NATIONAL POLAR-ORBITING OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM (NPOESS)

NPOESS Common Data Format Control Book - External Volume VIII – Look Up Table Formats
D34862-08 Rev C
CDRL No. A014

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Revision/Change Record

For Document No. D34862-08

Revision	Document Date	Revision/Change Description	Pages Affected
---	07/02/2008	Initial Release, ECR 785	All
A	01/16/2009	Revision A (for NPOESS CDR), ECR 902 Update to most tables to clarify/correct formats as provided by IDPS/PRO	All
B	06/05/2009	Revision B, ECR 963B - Addition of OMPS TC and OMPS NP LUTs, PCs, and Ephemeral PCs - Updated/Corrected VIIRS Calibration Coefficient Tables (Coeff A, B, and Delta C tables) - Data Mapping table moved to CDFCB-X, Vol I to eliminate duplicate documentation. Appendix A now references Vol I. - Various updates/corrections to Data Mnemonics, File Sizes, Descriptions also provided	All
C	12/09/2009	Revision C , ECR 1018B incorporates the following updates: • Updated references to Tunable Parameters to Ephemeral Processing Coefficients throughout the document for consistency • Inorporated ECR 1012A – Updated Appendix A, DATA MNEMONIC TO INTERFACE MAPPING to reference D34862-01, CDFCB-X Volume I for the mapping. This was done based on user feedback on use of the mappings as well as eliminates duplication and precedence issues across the various volumes of the CDFCB-X • NEW: Section 4, Provenance, also added description of new Section 4.0 for Provenance data files in overview • Updated formats based on Full Analysis and Review of PC and LUT files between SI, IDPS, and A&DP • Removed “The Version Number field of the File-Naming Convention for OMPS Automatic PCs will set to a dash (“-“)” from File-Naming Construct for all OMPS Automatic PCs, no longer needed with CDFCB-X Volume I update where applicable throughout document • Updated relationship of OMPS version number with respect to the Provenance Versioning Identifier provided in the filename, where applicable throughout document • Incorporation of ECR A-255A, CrIS SDR Algorithm Code and LUT Update and ECR A-184, Aerosols Code Update • Title corrections and text clarifications throughout document, updates based on LUT/PC analysis performed by IDPS,	All

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Revision	**Document Date**	**Revision/Change Description**	**Pages Affected**
		SE&I, and A&DP against implemented source, tech memo's, IPAC testing, and algorithm ECRs • New Defined Formats o VIIRS Surface Albedo BPSA Sea Ice LUT o VIIRS SDR GEO PARAM PC • Deleted Formats (OBE) o VIIRS COP SA and Emissivity PC o VIIRS Sea Ice Quality PC • Closed the following TBXs o EDFCB8-TBD-10225 – closed o EDFCB8-TBD-10511 – closed o EDFCB8-TBD-10275 – closed o EDFCB8-TBR-10516 – closed o EDFCB8-TBR-10517 – closed o EDFCB8-TBR-10518 – closed • Incorporated ECR A-251, VIIRS SDR Cal & Geolocation • Incorporated ECR A-263, Sea Ice Characterization • Updated Table 3.2.1.4.36-1, VIIRS SDR Quality Assurance PC Data Format based on A-251 • Updated CrIS Correction Matrix in accordance with A-255 with IDPS input • Added version identifier specification as applicable for LUTs and PC files • Table 3.2.1.3.11-1, OMPS TC Spectral Registration Pixel Map Table Data Format - update wmap Array size • Table 3.2.1.3.12-1, OMPS TC Timing Pattern Ground Table Data Format - Updated led_time_offset array size and total format file size • Table 3.2.1.3.7-1, OMPS TC Wave Fitting Parameters Table Data Format - updated Range of Values for diff Array (True = 1 and False = 0 in lieu of >0) • Table 3.2.1.3.14-1, OMPS TC Earth View Sample Ground Table Data Format - updated parameter name to macrot (in lieu of badpixBATC) • Table 3.2.1.3.2-1, OMPS TC Field Angles Map PC Table Data Format - updated name of second dimension for angles Array	

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1.0 INTRODUCTION

1.1 Document Purpose and Scope

Volume VIII of the Common Data Format Control Book - External (CDFCB-X) contains the specifications for the format of Look Up Tables (LUT) and Processing Coefficients (PC). These formats are used to create the NPP/NPOESS Data Products and are made available to authorized external users of the National Polar-orbiting Operational Environmental Satellite System (NPOESS) as well as delivered to the Comprehensive Large Array-data Stewardship System (CLASS).

For overview information and the reference documents for the CDFCB-X, see the CDFCB-X Volume I - Overview, D34862-01.

1.2 Document Overview

For ease of reading, understanding, and use of this document, the sections of this volume are organized in the following manner:

Section 1.0: Introduction – Provides a brief overview of the document's purpose, scope, and an explanation of the data formats used in this volume.

Section 2.0: Look Up Tables – Provides the data format definitions for Radiative Transfer Models' (RTM) LUTs and LUTs provided from external vendors such as Optimal Spectral Sampling (OSS).

Section 3.0: Processing Coefficients – Provides the data format definitions for the Processing Coefficients used by NPOESS – includes Ephemeral PCs (XML formatted) and automated/manual PCs (binary formatted).

Section 4.0: Provenance – Provides the data format definitions for the Provenance files product by NPOESS

Appendix A: Data Mnemonic to Interface Mapping - A mapping of data mnemonics to their corresponding logical interface mnemonics.

1.3 LUT Formats Template Overview

LUT data formats are files that contain data used to create NPOESS Data Products. The template used for these formats in this document is described below.

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Data Mnemonic: This is a unique identifier. The method for defining data mnemonics is defined in the CDFCB-X Volume I, D34862-01.

Description/Purpose: A brief description of the data format and its purpose.

File-Naming Construct: A description of the file-naming constructs for those data units that apply. See the CDFCB-X Volume I, D34862-01, for file-naming conventions.

File Size: The size of the data file.

File Format Type: The format type of the data file.

Production Frequency: Production frequency is the interval of time for data generation. A production frequency equal to dynamic implies that it is only as requested or as needed.

Data Format/Structure: This defines the actual data format. The definitions provide information for every data element in the data unit.

In the described formats:

The field names are all mandatory, unless specified otherwise.

Fill data is specified, where applicable.

Strings are left-aligned and integers are right-aligned, unless specified otherwise.

For information regarding Coordinated Universal Time (UTC) and IDPS Epoch Time (IET) conventions, see the CDFCB-X Volume I, D34862-01.

For all references of the ASCII Standard, the corresponding International Standards Organization (ISO) standard is ISO/IEC 10646. The specific Unicode is UTF8, unless stated otherwise.

The fields are presented in order (either top – down or most significant first), unless stated otherwise.

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2.0 Look Up Tables

Algorithm LUTs are files that contain tables of pre-computed values which are used in lieu of real-time algorithm computations. These table values are typically the result of RTM executions, and other environmental model simulations. This data typically covers a broad, multi-dimensional parameter space which is unique to each algorithm.

2.1 CrIMSS LUTs

2.1.1 CrIMSS Channel Selection LUT

Data Mnemonic	NP_NU-LM0030-000
Description/ Purpose	The Cross-track Infrared (IR) Microwave Sounder Suite (CrIMSS) Channel Selection LUT identifies which channels are used in the retrievals for the creation of the Atmospheric Vertical Moisture Profile (AVMP), the Atmospheric Vertical Temperature Profile (AVTP), and the Atmospheric Vertical Pressure Profile (AVPP). This file is used in the CrIMSS Environmental Data Records (EDR) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	10,440 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.1.1-1, CrIMMS Channel Selection LUT Data Format

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Table 2.1.1-1, CrIMSS Channel Selection LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
irChanSel	5220	32-bit integer	0 – 1	unitless	1 Dimensional Array IR Channel Size of Dimension(s): 1305
freq	5220	32-bit floating point	1.9E15 – 7.6E15	Hz	1 Dimensional Array Frequency Size of Dimension(s): 1305

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2.1.2 CrIMSS IR Optimal Spectral Sampling Coefficients LUT

Data Mnemonic	NP_NU-LM0030-001
Description/ Purpose	The CrIMSS IR Optimal Spectral Sampling Coefficients LUT provides the IR OSS coefficient and channel information. This file identifies which channels are used in the retrievals and covers both IR and microwave data. This file is used by the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	24,058,412 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.1.2-1, CrIMSS IR OSS Coefficients LUT Data Format

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Table 2.1.2-1, CrIMSS IR OSS Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nchan	4	32-bit integer	1 – 1305	unitless	Number of sensor channels for which data is provided
nfSel	4	32-bit integer	MinInt - MaxInt	unitless	Number of selected monochromatic spectral points
nChMax	4	32-bit integer	MinInt - MaxInt	unitless	Maximum number of selected points per sensor channel
cFreq	10400	32-bit floating point	Minfloat - Maxfloat	nm	Center Frequencies of the sensor channels 1 Dimensional Array: MAX_OSSIR_CHANS l Size of Dimension(s): 2600
nChSmp	48000	32-bit integer	1 – 1305	unitless	Number of channels which use a particular selected monochromatic spectral Pojnt 1 Dimensional Array: MAX_IR_FSAMP Size of Dimension(s): 12000
coef	12000000	32-bit floating point	Minfloat - Maxfloat	unitless	OSS IR absorption coefficients for the selected monochromatic spectral points 2 Dimensional Array: MAX_IR_FSAMP x MAX_OSSIR_COEFF_CHAN Dimensions: 12000 x 250
iChMap	12000000	32-bit integer	MinInt - MaxInt	unitless	Channel mapping data to relate coef to a particular sensor channel 2 Dimensional Array: MAX_IR_FSAMP x MAX_OSSIR_COEFF_CHAN Dimensions: 12000 x 250

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2.1.3 CrIMSS MW Absorption Coefficients LUT

Data Mnemonic	NP_NU-LM0030-002
Description/ Purpose	The CrIMSS Microwave (MW) Absorption Coefficients LUT file provides the MW absorption coefficients at OSS levels as well as temperature and water vapor data. This file covers both IR and MW data. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	160,029,208 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.1.3-1, CrIMSS MW Absorption Coefficients LUT Data Format

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Table 2.1.3-1, CrIMSS MW Absorption Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nLayers	4	32-bit integer	1 – 100	unitless	Number of layers
nTemps	4	32-bit integer	MinInt - MaxInt	unitless	Number of temperature elements
watVap	4	32-bit integer	MinInt - MaxInt	unitless	Number of water vapor elements
pRef	404	32-bit floating point	0 – 1100.0	hPa	Reference pressure for each layer 1 Dimensional Array: OSS_MW_LEVS Size of Dimension(s): 101
tempTable	20000	32-bit floating point	Minfloat - Maxfloat	Kelvin	Temperature table 2 Dimensional Array: OSS_MW_LAYERS x MAX_OSSMW_TEMPS Size of Dimension(s): 100 x 50
fixTable	400	32-bit floating point	Minfloat - Maxfloat	g/kg	Fixed gas table 1 Dimensional Array: OSS_MW_LAYERS Size of Dimension(s): 100
wvpTable	8000	32-bit floating point	Minfloat - Maxfloat	g/kg	Water vapor table 2 Dimensional Array: OSS_MW_LAYERS x MAX_OSSMW_WV Size of Dimension(s): 100 x 20
vFreq	400	32-bit floating point	Minfloat - Maxfloat	nm	Frequencies associated with absorption coefficients 1 Dimensional Array: MAX_MW_FSMP Size of Dimension(s): 100

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
kFix	40000000	32-bit floating point	Minfloat - Maxfloat	unitless	Fixed gas absorption coeffiecients 2 Dimensional Array: MAX_MW_FSMP x NUM_MW_AC Size of Dimension(s): 100 x 100000
dkFix	40000000	32-bit floating point	Minfloat - Maxfloat	unitless	Water vapor self continuum absorption coefficients 2 Dimensional Array: MAX_MW_FSMP x NUM_MW_AC Size of Dimension(s): 100 x 100000
kH2o	40000000	32-bit floating point	Minfloat - Maxfloat	unitless	Absorption coefficients for fixed gases for water 2 Dimensional Array: MAX_MW_FSMP x NUM_MW_AC Dimensions: 100 x 100000
dkH2o	40000000	32-bit floating point	Minfloat - Maxfloat	unitless	Interpolation coefficients for the absorption coefficients 2 Dimensional Array: MAX_MW_FSMP x NUM_MW_AC Dimensions: 100 x 100000

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2.1.4 CrIMSS MW Optimal Spectral Sampling Coefficients LUT

Data Mnemonic	NP_NU-LM0030-004
Description/ Purpose	The CrIMSS MW Optimal Spectral Sampling Coefficients LUT file contains the MW OSS coefficient and channel information. This file covers both IR and MW data. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	5,412bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	See Table 2.1.4-1, CrIMSS MW OSS Coefficients LUT Data Format

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Table 2.1.4-1, CrIMSS MW OSS Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nchan	4	32-bit integer	0 – 22	unitless	Number of sensor channels for which data is provided
nfSel	4	32-bit integer	>=0	unitless	
nChMax	4	32-bit integer	>=0	unitless	
cFreq	200	32-bit floating point	Minfloat - Maxfloat	unitless	Number of selected monochromatic spectral point 1 Dimensional Array: ossmwChannel Size of Dimension(s): 50
nChSmp	400	32-bit integer	0 – 22	unitless	1 Dimensional Array: mwFsamp Size of Dimension(s): 100
coef	2400	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array: mwFsamp x ossmwCoeffChan Size of Dimension(s): 100 x 6
iChMap	2400	32-bit integer	1 – 22	unitless	2 Dimensional Array: mwFsamp x ossmwCoeffChan Size of Dimension(s): 100 x 6

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2.1.5 CrIMSS Surface Emissivity LUT

Data Mnemonic	NP_NU-LM0030-005
Description/ Purpose	The CrIMSS Surface Emissivity LUT file contains the IR surface emissivity hinge points. This file covers both IR and MW data. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	52 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.1.5-1, CrIMSS Surface Emissivity LUT Data Format

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Table 2.1.5-1, CrIMSS Surface Emissivity LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numIrEmiss	4	32 bit integer	MinInt - MaxInt	unitless	Number of IR emissivities in the data buffer
freqSfcHp	48	32-bit floating point	Minfloat - Maxfloat	wavenumber	IR surface emissivity hinge point frequencies. The number of hinge points is equal to the number of surface IR emissivities in the geophysical domain 1 Dimensional Array: freqHp Size of Dimension(s): 12

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2.1.6 CrIMSS IR Absorption Coefficients LUT

Data Mnemonic	NP_NU-LM0030-006
Description/ Purpose	The CrIMSS IR Absorption Coefficients LUT file provides the IR absorption coefficients at OSS levels, as well as temperature and water vapor data. This file contains both IR and MW data. This file is used by the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	864,829,296 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.1.6-1, CrIMSS IR Absorption Coefficients LUT Data Format

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Table 2.1.6-1, CrIMSS IR Absorption Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nLayers	4	32-bit integer	1 - 100	unitless	Number of layers
nTemps	4	32-bit integer	MinInt - MaxInt	unitless	Number of temperature elements
nMol	4	32-bit integer	1 – 7	unitless	Number of molecule IDs
molId	80	32-bit integer	1 – 5	unitless	Molecule IDs 1 Dimensional Array: molIds Size of Dimension(s): 20
pRef	404	32-bit floating point	0 – 1100	hPa	Reference pressure 1 Dimensional Array: ossIrLev Size of Dimension(s): 101
tempTable	4000	32-bit floating point	Minfloat – Maxfloat	Kelvin	Temperature table 2 Dimensional Array: ossIrLayer x ossirTemp Size of Dimension(s): 100 x 10
wvpTable	8800	32-bit floating point	Minfloat – Maxfloat	g/kg	Water vapor table 2 Dimensional Array: ossIrLayer x ossirWv Size of Dimension(s): 100 x 22
vFreq	48000	32-bit floating point	Minfloat – Maxfloat	nm	Frequencies associated with absorption coeffs 1 Dimensional Array: irFsamp Size of Dimension(s): 12000

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nMols	48000	32-bit integer	MinInt – MaxInt	unitless	Number of molecules at each frequency for which there is an absorption coefficient 1 Dimensional Array: irFsamp Size of Dimension(s): 12000
iMols	720000	32-bit integer	1 – 5	unitless	Molecule index array 2 Dimensional Array: irFsamp x mol Size of Dimension(s): 12000 x 15
kFix	48000000	32-bit floating point	Minfloat – Maxfloat	unitless	Fixed gas absorption coefficients 2 Dimensional Array: irFsamp x irAc Size of Dimension(s): 12000 x 1000
dkH2o	48000000	32-bit floating point	Minfloat – Maxfloat	unitless	Water vapor self continuum absorption coefficients 2 Dimensional Array: irFsamp x irAc Size of Dimension(s): 12000 x 1000
kH2o	48000000	32-bit floating point	Minfloat – Maxfloat	unitless	Water vapor lines plus the foreign continuum absorption coefficients 2 Dimensional Array: irFsamp x irAc Size of Dimension(s): 12000 x 1000
kVar	720000000	32-bit floating point	Minfloat – Maxfloat	unitless	Absorption coefficient tables for the variable gases 2 Dimensional Array: irFsamp x irVg Size of Dimension(s): 12000 x 15000

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2.2 VIIRS LUTs

2.2.1 VIIRS AOT LUT

Data Mnemonic	NP_NU-LM0040-000
Description/ Purpose	The VIIRS Aerosol Optical Thickness (AOT) LUT file contains transmittances (used for both upward and downward), spherical albedo, ratios of AOT at the VIIRS band wavelengths to AOT at 550 nm and atmospheric reflectance. Contains values for all land and ocean aerosol models. This file is used in the VIIRS AOT algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	46,622,120 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.1-1, VIIRS AOT LUT Data Format

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Table 2.2.1-1, VIIRS AOT LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
szen	168	64-bit floating point	0 - 1.3962634	radians	1 Dimensional Array: SOL_ZEN_DIM Size of Dimension(s): 21
vzen	160	64-bit floating point	0 – 1.21455298	radians	1 Dimensional Array: SAT_ZEN_DIM Size of Dimension(s): 20
aot	60	32-bit floating point	0 – 2	unitless	1 Dimensional Array: AOT_DIM Size of Dimension(s): 15
band	44	unsigned 32-bit integer	0 – 9	unitless	1 Dimensional Array: BANDS_DIM Size of Dimension(s): 11
scat_ang_val	1680	32-bit integer	0 – 5491	unitless	1 Dimensional Array: SCAT_ANG_VAL_DIM Size of Dimension(s): 420
trans	176400	32-bit floating point	0 – 1	unitless	4 Dimensional Array: AERO_MOD_DIM x AOT_DIM x BAND_DIM x SOL_ZEN_DIM Size of Dimension(s): 14 x 15 x 10 x 21
albedo	8400	32-bit floating point	0 – 1	unitless	3 Dimensional Array: AERO_MOD_DIM x AOT_DIMx BAND_DIM Size of Dimension(s): 14 x 15 x 10
atau	8400	32-bit floating point	0 – 2	unitless	3 Dimensional Array: AERO_MOD_DIM x AOT_DIM x BAND_DIM Size of Dimension(s): 14 x 15 x 10

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
reflec	46,426,800	32-bit floating point	0 – 10	unitless	4 Dimensional Array: AERO_MOD_DIM x AOT_DIM x BAND_DIM x SCAT_ANG_DIM Size of Dimension(s): 14 x 15 x 10 x 5527
scat_ang_incr	8	32-bit integer	0 – 5491	unitless	

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2.2.2 VIIRS AOT Sunglint LUT

Data Mnemonic	NP_NU-LM0040-001
Description/ Purpose	The VIIRS AOT Sunglint LUT file contains the normalized integral of downward irradiance by sunglint directional reflectance (also used for normalized integral of upward radiance by sunglint directional reflectance). This file is used in the AOT algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	30,006,204 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.2-1, VIIRS AOT Sunglint LUT Data Format

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Table 2.2.2-1, VIIRS AOT Sunglint LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
aot	60	32-bit floating point	0 – 2	unitless	1 Dimensional Array: SG_AOT_DIM Size of Dimension(s): 15
szen	168	64-bit floating point	0 - 1.3962634	radians	1 Dimensional Array: SG_SOL_ZEN_DIM Size of Dimension(s): 21
vzen	168	64-bit floating point	0 - 1.3962634	radians	1 Dimensional Array: SG_SEN_ZEN_DIM Size of Dimension(s): 21
relaz	168	64-bit floating point	0 - 3.14159265	radians	1 Dimensional Array: SG_REL_AZI_DIM Size of Dimension(s): 21
rhobar	30,005,640	32-bit floating point	0 – 1	unitless	6 Dimensional Array: SG_AER_MOD_DIM x SG_AOT_DIM x SG_BAND_DIM x SG_SOL_ZEN_DIM x SG_SEN_ZEN_DIM x SG_REL_AZI_DIM Size of Dimension(s): 9 x 15 x 6 x 21 x 21 x 21

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2.2.3 VIIRS COP Ice Cloud LUT

Data Mnemonic	NP_NU-LM0040-002
Description/ Purpose	The VIIRS Cloud Optical Properties (COP) Ice Cloud LUT is created from the University of California at Los Angeles' (UCLA) Line-by-Line Equivalent (LBLE) RTM for the purpose of simulating cloudy reflectance for a variety of cloud relationships. This file contains reflectances and radiances generated for a variety of conditions. This file is used by the VIIRS COP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	162,017,200 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.3-1, VIIRS COP Ice Cloud LUT Data Format

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Table 2.2.3-1, VIIRS COP Ice Cloud LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sol_zen_bins	76	32-bit floating point	0 – pi/2	Radians	1 Dimensional Array: COP_ICE_SOL_ZEN_BINS Size of Dimension(s): 19
sen_zen_bins	76	32-bit floating point	0 – pi /2	Radians	1 Dimensional Array: COP_ICE_SEN_ZEN_BINS Size of Dimension(s): 19
rel_az_bins	88	32-bit floating point	0 – pi	Radians	1 Dimensional Array: COP_ICE_REL_AZ_BINS Size of Dimension(s): 22
sfc_albedo_bins	40	32-bit floating point	0 – 0.9	unitless	1 Dimensional Array: COP_ICE_ALBEDO_BINS Size of Dimension(s): 10
sfc_emiss_bins	4	32-bit floating point	0.9	unitless	1 Dimensional Array: COP_ICE_EMISS_BINS Size of Dimension(s): 1
eps_indexes	24	32-bit integer	MinInt - MaxInt	unitless	1 Dimensional Array: COP_ICE_EPS_BINS Size of Dimension(s): 6
eps_bins	24	32-bit floating point	24 – 124	Micrometers	1 Dimensional Array: COP_ICE_EPS_BINS Size of Dimension(s): 6
cot_bins	68	32-bit floating point	0.125 – 30	unitless	1 Dimensional Array: COP_ICE_COT_BINS Size of Dimension(s): 17

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
precalcM5_refl	32403360	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_ICE_COT_BINS x COP_ICE_EPS_BINS x COP_ICE_EMISS_BINS x COP_ICE_ALBEDO_BINS x COP_ICE_REL_AZ_BINS x COP_ICE_SEN_ZEN_BINS x COP_ICE_SOL_ZEN_BINS Size of Dimension(s): 17 x 6 x 1 x 10 x 22 x 19 x 19
precalcM8_refl	32403360	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_ICE_COT_BINS x COP_ICE_EPS_BINS x COP_ICE_EMISS_BINS x COP_ICE_ALBEDO_BINS x COP_ICE_REL_AZ_BINS x COP_ICE_SEN_ZEN_BINS x COP_ICE_SOL_ZEN_BINS Size of Dimension(s): 17 x 6 x 1 x 10 x 22 x 19 x 19
precalcM10_refl	32403360	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_ICE_COT_BINS x COP_ICE_EPS_BINS x COP_ICE_EMISS_BINS x COP_ICE_ALBEDO_BINS x COP_ICE_REL_AZ_BINS x COP_ICE_SEN_ZEN_BINS x COP_ICE_SOL_ZEN_BINS Size of Dimension(s): 17 x 6 x 1 x 10 x 22 x 19 x 19

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
precalcM11_refl	32403360	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_ICE_COT_BINS x COP_ICE_EPS_BINS x COP_ICE_EMISS_BINS x COP_ICE_ALBEDO_BINS x COP_ICE_REL_AZ_BINS x COP_ICE_SEN_ZEN_BINS x COP_ICE_SOL_ZEN_BINS Size of Dimension(s): 17 x 6 x 1 x 10 x 22 x 19 x 19
precalcM12_rad	32403360	32-bit floating point	Minfloat – Maxfloat	W/(m2 sr um)	7 Dimensional Array: COP_ICE_COT_BINS x COP_ICE_EPS_BINS x COP_ICE_EMISS_BINS x COP_ICE_ALBEDO_BINS x COP_ICE_REL_AZ_BINS x COP_ICE_SEN_ZEN_BINS x COP_ICE_SOL_ZEN_BINS Size of Dimension(s): 17 x 6 x 1 x 10 x 22 x 19 x 19

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2.2.4 VIIRS COP Water Cloud LUT

Data Mnemonic	NP_NU-LM0040-003
Description/ Purpose	The VIIRS COP Water Cloud LUT file is created from UCLA's LBLE RTM for the purpose of simulating cloudy reflectance for a variety of cloud relationships. This file is used in the VIIRS COP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	217,293,552 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.4-1, VIIRS COP Water Cloud LUT Data Format

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Table 2.2.4-1, VIIRS COP Water Cloud LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sol_zen_bins	76	32-bit floating point	0 – pi/2	Radians	1 Dimensional Array: COP_WATER_SOL_ZEN_BINS Size of Dimension(s): 19
sen_zen_bins	76	32-bit floating point	0 – pi/2	Radians	1 Dimensional Array: COP_WATER_SEN_ZEN_BINS Size of Dimension(s): 19
rel_az_bins	88	32-bit floating point	0 – pi	Radians	1 Dimensional Array: COP_WATER_REL_AZ_BINS Size of Dimension(s): 22
sfc_albedo_bins	40	32-bit floating point	0 – 0.9	unitless	1 Dimensional Array: COP_WATER_ALBEDO_BINS Size of Dimension(s): 10
sfc_emiss_bins	4	32-bit floating point	0.9	unitless	1 Dimensional Array: COP_WATER_EMISS_BINS Size of Dimension(s): 1
eps_indexes	36	32-bit integer	MinInt - MaxInt	unitless	1 Dimensional Array: COP_WATER_EPS_BINS Size of Dimension(s): 9
eps_bins	36	32-bit floating point	2 – 30	Micrometers	1 Dimensional Array: COP_WATER_EPS_BINS Size of Dimension(s): 9
cot_bins	76	32-bit floating point	0.125 – 200	unitless	1 Dimensional Array: COP_WATER_COT_BINS Size of Dimension(s): 19

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
precalcM5_refl	54323280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_WATER_COT_BINS x COP_WATER_EPS_BINS x COP_WATER_EMISS_BINS x COP_WATER_ALBEDO_BINS x COP_WATER_REL_AZ_BINS x COP_WATER_SEN_ZEN_BINS x COP_WATER_SOL_ZEN_BINS Size of Dimension(s): 19 x 9 x 1 x 10 x 22 x 19 x 19
precalcM8_refl	54323280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_WATER_COT_BINS x COP_WATER_EPS_BINS x COP_WATER_EMISS_BINS x COP_WATER_ALBEDO_BINS x COP_WATER_REL_AZ_BINS x COP_WATER_SEN_ZEN_BINS x COP_WATER_SOL_ZEN_BINS Size of Dimension(s): 19 x 9 x 1 x 10 x 22 x 19 x 19
precalcM10_refl	54323280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_WATER_COT_BINS x COP_WATER_EPS_BINS x COP_WATER_EMISS_BINS x COP_WATER_ALBEDO_BINS x COP_WATER_REL_AZ_BINS x COP_WATER_SEN_ZEN_BINS x COP_WATER_SOL_ZEN_BINS Size of Dimension(s): 19 x 9 x 1 x 10 x 22 x 19 x 19

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
precalcM11_refl	54323280	32-bit floating point	Minfloat – Maxfloat	unitless	7 Dimensional Array: COP_WATER_COT_BINS x COP_WATER_EPS_BINS x COP_WATER_EMISS_BINS x COP_WATER_ALBEDO_BINS x COP_WATER_REL_AZ_BINS x COP_WATER_SEN_ZEN_BINS x COP_WATER_SOL_ZEN_BINS Size of Dimension(s): 19 x 9 x 1 x 10 x 22 x 19 x 19

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2.2.5 VIIRS CTP COT LUT

Data Mnemonic	NP_NU-LM0040-004
Description/ Purpose	The VIIRS Cloud Top Parameters (CTP) COT LUT file contains factors for the conversion of COT at 0.55 microns to 10.763 microns. This file is used in the VIIRS CTP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	31,208 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.5-1, VIIRS CTP COT LUT Data Format

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Table 2.2.5-1, VIIRS CTP COT LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	31208	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: COT_ROWS x COT_COLS Size of Dimension(s): 3901 x 2

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2.2.6 VIIRS CTP MSC LUT

Data Mnemonic	NP_NU-LM0040-005
Description/ Purpose	The VIIRS CTP Multiple Scattering Correction (MSC) file contains regression coefficients for multiple scattering corrections. This file is used by the VIIRS CTP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	4,412 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.6-1, VIIRS CTP MSC LUT Data Format

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Table 2.2.6-1, VIIRS CTP MSC LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
grid_ndims	4	32-bit integer	3	unitless	Number of input dimensions. That is, the data vectors are specified on a grid in 'grid_ndims'-dimensional space
data_ndims	4	32-bit integer	4	unitless	Dimension of data values. Data variables are vectors with 'data_ndims' elements
ntics	12	32-bit integer	MinInt - MaxInt	unitless	Number of 'tic marks' for each dimension. 'tic marks' are essentially the grid coordinates. The value in ntics[i] is the number of grid coordinates for dimension number 'i' 1 Dimensional Array: GRID_NDIMS Size of Dimension(s): 3
factor	12	32-bit integer	MinInt - MaxInt	unitless	Factors for indexing values 1 Dimensional Array: GRID_NDIMS Size of Dimension(s): 3
tic_min	12	32-bit floating point	Minfloat – Maxfloat	unitless	Min tic value used for interpolation 1 Dimensional Array: GRID_NDIMS Size of Dimension(s): 3
tic_max	12	32-bit floating point	Minfloat – Maxfloat	unitless	Max tic value used for interpolation 1 Dimensional Array: GRID_NDIMS Size of Dimension(s): 3

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tic	132	32-bit floating point	Minfloat – Maxfloat	unitless	Tic mark (grid coordinate) table. The value in tic[i][j] is the 'j'th grid coordinate for dimension 'i' 2 Dimensional Array: GRID_NDIMS x NUM_TIC Size of Dimension(s): 3 x 11
data	4224	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficients for multiple scattering correction 2 Dimensional Array: DATA_NDIMS x NUM_DATA Size of Dimension(s): 4 x 264

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2.2.7 VIIRS CTP OSS OD LUT

Data Mnemonic	NP_NU-LM0040-006
Description/ Purpose	The VIIRS CTP OSS OD LUT file contains the OSS forward model input parameters. This file is used in the VIIRS Cloud Top Pressure (CTP) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	144,106,086 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.7-1, VIIRS CTP OSS OD LUT Data Format

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Table 2.2.7-1, VIIRS CTP OSS OD LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
NmolFix	2	16 bit integer	MinInt – MaxInt	unitless	
Nmol	2	16 bit integer	MinInt – MaxInt	unitless	
MolIDFix	24	16 bit integer	MinInt – MaxInt	unitless	1 Dimensional Array: NUM_MOLIDFIX Size of Dimension(s): 12
MolID	24	16 bit integer	MinInt – MaxInt	unitless	1 Dimensional Array: NUM_MOLID Size of Dimension(s): 12
Spare	2	16-bit integer	MinInt – MaxInt	unitless	
NLayOD	4	32-bit integer	MinInt – MaxInt	unitless	
NTmpOD	4	32-bit integer	MinInt – MaxInt	unitless	
pref	404	32-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array: NUM_PREF Size of Dimension(s): 101
tmptab	4000	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: TMPTAB_ROWS x TMPTAB_COLS Size of Dimension(s): 100 x 10

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wvptab	5600	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: WVPTAB_ROWS x WVPTAB_COLS Size of Dimension(s): 100 x 14
padFloat	4	32-bit floating point	Minfloat – Maxfloat	unitless	Pad
vFreq	96000	64-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array: NUM_VFREQ Size of Dimension(s): 12000
NmolS_tmp	2	16 bit integer	MinInt - MaxInt	unitless	
ImolS_tmp	10	16 bit integer	MinInt - MaxInt	unitless	1 Dimensional Array: NUM_IMOLS Size of Dimension(s): 5
Padshort	4	16-bit integer	MinInt - MaxInt	unitless	Spare 1 Dimensional Array: Size of Dimension(s): 2
kfix	48000000	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: KFIX_ROWS x KFIX_COLS Size of Dimension(s): 12000 x 1000
dkh2o	48000000	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: DKH2O_ROWS x DKH2O_COLS Size of Dimension(s): 12000 x 1000

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
kh2o	48000000	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: KH2O_ROWS x KH2O COLS Size of Dimension(s): 12000 x 1000

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2.2.8 VIIRS CTP OSS SEL LUT

Data Mnemonic	NP_NU-LM0040-007
Description/ Purpose	The VIIRS OSS SEL LUT file contains the OSS SEL regression coefficients. This file is used in the VIIRS CTP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	994,012 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.8-1, VIIRS CTP OSS SEL LUT Data Format

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Table 2.2.8-1, VIIRS CTP OSS SEL LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nchan	4	32-bit integer	MinInt - MaxInt	unitless	
nf_sel	4	32-bit integer	MinInt - MaxInt	unitless	
nchmax	4	32-bit integer	MinInt - MaxInt	unitless	
cFreq	10000	32-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array: NUM_CFREQ Size of Dimension(s): 2500
nch	24000	16 bit integer	MinInt - MaxInt	unitless	1 Dimensional Array: NUM_NCH Size of Dimension(s): 12000
coef	480000	32-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array: COEF_ROWS COEF_COLS Size of Dimension(s): 12000 x 10
ichmap	480000	32-bit integer	MinInt - MaxInt	unitless	1 Dimensional Array: ICH_ROWS ICH_COLS Size of Dimension(s): 12000 x 10

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2.2.9 VIIRS Sea Ice Broadband Atmospheric Transmittance LUT

Data Mnemonic	NP_NU-LM0040-008
Description/ Purpose	The VIIRS Sea Ice Broadband Atmospheric Transmittance LUT file is generated using the 6S radiative transfer routine and the algorithm. This file is used in the VIIRS Sea Ice Age algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	332 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.9-1, VIIRS Sea Ice Broadband Atmospheric Transmittance LUT Data Format

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Table 2.2.9-1, VIIRS Sea Ice Broadband Atmospheric Transmittance LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
aotbin	24	32-bit floating point	0.0 – 1.0 Initial Values = [0.0,0.01,0.1,0.2,0.6,1.0]	unitless	AOT Boundary Values 1 Dimensional Array: NAOT Size of Dimension(s): 6
szabin	44	32-bit floating point	-90 – 90 Initial Values = [48.0,52.0,56.0,60.0,64.0, 68.0,72.0,76.0,80.0,84.0, 88.0]	degree	Solar Zenith Angle Boundary Values 1 Dimensional Array: NSZA Size of Dimension(s): 11

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bbtranslut	264	32-bit floating point	0.0 – 1.0 Initial Values = [0.913416 0.913416 0.883998 0.852080 0.734581 0.634458 **(1)** 0.906948 0.906948 0.874509 0.839625 0.714074 0.610474 **(2)** 0.898996 0.898996 0.862829 0.824371 0.689830 0.583017**(3)** 0.889093 0.889093 0.848281 0.805525 0.661177 0.551780**(4)** 0.876536 0.876536 0.829884 0.781987 0.627344 0.516514**(5)** 0.860251 0.860251 0.806199 0.752198 0.587501 0.477124**(6)** 0.838493 0.838493 0.774994 0.713922 0.540873 0.433793**(7)** 0.808251 0.808251 0.732683 0.663920 0.487026 0.387159**(8)** 0.763895 0.763895 0.673236 0.597567 0.426465 0.338517**(9)** 0.705639 0.705639 0.596868 0.514757 0.359083 0.287918**(10)** 0.633377 0.633377 0.503474 0.415542 0.284933 0.235338**(11)]**	unitless	Atmospheric Broadband Transmittance values, extracted from 6S RTM. Transmittance is provided in this field, one for each “naot” bin (6 total) and a set of 6 for each solar zenith angle (as listed in the szabin field). 2 Dimensional Array: NSZA x NAOT Size of Dimension(s): 11 x 6

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2.2.10 VIIRS Sea Ice Reflectance LUT

Data Mnemonic	NP_NU-LM0040-009
Description/ Purpose	The VIIRS Sea Ice Reflectance LUT file contains top of the atmosphere reflectance, spectral albedo and broad band albedo values for snow/ice surfaces which are treated as flat surfaces. This file is used in the VIIRS Sea Ice Age algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	9,314,508 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.10-1, VIIRS Sea Ice Reflectance LUT Data Format

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Table 2.2.10-1, VIIRS Sea Ice Reflectance LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
snowThick	24	32-bit floating point	>0.0 Values initially set to: [0.0, 0.25, 0.5, 1.0, 2.0, 3.0]	cm	Snow Depth Bin Values 1 Dimensional Array: DEPTH Size of Dimension(s): 6
snowGrainSize	4	32-bit floating point	Value initially set to = 250.0	micrometers	Snow Grain Size
snowDensity	4	32-bit floating point	Value initially set to = 0.3	g/cm^3	Snow Density
iceThick	20	32-bit floating point	>0.0 Values initially set to: [5,10,20,30,40]	cm	Ice Thickness Bin Values 1 Dimensional Array: THICK Size of Dimension(s): 5
iceGrainSize	4	32-bit floating point	>0.0	micrometers	Ice Grain Size
iceDensity	4	32-bit floating point	>0.0	g/cm^3	Ice Density
normIceDensity	4	32-bit floating point	>0.0	g/cm^3	
brineGrainSize	4	32-bit floating point	>0.0	unitless	Brine Grain Size
brineDensity	4	32-bit floating point	>0.0	g/cm^3	Brine Grain Density
subRefl	4	32-bit floating point	>0.0	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sunZen	44	32-bit floating point	-1.0 – 1.0	unitless (values are cosines)	Solar Zenith Angle Bin Values 1 Dimensional Array: N_SZA Size of Dimension(s): 11
viewZen	28	32-bit floating point	-1.0 – 1.0	unitless (values are cosines)	View Zenith Angle Bin Values 1 Dimensional Array: N_VZA Size of Dimension(s): 7
relAzm	28	32-bit floating point	0 – 180	degree	Relative Azimuth Angle Bin Values 1 Dimensional Array: N_RELAZ Size of Dimension(s): 7
snowType	4	32-bit floating point	Minfloat - Maxfloat	unitless	Snow Type
h2oVapor	12	32-bit floating point	>=0.0 Values initially set to: [0.0, 0.4323, 2.0]	gm/cm^2	Precipitable Water Bin Values 1 Dimensional Array: N_WVOT Size of Dimension(s): 3
totClmnOzn	12	32-bit floating point	>=0.0 Values initially set to: [0.0, 0.1967, 0.5]	milli-atm-cm	Ozone Column Bin Values 1 Dimensional Array: N_OOT Size of Dimension(s): 3
aeroModel	8	32-bit floating point		unitless	Aerosol Model 1 Dimensional Array: N_AEROMDL Size of Dimension(s): 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
aotBin	16	32-bit floating point	>=0.0 Values initially set to: [0.0, 0.2366, 0.5472,1.0]	unitless	AOT Bin Values 1 Dimensional Array: N_AOT Size of Dimension(s): 4
iceRefl	9313920	32-bit floating point	> 0.0	unitless	TOA Reflectances From 6S RTM 10 Dimensional Array N_AM x N_BANDS x N_THICK x N_DEPTH x N_AOT x N_WVOT x N_OOT x N_SZA x N_VZA x N_RELAZ Size of Dimension(s): 2 x 2 x 5 x 6 x 4 x 3 x 3 x 11 x 7 x 7
sphrAlbedo	120	32-bit floating point	0.0 – 1.0	unitless	Broadband From 6S radiative transfer model (RTM) 2 Dimensional Array: N_DEPTH x N_THICK Size of Dimension(s): 6 x 5
narrowSphrAlbedo	240	32-bit floating point	0.0 – 1.0	unitless	Spectral Albedo from 6S RTM 3 Dimensional Array: N_BANDS x N_DEPTH x N_THICK Size of Dimension(s): 2 x 6 x 5

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2.2.11 VIIRS ACO/OCC Aerosol Coefficients LUT

Data Mnemonic	NP_NU-LM0040-010
Description/ Purpose	The VIIRS ACO/OCC Aerosol Coefficients LUT file contains parameters used to compute the aerosol contribution to the TOA reflectance. This file is used in the VIIRS ACO/OCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	73,735,340 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.11-1, VIIRS ACO/OCC Aerosol Coefficients LUT Data Format

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Table 2.2.11-1, VIIRS ACO/OCC Aerosol Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cost	36,867,600	32-bit floating point	Minfloat - Maxfloat	unitless	1) Coefficients for fit as rho_a + rho_ra vs. rho_as for the VIIRS bands, or 2) Coefficients for fit rho_as vs. (rho_a + rho_ra) for the VIIRS NIR bands. Coefficients are used to compute the multi-scattering aerosol reflectance for bands M1-M5. Note: AERO_COEF dimension (size = 5) corresponds to a,b,c,d,e (i.e. acost) 6 Dimensional Array: AERO_COEF x MODEL x ACOBANDS x MSUN x MPHI x NRAD Size of Dimension(s): 5 x 12 x 7 x 33 x 19 x 35

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cost_rev	36,867,600	32-bit floating point	Minfloat - Maxfloat	unitless	1) Coefficients for fit as rho_a + rho_ra vs. rho_as for the VIIRS bands, or 2) coefficients for fit rho_as vs. (rho_a + rho_ra) for the VIIRS NIR bands. Single-scattering aerosol (M6 – M7) reflectance coefficients are stored in these arrays (acost_rev, …). Note: AERO_COEF dimension (size = 5) corresponds to a,b,c,d,e (i.e. acost_rev) 6 Dimensional Array: AERO_COEF x MODEL x ACOBANDS x MSUN x MPHI x NRAD Size of Dimension(s): 5 x 12 x 7 x 33 x 19 x 35
thetav	140	32-bit floating point	Minfloat - Maxfloat	degrees	Sensor zenith angles 1 Dimensional Array: NRAD Size of Dimension(s): 35

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2.2.12 VIIRS ACO/OCC Aerosol Properties LUT

Data Mnemonic	NP_NU-LM0040-011
Description/ Purpose	The VIIRS ACO/OCC Aerosol Properties LUT file contains aerosol parameters pertaining to 12 different aerosol models. This file is used in the VIIRS ACO/OCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	76,600 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.12-1, VIIRS ACO/OCC Aerosol Properties LUT Data Format

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Table 2.2.12-1, VIIRS ACO/OCC Aerosol Properties LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
angle	300	32-bit floating point	0 ≤ angle ≤ 180 (increments vary)	degrees	Scattering angles 1 Dimensional Array: NUM_SCAT_ANGLES Size of Dimension(s): 75
wavelength	28	32-bit floating point	[412,443,448, 555,670,748, 865]	nm	VIIRS band center wavelengths 1 Dimensional Array: ACOBANDS Size of Dimension(s): 7
omega0	336	32-bit floating point	Minfloat – Maxfloat	unitless	Aerosol Single Scattering Albedo 2 Dimensional Array: MODEL x ACOBANDS Size of Dimension(s): 12 x 7
extinc	336	32-bit floating point	Minfloat – Maxfloat	unitless	Aerosol extinction coefficient 2 Dimensional Array: MODEL x ACOBANDS Size of Dimension(s): 12 x 7
s11	25,200	32-bit floating point	Minfloat – Maxfloat	unitless	Aerosol Scattering Phase Function 3 Dimensional Array: MODEL x ACOBANDS x NUM_SCAT_ANGLES Size of Dimension(s): 12 x 7 x 75

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ylog	25,200	32-bit floating point	Dependant on the original y values	unitless	Logs of s11 (scattering phase function) 3 Dimensional Array: MODEL x ACOBANDS x NUM_SCAT_ANGLES Size of Dimension(s): 12 x 7 x 75
y2	25,200	32-bit floating point	Dependant on the original y values	unitless	Spline (second derivative) of s11 (scattering phase function) 3 Dimensional Array: MODEL x ACOBANDS x NUM_SCAT_ANGLES Size of Dimension(s): 12 x 7 x 75

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2.2.13 VIIRS ACO/OCC Diffuse Transmittance LUT

Data Mnemonic	NP_NU-LM0040-012
Description/ Purpose	The VIIRS ACO/OCC Diffuse Transmittance LUT file contains values of fitting coefficients used to compute the diffuse transmittance. This file is used in the VIIRS ACO/OCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	22,176 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.13-1, VIIRS ACO/OCC Diffuse Transmittance LUT Data Format

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Table 2.2.13-1, VIIRS ACO/OCC Diffuse Transmittance LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tt_coef_a	11,088	32-bit floating point	Minfloat – Maxfloat	unitless	Diffuse Transmittance Coefficient 3 Dimensional Array: MSUN x ACOBANDS x MODEL Size of Dimension(s): 33 x 7 x 12
tt_coef_b	11,088	32-bit floating point	Minfloat – Maxfloat	unitless	Diffuse Transmittance Coefficient 3 Dimensional Array: MSUN x ACOBANDS x MODEL Size of Dimension(s): 33 x 7 x 12

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2.2.14 VIIRS ACO/OCC Rayleigh Scattering LUT

Data Mnemonic	NP_NU-LM0040-013
Description/ Purpose	The VIIRS ACO/OCC Rayleigh Scattering LUT file contains values used to compute the Rayleigh Component of the TOA reflectance. This file is used in the VIIRS ACO/OCC (ACO module) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	3,719,952 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.14-1, VIIRS ACO/OCC Rayleigh Scattering LUT Data Format

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Table 2.2.14-1, VIIRS ACO/OCC Rayleigh Scattering LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ray_tau	28	32-bit floating point	Minfloat – Maxfloat	unitless	Rayleigh Optical Thickness values for bands M1-M7 1 Dimensional Array: ACOBANDS Size of Dimension(s): 7
sigma_g	32	32-bit floating point	Minfloat – Maxfloat	unitless	Surface Roughness Parameter (Not used in the code) 1 Dimensional Array: NSIGMA Size of Dimension(s): 8
ray_dep	28	32-bit floating point	Minfloat – Maxfloat	unitless	Depolarization Factor for bands M1-M7 1 Dimensional Array: ACOBANDS Size of Dimension(s): 7
ray_sun	180	32-bit floating point	Minfloat – Maxfloat	degrees	Solar Zenith Angles 1 Dimensional Array: NSUN Size of Dimension(s): 45
ray_ang	164	32-bit floating point	Minfloat – Maxfloat	degrees	Sensor Zenith Angles 1 Dimensional Array: NRAD_RAY Size of Dimension(s): 41
ray_for_i	1,239,840	32-bit floating point	Minfloat – Maxfloat	unitless	I Stokes Parameter 5 Dimensional Array: NRAD_RAY x NORDER x NSUN x NSIGMA x ACOBANDS Size of Dimension(s): 41 x 3 x 45 x 8 x 7

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ray_for_q	1,239,840	32-bit floating point	Minfloat – Maxfloat	unitless	Q Stokes Parameter 5 Dimensional Array: NRAD_RAY x NORDER x NSUN x NSIGMA x ACOBANDS Size of Dimension(s): 41 x 3 x 45 x 8 x 7
ray_for_u	1,239,840	32-bit floating point	Minfloat – Maxfloat	unitless	U Stokes Parameter 5 Dimensional Array: NRAD_RAY x NORDER x NSUN x NSIGMA x ACOBANDS Size of Dimension(s): 41 x 3 x 45 x 8 x 7

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2.2.15 VIIRS Surface Albedo Skylight Diffussion Coefficients LUT

Data Mnemonic	NP_NU-LM0040-014
Description/ Purpose	The VIIRS Surface Albedo (SA) Skylight Diffussion Coefficients LUT file contains the Dark Pixel Sub-Algorithm (DPSA) Fraction of Diffuse Skylight (per band, per solar zenith angle, per aot value and per aerosol model, 5 currently). This file relates the fraction of diffuse skylight as a function of band, zenith angles, aerosol optical thickness values and aerosol model. It is used to produce the interpolated value of the diffuse skylight used in conjunction with the black sky and white sky albedo. The Five Aerosol models, in order, are: Dust, Smoke High, Smoke Low, Urban High and Urban Low. This file is used in the VIIRS Surface Albedo algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	359,040 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.15-1, VIIRS Surface Albedo Skylight Diffusion Coefficients LUT Data Format

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Table 2.2.15-1, VIIRS Surface Albedo Skylight Diffusion Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
C	35904	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2244
M1	35904	32-bit floating point	Minfloat – Maxfloat	unitless	Fraction of diffuse skylight for the M1 band 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2244
M2	3590	32-bit floating point	Minfloat – Maxfloat	unitless	Fraction of diffuse skylight for the M2 band 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2244
M3	35904	32-bit floating point	Minfloat – Maxfloat	unitless	Fraction of diffuse skylight for the M3 band 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2244

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M4	35904	32-bit floating point	Minfloat – Maxfloat	unitless	Fraction of diffuse skylight for the M4 band 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2244
M5	35904	32-bit floating point	Minfloat – Maxfloat	unitless	Fraction of diffuse skylight for the M5 band 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2244
M7	35904	32-bit floating point	Minfloat – Maxfloat	unitless	Fraction of diffuse skylight for the M7 band 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2244
M8	35904	32-bit floating point	Minfloat – Maxfloat	unitless	Fraction of diffuse skylight for the M8 band 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2244

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M10	35904	32-bit floating point	Minfloat – Maxfloat	unitless	Fraction of diffuse skylight for the M10 band 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2244
M11	35904	32-bit floating point	Minfloat – Maxfloat	unitless	Fraction of diffuse skylight for the M11 band 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_LUT_SIZE_BPSA Size of Dimension(s): 4 x 2244

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2.2.16 VIIRS Surface Albedo BPSA Regression Weight Coefficients LUT

Data Mnemonic	NP_NU-LM0040-015
Description/ Purpose	The VIIRS Surface Albedo BPSA Regression Weight Coefficients LUT file contains the Bright Pixel Sub-Algorithm (BPSA) Regression Weight Coefficients (one per five aerosol models, per solar zenith angle, per view zenith angle and per relative azimuth) for bands M1-M5, M7, M8, M10, M11 and an additional coefficient for the linear regression's constant term. This file is used for bright pixels when VIIRS AOT is suspect and cannot be used. Linear regression coefficients are used to directly obtain an albedo value using 10 coefficients (constant value + 9 M-band coefficients). This file is used in the VIIRS Surface Albedo algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	1,563,480 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.16-1, VIIRS Surface Albedo BPSA Regression Weight Coefficients LUT Data Format

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Table 2.2.16-1, VIIRS Surface Albedo BPSA Regression Weight Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
BPSA regression weight coefficients	359040	32-bit floating point	Minfloat – Maxfloat	unitless	BPSA linear regression coefficients. 5 Dimensional Array: BPSA_NUM_BINS_SOLAR_ZENITH x BPSA_NUM_BINS_VIEW_ZENITH x BPSA_NUM_BINS_REL_AZIMUTH x NUM_BPSA_AERO_MODELS x NUM_COEFFS Size of Dimension(s): 12 x 17 x 11 x 5 x 10)
M1	173720	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: LSA_NUM_AERO_MODELS x LSA_NUM_BINS_AOT x LSA_NUM_BINS_SOLZEN Size of Dimension(s): 5 x 101 x 86
M2	173720	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: LSA_NUM_AERO_MODELS x LSA_NUM_BINS_AOT x LSA_NUM_BINS_SOLZEN Size of Dimension(s): 5 x 101 x 86

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M3	173720	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: LSA_NUM_AERO_MODELS x LSA_NUM_BINS_AOT x LSA_NUM_BINS_SOLZEN Size of Dimension(s): 5 x 101 x 86
M4	173720	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: LSA_NUM_AERO_MODELS x LSA_NUM_BINS_AOT x LSA_NUM_BINS_SOLZEN Size of Dimension(s): 5 x 101 x 86
M5	173720	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: LSA_NUM_AERO_MODELS x LSA_NUM_BINS_AOT x LSA_NUM_BINS_SOLZEN Size of Dimension(s): 5 x 101 x 86
M7	173720	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: LSA_NUM_AERO_MODELS x LSA_NUM_BINS_AOT x LSA_NUM_BINS_SOLZEN Size of Dimension(s): 5 x 101 x 86

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M8	173720	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: LSA_NUM_AERO_MODELS x LSA_NUM_BINS_AOT x LSA_NUM_BINS_SOLZEN Size of Dimension(s): 5 x 101 x 86
M10	173720	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: LSA_NUM_AERO_MODELS x LSA_NUM_BINS_AOT x LSA_NUM_BINS_SOLZEN Size of Dimension(s): 5 x 101 x 86

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2.2.17 VIIRS Surface Albedo DPSA Narrowband to Broadband Conversion Coefficients LUT

Data Mnemonic	NP_NU-LM0040-016
Description/ Purpose	The VIIRS Surface Albedo DPSA Narrowband to Broadband Coefficients LUT file contains coefficients needed to convert the spectral surface albedo to broadband albedo. One coefficient per M-band is used plus a constant term (10 terms total). Coefficients are derived (via multivariate regression analysis) from radiative transfer simulations. This file is used in the VIIRS Surface Albedo algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	40 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.17-1, VIIRS Surface Albedo DPSA Narrowband to Broadband Conversion Coefficients LUT Data Format

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Table 2.2.17-1, VIIRS Surface Albedo DPSA Narrowband to Broadband Conversion Coefficients LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
C	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient (Constant Term)
M1	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M1 Narrowband Albedo variable
M2	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M2 Narrowband Albedo variable
M3	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M3 Narrowband Albedo variable
M4	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M4 Narrowband Albedo variable
M5	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M5 Narrowband Albedo variable
M7	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M7 Narrowband Albedo variable
M8	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M8 Narrowband Albedo variable
M10	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M10 Narrowband Albedo variable
M11	4	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M11 Narrowband Albedo variable

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2.2.18 VIIRS Surface Albedo BPSA Sea Ice LUT

Data Mnemonic	NP_NU-LM0040-111
Description/ Purpose	The VIIRS Surface Albedo BPSA Sea Ice LUT file contains coefficients needed to TBD. One coefficient per M-band is used plus a constant term (10 terms total). Coefficients are derived (via multivariate regression analysis) from radiative transfer simulations. This file is used in the VIIRS Surface Albedo algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	2,400 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.18-1, VIIRS Surface Albedo BPSA Sea Ice LUT Data Format

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Table 2.2.18-1, VIIRS Surface Albedo BPSA Sea Ice LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
C	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient (Constant Term) 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M1	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M1 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M2	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M2 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M3	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M3 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M4	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M4 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M5	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M5 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M7	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M7 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M8	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M8 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M10	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M10 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15
M11	240	32-bit floating point	Minfloat – Maxfloat	unitless	Regression coefficient for the M11 variable 2 Dimensional Array: LSA_NUM_BPSA_AERO_MODELS x LSA_SEA_ICE_NUM_BIN_SOLZEN Size of Dimension(s): 4 x 15

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2.2.19 VIIRS Sea Ice Snow Depth/Ice Thickness LUT

Data Mnemonic	NP_NU-LM0233-006
Description/ Purpose	The VIIRS Sea Ice Snow Depth/Ice Thickness LUT contains snow depth on sea ice and ice thickness. The table values are model computations based on NCEP surface temperature and precipitation rate climatology data.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	1,508,812 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.19-1, VIIRS Sea Ice Snow Depth/Ice Thickness LUT Data Format

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Table 2.2.19-1, VIIRS Sea Ice Snow Depth /Ice Thickness LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nlat_bins	92	32-bit floating point	-90 ≤ nlat_bins ≤ 90 Values initially set to a 2.5 degree spacing from 35.0 to 90.0 degrees: [35., 37.5, 40…85., 87.5, 90.]	degree	Northern Hemisphere latitudes at 2.5 deg increments 1 Dimensional Array: N_NLAT Size of Dimension(s): 23
slat_bins	68	32-bit floating point	-90 ≤ slat_bins ≤ 90 Values initially set to a 2.5 degree spacing from -90.0 to -50.0 degrees: [-90., -87.5, -85…-55., -52.5, -50.]	degree	Southern Hemisphere latitudes at 2.5 deg increments 1 Dimensional Array: N_SLAT Size of Dimension(s): 17
lon_bins	580	32-bit floating point	-180 ≤ lon_bins ≤ 180 Values initially set to a 2.5 degree spacing from 0 to 360.0 degrees: [0, 2.5, 5.0…355, 357.5, 360.]	degree	Longitudes at 2.5 deg increments 1 Dimensional Array: N_LON Size of Dimension(s): 145
date_bins	52	32-bit floating point	> 0.0 Values initially set to a 30.5 day spacing from 15.5 to 381.5: [15.5, 46., 76.5…320.5, 351., 381.5]	Day number	Day of year for the middle of each month 1 Dimensional Array: N_DATE Size of Dimension(s): 13

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ice_bins	20	32-bit floating point	> 0.0 Values initially set to: [5.0,10.0,20.0,30.0,40.0]	cm	Ice Thickness 1 Dimensional Array: N_ICE Size of Dimension(s): 5
sdc_n	867,100	32-bit floating point	>= 0.0	cm	Snow depth from climatology model for Northern Hemisphere 4 Dimensional Array: N_DATE x N_LON x N_NLAT x N_ICE Size of Dimension(s): 13 x 145 x 23 x 5
sdc_s	640,900	32-bit floating point	>= 0.0	cm	Snow depth form climatology model for Southern Hemisphere 4 Dimensional Array: N_DATE x N_LON x N_SLAT x N_ICE Size of Dimension(s): 13 x 145 x 17 x 5

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2.2.20 VIIRS NHF COART LUT

Data Mnemonic	NP_NU-LM0234-000
Description/ Purpose	The NHF COART LUT This file contains Ocean Albedo and albedo weight Look-up data for the VIIRS NHF algorithm. Table data is from the Coupled Ocean and Atmospheric Radiative Transfer (COART) model.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	829,440 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.20-1, VIIRS NHF COART LUT Data Format

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Table 2.2.20-1, VIIRS NHF COART LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ocnalbtab	806,400	32-bit floating point	Minfloat – Maxfloat	unitless	Ocean Albedo 2 Dimensional Array: OCNALB_NUM_RECS x COART_REC_SIZ Size of Dimension(s): 8400 x 24
albwt	23,040	32-bit floating point	Minfloat – Maxfloat	unitless	Albedo Weights 2 Dimensional Array: ALBWT_NUM_RECS x COART_REC_SIZ Size of Dimension(s): 240 x 24

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2.2.21 VIIRS NHF RTM LUT

Data Mnemonic	NP_NU-LM0234-001
Description/ Purpose	The NHF RTM LUT This file contains the RRTM (Rapid Radiative Transfer Model) correlated-k absorption coefficients for calculating radiative fluxes.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	839,872 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.21-1, VIIRS NHF RTM LUT Data Format

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Table 2.2.21-1, VIIRS NHF RTM LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K1_ka	4160	32-bit floating point	Minfloat - Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K1_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K1_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K1_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K1_ka_mn2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K1_kb_mn2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K2_ka	4160	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K2_kb	15040	32-bit floating point	Minfloat - Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K2_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K2_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K3_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K3_kb	75200	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 47 x 5 x 5
K3_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K3_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K3_ka_mn2o	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K3_kb_mn2o	6080	32-bit floating point	Minfloat - Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 5
K4_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K4_kb	75200	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 47 x 5 x 5
K4_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K4_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K5_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K5_kb	75200	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 47 x 5 x 5
K5_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K5_selfref	640	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K5_ka_mo3	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K6_ka	4160	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K6_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K6_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K6_ka_mco2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K7_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K7_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K7_forref	256	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K7_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K7_ka_mco2	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K7_kb_mco2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K8_ka	4160	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K8_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K8_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K8_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K8_ka_mco2	1216	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K8_ka_mo3	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K8_ka_mn2o	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K8_kb_mco2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K8_kb_mn2o	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K9_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K9_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K9_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K9_selfref	640	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K9_ka_mn2o	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K9_kb_mn2o	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K10_ka	4160	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K10_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K10_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K10_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K11_ka	4160	32-bit floating point	Minfloat - Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K11_kb	15040	32-bit floating point	Minfloat - Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K11_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K11_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K11_ka_mo2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K11_kb_mo2	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K12_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K12_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K12_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K13_ka	37440	32-bit floating point	Minfloat - Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K13_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K13_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K13_ka_mco2	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K13_ka_mco	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K13_kb_mo3	1216	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 19
K14_ka	4160	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5
K14_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K14_forref	256	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K14_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K15_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K15_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4
K15_selfref	640	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10
K15_ka_mn2	10944	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 19 x 9
K16_ka	37440	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array Size of Dimension(s): 16 x 13 x 5 x 9
K16_kb	15040	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array Size of Dimension(s): 16 x 47 x 5
K16_forref	256	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 4

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
K16_selfref	640	32-bit floating point	Minfloat - Maxfloat	unitless	2 Dimensional Array Size of Dimension(s): 16 x 10

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2.2.22 DELETED

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2.2.23 DELETED

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2.2.24 DELETED

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2.2.25 DELETED

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2.2.27 VIIRS NHF RRTM Ozone Climatology LUT

This LUT is an ancillary table. For format details see the CDFCB-X, Volume VI, D34862-06, Section 2.1.3.35, Normalized Ozone Profile Climatology.

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2.2.28 VIIRS Bright Pixel PSF MOD LUT

Data Mnemonic	NP_NU-LM0235-000
Description/ Purpose	The VIIRS Bright Pixel PSF MOD LUT file contains the Point Spread Function (PSF) parameters for use in determining Bright Pixels. This file is used in the VIIRS Bright Pixel algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	409,728 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.28-1, VIIRS Bright Pixel PSF MOD LUT Data Format

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Table 2.2.28-1, VIIRS Bright Pixel PSF MOD LUT

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Psf	409728	64-bit floating point	-0.446723 – 0.144059	unitless	Point Spread Function (PSF) values 3 Dimensional Array NUM_750M_BANDS NUM_MOD_PSF_ROW NUM_MOD_PSF_COL Size of Dimension(s): 16 x 33 x 97

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2.2.29 VIIRS Bright Pixel Sub Radiance LUT

Data Mnemonic	NP_NU-LM0235-001
Description/ Purpose	The VIIRS Bright Pixel Sub Radiance LUT file contains substitute radiance values used for saturated pixels. Note: The dimension of the radianceValues field includes the Imagery Bands in addition to the Moderate Bands (16 + 5 = 21 total). The Imagery bands are not currently used in the algorithm, but retained in this table for possible future inclusion. This file is used in the VIIRS Bright Pixel algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	336 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.29-1, VIIRS Bright Pixel Sub Radiance LUT Data Format

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Table 2.2.29-1, VIIRS Bright Pixel Sub Radiance LUT

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
radianceValues	4	32-bit floating point	Approx 0 – 4300	W/(m^2 um sr)	2 Dimensional Array TOTAL_M_I_BANDS (MOD + IMG) X NUM_BP_RAD_COLUMNS Size of Dimension(s): 21 x 4 (For TOTAL_M_I_BANDS = 21, Bands 1-16 are Moderate Bands M1-M16, 17-21 are Imagery Bands I1 – I5)

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2.2.30 VIIRS Surface Albedo Kernel black-sky and white-sky albedo LUT

Data Mnemonic	NP_NU-LM0233-019
Description/ Purpose	The VIIRS Surface Albedo Kernel black-sky and white-sky albedo LUT file contains the values of the black sky and white sky albedos for each of the kernel models (Volumetric and Geometric) used in the inversion process of the DPSA. This file is used in the VIIRS Surface Albedo / DPSA algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names. Version Number Field provides Provenance Version Identifier
File Size	5472 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 2.2.30-1, VIIRS Surface Albedo Kernel black-sky and white-sky albedo LUT Data Format

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Table 2.2.30-1, VIIRS Surface Albedo Kernel black-sky and white-sky albedo LUT Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
whiteSky	32	32-bit floating point	Minfloat - Maxfloat	Unitless	Kernel White Sky Albedo 1 Dimensional Array: NUM_KERNELS Size of Dimension(s): 8 The 8 Kernels are, in order: 1. Ross-Thick Volumetric Scattering 2. Ross-Thin Volumetric Scattering 3. Non-reciprocal Li-Sparse 4. Reciprocal Li-Sparse 5. non-Reciprocal Li-Dense 6. Reciprocal Li-Dense 7.non-Reciprocal Li-Transit 8. Roujean

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
blackSky	5440	32-bit floating point		Unitless	Kernel Black Sky Albedo 2 Dimensional Array: NUM_KERNELS x NUMBINS_KERNELBLACKSKYALBEDO Size of Dimension(s): 8 x 170 The 8 Kernels are, in order: 1. Ross-Thick Volumetric Scattering 2. Ross-Thin Volumetric Scattering 3. Non-reciprocal Li-Sparse 4. Reciprocal Li-Sparse 5. non-Reciprocal Li-Dense 6. Reciprocal Li-Dense 7.non-Reciprocal Li-Transit 8. Roujean

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2.3 OMPS LUTs

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3.0 PROCESSING COEFFICIENTS

PCs are files containing parameters used in the creation of NPP/NPOESS Data Products by ground processing.

3.1 Automated PCs

Automated PCs are files containing parameters updated and/or created during the processing of the NPP/NPOESS Data Products by the processing algorithms. These updated files are subsequently used in the processing environment without human review of their contents. In some instances, these files are used immediately for processing, in other instances these files are used for future processing (e.g. for the next granule in the production data stream).

3.1.1 CrIS Automatic PCs

3.1.1.1 CrIS Correction Matrix PC

Data Mnemonic	NP_NU-LM0130-000
Description/ Purpose	The Cross-track Infrared Sounder (CrIS) Correction Matrix PC is applied to spectra as they are ejected from a sliding window. The 4-minute Engineering packet is used as input to create it. It is created at least once an orbit, estimated.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	76,723,760 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.1.1-1, CrIS Correction Matrix PC Data Format

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Table 3.1.1.1-1, CrIS Correction Matrix PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
padding	2	16 bit integer	MinInt – MaxInt	unitless	
Version	2	16 bit integer	MinInt – MaxInt	unitless	
lowestWavenumber_LW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW
theMatrix_LW_FOV_1	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_LW_FOV_2	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	unitless	
deltaSigma_LW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 3
theMatrix_LW_FOV_3	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 4

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_LW_FOV_4	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 5
theMatrix_LW_FOV_5	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 6

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_LW_FOV_6	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 7
theMatrix_LW_FOV_7	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 8

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_LW_FOV_8	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_LW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_LW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for LW for FOV 9
theMatrix_LW_FOV_9	5971968	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: LW_POINTS_DECIMATED_INTERFEROGRAM x LW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 864 x 864
lowestWavenumber_MW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 1

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_MW_FOV_1	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 2
theMatrix_MW_FOV_2	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	cm-1	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deltaSigma_MW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 3
theMatrix_MW_FOV_3	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 4
theMatrix_MW_FOV_4	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lowestWavenumber_MW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 5
theMatrix_MW_FOV_5	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 6

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_MW_FOV_6	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 7
theMatrix_MW_FOV_7	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deltaSigma_MW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 8
theMatrix_MW_FOV_8	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528
lowestWavenumber_MW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_MW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for MW for FOV 9
theMatrix_MW_FOV_9	2230272	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: MW_POINTS_DECIMATED_INTERFEROGRAM x MW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 528 x 528

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lowestWavenumber_SW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_1	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 1
theMatrix_SW_FOV_1	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_2	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_SW_FOV_2	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_3	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 3
theMatrix_SW_FOV_3	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deltaSigma_SW_FOV_4	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 4
theMatrix_SW_FOV_4	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 864
lowestWavenumber_SW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_5	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 5
theMatrix_SW_FOV_5	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lowestWavenumber_SW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_6	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 6
theMatrix_SW_FOV_6	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_7	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 7

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
theMatrix_SW_FOV_7	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	
deltaSigma_SW_FOV_8	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 8
theMatrix_SW_FOV_8	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
lowestWavenumber_SW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deltaSigma_SW_FOV_9	8	64-bit floating point	Minfloat – Maxfloat	cm-1	Specifies wavenumber spacing for Resampling for SW for FOV 9
theMatrix_SW_FOV_9	320000	64-bit floating point	Minfloat – Maxfloat	unitless	Correction Matrix Operator (CMO) 2 Dimensional Array: SW_POINTS_DECIMATED_INTERFEROGRAM x SW_POINTS_DECIMATED_INTERFEROGRAM Size of Dimension(s): 200 x 200
pad	4	32-bit integer	MinInt – MaxInt	unitless	
IET_Time	8	64-bit integer	MinInt – MaxInt	unitless	
padding0	2	16-bit integer	MinInt – MaxInt	unitless	
padding01	2	16-bit integer	MinInt – MaxInt	unitless	
padding1	2	16-bit integer	MinInt – MaxInt	unitless	
versionInfo1	2	16-bit integer	0-32766	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Effective Emissivity	12736	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 1592
Pad Version 2	2	16-bit integer	MinInt – MaxInt	unitless	
Version 2	2	16-bit integer	MinInt – MaxInt	unitless	
Curve Fit Params	3240	64-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array: Band, FOV, Band Edge, ils Curve Fit Param Size of Dimension(s): 3 x 9 x 3 x 5
Pad Version 3	2	16-bit integer	MinInt – MaxInt	unitless	
Version 3	2	16-bit integer	MinInt – MaxInt	unitless	
FOR Params	324	32-bit integer	MinInt – MaxInt	unitless	3 Dimensional Array: Band, ils Curve Fit Param, FOV Size of Dimension(s): 3 x 3 x 9

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
FOV 5 Cross Track Misalignment	12	32-bit integer	MinInt – MaxInt	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
FOV 5 In Track Misalignment	12	32-bit integer	MinInt – MaxInt	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Pad Version 4	2	16-bit integer	MinInt – MaxInt	unitless	
Version 4	2	16-bit integer	MinInt – MaxInt	unitless	
Beam Splitter Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Scan Mirror Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Scan Baffle Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Interferometer Housing Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Ict Baffle Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Ssm Target Emissivity	24	64-bit floating point	0-1	unitless	1 Dimensional Array: Band Size of Dimension(s): 3
Warm Beam Splitter View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Cold Beam Splitter View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Scan Baffle View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Ict Baffle View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Frame View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Space View Factor	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Ssm Target Temp	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Orbital Period	4	32-bit integer	MinInt – MaxInt	unitless	
Baffle Temperature Offset Decimated X	84	32-bit floating point	0-1	unitless	1 Dimensional Array: ECM Baffle Pts Size of Dimension(s): 21
Baffle Temperature Offset Decimated Y	84	32-bit floating point	0-1	unitless	1 Dimensional Array: ECM Baffle Pts Size of Dimension(s): 21
Pad Version 5	2	16-bit integer	MinInt – MaxInt	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Version 5	2	16-bit integer	MinInt – MaxInt	unitless	
ictPrt1Ro	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ictPrt1A	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ictPrt1B	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ictPrt2Ro	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ictPrt2A	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ictPrt2B	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Ict Low Range Calibration Resistor Ro	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Ict Low Range Calibration Resistor A	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Ict High Range Calibration Resistor Ro	8	64-bit floating point	Minfloat – Maxfloat	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Ict High Range Calibration Resistor A	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ict Calibration Resistor RTD RO	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ict Calibration Resistor RTD A	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Laser Diode Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Laser Diode Bias Current Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Beam Splitter Temp Intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Beam Splitter Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Scan Mirror Temp Intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Scan Mirror Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Scan Baffle Temp Intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Scan Baffle Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
omaStructureTemp1intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
omaStructureTemp1Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
omaStructureTemp2intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
omaStructureTemp2Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Telescope Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 1 Cooler Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 2 Cooler Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 3 Cooler Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 4 Cooler Temp Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Cross Track Ssm Pointing Error Intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Cross Track Ssm Pointing Error Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
In Track Ssm Pointing Error Intercept	8	64-bit floating point	Minfloat – Maxfloat	unitless	
In Track Ssm Pointing Error Slope	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Pad Version 6	2	16-bit integer	MinInt – MaxInt	unitless	
Version 6	2	16-bit integer	MinInt – MaxInt	unitless	
Polarization Change	2232	64-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: inTrack, crossTrack, Wavenumber Position Size of Dimension(s): 31, 3, 3
Wavenumber Position	72	64-bit floating point	1000-8500	unitless	2 Dimensional Array: Band, Wavenumber Size of Dimension(s): 3, 3
Pad Version 7	2	16-bit integer	MinInt – MaxInt	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Version 7	2	16-bit integer	MinInt – MaxInt	unitless	
Neon Cal Starting Count	512	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Sweep Size of Dimension(s): 128
Neon Cal Starting Partial Count	512	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Sweep Size of Dimension(s): 128
Neon Cal Fringe Count	512	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Sweep Size of Dimension(s): 128
Neon Cal Ending Partial Count	512	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Sweep Size of Dimension(s): 128

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Neon Cal Ending Count	512	32-bit unsigned integer	MinInt – MaxInt	unitless	1 Dimensional Array: Sweep Size of Dimension(s): 128
Pad Version 8	2	16-bit integer	MinInt – MaxInt	unitless	
Version 8	2	16-bit integer	MinInt – MaxInt	unitless	
Laser Fringe Count	4	32-bit unsigned integer	MinInt – MaxInt	unitless	
Number Designated Calibration Sweeps	4	32-bit unsigned integer	MinInt – MaxInt	unitless	
Neon Gas Wave Length	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Time Stamp Days	4	32-bit unsigned integer	MinInt – MaxInt	unitless	
Time Stamp Miliseconds	4	32-bit unsigned integer	MinInt – MaxInt	unitless	
Repeat Calibration Time Interval	4	32-bit unsigned integer	MinInt – MaxInt	unitless	
Pad Version 9	2	16-bit integer	MinInt – MaxInt	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Version 9	2	16-bit integer	MinInt – MaxInt	unitless	
ict Temp 1 Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ict Temp 2 Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Beamsplitter Temp 1 Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Scan Mirror Temp Drift Limt	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Scan Baffle Temp Drift Limt	8	64-bit floating point	Minfloat – Maxfloat	unitless	
oma Struct 1 Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
oma Struct 2 Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Telescope Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 1 Cooler Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Stage 2 Cooler Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 3 Cooler Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Stage 4 Cooler Temp Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Laser Diode Wavelength Drift Limit	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Pad Version 10	2	16-bit integer	MinInt – MaxInt	unitless	
Version 10	2	16-bit integer	MinInt – MaxInt	unitless	
Commanded Cross Track Angle ES	240	64-bit floating point	1000-8500	unitless	1 Dimensional Array: Angle Size of Dimension(s): 30
Commanded Cross Track Angle Nadir	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ssm Mirror Mount Misalignment Pitch	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ssm Mirror Mount Misalignment Yaw	8	64-bit floating point	Minfloat – Maxfloat	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Commanded In Track Angle	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ssmr To SSMF Angle Roll	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ssmr To SSMF Angle Pitch	8	64-bit floating point	Minfloat – Maxfloat	unitless	
ssmr To SSMF Angle Yaw	8	64-bit floating point	Minfloat – Maxfloat	unitless	
iar To SSMF Angle Roll	8	64-bit floating point	Minfloat – Maxfloat	unitless	
iar To SSMF Angle Pitch	8	64-bit floating point	Minfloat – Maxfloat	unitless	
iar To SSMF Angle Yaw	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Interferometer Borsight Yaw	8	64-bit floating point	Minfloat – Maxfloat	unitless	
Interferometer Borsight Pitch	8	64-bit floating point	Minfloat – Maxfloat	unitless	
sbf To IAR Angle Roll	8	64-bit floating point	Minfloat – Maxfloat	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sbf To IAR Angle Pitch	8	64-bit floating point	Minfloat – Maxfloat	unitless	
sbf To IAR Angle Yaw	8	64-bit floating point	Minfloat – Maxfloat	unitless	
FOR Time Stamp Bias	4	32-bit unsigned integer	MinInt – MaxInt	unitless	
Pad Version 11	2	16-bit integer	MinInt – MaxInt	unitless	
Version 11	2	16-bit integer	MinInt – MaxInt	unitless	
a2	108	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: FOV, Band Size of Dimension(s): 9, 3
Vinst	108	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: FOV, Band Size of Dimension(s): 9, 3
ModEff	108	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: FOV, Band Size of Dimension(s): 9, 3

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Gain Setting	108	32-bit integer	MinInt – MaxInt	unitless	2 Dimensional Array: FOV, Band Size of Dimension(s): 9, 3
EffGain	108	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: FOV, Band Size of Dimension(s): 9, 3
Effective Gain Map	192	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: Band, MAX_EFFECTIVE_GAIN Size of Dimension(s): 3, 16
Fir Filter Scale	24	64-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: Band Size of Dimension(s): 3
Fir Start Bit	24	64-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: Band Size of Dimension(s): 3

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Implicit_pad	4	8-bit unsigned integer	MinInt – MaxInt	unitless	2 Dimensional Array: padBytes Size of Dimension(s): 4

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3.1.2 OMPS Automatic PCs

3.1.2.1 OMPS TC Darks PC

Data Mnemonic	NP_NU-LM0240-000
Description/ Purpose	The OMPS TC Darks PC table contains detector dark signal in counts This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,082,692 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.1-1, OMPS TC Darks PC Data Format

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Table 3.1.2.1-1, OMPS TC Darks PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
recid_dark	20	32-bit integer	>= 0	unitless	record identification number 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
lseq_dark	20	32-bit integer	>= 0	unitless	logical sequence number 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
iyear_dark	20	32-bit integer	2000 – 2050	years	year of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
iday_dark	20	32-bit integer	1 – 366	days	day of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
time_start_dark	40	64-bit floating point	>= 0	seconds	time start of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
time_end_dark	40	64-bit floating point	>= 0	seconds	time end of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
expose_dark	8	64-bit floating point	>= 0	seconds	exposure time of dark current
geosrc_dark	4272	32-bit integer	0 – 1	unitless	geolocation flag 1 Dimensional Array: tc::MAX_COADDS_S + tc::MAX_COADDS_E + tc::MAX_COADDS_L + tc::MAX_COADDS_D Size of Dimension(s): 1068
good_darks	4	32-bit integer	0 – 100	percent	percentage of good pixels (out of the total number of pixels on the fully sampled CCDs image)
sat_pos_dark	120	32-bit floating point	Minfloat – Maxfloat	meters	XYZ satellite position in Earth Center Inertial frame, at begin and end of observation 3 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB x VEC_SIZE Size of Dimension(s): 5 x 2 x 3

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sat_vel_dark	120	32-bit floating point	Minfloat – Maxfloat	m/s	XYZ satellite velocity in Earth Center Inertial frame, at begin and end of observation 3 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB x VEC_SIZE Size of Dimension(s): 5 x 2 x 3
scrpy_dark	120	32-bit floating point	Minfloat – Maxfloat	radians	spacecraft roll pitch and yaw at begin and end of observation 3 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB x VEC_RPY_SIZE Size of Dimension(s): 5 x 2 x 3
rtasc_dark	40	32-bit floating point	0 – 2pi	radians	right ascension at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2
decli_dark	40	32-bit floating point	0 – 2pi	radians	declination at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
solaz_dark	40	32-bit floating point	0 – 2pi	radians	solar azimuth at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2
solel_dark	40	32-bit floating point	0 – 2pi	radians	solar elevation at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2
sublat_dark	40	32-bit floating point	-90 – 90	degrees	nadir subsatellite latitude 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2
sublng_dark	40	32-bit floating point	-180 – 180	degrees	nadir subsatellite longitude at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
alti_dark	40	32-bit floating point	>=0	meters	altitude of satellite at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2
qual_dark	10	16-bit integer	MinInt – MaxInt	unitless	quality of processing 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
istat_dark	10	16-bit integer	MinInt – MaxInt	unitless	Instrument/data record status 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
analog_dark	20	32-bit floating point	MinInt – MaxInt	unitless	Instrument/data record status 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
extsrc_dark	10	16-bit integer	0h – Fh	unitless	external data source 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
saa_dark	20	32-bit floating point	0 – 100	percent	South Atlantic Anomaly severity flag 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
tccdtc_dark	10	16-bit integer	>= 0	counts	Temperature of CCD 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
tmotnad_dark	10	16-bit integer	>= 0	counts	Temperature of motor 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
tlmpnad_dark	10	16-bit integer	>= 0	counts	Temperature of lamp 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
tradnad_dark	10	16-bit integer	>= 0	counts	Temperature of radiator 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tel1nad_dark	10	16-bit integer	>= 0	counts	Temperature of electronics1 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
tel2nad_dark	10	16-bit integer	>= 0	counts	Temperature of electronics2 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
pccdtc_dark	10	16-bit integer	MinInt – MaxInt	counts	Profile of CCD 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
vtectc_dark	10	16-bit integer	>= 0	counts	Voltage of electronics in Counts 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
ctectc_dark	10	16-bit integer	>= 0	counts	Voltage of electronics 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
dark_data	1077440	32-bit floating point	MinInt – MaxInt	counts	corrected dark current counts 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Dimension(s): 364 x 740
dark_med	4	32-bit floating point	>= 0	counts	median dark current level
dark_stddev	4	32-bit floating point	MinInt – MaxInt	counts	dark current level standard deviation

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3.1.2.2 OMPS TC SAA Darks PC

Data Mnemonic	NP_NU-LM0240-001
Description/ Purpose	The OMPS TC SAA Darks PC table contains detected dark signal in counts during South Atlantic Anomaly This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	5,392,466 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.2-1, OMPS TC SAA Darks PC Data Format

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Table 3.1.2.2-1, OMPS TC SAA Darks PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
recid_darksaa	20	32-bit integer	>= 0	unitless	record identification number 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
lseq_darksaa	20	32-bit integer	>= 0	unitless	logical sequence number 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
iyear_darksaa	20	32-bit integer	2000 – 2050	years	year of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
iday_darksaa	20	32-bit integer	1 – 366	days	day of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
time_start_darksaa	40	64-bit floating point	>= 0	seconds	time start of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
time_end_darksaa	40	64-bit floating point	>= 0	seconds	time end of observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
delta_time_darksaa	40	64-bit floating point	>= 0	seconds	integration time during observation 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
geosrc_darksaa	4272	32-bit integer	0 – 1	unitless	geolocation flag 1 Dimensional Array: tc::MAX_COADDS_S + tc::MAX_COADDS_E + tc::MAX_COADDS_L + tc::MAX_COADDS_D Size of Dimension(s): 1068
excess_darksaa_frames	4	32-bit integer	MinInt – MaxInt	unitless	
sat_pos_darksaa	120	32-bit floating point	Minfloat – Maxfloat	meters	XYZ satellite position in Earth Center Inertial frame, at begin and end of observation 3 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB x VEC_SIZE Size of Dimension(s): 5 x 2 x 3

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sat_vel_darksaa	120	32-bit floating point	Minfloat – Maxfloat	meters	XYZ satellite velocity in Earth Center Inertial frame, at begin and end of observation 3 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB x VEC_SIZE Size of Dimension(s): 5 x 2 x 3
scrpy_darksaa	120	32-bit floating point	Minfloat – Maxfloat	unitless	spacecraft roll pitch and yaw at begin and end of observation 3 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB x VEC_RPY_SIZE Size of Dimension(s): 5 x 2 x 3
rtasc_darksaa	40	32-bit floating point	0 – 2pi	radians	right ascension at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2
decli_darksaa	40	32-bit floating point	0 – 2pi	radians	declination at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
solaz_darksaa	40	32-bit floating point	0 – 2pi	radians	solar azimuth at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2
solel_darksaa	40	32-bit floating point	0 – 2pi	radians	solar elevation at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2
sublat_darksaa	40	32-bit floating point	-90 – 90	degrees	nadir subsatellite latitude 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2
sublng_darksaa	40	32-bit floating point	-180 – 180	degrees	nadir subsatellite longitude at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
alti_darksaa	40	32-bit floating point	Minfloat – Maxfloat	meters	altitude of satellite at begin and end of observation 2 Dimensional Array: tc::MAX_COADDS_D x NUM_TIMES_PER_OB Size of Dimension(s): 5 x 2
saa_darksaa	20	32-bit floating point	0 – 100	percent	South Atlantic Anomaly severity flag 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
istat_darksaa	10	16-bit integer	MinInt – MaxInt	unitless	Instrument/data record status 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
analog_darksaa	20	32-bit floating point	MinInt – MaxInt	unitless	Instrument/data record status 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
extsrc_darksaa	10	16-bit integer	0h – Fh	unitless	external data source 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tccdtc_darksaa	10	16-bit integer	>= 0	counts	Temperature of CCD 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
tmotnad_darksaa	10	16-bit integer	>= 0	counts	Temperature of motor 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
tlmpnad_darksaa	10	16-bit integer	>= 0	counts	Temperature of lamp 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
tradnad_darksaa	10	16-bit integer	>= 0	counts	Temperature of radiator 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
tel1nad_darksaa	10	16-bit integer	>= 0	counts	Temperature of electronics1 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tel2nad_darksaa	10	16-bit integer	>= 0	counts	Temperature of electronics2 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
pccdtc_darksaa	10	16-bit integer	MinInt – MaxInt	counts	profile of CCD at middle 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
vtectc_darksaa	10	16-bit integer	>= 0	counts	Voltage of electronics 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
ctectc_darksaa	10	16-bit integer	>= 0	counts	Current of electronics 1 Dimensional Array: tc::MAX_COADDS_D Size of Dimension(s): 5
darksaa_array	5387200	32-bit floating point	>= 0	counts	corrected dark current counts for SAA observation; smear values are in individual pixels 3 Dimensional Array: tc::MAX_COADDS_D x tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Dimension(s): 5 x 364 x 740

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3.1.2.3 OMPS TC Bias PC

Data Mnemonic	NP_NU-LM0240-002
Description/ Purpose	The OMPS TC Bias PC table contains detector electronic offset in counts. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	8 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.3-1, OMPS TC Bias PC Data Format

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Table 3.1.2.3-1, OMPS TC Bias PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bias1	4	32-bit floating point	0 – 1e5	counts	bias electronics 1st CCD
bias2	4	32-bit floating point	0 – 1e5	counts	bias electronics 2nd CCD

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3.1.2.4 OMPS TC Flat Fields History PC

Data Mnemonic	NP_NU-LM0240-003
Description/ Purpose	The OMPS TC Flat Fields History PC table contains relative multiplication factors for each pixel used in binning for an Earth spatial cell. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	31,246,340 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.4-1, OMPS TC Flat Fields History PC Data Format

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Table 3.1.2.4-1, OMPS TC Flat Fields History PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	116	32-bit integer	2000 – 2050	years	1 Dimensional Array: tc::TC_CAL_DAYS Size of Dimension(s): 29
obs_day	116	32-bit integer	1 – 366	days	1 Dimensional Array: tc::TC_CAL_DAYS Size of Dimension(s): 29
old_nmonitor	116	32-bit integer	1 – 20	unitless	number of observations used in trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Dimension(s): 29
monitor_year	116	32-bit integer	2000 – 2050	years	last year of data used for flat field trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Dimension(s): 29
monitor_day	116	32-bit integer	1 – 366	days	last day of data used for flat field trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Dimension(s): 29

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
flat Array	31245760	32-bit floating point	Minfloat – Maxfloat	unitless	flat field: local relative normalized radiometric sensitivities 3 Dimensional Array: tc::TC_CAL_DAYS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Dimension(s): 29 x 364 x 740

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3.1.2.5 OMPS TC Wavmon PC

Data Mnemonic	NP_NU-LM0240-004
Description/ Purpose	The OMPS TC Wavemon PC table contains bandcenter wavelength shifts relative to the baseline solar measurement This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	101,202 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.5-1, OMPS TC Wavmon PC Data Format

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Table 3.1.2.5-1, OMPS TC Wavmon PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
refname	30	unsigned 8-bit integer	0 – 1e5	unitless	Solar Spectrum Filename 1 Dimensional Array: tc::NAMELEN Size of Array(s): 30
tablename	36	unsigned 8-bit integer	0 – 1e5	unitless	Line-Shift Table Filename 1 Dimensional Array: tc::TAB_NAMELEN Size of Array(s): 36
wmin	4	32-bit floating point	290 – 390	nanometers	Wavelength Minimum
wmax	4	32-bit floating point	290 – 390	nanometers	Wavelength Maximum
nlines	2	16-bit integer	1 – 10	unitless	Number of Monitor Lines
line_locates	20	16-bit integer	1 – 192	pixels	Line Pixel Numbers 1 Dimensional Array: tc::MAXLINES Size of Array(s): 10
offset_pix	2	16-bit integer	1 – 3	pixels	Offset Pixel Monitored

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
waveline	40	32-bit floating point	290 – 390	nanometers	Line Monitor Wavelengths 1 Dimensional Array: tc::MAXLINES Size of Array(s): 10
year	40	32-bit integer	2000 – 2050	years	Year 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10
day	40	32-bit integer	1 – 366	days	Day 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10
avg_solar_beta	40	32-bit floating point	-180 – 180	degrees	Solar Mean Beta-Angle 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10
diffuser	20	16 bit integer	1 – 7	unitless	Diffuser Surface 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nadd	40	32-bit integer	1 – 28	unitless	Number of Solar observations 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10
resolution	80	64-bit floating point	>=0	nanometers	FWHM wavelength resolution 1 Dimensional Array: tc:: MAX_TREND_POINTS Size of Array(s): 10
no_observations	4	32-bit integer	0 – 10	unitless	
r_delw_c	8400	64-bit floating point	Minfloat – Maxfloat	nanometers	Waveshift 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105
r_scale_c	8400	64-bit floating point	Minfloat – Maxfloat	unitless	Wavestretch 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
r_rchisq_c	8400	64-bit floating point	>=0	unitless	Reduced Chi^2 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105
r_delw_line	8400	64-bit floating point	Minfloat – Maxfloat	nanometers	Group lineshift 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105
r_add_l	8400	64-bit floating point	Minfloat – Maxfloat	nanometers	fit lineshift 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105
r_stretch_l	8400	64-bit floating point	Minfloat – Maxfloat	unitless	fit slope 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
r_correl_l	8400	64-bit floating point	-1 – 1	unitless	correlation 2 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXCTPX Size of Array(s): 10 x 105
shift	42000	32-bit floating point	Minfloat – Maxfloat	nanometers	Individual Lineshifts 3 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAXLINES tc::MAXCTPX Size of Array(s): 10 x 10 x 105

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3.1.2.6 OMPS TC CF Solar PC

Data Mnemonic	NP_NU-LM0240-005
Description/ Purpose	The OMPS TC CF Solar PC table contains radiometric calibration factors for the solar illuminated pixels This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	31,246,340 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.6-1, OMPS TC CF Solar PC Data Format

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Table 3.1.2.6-1, OMPS TC CF Solar PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	116	32-bit integer	2000 – 2050	years	Year 1 Dimensional Array: tc::TC_CAL_DAYS Size of Array(s): 29
obs_day	116	32-bit integer	1 – 366	days	Day 1 Dimensional Array: tc::TC_CAL_DAYS Size of Array(s): 29
old_nmonitor	116	32-bit integer	1 – 20	unitless	number of observations used in trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Array(s): 29
monitor_year	116	32-bit integer	2000 – 2050	years	last year of data used for flat field trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Array(s): 29
monitor_day	116	32-bit integer	1 – 366	days	last day of data used for flat field trending 1 Dimensional Array: tc::TC_CAL_DAYS Size of Array(s): 29

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
extrap_cfsolar	31245760	32-bit floating point	>=0	unitless	radiometric calibration factors 3 Dimensional Array: tc::TC_CAL_DAYS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Array(s): 29 x 364 x 740

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3.1.2.7 OMPS TC Flux PC

Data Mnemonic	NP_NU-LM0240-006
Description/ Purpose	The OMPS TC Flux PC table contains solar signal corrected for detector spectral shifts. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	13,046,118 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.7-1, OMPS TC Flux PC Data Format

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Table 3.1.2.7-1, OMPS TC Flux PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_iyear	4	32-bit integer	2000 – 2050	years	reference solar flux observation year
rsf_iday	4	32-bit integer	1 – 366	days	reference solar flux observation day
rsf_solar_beta	4	32-bit floating point	-180 – 180	degrees	angle between orbital plane and sun vector
rsf_diffuser_surface	2	16-bit integer	1 – 2	unitless	diffuser surface number
rsf_number_coadds	4	32-bit integer	1 – 28	unitless	number of solar observations constituting reference flux
rsf_avg_scan_time	8	64-bit floating point	>=0	seconds	average exposure time of reference solar flux observations
rsf_expose	8	64-bit floating point	>=0	seconds	total exposure time of reference solar flux
rsf_data	1135680	32-bit floating point	0 – 1800	W/cm^3	The baseline reference solar flux 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_counts	1135680	32-bit floating point	Minfloat – Maxfloat	counts	The baseline reference solar counts 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780
no_observations	4	32-bit integer	MinInt – MaxInt	unitless	
iyear_solar	40	32-bit integer	2000 – 2050	years	year of current solar data 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10
iday_solar	40	32-bit integer	1 – 366	days	day of current solar data 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10
avg_solar_beta	40	32-bit floating point	-180 – 180	degrees	angle between current orbital plane and sun vector 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
no_work_frames	40	32-bit integer	>=0	unitless	number of solar data observations constituting raw flux 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10
avg_sol_scan_time	80	64-bit floating point	>=0	seconds	average exposure time of raw flux solar data 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10
total_sol_expose	80	64-bit floating point	>=0	seconds	total exposure time of raw flux solar data 1 Dimensional Array: tc::MAX_TREND_POINTS Size of Dimension(s): 10
shift_flux	10774400	32-bit floating point	Variable, but around and about 0.5 to 1.5 should be usual	unitless	The current solar flux, ratioed by the baseline solar flux, both at the baseline wavelengths 3 Dimensional Array: tc::MAX_TREND_POINTS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Dimension(s): 10 x 364 x 740

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3.1.2.8 OMPS TC Raw Flux PC

Data Mnemonic	NP_NU-LM0240-007
Description/ Purpose	The OMPS TC Raw Flux PC table contains solar signals corrected for detector and normalized by the baseline solar signals This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	3,348,870 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.8-1, OMPS TC Raw Flux PC Data Format

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Table 3.1.2.8-1, OMPS TC Raw Flux PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_iyear	4	32-bit integer	2000 – 2050	years	reference solar flux observation year
rsf_iday	4	32-bit integer	1 – 366	days	reference solar flux observation day
rsf_solar_beta	4	32-bit floating point	-180 – 180	degrees	angle between orbital plane and sun vector
rsf_diffuser_surface	2	16-bit integer	1 – 2	unitless	diffuser surface number
rsf_number_coadds	4	32-bit integer	1 – 28	unitless	number of solar observations constituting reference flux
rsf_avg_scan_time	8	64-bit floating point	>=0	seconds	average exposure time of reference solar flux observations
rsf_expose	8	64-bit floating point	>=0	seconds	total exposure time of reference solar flux
rsf_data	1135680	32-bit floating point	0 – 1800	W/cm^3	reference solar flux 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_counts	1135680	32-bit floating point	Minfloat – Maxfloat	counts	reference solar counts 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780
latest_year	4	32-bit integer	2000 – 2050	years	year of current solar data
latest_day	4	32-bit integer	1 – 366	days	day of current solar data
avg_solar_beta	4	32-bit floating point	-180 – 180	degrees	angle between current orbital plane and sun vector
n	4	32-bit integer	-1 – 1	unitless	working diffuser surface number
m	4	32-bit integer	>=0	unitless	number of solar data observations constituting raw flux
avg_sol_scan_time	8	64-bit floating point	>=0	seconds	average exposure time of raw flux solar data
t_expose	8	64-bit floating point	>=0	seconds	total exposure time of raw flux solar data
rawflx_data	1077440	32-bit floating point	any, but about 1	unitless	ratio of current observed solar counts to reference solar counts 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_PIX Size of Dimension(s): 364 x 740

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3.1.2.9 OMPS NP Darks PC

Data Mnemonic	NP_NU-LM0240-100
Description/ Purpose	The OMPS NP Darks PC table contains detector dark signal in counts This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,139,838 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.9-1, OMPS NP Darks PC Data Format

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Table 3.1.2.9-1, OMPS NP Darks PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
recid_dark	20	Int32	>=0	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
lseq_dark	20	Int32	>=0	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
iyear_dark	20	Int32	2000 – 2050	years	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
iday_dark	20	Int32	1 – 366	days	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
time_start_dark	40	Float64	>=0	seconds	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
time_end_dark	40	Float64	>=0	seconds	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
expose_dark	8	Float64	>=0	seconds	Exposure time of dark current (expose_dark)
geosrc_dark	3828	Int32	0 – 1	unitless	1 Dimensional Array np::NO_COADDS_S+np::NO_COADDS_E+np::NO_COADDS_L+ np::NO_COADDS_D Size of Dimension(s): 957
good_darks	4	Int32	>= 0	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
qual_dark	10	Int16	>= -13	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
istat_dark	10	Int16	Minint – Maxint	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
analog_dark	20	Float32	Minint – Maxint	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
saa_dark	20	Float32	0 – 100	percent	Spacecraft within South Atlantic Anomaly during dark calibration (extent in percent based on a Gaussian Distribution Model) 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
tccdnp_dark	10	Int16	>=0	Counts	CCD Temperature 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
tmotnad_dark	10	Int16	>=0	Counts	Motor Temperature at Nadir 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
tlmpnad_dark	10	Int16	>=0	Counts	Lamp Temperature at Nadir 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tradnad_dark	10	Int16	>=0	Counts	Radiator Temperature at Nadir 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
tel1nad_dark	10	Int16	>=0	Counts	Electronics 1 Temperature at Nadir 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
tel2nad_dark	10	Int16	>=0	Counts	Electronics 2 Temperature at Nadir 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
pccdnp_dark	10	Int16	>=0	Counts	Profile of CCD 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
vtecnp_dark	10	Int16	>=0	Counts	Voltage of Electronics 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
ctecnp_dark	10	Int16	>=0	Counts	Current of Electronics 1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
dark_data	1135680	Float32	>=0	Counts	3 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD x np::SMEAR_NON_SMEAR_DIM Size of Dimension(s): 364 x 390 x 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
dark_med	4	Float32	>=0	Counts	Median dark current
dark_stddev	4	Float32	>=0	unitless	Standard deviation of dark current

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3.1.2.10 OMPS NP SAA Darks PC

Data Mnemonic	NP_NU-LM0240-101
Description/ Purpose	The OMPS NP SAA Darks PC table contains detected dark signal in counts during South Atlantic Anomaly This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,139,758 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.10-1, OMPS NP SAA Darks PC Data Format

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Table 3.1.2.10-1, OMPS NP SAA Darks PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
recid_darksaa	20	Int32	>=0	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
lseq_darksaa	20	Int32	>=0	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
iyear_darksaa	20	Int32	2000 – 2050	years	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
iday_darksaa	20	Int32	1 – 366	days	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
time_start_darksaa	40	Float64	>=0	seconds	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
time_end_darksaa	40	Float64	>=0	seconds	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
delta_time_darksaa	40	Float64	>=0	seconds	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
geosrc_darksaa	3828	Int32	0 – 1	unitless	1 Dimensional Array np::NO_COADDS_S+np::NO_COADDS_E+ np::NO_COADDS_L+ np::NO_COADDS_D Size of Dimension(s): 957

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SAA_darksaa	20	Float32	0 – 100	percent	Spacecraft within South Atlantic Anomaly during dark calibration (on a Gaussian Distribution Model) np::NO_COADDS_D Size of Dimension(s): 5
istat_darksaa	10	Int16	Minint – Maxint	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
analog_darksaa	20	Float32	Minfloat – Maxfloat	unitless	1 Dimensional Array np::NO_COADDS_D Size of Dimension(s): 5
darksaa_array	1135680	Float32	>=0	Counts	3 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD x np::SMEAR_NON_SMEAR_DIM Size of Dimension(s): 364 x 390 x 2

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3.1.2.11 OMPS NP Bias PC

Data Mnemonic	NP_NU-LM0240-102
Description/ Purpose	The OMPS NP Bias PC table contains detector electronic offset in counts. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	4 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.11-1, OMPS NP Bias PC Data Format

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Table 3.1.2.11-1, OMPS NP Bias PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bias1	4	Float32	0 - 1.00E+05	Counts	

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3.1.2.12 OMPS NP Flat Fields History PC

Data Mnemonic	NP_NU-LM0240-103
Description/ Purpose	The OMPS NP Flat Fields History PC table contains relative multiplication factors for each pixel used in binning for an Earth spatial cell. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	32,935,300 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.12-1, OMPS NP Flat Fields History PC Data Format

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Table 3.1.2.12-1, OMPS NP Flat Fields History PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
present_year	116	Int32	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
present_day	116	Int32	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
nmonitor	116	Int32	1 – 20	unitless	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
history_year	116	Int32	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
history_day	116	Int32	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
flat	16467360	Float32	Minfloat – Maxfloat	unitless	Local relative normalized radiometric sensitivities 3 Dimensional Array np::NP_CAL_DAYS x np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 29 x 364 x 390

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3.1.2.13 OMPS NP Wavmon PC

Data Mnemonic	NP_NU-LM0240-104
Description/ Purpose	The OMPS NP Wavemon PC table contains bandcenter wavelength shifts relative to the baseline solar measurement This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	5,156 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.13-1, OMPS NP Wavmon PC Data Format

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Table 3.1.2.13-1, OMPS NP Wavmon PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
refname	30	UInt8	Minint – Maxint	unitless	1 Dimensional Array np::NAMELEN Size of Dimension(s): 30
tablename	30	UInt8	Minint – Maxint	unitless	1 Dimensional Array np::NAMELEN Size of Dimension(s): 30
wmin	4	Float32	240 – 320	nanometers	
wmax	4	Float32	240 – 320	nanometers	
nlines	2	Int16	1 – 10	unitless	
line_locates	20	Int16	1 – 145	unitless	1 Dimensional Array np::MAXLINES Size of Dimension(s): 10
offset	2	Int16	1 – 3	pixels	
w	40	Float32	240 – 320	nanometers	1 Dimensional Array np::MAXLINES Size of Dimension(s): 30
iyear_solar	40	Int32	2000 – 2050	years	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
iday_solar	40	Int32	1 – 366	days	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
avg_solar_beta	40	Float32	-180 – 180	degrees	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
diffuser_surface_solar	20	Int16	1 – 7	unitless	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
no_solar_frames	40	Int32	1 – 28	unitless	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
resolution	40	Float32	>=0	nanometers	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
c_shifts	400	Float64	Minfloat – Maxfloat	nanometers	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
c_scales	400	Float64	Minfloat – Maxfloat	unitless	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
fitness	400	Float64	>=0	unitless	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
l_shift	400	Float64	Minfloat – Maxfloat	nanometers	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
l_add	400	Float64	Minfloat – Maxfloat	nanometers	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
l_stretches	400	Float64	Minfloat – Maxfloat	unitless	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
linear	400	Float64	-1 – 1	unitless	2 Dimensional Array np::MAX_TREND_POINTS x np::MAXCTPX Size of Dimension(s): 10 x 5
shift	2000	Float32	Minfloat – Maxfloat	nanometers	3 Dimensional Array np::MAX_TREND_POINTS x np::MAXLINES x np::MAXCTPX Size of Dimension(s): 10 x 10 x 5
no_observations	4	Int32	>=1	unitless	

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3.1.2.14 OMPS NP CF Solar PC

Data Mnemonic	NP_NU-LM0240-105
Description/ Purpose	The OMPS NP CF Solar PC table contains radiometric calibration factors for the solar illuminated pixels This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	14,778,980 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.14-1, OMPS NP CF Solar PC Data Format

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Table 3.1.2.14-1, OMPS NP CF Solar PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	116	Int32	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
obs_day	116	Int32	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
old_nmonitor	116	Int32	1 – 20	unitless	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
monitor_year	116	Int32	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
monitor_day	116	Int32	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
extrap_cfsolar	14778400	Float32	>=0	unitless	3 Dimensional Array np::NP_CAL_DAYS x np::MAX_NSPEC_CCD x np::NOSPACE Size of Dimension(s): 29 x 364 x 350

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3.1.2.15 OMPS NP Flux PC

Data Mnemonic	NP_NU-LM0240-106
Description/ Purpose	The OMPS NP Flux PC table contains solar signal corrected for detector spectral shifts. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	6,814,478 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.15-1, OMPS NP Flux PC Data Format

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Table 3.1.2.15-1, OMPS NP Flux PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_iyear	4	Int32	2000 – 2050	years	
rsf_iday	4	Int32	1 – 366	days	
rsf_solar_beta	4	Float32	-180 – 180	degrees	
rsf_diffuser_surface	2	Int16	1 – 2	unitless	
rsf_number_coadds	4	Int32	1 – 28	unitless	
rsf_avg_scan_time	8	Float64	>=0	seconds	
rsf_expose	8	Float64	>=0	seconds	
rsf_data	567840	Float32	Minfloat – Maxfloat	W/cm/sterad	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390
rsf_counts	567840	Float32	Minfloat – Maxfloat	Counts	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390
no_observations	4	Int32	>=1	unitless	
iyear_solar	40	Int32	2000 – 2050	years	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
iday_solar	40	Int32	1 – 366	days	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
avg_solar_beta	40	Float32	-180 – 180	degrees	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
diffuser_surface_num	40	Int32	1	unitless	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
no_work_frames	40	Int32	>=0	unitless	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
avg_sol_scan_time	80	Float64	>=0	seconds	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
total_sol_expose	80	Float64	>=0	seconds	1 Dimensional Array np::MAX_TREND_POINTS x Size of Dimension(s): 10
shift_flux	5678400	Float32	Minfloat – Maxfloat	unitless	3 Dimensional Array np::MAX_TREND_POINTS x np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 10 x 364 x 390

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3.1.2.16 OMPS NP Raw Flux PC

Data Mnemonic	NP_NU-LM0240-107
Description/ Purpose	The OMPS NP Raw Flux PC table contains solar signals corrected for detector and normalized by the baseline solar signals This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,703,670 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.1.2.16-1, OMPS NP Raw Flux PC Data Format

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Table 3.1.2.16-1, OMPS NP Raw Flux PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_iyear	4	Int32	2000 – 2050	years	
rsf_iday	4	Int32	1 – 366	days	
rsf_solar_beta	4	Float32	-180 – 180	degrees	
rsf_diffuser_surface	2	Int16	1 – 2	unitless	
rsf_number_coadds	4	Int32	1 – 28	unitless	
spat_dim	4	Int32	>=0	pixels	
spec_dim	4	Int32	>=0	pixels	
rsf_avg_scan_time	8	Float64	>=0	seconds	
rsf_expose	8	Float64	>=0	seconds	
rsf_data	567840	Float32	0 – 1800	W/cm^3	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390
rsf_counts	567840	Float32	Minfloat – Maxfloat	Counts	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390
iyear_solar	40	Int32	2000 – 2050	years	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
iday_solar	40	Int32	1 – 366	days	1 Dimensional Array np::MAX_TREND_POINTS Size of Dimension(s): 10
avg_solar_beta	4	Float32	-180 – 180	degrees	
diffuser_surface_num	4	Int32	1	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
no_work_frames	4	Int32	>=0	unitless	
avg_sol_scan_time	8	Float64	>=0	seconds	
total_sol_expose	8	Float64	>=0	seconds	
rawflx_data	567840	Float32	Minfloat – Maxfloat	unitless	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

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3.2 Manual Processing Coefficients

Manual PCs are files that contain PC parameters used in the creation of NPP/NPOESS Data Products. All of these files require human review prior to their insertion into the operational processing environment.

3.2.1 Initialization Processing Coefficients

Initialization PCs are files containing the initial sets of PC parameters used to create NPP/NPOESS Data Products and are not updated frequently.

3.2.1.1 CrIMSS PCs

3.2.1.1.1 CrIMSS Daytime LAA PC

Data Mnemonic	NP_NU-LM0230-000
Description/ Purpose	The CrIMSS Daytime Local Angle Adjustment (LAA) PC file contains the regression coefficients used for the daytime local adjustment of the Field Of View (FOV) radiances. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	13,154,400 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.1-1, CrIMSS Daytime LAA PC Data Format

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Table 3.2.1.1.1-1, CrIMSS Daytime LAA PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rCoeff	12528000	32-bit floating point	Minfloat – Maxfloat	unitless	4 Dimensional Array: CRIS_SCAN_ANGLES x CRIS_FOV-1 x MAX_LAA_EOFS x MAX_IR_CHAN Size of Dimension(s): 15 x 8 x 20 x 1305
cCoeff	626400	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: CRIS_SCAN_ANGLES x CRIS_FOV-1 x MAX_IR_CHAN Size of Dimension(s): 15 x 8 x 1305

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3.2.1.1.2 CrIMSS Daytime LAA EOF PC

Data Mnemonic	NP_NU-LM0230-001
Description/ Purpose	The CrIMSS Daytime LAA EOF PC file contains the EOFs used for the daytime LAA of the CrIS FOVs. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	208,800 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.2-1, CrIMSS Daytime LAA EOF PC Data Format

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Table 3.2.1.1.2-1, CrIMSS Daytime LAA EOF PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
eofday	208,800	64-bit floating point	Minfloat – Maxfloat	unitless	EOFs used for daytime local angle adjustment of CrIS FOVs 2 Dimensional Array: MAX_IR_CHAN x MAX_LAA_EOFS Size of Dimension(s): 1305 x 20

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3.2.1.1.3 CrIMSS IR Channel Atmospheric Noise PC

Data Mnemonic	NP_NU-LM0230-002
Description/ Purpose	The CrIMSS IR Channel Atmospheric Noise PC file contains the noise values for all of the CrIS and ATMS channels. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	10,444 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.3-1, CrIMSS IR Channel Atmospheric Noise PC Data Format

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Table 3.2.1.1.3-1, CrIMSS IR Channel Atmospheric Noise PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nChan	4	32-bit integer	1 – 1305	unitless	Number of Channels Used
freqIR	5220	32-bit floating point	Minfloat – Maxfloat	nanometers	Frequency for IR Channels 1 Dimensional Array: MAX_IR_CHAN Size of Dimension(s): 1305
atmosphericNoise	5220	32-bit floating point	Minfloat – Maxfloat	unitless	Atmospheric noise for the IR channels 1 Dimensional Array: MAX_IR_CHAN Size of Dimension(s): 1305

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3.2.1.1.4 CrIMSS IR Channel NEdN PC

Data Mnemonic	NP_NU-LM0230-003
Description/ Purpose	The CrIMSS IR Channel Atmospheric Noise Equivalent delta Noise (NEdN) PC file contains the noise values for all of the CrIS and ATMS channels. This file is used in the CrIMSS EDR algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	20,944 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.4-1, CrIMSS IR Channel NEdN PC Data Format

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Table 3.2.1.1.4-1, CrIMSS IR Channel NEdN PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bnFreq	16	32-bit floating point	Minfloat – Maxfloat	unitless	End points for noise calculations 1 Dimensional Array: MAX_FRQ_CLASS Size of Dimension(s): 4
sceneTemp	48	32-bit floating point	0 – 330	Kelvin	Scene temperatures for which NEdNs were calculated 2 Dimensional Array: NUM_NOISE_TEMPERATURES x MAX_FRQ_CLASS Size of Dimension(s): 3 x 4
irDevNoise	20880	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array: MAX_FRQ_CLASS x MAX_IR_CHAN Size of Dimension(s): 4 x 1305

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3.2.1.1.5 CrIMSS MW Atmospheric Noise PC

Data Mnemonic	NP_NU-LM0230-004
Description/ Purpose	The CrIMSS MW Atmospheric Noise PC file contains the noise for all of the CrIS and ATMS channels. This file is used in the CrIMMS EDR algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	92 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.5-1, CrIMSS MW Atmospheric Noise PC Data Format

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Table 3.2.1.1.5-1, CrIMSS MW Atmospheric Noise PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nChan	4	32-bit integer	1 – 22	unitless	Number of channels used
atmosphericNoise	88	32-bit floating point	Minfloat – Maxfloat	unitless	Atmospheric noise for the MW channels 1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22

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3.2.1.1.6 CrIMSS MW Frequency Polarization PC

Data Mnemonic	NP_NU-LM0230-005
Description/ Purpose	The CrIMSS MW Frequency Polarization PC files contain the MW frequencies, weights, and polarization information. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	444 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.6-1, CrIMSS MW Frequency Polarization PC Data Format

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Table 3.2.1.1.6-1, CrIMSS MW Frequency Polarization PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numChans	4	32-bit integer	1 – 22	unitless	Number of MW Channels
freq	88	32-bit floating point	Minfloat – Maxfloat	unitless	MW OSS RTM frequency points 1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22
s1	88	32-bit floating point	Minfloat – Maxfloat	unitless	s1 variable 1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22
s2	88	32-bit floating point	Minfloat – Maxfloat	unitless	s2 variable 1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22
hw	88	32-bit floating point	Minfloat – Maxfloat	unitless	Weight value 1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22
pol	88	32-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array MAX_MW_CHAN Size of Dimension(s): 22

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3.2.1.1.7 CrIMSS MW Noise Amplification PC

Data Mnemonic	NP_NU-LM0230-006
Description/ Purpose	The CrIMSS MW Noise Amplification PC file contains the noise amplification data for all of the CrIS and ATMS channels. This file is used in the CrIMSS EDR algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	2740 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.7-1, CrIMSS MW Noise Amplification PC Data Format

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Table 3.2.1.1.7-1, CrIMSS MW Noise Amplification PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numFor	4	32-bit integer	1 – 30	unitless	MWNA data is for numFor FORs per scan. This must match the number of FORs per scan in the data being processed.
numElements	4	32-bit integer	1 – 9	unitless	Number of noise amplification elements
numMwChans	4	32-bit integer	1 – 22	unitless	Number of MW channels for the MWNA data
indexMwNa	88	32-bit integer	Minint – MaxInt	unitless	Index into the MWNA data 1 Dimensional Array: MAX_MW_CHAN Size of Dimension(s): 22
mwNoiseAmp	2640	32-bit floating point	Minfloat – Maxfloat	unitless	MW noise amplification data 2 Dimensional Array: MAX_MW_CHAN x CRIS_SCAN_FORS Size of Dimension(s): 22 x 30

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3.2.1.1.8 CrIMSS MW Noise PC

Data Mnemonic	NP_NU-LM0230-007
Description/ Purpose	The CrIMSS MW Noise PC file contains the noise data for all of the CrIS and ATMS channels. This file is used in the CrIMSS EDR algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	92 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.8-1, CrIMSS MW Noise PC Data Format

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Table 3.2.1.1.8-1, CrIMSS MW Noise PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
mwChannel	4	32-bit integer	1 – 22	unitless	Number of channels for which noise data exists in the data
mwNoise	88	32-bit floating point	Minfloat – Maxfloat	unitless	Mw channel noise vector 1 Dimensional Array: MAX_MW_CHAN Size of Dimension(s): 22

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3.2.1.1.9 CrIMSS Nighttime LAA PC

Data Mnemonic	NP_NU-LM0230-008
Description/ Purpose	The CrIMSS Nighttime LAA PC file contains the regression coefficients used for nighttime LAA of the FOV radiances. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	13,154,400 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.9-1, CrIMSS Nighttime LAA PC Data Format

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Table 3.2.1.1.9-1, CrIMSS Nighttime LAA PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rCoeff	12,528,000	32-bit floating point	Minfloat – Maxfloat	unitless	Local angle adjustment regression coefficients 4 Dimensional Array: CRIS_SCAN_ANGLES x LAA_FOVS x MAX_LAA_EOFS x MAX_IR_CHAN Size of Dimension(s): 15 x 8 x 20 x 1305
cCoeff	626,400	32-bit floating point	Minfloat – Maxfloat	unitless	3 Dimensional Array: crisScanAngle x crisFov x irChannel Size of Dimension(s): 15 x 8 x 1305

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3.2.1.1.10 CrIMSS Nighttime LAA EOF PC

Data Mnemonic	NP_NU-LM0230-009
Description/ Purpose	The CrIMSS Nighttime LAA EOF PC file contains the EOFs used for the nighttime LAA of the CrIS FOVs. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	208,800 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.10-1, CrIMSS Nighttime LAA EOF PC Data Format

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Table 3.2.1.1.10-1, CrIMSS Nighttime LAA EOF PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
eofNight	208800	64-bit floating point	Minfloat – Maxfloat	unitless	EOFs used for nighttime local angle adjustment of CrIS FOVs 2 Dimensional Array: MAX_IR_CHAN x MAX_LAA_EOFS Size of Dimension(s): 1305 x 20

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3.2.1.1.11 CrIMSS NWP Temperature PC

Data Mnemonic	NP_NU-LM0230-010
Description/ Purpose	The CrIMSS Numerical Weather Prediction (NWP) Temperature PC file includes both the climatological means and covariances of all of the state variables used in the CrIS inversion algorithm. This file also includes part of the optimal inverse non-linear method employed by CrIMSS. Separate covariances are included for several geographic/climatological regions This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	41,420 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.11-1, CrIMSS NWP Temperature PC Data Format

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Table 3.2.1.1.11-1, CrIMSS NWP Temperature PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numTempLevels	4	32-bit integer	1 – 18	unitless	Number of levels for which the coeffs were generated
indxIndep	104	32-bit integer	1 – 101	unitless	Indices for the mapping NWP temperature level data to OSS levels before interpolation 1 Dimensional Array: ncepLayerEnum Size of Dimension(s): 26
pressLevs	104	32-bit integer	1 - 18	hPa	Pressure levels for which the interpolation coefficients were generated 1 Dimensional Array: ncepLayerEnum Size of Dimension(s): 26
coef	40804	32-bit floating point	Minfloat – Maxfloat	unitless	Matrix used in conversion of temperatures from NWP levels to CrIMSS EDR levels. 2 Dimensional Array: ossLevel x ossLevel Size of Dimension(s): 101 x 101
coef0	404	32-bit floating point	Minfloat – Maxfloat	unitless	Vector used in conversion of temperatures from NWP levels to CrIMSS EDR levels. 1 Dimensional Array: OSS_LEVELS Size of Dimension(s): 101

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3.2.1.1.12 CrIMSS NWP Water Vapor PC

Data Mnemonic	NP_NU-LM0230-011
Description/ Purpose	The CrIMSS NWP Water Vapor PC file includes both the climatological means and covariances of all of the state variables used in the CrIS inversion algorithm. This file includes a part of the optimal inverse non-linear inverse method employed by CrIMSS. Separate covariances are included for several geographic/climatological regions. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	41,420 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.12-1, CrIMSS NWP Water Vapor PC Data Format

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Table 3.2.1.1.12-1, CrIMSS NWP Water Vapor PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numWatVapLevels	4	32-bit integer	1 – 13	unitless	Number of levels for which the coeffs were generated
indxIndep	104	32-bit integer	1 – 101	unitless	Indices for the mapping NWP water vapor level data to OSS levels before interpolation 1 Dimensional Array: ncepLayerEnum Size of Dimension(s): 26
pressLevs	104	32-bit integer	1 - 18	hPa	1 Dimensional Array: ncepLayerEnum Size of Dimension(s): 26
coef	40804	32-bit floating point	Minfloat – Maxfloat	unitless	2 Dimensional Array ossLevel x ossLevel Size of Dimension(s): 101 x 101
coef0	404	32-bit floating point	Minfloat – Maxfloat	unitless	1 Dimensional Array: ossLevel Size of Dimension(s): 101

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3.2.1.1.13 CrIMSS Solar Irradiance and IR Frequency PC

Data Mnemonic	NP_NU-LM0230-012
Description/ Purpose	The CrIMSS Solar Irradiance and IR Frequency PC file contains solar irradiance and IR frequency data. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	20,880 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.13-1, CrIMSS Solar Irradiance and IR Frequency PC Data Format

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Table 3.2.1.1.13-1, CrIMSS Solar Irradiance and IR Frequency PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
freqIR	5220	32-bit floating point	Minfloat – Maxfloat	cm^-1	IR frequency grid. Data is used in the OSS model 1 Dimensional Array: MAX_IR_CHAN Size of Dimension(s): 1305
solRad	15660	32-bit floating point	Minfloat – Maxfloat	mW/m^2/cm^-1	Extraterrestrial solar irradiance. One value per apodization method per channel 2 Dimensional Array: MAX_IR_CHAN x MAX_APOD Size of Dimension(s): 1305 x 3

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3.2.1.1.14 CrIMSS Trace Gas Reference Profiles PC

Data Mnemonic	NP_NU-LM0230-013
Description/ Purpose	The CrIMSS Trace Gas Reference Profiles PC file contains the trace gas reference profiles. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	2020 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.14-1, CrIMSS Trace Gas Reference Profiles PC Data Format

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Table 3.2.1.1.14-1, CrIMSS Trace Gas Reference Profiles PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
trref	2020	32-bit floating point	Minfloat – Maxfloat	unitless	Trace gas profiles 2 Dimensional Array: OSS_LEVELS x NUM_TRACE_GASES Size of Dimension(s): 101 x 5

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3.2.1.1.15 CrIMSS Tropopause Reference Profiles PC

Data Mnemonic	NP_NU-LM0230-014
Description/ Purpose	The CrIMSS Tropopause Reference Profiles PC file contains the above tropopause reference profiles. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	808 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.15-1, CrIMSS Tropopause Reference Profiles PC Data Format

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Table 3.2.1.1.15-1, CrIMSS Tropopause Reference Profiles PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
pn2oref	404	32-bit floating point	Minfloat – Maxfloat	g/kg	Reference profile for nitrous oxide 1 Dimensional Array: OSS_LEVELS Size of Dimension(s): 101
pch4ref	404	32-bit floating point	Minfloat – Maxfloat	g/kg	Reference profile for methane 1 Dimensional Array: OSS_LEVELS Size of Dimension(s): 101

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3.2.1.1.16 CrIMSS Climatological PC

Data Mnemonic	NP_NU-LM0230-015
Description/ Purpose	The CrIMSS Climatological PC file provides the climatological means and covariances of all state variables used in the CrIS inversion algorithm. Separate covariances are included for several geographic/climatological regions. This file is used in the CrIMSS EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	976,928 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.1.16-1, CrIMSS Climatological PC Data Format

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Table 3.2.1.1.16-1, CrIMSS Climatological PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
covMatrix	161312	32-bit floating point	Minfloat – Maxfloat	unitless	Two dimensional array containing MW and IR error covariance matrices for each environmental condition 3 Dimensional Array: Land Type x irRetProfLen x irRetProfLen Size of Dimension(s): 8 x 71 x 71
eof	804288	32-bit floating point	Minfloat – Maxfloat	unitless	Contains EOFs for stratified environmental conditions 3 Dimensional Array: Land Type x irRetProfLen x irGeoProfLen Size of Dimension(s): 8 x 71 x 354
background	11328	32-bit floating point	Minfloat – Maxfloat	unitless	MW and IR background mean profiles(climatic means) 2 Dimensional Array: Land Type x irGeoProfLen Size of Dimension(s): 8 x 354

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3.2.1.2 ATMS PCs

3.2.1.2.1 ATMS Footprint Matching Kernels PC

Data Mnemonic	NP_NU-LM0231-000
Description/ Purpose	The ATMS Remap Footprint Matching Kernels PC file provides the coefficients for resampling the ATMS observed brightness temperature using the Backus-Gilbert technique to the CrIS Field of Regard (FOR). This file is used in the ATMS algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,058,648 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.2.1-1, ATMS Footprint Matching Kernels PC Data Format

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Table 3.2.1.2.1-1, ATMS Footprint Matching Kernels PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
maxPosTrackOffset	4	32-bit integer	0 - 10	unitless	Maximum positive track offset
maxNegTrackOffset	4	32-bit integer	0 - 10	unitless	Maximum negative track offset
numResBeamPos	2640	32-bit integer	1 - 100	unitless	Number of beam positions (ie. data points) to use in resampling each channel to a CrIS FOR. 2 Dimensional Array: CrIS FOR x ATMS Channel Size of Dimension(s): 30 x 22
scanPos	264000	32-bit integer	1 - 96	unitless	The scan position of each of the values used in resampling to a CrIS FOR for a given channel. 3 Dimensional Array: CrIS FOR x ATMS Channel x Beam Use Size of Dimension(s): 30 x 22 x 100
trackOff	264000	32-bit integer	-10 – 10	unitless	The along-track (ie. scan) offset of each beam position used in resampling to a CrIS FOR for a given channel. Offset is from the synched ATMS scan. 3 Dimensional Array: CrIS FOR x ATMS Channel x Beam Use Size of Dimension(s): 30 x 22 x 100

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bgCoeffs	528000	64-bit floating point	0 – 1	unitless	Backus-Gilbert coefficients to use in resampling ATMS data to CrIS FORs. There is one coeff for each data point to be used in resampling an ATMS channel to a CRIS FOR. 3 Dimensional Array: CrIS FOR x ATMS Channel x Beam Use Size of Dimension(s): 30 x 22 x 100

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3.2.1.3 OMPS PCs

3.2.1.3.1 OMPS TC Calibration Constant PC

Data Mnemonic	NP_NU-LM0240-008
Description/ Purpose	The OMPS TC Calibration Constant PC contains radiance calibration constant (from pre-launch calibration). This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	2,271,360 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.1-1, OMPS TC Calibration Constant PC Data Format

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Table 3.2.1.3.1-1, OMPS TC Calibration Constant PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iradsolresp	2,271,360	32-bit floating point	2.89661 to 3299.13	counts/W/cm^3/sr	Radiometric sensitivities 3 Dimensional Array: tc::NUM_ELECTRONICS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 2 x 364 x 780

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3.2.1.3.2 OMPS TC Field Angles Map PC Table

Data Mnemonic	NP_NU-LM0240-009
Description/ Purpose	The OMPS TC Field Angles Map PC Table contains the detector map of pixel optical angles This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	12,480 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.2-1, OMPS TC Field Angles Map PC Table Data Format

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Table 3.2.1.3.2-1, OMPS TC Field Angles Map PC Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
angles Array	12,480	64-bit floating point	-1 – 8.6044729E-02	nanometers	Pre-launch cross-track and along-track view angles map 2 Dimensional Array: tc::NO_SPAT_CCD x tc::NUM_IMAGE_HALF Note: OPTICAL_ANGLE_TYPE refers to the azimuth angle (0) and elevation angle (1) Size of Dimension(s): 780 x 2

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3.2.1.3.3 OMPS TC Observed Solar PC Table

Data Mnemonic	NP_NU-LM0240-010
Description/ Purpose	The OMPS TC Observed Solar PC Table contains observed reference solar irradiances. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	2,271,360 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.3-1, OMPS TC Observed Solar PC Table Data Format

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Table 3.2.1.3.3-1, OMPS TC Observed Solar PC Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
rsf_data Array	1135680	32-bit floating point	0 – ~1316	W/cm^3/sr	Baseline OMPS observed reference solar irradiances 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780
rsf_counts Array	1135680	32-bit floating point	24,531.2 – 16,708,400	counts	Baseline OMPS observed reference solar counts 2 Dimensional Array: tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780

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3.2.1.3.4 OMPS TC Predicted Solar PC Table

Data Mnemonic	NP_NU-LM0240-011
Description/ Purpose	The OMPS TC Predicted Solar PC Table contains solar irradiances and solar wavelengths predicted from spectral functions. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	32,640 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.4-1, OMPS TC Predicted Solar PC Table Data Format

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Table 3.2.1.3.4-1, OMPS TC Predicted Solar PC Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
womps Array	16,320	64-bit floating point	298 – 380	nanometers	OMPS solar wavelengths predicted from spectral functions 1 Dimensional Array: tc::MAXPTS_SPEC Size of Dimension(s): 2040
fomps Array	16,320	64-bit floating point	400 – 1504	W/cm^3/sr	OMPS solar irradiances predicted from spectral functions 1 Dimensional Array: tc::MAXPTS_SPEC Size of Dimension(s): 2040

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3.2.1.3.5 OMPS TC Solar Irradiance PC Table

Data Mnemonic	NP_NU-LM0240-012
Description/ Purpose	The OMPS TC Solar Irradiance PC Table contains solar wavelengths and irradiances of calibration standard. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	32,640 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.5-1, OMPS TC Solar Irradiance PC Table Data Format

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Table 3.2.1.3.5-1, OMPS TC Solar Irradiance PC Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wsun Array	16,320	64-bit floating point	298 to 380	nanometers	Solar wavelengths of calibration standard 1 Dimensional Array: tc::MAXPTS_SPEC Size of Dimension(s): 2040
fsun Array	16,320	64-bit floating point	400 to 1504	W/cm^3/sr	Solar irradiances of calibration standard 1 Dimensional Array: tc::MAXPTS_SPEC Size of Dimension(s): 2040

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3.2.1.3.6 OMPS TC Spectral Response Function Table

Data Mnemonic	NP_NU-LM0240-013
Description/ Purpose	The OMPS TC Spectral Response Function Table contains Spectral Response Functions. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	198,992 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.6-1, OMPS TC Spectral Response Function Table Data Format

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Table 3.2.1.3.6-1, OMPS TC Spectral Response Function Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wave_prof Array	192	64-bit floating point	290 – 390	nanometer	Wavelengths 1 Dimensional Array: tc::NFUNC Size of Dimension(s): 24
offsetw Array	7952	64-bit floating point	-2.6 – 2.6	nanometers	Offset wavelengths 1 Dimensional Array: tc::NSAMP Size of Dimension(s): 994
wavefunc Array	190848	64-bit floating point	0 – 1	unitless	Spectral responses 2 Dimensional Array: tc::NSAMP x tc::NFUNC Size of Dimension(s): 994 x 24

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3.2.1.3.7 OMPS TC Wave Fitting Parameters Table

Data Mnemonic	NP_NU-LM0240-014
Description/ Purpose	The OMPS TC Wave Fitting Parameters Table contains the Wavelength fitting parameters This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	2,684 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.7-1, OMPS TC Wave Fitting Parameters Table Data Format

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Table 3.2.1.3.7-1, OMPS TC Wave Fitting Parameters Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
inputLine Array	72	8-bit character	Minchar – Maxchar	unitless	Describes file content 1 Dimensional Array: tc::LINE_LEN Size of Dimension(s): 72
iterate	4	32-bit integer	True = 1 False = 0	unitless	processing switch
write_fit	4	32-bit integer	True = 1 False = 0	unitless	processing switch
weight	4	32-bit integer	True = 1 False = 0	unitless	processing switch
mirror	4	32-bit integer	True = 1 False = 0	unitless	processing switch
autodiff	4	32-bit integer	True = 1 False = 0	unitless	processing switch
wavelo	8	64-bit floating point	303.5 – 376.5	nanometers	wavelength limits for fitting
wavehi	8	64-bit floating point	303.5 – 376.5	nanometers	wavelength limits for fitting
delchi	8	64-bit floating point	1e-12	unitless	convergence criteria
provar	8	64-bit floating point	1e-12	unitless	convergence criteria

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
var Array	512	64-bit floating point	1.00E-12	unitless	polynomial parameters 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64
if_varied Array	256	32-bit integer	True = 1 False = 0	unitless	vary parameter 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64
diff Array	512	64-bit floating point	True = 1 False = 0	unitless	increment parameter 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64
lock Array	256	32-bit integer	0	unitless	unused lock 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64
alock Array	512	64-bit floating point	0	unitless	unused lock 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
block Array	512	64-bit floating point	0	unitless	unused lock 1 Dimensional Array: tc::MMAX Size of Dimension(s): 64

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3.2.1.3.8 OMPS TC Solar Irradiance Calibration Constants Table

Data Mnemonic	NP_NU-LM0240-015
Description/ Purpose	The OMPS TC Solar Irradiance Calibration Constants Table contains the solar irradiance calibration constants. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	15,899,520 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.8-1, OMPS TC Solar Irradiance Calibration Constants Table Data Format

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Table 3.2.1.3.8-1, OMPS TC Solar Irradiance Calibration Constants Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
radevresp Array	15,899,520	32-bit floating point	2.89661 – 3299.13	counts/W/cm^3/sr	Radiometric sensitivities 4 Dimensional Array: tc::NUM_ELECTRONICS x tc::NO_DIFFUSER_POSITIONS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 2 x 7 x 364 x 780

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3.2.1.3.9 OMPS TC BRDF GRIDS Table

Data Mnemonic	NP_NU-LM0240-017
Description/ Purpose	The OMPS TC BRDF GRIDS Table contains Sensor diffuser irradiance goniometry characteristics. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,774,080,280 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.9-1, OMPS TC BRDF GRIDS Table Data Format

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Table 3.2.1.3.9-1, OMPS TC BRDF GRIDS Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
BRDF_grid Array	1774080000	32-bit floating point	Minfloat - Maxfloat	unitless	Bireflectance directional functions 5 Dimensional Array tc::NO_DIFFUSER_POSITIONS x tc::NO_SPEC_PIX x tc::BRDF_SPAT_PIX x tc::GRID_SIZE x tc::GRID_SIZE Size of Dimension(s): 7 x 198 x 200 x 40 x 40
minAzim Array	28	32-bit floating point	Minfloat - Maxfloat	degrees	Minimum azimuth angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
maxAzim Array	28	32-bit floating point	Minfloat - Maxfloat	degrees	Maximum azimuth angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
minElev Array	28	32-bit floating point	Minfloat - Maxfloat	degrees	Minimum elevation angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
maxElev Array	28	32-bit floating point	Minfloat - Maxfloat	degrees	Maximum elevation angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
gspat_offset Array	28	32-bit integer	Minint - Maxint	unitless	starting spatial index for calibrated data 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
gspec_offset Array	28	32-bit integer	Minint - Maxint	unitless	starting spectral index for calibrated data 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
gspat_size Array	28	32-bit integer	Minint - Maxint	unitless	extent of spatial indices for calibrated data 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
gspec_size Array	28	32-bit integer	Minint - Maxint	unitless	extent of spectral indices for calibrated data 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
gazim_size Array	28	32-bit integer	Minint - Maxint	unitless	number of azimuth angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7
gelev_size Array	28	32-bit integer	Minint - Maxint	unitless	number of elevation angles 1 Dimensional Array tc::NO_DIFFUSER_POSITIONS Size of Dimension(s): 7

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3.2.1.3.10 OMPS TC Line Shifts Table

Data Mnemonic	NP_NU-LM0240-018
Description/ Purpose	The OMPS TC Line Shifts Table contains bandcenter spectral shift information for calibration/wavelength registration. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	29,750 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.10-1, OMPS TC Line Shifts Table Data Format

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Table 3.2.1.3.10-1, OMPS TC Line Shifts Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
instrument Array	12	8-bit character	“Total Column”	unitless	instrument name 1 Dimensional Array tc::INSTR_NAMELEN Size of Dimension(s): 12
nlines	2	16-bit integer	10	unitless	number of lines
indexes Array	20	16-bit integer	5 – 163	pixels	line pixel number 1 Dimensional Array tc:: MAXLINES Size of Dimension(s): 10
offset	2	16-bit integer	1	pixels	pixel offset
nshifts	2	16-bit integer	167	unitless	number of shifts
wlines Array	80	64-bit floating point	302 – 369	nanometers	Selected wavelength lines for monitoring 1 Dimensional Array tc:: MAXLINES Size of Dimension(s): 10
refshifts Array	13360	64-bit floating point	Minfloat – Maxfloat	nanometers	Selected wavelength shifts for monitoring 2 Dimensional Array tc::MAXLINES x tc:: TC_MAX_SHIFTS Size of Dimension(s): 10 x 167

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
irrad_diff Array	13360	64-bit floating point	Minfloat – Maxfloat	unitless	Selected irradiance shifts for monitoring 2 Dimensional Array tc::MAXLINES x tc:: TC_MAX_SHIFTS Size of Dimension(s): 10 x 167
wref_l Array	2912	64-bit floating point	300 – 380	nanometers	reference wavelengths 1 Dimensional Array tc::MAX_NSPEC_CCD Size of Dimension(s): 364

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3.2.1.3.11 OMPS TC Spectral Registration Pixel Map Table

Data Mnemonic	NP_NU-LM0240-019
Description/ Purpose	The OMPS TC Spectral Registration Pixel Map Table contains the wavelength mapping of the CCD for spatial and spectral dimensions. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	2,271,360 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.11-1, OMPS TC Spectral Registration Pixel Map Table Data Format

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Table 3.2.1.3.11-1, OMPS TC Spectral Registration Pixel Map Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wmap Array	2271360	64-bit floating point	290 – 390	nanometers	wavelength map 2 Dimensional Array tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 364 x 780

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3.2.1.3.12 OMPS TC Timing Pattern Ground Table

Data Mnemonic	NP_NU-LM0240-020
Description/ Purpose	The OMPS TC Timing Pattern Ground Table contains integration times and offsets for Earth View, Solar, LED and Dark. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	2188 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.12-1, OMPS TC Timing Pattern Ground Table Data Format

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Table 3.2.1.3.12-1, OMPS TC Timing Pattern Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
TPev_num	4	32-bit integer	1	unitless	number of Earth View Frames
TPsol_num	4	32-bit integer	1	unitless	number of solar frames
TPdark_num	4	32-bit integer	1	unitless	number of dark frames
TPled_num	4	32-bit integer	1	unitless	number of lamp frames
TPev_conum	4	32-bit integer	1	unitless	number of Earth View coadds
TPsol_conum	4	32-bit integer	1 – 7	unitless	number of solar coadds
TPdark_conum	4	32-bit integer	1	unitless	number of dark coadds
TPled_conum	4	32-bit integer	1 – 83	unitless	number of lamp coadds
TPev_time Array	60	32-bit floating point	>=1	seconds	total integration time for each frame – Earth View 1 Dimensional Array tc::NO_SCANS_PER_GRANULE Size of Dimension(s): 15
TPsol_time Array	252	32-bit floating point	>=1	seconds	total integration time for each frame - Solar 1 Dimensional Array tc::NO_SOLAR_IMAGES Size of Dimension(s): 63

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
TPdark_time Array	20	32-bit floating point	>=1	seconds	total integration time for each frame - Dark 1 Dimensional Array tc::NO_DARK_IMAGES Size of Dimension(s): 5
TPled_time Array	600	32-bit floating point	>=1	seconds	total integration time for each frame - LED 1 Dimensional Array tc::NO_LAMP_IMAGES Size of Dimension(s): 150
ev_time_offset	8	64-bit integer		microseconds	EV time offset
sol_time_offset	8	64-bit integer		microseconds	Solar time offset
dark_time_offset	8	64-bit integer		microseconds	Dark time offset
led_time_offset	1200	64-bit integer		microseconds	1 Dimensional Array tc::NO_LAMP_IMAGES Size of Dimension(s): 150

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3.2.1.3.13 OMPS TC Linearity Ground Table

Data Mnemonic	NP_NU-LM0240-021
Description/ Purpose	The OMPS TC Linearity Ground Table contains linearity coefficients for primary and reduntand CCD1 and CCD2. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	262,144 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.13-1, OMPS TC Linearity Ground Table Data Format

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Table 3.2.1.3.13-1, OMPS TC Linearity Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
linearity_table Array	262,144	32-bit floating point	1 – 100,000	unitless	linearity coefficients for: primary CCD1, primary CCD2, redundant CCD1, redundant CCD2 3 Dimensional Array tc::NUM_ELECTRONICS x tc::NUM_IMAGE_HALF x tc::LAMPLUTSIZE Size of Dimension(s): 2 x 2 x 16,384

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3.2.1.3.14 OMPS TC Earth View Sample Ground Table

Data Mnemonic	NP_NU-LM0240-022
Description/ Purpose	The OMPS TC Earth View Sample Ground Table contains the BATC generated database of utilized pixels. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.14-1, OMPS TC Earth View Sample Ground Table Data Format

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Table 3.2.1.3.14-1, OMPS TC Earth View Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
macrot	1,135,680	32-bit integer	0-3: 0 = unused pixel 1 = macropixel A 2 = macropixel B 3 = bad pixel	unitless	Flight-like Earth-view sample table array. 2 Dimensional Array tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD x Size of Dimension(s): 364 x 780

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3.2.1.3.15 OMPS TC Macropixel Ground Table

Data Mnemonic	NP_NU-LM0240-023
Description/ Purpose	The OMPS TC Macropixel Ground Table contains the ccd map of EV macropixels This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.15-1, OMPS TC Macropixel Ground Table Data Format

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Table 3.2.1.3.15-1, OMPS TC Macropixel Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
macrot Array	1,135,680	32-bit integer	-N to N: negative number indicates all bad macropixel, N goes from 1 to the number of macropixels	unitless	Macropixel table array 2 Dimensional Array tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD x Size of Dimension(s): 364 x 780

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3.2.1.3.16 OMPS TC LED Sample Ground Table

Data Mnemonic	NP_NU-LM0240-024
Description/ Purpose	The OMPS TC LED Sample Ground Table contains the ccd map of LAMP pixels. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.16-1, OMPS TC LED Sample Ground Table Data Format

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Table 3.2.1.3.16-1, OMPS TC LED Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lampsample Array	1,135,680	32-bit integer	0-2: 0 = unused pixel 1 = macropixel A 2 = macropixel B	unitless	linearity LED sample table array, 3rd dimension is for the primary and redundant CCDs 2 Dimensional Array tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD x Size of Dimension(s): 364 x 780

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3.2.1.3.17 OMPS TC Solar Sample Ground Table

Data Mnemonic	NP_NU-LM0240-025
Description/ Purpose	The OMPS TC Solar Sample Ground Table contains the sample table array for each of 7 solar diffuser positions. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	7,949,760 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.17-1, OMPS TC Solar Sample Ground Table Data Format

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Table 3.2.1.3.17-1, OMPS TC Solar Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
macrot Array	7,949,760	32-bit integer	0-2: 0 = unused pixel 1 = macropixel A 2 = macropixel B	unitless	Sample table array for each of 7 solar diffuser positions. 2 Dimensional Array tc::NO_DIFFUSER_POSITIONS x tc::MAX_NSPEC_CCD x tc::NO_SPAT_CCD Size of Dimension(s): 7 x 364 x 780

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3.2.1.3.18 OMPS TC Wavelengths Ground Table

Data Mnemonic	NP_NU-LM0240-026
Description/ Purpose	The OMPS TC Wavelengths Ground Table contains bandcenter wavelengths corrected for solar doppler shift.. This file is used in the OMPS TC SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	26,674,780 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.18-1, OMPS TC Wavelengths Ground Table Data Format

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Table 3.2.1.3.18-1, OMPS TC Wavelengths Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	58	16-bit integer	2000 – 2050	years	Year 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
obs_day	58	16-bit integer	1 – 366	days	Day 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
resolution	232	64-bit floating point	>0	nanometers	FWHM wavelength resolution 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
intercept	24360	64-bit floating point	Minfloat – Maxfloat	nanometers	Intercept line 2 Dimensional Array tc::TC_CAL_DAYS x tc::MAXCTPX Size of Dimension(s): 29 x 105
slope	24360	64-bit floating point	Minfloat – Maxfloat	unitless	Slope line 2 Dimensional Array tc::TC_CAL_DAYS x tc::MAXCTPX Size of Dimension(s): 29 x 105

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
correl	24360	64-bit floating point	>0	unitless	Correlation 2 Dimensional Array tc::TC_CAL_DAYS x tc::MAXCTPX Size of Dimension(s): 29 x 105
ntrends	116	32-bit integer	>3	unitless	Number of calibrations used for trend 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
newestyear	58	16-bit integer	2000 – 2050	years	Year of newest calibration trended 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
newestday	58	16-bit integer	1 – 366	days	Day of newest calibration 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
wbands	8867040	64-bit floating point	290 – 390	nanometers	Wavelengths 3 Dimensional Array tc::TC_CAL_DAYS x tc::MAX_NSPEC_CCD x tc::MAXCTPX Size of Dimension(s): 29 x 364 x 105

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sig_w	8867040	64-bit floating point	>0	nanometers	Precision of Wavelengths 3 Dimensional Array tc::TC_CAL_DAYS x tc::MAX_NSPEC_CCD x tc::MAXCTPX Size of Dimension(s): 29 x 364 x 105
gamma	8867040	64-bit floating point	>0	unitless	irradiance corrections for shifts 3 Dimensional Array tc::TC_CAL_DAYS x tc::MAX_NSPEC_CCD x tc::MAXCTPX Size of Dimension(s): 29 x 364 x 105

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3.2.1.3.19 OMPS TC CF Earth Ground Table

Data Mnemonic	NP_NU-LM0240-027
Description/ Purpose	The OMPS TC CF Earth Ground Table contains radiometric calibration factors for the Earth scene spatial cells. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	4,434,100 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.19-1, OMPS TC CF Earth Ground Table Data Format

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Table 3.2.1.3.19-1, OMPS TC CF Earth Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	116	32-bit integer	2000 – 2050	years	year of calibration record 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
obs_day	116	32-bit integer	1 – 366	days	day of calibration record 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
old_nmonitor	116	32-bit integer	>0	unitless	number of observations used in trending 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
monitor_year	116	32-bit integer	2000 – 2050	years	last year of data used for flat field trending 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29
monitor_day	116	32-bit integer	1 – 366	days	last day of data used for flat field trending 1 Dimensional Array tc::TC_CAL_DAYS Size of Dimension(s): 29

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cfearth	4433520	32-bit floating point	>0	unitless	radiometric calibration factors 3 Dimensional Array tc::TC_CAL_DAYS x tc::MAX_NSPEC_CCD x tc::MAXCTPX Size of Dimension(s): 29 x 364 x 105

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3.2.1.3.20 OMPS NP Calibration Constant PC

Data Mnemonic	NP_NU-LM0240-108
Description/ Purpose	The OMPS NP Calibration Constant PC contains radiance calibration constant (from pre-launch calibration). This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.20-1, OMPS NP Calibration Constant PC Data Format

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Table 3.2.1.3.20-1, OMPS NP Calibration Constant PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
radevresp	1135680	Float32	2.89661 – 3299.13	counts/W/cm^3/sterad	3 Dimensional Array np::NUM_ELECTRONICS x np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 2 x 364 x 390

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3.2.1.3.21 OMPS NP Field Angles Map PC

Data Mnemonic	NP_NU-LM0240-109
Description/ Purpose	The OMPS NP Field Angles Map PC contains the detector map of pixel optical angles This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	6,240 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.21-1, OMPS NP Field Angles Map PC Data Format

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Table 3.2.1.3.21-1, OMPS NP Field Angles Map PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
angles	6240	Float64	-1 – 8.6044729E	radians	2 Dimensional Array np::NO_SPAT_CCD x np::OPTICAL_ANGLE_TYPE Note: OPTICAL_ANGLE_TYPE refers to the azimuth angle (0) and elevation angle (1) Size of Dimension(s): 390 x 2

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3.2.1.3.22 OMPS NP Observed Solar PC

Data Mnemonic	NP_NU-LM0240-110
Description/ Purpose	The OMPS NP Observed Solar PC contains observed reference solar irradiances. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.22-1, OMPS NP Observed Solar PC Data Format

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Table 3.2.1.3.22-1, OMPS NP Observed Solar PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
osol_data	567840	Float32	0 – ~656	W/cm^3/sterad	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390
osol_count	567840	Float32	9520.00 – 485757.0	counts	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

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3.2.1.3.23 OMPS NP Predicted Solar PC

Data Mnemonic	NP_NU-LM0240-111
Description/ Purpose	The OMPS NP Predicted Solar PC contains solar irradiances and solar wavelengths predicted from spectral functions. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	64,000 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.23-1, OMPS NP Predicted Solar PC Data Format

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Table 3.2.1.3.23-1, OMPS NP Predicted Solar PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
womps	32000	Float64	~249 – ~315	nanometers	1 Dimensional Array np::MAXPTS_SPEC Size of Dimension(s): 4000
fomps	32000	Float64	0 – ~800	W/cm^3/sterad	1 Dimensional Array np::MAXPTS_SPEC Size of Dimension(s): 4000

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3.2.1.3.24 OMPS NP Solar Irradiance PC

Data Mnemonic	NP_NU-LM0240-112
Description/ Purpose	The OMPS NP Solar Irradiance PC contains solar wavelengths and irradiances of calibration standard. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	64,000 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.24-1, OMPS NP Solar Irradiance PC Data Format

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Table 3.2.1.3.24-1, OMPS NP Solar Irradiance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wsun	32000	Float64	~250 – ~314	nanometers	1 Dimensional Array np::SOL_NP_COUNT Size of Dimension(s): 4000
fsun	32000	Float64	0 – ~750	W/cm^3/sterad	1 Dimensional Array np::SOL_NP_COUNT Size of Dimension(s): 4000

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3.2.1.3.25 OMPS NP Spectral Response Function Table

Data Mnemonic	NP_NU-LM0240-113
Description/ Purpose	The OMPS NP Spectral Response function Table contains Spectral Response Functions. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	2,352 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.25-1, OMPS NP Spectral Response Function Table Data Format

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Table 3.2.1.3.25-1, OMPS NP Spectral Response Function Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
offsetw	1176	Float64	-1.5 – 1.5	nanometers	1 Dimensional Array np::NSAMP Size of Dimension(s): 147
wavefunc	1176	Float64	0 – 1	unitless	1 Dimensional Array np::NSAMP Size of Dimension(s): 147

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3.2.1.3.26 OMPS NP Wave Fitting Parameters Table

Data Mnemonic	NP_NU-LM0240-114
Description/ Purpose	The OMPS NP Wave Fitting Parameters Table contains the Wavelength fitting parameters This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	2,612 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.26-1, OMPS NP Wave Fitting Parameters Table Data Format

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Table 3.2.1.3.26-1, OMPS NP Wave Fitting Parameters Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iterate	4	Int32	>=0	unitless	
write_fit	4	Int32	>=0	unitless	
weight	4	Int32	>=0	unitless	
mirror	4	Int32	>=0	unitless	
autodiff	4	Int32	>=0	unitless	
wavlo	8	Float64	255.83 – 308.58	nanometers	
wavhi	8	Float64	255.83 – 308.58	nanometers	
delchi	8	Float64	1.00E-12	unitless	
provar	8	Float64	1.00E-12	unitless	
var	512	Float64	1.00E-12	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64
if_varied	256	Int32	>=0	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64
diff	512	Float64	>=0	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64
lock	256	Int32	0	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64
block	512	Float64	0	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
alock	512	Float64	0	unitless	1 Dimensional Array np::MMAX Size of Dimension(s): 64

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3.2.1.3.27 OMPS NP Solar Irradiance Calibration Constants Table

Data Mnemonic	NP_NU-LM0240-115
Description/ Purpose	The OMPS NP Solar Irradiance Calibration Constants Table contains the solar irradiance calibration constants. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.27-1, OMPS NP Solar Irradiance Calibration Constants Table Data Format

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Table 3.2.1.3.27-1, OMPS NP Solar Irradiance Calibration Constants Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iradsolresp	1135680	Float32	~2 – ~1110	counts/(W/cm^3/sterad)	3 Dimensional Array np::NUM_ELECTRONICS x np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 2 x 364 x 390

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3.2.1.3.28 OMPS NP BRDF GRIDS Table

Data Mnemonic	NP_NU-LM0240-116
Description/ Purpose	The OMPS NP BRDF GRIDS Table contains Sensor diffuser irradiance goniometry characteristics. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	297,600,088 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.28-1, OMPS NP BRDF GRIDS Table Data Format

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Table 3.2.1.3.28-1, OMPS NP BRDF GRIDS Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
BRDF_grid	297600000	Float32	Minint – Maxint	unitless	5 Dimensional Array np::NO_BRDF x np::NO_SPEC_PIX x np::NO_SOL_PIX x np::GRID_SIZE x np::GRID_SIZE Size of Dimension(s): 2 x 150 x 155 x 40 x 40
minAzim	8	Float32	Minint – Maxint	degrees	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
maxAzim	8	Float32	Minint – Maxint	degrees	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
minElev	8	Float32	Minint – Maxint	degrees	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
maxElev	8	Float32	Minint – Maxint	degrees	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
gspat_offset	8	Int32	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
gspec_offset	8	Int32	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
gspat_size	8	Int32	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
gspec_size	8	Int32	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
gazim_size	8	Int32	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2
gelev_size	8	Int32	Minint – Maxint	unitless	1 Dimensional Array np::NO_BRDF Size of Dimension(s): 2

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3.2.1.3.29 OMPS NP Line Shifts Table

Data Mnemonic	NP_NU-LM0240-117
Description/ Purpose	The OMPS NP Line Shifts Table contains bandcenter spectral shift information for calibration/wavelength registration. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	30,058 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.29-1, OMPS NP Line Shifts Table Data Format

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Table 3.2.1.3.29-1, OMPS NP Line Shifts Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nlines	2	Int16	10	unitless	
indexes	20	Int16	37 – 136	pixels	1 Dimensional Array np::MAXLINES Size of Dimension(s): 10
offset	2	Int16	1	pixels	
nshift	2	Int16	169	unitless	
wlines	80	Float64	265.0 – 306.2	nanometers	1 Dimensional Array np::MAXLINES Size of Dimension(s): 10
refshifts	13520	Float64	Minfloat – Maxfloat	nanometers	2 Dimensional Array np::MAXLINES x np::MAXSHIFTS Size of Dimension(s): 10 x 169
irraddiff	13520	Float64	Minfloat – Maxfloat	unitless	2 Dimensional Array np::MAXLINES x np::MAXSHIFTS Size of Dimension(s): 10 x 169
wref_l	2912	Float64	250 – 310	nanometers	1 Dimensional Array np::MAX_NSPEC_CCD Size of Dimension(s): 364

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3.2.1.3.30 OMPS NP Spectral Registration Pixel Map Table

Data Mnemonic	NP_NU-LM0240-118
Description/ Purpose	The OMPS NP Spectral Registration Pixel Map Table contains the wavelength mapping of the CCD for spatial and spectral dimensions. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,135,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.30-1, OMPS NP Spectral Registration Pixel Map Table Data Format

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Table 3.2.1.3.30-1, OMPS NP Spectral Registration Pixel Map Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wmap	1135680	Float64	240 – 320	nanometers	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

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3.2.1.3.31 OMPS NP Timing Pattern Ground Table

Data Mnemonic	NP_NU-LM0240-119
Description/ Purpose	The OMPS NP Timing Pattern Ground Table contains integration times and offsets for Earth View, Solar, LED and Dark. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,560 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.31-1, OMPS NP Timing Pattern Ground Table Data Format

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Table 3.2.1.3.31-1, OMPS NP Timing Pattern Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
TPev_num	4	Int32	1 – np::NO_SCANS_PER_GRANULE	unitless	
TPsol_num	4	Int32	1 – np::NO_SOLAR_IMAGES	unitless	
TPdark_num	4	Int32	1 – np::NO_DARK_IMAGES	unitless	
TPled_num	4	Int32	1 – np::NO_LAMP_IMAGES	unitless	
TPev_conum	4	Int32	1 – np::NO_COADDS_E	unitless	
TPsol_conum	4	Int32	1 – np::NO_COADDS_S	unitless	
TPdark_conum	4	Int32	1 – np::NO_COADDS_D	unitless	
TPled_conum	4	Int32	1 – np::NO_COADDS_L	unitless	
TPev_time	40	Float64	>=1	seconds	1 Dimensional Array np::NO_SCANS_PER_GRANULE Size of Dimension(s): 5
TPsol_time	216	Float64	Minfloat – Maxfloat	seconds	1 Dimensional Array np::NO_SOLAR_IMAGES Size of Dimension(s): 27
TPdark_time	40	Float64	>=1	seconds	1 Dimensional Array np::NO_DARK_IMAGES Size of Dimension(s): 5
TPled_time	1200	Float64	>=0.1	seconds	1 Dimensional Array np::NO_LAMP_IMAGES Size of Dimension(s): 150
ev_time_offset	8	Int64	Minint – Maxint	microseconds	
sol_time_offset	8	Int64	Minint – Maxint	microseconds	
dark_time_offset	8	Int64	Minint – Maxint	microseconds	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
led_time_offset	8	Int64	Minint – Maxint	microseconds	

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3.2.1.3.32 OMPS NP Linearity Ground Table

Data Mnemonic	NP_NU-LM0240-120
Description/ Purpose	The OMPS NP Linearity Ground Table contains linearity coefficients for primary and reduntand CCD1 and CCD2. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	131,072 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.32-1, OMPS NP Linearity Ground Table Data Format

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Table 3.2.1.3.32-1, OMPS NP Linearity Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
linearity_table	131072	Float32	1 – 16384	unitless	2 Dimensional Array np::NUM_ELECTRONICS x np::LAMPLUTSIZE Size of Dimension(s): 2 x 16384

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3.2.1.3.33 OMPS NP Earth View Sample Ground Table

Data Mnemonic	NP_NU-LM0240-121
Description/ Purpose	The OMPS NP Earth View Sample Ground Table contains the BATC generated database of utilized pixels. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	567,840 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.33-1, OMPS NP Earth View Sample Ground Table Data Format

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Table 3.2.1.3.33-1, OMPS NP Earth View Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
badpixBATC	567840	Int32	0 – 3	unitless	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

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3.2.1.3.34 OMPS NP Macropixel Ground Table

Data Mnemonic	NP_NU-LM0240-122
Description/ Purpose	The OMPS NP Macropixel Ground Table contains the ccd map of EV macropixels This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	567,840 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.34-1, OMPS NP Macropixel Ground Table Data Format

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Table 3.2.1.3.34-1, OMPS NP Macropixel Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
macrot	567840	Int32	Minint – Maxint	unitless	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

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3.2.1.3.35 OMPS NP LED Sample Ground Table

Data Mnemonic	NP_NU-LM0240-123
Description/ Purpose	The OMPS NP LED Sample Table contains the ccd map of LAMP pixels. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	567,840 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.35-1, OMPS NP LED Sample Ground Table Data Format

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Table 3.2.1.3.35-1, OMPS NP LED Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lampsample	567840	Int32	0 – 2	unitless	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

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3.2.1.3.36 OMPS NP Solar Sample Ground Table

Data Mnemonic	NP_NU-LM0240-124
Description/ Purpose	The OMPS NP Solar Sample Ground Table contains the sample table array for each of 7 solar diffuser positions. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	567,840 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.36-1, OMPS NP Solar Sample Ground Table Data Format

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Table 3.2.1.3.36-1, OMPS NP Solar Sample Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
macrot	567840	Int32	0 – 2	unitless	2 Dimensional Array np::MAX_NSPEC_CCD x np::NO_SPAT_CCD Size of Dimension(s): 364 x 390

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3.2.1.3.37 OMPS NP Wavelengths Ground Table

Data Mnemonic	NP_NU-LM0240-125
Description/ Purpose	The OMPS NP Wavelengths Ground Table contains bandcenter wavelengths of each macropixel for the current day. This file is used in the OMPS NP SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,272,810 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.37-1, OMPS NP Wavelengths Ground Table Data Format

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Table 3.2.1.3.37-1, OMPS NP Wavelengths Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	290	Int16	2000 – 2050	years	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
obs_day	290	Int16	1 – 366	days	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
resolution	580	Float32	>=0	nanometers	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
spatial	290	Int16	>=1	unitless	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
intercept	1160	Float64	Minfloat – Maxfloat	nanometers	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
slope	1160	Float64	Minfloat – Maxfloat	unitless	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
straight	1160	Float64	>=0	unitless	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
nmonitor	580	Int32	>=3	unitless	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
year	290	Int16	2000 – 2050	years	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
day	290	Int16	1 – 366	days	2 Dimensional Array np::NP_CAL_DAYS x np::MAXCTPX Size of Dimension(s): 29 x 5
wbands	422240	Float64	240 – 320	nanometers	3 Dimensional Array np::NP_CAL_DAYS x np::MAX_NSPEC_CCD x np::MAXCTPX Size of Dimension(s): 29 x 364 x 5
sig_w	422240	Float64	>=0	nanometers	3 Dimensional Array np::NP_CAL_DAYS x np::MAX_NSPEC_CCD x np::MAXCTPX Size of Dimension(s): 29 x 364 x 5
gamma	422240	Float64	>=0	unitless	3 Dimensional Array np::NP_CAL_DAYS x np::MAX_NSPEC_CCD x np::MAXCTPX Size of Dimension(s): 29 x 364 x 5

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3.2.1.3.38 OMPS NP CF Earth Ground Table

Data Mnemonic	NP_NU-LM0240-127
Description/ Purpose	The OMPS NP CF Earth Ground Table contains radiometric calibration factors for the Earth scene spatial cells. This file is used in the OMPS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The following version information will be appended to the Provenance Version in the Version Number field of the File-Naming Convention for OMPS Automatic PCs: IDzzz-Vxxx-yyy Where zzz is the ID number and xxx-yyy is the version number of the table. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	211,700 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.3.38-1, OMPS NP CF Earth Ground Table Data Format

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Table 3.2.1.3.38-1, OMPS NP CF Earth Ground Table Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
obs_year	116	Int32	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
obs_day	116	Int32	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
old_nmonitor	116	Int32	>=0	unitless	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
monitor_year	116	Int32	2000 – 2050	years	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
monitor_day	116	Int32	1 – 366	days	1 Dimensional Array np::NP_CAL_DAYS Size of Dimension(s): 29
cfearth	211120	Float32	>=0	unitless	3 Dimensional Array np::NP_CAL_DAYS x np::MAX_NSPEC_CCD x np::MAXCTPX Size of Dimension(s): 29 x 364 x 5

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3.2.1.4 VIIRS PCs

3.2.1.4.1 VIIRS CBH Liquid Water Content PC

Data Mnemonic	NP_NU-LM0233-001
Description/ Purpose	The VIIRS Cloud Base Height (CBH) Liquid Water Content (LWC) PC file contains the cloud Liquid Water Content values. This file contains a single fixed LWC value for each cloud type (cirrus, stratus, etc.). This file is used in the VIIRS CBH algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	48 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.1-1, VIIRS CBH Liquid Water Content PC Data Format

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Table 3.2.1.4.1-1, VIIRS CBH LWC PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lwc	48	64-bit floating point	0.000: no cloud 0.293: stratus 0.455: altocumulus or altostratus 0.580: cumulus 0.010: cirrus 0.010: cirrocumulus	g/m3	1 Dimensional Array: cloudType Size of Dimension(s): 6

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3.2.1.4.2 VIIRS CCL Cloud Type PC

Data Mnemonic	NP_NU-LM0233-002
Description/ Purpose	The VIIRS CCL Cloud Type PC file contains the attribute values of cloud types. These values are derived from standard meteorological definitions. This file is used in the VIIRS Cloud Cover/Layers (CCL) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	60 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.2-1, VIIRS CCL Cloud Type PC Data Format

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Table 3.2.1.4.2-1, VIIRS CCL Cloud Type PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
height	20	32-bit float	stratus = 1.3 altocumulus = 3.5 cumulus = 3.3 cirrus = 9.0 cirrocumulus = 10.5	Kilometers	Mean Cloud Top Height 1 Dimensional Array: height Size of Dimension(s): 5
size	20	32-bit float	stratus = 13.5 altocumulus = 17.0 cumulus = 27.5 cirrus = 55.0 cirrocumulus = 75.0	Micrometers	Mean Cloud Effective Particle Size 1 Dimensional Array: size Size of Dimension(s): 5
op_thick	20	32-bit float	stratus = 5.5 altocumulus = 17.0 cumulus = 26.5 cirrus = 2.5 cirrocumulus = 4.5	unitless	Mean Cloud Optical Thickness 1 Dimensional Array: op_thick Size of Dimension(s): 5

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3.2.1.4.3 DELETED

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3.2.1.4.4 VIIRS CCL/GCE Cloud Aggregation PC

Data Mnemonic	NP_NU-LM0233-005
Description/ Purpose	The VIIRS CCL/GCE Cloud Aggregation PC file contains the data that identifies the cell sizes appropriate for the CCL data products (both the clustering cells and the aggregation cells). This file is used in the VIIRS CCL and GCE algorithms
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	3,453,136 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.4-1, VIIRS CCL/GCE Cloud Aggregation PC Data Format

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Table 3.2.1.4.4-1, VIIRS CCL/GCE Cloud Aggregation PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numAtCellsPerScan	4	32-bit integer	>=0	unitless	Number of along-track (rows) horizontal cells per scan
numXtCellsPerScan	4	32-bit integer	>=0	unitless	Number of cross-track (columns) horizontal cells per
numAtPixPerScan	4	32-bit integer	>=0	unitless	Number of along-track (rows) pixels per scan
numXtPixPerScan	4	32-bit integer	>=0	unitless	Number of cross-track (columns) pixels per scan
crow	575520	32-bit integer	>=0	unitless	Cell row index 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 143,880
ccol	575520	32-bit integer	>=0	unitless	Cell column index 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 143,880
scan	575520	32-bit integer	>=0	unitless	Scan index 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 143,880

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
row	575520	32-bit integer	>=0	unitless	Pixel row index 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 143,880
col	155056	32-bit integer	>=0	unitless	Pixel column index 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 38,764
type	575520	32-bit integer	1 = CLUSTER_CELL 2 = PRODUCT_CELL 3 = PRODUCT_AND_CLUSTER CELL	unitless	Cell type 1 Dimensional Array: VIIRS_AGGTBL_ENTRIES Size of Dimension(s): 143,880

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3.2.1.4.5 DELETED

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3.2.1.4.6 VIIRS Sea Ice Concentration PC

Data Mnemonic	NP_NU-LM0233-008
Description/ Purpose	The VIIRS Sea Ice Concentration PC file contains ice concentration parameters. This file is used in the VIIRS Sea Ice Concentration algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	132 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.6-1, VIIRS Sea Ice Concentration PC Data Format

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Table 3.2.1.4.6-1, VIIRS Sea Ice Concentration PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
hmin	12	32 bit float	[0.0, 0.0, 0.0]	[unitless, unitless, Kelvin]	Minimum range of histogram, by band. If hmin = hmax then code must derive hmin. 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
hmax	12	32 bit float	[0.0, 0.0, 0.0]	[unitless, unitless, Kelvin]	Maximum range of histogram, by band. If hmax = hmin then code must derive hmax. 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
thre_def	12	32 bit float	[0.2, 0.17, 269.0]	[unitless, unitless, Kelvin]	Default ice/water thresholds by band 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
thre_max	12	32 bit float	[0.25, 0.22, 270.0]	[unitless, unitless, Kelvin]	Maximum ice/water thresholds by band 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
thre_min	12	32 bit float	[0.15, 0.13, 268.0]	[unitless, unitless, Kelvin]	Minimum ice/water threshold by band 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wat_def	12	32 bit float	[0.08, 0.07, 271.4]	[unitless, unitless, Kelvin]	Default water tie points 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
wat_max	12	32 bit float	[0.1, 0.08, 278.0]	[unitless, unitless, Kelvin]	Default maximum water tie point 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
wat_min	12	32 bit float	[0.04, 0.03, 270.0]	[unitless, unitless, Kelvin]	Default minimum water tie point 1 Dimensional Array: IC_BANDS Size of Dimension(s): 3
ice_tiept_adj_thinice_thresh	12	32 bit float	[0.2, 0.17, 269.0]	[unitless, unitless, Kelvin]	Ice tie point adjustment thresholds for thin ice If any element = -999.0 then code interally sets iswitch_adj = 0 to disable the tie point adjustement computation branch. The -999.0 value may be used as a switch for the ic e tie point adjustment 1 Dimensional Array: IC_BANDS Dimensions: 3
ice_tiept_adj_threshT	4	32 bit float	270.0	Kelvin	Ice tie point adjustment temperature threshold Ice tie point adjustment is not applied to pixels with surface temperatures greater than this threshold value

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wat_wsize	2	unsigned 16-bit integer	15	unitless	Size of search window for local water tie points
max_wsize	2	unsigned 16-bit integer	15	unitless	Maximum local window search size in pixels.
min_wsize	2	unsigned 16-bit integer	8	unitless	Minimum local window search size in pixels
min_pix_win	2	unsigned 16-bit integer	200	unitless	Minimum number of “good” ice pixels, in a search window, required for a reliable histogram
min_pix_wat	2	unsigned 16-bit integer	50	unitless	Minimum number of “good” water pixels, in a search window, required for a reliable histogram
nbig	2	unsigned 16-bit integer	100	unitless	Number of bins in the reflectance or temperature histograms (global)
nbin	2	unsigned 16-bit integer	50	unitless	Number of bins in the reflectance or temperature histograms (local)
ning	2	unsigned 16-bit integer	5	unitless	Number of bins for boxcar smoothing of global histograms
nint	2	unsigned 16-bit integer	10	unitless	Number of bins for boxcar smoothing of local histograms
pad	2	unsigned 8-bit integer	MinInt - MaxInt	unitless	Pad Bytes 1 Dimensional Array: Pad Size of Dimension(s): 2

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3.2.1.4.7 VIIRS Surface Temperature PC

Data Mnemonic	NP_NU-LM0233-009
Description/ Purpose	The VIIRS Surface Temperature PC file contains the regression coefficients for baseline and fallback algorithms. Includes values for both day and night time. This file is used in the VIIRS Surface Temperature IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	64 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.7-1, VIIRS Surface Temperature PC Data Format

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Table 3.2.1.4.7-1, VIIRS Surface Temperature PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
StipCoeffs	64	float32	minfloat – maxfloat	unitless	LUT Coefficients / ST IP LUT data file 4 Dimensional Array: NTERMS x NDAYNIGHT x NALGORITHMS Size of Dimension(s): 4 x 2 x 2

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3.2.1.4.8 VIIRS Sea Ice Quality PC

Data Mnemonic	NP_NU-LM0233-010
Description/ Purpose	The VIIRS Sea Ice Quality PC file contains ice quality algorithm thresholds. This file is used in the VIIRS Sea Ice Quality EDR and Surface Temperature IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	664 bytes Note: 664 = (332 bytes x 2). The file consists of 2 table identical entries. The order of the fields and sizes of dimensions are the same for both entries.
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.8-1, VIIRS Sea Ice Quality PC Data Format

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Table 3.2.1.4.8-1, VIIRS Sea Ice Quality PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
bandWgts	12	32-bit floating point	>= 0.0 Initially set to: [0.3, 0.6, 0.1]	unitless	Initial Ice Quality Band Weights 1 Dimensional Array: IQ_N_BANDS Size of Dimension(s): 3
cldWgts	84	32-bit floating point	>= 0.0 Initially set to: **(1) (2) (3) (4) (5) (6) (7)** [0.5, 0.5, 0.5, 0.5, 0.6, 0.3, 0.8; 0.5, 0.5, 0.5, 0.5, 0.6, 0.3, 0.8; 0.5, 0.5, 0.5, 0.5, 0.6, 1.0, 0.8]	unitless	Cloud weights corresponding to the three imagery bands (I1, I2, I5) (rows) and the seven cloud properties (columns) - four phases = Default (1), Water (2), Ice (3), Mixed (4), and 3 types = cirrus (5), shadow (6), adjacency (7); 2 Dimensional Array: IQ_N_BANDS x IQ_N_CLD_TYPES Size of Dimension(s): 3 x 7
cotThresh	96	32-bit floating point	>= 0.0 Initially set to: (Default, Water, Ice, Mixed) (I1) (I2) (I5) [0.5, 0.5, 0.5;**(1)** 0.2, 0.2, 0.2] **(2)** (Phases follow the order shown above)	unitless	Cloud Optical Thickness Thresholds used when COT is used to determine ***cloud confidence*** in the Ice Quality Flags IP output. The “4” in the “Data Type/Size” cell corresponds to the four phases (Default(1), Water(2), Ice(3), Mixed(4)). “IQ_N_THRESH” corresponds to the rows of each set of matrices which are a function of cloud phase; the “(1)’s” represent the YELLOW/RED cot thresholds and the “(2)’s” represent the GREEN/YELLOW COT thresholds. 3 Dimensional Array: IQ_N_BANDS x IQ_N_THRESH x IQ_N_PHASES Size of Dimension(s): 3 x 2 x 4

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
fwRange	16	32-bit floating point	- PI <= fw_range(1,2) <= PI - PI/2 <= fw_range(3,4) <=PI/2 Initially set to: [1.308997 (75°), -1.65806 (-95°), 0.872664(50°), 0.69813 (40°)]	Radians	Fresh Water Ice Latitude/Longitude Range Lat/Lon Boundaries. 1 Dimensional Array: IQ_N_FW Size of Dimension(s): 4
min_nlat	4	32-bit floating point	-PI/2 ≤ minNLat ≤ PI/2 Initially set to: 0.62831 (36°)	Radians	Sea Ice Latitude Range – Minimum Northern Latitude
max_slat	4	32-bit floating point	-PI/2 ≤ maxSLat ≤ PI/2 Initially set to: [0.0,0.15,0.5,1.0]	Radians	Sea Ice Latitude Range – Maximum Southern Latitude
aotBin	16	32-bit floating point	>= 0.0 Initially set to: [0.0,0.15,0.5,1.0]	unitless	AOT bin boundary values 1 Dimensional Array: IQ_N_AOT_BINS Size of Dimension(s): 4

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
qAOTSunZen	64	32-bit floating point	- PI/2 <= qAOTSunZen <= PI/2 Initially set to: (**I1,I2**) **(G/Y) (Y/R)** [1.308997(75°),1.48353(85°)**(1)** 1.22173(70°) ,1.48353(85°)**(2)** 1.13446(65°) ,1.39626(80°);**(3)** 1.04719(60°),1.308997(75°)]**(4)** (Bands follow the order shown above)	Radians	Solar Zenith Angle values that correspond to the Solar Zenith Angle quality regimes (G/Y = “Green/Yellow”, Y/R = “Yellow/Red”) 3 Dimensional Array: IQ_N_AOT_BANDS x IQ_N_AOT_BINS x IQ_N_AOT_SUNZEN Size of Dimension(s): 2 x 4 x 2
qualWgts	36	32-bit floating point	>= 0.0 Initially set to: **(I1) (I2) (I5)** [0.060,0.12, 0.195;**(1)** 0.12 ,0.24, 0.39 ; **(2)** 0.02 ,0.04 ,0.065]**(3)**	unitless	Overall Ice Quality Band Weights for each band (I1, I2, I5) and for each set of weights for each band; the (1)=“RED”, (2)=“YELLOW” and (3)=“GREEN” quality regions. 2 Dimensional Array: EQ_N_BANDS x IQ_N_WGTS Size of Dimension(s): 3 x 3

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3.2.1.4.9 VIIRS IST PC

Data Mnemonic	NP_NU-LM0233-011
Description/ Purpose	The VIIRS Ice Surface Temperature (IST) PC file contains regression coefficients for the baseline and fallback algorithms for both day and night. This file is used in the VIIRS IST algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	64 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.9-1, VIIRS IST PC Data Format

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Table 3.2.1.4.9-1, VIIRS IST PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
IstCoeffs	64	32-bit floating point	MinFloat - MaxFloat	unitless	4 Dimensional Array: Term x Day or Night x Algorithm x Regime Size of Dimension(s): 4 x 2 x 2 x 1 Dimension Details: Day or Night: Index 0 = night, Index 1 = Day Algorithm: Index 0 = “dual”, Index 1 = “split”

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3.2.1.4.10 VIIRS LST PC

Data Mnemonic	NP_NU-LM0233-012
Description/ Purpose	The VIIRS Land Surface Temperature (LST) PC file contains regression coefficients for each of the 17 IGBP land cover types for baseline and fallback algorithms. This file contains values for both day and night time. This file is used in the VIIRS LST algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	4,896 Bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.10-1, VIIRS LST PC Data Format

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Table 3.2.1.4.10-1, VIIRS LST PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
LstLut	4896	64-bit floating point	MinFloat - MaxFloat	unitless	Dual Window has 9, Split Window has 5 for term 5 Dimensional Array: Term x Day or Night x Surface Type x Algorithm x Regime Size of Dimension(s): 9 x 2 x 17 x 2 x 1 Dimension Details: Day or Night: Index 0 = night, index 1 = day Surface Type: Indices 0 – 16 correspond to the Surface Type values in the Surface Type EDR (IGBP values of 1-17) Algorithm: Index 0 = “dual”, Index 1 = “split”

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3.2.1.4.11 VIIRS NCC Gain Value Versus Scene Lunar Zenith PC

Data Mnemonic	NP_NU-LM0233-013
Description/ Purpose	The VIIRS NCC Gain Value Versus Scene Lunar Zenith PC file contains the gain values for the lunar illuminated scene signal for the Day/Night Band (DNB) for various lunar zenith angles. Note: It is not a function of elevation angle, despite the word “elevation” in the name (a heritage artifact). It is, however, indirectly a function, since the elevation angle is the complement of the zenith angle. This file is used in the VIIRS Near Constant Contrast (NCC) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	8408 bytes
File Format Type	Binary
Production Frequency	One time per instrument during intensive Cal/Val using the Algorithm Support Function (ASF).
Data Content and Data Format	For details see Table 3.2.1.4.11-1, VIIRS NCC Gain Value Versus Scene Lunar Zenith PC Data Format

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Table 3.2.1.4.11-1, VIIRS NCC Gain Value Versus Scene Lunar Zenith PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
angle	4204	32-bit floating point	0 – 105	Degrees	1 Dimensional Array: Angle Bin Size of Dimension(s): 1051
gain	4204	32-bit floating point	0.9 – 1e+11	unitless	1 Dimensional Array: Gain Bin Size of Dimension(s): 1051

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3.2.1.4.12 VIIRS NCC Gain Value Versus Scene Solar Elevation PC

Data Mnemonic	NP_NU-LM0233-014
Description/ Purpose	The VIIRS NCC Gain Value Versus Scene Solar Elevation (GVVSSE) PC file contains gain values for the solar illuminated scene signal from the DNB for various solar zenith angles. Note: It is not a function of elevation angle, despite the word “elevation” in the name (a heritage artifact). It is, however, indirectly a function, since the elevation angle is the complement of the zenith angle. This file is used in the VIIRS NCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	8408 bytes
File Format Type	Binary
Production Frequency	Once per instrument during intensive Cal/Val
Data Content and Data Format	For details see Table 3.2.1.4.12-1, VIIRS NCC Gain Value Versus Scene Solar Elevation PC Data Format

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Table 3.2.1.4.12-1, VIIRS NCC Gain Value Versus Scene Solar Elevation PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
angle	4204	32-bit floating point	0 – 105	Degrees	1 Dimensional Array: Angle Bin Size of Dimension(s): 1051
gain	4204	32-bit floating point	0.9 – 1e+11	Unitless	1 Dimensional Array: Gain Bin Size of Dimension(s): 1051

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3.2.1.4.13 VIIRS NCC Lunar BRDF PC

Data Mnemonic	NP_NU-LM0233-015
Description/ Purpose	The VIIRS NCC Lunar BRDF PC file contains the anisotropic reflectance factors for the lunar scene signal from the VIIRS DNB. Note: This is not truly a Bidirectional Reflectance Distribution Function (BRDF) since it is not in units of sr^{-1}, though dividing the values in the file by pi steradians produces a true BRDF. This file is used in the VIIRS NCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,600 bytes
File Format Type	Binary
Production Frequency	Once before launch
Data Content and Data Format	For details see Table 3.2.1.4.13-1, VIIRS NCC Lunar BRDF PC Data Format

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Table 3.2.1.4.13-1, VIIRS NCC Lunar BRDF PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
zenith_angle	28	32-bit floating point	0 – 105	Degrees	1 Dimensional Array: ZENITH Size of Dimension(s): 7
view_angle	24	32-bit floating point	0 – 57	Degrees	1 Dimensional Array: VIEW Size of Dimension(s): 6
relative_azimuth	36	32-bit floating point	-180 – 180	Degrees	1 Dimensional Array: RELA Size of Dimension(s): 9
brdf	1512	32-bit floating point	0.5 – 1.5	unitless	Anisotropic reflectance factors 3 Dimensional Array: ZENITH x VIEW x RELA Size of Dimension(s): 7 x 6 x 9

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3.2.1.4.14 VIIRS NCC Lunar Phase PC

Data Mnemonic	NP_NU-LM0233-016
Description/ Purpose	The VIIRS NCC Lunar Phase PC file contains values used in calculation of the lunar irradiance as a function of the phase angle of the moon. Note: The lunar radiance as defined here as the radiance that would be observed from a 100% albedo surface where the lunar zenith angle is zero. This file is used in the VIIRS NCC algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	40 bytes
File Format Type	Binary
Production Frequency	Once before launch
Data Content and Data Format	For details see Table 3.2.1.4.14-1, VIIRS NCC Lunar Phase PC Data Format

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Table 3.2.1.4.14-1, VIIRS NCC Lunar Phase PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Lunar_phase_bins	20	32-bit floating point	0 – 180	degrees	1 Dimensional Array: LPHASE (lunar phase angle) Size of Dimension(s): 5
Lunar_source	20	32-bit floating point	–1e10 – 1e-07	W/(cm^2 sr)	1 Dimensional Array: LSRC (Lunar Source Irradiance) Size of Dimension(s): 5

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3.2.1.4.15 VIIRS NCC Solar BRDF PC

Data Mnemonic	NP_NU-LM0233-017
Description/ Purpose	The VIIRS NCC Solar BRDF PC file contains the anisotropic reflectance factors for the solar scene signal from the DNB. Note: This is not truly a Bidirectional Reflectance Distribution Function (BRDF) since it is not in units of sr^{-1}, though dividing the values in the file by pi steradians produces a true BRDF. This file is used in the VIIRS NCC and Bright Pixel algorithms.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,600 bytes
File Format Type	Binary
Production Frequency	Once before launch
Data Content and Data Format	For details see Table 3.2.1.4.15-1, VIIRS NCC Solar BRDF PC Data Format

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Table 3.2.1.4.15-1, VIIRS NCC Solar BRDF PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
zenith_angle	28	32-bit floating point	0 – 105	Degrees	1 Dimensional Array: ZENITH Size of Dimension(s): 7
view_angle	24	32-bit floating point	0 – 57	Degrees	1 Dimensional Array: VIEW Size of Dimension(s): 6
relative_azimuth	36	32-bit floating point	-180 – 180	Degrees	1 Dimensional Array: RELA Size of Dimension(s): 9
brdf	1512	32-bit floating point	0.5 – 1.5	unitless	Anisotropic reflectance factors 3 Dimensional Array: ZENITH x VIEW x RELA Size of Dimension(s): 7 x 6 x 9

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3.2.1.4.16 VIIRS SST PC

Data Mnemonic	NP_NU-LM0233-018
Description/ Purpose	The VIIRS Sea Surface Temperature (SST) Processing Coefficients file contains the coefficients for each term in the SST retrieval algorithms according to the regimes of predefined conditions. This file is used in the VIIRS SST algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	256 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.16-1, VIIRS SST PC Data Format

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Table 3.2.1.4.16-1, VIIRS SST PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	256	32-bit floating point	MinFloat – MaxFloat	unitless	5 Dimensional Array: MAXCOEFFS x DAYNGT x SKNBLK x WNDOW x MOISTURE STRATIFICATIONS Size of Dimension(s): 4 x 2 x 2 x 2 x 2

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3.2.1.4.17 DELETED

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3.2.1.4.18 VIIRS SDR BB Thermistor PC

Data Mnemonic	NP_NU-LM0233-021
Description/ Purpose	The VIIRS Blackbody (BB) Thermistor Processing Coefficients file contains an array of coefficient values for each BB thermistor. These values include voltages, currents, and resistances of the BB circuitry as required for the BB temperature calculation. This file is used in the VIIRS Sensor Data Record (SDR) algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	240 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.18-1, VIIRS BB Thermistor PC Data Format * Unlike the default row-major ordering for all binary tables documented in this volume, values in this table are written to the binary file in column major order rather than row major order. Specifically, the entries are ordered I0[0], V0[0], Rp[0], G[0], Const1[0], I0[1], V0[1], Rp[1], G[1], Const1[1], etc., so that all 5 coefficients may be read at once for each of the 6 blackbody thermistors.

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Table 3.2.1.4.18-1, VIIRS BB Thermistor PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
I0*	48	64-bit floating point	minfloat - maxfloat	milliAmps	Excitation Current applied to thermistor 1 Dimensional Array: NUM_BB_THERMISTORS Size of Dimension(s): 6
V0*	48	64-bit floating point	minfloat - maxfloat	Volts	Offset voltage (to be added to Vtot) 1 Dimensional Array: NUM_BB_THERMISTORS Size of Dimension(s): 6
Rp*	48	64-bit floating point	minfloat - maxfloat	ohms	Parallel Resistance 1 Dimensional Array: NUM_BB_THERMISTORS Size of Dimension(s): 6
G*	48	64-bit floating point	minfloat - maxfloat	Unitless	Gain value (to be multiplied to I0). 1 Dimensional Array: NUM_BB_THERMISTORS Size of Dimension(s): 6
Const1*	48	64-bit floating point	minfloat - maxfloat	Volts/Counts	Constant value (to be multiplied to DN value) 1 Dimensional Array: NUM_BB_THERMISTORS Size of Dimension(s): 6

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3.2.1.4.19 VIIRS SDR Detector Response (Coefficient A) PC

Data Mnemonic	NP_NU-LM0233-022
Description/ Purpose	The VIIRS SDR Detector Response PC file contains the temperature dependent coefficients of the detector response functions, which are specific to HAM side and gain state. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	901,120 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.19-1, VIIRS SDR Detector Response (Coefficient A) PC Data Format

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Table 3.2.1.4.19-1, VIIRS SDR Detector Response (Coefficient A) PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Data	901120	64-bit floating point	-7.2647e+06 - 4.88472e+08	Photoelectrons/V[i]	7 Dimensional Array: NUM_ELECTRONICS_SIDE x NUM_VIIRS_BANDS x MAX_NUM_DETECTOR x NUM_GAINS x NUM_MIRROR_SIDES x NUM_TDET_LEVEL x 4 Size of Dimension(s): 2 x 22 x 32 x 2 x 2 x 5 x 4 **Dimension Details**: • NUM_ELECTRONICS_SIDE: Indices 0/1 corresponds to values for A/B sides (Index 0 = A / Index 1 = B) • NUM_VIIRS_BANDS: Order of Bands is: I1 – I5 Bands (indices 0 – 4), M1 – M16 (indices 5 – 20). Index 21 is not used. Bands I4, I5, M12 – M16 are not reflective and therefore no A coefficients data is stored in these indices. • MAX_NUM_DETECTOR: All bands are sized to the max detector size of 32. Indices 0 – 31 correspond to detectors 1 – 32: o I-Bands use all 32 indices. o M-Bands use indices 0 – 15, while indices 16 – 31 are filled. *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. • NUM_GAINS: low gain or single gain = index 0, high gain = index 1, index 2 is not used (fill

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
					values) • NUM_MIRROR_SIDES: HAM Side A = index 0, HAM Side B = index 1 • NUM_TDET_LEVEL: Sized to 5 for each of the detector temperatures: • “4”: This dimension combines the temperature of the detectors with the three A coeffs: o temperature of detector = index 0, a0 = index1, a2 = index 1, a3 = index2

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3.2.1.4.20 VIIRS SDR Electronic Response (Coefficient B) PC

Data Mnemonic	NP_NU-LM0233-023
Description/ Purpose	The VIIRS SDR Electronic Response PC file contains the temperature dependent coefficients of the electronics response functions, which are specific to HAM side. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	270,336 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.20-1, VIIRS SDR Electronic Response (Coefficient B) PC Data Format

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Table 3.2.1.4.20-1, SDR VIIRS Electronic Response (Coefficient B) PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	270336	64-bit floating point	-999.9 - 300	V/count[i]	6 Dimensional Array: NUM_ELECTRONICS_SIDE x NUM_VIIRS_BANDS x MAX_NUM_DETECTOR x NUM_MIRROR_SIDES x NUM_TELE_LEVEL x 4 Size of Dimension(s): 2 x 22 x 32 x 2 x 5 x 4 **Dimension Details**: • NUM_ELECTRONICS_SIDE: Indices 0/1 corresponds to values for A/B sides (Index 0 = A / Index 1 = B) • NUM_VIIRS_BANDS: Order of Bands is: I1 – I5 Bands (indices 0 – 4), M1 – M16 (indices 5 – 20). Index 21 is not used. Bands I4, I5, M12 – M16 are not reflective and therefore no B coefficients data is stored in these indices. • MAX_NUM_DETECTOR: All bands are sized to the max detector size of 32. Indices 0 – 31 correspond to detectors 1 – 32: o I-Bands use all 32 indices. o M-Bands use indices 0 – 15, while indices 16 – 31 are filled. *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. • NUM_MIRROR_SIDES: HAM Side A = index 0, HAM Side B = index 1 • NUM_TELE_LEVEL: Sized to 5 for each of the electronics temperatures • “4”: This dimension combines the temperature of the electronics with the three B coeffs:

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
					o temperature of detector = index 0, a0 = index1, a2 = index 1, a3 = index2

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3.2.1.4.21 VIIRS SDR Delta C Temperature PC

Data Mnemonic	NP_NU-LM0233-024
Description/ Purpose	The VIIRS SDR Delta C Temperature PC file contains the detector specific and temperature dependent (electronics and detector temperature) adjustments to the coefficients of the radiance response functions. This file is used in the VIIRS SDR and Solar Diffuser algorithms.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	4,505,920bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.21-1, VIIRS SDR Delta C Temperature PC Data Format

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Table 3.2.1.4.21-1, VIIRS SDR Delta C Temperature PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DeltaC	4505600	64-bit floating point	-0.000902409 – 3.86727	$W/(m^2 \mu m\ sr\ cnts^i)$	Delta C coefficients – 0th, 1st, 2nd, and 3rd order delta C coefficients used to obtain the c coefficient values. 7 Dimensional Array: electronicsSideNum x viirsBandNum x detectorNum x gainNum x mirrorNum x coeffNum x telecThermistorNum Size of Dimension(s): 2 x 22 x 32 x 2 x 2 x 4 x 25 **Dimension Details**: • electronicsSideNum: 0/1 corresponds to A/B sides (0 = A / 1 = B) • viirsBandNum: Order of Bands is: I1 – I5 Bands (indices 0 – 4), M1 – M16 (indices 5 – 20). Index 21 is not used. • detectorNum: All bands are sized to the max detector size of 32: o I-Bands use all 32 entries. o M-Bands use indices 0 – 15, while indices 16 – 31 are filled. *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. • gainNum: Low/Single = index 0, High = index 1 (index 1 is zero filled for single gain bands) • mirrorNum: HAM Side A = index 0, HAM Side B = index 1 • coeffNum: delta c0 = index 0, delta c1 = index1, delta c2 = index 2, delta c3 = index 3 • telecThermistorNum: The Tdet and Telec values are combined into this dimension (5 x 5). The faster moving

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
					dimension is the Telec, the slower moving dimension is the Tdet.
Tele	80	64-bit floating point	240 – 300	K	Electronics Temperatures used in conjunction with the values stored in the DeltaC field. 2 Dimensional Array: electronicsSideNum x teleLevelNum Size of Dimension(s): 2 x 5 **Dimension Details:** electronicsSideNum: Side A = index 0, Side B = index 1 teleLevelNum: Number of electronics Temperatures used in DeltaC field.
Tdet	240	64-bit floating point	0 - 300	K	Detector Temperatures used in conjunction with the values stored in the DeltaC field. The 3 Dimensional Array: electronicsSideNum x focalPlaneNum x tdetLevelNum Size of Dimension(s): 2 x 3 x 5 **Dimension Details:** electronicsSideNum: Side A = index 0, Side B = index 1 focalPlaneNum: fpa1 (Vis/NIR) = index 0, fpa2 (S/MWIR) = index 1, fpa3 (LWIR) = index 2 tdetLevelNum: Number of electronics Temperatures used in DeltaC field.

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3.2.1.4.22 VIIRS SDR DNB C PC

Data Mnemonic	NP_NU-LM0233-025
Description/ Purpose	The VIIRS SDR DNB C PC file contains the aggregation zone specific DN to radiance calibration coefficients, which are dependent on along-track pixel and DNB gain state. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	73,728 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.22-1, VIIRS SDR DNB C PC Data Format

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Table 3.2.1.4.22-1, VIIRS SDR DNB C PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNBCoeffs	73728	64-bit floating point	0 - 3.56965e-06	radiance/count	5 Dimensional Array: electronicsSideNum x zoneNum x detectorDnbNum x gainNum x polynomialDegree *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. Size of Dimension(s): 2 x 32 x 16 x 3 x 3

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3.2.1.4.23 VIIRS SDR DNB Digital Count 0 PC

Data Mnemonic	NP_NU-LM0233-026
Description/ Purpose	The VIIRS SDR DNB Digital Count 0 (DN0) PC file contains DN sv0 values for DNB calibration. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,560,576 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.23-1, VIIRS SDR DNB Digital Count PC Data Format

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Table 3.2.1.4.23-1, VIIRS SDR DNB Digital Count PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	1560576	32-bit floating point	134.293 – 258.399	unitless	4 Dimensional Array: evDnbFrame x detectorDnbNum x dnbGainState x mirrorSideNum *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. Size of Dimension(s): 4064 x 16 x 3 x 2

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3.2.1.4.24 VIIRS SDR DNB Frame to Zone PC

Data Mnemonic	NP_NU-LM0233-027
Description/ Purpose	The VIIRS SDR DNB Frame to Zone PC file contains the DNB Frame to Zone values. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	16,256 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.24-1, VIIRS SDR DNB Frame to Zone PC Data Format

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Table 3.2.1.4.24-1, VIIRS SDR DNB Frame to Zone PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
FrameToZone	16256	32-bit integer	MinInt – MaxInt	unitless	DayNight Band Frame to Zone 1 Dimensional Array: evDnbFrame Size of Dimension(s): 4064

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3.2.1.4.25 VIIRS SDR DNB Response Versus Scan PC

Data Mnemonic	NP_NU-LM0233-028
Description/ Purpose	The VIIRS SDR DNB Response Versus Scan PC file contains the DNB response versus scan angle values. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	520,192 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.25-1, VIIRS SDR DNB Response Versus Scan PC Data Format

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Table 3.2.1.4.25-1, VIIRS SDR DNB Response Versus Scan PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
dnbrvs	520192	32-bit floating point	Approx 1.002 – 1.006	unitless	Response vs Scan values for DNB 3 Dimensional Array: evDnbFrame x detectorDnbNum x mirrorSideNum *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. Size of Dimension(s): 4064 x 16 x 2

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3.2.1.4.26 VIIRS SDR Equivalent BB Temperature PC

Data Mnemonic	NP_NU-LM0233-029
Description/ Purpose	The VIIRS SDR Equivalent BB Temperature (EBBT) PC file contains the values for converting radiances to brightness temperatures. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	16,800,056 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.26-1, VIIRS SDR Equivalent BB Temperature PC Data Format

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Table 3.2.1.4.26-1, VIIRS SDR Equivalent BB Temperature PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
EBBT_indices	56	32-bit integer	>=0	unitless	2 Dimensional Array: hamerFileNum x bufferIndexNum Size of Dimension(s): 7 x 2 **Dimension Details**: Overview: This field provides a roadmap of for the temperature/radiance fields in the table. Values for L_to_EBBT_tp and L_to_EBBT_rad are stored for each emissive band. The number of entries for each band, however, is not identical. This field provides information regarding the number of entries for each band. In addition, a buffer (fill value = -900) is present immediately following the temperature/radiance entries. First dimension (file) corresponds to Bands in order (I4, I5, M12 – M16). The number of L_to_EBBT_tp/ L_to_EBBT_rad entries is provided in this dimension for each band. Second Dimension (bufferIndexNum) corresponds to the index (starting with zero) in the L_to_EBBT_tp/ L_to_EBBT_rad arrays that mark the beginning of the data for each band. Example: EBBT_indices [0][0] = 2549 Means that the I4 Band has 2549 the L_to_EBBT_tp/ L_to_EBBT entries EBBT_indices [0][1] = 0 Means that the I4 Band's data begins at index number 0 (out of the 1,049,999 total indices)
L_to_EBBT_tp	8,400,000	64-bit floating	Approx 110 – 683 (dependent	Kelvin	Temperatures to be used in the interpolation of BB Temperatures to emitted radiances (corresponds to L_to_EBBT_rad entries)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
		point	upon Band)		1 Dimensional Array: ebbtIndex Size of Dimension(s): 1,050,000
L_to_EBBT_rad	8,400,000	64-bit floating point	Approx 9e-04 - 632 (Dependent upon Band)	W/(m^2 um sr)	Array of Radiances corresponding to the Temperatures in L_to_EBBT_tp (corresponds to values in HAM_ER_tp field) 1 Dimensional Array: ebbtIndex Size of Dimension(s): 1,050,000

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3.2.1.4.27 VIIRS SDR Emissivity PC

Data Mnemonic	NP_NU-LM0233-030
Description/ Purpose	The VIIRS SDR Emissivity PC file contains the values for emissive band calibration. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	48 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.27-1, VIIRS SDR Emissivity PC Data Format

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Table 3.2.1.4.27-1, VIIRS SDR Emissivity PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wordBoundaryPad	2	16 bit integer	MinInt – MaxInt	unitless	Padbyte
SV_DN_first_frame_to_use	2	16 bit integer	1	unitless	First frame to be used in the Space View (used in routine to calculate mean/Std Dev of Space View DNs)
SV_DN_number_of_frames_to_use	2	16 bit integer	48	unitless	Number of frames to be used in the Space View (used in routine to calculate mean/Std Dev of Space View DNs)
SV_DN_moon_include_frames	2	16 bit integer	25	unitless	Threshold for maximum number of frames allowed with moon (Reserved parameter - Not currently used) Max number of frames in granule that may include moon view
BB_DN_first_frame_to_use	2	16 bit integer	1	unitless	First frame to be used in the BlackBody View (used in routine to calculate mean/Std Dev of Space View DNs)
BB_DN_number_of_frames_to_use	2	16 bit integer	48	unitless	Number of frames to be used (used in routine to calculate mean/Std Dev of Space View DNs)
T_mir_function_flag	8	32-bit integer	1	unitless	(Reserved parameter - Not implemented in code) 1 Dimensional Array: tMirrorThermistorNum Size of Dimension(s): 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
T_mir_default	4	32-bit floating point	256	Kelvin	(Reserved parameter - Not implemented in code)
BB_Weight	24	32-bit floating point	1	unitless	Weighting factors used in the BlackBody calibration corresponding to each of the six active thermistors OBCBB. 1 Dimensional Array bbThermistorNum Size of Dimension(s): 6

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3.2.1.4.28 VIIRS SDR F Table PC

Data Mnemonic	NP_NU-LM0233-031
Description/ Purpose	The VIIRS SDR F Table PC file contains the values calculated by the VIIRS Solar Diffuser algorithm. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	33,792 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.28-1, VIIRS SDR F Table PC Data Format

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Table 3.2.1.4.28-1, VIIRS SDR F Table PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data (F Factors)	33792	64-bit floating point	0 – 1.01	unitless	F Factors determined from on-orbit calibration. 4 Dimensional Array: viirsBandNum x detectorNum x gainNum x mirrorSideNum *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details. Size of Dimension(s): 22 x 32 x 3 x 2

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3.2.1.4.29 VIIRS SDR Gain Table PC

Data Mnemonic	NP_NU-LM0233-032
Description/ Purpose	The VIIRS SDR Gain Table PC file contains the gain values for each of the VIIRS bands. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	176 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.29-1, VIIRS SDR Gain Table PC Data Format

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Table 3.2.1.4.29-1, VIIRS SDR Gain Table PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	176	64-bit floating point	Approx: 8.5e-07 to 2.5e-04 Fill value = -999.9	W/(m^2 um sr) /photoelectron	Gain values to convert detector electron counts to radiance 1 Dimensional Array: viirsBandNum Size of Dimension(s): 22 **Dimension Details**: The 22 entries correspond to I1 – I5, M1 – M16, DNB

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3.2.1.4.30 DELETED

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3.2.1.4.31 DELETED

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3.2.1.4.32 VIIRS SDR HAM ER PC

Data Mnemonic	NP_NU-LM0233-036
Description/ Purpose	The VIIRS SDR Half Angle Mirror (HAM) PC file contains the values for calculating the emitted radiance of the HAM based on its temperature. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	120,024 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.32-1, VIIRS SDR HAM PC Data Format

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Table 3.2.1.4.32-1, VIIRS SDR HAM ER PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
HAM_ER_indices	56	32-bit integer	>=0	unitless	HAM Emitted Radiance Indices 2 Dimensional Array: Band x bufferIndexNum Size of Dimension(s): 7 x 2 **Dimension Details**: Overview: This field provides a roadmap of for the temperature/radiance fields in the table. Values for HAM_ER_tp and HAM_ER_rad are stored for each emissive band. The number of entries for each band, however, is not identical. This field provides information regarding the number of entries for each band. In addition, a buffer (fill value = -900) is present immediately following the temperature/radiance entries. First dimension (file) corresponds to Bands in order (I4, I5, M12 – M16). The number of HAM_ER_tp/HAM_ER_rad entries is provided in this dimension for each band. Second Dimension (bufferIndexNum) corresponds to the index (starting with zero) in the HAM_ER_tp/HAM_ER_rad arrays that mark the beginning of the data for each band. Example: HAM_ER_indices[0][0] = 637 Means that the I4 Band has 637 HAM_ER_tp/rad entries HAM_ER_indices[0][1] = 0 Means that the I4 Band's data begins at index number 0 (out of the 7497 total indices)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
HAM_ER_tp	59984	64-bit floating point	Approx 110 – 685 (Dependent upon Band)	Kelvin	Temperatures to be used in the interpolation of HAM Temperatures to emitted radiances (corresponds to HAM_ER_rad entries) 1 Dimensional Array: hamErIndex Size of Dimension(s): 7498
HAM_ER_rad	59984	64-bit floating point	Approx 9e-04 - 632 (Dependent upon Band)	W/(m^2 um sr)	HAM Emitted Radiances (corresponds to values in HAM_ER_tp field) 1 Dimensional Array: hamErIndex Size of Dimension(s): 7498

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3.2.1.4.33 VIIRS SDR OBC Emitted Radiance PC

Data Mnemonic	NP_NU-LM0233-037
Description/ Purpose	The VIIRS SDR OBC Emitted Radiance PC file contains the values for calculating the emitted radiance of the BB based on the temperature. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	120,024 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.33-1, VIIRS SDR OBC Emitted Radiance PC Data Format

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Table 3.2.1.4.33-1, VIIRS SDR OBC Emitted Radiance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
OBC_ER_indices	56	32-bit integer	>=0	unitless	OBC Emitted Radiance Indices 2 Dimensional Array: Band x bufferIndexNum Size of Dimension(s): 7 x 2 **Dimension Details**: Overview: This field provides a roadmap of for the temperature/radiance fields in the table. Values for OBC_ER_tp and OBC_ER_rad are stored for each emissive band. The number of entries for each band, however, is not identical. This field provides information regarding the number of entries for each band. In addition, a buffer (fill value = -900) is present immediately following the temperature/radiance entries. First dimension (file) corresponds to Bands in order (I4, I5, M12 – M16). The number of OBC _ER_tp/ OBC _ER_rad entries is provided in this dimension for each band. Second Dimension (bufferIndexNum) corresponds to the index (starting with zero) in the OBC _ER_tp/ OBC _ER_rad arrays that mark the beginning of the data for each band. Example: OBC _ER_indices[0][0] = 637 Means that the I4 Band has 637 HAM_ER_tp/rad entries OBC_ER_indices[0][1] = 0 Means that the I4 Band's data begins at index number 0 (out of the 7497 total indices)
OBC_ER_tp	59984	64-bit floating	Minfloat – Maxfloat	Kelvin	Temperatures to be used in the interpolation of OBC Temperatures to emitted radiances (corresponds to OBC_ER_rad entries)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
		point			1 Dimensional Array: obcErIndex Size of Dimension(s): 7498
OBC_ER_rad	59984	64-bit floating point	Minfloat – Maxfloat	W/(m^2 um sr)	OBC Emitted Radiances (corresponds to values in OBC_ER_tp field) 1 Dimensional Array: obcErIndex Size of Dimension(s): 7498

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3.2.1.4.34 VIIRS SDR OBC Black Body Reflected Radiance PC

Data Mnemonic	NP_NU-LM0233-038
Description/ Purpose	The VIIRS SDR OBC Black Body Reflected Radiance PC file contains the values for calculating the reflected radiance of the Black Body based on the temperature. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	120,024 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.34-1, VIIRS SDR OBC Black Body Reflected Radiance PC Data Format

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Table 3.2.1.4.34-1, VIIRS SDR OBC Black Body Reflected Radiance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
OBC_RR_indices	56	32-bit integer	>=0	unitless	OBC Black Body Reflected Radiance Indices 2 Dimensional Array: Band x bufferIndexNum Size of Dimension(s): 7 x 2 **Dimension Details**: Overview: This field provides a roadmap of for the temperature/radiance fields in the table. Values for OBC_RR_tp and OBC_RR_rad are stored for each emissive band. The number of entries for each band, however, is not identical. This field provides information regarding the number of entries for each band. In addition, a buffer (fill value = -900) is present immediately following the temperature/radiance entries. First dimension (file) corresponds to Bands in order (I4, I5, M12 – M16). The number of OBC _RR_tp/ OBC _RR_rad entries is provided in this dimension for each band. Second Dimension (bufferIndexNum) corresponds to the index (starting with zero) in the OBC _RR_tp/ OBC _RR_rad arrays that mark the beginning of the data for each band. Example: OBC _RR_indices[0][0] = 637 Means that the I4 Band has 637 HAM_RR_tp/rad entries OBC_RR_indices[0][1] = 0 Means that the I4 Band's data begins at index number 0 (out of the 7497 total indices)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
OBC_RR_tp	59984	64-bit floating point	Minfloat – Maxfloat	Kelvin	Temperatures to be used in the interpolation of OBC BB Temperatures to reflected radiances (corresponds to OBC_RR_rad entries) 1 Dimensional Array: obcRrIndex Size of Dimension(s): 7498
OBC_RR_rad	59984	64-bit floating point	Minfloat – Maxfloat	W/(m^2 um sr)	OBC BB Reflected Radiances (corresponds to values in OBC_RR_tp field) 1 Dimensional Array: obcRrIndex Size of Dimension(s): 7498

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3.2.1.4.35 VIIRS SDR OBS to Pixel PC

Data Mnemonic	NP_NU-LM0233-039
Description/ Purpose	The VIIRS SDR OBS to Pixel PC file contains the dual gain band along-scan samples to aggregated pixel frame number mapping table. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	25,216 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.35-1, VIIRS SDR OBS to Pixel PC Data Format

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Table 3.2.1.4.35-1, VIIRS SDR OBS to Pixel PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
pixels	25216	32-bit integer	0 - 3199	unitless	Contains the dual gain band along-scan samples to aggregated pixel frame number mapping table 1 Dimensional Array: EV_FRAMES_750m_DG Size of Dimension(s): 6304

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3.2.1.4.36 VIIRS SDR Quality Assurance PC

Data Mnemonic	NP_NU-LM0233-040
Description/ Purpose	The VIIRS SDR Quality Assurance PC file contains detectors, quality flags, and moon offset limits science data sets. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	3,812 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.36-1, VIIRS SDR Quality Assurance PC Data Format

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Table 3.2.1.4.36-1, VIIRS SDR Quality Assurance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Detector_Quality_Flag_Values	3456	8 bit unsigned integer	0 – 245	unitless	2 Dimensional Array: detectorNum x bitNum Size of Dimension(s): 432 x 8 **Dimension Details:** detectorNum: 432 represents all detectors for the following band resolutions: Reflective 375M = 32 detectors for each of the 3 bands. Bands follow numerical order I1 – I3. This is the first 96 (= 32 x 3) entries of the 432. Reflective 750M = 16 detectors for each of the 11 bands. Bands follow the order of M6, M8, M9, M10, M11, M1-M5, M7 (SG bands followed by DG bands). This is the next 176 (= 16 x 11) entries of the 432. Emissive 375M = 32 detectors for each of the 2 bands. Bands follow the order of I4 – I5. This is the next 64 (= 32 x 2) entries of the 432. Emissive 750M = 16 detectors for each of the 5 bands. Bands follow the order of M12, M14 – M16, M13 (SG bands followed by DG bands). This is the next 80 (= 16 x 5) entries of the 432.DNB = 16 detectors. This is the last 16 entries of the 432. *Note on detector ordering: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details.

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
moon_offset_limits	352	32-bit floating point	-55 – 55	degrees	Limits used to determine whether the moon is inside or outside the keep-out box. 2 Dimensional Array: bandNum x moonOffsetLimitNum Size of Dimension(s): 22 x 4 **Dimension Details:** bandNum: Order of bands is I1 – I5, M1 – M16, DNB 4: Moon offset limit dimensions: Track Upper Limit = index 0 Track Lower Limit = index 1 Scan Upper Limit = index 3 Scan Lower Limit = index 4
saa_threshold	4	32-bit floating point	0 – 100	Percent	South Atlantic Anomoly Threshold – minimum percent to trigger flag.

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3.2.1.4.37 VIIRS SDR Radiometric Parameters PC

Data Mnemonic	NP_NU-LM0233-041
Description/ Purpose	The VIIRS SDR Radiometric Parameters PC file contains various temperatures used during radiometric calibration. This file is used in the VIIRS SDR and Solar Diffuser algorithms.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	212 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.37-1, VIIRS SDR Radiometric Parameters PC Data Format

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Table 3.2.1.4.37-1, VIIRS SDR Radiometric Parameters PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Telec_Therm_Indexes	36	32-bit integer	11 - 19	unitless	Contains the indices of the thermistors to be used for each component of the Telec Temperature. 1 Dimensional Array: telecThermistorNum Size of Dimension(s): 9
Telec_Therm_Weights	36	32-bit floating point	0 – 0.25	unitless	Weights used in to obtain the weighted average temperature of the Electronics Temperatures 1 Dimensional Array: telecThermistorNum Size of Dimension(s): 9
Tsh_Indexes	8	32-bit integer	9 – 10	unitless	Contains the indices of the thermistors to be used for each component of Shield Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tsh_Weights	8	32-bit floating point	0.5	unitless	Weights used in to obtain the weighted average temperature of the Shield Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Ttele_Indexes	8	32-bit integer	9 – 10	unitless	Contains the indices of the thermistors to be used for each component of telescope Temperatures 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Ttele_Weights	8	32-bit floating point	0.5	unitless	Weights used in to obtain the weighted average temperature of the Telescope Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Ttele_Offset	4	32-bit floating point	>0	Kelvin	Offset used in telescope temperature calculation
Trta_Indexes	8	32-bit integer	9 – 10	unitless	Contains the indices of the thermistors to be used for each component of Rotating Telescope Assembly 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Trta_Weights	8	32-bit floating point	0.5	unitless	Weights used in to obtain the weighted average temperature of the rotating telescope assembly Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Trta_Offset	4	32-bit floating point	>0	Kelvin	Offset used in rotating telescope assembly temperature calculation

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Tcav_Indexes	8	32-bit integer	9 – 10	unitless	Contains the indices of the thermistors to be used for each component of Cavity 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tcav_Weights	8	32-bit floating point	0.5	unitless	Offset used in cavity temperature calculation 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tmir_Indexes	8	32-bit integer	9 – 10	unitless	Contains the indices of the thermistors to be used for each component of HAM 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tmir_Weights	8	32-bit floating point	0.5	unitless	Weights used in to obtain the weighted average temperature of the HAM Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tfpsm_Indexes	8	32-bit integer	9 – 10	unitless	Contains the indices of the thermistors to be used for each component of SW and MW Focal Plane Arrays 1 Dimensional Array: thermistorRank Size of Dimension(s): 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Tfpsm_Weights	8	32-bit floating point	0.5	unitless	Weights used in to obtain the weighted average temperature of the SW and MW Focal Plane Array Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tfplw_Indexes	8	32-bit integer	9 – 10	unitless	Contains the indices of the thermistors to be used for each component of LW Focal Plane Array 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Tfplw_Weights	8	32-bit floating point	0.5	unitless	Weights used in to obtain the weighted average temperature of the LW Focal Plane Array Thermistors 1 Dimensional Array: thermistorRank Size of Dimension(s): 2
Ttel_Tsh_Tcav_Weights	12	32-bit floating point	0.333 – 0.334	unitless	Weights used to obtain the OBC reflected band averaged radiance: Index 0 = Telescope Index 1 = Cavity Index 2 = Shield 1 Dimensional Array: numWeights Size of Dimension(s): 3
Tmax	4	32-bit floating point	330	Kelvin	Max Temperature for Blackbody Thermistor allowed before flagging a a warning

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Tmin	4	32-bit floating point	270	Kelvin	Min Temperature for Blackbody Thermistor allowed before flagging a a warning

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3.2.1.4.38 VIIRS SDR Reflective Values PC

Data Mnemonic	NP_NU-LM0233-042
Description/ Purpose	The VIIRS SDR Reflective Values PC file contains the values for calibrating reflective bands. The values include first frame to use for OBC average, number of frames to use for OBC average, and RSB moon include. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	8 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.38-1, VIIRS SDR Reflective Values PC Data Format

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Table 3.2.1.4.38-1, VIIRS SDR Reflective Values PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DN_obc_avg_first_frame	2	16 bit integer	>0	unitless	First frame to use for OBC average
DN_obc_avg_num_frames	2	16 bit integer	>0	unitless	Number of frames to use for OBC average
RSB_SV_DN_moon_include_frames	2	16 bit integer	>0	unitless	RSB moon include
WordBoundaryPad	2	16 bit integer	MinInt – MaxInt	unitless	Pad

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3.2.1.4.39 VIIRS SDR RSR PC

Data Mnemonic	NP_NU-LM0233-043
Description/ Purpose	The VIIRS SDR Relative Spectral Response (RSR) PC file contains part of the Calc D Tables used in calculating the D coefficients LUT. This file is used in the VIIRS SDR algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	22,456 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.39-1, VIIRS SDR RSR PC Data Format

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Table 3.2.1.4.39-1, VIIRS SDR RSR PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
num_x2y2_pts	56	32-bit integer	9 – 31	unitless	Number of RSR wavelengths used for each Reflective Band. 1 Dimensional Array: reflectiveBandNum Size of Dimension(s): 14
x2	11200	64-bit floating point	-1 – 2312.16	nanometers	RSR Wavelengths Each of the 14 reflective band's wavelengths for the RSR (center of the band represented near the center of each set of values) are stored in blocks of 100 each. However, only the number stored in num_x2y2_pts are non-filled in each set of 100. Fill values are represented as -1. Note that the reflective bands are not necessarily listed in order (I1, I2, I3, M1, etc.) Instead, the values in this field must be examined to determine the band/wavelength for each dimension. 1 Dimensional Array: reflectiveBandNum Size of Dimension(s): 1400

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
y2	11200	64-bit floating point	-1 – 1	unitless	RSR values for each reflective band. Corresponding wavelengths are in the x2 field for the response function. Fill values are represented as -1. 1 Dimensional Array: reflectiveBandNum Size of Dimension(s): 1400

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3.2.1.4.40 VIIRS SDR RTA PC

Data Mnemonic	NP_NU-LM0233-044
Description/ Purpose	The VIIRS SDR Rotating Telescope Assembly (RTA) PC file contains the VIIRS RTA emissive radiance tables for each VIIRS emissive band (I4-I5), (M12-M16). This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	120,024 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.40-1, VIIRS SDR RTA PC Data Format

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Table 3.2.1.4.40-1, VIIRS SDR RTA PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RTA_ER_indices	56	32-bit integer	0 – 7497	unitless	Index information for the band of interest and where that band's data is located in the RTA_ER_tp & RTA_ER_rad arrays. 2 Dimensional Array: rtaerFileNum x bufferIndexNum Size of Dimension(s): 7 x 2 Dimension Details: rtaerFileNum: The 7 emissive bands in order: I4, I5, M12 – M16 bufferIndexNum: index 0 = The number of values in the band index 1 = The index number that tells where in the two input arrays (RTA_ER_tp & RTA_ER_rad) the data for the band of interest starts.
RTA_ER_tp	59984	64-bit floating point	>0	Kelvin	Array of Temperatures corresponding to RTA_ER_rad Radiances 1 Dimensional Array: rtaErIndex Size of Dimension(s): 7498
RTA_ER_rad	59984	64-bit floating point	Minfloat – Maxfloat	W/(m^2 um sr)	Array of Radiances corresponding to RTA_ER_tp Temperatures 1 Dimensional Array: rtaErIndex Size of Dimension(s): 7498

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3.2.1.4.41 VIIRS SDR Response Versus Scan PC

Data Mnemonic	NP_NU-LM0233-045
Description/ Purpose	The VIIRS SDR Response Versus Scan PC file contains the VIIRS Half Angle Mirror (HAM) reponses as a function of scan at the pixel (frame) level. Each frame corresponds to a nominal HAM angle. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	17,533,440 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.41-1, VIIRS SDR Response Versus Scan PC Data Format

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Table 3.2.1.4.41-1, VIIRS SDR Response Versus Scan PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RVS_375m	8192000	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.95 – 1.15	unitless	Response Versus Scan for the Imagery Bands. 4 Dimensional Array: 375mBandNum x 375mDetectorNum* x ev375mFrame x mirrorNum Size of Dimension(s): 5 x 32 x 6400 x 2 Dimension Details: 375mBandNum: Indices 0 – 4 corresponds (in order) to Bands I1 – I5 mirrorNum: Index 0 = HAM Side A, index 1 = HAM Side B *Note on detector ordering for all detector related fields in this table: The numbering of detectors on the FPA, referred to as the Instrument Engineering Order (IEO) is numbered with 1 being the leading edge of the FPA in the in-track direction. However, the order of the detectors in all LUT/PC tables, SDRs, and EDRs, is the reverse, called the Product Order (PO). Refer to the VIIRS SDR Algorithm Documents for details.

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RVS_750m_SG	3686400	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.95 – 1.15	unitless	Response Versus Scan for the Single Gain Moderate Resolution Bands 4 Dimensional Array: 750mSgBandNum x 750mDetectorNum x ev750mSgFrame x mirrorSideNum Size of Dimension(s): 9 x 16 x 3200 x 2 Dimension Details: 750mSgBandNum: Order of Bands is M6, M8 – M12, M14 – M16 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B
RVS_750m_DG	5648384	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.95 – 1.15	unitless	Response Versus Scan for the Dual Gain Moderate Resolution Bands 4 Dimensional Array: 750mSgBandDgBandNum x 750mDetectorNum x ev750mDgFrame x mirrorSideNum Size of Dimension(s): 7 x 16 x 6304 x 2 Dimension Details: 750mDgBandNum: Order of Bands is M1 – M5, M7, M13 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RVS_375m_SV	1280	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.95 – 1.15	unitless	Response Versus Scan for the Imagery Bands – Space View 3 Dimensional Array: 375mbandNum x 375mDetectorNum x mirrorSideNum Size of Dimension(s): 5 x 32 x 2 Dimension Details: 375mBandNum: Indices 0 – 4 corresponds (in order) to Bands I1 – I5 375mDetectorNum: See note above on Detector ordering mirrorNum: Index 0 = HAM Side A, index 1 = HAM Side B
RVS_750m_SV_SG	1152	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.95 – 1.15	unitless	Response Versus Scan for the Single Gain Moderate Resolution Bands – Space View 3 Dimensional Array: 750mSgBandNum x 750mDetectorNum x mirrorSideNum Size of Dimension(s): 9 x 16 x 2 Dimension Details: 750mSgBandNum: Order of Bands is M6, M8 – M12, M14 – M16 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RVS_750m_SV_DG	896	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.95 – 1.15	unitless	Response Versus Scan for the Dual Gain Moderate Resolution Bands – Space View 3 Dimensional Array: 750mDgBandNum x 750mDetectorNum x mirrorSideNum Size of Dimension(s): 7 x 16 x 2 Dimension Details: 750mDgBandNum: Order of Bands is M1 – M5, M7, M13 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B
RVS_375m_BB	1280	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.95 – 1.15	unitless	Response Versus Scan for the Imagery Bands – Blackbody View 3 Dimensional Array: 375mBandNum x 375mDetectorNum x mirrorSideNum Size of Dimension(s): 5 x 32 x 2 Dimension Details: 375mBandNum: Indices 0 – 4 corresponds (in order) to Bands I1 – I5 375mDetectorNum: See note above on Detector ordering mirrorNum: Index 0 = HAM Side A, index 1 = HAM Side B

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
RVS_750m_BB_SG	1152	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.95 – 1.15	unitless	Response Versus Scan for the Single Gain Moderate Resolution Bands – Blackbody View 3 Dimensional Array: 750mSgBandNum x 750mDetectorNum x mirrorSideNum Size of Dimension(s): 9 x 16 x 2 Dimension Details: 750mSgBandNum: Order of Bands is M6, M8 – M12, M14 – M16 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B
RVS_750m_BB_DG	896	32-bit floating point	Values depend on specific response of HAM, but generally are between: ~ 0.95 – 1.15	unitless	Response Versus Scan for the Dual Gain Moderate Resolution Bands – Blackbody View 3 Dimensional Array: 750mDgBandNum x 750mDetectorNum x mirrorSideNum Size of Dimension(s): 7 x 16 x 2 Dimension Details: 750mDgBandNum: Order of Bands is M1 – M5, M7, M13 750mDetectorNum: See note above on Detector ordering mirrorSideNum: Index 0 = HAM Side A, Index 1 = HAM Side B

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3.2.1.4.42 VIIRS SDR Solar Irradiances PC

Data Mnemonic	NP_NU-LM0233-047
Description/ Purpose	The VIIRS SDR Solar Irradiances PC file contains the solar power table needed for calculation of D coefficients, which are used in the reflectance algorithm. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,200,004 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.42-1, VIIRS SDR Solar Irradiances PC Data Format

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Table 3.2.1.4.42-1, VIIRS SDR Solar Irradiances PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
num_xy_pts	4	32-bit integer	49951	unitless	Number of valid values (non-zero) contained in the x and y arrays, beginning with the first index. (All other entries in x and y arrays are zero filled)
x	600000	64-bit floating point	-1 – 200000	nanometers	Wavelength 1 Dimensional Array: x Size of Dimension(s): 75000
y	600000	64-bit floating point	-1 - 6.07e+26	W / Micrometers (W / um)	Solar Irradiance 1 Dimensional Array: y Size of Dimension(s): 75000

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3.2.1.4.43 VIIRS SDR Telemetry PC

Data Mnemonic	NP_NU-LM0233-048
Description/ Purpose	The VIIRS SDR Telemetry PC file contains Calibration coefficients for VIIRS thermistors as provided by Raytheon SBRS This file is used in the VIIRS SDR and Solar Diffuser algorithms.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	676 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.43-1, VIIRS SDR Telemetry PC Data Format

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Table 3.2.1.4.43-1, VIIRS SDR Telemetry PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
teleCoeffs	624	32-bit floating point	-1.01154e-06 - 292.452	unitless	Calibration Coefficients 2 Dimensional Array: NUM_MAX_THERMISTORS x NUM_TEMP_COEFFS Size of Dimension(s): 26 x 6 Dimension Details: NUM_MAX_THERMISTORS: Corresponds to each thermistor in order Index 0 = TP_BB_1 Index 1 = TP_BB_2 Index 2 = TP_BB_3 Index 3 = TP_BB_4 Index 4 = TP_BB_5 Index 5 = TP_BB_6 Index 6 = TP_MF_TEL_BLKHD_PX Index 7 = TP_MF_SCAN_CAVITY_NX_PZ Index 8 = TP_MF_SCAN_CVTY_BAF_NZ Index 9 = Shield/RTA/Telescope 2 Index 10 = TP_EM_BACKPLANE_CCA_T1 Index 11 = TP_EM_PY_RADPANEL Index 12 = TP_EM_CCA_RELAYS_A Index 13 = TP_EM_CCA_RELAYS_B Index 14 = TP_EM_1394_CCA_T1 Index 15 = TP_EM_1394_CCA_T2 Index 16 = TP_DP_DNB_CCA Index 17 = TP_DP_DPP_CCA Index 18 = TP_DP_FPIE_CLK_CCA

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
					Index 19 = TA_FT_LW_CFPA_HI_RSL Index 20 = TA_FT_LW_CFPA_LO_RSL Index 21 = TA_FT_SW_CFPA_HI_RSL Index 22 = TA_FT_SW_CFPA_LO_RSL Index 23 = TA_FT_VIS_NIR_FPA Index 24 = TP_SE_HAM_MIRR_T1 Index 25 = TP_SE_HAM_MIRR_T2 NUM_TEMP_COEFFS: 6 coefficients needed for each temperature calculation. Index 0 is lowest order (the constant in the polynomial), index 5 holds the highest order coefficient.
defaultValue	52	16-bit integer	80 – 290	Kelvin	Default Temperature used if the thermistor is flagged as bad. 1 Dimensional Array: NUM_MAX_THERMISTORS Size of Dimension(s): 26 Dimension Details: The 26 values correspond to the thermistors listed above for the coefficients.

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3.2.1.4.44 VIIRS Solar Diffuser Coefficient A PC

Data Mnemonic	NP_NU-LM0233-049
Description/ Purpose	The VIIRS Solar Diffuser Coefficient A PC file contains the temperature dependent coefficients of the detector response functions, which are specific to HAM side and gain state during solar diffuser calibration. (These coefficients are identical with VIIRS Detector Response (Coefficient A) PC, but the table formats differ). This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	215,656 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.44-1, VIIRS Solar Diffuser Coefficient A PC Data Format

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Table 3.2.1.4.44-1, VIIRS Solar Diffuser Coefficient A PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
A0	71680	64-bit floating point	0 - maxfloat	Electron	VIIRS "Coefficient A0" – The zeroth order coefficient of the detector response function 5 Dimensional Array: NUM_Reflective_Bands x NUM_GAINS x NDETMAX x NUM_HAMSIDES x NTemperature Size of Dimension(s): 14 x 2 x 32 x 2 x 5 **Dimension Details**: • NUM_ Reflective_Bands: Order of Bands is: I1 – I3 Bands (indices 0 – 2), M1 – M11 (indices 3 – 13). • NUM_GAINS: Low/Single Gain = index 0, High Gain = index 1 • NDETMAX: Indices range from 0 to 31 (for detectors 1 – 32). For M Bands, only indices 0 – 15 are used (for detectors 1 – 16). • NUM_HAMSIDES: A Side = index 0, B Side = Index 1 • NTemperature: Indices correspond to temperatures stored in the same dimension in the Temperature Field of this table.
A1	71680	64-bit floating point	0 - maxfloat	Electron/V	VIIRS "Coefficient A1" – The first order coefficient of the detector response function 5 Dimensional Array: NUM_Reflective_Bands x NUM_GAINS x NDETMAX x NUM_HAMSIDES x NTemperature Size of Dimension(s): 14 x 2 x 32 x 2 x 5 **Dimension Details**: See Dimension Details for the A0 field in this table

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
A2	71680	64-bit floating point	0 - maxfloat	Electron/V^2	VIIRS “Coefficient A2” – The second order coefficient of the detector response function 5 Dimensional Array: NUM_Reflective_Bands x NUM_GAINS x NDETMAX x NUM_HAMSIDES x NTemperature Size of Dimension(s): 14 x 2 x 32 x 2 x 5 **Dimension Details**: See Dimension Details for the A0 field in this table
Temperature	560	64-bit floating point	77 – 300	Kelvin	Temperature used to determine each of the A coefficients. These temperatures correspond to the NTemperature dimension in the A coefficient fields of this table. 2 Dimensional Array: NUM_Reflective_Bands x NTemperature Size of Dimension(s): 14 x 5 **Dimension Details**: See Dimension Details for the A0 field in this table
nTemperatures	56	32-bit integer	>=0	Unitless	Number of temperatures used for each band to determine the A coefficients. 1 Dimensional Array: NUM_Reflective_Bands Size of Dimension(s): 14

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3.2.1.4.45 VIIRS Solar Diffuser Coefficient B PC

Data Mnemonic	NP_NU-LM0233-050
Description/ Purpose	The VIIRS Solar Diffuser Coefficient B PC file contains the temperature dependent coefficients of the electronics response functions, which are specific to HAM side during solar diffuser calibration. (These are identical with VIIRS Electronic Response (Coefficient B) PC). This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	108,136 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.45-1, VIIRS Solar Diffuser Coefficient B PC Data Format

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Table 3.2.1.4.45-1, VIIRS Solar Diffuser Coefficient B PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
B0	35840	64-bit floating point	0 - maxfloat	Electron	4 Dimensional Array: NUM_Reflective_Bands x NDETMAX x NUM_HAMSIDES x NTemperature Size of Dimension(s): 14 x 32 x 2 x 5
B1	35840	64-bit floating point	0 - maxfloat	Electron/V	4 Dimensional Array: NUM_Reflective_Bands x NDETMAX x NUM_HAMSIDES x NTemperature Size of Dimension(s): 14 x 32 x 2 x 5
B2	35840	64-bit floating point	0 - maxfloat	Electron/V^2	4 Dimensional Array: NUM_Reflective_Bands x NDETMAX x NUM_HAMSIDES x NTemperature Size of Dimension(s): 14 x 32 x 2 x 5
Temperature	560	64-bit floating point	250 – 290	Kelvin	2 Dimensional Array: NUM_Reflective_Bands x NTemperature Size of Dimension(s): 14 x 5
nTemperature	56	32-bit integer	>=0	unitless	1 Dimensional Array: NUM_Reflective_Bands Size of Dimension(s): 14

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3.2.1.4.46 DELETED

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3.2.1.4.47 VIIRS Solar Diffuser Gain PC

Data Mnemonic	NP_NU-LM0233-052
Description/ Purpose	The VIIRS Solar Diffuser Gain PC file contains the gain value for each VIIRS band during solar diffuser calibration. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	112 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.47-1, VIIRS Solar Diffuser Gain PC Data Format

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Table 3.2.1.4.47-1, VIIRS Solar Diffuser Gain PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	112	64-bit floating point	Initial range of values is: 1.1707527e-07 – 2.4043947e-04	W/(m^2 um sr) /photoelectron	Gain values to convert detector electron counts to radiance 1 Dimensional Array: NUM_Reflective_Bands Size of Dimension(s): 14 Dimension Details: NUM_Reflective_Bands: Represents Reflective Bands I1 – I3, M1 – M11 (in order)

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3.2.1.4.48 VIIRS Solar Diffuser Lambda PC

Data Mnemonic	NP_NU-LM0233-053
Description/ Purpose	The VIIRS Solar Diffuser Lambda PC file contains the relative spectral response (RSR) values and corresponding wavelengths for each reflective band. Used in conjunction with the Solar Diffuser Phi PC Table. Solar Flux between 0 and 20 micrometers. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	9,0167,000 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.48-1, VIIRS Solar Diffuser Lambda PC Data Format

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Table 3.2.1.4.48-1, VIIRS Solar Diffuser Lambda PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Nlambda	56	32-bit floating pointInteger	9 – 31	unitless	Number of wavelengths populated in the data and lambda fields 1 Dimensional Array: NUM_Reflective_Bands Size of Dimension(s): 14
data	4480	64-bit floating point	0.0 – 1.0 (Fill values = -999.9)	unitless	Relative Spectral Response corresponding to wavelengths in lambda field.Solar Flux 2 Dimensional Array: NUM_Reflective_Bands x MAX_NUM_LAMBDA Size of Dimension(s): 14 x 4031
lambda	4480	64-bit floating point	0.376 – 2.333	Micrometer	Wavelengths (corresponding to the “data” –RSR field) 2 Dimensional Array: NUM_Reflective_Bands x MAX_NUM_LAMBDA Size of Dimension(s): 14 x 4031

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3.2.1.4.49 VIIRS Solar Diffuser Phi PC

Data Mnemonic	NP_NU-LM0233-054
Description/ Purpose	The VIIRS Solar Diffuser Phi PC file contains parameters for the spectral output of the Sun and corresponding wavelengths. This table is used in conjunction with the Solar Diffuser Lambda Table to correlate the RSR per wavelength with the output of the Sun. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	799,216 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.49-1, VIIRS Solar Diffuser Phi PC Data Format

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Table 3.2.1.4.49-1, VIIRS Solar Diffuser Phi PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	399608	64-bit floating point	5.60982e+17 - 6.11283e+26	W/micrometer	Spectral output power of the sun 1 Dimensional Array: MAX_PHI Size of Dimension(s): 49951
lambda	399608	64-bit floating point	0.2 – 200	micrometers	Wavelengths 1 Dimensional Array: MAX_PHI Size of Dimension(s): 49951

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3.2.1.4.50 VIIRS Solar Diffuser H-Value PC

Data Mnemonic	NP_NU-LM0233-055
Description/ Purpose	The VIIRS Solar Diffuser PC file contains the Operational constants required by the Solar Diffuser algorithm. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	176 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.50-1, VIIRS Solar Diffuser PC Data Format

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Table 3.2.1.4.50-1, VIIRS Solar Diffuser PC (SD H-Value) Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
H	112	64-bit floating point	< 1.0 (value will vary but be close to but less than 1.0)	unitless	Scale factor describing the time dependence of the BRDF for the Solar Diffuser Stability Monitor 1 Dimensional Array Size of Dimension(s): 14
averageDistanceEarthToSun	8	64-bit floating point	1.49598e+11	meters	Average Distance between the Earth and Sun in meters
spaceViewVector	24	64-bit floating point	Varies	unitless	Vector in instrument coordinates of the mean space-view 1 Dimensional Array Size of Dimension(s): 3
limitsPhiV	16	64-bit floating point	[5.0, 41.0]	unitless	angular limit on which to reject a scan due to insufficient alignment of sun with solar diffuser 1 Dimensional Array Size of Dimension(s): 2
limitsPhiH	16	64-bit floating point	[-170.0, -15.0]	unitless	angular limit on which to reject a scan due to insufficient alignment of sun with solar diffuser 1 Dimensional Array Size of Dimension(s): 2

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3.2.1.4.51 VIIRS Solar Diffuser Reflectance PC

Data Mnemonic	NP_NU-LM0233-056
Description/ Purpose	The VIIRS Solar Diffuser Reflectance PC file contains the solar diffuser (SD) BRDF as a function of incidence angles on the SD screen for each reflective band detector. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	23,687,744 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.51-1, VIIRS Solar Diffuser Reflectance PC Data Format

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Table 3.2.1.4.51-1, VIIRS Solar Diffuser Reflectance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
phi_h	808	64-bit floating point	3.5 – 44.5	unitless	Description: binned horizontal angles 1 Dimensional Array: NUM_PHI_H_SAMPLES Size of Dimension(s): 101
phi_v	88	64-bit floating point	10 – 20	unitless	Description: Binned vertical angles 1 Dimensional Array: NUM_PHI_V_SAMPLES Size of Dimension(s): 11
lambda	328	64-bit floating point	0.35 – 2.35	micrometers	Description: binned wavelengths 1 Dimensional Array: NUM_LAMBDA_SAMPLES Size of Dimension(s): 41
brdf	364408	64-bit floating point	0.288452 – 2.35	unitless	Array of bidirectional reflectance distribution function values 3 Dimensional Array: NUM_PHI_H_SAMPLES x NUM_PHI_V_SAMPLES x NUM_LAMBDA_SAMPLES Size of Dimension(s): 101 x 11 x 41
tau	23,322,112	64-bit floating point	0.127239 – 2.35	unitless	Array of tau (SD Screen Transmittance) values 3 Dimensional Array: NDETMAX x BANDGROUP x NUM_TAU_SAMPLES Size of Dimension(s): 32 x 2 x 45551

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3.2.1.4.52 VIIRS Solar Diffuser RVS PC

Data Mnemonic	NP_NU-LM0233-057
Description/ Purpose	The VIIRS Solar Diffuser RVS PC file contains the response versus scan angle for the moderate and imagery bands during solar diffuser calibration. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	224 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.52-1, VIIRS Solar Diffuser RVS PC Data Format

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Table 3.2.1.4.52-1, VIIRS Solar Diffuser RVS PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	224	64-bit floating point	0.999993 – 1.0 (Lower range may vary somewhat – depends upon calibration results)	unitless	2 Dimensional Array: NUM_Reflective_Bands x NUM_MIRROR_SIDES Size of Dimension(s): 14 x 2

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3.2.1.4.53 DELETED

D34862-08, C. PDMO Released: 2010-06-16 (VERIFY REVISION STATUS)
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3.2.1.4.54 VIIRS Solar Diffuser Aggregation PC

Data Mnemonic	NP_NU-LM0233-059
Description/ Purpose	The VIIRS Solar Diffuser Aggregation PC file contains frame and scan aggregation parameters. Included are frame limits, orbits to aggregate, min/max DN values and sigmas, and min SNRs. This file is used in the VIIRS SDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,208 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.54-1, VIIRS Solar Diffuser Aggregation PC Data Format

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Table 3.2.1.4.54-1, VIIRS Solar Diffuser Aggregation PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
minFrameCount	56	32-bit integer	MinInt – MaxInt	unitless	Minimum number of frames 1 Dimensional Array: NUM_Reflective_Bands Size of Dimension(s): 14 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11
minDNsv	112	32-bit integer	MinInt – MaxInt	unitless	Min DN for SpaceView by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1
maxDNsv	112	32-bit integer	MinInt – MaxInt	unitless	Max DN for SpaceView by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
maxDNsvSigma	112	32-bit integer	MinInt – MaxInt	unitless	Max DN Sigma for SpaceView by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1
minDNsd	112	32-bit integer	MinInt – MaxInt	unitless	Min DN for SolarDiffuser by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1
maxDNsd	112	32-bit integer	MinInt – MaxInt	unitless	Max DN for SolarDiffuser by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
maxDNsdSigma	112	32-bit integer	MinInt – MaxInt	unitless	Max DN Sigma for SolarDiffuser by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1
minSNR	224	64-bit floating point	Minfloat – Maxfloat	unitless	Min SNR value for Band and Gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1
physicsSigma	224	64-bit floating point	Minfloat – Maxfloat	unitless	Sigma from external physics analysis by band and gain 2 Dimensional Array: NUM_Reflective_Bands x NUM_GAIN Size of Dimension(s): 14 x 2 Dimension Details: NUM_Reflective_Bands : Reflective bands are (in order) I1, I2, I3, M1 – M11 NUM_GAIN: low gain or single gain = index 0, high gain = index 1

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
limitsSDM	8	32-bit integer	[0, 1]	unitless	Solar Diffuser frame limits [0]=start [1]=number of frames for Moderate Resolution Bands (M) 1 Dimensional Array: Index Size of Dimension(s): 2
limitsSDI	8	32-bit integer	[0, 1]	unitless	Solar Diffuser frame limits [0]=start [1]=number of frames for Imagery Resolution Bands (I) 1 Dimensional Array: Index Size of Dimension(s): 2
limitsSVM	8	32-bit integer	[0, 1]	unitless	Space view frame limits [0]=start [1]=number of frames for Moderate Resolution Bands (M) 1 Dimensional Array: Index Size of Dimension(s): 2
limitsSVI	8	32-bit integer	[0, 1]	unitless	Space view frame limits [0]=start [1]=number of frames for Imagery Resolution Bands (I) 1 Dimensional Array: Index Size of Dimension(s): 2

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3.2.1.4.55 DELETED

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3.2.1.4.56 VIIRS AOT Climatology PC

The VIIRS AOT Climatology PC is an ancillary rather than an auxiliary product. This product is documented in the CDFCB-X, Vol VI, Section 2.1.3.1, Aerosol Optical Thickness Climatology File.

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3.2.1.4.57 VIIRS COP Surface PC

Data Mnemonic	NP_NU-LM0233-063
Description/ Purpose	The VIIRS COP Surface PC file contains the Surface Albedo and emissivity for the surface types identified by the VCM. This file is used in the VIIRS Cloud Optical Properties (COP) IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	240 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.57-1, VIIRS COP Surface PC Data Format

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Table 3.2.1.4.57-1, VIIRS COP Surface PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
albedo	120	32-bit floating point	0 – 1	unitless	2 Dimensional Array: COP_SURFACE_TYPES x COP_MAX_BANDS Size of Dimension(s): 6 x 5
emissivity	120	32-bit floating point	0 – 1	unitless	2 Dimensional Array: COP_SURFACE_TYPES x COP_MAX_BANDS Size of Dimension(s): 6 x 5

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3.2.1.4.58 VIIRS Surface Reflectance AOT Values PC

Data Mnemonic	NP_NU-LM0233-064
Description/ Purpose	The VIIRS Surface Reflectance AOT Values PC file contains the ratio of AOT at VIIRS wavelengths to AOT at 550 nm calculated using 6S RTM. Contains values for all land and ocean aerosol models. These same tables are used in AOT. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	60 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.58-1, VIIRS Surface Reflectance AOT Values PC Data Format

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Table 3.2.1.4.58-1, VIIRS Surface Reflectance AOT Values PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	60	32-bit floating point	1.00E-02 – 2.00E+00	unitless	1 Dimensional Array: AOT_DIM Size of Dimension(s): 15

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3.2.1.4.59 VIIRS Surface Reflectance Atmospheric Reflectance PC

Data Mnemonic	NP_NU-LM0233-065
Description/ Purpose	The VIIRS Surface Reflectance Atmospheric Reflectance PC contains the atmospheric reflectance calculated using 6S RTM. Contains values for all land and ocean aerosol models. These same tables are used in AOT. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	16,581,000 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.59-1, VIIRS Surface Reflectance Atmospheric Reflectance PC Data Format

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Table 3.2.1.4.59-1, VIIRS Surface Reflectance Atmospheric Reflectance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	16581000	32-bit floating point	1.18E-38 – 3.40E+38	unitless	4 Dimensional Array: AERO_MODEL_DIM x AOT_DIM x BAND_DIM x ANG_DIM Size of Dimension(s): 5 x 15 x 10 x 5527

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3.2.1.4.60 VIIRS Surface Reflectance Downward Transmittance PC

Data Mnemonic	NP_NU-LM0233-066
Description/ Purpose	The VIIRS Surface Reflectance Downward Transmittance PC contains the downward transmittance calculated using 6S RTM. Contains values for all land and ocean aerosol models. These same tables are used in AOT. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	63,000 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.60-1, VIIRS Surface Reflectance Downward Transmittance PC Data Format

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Table 3.2.1.4.60-1, VIIRS Surface Reflectance Downward Transmittance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	63000	32-bit floating point	1.18E-38 – 3.40E+38	unitless	4 Dimensional Array: AERO_MODEL_DIM x AOT_DIM x BAND_DIM x SOL_ZEN_DIM Size of Dimension(s): 5 x 15 x 10 x 21

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3.2.1.4.61 VIIRS Surface Reflectance Incremental Scattering Angles PC

Data Mnemonic	NP_NU-LM0233-067
Description/ Purpose	The VIIRS Surface Reflectance Incremental Scattering Angles PC file is used to compute the four scattering angles that come closest to the input scattering angle that will be used to interpolate the atmospheric reflectance. This table contains the incremental scattering angle (= step_length). This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	4 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.61-1, VIIRS Surface Reflectance Incremental Scattering Angles PC Data Format

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Table 3.2.1.4.61-1, VIIRS Surface Reflectance Inc Scattering Angles PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	4	32-bit floating point	Initially set to 4.0	Degrees	Incremental scattering angles Step Length

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3.2.1.4.62 VIIRS Surface Reflectance Solar Zenith Angle PC

Data Mnemonic	NP_NU-LM0233-068
Description/ Purpose	The VIIRS Surface Reflectance Solar Zenith Angle LUT file is used to compute the four solar zenith angles that come closest to the input solar zenith angle that will be used in interpolation. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	168 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.62-1, VIIRS Surface Reflectance Solar Zenith Angle PC Data Format

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Table 3.2.1.4.62-1, VIIRS Surface Reflectance Solar Zenith Angle PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	168	64-bit floating point	0.0 – 1.4	Radians	1 Dimensional Array: SOL_ZEN_DIM Size of Dimension(s): 21

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3.2.1.4.63 VIIRS Surface Reflectance Scattering Angle Dimensions PC

Data Mnemonic	NP_NU-LM0233-069
Description/ Purpose	The VIIRS Surface Reflectance Scattering Angle Dimensions LUT file is used to determine how many scattering angles correspond to the given solar and satellite zenith angles. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,680 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.63-1, VIIRS Surface Reflectance Scattering Angle Dimensions PC Data Format

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Table 3.2.1.4.63-1, VIIRS Surface Reflectance Scattering Angle Dimensions PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	1680	32-bit integer	1 – 36	unitless	1 Dimensional Array: SOL_ZEN_DIM*SAT_ZEN_DIM Size of Dimension(s): 420

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3.2.1.4.64 VIIRS Surface Reflectance Satellite Zenith Angles PC

Data Mnemonic	NP_NU-LM0233-070
Description/ Purpose	The VIIRS Surface Reflectance Satellite Zenith Angles PC file is used to compute the four satellite zenith angles that come closest to the input solar satellite angle that will be used in interpolation. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	160 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.64-1, VIIRS Surface Reflectance Satellite Zenith Angles PC Data Format

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Table 3.2.1.4.64-1, VIIRS Surface Reflectance Satellite Zenith Angles PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
data	160	64-bit floating point	0.0 – 1.21	Radians	1 Dimensional Array: SAT_ZEN_DIM Size of Dimension(s): 20

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3.2.1.4.65 VIIRS Surface Reflectance Spherical Albedo PC

Data Mnemonic	NP_NU-LM0233-071
Description/ Purpose	The VIIRS Surface Reflectance Spherical Albedo PC file contains spherical albedo calculated using 6S RTM. Contains values for all land and ocean aerosol models. These same tables are used in AOT. This file is used in the VIIRS Surface Reflectance IP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	3,000 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.65-1, VIIRS Surface Reflectance Spherical Albedo PC Data Format

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Table 3.2.1.4.65-1, VIIRS Surface Reflectance Spherical Albedo PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Data	3000	32-bit floating point	0.0 – 1.0	unitless	3 Dimensional Array: AERO_MODEL_DIM x AOT_DIM x BAND_DIM Size of Dimension(s): 5 x 15 x 10

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3.2.1.4.66 VIIRS SCD Snow Cover Quality PC

Data Mnemonic	NP_NU-LM0233-072
Description/ Purpose	The VIIRS SCD Snow Cover Quality PC file contains weight reduction factors for cloud contamination and degradation/ exclusion threshold limits. This file is used in the VIIRS Snow Cover EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,652 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.66-1, VIIRS SCD Snow Cover Qual PC Data Format

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Table 3.2.1.4.66-1, VIIRS SCD Snow Cover Qual PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nbands_i	4	Unsigned 32-bit integer	> 0	unitless	Number of Imagery Resolution Bands
nbands_m	4	Unsigned 32-bit integer	> 0 (Initially set to 9)	unitless	Number of Moderate Resolution Bands
band_wgt	36	32-bit floating point	0.0 – 1.0 (Initially set to 1.0 for all bands)	unitless	Default Moderate Resolution Band Weights 1 Dimensional Array: SCD_NBANDS_M Size of Dimension(s): 9
num_aot_bins	4	Unsigned 32-bit integer	> 0 (Initially set to 4)	unitless	Number of AOT bins, corresponding to the number of AOT values used for thresholding (aot_bins, this table)
aot_bins	16	32-bit floating point	0.0 – 1.0 (Initially set to: [0.0, 0.15, 0.50, 1.0])	unitless	AOT Bin Boundary Values 1 Dimensional Array: SCD_NUM_AOT_BINS Size of Dimension(s): 4
num_thresh	4	Unsigned 32-bit integer	> 0 (Initially set to 2)	unitless	Number of Solar Zenith Angle Thresholds

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
q_aot_sza	384	32-bit floating point	-pi/2 – pi/2 All bands initially set to the same default values (values listed in degrees below, but represented as radians in table): [*,1,1:2] = 75.0, 85.0 [*,2,1:2] = 70.0, 85.0 [*,3,1:2] = 65.0, 80.0 [*,4,1:2] = 60.0, 75.0	Radians	Solar Zenith Angle values that correspond to the Solar Zenith Angle quality regimes The order for each num_aot_bin x num_thresh matrix of angles is: I1, I2, I3, M1, M2, M3, M4, M5, M7, M8, M10, and M11 3 Dimensional Array: SCD_NUM_THRESH x SCD_NUM_AOT_BINS x SCD_NBANDS_TOTAL Size of Dimension(s): 2 x 4 x 12
cot_switch	4	Unsigned 32-bit integer	0 – 1 (Initially set to 0)	unitless	Switch to flag the availability of the Cloud Optical Thickness IP 0 = COT Not Available (Use VCM mode) 1 = COT Available (Use COT mode) Initially a placeholder – cot_switch is used in the code, but not from this field in this table. The cot_switch used in the code has been placed in the VIIRS Snow Cover/Depth Ephemeral PC, Table 3.2.2.5.17-1
num_cloud_types	4	Unsigned 32-bit integer	> 0 (Initially set to 7)	unitless	Number of Cloud Types

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cloud_wgts	336	32-bit floating point	0.0 – 1.0 All bands initially set to the same default values for each cloud type: [0.5;**(1)** 0.5;**(2)** 0.5;**(3)** 0.5;**(4)** 0.6;**(5)** 0.3;**(6)** 0.8]**(7)**	unitless	Cloud weights corresponding to the 3 imagery bands + 9 moderate bands and the 7 cloud properties - 4 phases = Default (1), Water (2), Ice (3), Mixed (4), and 3 types = cirrus (5), shadow (6), adjacency (7); the parenthetical values correspond to the rows of the matrix shown in the "Units/Range" cell, the column represent the bands I1, I2, I3, M1, M2, M3, M4, M5, M7, M8, M10, and M11 in this order. 2 Dimensional Array: SCD_NBANDS_TOTAL x SCD_NUM_CLOUD_TYPES Size of Dimension(s): 12 x 7
cot_gy	336	32-bit floating point	MinFloat – MaxFloat	unitless	Cloud Optical Thickness "GREEN/YELLOW" quality threshold values 2 Dimensional Array: SCD_NBANDS_TOTAL x SCD_NUM_CLOUD_TYPES Size of Dimension(s): 7 x 12
cot_yr	336	32-bit floating point	MinFloat – MaxFloat	unitless	Cloud Optical Thickness "YELLOW/RED" quality threshold values 2 Dimensional Array: SCD_NBANDS_TOTAL x SCD_NUM_CLOUD_TYPES Size of Dimension(s): 7 x 12
qwgt_r	48	32-bit floating point	(Initially set to 0.3 for all bands)	unitless	Solar Zenith Angle boundaries "RED" 1 Dimensional Array: SCD_NBANDS_TOTAL Size of Dimension(s): 12

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
qwgt_y	48	32-bit floating point	(Initially set to 0.5 for all bands)	unitless	Solar Zenith Angle boundaries "YELLOW" 1 Dimensional Array: SCD_NBANDS_TOTAL Size of Dimension(s): 12
qwgt_g	48	32-bit floating point	(Initially set to 0.7 for all bands)	unitless	Solar Zenith Angle boundaries "GREEN" 1 Dimensional Array: SCD_NBANDS_TOTAL Size of Dimension(s): 12
frac_wgt_yr	4	32-bit floating point	0 – 1 (Initially set to 0.4)	unitless	Fractional Weight "YELLOW/RED" Threshold
frac_wgt_gy	4	32-bit floating point	0 – 1 (Initially set to 0.6)	unitless	Fractional Weight "GREEN/YELLOW" Threshold
sfrac_bmap_excl_thresh1	4	32-bit floating point	0.2	unitless	Snow fraction threshold lower limit for binary map exclusion (0.2 < snow fraction < 0.7)
sfrac_bmap_excl_thresh2	4	32-bit floating point	0.7	unitless	Snow fraction threshold upper limit for binary map exclusion (0.2 < snow fraction < 0.7)
sza_sfrac_degrad_thresh1	4	32-bit floating point	70*Deg2Rad	Radians	Solar zenith angle threshold lower limit for degraded snow fraction condition (70 deg <=sza<=85 deg)
sza_sfrac_degrad_thresh2	4	32-bit floating point	85*Deg2Rad	Radians	Solar zenith angle threshold upper limit for degraded snow fraction condition (70 deg <=sza<=85 deg)
sza_bmap_excl_thresh	4	32-bit floating point	60*Deg2Rad	Radians	Solar zenith angle threshold for binary map exclusion (sza > 60 deg)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sza_sfrac_excl_thresh	4	32-bit floating point	85*Deg2Rad	Radians	Solar zenith angle threshold for snow fraction exclusion (sza > 85 deg)
aot_excl_thresh	4	32-bit floating point	1.0	unitless	Aerosol optical thickness exclusion threshold (aot>1.0)
sza_daynight_thresh	4	32-bit floating point	85*Deg2Rad	Radians	Solar zenith angle threshold for day to night transition (night defined as sza > 85 deg)

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3.2.1.4.67 VIIRS SCD Snow Cover PC

Data Mnemonic	NP_NU-LM0233-073
Description/ Purpose	The VIIRS SCD Snow Cover PC file contains thresholds, switches, and coeffiecients used to derive TOA reflectance for each of the nine moderate resolution bands used for snow fraction. This file is used in the VIIRS Snow Cover EDR algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	104 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.67-1, VIIRS SCD Snow Cover PC Data Format

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Table 3.2.1.4.67-1, VIIRS SCD Snow Cover PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
nbands_m	4	Unsigned 32-bit integer	> 0 (initially set to 9)	unitless	Number of moderate resolution bands SCD_NBANDS_M
band_m	36	Unsigned 32-bit integer	1 – 11 (initially set to"M1", "M2", "M3", "M4", "M5", "M7", "M8", "M10", "M11")	unitless	Band Numbers (nbands_m in size) 1 Dimensional Array: SCD_NBANDS_M Size of Dimension(s): 9
num_r_water	4	Unsigned 32-bit integer	> 0 (initially set to 2)	unitless	Number of water reflectance thresholds (For I1 and I2) SCD_NUM_R_WATER
r_water	8	32-bit floating point	0.0 – 1.0 (initially set to [0.11, 0.11])	unitless	Water Reflectance Thresholds (For I1 and I2) 1 Dimensional Array: SCD_NUM_R_WATER Size of Dimension(s): 2
ndsi_thre1	4	32-bit floating point	(Initially set to 0.4)	unitless	First NDSI Threshold
ndsi_thr2	4	32-bit floating point	(Initially set to 0.1)	unitless	Second NDSI Threshold
n_max_coeff	4	Unsigned 32-bit integer	> 0 (Initially set to 4)	unitless	Number of NDVI Maximum Coefficients SCD_N_MAX_COEFF
ndvi_max_coeff	16	32-bit floating point	-12.0 – 10 (Initially set to [-0.28, 6.4, -12.0, 10.0])	unitless	NDVI Maximum Coefficients 1 Dimensional Array: SCD_N_MAX_COEFF Size of Dimension(s): 4

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
n_min_coeff	4	Unsigned 32-bit integer	> 0 (Initially set to 2)	unitless	Number of NDVI Minimum Coefficients SCD_N_MIN_COEFF
ndvi_min_coeff	8	32-bit floating point	(Initially set to [0.32, -0.7])	unitless	NDVI Minimum Coefficients 1 Dimensional Array: SCD_N_MIN_COEFF Size of Dimension(s): 2
btmax	4	32-bit floating point	(Initially set to 283.0)	Kelvin	Brightness Temperature Threshold
ntypes	4	Unsigned 32-bit integer	1 – 24	unitless	Number of Snow Types (6 grain size * 4 impurities = 24 types) (Initially a placeholder – Not used in code)
frac_option	4	Unsigned 32-bit integer	(Initially set to 1)	unitless	Flag which determines which snow fraction algorithm to run 0 = Spectral Mixing Algorithm 1 = Binary Snow Map Aggregation 2 = Both Initially set to 1 as default

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3.2.1.4.68 VIIRS Gridded SIN Tiles Earth Land PC

Data Mnemonic	NP_NU-LM0233-074
Description/ Purpose	The VIIRS Sinusoidal Map Earth/Land PC file contains earth/off-earth information for each tile on the Sinusoidal Grid. This file is used in the VIIRS GridToGran algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	5184 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.68-1, VIIRS Gridded SIN Tiles Earth/Land PC Data Format

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Table 3.2.1.4.68-1, VIIRS Gridded SIN Tiles Earth Land PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
classification	5184	unsigned 8-bit integer	[0, 1, 3]	unitless	0 = off the earth 1 = on the earth – not land 3 = on the earth – land 2 Dimensional Array: SinusoidalGridRow x SinusoidalGridCol Size of Dimension(s): 72 x 72

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3.2.1.4.69 VIIRS COP Transmittance PC

Data Mnemonic	NP_NU-LM0040-017
Description/ Purpose	This file is used in the VIIRS COP algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	4,768 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.69-1, VIIRS COP Transmittance PC Data Format

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Table 3.2.1.4.69-1, VIIRS COP Transmittance PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Altitude	208	32-bit floating point	0 – 100	meters	1 Dimensional Array: COP_ALTITUDE_LAYERS Size of Dimension(s): 52
Trans_ref	416	64-bit floating point	0 – 1	unitless	1 Dimensional Array: COP_ALTITUDE_LAYERS Size of Dimension(s): 52
transdT_ref	1664	64-bit floating point	0 – 1	unitless	2 Dimensional Array: 4 x COP_ALTITUDE_LAYERS Size of Dimension(s): 4 x 52
transdq_ref	1664	64-bit floating point	0 – 1	unitless	2 Dimensional Array: 4 x COP_ALTITUDE_LAYERS Size of Dimension(s): 4 x 52
t_ref	408	64-bit floating point	0 – 1	unitless	1 Dimensional Array: COP_TRANSMITTANCE_LAYERS Size of Dimension(s): 51
du_ref	408	64-bit floating point	0 – 1	unitless	1 Dimensional Array: COP_TRANSMITTANCE_LAYERS Size of Dimension(s): 51

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3.2.1.4.70 VIIRS AOT Climatology PC

The VIIRS AOT Climatology PC is an ancillary rather than an Auxiliary product. This product is documented in the CDFCB-X, Vol VI, Section 2.1.3.1, Aerosol Optical Thickness Climatology File.

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3.2.1.4.71 VIIRS Bright Pixel Flag Threshold PC

Data Mnemonic	NP_NU-LM0235-002
Description/ Purpose	The VIIRS Bright Pixel Flag Threshold PC file contains bit patterns that match corresponding percents of scattered light. These thresholds are used to determine the output 4-bit state flag that is the output of the Bright Pixel Algorithm. This file is used in the VIIRS Bright Pixel algorithm
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1052 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.71-1, VIIRS Bright Pixel Flag Threshold PC Data Format

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Table 3.2.1.4.71-1, VIIRS Bright Pixel Flag Threshold PC

<table>
<tr><th>Field Name</th><th>Length (Bytes)</th><th>Data Type</th><th>Range of Values</th><th>Units</th><th>Comments</th></tr>
<tr><td>pattern</td><td>210</td><td>unsigned 8-bit integer</td><td>(The values are the same for all 21 bands)

The ranges listed below also represent the legend entry for the VIIRS Bright Pixel Retained IP “Bright Pixel” field.

<table>
<tr><th>Name</th><th>Integer Value</th></tr>
<tr><td>0.0% < scattered light <= 0.01%</td><td>0</td></tr>
<tr><td>0.01% < scattered light <= 0.02%</td><td>1</td></tr>
<tr><td>0.05% < scattered light <= 0.10%</td><td>2</td></tr>
<tr><td>0.10% < scattered light <= 0.20%</td><td>3</td></tr>
<tr><td>0.20% < scattered light <= 0.50%</td><td>4</td></tr>
<tr><td>0.50% < scattered light <= 1.00%</td><td>5</td></tr>
<tr><td>1.00% < scattered light <= 2.00%</td><td>6</td></tr>
<tr><td>1.00% < scattered light <= 2.00%</td><td>7</td></tr>
<tr><td>2.00% < scattered light <= 5.00%</td><td>8</td></tr>
<tr><td>5.00% < scattered light <= 10.00%</td><td>9</td></tr>
<tr><td>10.00% < scattered light</td><td>10</td></tr>
<tr><td>Calculation Unreliable</td><td>15</td></tr>
</table></td><td>unitless</td><td>Values that match the % scattered light thresholds (table entries represent fractional scattered light, not percents) – entries correspond to the thresholds field in this table.

2 Dimensional Array
NUM_IMG_MOD_BANDS
NUM_BP_THRESHOLDS
Size of Dimension(s): 21 x 10

(For NUM_IMG_MOD_BANDS = 21, Bands 1-16 are Moderate Bands M1-M16, 17-21 are Imagery Bands I1 – I5)</td></tr>
<tr><td>spare</td><td>2</td><td>16-bit integer</td><td>MinInt-MaxInt</td><td>Unitless</td><td></td></tr>
</table>

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
thresholds	840	32-bit floating point	-1E-6 to 0.1	percent (of scattered light)	Thresholds for percent of scattered light - entries correspond to the patterns field. 2 Dimensional Array NUM_IMG_MOD_BANDS NUM_BP_THRESHOLDS Size of Dimension(s): 21 x 10 (For NUM_IMG_MOD_BANDS = 21, Bands 1-16 are Moderate Bands M1-M16, 17-21 are Imagery Bands I1 – I5)

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3.2.1.4.72 DELETED

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3.2.1.4.73 VIIRS Surface Temperature IP PC

Data Mnemonic	NP_NU-LM0236-001
Description/ Purpose	The VIIRS Surface Temperature PC This file is used in the VIIRS Sea Ice Quality and Sea Ice Concentration algorithms. Coefficients are used to determine the surface temperature values.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	64 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.73-1, VIIRS Surface Temperature PC Data Format

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Table 3.2.2.5.73-1, VIIRS Surface Temperature PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
coeffs	64	32-bit floating point	Minfloat – Maxfloat	unitless	Coefficients used to determine the surface temperature values for Surface Temperature IP 3 Dimensional Array: STIP_LUT_MAX_TERMS x STIP_LUT_MAX_DN (day/night) x STIP_LUT_MAX_ALG Size of Dimension(s): 4 x 2 x 2

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3.2.1.4.74 VIIRS Solar Diffuser Rotation Matrix PC

Data Mnemonic	NP_NU-LM0233-080
Description/ Purpose	The VIIRS Solar Diffuser Rotation Matrix PC contains the Solar Diffuser rotation matrix and the SDSM screen rotation matrix. These matrices are used to determine the orientation of the Solar Diffuser with respect to the spacecraft. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	72 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.74-1, VIIRS Solar Diffuser Rotation Matrix PC Data Format

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Table 3.2.1.4.74-1, Solar Diffuser Rotation Matrix PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SD	36	32-bit floating point	0 – 1	unitless	Solar Diffuser rotation matrix values used to convert Spacecraft Coordinates to Solar Diffuser Coordinates 2 Dimensional Array SD_MATRIX_ROW x SD_MATRIX_COL Size of Dimension(s): 3 x 3
SDSM	36	32-bit floating point	0 – 1	unitless	Solar Diffuser rotation matrix values used to convert Spacecraft Coordinates to SDSM Coordinates 2 Dimensional Array SD_MATRIX_ROW x SD_MATRIX_COL Size of Dimension(s): 3 x 3

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3.2.1.4.75 VIIRS Solar Diffuser SDSM BRDF PC

Data Mnemonic	NP_NU-LM0233-081
Description/ Purpose	The VIIRS Solar Diffuser SDSM BRDF PC contains Solar Diffuser BRDF values as observed by the SDSM. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	56,416
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.75-1, VIIRS Solar Diffuser SDSM BRDF PC Data Format

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Table 3.2.1.4.75-1, Solar Diffuser SDSM BRDF PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Elevation	1312	32-bit floating point	30 – 50	degrees	Solar Elevation Angle 2 Dimensional Array Number of bands x elevations Size of Dimension(s): 8 x 41
azimuth	1312	32-bit floating point	0 – 20	degrees	Solar Azimuth Angle 2 Dimensional Array Number of bands x azimuths Size of Dimension(s): 8 x 41
factor	53792	32-bit floating point	<= 1.0	unitless	Factors based on Elevation and Azimuth 3 Dimensional Array Number of bands x azimuths x elevation Size of Dimension(s): 8 x 41 x 41

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3.2.1.4.76 VIIRS Solar Diffuser SDSM Time PC

Data Mnemonic	NP_NU-LM0233-082
Description/ Purpose	The VIIRS Solar Diffuser SDSM Time PC contains scan fractions of SDSM sample times. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	20 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.76-1, VIIRS Solar Diffuser SDSM Time PC Data Format

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Table 3.2.1.4.76-1, Solar Diffuser SDSM Time PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
fraction	20	32-bit floating point	0 – 1	unitless (fraction of scan)	Collection of offsets by time fraction. These are the scan fraction locations of the SDSM sample time. 1 Dimensional Array Size of Dimension(s): 5

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3.2.1.4.77 VIIRS Solar Diffuser Transmittance Screen PC

Data Mnemonic	NP_NU-LM0233-083
Description/ Purpose	The VIIRS Solar Diffuser Transmittance Screen PC contains the transmittance screen coefficients for the Solar Diffuser. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	86,496 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.77-1, VIIRS Solar Diffuser Transmittance Screen PC Data Format

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Table 3.2.1.4.77-1, Solar Diffuser Transmittance Screen PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
elevation	1632	32-bit floating point	Initially set to: -5 – 5	degrees	Solar Elevation Angle 2 Dimensional Array SDSM_DETECTOR x SD_EL Size of Dimension(s): 8 x 51
azimuth	1632	32-bit floating point	Initially set to: -10 – 10	degrees	SolarAzimuth Angle 2 Dimensional Array SDSM_DETECTOR x SD_AZ Size of Dimension(s): 8 x 51
factor	83232	32-bit floating point	0 – 1	unitless	Factors based on Elevation and Azimuth 3 Dimensional Array SDSM_DETECTOR x SDSM_AZ x SDSM_EL Size of Dimension(s): 8 x 51 x 51

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3.2.1.4.78 VIIRS Solar Diffuser Voltage PC

Data Mnemonic	NP_NU-LM0233-084
Description/ Purpose	The VIIRS Solar Diffuser Voltage PC contains scaling factors for converting scaled integer data to engineering units (volts). This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1,280
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.78-1, VIIRS Solar Diffuser Voltage PC Data Format

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Table 3.2.1.4.78-1, Solar Diffuser Voltage PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
voltCoef	960	32-bit floating point		unitless	Conversion factors for polynomial conversions of SDSM data 3 Dimensional Array nsamples x ndetectors x ncoefficients Size of Dimension(s): 5 x 8 x 6
voltLowerLimit	160	32-bit integer	-8192 to 8191	unitless	Lower limit of unscaled data 2 Dimensional Array nsamples x ndetectors Size of Dimension(s): 5 x 8
voltUpperLimit	160	32-bit integer	-8192 to 8191	unitless	voltUpperLimit 2 Dimensional Array nsamples x ndetectors Size of Dimension(s): 5 x 8

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3.2.1.4.79 VIIRS SDSM Transmittance Screen PC

Data Mnemonic	NP_NU-LM0233-085
Description/ Purpose	The VIIRS SDSM Transmittance Screen PC contains the transmittance screen coefficients for the Solar Diffuser Stability Monitor. This file is used in the VIIRS Solar Diffuser algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	16,096
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.79-1, VIIRS SDSM Transmittance Screen PC Data Format

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Table 3.2.1.4.79-1, SDSM Transmittance Screen PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
elevation	352	32-bit floating point	Initially set to: -5 – 5	degrees	Solar Elevation Angle 2 Dimensional Array Number of bands x elevations Size of Dimension(s): 8 x 11
azimuth	1312	32-bit floating point	Initially set to: -10 – 10	degrees	SolarAzimuth Angle 2 Dimensional Array Number of bands x azimuths Size of Dimension(s): 8 x 41
factor	14432	32-bit floating point	0 – 1	unitless	Factors based on Elevation and Azimuth 3 Dimensional Array Number of bands x azimuths x elevations Size of Dimension(s): 8 x 41 x11

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3.2.1.4.80 VIIRS SDR GEO PARAM PC

Data Mnemonic	NP_NU-LM0233-211: I-Band Geolocation PC NP_NU-LM0233-212: M-Band Geolocation PC NP_NU-LM0233-213: DNB Geolocation PC
Description/ Purpose	The VIIRS SDR GEO PARAM PC contains coefficients used in the geolocation algorithm. This file is used in the VIIRS SDR Geolocation algorithm. This is a common format for I-Band, M-Band Aggregated and DNB PC Tables.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	6604
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.80-1, VIIRS SDR GEO PARAM PC Data Format

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Table 3.2.1.4.80-1, VIIRS SDR GEO PARAM PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
revision	10	UInt8	>=0	unitless	Revision number for the parameter file. 1 Dimensional Array: Size of Dimension(s): 10
pad1	2	UInt8	MinInt - MaxInt	unitless	1 Dimensional Array: Size of Dimension(s): 2
band_number	4	Int32	0 – 22	unitless	Band number to geolocate (0 is the ideal band). This parameter is used to index other band dependent parameters.
latch_to_center	8	Float64	0 – 1.0	unitless	Used to calculate sample time from frame time. This specifies the fraction of the frame time that is used to compute the sample time, e.g., latch_to_center = 0.5 means that the sample time is computed at the center of the frame time.
t_reset	8	Float64	0 <= 2.3e-5	seconds	Time to reset the sample, otherwise called the readout time. This is computed by subtracting the integration time from the frame time.
N_samp	74	UInt16	1 - 2	unitless	Factor used to determine the number of samples per frame for each band (0 is the ideal band). 1 Dimensional Array: Size of Dimension(s): 37
pad2	2	UInt8	MinInt – MaxInt	unitless	1 Dimensional Array: Size of Dimension(s): 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
focal_length	296	Float64	0.270 – 1.15	meters	Instrument focal length for each band. This parameter is tied to the Mag parameter. If the system Mag is used, then the system focal length should be used. Likewise, if the Mag of the Aft Optics is used, then the Aft Optics focal length should be used.1 Dimensional Array: Size of Dimension(s): 37
det_space_track	296	Float64	Range for IMG: 0.000508 – 0.000511 Range for MOD: 0.001016 – 0.001022	meters	Detector center spacing in the track direction (0 is the ideal band). 1 Dimensional Array: Size of Dimension(s): 37
det_space_scan	296	Float64	≥ 0	meters	Detector center spacing in the scan direction (0 is the ideal band). This parameter currently set to zero for all bands since the scan offset is accounted for by a timing offset. 1 Dimensional Array: Size of Dimension(s): 37
DNB_space_track	256	Float64	0.000484 - 0.001016	meters	DNB detector center spacing in the track direction. Aggregation zone dependent, listed in order from Zone 0 to 31, where aggregation Zone 0 is nadir.1 Dimensional Array: Size of Dimension(s): 32

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_space_scan	256	Float64	≥ 0	meters	DNB detector center spacing in the scan direction. Aggregation zone dependent, listed in order of zone 0 to 31, where aggregation zone 0 is nadir. This parameter currently set to zero for all zones since the scan offset is accounted for by a timing offset. 1 Dimensional Array: Size of Dimension(s): 32
det_position	592	Float64	Range Dim 1 (scan): Range IMG: 0 - 0.000177 Range MOD: 0 - 0.000354 Range DNB: 0 - 0.000015] Range Dim 2 (track): Range IMG: 0 - 0.000508 Range MOD: 0 - 0.001016 Range DNB: 0 - 0.000024	meters	Band center x and y offset pairs with respect to the optical center (0 is the ideal band). This value is the average shift of all detector locations within the band from the nominal location (overall bias per band). 2 Dimensional Array: Size of Dimension(s): 37 x 2 Col 1: x-component (scan) shift Col 2: y-component (track) shift
band_position	296	Float64	-22 - 22	MOD Res IFOV	Scan IFOV offset of band trailing edges with respect to the Optical Center (0 is the ideal band). 1 Dimensional Array: Size of Dimension(s): 37
earth_view_delay	8	Float64	MinFloat – MaxFloat	seconds	The delay following the start of scan (referenced to the encoder clock reset) to the start of the first Earth View (EV) sample. This parameter specifies the dropped samples to allow for electronic settling before EV sampling.

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
detector_sampling_rate	8	Float64	0.00003 – 0.0009	seconds	Sampling rate for MOD, IMG and DNB resolution detectors
scan_length	8	Float64	1.77 – 1.80	seconds	Scan period (Length of VIIRS scan).
agg_zone_bounds	20	Int32	Constants	unitless	Upper bounds for the MOD and IMG resolution along-scan aggregation zones. For the MOD resolution case, specification of a Negative value for the first zone forces the software to geolocate unaggregated MOD pixels. Capability required for Cal/Val. Note that N_frame should be consistent with RES choice made here. 1 Dimensional Array: Size of Dimension(s): 5
DNB_aggregation	256	Int32	Constant	unitless	The first column is the number of samples occurring in each DNB aggregation zone, and the second column is the number of along-scan photosites per pixel for that zone. Values are listed from aggregation zone 0 to 31, where Zone 0 is nadir. 2 Dimensional Array: Size of Dimension(s): 32 x 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DNB_ag_zone_bounds	768	Int32	Range for Col 0 &1: 0 – 4063 Range for Col 2: 0 – 31	Col 0 and 1: Frame Num Col 2: Agg Zone Index	Frame number limits for the 32 DNB aggregation zones from start of scan through nadir to end of scan, and the associated DNB aggregation zone indices. Columns 0 & 1 are the lower and upper frame numbers per zone, respectively. Column 2 contains the associated aggregation zone index, where Index 0 corresponds to nadir and Index 31 the edge of scan. 2 Dimensional Array: Size of Dimension(s): 64 x 3
scan_ang_coef_tel	8	Float64	MinFloat – MaxFloat	unitless	Scan angle coefficient for telescope.
scan_ang_coef_mirr	8	Float64	MinFloat – MaxFloat	unitless	Scan angle coefficient for HAM
scan_ang_offsets	16	Float64	0 to 2π	radians	Scan angle offsets for computing the sample scan angle for mirror side 1 (element 0) and side 2 (element 1). 1 Dimensional Array: Size of Dimension(s): 2
enc_scale	8	Float64	Constant	unitless	Scale factor for converting 14-bit encoders to 16-bit representation.
mirr_abs_limit	16	Float64	875 – 885	Scan-time counter ticks	Mirror encoder time stamp absolute limits in units of Scan-Time counter ticks. This parameter determines the valid range for the mirror encoder delta time stamp readings (specifies the acceptable stable scan rate range by limiting the delta timestamp readings). 1 Dimensional Array: Size of Dimension(s): 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
mirr_del_limit	8	Float64	<= 10	Scan-time counter ticks	Mirror encoder time stamp delta limits in units of Scan-Time counter ticks. This parameter specifies the maximum allowable difference between adjacent mirror encoder delta time stamp readings (limits the instantaneous changes in scan rate).
tel_abs_limit	16	Float64	875 to 885	Scan-time counter ticks	Telescope encoder time stamp absolute limits in units of Scan-Time counter ticks. This parameter determines the valid range for the telescope encoder delta time stamp readings (specifies the acceptable stable scan rate range by limiting the delta timestamp readings). 1 Dimensional Array: Size of Dimension(s): 2
tel_del_limit	8	Float64	<= 10	Scan-time counter ticks	Telescope encoder time stamp delta limits in units of Scan-Time counter ticks. This parameter specifies the maximum allowable difference between adjacent telescope encoder delta time stamp readings (limits the instantaneous changes in scan rate).
sample_impulse_mirr	4	Int32	Constant	Encoder pulses	Mirror encoder pulses between each encoder sample (= 2)
sample_impulse_tel	4	Int32	Constant	Encoder pulses	Telescope encoder pulses between each encoder sample (= 4)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
A_bit_adj	8	Int32	0 - 1	16-bit encoder ticks	Offset to convert from pseudo 15-bit to 16-bit encoders, depending on if the Start-of-Scan15-bit encoder is even or odd [even adjust / odd adjust] 1 Dimensional Array: Size of Dimension(s): 2
B_HAM_adj	8	Int32	0 - 2^{16}	16-bit encoder ticks	Offset for converting HAM encoders to absolute encoders depending on the HAM side [HAM A adjust / HAM B adjust] 1 Dimensional Array: Size of Dimension(s): 2
t_encoder	8	Float64	0.495624 - 0.495688	Microseconds per scan time counter tick	Encoder data scale factor to convert from scan time counter ticks to time.
mirr_side1_range	16	Float64	$-\pi$ to π	radians	Mirror side 1 angle range 1 Dimensional Array: Size of Dimension(s): 2
alpha	8	Float64	< 9.7e-5	radians	Mirror wedge angle α is the non-parallelism of the HAM in the along-scan axis, and creates an along-scan offset between scans from mirror sides 1 and 2.
beta	8	Float64	< 9.7e-5	radians	Mirror wedge angle β is the non-parallelism of the HAM in the along-track axis, and creates an along-track offset.
gammaa	8	Float64	-4.85e-5 to 4.85e-5	radians	Misalignment of the mirror plane-of-symmetry (defined as the plane midway between the two mirror surfaces) to the rotation axis (HAM motor axis)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
T_inst2sc	72	Float64	MinFloat – MaxFloat	unitless	3x3 Instrument to Spacecraft frame transformation matrix 2 Dimensional Array: Size of Dimension(s): 3 x 3
T_mirr2inst	72	Float64	MinFloat – MaxFloat	unitless	3x3 Mirror to Instrument frame transformation matrix 2 Dimensional Array: Size of Dimension(s): 3 x 3
T_aft2inst	72	Float64	-1 - 1	unitless	3x3 AFT to Instrument frame transformation matrix (this matrix includes Focal plane to AFT frame transformation, which is a 3x3 rotation matrix with the scan velocity lag angle) 2 Dimensional Array: Size of Dimension(s): 3 x 3
T_inst2SD	72	Float64	-2 - 2	unitless	3x3 Instrument to Solar Diffuser frame transformation matrix 2 Dimensional Array: Size of Dimension(s): 3 x 3
T_tel2inst	72	Float64	MinFloat – MaxFloat	unitless	3x3 Telescope to Instrument frame transformation matrix 2 Dimensional Array: Size of Dimension(s): 3 x 3
num_thermistor	4	Int32	0 - 26	unitless	Number of thermistors used for thermal correction.

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
thermistor_id	1040	UInt8	MinInt - MaxInt	unitless	ID of thermistors used for temperature corrections. Each ID or name corresponds to a set of thermistor coefficients listed in the thermistor_coeffs parameter. The number of items listed here should equal num_thermistor. 2 Dimensional Array: Size of Dimension(s): 40 x 26
thermistor_coeffs	1248	Float64	MinFloat – MaxFloat	unitless	Set of coefficients used in a conversion polynomial to derive a temperature from thermistor readings. Each set corresponds to a thermistor name (see thermistor_id). The number of items entered here should equal num_thermistor. 2 Dimensional Array: Size of Dimension(s): 26 x 6
Mag	72	Float64	0 - 1	unitless	3x3 telescope magnification matrix, where the matrix contains the term 1/m. This parameter is coupled with the focal_length parameter (see focal_length comments). 2 Dimensional Array: Size of Dimension(s): 3 x 3
basis_in	72	Float64	-1 - 1	unitless	3x3 telescope entrance basis matrix. 2 Dimensional Array: Size of Dimension(s): 3 x 3
basis_out	72	Float64	-1 - 1	unitless	3x3 telescope exit basis matrix. 2 Dimensional Array: Size of Dimension(s): 3 x 3

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
poly_coef_mirr	40	Float64	MinFloat – MaxFloat	Element 0: Radians Element 1: radians/16-bit encoder ticks	Polynomial coefficients for mirror encoder-to-angle conversion. Assumes linear relationship, so only first two coefficients are populated. 1 Dimensional Array: Size of Dimension(s): 5
poly_coef_tel	40	Float64	MinFloat – MaxFloat	Element 0: Radians Element 1: radians/16-bit encoder ticks	Polynomial coefficients for telescope encoder-to-angle conversion. Assumes linear relationship, so only first two coefficients are populated. 1 Dimensional Array: Size of Dimension(s): 5
tel_ref	8	Float64	$-\pi$ to π	radians	Telescope reference angle
MIN_COS_VIEW	8	Float64	0 – 1	unitless	The “Near Limb” test limit for setting the geo quality flags. This limit is defined as the minimum value of the cosine of the Senor Zenith Angle. Any values of cos(SenZenith) < MIN_COS_VIEW are flagged as “Near Limb”.
band_type	4	Int32	0 - 2	unitless	Identifies band type: moderate (0), imagery (1), or DNB (2)
num_detectors	4	Int32	16 - 32	unitless	Number of detectors per band (depends on band type).
poly_degree	4	Int32	1 - 4	unitless	Degree of the polynomial for mirror encoder-to-angle conversion
N_frame	2	UInt16	3200 – 6400	unitless	Number of frames per scan (depends on band_type).
pad3	2	UInt8	MinInt - MaxInt	unitless	1 Dimensional Array: Size of Dimension(s): 2

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3.2.1.4.81 Common Geolocation Parameters PC

Data Mnemonic	NP_NU-LM0233-215: Common Geolocation PC
Description/ Purpose	The COMMON GEO PARAM PC contains coefficients used in the common geolocation algorithm. This file is used in the Common Geolocation algorithm.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	120 bytes
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	For details see Table 3.2.1.4.81-1, Common Geolocation Parameters PC Data Format

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Table 3.2.1.4.81-1, Common Geolocation Parameters PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ang_mom_limit	16	Float64	5.3E10 - 5.44E10	Meters^2 per second	Angular momentum magnitude absolute limits. 1 Dimensional Array: Size of Dimension(s): 2
ang_mom_z_limit	16	Float64	-8.5E10 - -7.5E9	Meters^2 per second	Angular momentum Z component absolute limits. 1 Dimensional Array: Size of Dimension(s): 2
orbit_consistency	8	Float64	≤ 75 m	Meters	Orbit position/velocity consistency limit – used to verify that the S/C velocity data can be used to compute the absolute value of the shift in S/C position between two E&A data points to within the consistency limit. The same limit applies to all vector components.
position_abs_limit	16	Float64	-7.25E6 to 7.25E6	Meters	Orbit position absolute limits –used to check that the position vector components are within the valid range. 1 Dimensional Array: Size of Dimension(s): 2
position_mag_limit	16	Float64	7.0E6 to 7.5E6	Meters	Orbit position magnitude limits –used to check that the magnitude of the position vector is within the valid range. 1 Dimensional Array: Size of Dimension(s): 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
velocity_abs_limit	16	Float64	-7.55E3 to 7.55E3	Meters per second	Orbit velocity absolute limits –used to check that the velocity vector components are within the valid range. 1 Dimensional Array: Size of Dimension(s): 2
velocity_mag_limit	16	Float64	7.35E3 to 7.55E3	Meters per second	Orbit velocity magnitude limits –used to check that the magnitude of the velocity vector is within the valid range. 1 Dimensional Array: Size of Dimension(s): 2
attitude_abs_limit	16	Float64	-1800.0 to 1800.0	Arcseconds	Attitude angle absolute limits. 1 Dimensional Array: Size of Dimension(s): 2

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3.2.2 Ephemeral PCs

Ephemeral PCs are files containing the processing coefficient parameters used to create NPP/NPOESS Data Products and are updated frequently. Ephemeral PC updates follow the data format definition provided in the CDFCB-X Volume VI, D34862-06 for PC Tables.

The following sections indicate the parameters included in each respective file.

Most Ephemeral PCs are applicable to a single sensor or sensor suite. However, the SAA table is independent of all sensors. The format is provided in Table 3.2.2-1, SAA PC Data Format.

The South Atlantic Anomaly (SAA) PC file contains the SAA intensity as modeled using a 2-d Gaussian to provide the intensity at any given latitude and longitude. Coefficients for the peak intensity (100%), and latitude/longitude widths and centers are also provided. The resulting values are typically binned into a percentage threshold range and a quality flag is set accordingly – this quality flag is present in multiple SDRs and EDRs.

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Table 3.2.2-1, VIIRS Common Geolocation SAA PC Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
centerLat	8	64-bit floating point	-pi/2 to pi/2	radians	Latitude of the center of the SAA (in radians, positive north)
centerLon	8	64-bit floating point	-pi to pi	radians	Longitude of the center of the SAA (in radians, positive East)
maxIndex	8	64-bit floating point	0 - 100	percent	Maximum index value produced by the function
latHeight	8	64-bit floating point	0 to pi/2	radians	Latitude height of the SAA (in radians) equal to 1 standard deviation of the Gaussian distribution model
lonWidth	8	64-bit floating point	0 to pi	radians	Longitude width of the SAA (in radians) equal to 1 standard deviation of the Gaussian distribution model

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3.2.2.1 CrIMSS PCs

3.2.2.1.1 CrIMSS EDR Ephemeral PC

Table 3.2.2.1.1-1, CrIMSS EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
localAngleAdj	4	32-bit integer	MinInt – MaxInt	unitless	Flag to perform local angle adjustments
iTrop	4	32-bit integer	MinInt – MaxInt	unitless	Flag to determine whether to find the tropopause level
mwCloud	4	32-bit integer	MinInt – MaxInt	unitless	Flag for Cloud retrieval
covSelectMethod	4	32-bit integer	MinInt – MaxInt	unitless	Covariance selection method
chanSelFlag	88	32-bit integer	MinInt – MaxInt	unitless	Array of channel selection flag for mw 1 Dimensional Array Size of Dimension(s): 22
landTypes	32	32-bit integer	MinInt – MaxInt	unitless	Array of land types used in the algorithm 1 Dimensional Array Size of Dimension(s): 8
fovFac	4	32-bit floating point	Minfloat – Maxfloat	unitless	Additional flag for MW channels 1 and 2
apodFlag	4	32-bit integer	MinInt – MaxInt	unitless	Apodization option flag
maxMwIter	4	32-bit integer	MinInt – MaxInt	unitless	Maximum number of iterations for MW retrieval

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
maxIrIter	4	32-bit integer	MinInt – MaxInt	unitless	Maximum number of iterations for IR+MW retrieval
sceneClassMode	4	32-bit integer	MinInt – MaxInt	unitless	Scene classification mode
freqIrSfcHp	48	32-bit floating point	Minfloat – Maxfloat	unitless	Array of Surface hinge points for IR emissivity 1 Dimensional Array Size of Dimension(s): 12
bkgCld	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of cloud backgrounds 1 Dimensional Array Size of Dimension(s): 2
cldRetrCov	16	32-bit floating point	Minfloat – Maxfloat	unitless	Array of Cloud retrieval covariance 1 Dimensional Array Size of Dimension(s): 2 x 2
chanFlagLowerMin	4	32-bit floating point	Minfloat – Maxfloat	unitless	Channel selection lower limit flag's minimum value
chanFlagLowerMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	Channel selection lower limit flag's maximum value
chanFlagUpperMin	4	32-bit floating point	Minfloat – Maxfloat	unitless	Channel selection upper limit flag's minimum value
chanFlagUpperMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	Channel selection upper limit flag's maximum value
maxTemp	4	32-bit floating point	Minfloat – Maxfloat	Kelvin	Maximum temperature

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
minTemp	4	32-bit floating point	Minfloat – Maxfloat	Kelvin	Minimum temperature
alpha1	4	32-bit floating point	Minfloat – Maxfloat	unitless	Constant used to calculate error covariance matrix
chiSqMwIterThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	MW convergence flag to finish iteration
chiSqMwThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	Threshold used to determine when to reset background and covariance
chiSqCldThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	Cloudy radiance convergence criterion
chiSqIrThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	Convergence threshold to finish IR iterations
htol	4	32-bit floating point	Minfloat – Maxfloat	unitless	Constant used for checking mixing ratio for super-saturation
debug	4	32-bit integer	Minfloat – Maxfloat	unitless	Debug flag
landThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	Land Threshold(Percentage of land)
oceanThresh	4	32-bit floating point	Minfloat – Maxfloat	unitless	Ocean Threshold(percentage of ocean)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tSkinMwThreshold1	4	32-bit floating point	Minfloat – Maxfloat	unitless	Assign threshold 1 background profiles and covariance matrices according to value
tSkinMwThreshold2	4	32-bit floating point	Minfloat – Maxfloat	unitless	Assign threshold 2 background profiles and covariance matrices according to value
tSkinMwThreshold3	4	32-bit floating point	Minfloat – Maxfloat	unitless	Assign threshold 3 background profiles and covariance matrices according to value
tSkinMwThreshold4	4	32-bit floating point	Minfloat – Maxfloat	unitless	Assign threshold 4 background profiles and covariance matrices according to value
firstCldTunApod0	4	32-bit floating point	Minfloat – Maxfloat	unitless	First cloud-clearing turning parameter for APOD 0
firstCldTunApod1	4	32-bit floating point	Minfloat – Maxfloat	unitless	First cloud-clearing turning parameter for APOD 1
firstCldTunApod2	4	32-bit floating point	Minfloat – Maxfloat	unitless	First cloud-clearing turning parameter for APOD 2
secondCldTunApod0	4	32-bit floating point	Minfloat – Maxfloat	unitless	Second cloud-clearing turning parameter for APOD 0
secondCldTunApod1	4	32-bit floating point	Minfloat – Maxfloat	unitless	Second cloud-clearing turning parameter for APOD 1
secondCldTunApod2	4	32-bit floating point	Minfloat – Maxfloat	unitless	Second cloud-clearing turning parameter for APOD 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cldClearRngBnd1	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of Cloud-clearing spectral range for band 1 1 Dimensional Array Size of Dimension(s): 2
cldClearRngBnd3	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of Cloud-clearing spectral range for band 3 1 Dimensional Array Size of Dimension(s): 2
atmNoise	4	32-bit integer	MinInt – MaxInt	unitless	Atmospheric noise flag used in FOV selection routine
irChanRangNotUsed	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of IR channels not used in the retrieval 1 Dimensional Array Size of Dimension(s): 2
cloudIEmissAndRefl	4	32-bit floating point	Minfloat – Maxfloat	unitless	Emissivity and reflectivity for cloud I for all channels
cloudIIEmissAndRefl	4	32-bit floating point	Minfloat – Maxfloat	unitless	Emissivity and reflectivity for cloud II for all channels
irECMSpectRangeLow	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of IR lower spectral range to calculate error covariance matrix 1 Dimensional Array Size of Dimension(s): 2
irECMSpectRangeHigh	8	32-bit floating point	Minfloat – Maxfloat	unitless	Array of IR higher spectral range to calculate error covariance matrix 1 Dimensional Array Size of Dimension(s): 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
chiSqAirsMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	AIRS chi-square threshold - quality flag is set if value is exceeded
chiSqMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	Second stage chi-square threshold - quality flag is set if value exceeded
chiSqMwMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	First stage (MW only) chi-square threshold - quality flag is set if is exceeded
chiSqMw2Max	4	32-bit floating point	Minfloat – Maxfloat	unitless	Second stage MW chi-square threshold - quality flag is set if value is exceeded
profDiffMax	4	32-bit floating point	Minfloat – Maxfloat	unitless	First vs. second stage retrieval profile difference threshold quality flag. Set if value is exceeded
ccThreshIrMw	4	32-bit floating point	Minfloat – Maxfloat	unitless	Cloud/Clear threshold for second stage chisquare value
ccThreshMw	4	32-bit floating point	Minfloat – Maxfloat	unitless	Cloud/Clear threshold for first stage chisquare value
ccThreshIrna	4	32-bit floating point	Minfloat – Maxfloat	unitless	Cloud/Clear threshold for the IR Noise Amplification Factor value
sunGlintThresh	4	32-bit floating point	Minfloat – Maxfloat	degrees	Sun glint threshold (degrees)
detectorQF	108	32-bit integer	MinInt – MaxInt	unitless	Detector quality flags (0=detector failure) 1 Dimensional Array Size of Dimension(s): 27

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3.2.2.2 ATMS PCs

3.2.2.2.1 ATMS SDR Ephemeral PC

Table 3.2.2.2.1-1, ATMS SDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
scanWeightsWc	1760	64-bit floating point	0 – 1	unitless	Weighting factors applied to calibration target data 2 Dimensional Array: NUM_SCAN_WC x NUM_CHANNELS Size of Dimenions(s): 10 x 22
scanWeightsCc	1760	64-bit floating point	0 – 1	unitless	Weighting factors applied to calibration target data 2 Dimensional Array: NUM_SCAN_CC x NUM_CHANNELS Size of Dimenions(s): 10 x 22
scanBias	16896	64-bit floating point	-5 – 5	Kelvin	Scan-angle dependent BT biases for each channel coefficient of 0th order term in brightness temperature equation Tcorrected = AT + B 2 Dimensional Array: NUM_CHANNELS x NUM_BEAM_POSITIONS Size of Dimenions(s): 22 x 96

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
beamEfficiencyCorrection	16896	64-bit floating point	0 – 1.2	unitless	Scan-angle dependent beam efficiency correction factor for each channel coefficient of 1st order term in brightness temperature equation corrected = AT + B 2 Dimensional Array: NUM_CHANNELS x NUM_BEAM_POSITIONS Size of Dimenions(s): 22 x 96
warmBiasCorrection	528	64-bit floating point		a1: K a2: KC^{-1} a3: KC^{-2}	Coefficients for receiver temperature dependent warm bias corrections where correction equation is of form a1 + a2TR + a3TR**2 and coefficients are a1, a2, and a3. TR is the receiver temperature in degrees C. 2 Dimensional Array: NUM_BIAS_COEFFS x NUM_CHANNELS Size of Dimenions(s): 3 x 22
scanWeightsPrtKav	288	32-bit floating point	0 – 1	unitless	Weighting factors applied to KAV target PRT measurements 2 Dimensional Array: NUM_SCAN_PRT x NUM_PRT_KAV Size of Dimenions(s): 9 x 8
scanWeightsPrtWg	252	32-bit floating point	0 – 1	unitless	Weighting factors applied to WG target PRT measurements 2 Dimensional Array: NUM_SCAN_PRT x NUM_PRT_WG Size of Dimenions(s): 9 x 7

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
coldSpaceTbs	88	32-bit floating point	2.76 – 4.79	Kelvin	Brightness temperature of cosmic cold space, with Planck correction applied, for each ATMS channel 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
quadraticRc	1056	32-bit floating point	-0.85 – 0.854	Kelvin	Quadratic RC 3 Dimensional Array: NUM_COLD_PLATE_TEMP x NUM_REDUNCDANCY_CONFIGS x NUM_CHANNELS Size of Dimenions(s): 3 x 4 x 22
shelfTemp	48	32-bit floating point	-10 – 50	Celsius	Shelf temperature 2 Dimensional Array: NUM_COLD_PLATE_TEMP x NUM_SHELF_TEMPS Size of Dimenions(s): 3 x 4
beamAlignmentError	792	32-bit floating point	-0.665 – 0.656	Degrees	Beam alignment errors 3 Dimensional Array: NUM_CHANNELS x BEAM_POS_OFFSET x ATTITUDE Size of Dimenions(s): 22 x 3 x 3
coldBiasCorrection	352	32-bit floating point	0 – 0.6	Kelvin	Cold bias correction coefficients 2 Dimensional Array: NUM_COLD_SAMPLES x NUM_CHANNELS Size of Dimenions(s): 4 x 22

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lowLimitPrt	8	32-bit floating point	245- 340	Kelvin	Lower limit PRT 1 Dimensional Array: NUM_BAND_CATEGORIES Size of Dimenions(s): 2
uppLimitPrt	8	32-bit floating point	245- 340	Kelvin	Upper limit PRT 1 Dimensional Array: NUM_BAND_CATEGORIES Size of Dimenions(s): 2
maxVarPrt	8	32-bit floating point	0 -10	Kelvin	Max variance PRT 1 Dimensional Array: NUM_BAND_CATEGORIES Size of Dimenions(s): 2
threeDBeamWidth	88	32-bit floating point	1.14 – 5.42	degrees	Three D beam width 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
lunarContaminationThreshold	88	32-bit floating point	0 – 1	Kelvin	Lunar contamination threshold 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
nominalAltitude	4	32-bit floating point	Initially set to 833 km	km	Altitude used as 1st guess in Earth normal computation loop
prtConvergence	4	32-bit floating point	Initially set to 0.0005	celsius	Convergence criteria for Newton-Raphson computation of temperature from PRT resistance

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wtThresholdPrt	4	32-bit floating point	0 -1	unitless	Weight threshold for PRT - Minimum normalized weight-sum required for passing the PRT data sufficiency check
wtThresholdWc	4	32-bit floating point	0 -1	unitless	Weight threshold for WC - Minimum normalized weight-sum required for passing the warm count data sufficiency check
wtThresholdCc	4	32-bit floating point	0 -1	unitless	Weight threshold for CC - Minimum normalized weight-sum required for passing the cold count data sufficiency check
dataLimits	592	32-bit floating point	minfloat – maxfloat	unitless	The valid value range for the Health & Status telemetry 2 Dimensional Array: MIN_MAX_DIM x NUM_HS_VARS Size of Dimenions(s): 2 x 74
spaceViewresolverCounts	64	32-bit integer	13746 - 15565	Expected Counts	Space view resolver counts - Expected count for 4 cold view positions and 4 cold scan profiles 2 Dimensional Array: NUM_COLD_SAMPLES x NUM_COLD_SCAN_PROFILES Size of Dimenions(s): 4 x 4
blackBodyResolverCounts	64	32-bit integer	35286 – 35892	Expected Counts	Black body resolver counts - Expected count for 4 warm view positions 2 Dimensional Array: NUM_WARM_SAMPLES x NUM_WARM_SCAN_PROFILES Size of Dimenions(s): 4 x 4

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lowLimitWc	88	32-bit integer	0 – 65635	Count	Lower limit WC - Channel-specific lower limit for warm count 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
uppLimitWc	88	32-bit integer	0 – 65635	Count	Upper limit WC - Channel-specific upper limit for warm count 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
maxVarWc	88	32-bit integer	0 – 65635	Count	Max variance WC 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
lowLimitCc	88	32-bit integer	0 – 65635	Count	Lower limit CC 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
uppLimitCc	88	32-bit integer	0 – 65635	Count	Upper limit CC 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22
maxVarCc	88	32-bit integer	0 – 65635	Count	Max variance CC 1 Dimensional Array: NUM_CHANNELS Size of Dimenions(s): 22

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
numThresholdPrt	8	32-bit integer	1 – 8	unitless	Number of threshold PRTs 1 Dimensional Array: NUM_BAND_CATEGORIES Size of Dimenions(s): 2
mapRc	32	32-bit integer	1 – 4	unitless	Map of RC 1 Dimensional Array: NUM_MAP_RC_SIZE Size of Dimenions(s): 8
resolverOffset	4	32-bit integer	-200 – 200	Count	Offset of the resolver
epsilonCold	4	32-bit integer	initially set to 7	unitless	Epsilon value for cold space view positions
epsilonWarm	4	32-bit integer	initially set to 7	unitless	Epsilon value for warm blackbody view positions
allowableDev	4	32-bit integer	initially set to 18	milliseconds	Allowable deviance
prtLoops	4	32-bit integer	1 – 200	unitless	Maximum allowable loops for PRT temperature calculations
useQuadraticTerm	1	bool	0 or 1	unitless	Flag indicating use of quadratic 0: do not use quadratic term 1: use quadratic term
useQuadraticTele	1	bool	0 or 1	unitless	Flag indicating use of quadratic telemetry
useBeamAlignTele	1	bool	0 or 1	unitless	Flag indicating use of beam alignment telemetry
useWarmBiasTele	1	bool	0 or 1	unitless	Flag indicating use of warm bias telemetry
useColdBiasTele	1	bool	0 or 1	unitless	Flag indicating use of cold bias telemetry

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
chkConsistWcCc	1	bool	0 or 1	unitless	Flag indicating whether the WC CC consistency is checked
chkConsistPrt	1	bool	0 or 1	unitless	Flag indicating whether the PRT consistency is checked
pad	5	8-bit char	0	unitless	Padding array 1 Dimensional Array: COEFF_PAD_SIZE Size of Dimenions(s): 5

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3.2.2.2.2 ATMS Remap SDR Ephemeral PC

Table 3.2.2.2.2-1, ATMS Remap SDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
coefSumLimit	4	32-bit floating point	0 – 1	unitless	If the sum of the Backus-Gilbert coefficients used for resampling to a CrIS FOR does not exceed this value, the resampled data are set to erroneous fill.
expTimeDiff	4	32-bit integer	-1334 – 1334	ms	Expected time difference between the mid-point of CrIS FOR 15 and the mid-point of ATMS beam position 47. This parameter is needed to allow other synchronization schemes to be implemented without changing code. If synchronization scheme is middle of FOR 15 and beam position 47 this parameter should be zero.
synchDeltaMax	4	32-bit integer	0 – 20	ms	The maximum deviation from the ideal time synchronization.
viewVec	6480	64-bit floating point	-50.764764 – 1000.0	unitless	Exit vectors used for generating Geolocation when CrIS data is not available 3-Dimensional Array: NUM_CRIS_FORS x NUM_CRIS_FOVS x NUM_COMP Size of Dimension(s): 30 x 9 x 3

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3.2.2.2.3 DELETED

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3.2.2.3 CrIS PCs

3.2.2.3.1 CrIS SDR Ephemeral PC

Table 3.2.2.3.1-1, CrIS SDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
hammingParameter	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Hamming apodization
ictPrt1Bias	8	64-bit floating pont	Minfloat – Maxfloat	Kelvin	Used to calculate ICT Temperature
ictPrt2Bias	8	64-bit floating pont	Minfloat – Maxfloat	Kelvin	Used to calculate ICT Temperature
laserWavelengthDriftTolerance	8	64-bit floating pont	Minfloat – Maxfloat	ppm	Used to determine if calculated laser wavelength should replace existing laser wavelength.
fceParamLwAmpThreshRejectLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamMwAmpThreshRejectLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamSwAmpThreshRejectLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamLwDimensionThresholdLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamMwDimensionThresholdLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamSwDimensionThresholdLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamLwFractionalFceThresholdLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
fceParamMwFractionalFceThresholdLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamSwFractionalFceThresholdLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamMwGoodLinearFittingThreshLimit	8	64-bit floating pont	Minfloat – Maxfloat	rad^2	Fringe count validation
fceParamLwGoodLinearFittingThreshLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamSwGoodLinearFittingThreshLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamLwMaxFceThreshLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamMwMaxFceThreshLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
fceParamSwMaxFceThreshLimit	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
postCalibrationSwA2	8	64-bit floating pont	Minfloat – Maxfloat	unitless	SW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwA2	8	64-bit floating pont	Minfloat – Maxfloat	unitless	MW Parameter used to calculate Post Calibration correction mat
postCalibrationLwA2	8	64-bit floating pont	Minfloat – Maxfloat	unitless	LW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwA4	8	64-bit floating pont	Minfloat – Maxfloat	unitless	SW Parameter used to calculate Post Calibration correction matrix

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
postCalibrationMwA4	8	64-bit floating pont	Minfloat – Maxfloat	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationLwA4	8	64-bit floating pont	Minfloat – Maxfloat	unitless	LW Parameter used to calculate Post Calibration correction matrix
maximumFractionRejections	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Fringe count validation
blackmanHarrisParamA0	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Parameter used to calculate User Apodization correction matrix
blackmanHarrisParamA1	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Parameter used to calculate User Apodization correction matrix
blackmanHarrisParamA2	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Parameter used to calculate User Apodization correction matrix
blackmanHarrisParamA3	8	64-bit floating pont	Minfloat – Maxfloat	unitless	Parameter used to calculate User Apodization correction matrix
computedWavelengthRejectionThreshold	4	32-bit integer	MinInt – MaxInt	unitless	Threshold used to reject laser wavelengths during Neon Calibration
fceParamMwMaxIndex	4	32-bit integer	MinInt – MaxInt	unitless	Max index used in FCE detection
fceParamLwMaxIndex	4	32-bit integer	MinInt – MaxInt	unitless	Max index used in FCE detection
fceParamSwMaxIndex	4	32-bit integer	MinInt – MaxInt	unitless	Max index used in FCE detection
fceParamLwMinIndex	4	32-bit integer	MinInt – MaxInt	unitless	Min index used in FCE detection

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
fceParamMwMinIndex	4	32-bit integer	MinInt – MaxInt	unitless	Min index used in FCE detection
fceParamSwMinIndex	4	32-bit integer	MinInt – MaxInt	unitless	Min index used in FCE detection
fceParamDefaultDetectorBand	4	32-bit integer	MinInt – MaxInt	unitless	FCE default detector band
fceParamDefaultDetectorFOV	4	32-bit integer	MinInt – MaxInt	unitless	FCE default detector FOV
polarizationCorrectionFitOrder	4	32-bit integer	MinInt – MaxInt	unitless	Order of Polynomial fit used to calculate Polarization Curve
postCalibrationLwA1	4	32-bit integer	MinInt – MaxInt	unitless	LW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwA1	4	32-bit integer	MinInt – MaxInt	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwA1	4	32-bit integer	MinInt – MaxInt	unitless	SW Parameter used to calculate Post Calibration correction matrix
postCalibrationLwA3	4	32-bit integer	MinInt – MaxInt	unitless	LW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwA3	4	32-bit integer	MinInt – MaxInt	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwA3	4	32-bit integer	MinInt – MaxInt	unitless	SW Parameter used to calculate Post Calibration correction matrix
postCalibrationLwK	4	32-bit integer	MinInt – MaxInt	unitless	LW Parameter used to calculate Post Calibration correction matrix

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
postCalibrationLwK0	4	32-bit integer	MinInt – MaxInt	unitless	LW Parameter used to calculate Post Calibration correction matrix
postCalibrationLwK1	4	32-bit integer	MinInt – MaxInt	unitless	LW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwK	4	32-bit integer	MinInt – MaxInt	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwK0	4	32-bit integer	MinInt – MaxInt	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationMwK1	4	32-bit integer	MinInt – MaxInt	unitless	MW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwK	4	32-bit integer	MinInt – MaxInt	unitless	SW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwK0	4	32-bit integer	MinInt – MaxInt	unitless	SW Parameter used to calculate Post Calibration correction matrix
postCalibrationSwK1	4	32-bit integer	MinInt – MaxInt	unitless	SW Parameter used to calculate Post Calibration correction matrix
numberOpdOverscanSamples	4	32-bit integer	MinInt – MaxInt	unitless	Number of samples of trim from each end of the interferogram
calibrationTargetDataValidityDuration	8	64-bit floating point	Minfloat – Maxfloat	unitless	Absolute temporal displacement to ES under calibration

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
calibrationTargetDataValidityDurationTolerance	8	64-bit floating point	Minfloat – Maxfloat	unitless	Max temporal displacement of FOR under calibration
elapsedTimeForValidScienceTlmData	8	64-bit floating point	Minfloat – Maxfloat	unitless	Absolute temporal displacement to ES under calibration
elapsedTimeForValidSpaceTargetTemperature	8	64-bit floating point	Minfloat – Maxfloat	unitless	Max temporal displacement of FOR under calibration
scienceTlmTimeDifferenceTolerance	8	64-bit floating point	Minfloat – Maxfloat	unitless	Absolute temporal displacement
spaceTargetTemperatureTimeDifferenceTolerance	8	64-bit floating point	Minfloat – Maxfloat	unitless	Max temporal displacement for temperature correlation
maxLunarRadiance	4	32-bit floating point	Minfloat – Maxfloat	unitless	Discards DS measurements above this threshold
movingAverageWindowSize	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the reference window size (ES are half that)
maximumNumberOfFceTriesDuringIctDsSynchronization	4	32-bit integer	MinInt – MaxInt	unitless	Max fringe counts to try in both directions
maximumNumberOfIctDsSynchronizationTries	4	32-bit integer	MinInt – MaxInt	unitless	Max ES window depth to seek valid measurement
dsTemperatureOrigin	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Specifies origin for file
instrumentTemperatureOrigin	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Specifies source of value
ictEmissivityOrigin	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Specifies emissivities are used from main configuration file

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
allowCalibrationTargetDataMissing	1	bool	0 or 1	unitless	Allows for missing ICT/DS references measurements
allowEngineeringDataPacketsMissing	1	bool	0 or 1	unitless	Allows for missing reference measurements
allowSpaceTargetTemperatureDataMissing	1	bool	0 or 1	unitless	Allows for missing reference measurements
disableTimeStampBasedMovingWindow	1	bool	0 or 1	unitless	Adds additional constrains for packet timing
performRadiometricCalibration	1	bool	0 or 1	unitless	Allows for radiometric calibration
skipIctDsPhaseSynchronization	1	bool	0 or 1	unitless	Phase aligns initial ICT/DS reference window
useDeepSpaceRadiance	1	bool	0 or 1	unitless	Specifies calibration equation to consider cold target
useIctEnvironmentalCorrectionModel	1	bool	0 or 1	unitless	Sets ICT temp to include component contributions
useWavenumberDependentDsEmissivity	1	bool	0 or 1	unitless	Specifies emissivities are used from main config file
useWavenumberDependentIctEmissivity	1	bool	0 or 1	unitless	Specifies emissivities are used from main config file
allowScienceTlmDataMissing	1	bool	0 or 1	unitless	Allows for missing reference measurement
monitorLunarIntrusion	1	bool	0 or 1	unitless	Discards DS measurements about a threshold
edrMwDeltaSigma	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies wavenumber spacing for Resampling for MW

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
edrLwDeltaSigma	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies wavenumber spacing for Resampling for LW
edrSwDeltaSigma	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies wavenumber spacing for Resampling for SW
edrSwMinimumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the low clipping range for SW
edrLwMaximumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the high clipping range for LW
edrMwMaximumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the high clipping range for MW
edrSwMaximumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the high clipping range for SW
edrMwMinimumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the low clipping range for MW
edrLwMinimumWavenumber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies the low clipping range for LW
impulseNoiseCountThreshold	4	32-bit integer	MinInt – MaxInt	unitless	Specifies limit to flag
edrSwNumberOfPoints	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the number of points in range for SW
edrMwNumberOfPoints	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the number of points in range for MW
edrLwNumberOfPoints	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the number of points in range for LW
apodizationType	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Choice of apodization
laserDiodeWavelengthOrigin	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Identifies the source for measurement (telemetry or config)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
applyPolarizationCorrections	1	bool	0 or 1	unitless	Specifies the application of scene specific correction
applyPostCalibrationFilterMatrixCorrection	1	bool	0 or 1	unitless	Specifies the application of matrix correction
applyIlsFovEffectsCorrection	1	bool	0 or 1	unitless	Specifies the application of ILS corrections
applyIlsResidualEffectCorrection	1	bool	0 or 1	unitless	Specifies the application of ILS residual correction
applyResamplingMatrix	1	bool	0 or 1	unitless	Specifies the application of resampling corrections
disableLaserMonitoring	1	bool	0 or 1	unitless	Specifies the monitoring for laser drift
performFringeCountErrorHandling	1	bool	0 or 1	unitless	Enables FCE Handling
performPolarizationCorrection	1	bool	0 or 1	unitless	Allows for polarization correction
performSpectralAndSpatialCorrection	1	bool	0 or 1	unitless	Allows spectral and spatial corrections
useSavedMatrices	1	bool	0 or 1	unitless	Allows for use of saved matrices
userSelectedClipping	1	bool	0 or 1	unitless	Set up clip guard bands
calibrationWindowSize	4	32-bit integer	MinInt – MaxInt	unitless	Calibration window size
outputStyle	4	32-bit integer	MinInt – MaxInt	unitless	Output style
calibrationType	4	32-bit integer	MinInt – MaxInt	unitless	Calibration type
maxBufferDepth	4	32-bit integer	MinInt – MaxInt	unitless	Maximum buffer depth
windowManagementStyle	4	32-bit integer	MinInt – MaxInt	unitless	Window management style
instrumentLocation	4	(enum) 32-bit integer	MinInt – MaxInt	unitless	Instrument location

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
detector	27	bool[9][3]	0 or 1	unitless	Detector 2 Dimensional Array: Size of Dimension(s): 9 x 3
fieldOfRegard	34	bool[34]	0 or 1	unitless	Field of regard 1 Dimensional Array: Size of Dimension(s): 34
requestNEdN	1	bool	0 or 1	unitless	Request
outputStyle_All	1	bool	0 or 1	unitless	Output style for all
outputStyle_Discard	1	bool	0 or 1	unitless	Output style for discard
dsTempBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	Deep space temperature bench testing value
beamsplitterTempBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	Beamsplitter temperature bench testing value
beamsplitterTempChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Beamsplitter temperature chamber value
dsTempChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Deep space temperature chamber value
ictTempBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	Internal calibration target temperature bench testing value
ictTempChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Internal calibration target temperature chamber value
meanDsEmissivityBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	Mean deep space emissivity bench testing value

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
meanDsEmissivityChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Mean deep space emissivity chamber testing value
omaTempBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	OMA temperature value for bench testing
omaTempChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	OMA temperature value for chamber testing
scanBaffleTempBench	8	64-bit floating point	Minfloat – Maxfloat	unitless	Scan baffle temperature for bench testing
scanBaffleTempChamber	8	64-bit floating point	Minfloat – Maxfloat	unitless	Scan baffle temperature for the chamber
dsEffectiveEmissivityLW	6912	64-bit floating point	Minfloat – Maxfloat	unitless	Deep space effective emissivity long wave value 1 Dimensional Array Size of Dimension(s): 864
dsEffectiveEmissivityMW	4224	64-bit floating point	Minfloat – Maxfloat	unitless	Deep space effective emissivity medium wave value 1 Dimensional Array Size of Dimension(s): 528
dsEffectiveEmissivitySW	1600	64-bit floating point	Minfloat – Maxfloat	unitless	Deep space effective emissivity small wave value 1 Dimensional Array Size of Dimension(s): 200
laserDiodeWavelength	8	64-bit floating point	Minfloat – Maxfloat	unitless	Laser frequency used in absence of measurement
spaceTargetTemperatureDriftLimit	8	64-bit floating point	Minfloat – Maxfloat	unitless	Specifies limit to flag

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lwBenchMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	LW ICT Emissivity (Instrument Location = Bench)
lwChamberMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	LW ICT Emissivity (Instrument Location = Chamber)
mwChamberMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	MW ICT Emissivity (Instrument Location = Chamber)
swChamberMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	SW ICT Emissivity (Instrument Location = Chamber)
swBenchMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	SW ICT Emissivity (Instrument Location = Bench)
mwBenchMeanIctEmissivity	8	64-bit floating point	Minfloat – Maxfloat	unitless	MW ICT Emissivity (Instrument Location = Bench)
benchMeanIctEmissivity	4	32-bit floating point	Minfloat – Maxfloat	unitless	
chamberMeanIctEmissivity	4	32-bit floating point	Minfloat – Maxfloat	unitless	
forIdentifierDs	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the DS of the ICT reference measurement
forIdentifierIct	4	32-bit integer	MinInt – MaxInt	unitless	Specifies the FOR of the ICT reference measurement
forwardSweepDirectionIdentifier	4	32-bit integer	MinInt – MaxInt	unitless	"0" by convention
lwDataPointsUndecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	LW data points undecimated

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lwDecimationFactor	4	32-bit integer	MinInt – MaxInt	unitless	LW decimation factor
mwDataPointsDecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	MW data points decimated
mwDataPointsUndecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	MW data points undecimated
swDataPointsDecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	SW data points decimated
swDataPointsUndecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	SW data points undecimated
mwDecimationFactor	4	32-bit integer	MinInt – MaxInt	unitless	MW decimation factor
numberFOR	4	32-bit integer	MinInt – MaxInt	unitless	Number of FOR
numberSpectralBands	4	32-bit integer	MinInt – MaxInt	unitless	Number of spectral bands
numberSamplesPerLaserWavelength	4	32-bit integer	MinInt – MaxInt	unitless	Number of samples per wavelength
numberFOV	4	32-bit integer	MinInt – MaxInt	unitless	Number of FOV
reverseSweepDirectionIdentifier	4	32-bit integer	MinInt – MaxInt	unitless	"1" by convention
swDecimationFactor	4	32-bit integer	MinInt – MaxInt	unitless	SW decimation factor
lwDataPointsDecimatedInterferogram	4	32-bit integer	MinInt – MaxInt	unitless	LW data points decimated
dataPointsUndecimatedInterferogram	12	32-bit integer	MinInt – MaxInt	unitless	Dimensions Correspond to Bands in this order: “LW”, “MW”, “SW” 1 Dimensional Array: Size of Dimension(s): 3
decimationFactor	12	32-bit integer	MinInt – MaxInt	unitless	Dimensions Correspond to Bands in this order: “LW”, “MW”, “SW” 1 Dimensional Array: Size of Dimension(s): 3
engineeringPacketAPID	4	32-bit integer	MinInt – MaxInt	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sciencePacketAPID	4	32-bit integer	MinInt – MaxInt	unitless	
forwardSweepDirectionLabel	2	8-bit character	“F”	unitless	"F" for forward 1 Dimensional Array: Size of Dimension(s): 2
lwBandLabel	3	8-bit character	“LW”	unitless	"LW" 1 Dimensional Array: Size of Dimension(s): 3
mwBandLabel	3	8-bit character	“MW”	unitless	"MW" 1 Dimensional Array: Size of Dimension(s): 3
reverseSweepDirectionLabel	2	8-bit character	“R”	unitless	"R" for reverse 1 Dimensional Array: Size of Dimension(s): 3
swBandLabel	3	8-bit character	“SW”	unitless	"SW" 1 Dimensional Array: Size of Dimension(s): 3
timingSequenceErrorThreshold	8	64-bit integer	>=0	seconds	Amount of time scan start times are allowed to vary from eight seconds with respect to adjacent scans’ start times
invalidNeonCalibrationPercentageThreshold	8	64-bit floating point	0 – 100	percent	Percentage of the number of scans by the number of EV FORs by the number of FOVs by the number of bands neon calibration values are allowed to change
numOfValidPRTTempThreshold	4	32-bit integer	Minint - Maxint	unitless	Number of valid PRT temperature threshold

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
impulseNoiseCountThresh	4	32-bit integer	Minint - Maxint	unitless	Impulse noise count threshold
ictTempLowThreshold	4	32-bit integer	Minint - Maxint	unitless	ICT low temperature threshold
ictTempHighThreshold	4	32-bit integer	Minint - Maxint	unitless	ICT high temperature threshold
ictTempStabilityThreshold	4	32-bit floating point	Minint - Maxint	**unitless**	ICT temperature stability threshold
ictTempConsistencyThreshold	4	32-bit floating point	Minint - Maxint	unitless	ICT temperature consistency threshold
ShiftFactorArray	9*8	64-bit floating point	0 - 1000	ppm	399 for FOVs 1,3,7.9 216 for FOVs 2,4,6,8 17 for FOV 5
AppShiftFactorFlag	1	boolean	0 - 1	unitless	Perform ICT spectral grid shift control parameter
performLWLinearityCorrectionControl	1	boolean	0-1	unitless	Perform LW linearity correction control parameter (True)
performMWLinearityCorrectionControl	1	boolean	0-1	unitless	Perform MW linearity correction control parameter (True)
performSWLinearityCorrectionControl	1	boolean	0-1	unitless	Perform SW linearity correction control parameter (False)
LinearityCorrectionControlParam (LW)	4	32-bit integer	MinInt32 – MaxInt32	unitless	LW Linearity correction control parameter (TLM)
LinearityCorrectionControlParam (MW)	4	32-bit integer	MinInt32 – MaxInt32	unitless	MW Linearity correction control parameter (TLM)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
LinearityCorrectionControlParam (SW)	4	32-bit integer	MinInt32 – MaxInt32	unitless	SW Linearity correction control parameter (TLM)

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OMPS PCs

3.2.2.3.2 OMPS Nadir Profile IP PCs

Table 3.2.2.4.1-1, Nadir Profile IP Parameters

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments

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3.2.2.3.3 OMPS Total Column SDR PCs

Table 3.2.2.4.2-1, OMPS Total Column SDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deviate	8	64-bit floating point	0 - 1000	unitless	
minCorrel	8	64-bit floating point	0 - 1000	unitless	
chiTol	4	32-bit floating point	0 - 1000	unitless	
motorRate	4	32-bit floating point	0 - 1000	unitless	
tcFov	4	32-bit floating point	0 - 1000	unitless	
diffusersOffset	4	32-bit floating point	0 - 1000	unitless	
waveStdTol	4	32-bit floating point	0 - 1000	unitless	
diffuserSep	4	32-bit floating point	0 - 1000	unitless	
biasDefault	4	32-bit floating point	0 - 1000	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
linearMax	4	32-bit floating point	0 – 1,100,050.0	unitless	
radHigh	4	32-bit floating point	3.00000064E8	unitless	
badSaa	4	32-bit floating point	1000	unitless	
fullWidth	4	32-bit floating point	0 - 1000	unitless	
nwaveTrends	4	32-bit integer	0 – 1000	unitless	
wmonInterval	4	32-bit integer	0 – 1000	unitless	
trendCf	4	32-bit integer	0 – 1000	unitless	
cfInterval	4	32-bit integer	0 – 1000	unitless	
bias_indx[0]	4	32-bit integer	0 – 1000	unitless	
bias_indx[1]	4	32-bit integer	0 – 1000	unitless	
bias_indx[2]	4	32-bit integer	0 – 1000	unitless	
bias_indx[3]	4	32-bit integer	0 – 1000	unitless	
nalts	4	32-bit integer	0 – 1000	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
altitudeBinM	4	32-bit integer	0 - 1000	unitless	
lpSeparation	4	32-bit integer	0 – 1000	unitless	
lpNoTrack	4	32-bit integer	0 – 1000	unitless	
nsamp	4	32-bit integer	0 – 1000	unitless	
nfunc	4	32-bit integer	0 – 1000	unitless	
usepix	4	32-bit integer	0 – 1000	unitless	
norder	4	32-bit integer	0 – 1000	unitless	
noEntries	4	32-bit integer	0 – 16434	unitless	
row[0][0]	4	32-bit integer	0 – 1000	unitless	
row[0][1]	4	32-bit integer	0 – 1000	unitless	
row[1][0]	4	32-bit integer	0 – 1000	unitless	
row[1][1]	4	32-bit integer	0 – 1000	unitless	
column[0][0]	4	32-bit integer	0 – 1000	unitless	
column [0][1]	4	32-bit integer	0 – 1000	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
column [1][0]	4	32-bit integer	0 - 1000	unitless	
column [1][1]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[0]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[1]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[2]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[3]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[4]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[5]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[6]	4	32-bit integer	0 – 1000	unitless	
diffEndEdges[7]	4	32-bit integer	0 – 1000	unitless	
trendGapMax	4	32-bit integer	0 – 1000	unitless	
badPixLowerThreshold	4	32-bit integer	0 - 1000	unitless	
badPixUpperThreshold	4	32-bit integer	0 - 27550	unitless	
goniometryOn	1	bool		unitless	

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3.2.2.3.4 OMPS Nadir Profile SDR Calibration Coefficients

Table 3.2.2.4.3-1, OMPS Nadir Profile SDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
deviate	8	64-bit floating point	0 - 1000	unitless	
deviateWidth	8	64-bit floating point	0 - 1000	unitless	
minCorrel	8	64-bit floating point	0 - 1000	unitless	
qUpPrimaryElec	8	64-bit floating point	0 - 12050	unitless	
qUpRedundantElec	8	64-bit floating point	0 - 12050	unitless	
chiTol	4	32-bit floating point	0 - 1000	unitless	
fullWidth	4	32-bit floating point	0 - 1000	unitless	
edge	4	32-bit floating point	0 - 1000	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
motorRate	4	32-bit floating point	0 - 1000	unitless	
diffusersOffset	4	32-bit floating point	0 - 1000	unitless	
diffuserSep	4	32-bit floating point	0 - 1000	unitless	
radHigh	4	32-bit floating point	0 - 3.00000064E8	unitless	
badSaa	4	32-bit floating point	0 – 1000	unitless	
waveStdTol	4	32-bit floating point	0 – 1000	unitless	
biasDefault	4	32-bit floating point	0 – 1000	unitless	
wmonInterval	4	32-bit integer	0 – 1000	unitless	
cfInterval	4	32-bit integer	0 – 1000	unitless	
badPixLowerThreshold	4	32-bit integer	0 – 1000	unitless	
badPixUpperThreshold	4	32-bit integer	0 – 1000	unitless	
biasIndex[0]	4	32-bit integer	0 – 1000	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
biasIndex[1]	4	32-bit integer	0 – 1000	unitless	
biasIndex[2]	4	32-bit integer	0 – 1000	unitless	
biasIndex[3]	4	32-bit integer	0 – 1000	unitless	
offset	4	32-bit integer	0 – 1000	unitless	
trendGapMax	4	32-bit integer	0 – 1000	unitless	
goniometryOn	1	bool		unitless	

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3.2.2.3.5 OMPS Total Column EDR Algorithm Coefficients

Table 3.2.2.4.4-1, OMPS Total Column EDR Parameters

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments

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3.2.2.3.6 DELETED

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3.2.2.4 VIIRS PCs

3.2.2.4.1 VIIRS Active Fires ARP Ephemeral PC

Table 3.2.2.5.1-1, VIIRS Active Fires ARP Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
aggregationBound	16	int[4]	0-2610	unitless	The aggregation boundary values (determines bow-tie width based upon the current column)
searchBound	8	int[2]	0-1000	unitless	The search boundary values (determines if the pixel is within search bounds)
aWidth	12	int[3]	0-1000	unitless	The bowtie boundary width (determines bow-tie width based upon the current column)
maxDistance	4	float	0.0-1000.0	unitless	The max distance, which is a float (greater than the configurable distance)
interval	36	int[9]	0-1000	unitless	The bowtie interval
prevPixel	36	int[9]	0-1000	unitless	The previous pixels
m13_confidence_day_max	4	float	0.0-1000.0	unitless	m13 confidence max (day)
m13_confidence_day_min	4	float	0.0-1000.0	unitless	m13 confidence min (day)
m13_confidence_night_max	4	float	0.0-1000.0	unitless	m13 confidence max (night)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
m13_confidence_night_min	4	float	0.0-1000.0	unitless	m13 confidence min (night)
m13_deviation_confidence_max	4	float	0.0-1000.0	unitless	m13 deviation confidence max
m13_deviation_confidence_min	4	float	0.0-1000.0	unitless	m13 deviation confidence min
dt_confidence_max	4	float	0.0-1000.0	unitless	m13 - m15 confidence max
dt_confidence_min	4	float	0.0-1000.0	unitless	m13 - m15 confidence min
adj_water_confidence_max	4	float	0.0-1000.0	unitless	adjacent water confidence max
adj_water_confidence_min	4	float	0.0-1000.0	unitless	adjacent water confidence min
adj_cloud_confidence_max	4	float	0.0-1000.0	unitless	adjacent cloud confidence max
adj_cloud_confidence_min	4	float	0.0-1000.0	unitless	adjacent cloud confidence min
m13_bt_threshold	4	float	0.0-1000.0	unitless	m13 brightness temperature threshold
m13_bt_saturation	4	float	0.0-1000.0	unitless	m13 brightness temperature saturation
m15_bt_saturation	4	float	0.0-1000.0	unitless	m15 brightness temperature saturation
m16_bt_saturation	4	float	0.0-1000.0	unitless	m16 brightness temperature saturation
test2_sigma	4	float	0.0-1000.0	unitless	Test 2 sigma value
test4_sigma	4	float	0.0-1000.0	unitless	Test 4 sigma value

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
test6_sigma	4	float	0.0-1000.0	unitless	Test 6 sigma value
bkgoverride_fvalid	4	float	0.0-1000.0	unitless	background override value for fvalid
bkgoverride_nbfire	4	int	0-1	unitless	background override value for nb fire
bkgoverride_MeanM13	4	float	0.0-1000.0	unitless	background override value for mean of m13
bkgoverride_MadM13	4	float	0.0-1000.0	unitless	background override value for mean absolute deviation
bkgoverride_m7	4	float	0.0-1000.0	unitless	background override value of m7
bkgoverride_sigmaM13	4	float	0.0-1000.0	unitless	Background override sigma value for m13
glintlevel3_limit	4	float	0.0-1000.0	unitless	glint level 3 limit
glintlevel2_limit	4	float	0.0-1000.0	unitless	glint level 2 limit
glintlevel1_limit	4	float	0.0-1000.0	unitless	glint level 1 limit
glintlevel2_m5	4	float	0.0-1000.0	unitless	Glint level 2 m5 limit
glintlevel2_m7	4	float	0.0-1000.0	unitless	Glint level 2 m7 limit
glintlevel2_m11	4	float	0.0-1000.0	unitless	Glint level 2 m11 limit
bkgwater_m7	4	float	0.0-1000.0	unitless	Background water limit for m7
bkgwater_m11	4	float	0.0-1000.0	unitless	Background water limit for m11
bkgwater_NDVI	4	float	0.0-1000.0	unitless	Background water limit for NDVI
iscloud_test1	4	float	0.0-1000.0	unitless	Test 1 for internal cloud mask

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iscloud_test2	4	float	0.0-1000.0	unitless	Test 2 for internal cloud mask
iscloud_test3	4	float	0.0-1000.0	unitless	Test 3 for internal cloud mask
iscloud_test4	4	float	0.0-1000.0	unitless	Test 4 for internal cloud mask
max_win_size	4	int	0-1000	unitless	Maximum window size
min_win_size	4	int	0-1000	unitless	Minimum window size
valid_win_ratio	4	float	0.0-1000.0	unitless	Valid window ratio
valid_win_size	4	int	0-1000	unitless	Valid window size
day_thresh_PF_m13	4	float	0.0-1000.0	unitless	Potential fire threshold for m13 (was m13b)
day_thresh_PF_DT	4	float	0.0-1000.0	unitless	potential fire threshold for m15 - m13
day_thresh_PF_m7	4	float	0.0-1000.0	unitless	potential fire threshold for m7
day_thresh_bkg_m13	4	float	0.0-1000.0	unitless	Background fire threshold for m13 (was m13b)
day_thresh_bkg_DT	4	float	0.0-1000.0	unitless	Background fire threshold for m15 - m13
day_thresh_m13	4	float	0.0-1000.0	unitless	Threshold for m13 (was threshold m13b)
day_min_bkg_DT	4	float	0.0-1000.0	unitless	minimum background for m15 - m13
day_devrp_m15	4	float	0.0-1000.0	unitless	Devrp value for m15 day granules
night_thresh_PF_m13	4	float	0.0-1000.0	unitless	Potential fire threshold for m13 (was m13b)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
night_thresh_PF_DT	4	float	0.0-1000.0	unitless	potential fire threshold for m15 - m13
night_thresh_PF_m7	4	float	0.0-1000.0	unitless	potential fire threshold for m7
night_thresh_bkg_m13	4	float	0.0-1000.0	unitless	Background fire threshold for m13 (was m13b)
night_thresh_bkg_DT	4	float	0.0-1000.0	unitless	Background fire threshold for m15 - m13
night_thresh_m13	4	float	0.0-1000.0	unitless	Threshold for m13 (was threshold m13b)
night_min_bkg_DT	4	float	0.0-1000.0	unitless	minimum background for m15 - m13
night_devrp_m15	4	float	0.0-1000.0	unitless	Devrp value for m15 night granules

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3.2.2.4.2 VIIRS Aerosol Ephemeral PC

Table 3.2.2.5.2-1, VIIRS Aerosol Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
solarZenithNightThresh	EDFCB8-TBD-10557	32-bit floating point	0 – 1000	EDFCB8-TBD-10557	
solarZenithExclusionThresh	EDFCB8-TBD-10557	32-bit floating point	0 – 1000	EDFCB8-TBD-10557	
solarZenithDegradationThresh	EDFCB8-TBD-10557	32-bit floating point	0 – 1000	EDFCB8-TBD-10557	
distClimo	EDFCB8-TBD-10557	32-bit integer	0 – 1000	EDFCB8-TBD-10557	
deltaClimo	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
defaultLandClimo	EDFCB8-TBD-10557	32-bit integer	0 – 1000	EDFCB8-TBD-10557	
defaultOceanClimo	EDFCB8-TBD-10557	32-bit integer	0 – 1000	EDFCB8-TBD-10557	
lambda	EDFCB8-TBD-10557	32-bit floating point [11]	0 – 1000	EDFCB8-TBD-10557	
moltau	EDFCB8-TBD-10557	32-bit floating point [11]	0 – 1000	EDFCB8-TBD-10557	

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rayrefl	EDFCB8-TBD-10557	32-bit floating point [11]	-50.30925 – 1000	EDFCB8-TBD-10557	
o3cof	EDFCB8-TBD-10557	32-bit floating point [11]	0 – 1000	EDFCB8-TBD-10557	
o2cof1	EDFCB8-TBD-10557	32-bit floating point [11]	-50.00002 – 1000	EDFCB8-TBD-10557	
o2cof2	EDFCB8-TBD-10557	32-bit floating point [11]	0 – 1000	EDFCB8-TBD-10557	
co2cof1	EDFCB8-TBD-10557	32-bit floating point [11]	-50.014248 – 1000	EDFCB8-TBD-10557	
co2cof2	EDFCB8-TBD-10557	32-bit floating point [11]	0 – 1000	EDFCB8-TBD-10557	
n2ocof1	EDFCB8-TBD-10557	32-bit floating point [11]	-50.003723 – 1000	EDFCB8-TBD-10557	
n2ocof2	EDFCB8-TBD-10557	32-bit floating point [11]	0 – 1000	EDFCB8-TBD-10557	
ch4cof1	EDFCB8-TBD-10557	32-bit floating point [11]	-50.04275 – 1000	EDFCB8-TBD-10557	
ch4cof2	EDFCB8-TBD-10557	32-bit floating point [11]	0 – 1000	EDFCB8-TBD-10557	
pwcof1	EDFCB8-TBD-10557	32-bit floating point [11]	-50.003174 – 1000	EDFCB8-TBD-10557	

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pwcof2	EDFCB8-TBD-10557	32-bit floating point [11]	-50.003834 – 1000	EDFCB8-TBD-10557	
Pwcof3	EDFCB8-TBD-10557	32-bit floating point [11]	0 – 1000	EDFCB8-TBD-10557	
turbThsh	EDFCB8-TBD-10557	32-bit floating point [11]	0 – 1000	EDFCB8-TBD-10557	
solird	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
esnorm	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
planckco	EDFCB8-TBD-10557	32-bit floating point [2]	0 – 1000	EDFCB8-TBD-10557	
emissco	EDFCB8-TBD-10557	32-bit floating point [3]	0 – 1000	EDFCB8-TBD-10557	
transco	EDFCB8-TBD-10557	32-bit floating point [5]	-50.057297 – 1000	EDFCB8-TBD-10557	
r375thsh	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
sttsh	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
stcoeff1	EDFCB8-TBD-10557	64-bit floating point [4]	0 – 1000	EDFCB8-TBD-10557	

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Stcoeff2	EDFCB8-TBD-10557	64-bit floating point [4]	0 – 1000	EDFCB8-TBD-10557	
sgcoeff	EDFCB8-TBD-10557	64-bit floating point [10]	0 – 1000	EDFCB8-TBD-10557	
vracoeff	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
vrathsh	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
miracoeff1	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
miracoeff2	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
mirathsh	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
cirrus1	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
cirrus2	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
sungt	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
firethsh	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	

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snowthsh1	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
snowthsh2	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
icethsh	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
ephemeralWaterThsh	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
residualLandThsh	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
residualOceanThsh	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
residualAotThsh	EDFCB8-TBD-10557	32-bit floating point	0 – 1000	EDFCB8-TBD-10557	
smlmdoff	EDFCB8-TBD-10557	32-bit integer	0 – 1000	EDFCB8-TBD-10557	
lrgmdoff	EDFCB8-TBD-10557	32-bit integer	0 – 1000	EDFCB8-TBD-10557	
aotrnglo	EDFCB8-TBD-10557	32-bit floating point	0 – 1000	EDFCB8-TBD-10557	
aotrnghi	EDFCB8-TBD-10557	32-bit floating point	0 – 1000	EDFCB8-TBD-10557	

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foutlo	EDFCB8-TBD-10557	32-bit floating point	0 – 1000	EDFCB8-TBD-10557	
fouthi	EDFCB8-TBD-10557	32-bit floating point	0 – 1000	EDFCB8-TBD-10557	
wvllnd1	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
wvllnd2	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
wvlwat1	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
wvlwat2	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
dustmdl	EDFCB8-TBD-10557	32-bit integer	0 – 1000	EDFCB8-TBD-10557	
smokehimdl	EDFCB8-TBD-10557	32-bit integer	0 – 1000	EDFCB8-TBD-10557	
smokelomdl	EDFCB8-TBD-10557	32-bit integer	0 – 1000	EDFCB8-TBD-10557	
urbancmdl	EDFCB8-TBD-10557	32-bit integer	0 – 1000	EDFCB8-TBD-10557	
urbanpmdl	EDFCB8-TBD-10557	32-bit integer	0 – 1000	EDFCB8-TBD-10557	

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smkco1	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
smkco2	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
minsmkco	EDFCB8-TBD-10557	64-bit floating point	0 – 1000	EDFCB8-TBD-10557	
aotThsh	EDFCB8-TBD-10557	32-bit floating point	0 – 1000	EDFCB8-TBD-10557	
detectExcThsh	EDFCB8-TBD-10557	32-bit floating point	0 – 1000	EDFCB8-TBD-10557	
typeExcThsh	EDFCB8-TBD-10557	32-bit floating point	0 – 1000	EDFCB8-TBD-10557	

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3.2.2.4.3 DELETED

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3.2.2.4.4 VIIRS CBH Ephemeral PC

Table 3.2.2.5.4-1, VIIRS CBH Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
minCbh	4	float	Initially set to 0.0	km	Cloud base height min
maxCbh	4	float	Initially set to 20.0	km	Cloud base height max
c0	4	float	Initially set to -0.006656	m^2/g	Ice Water Path (IWP) contants in equation IWP = Cot/[c_0 + (c_1 /2reff)]
c1	4	float	Initially set to 3.686	m^2 Micrometers/g	Ice Water Path (IWP) contants in equation IWP = Cot/[c_0 + (c_1 /2reff)]
c2	4	float	Initially set to 20.0	Celsius	Ice Water Concentration Constant
c3	4	float	Initially set to 2.455	Unitless	Ice Water Concentration Constant
c4	4	float	Initially set to -0.2443	Unitless	Ice Water Concentration Constant
c5	4	float	Initially set to 0.001	Unitless	Ice Water Concentration Constant
c6	4	float	Initially set to -7.6	Unitless	Ice Water Concentration Constant
c7	4	float	Initially set to 4.0	Unitless	Ice Water Concentration Constant
d0	4	float	Initially set to 2.0	gm/m^2	Liquid Water Concentration Constant
d3	4	float	Initially set to 3.0	Micrometers	Liquid Water Concentration Constant

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
minCtt	4	float	Initially set to -60.0	Celcius	Cloud Top Temperature Minimum
maxCtt	4	float	Initially set to -20.0	Celcius	Cloud Top Temperature Maximum

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3.2.2.4.5 VIIRS CCL Ephemeral PC

Table 3.2.2.5.5-1, VIIRS CCL Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
wgtCth	4	float	Initially set to 0.5	km	K-Means algorithm cluster assignment weight for cloud top height
wgtCot	4	float	Initially set to 0.0	Unitless	K-Means algorithm cluster assignment weight for cloud optical thickness
wgtEps	4	float	Initially set to 0.2	Micrometers	K-Means algorithm cluster assignment weight for cloud top height
wgtPhase	4	float	Initially set to 2.0	Unitless	K-Means algorithm cluster assignment weight for cloud top height
EkmCthThresh1	4	float	Initially set to 0.75	Unitless	Ekm_first_guess() threshold on CTH for not splitting layers
EkmCthThresh2	4	float	Initially set to 1.6	Unitless	Ekm_first_guess() threshold on CTH for not splitting layers
EkmCthThresh3	4	float	Initially set to 1.6	Unitless	Ekm_first_guess() threshold on CTH for not splitting layers
Cluster_Flag_Threshold	4	float	Initially set to 0.75	percent	Percentage of cloudy product pixels
CTH_LOW_THRESH	4	float	Initially set to 2.5	Unitless	Mbkm_first_guess() lower CTH threshold
CTH_MID_THRESH	4	float	Initially set to 5.0	Unitless	Mbkm_first_guess() middle CTH threshold

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CTH_HIGH_THRESH	4	float	Initially set to 7.5	Unitless	Mbkm_first_guess() high CTH threshold
PHASE_WATER	4	float	Initially set to 0.0	Unitless	Water cloud
PHASE_MIXED	4	float	Initially set to 0.5	Unitless	Water and ice cloud
PHASE_ICE	4	float	Initially set to 1.0	Unitless	Ice cloud
gracefulDegradationMode	1	int	Initially set to 0	Unitless	Switch for handling missing pixel data
kmeansAlgorithm	1	int	Initially set to 0	Unitless	Switch to select the first guess algorithm for layer analysis
kmeansMaxIter	1	int	Initially set to 3	Unitless	Maximum number of iterations
clusterConvergCrit	1	int	Initially set to 14	Unitless	Convergence criteria = number of pixel reassignments

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3.2.2.4.6 VIIRS Cloud Mask IP Ephemeral PC

Table 3.2.2.5.6-1, VIIRS Cloud Mask IP Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
maxSolarZenith	4	float	0.0-1000.0	radians	
snow_thresh_BTM15	4	float	0.0-1000.0	Kelvin	
snow_thresh_RM7	4	float	0.0-1000.0	unitless	
ndsi_snow	4	float	0.0-1000.0	unitless	
snow_thinCiM9	4	float	0.0-1000.0	unitless	
snow_thinCiM15	4	float	0.0-1000.0	unitless	
snow_thresh_BTM14_M15	4	float	0.0-1000.0	Kelvin	
snow_thresh_BTM12_M15	4	float	0.0-1000.0	Kelvin	
HiElevThresh	4	float	0.0-2050.0	Meters	minimum high terrain value required for performing snow/day and snow/night M12 – M15 emission difference test
I4varthres	4	float	0.0-1000.0	EDFCB8-TBD-10280	I4 spatial variability brightness temperature thresholds
I5varthres	4	float	0.0-1000.0	EDFCB8-TBD-10280	I5 spatial variability brightness temperature thresholds
btdm14m15WaterThresh	4	float	0.0-1000.0	EDFCB8-TBD-10280	BT water threshold
fire_thresh_k	4	float	0.0-1000.0	EDFCB8-TBD-10280	Aero shadow Fire threshold

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
fire_thresh_diff	4	float	0.0-1000.0	EDFCB8-TBD-10280	Aero shadow Fire threshold
dust_thresh	4	float	-50.0-1000.0	EDFCB8-TBD-10280	Aero shadow Fire threshold
aero_thresh_0	4	float	0.0-1000.0	EDFCB8-TBD-10280	Aero shadow Fire threshold
aero_thresh_1	4	float	0.0-1000.0	EDFCB8-TBD-10280	Aero shadow Fire threshold
shadnir1	4	float	0.0-1000.0	EDFCB8-TBD-10280	Aero shadow Fire threshold
shadnir2	4	float	0.0-1000.0	EDFCB8-TBD-10280	Aero shadow Fire threshold
shadratio	4	float	0.0-1000.0	EDFCB8-TBD-10280	Aero shadow Fire threshold
shad124	4	float	0.0-1000.0	EDFCB8-TBD-10280	
shadM71	4	float	0.0-1000.0	EDFCB8-TBD-10280	
shadM72	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
LD_I1_thresh	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CD_I1_thresh	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_I2_thresh	4	float	0.0-1000.0	EDFCB8-TBD-10280	
DD_I2_thresh	4	float	0.0-1000.0	EDFCB8-TBD-10280	Desert Day BT threshold
LD_BTD_thresh	4	float	-62.0-1000.0	EDFCB8-TBD-10280	Land Day BT threshold
CD_BTD_thresh	4	float	-62.0-1000.0	EDFCB8-TBD-10280	
WD_BTD_thresh	4	float	-58.0-1000.0	EDFCB8-TBD-10280	
DD_BTD_thresh	4	float	-68.0-1000.0	EDFCB8-TBD-10280	
LN_BTD_thresh	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WN_BTD_thresh	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SD_BTD_thresh	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SN_BTD_thresh	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CD_M15_M12_Hi	4	float	-60.0-1000.0	EDFCB8-TBD-10280	
CD_M15_M12_Mid	4	float	-62.0-1000.0	EDFCB8-TBD-10280	
CD_M15_M12_Lo	4	float	-64.0-1000.0	EDFCB8-TBD-10280	
CD_M15_M16_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CD_M5_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CD_M5_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CD_M5_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CD_M9_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CD_M9_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CD_M9_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
DD_M15_M12_A1	4	float	0.0-1000.0	EDFCB8-TBD-10280	
DD_M15_M12_B1	4	float	-80.0-1000.0	EDFCB8-TBD-10280	
DD_M15_M12_A2	4	float	0.0-1000.0	EDFCB8-TBD-10280	
DD_M15_M12_B2	4	float	-71.0-1000.0	EDFCB8-TBD-10280	
DD_M15_M12_TPIWV_switch	4	float	0.0-1000.0	EDFCB8-TBD-10280	
DD_M15_M16_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
DD_M1_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
DD_M1_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
DD_M1_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
DD_M9_TPIWV_cutoff	4	float	0.0-1000.0	EDFCB8-TBD-10280	
DD_M9_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
DD_M9_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	Desert Day threshold
DD_M9_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	Desert Day threshold
LD_M12_M13_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	Land Day threshold
LD_M12_M13_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	Land Day threshold
LD_M12_M13_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	Land Day threshold
LD_M15_M12_Hi	4	float	-66.0-1000.0	EDFCB8-TBD-10280	Land Day threshold
LD_M15_M12_Mid	4	float	-68.0-1000.0	EDFCB8-TBD-10280	Land Day threshold

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
LD_M15_M12_Lo	4	float	-70.0-1000.0	EDFCB8-TBD-10280	Land Day threshold
LD_M15_M16_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	Land Day threshold
LD_M5_GEMI_THRESH	4	float	0.0-1000.0	EDFCB8-TBD-10280	Land Day threshold
VCM_TOA_NDVI_THRESH	4	float	0.0-1000.0	EDFCB8-TBD-10280	VCM toc ndvi threshold
LD_M5_M7_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	Land Day threshold
LD_M5_M7_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	Land Day threshold
LD_M5_M7_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
LD_M9_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
LD_M9_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
LD_M9_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
LN_M12_M16_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
LN_M12_M16_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
LN_M12_M16_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
LN_M15_M12_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
LN_M15_M12_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
LN_M15_M12_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
LN_M15_M16_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SD_M12_M13_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SD_M12_M13_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SD_M12_M13_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SD_M12_M15_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SD_M12_M15_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SD_M12_M15_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SD_M12_M15_HiHiElev	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SD_M12_M15_MidHiElev	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SD_M12_M15_LoHiElev	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SD_M9_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	Snow Day threshold
SD_M9_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	Snow Day threshold
SD_M9_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	Snow Day threshold
SN_M12_M16_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SN_M12_M16_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SN_M12_M16_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SN_M15_M12_Hi	4	float	-55.0-1000.0	EDFCB8-TBD-10280	
SN_M15_M12_Mid	4	float	-56.0-1000.0	EDFCB8-TBD-10280	
SN_M15_M12_Lo	4	float	-57.0-1000.0	EDFCB8-TBD-10280	
WD_M12_M13_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M12_M13_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M12_M13_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M15_M12_Hi	4	float	-58.0-1000.0	EDFCB8-TBD-10280	
WD_M15_M12_Mid	4	float	-60.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
WD_M15_M12_Lo	4	float	-62.0-1000.0	EDFCB8-TBD-10280	
WD_M15_M16_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M5_M7_Hi1	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M5_M7_Hi2	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M5_M7_Mid1	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M5_M7_Mid2	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M5_M7_Lo1	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M5_M7_Lo2	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M7_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M7_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
WD_M7_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M9_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M9_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M9_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WN_M15_M12_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WN_M15_M12_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WN_M15_M12_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WN_M15_M16_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	
sst_thres	4	float	0.0-1000.0	EDFCB8-TBD-10280	
sst_in_water_thres	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
lst_thres	4	float	0.0-1000.0	EDFCB8-TBD-10280	
lst_snow_thres	4	float	0.0-1000.0	EDFCB8-TBD-10280	
lst_desert_thres	4	float	0.0-1000.0	EDFCB8-TBD-10280	
sngIntM7_Hi	4	float	0.0-1000.0	EDFCB8-TBD-10280	Sun-glint coefficient
sngIntM7_Mid	4	float	0.0-1000.0	EDFCB8-TBD-10280	Sun-glint coefficient
sngIntM7_Lo	4	float	0.0-1000.0	EDFCB8-TBD-10280	Sun-glint coefficient
sngIntRatio_Hi1	4	float	0.0-1000.0	EDFCB8-TBD-10280	
sngIntRatio_Hi2	4	float	0.0-1000.0	EDFCB8-TBD-10280	
sngIntRatio_Mid1	4	float	0.0-1000.0	EDFCB8-TBD-10280	
sngIntRatio_Mid2	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sngIntRatio_Lo1	4	float	0.0-1000.0	EDFCB8-TBD-10280	
sngIntRatio_Lo2	4	float	0.0-1000.0	EDFCB8-TBD-10280	
BTM12_limit	4	float	0.0-1000.0	EDFCB8-TBD-10280	
LD_M9_thin_cirrus	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CD_M9_thin_cirrus	4	float	0.0-1000.0	EDFCB8-TBD-10280	
DD_M9_thin_cirrus	4	float	0.0-1000.0	EDFCB8-TBD-10280	
SD_M9_thin_cirrus	4	float	0.0-1000.0	EDFCB8-TBD-10280	
WD_M9_thin_cirrus	4	float	0.0-1000.0	EDFCB8-TBD-10280	
high_tpw_value	4	float	0.0-1000.0	EDFCB8-TBD-10280	
trispec_coeff1	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
trispec_coeff2	4	float	-50.0-1000.0	EDFCB8-TBD-10280	
trispec_coeff3	4	float	0.0-1000.0	EDFCB8-TBD-10280	
trispec_coeff4	4	float	-50.0-1000.0	EDFCB8-TBD-10280	
CP_BAD	4	float	0.0-10049.0	EDFCB8-TBD-10280	
CP_CERTAIN_ICE_BTM15	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_MAX_BTM15_WIN_OVER	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_MAX_BTM15_NIR_OVER	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_MAX_BTM15_NIGHT_OVER	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_NIR_CIRRUS_THRES_WATER_M12	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_NIR_CIRRUS_THRES_LAND_M12	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_NIR_CIRRUS_THRES_DESERT_M12	4	float	0.0-1000.0	EDFCB8-TBD-10280	Cloud phase coefficients
CP_MIN_CIRRUS	4	float	0.0-1000.0	EDFCB8-TBD-10280	Cloud phase coefficients
CP_MAX_CIRRUS	4	float	0.0-1000.0	EDFCB8-TBD-10280	Cloud phase coefficients
CP_MIN_M5_OVER	4	float	0.0-1000.0	EDFCB8-TBD-10280	Cloud phase coefficients
CP_MAX_M5_OVER	4	float	0.0-1000.0	EDFCB8-TBD-10280	Cloud phase coefficients
CP_MIN_M1_OVER	4	float	0.0-1000.0	EDFCB8-TBD-10280	Cloud phase coefficients
CP_MIN_M9_OVER_WATER_LOW	4	float	0.0-1000.0	EDFCB8-TBD-10280	Cloud phase coefficients
CP_MIN_M9_OVER_LAND_LOW	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_MIN_M9_OVER_WATER_HIGH	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_MIN_M9_OVER_LAND_HIGH	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_MAX_M9_OVER	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M9_WIN_CHECK_THRES_LAND	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M9_WIN_CHECK_THRES_WATER	4	float	0.0-1000.0	EDFCB8-TBD-10280	Cloud phase coefficients
CP_M15_M16_OVERLAP_NIGHT_THRES	4	float	0.0-1000.0	EDFCB8-TBD-10280	Cloud phase coefficients
CP_M12_M15_OVERLAP_NIGHT_THRES	4	float	0.0-1000.0	EDFCB8-TBD-10280	Cloud phase coefficients
CP_MAX_SZA_OVER	4	float	0.0-1000.0	EDFCB8-TBD-10280	Cloud phase coefficients
CP_SNOW_M10_THRES_LOW	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_SNOW_M10_THRES_HIGH	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M15_M16_N_OVER_L_TROPWATER	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M15_M16_N_OVER_H_TROPWATER	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_M12_N_OVER_L_TROPWATER	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M12_N_OVER_H_TROPWATER	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M15_M16_N_OVER_L_MIDWATER	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M15_M16_N_OVER_H_MIDWATER	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M12_N_OVER_L_MIDWATER	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M12_N_OVER_H_MIDWATER	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M15_M16_N_OVER_L_LAND	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M15_M16_N_OVER_H_LAND	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M12_N_OVER_L_LAND	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M12_N_OVER_H_LAND	4	float	0.0-1000.0	EDFCB8-TBD-10280	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
CP_M12_M15_N_OVER_L	4	float	0.0-1000.0	EDFCB8-TBD-10280	
CP_M12_M15_N_OVER_H	4	float	0.0-1000.0	EDFCB8-TBD-10280	
A_win_over	448	double[8][7]	-335.0-1000.0	EDFCB8-TBD-10280	AVHRR algorithm cloud overlap function coefficients
B_win_over	448	double[8][7]	0.0-1000.0	EDFCB8-TBD-10280	AVHRR algorithm cloud overlap function coefficients
C_win_over	448	double[8][7]	-359.0-1000.0	EDFCB8-TBD-10280	AVHRR algorithm cloud overlap function coefficients
D_win_over	448	double[8][7]	-60.0-1000.0	EDFCB8-TBD-10280	AVHRR algorithm cloud overlap function coefficients
E_win_over	448	double[8][7]	-50.0-1000.0	EDFCB8-TBD-10280	AVHRR algorithm cloud overlap function coefficients
MIN_win_over	448	double[8][7]	0.0-1000.0	EDFCB8-TBD-10280	The minimum 10.7um - 12um BTD allowed for overlap detection
A_nir_over_water	144	double[18]	-65.0-1000.0	EDFCB8-TBD-10280	VIIRS algorithm cloud overlap function coefficients for a water surface
B_nir_over_water	144	double[18]	-65.0-1000.0	EDFCB8-TBD-10280	VIIRS algorithm cloud overlap function coefficients for a water surface

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
C_nir_over_water	144	double[18]	-55.0-1000.0	EDFCB8-TBD-10280	VIIRS algorithm cloud overlap function coefficients for a water surface
D_nir_over_water	144	double[18]	-50.0-1000.0	EDFCB8-TBD-10280	VIIRS algorithm cloud overlap function coefficients for a water surface
E_nir_over_water	144	double[18]	0.0-1000.0	EDFCB8-TBD-10280	VIIRS algorithm cloud overlap function coefficients for a water surface
A_nir_over_land	144	double[18]	-60.0-1000.0	EDFCB8-TBD-10280	VIIRS algorithm cloud overlap function coefficients for a grass surface
B_nir_over_land	144	double[18]	-60.0-1000.0	EDFCB8-TBD-10280	VIIRS algorithm cloud overlap function coefficients for a grass surface
C_nir_over_land	144	double[18]	-50.0-1000.0	EDFCB8-TBD-10280	VIIRS algorithm cloud overlap function coefficients for a grass surface
D_nir_over_land	144	double[18]	-50.0-1000.0	EDFCB8-TBD-10280	VIIRS algorithm cloud overlap function coefficients for a grass surface
E_nir_over_land	144	double[18]	0.0-1000.0	EDFCB8-TBD-10280	VIIRS algorithm cloud overlap function coefficients for a grass surface

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
A_cirrus	56	double[7]	-50.0-1000.0	EDFCB8-TBD-10280	10.7um-12um as a function of 10.7um BT coefficients for cirrus detection
B_cirrus	56	double[7]	0.0-1000.0	EDFCB8-TBD-10280	10.7um-12um as a function of 10.7um BT coefficients for cirrus detection
C_cirrus	56	double[7]	-50.0-1000.0	EDFCB8-TBD-10280	10.7um-12um as a function of 10.7um BT coefficients for cirrus detection
D_cirrus	56	double[7]	0.0-1000.0	EDFCB8-TBD-10280	10.7um-12um as a function of 10.7um BT coefficients for cirrus detection
E_cirrus	56	double[7]	-5145.07	EDFCB8-TBD-10280	10.7um-12um as a function of 10.7um BT coefficients for cirrus detection
A_M14_M15	56	double[7]	0.0-1000.0	EDFCB8-TBD-10280	8.6um-10.7um as a function of 10.7um BT coefficients for cloud typing
B_M14_M15	56	double[7]	-50.0-1000.0	EDFCB8-TBD-10280	8.6um-10.7um as a function of 10.7um BT coefficients for cloud typing
C_M14_M15	56	double[7]	0.0-1000.0	EDFCB8-TBD-10280	8.6um-10.7um as a function of 10.7um BT coefficients for cloud typing

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
D_M14_M15	56	double[7]	-0.0-1000.0	EDFCB8-TBD-10280	8.6um-10.7um as a function of 10.7um BT coefficients for cloud typing
E_M14_M15	56	double[7]	0.0-1000.0	EDFCB8-TBD-10280	8.6um-10.7um as a function of 10.7um BT coefficients for cloud typing
vis2_ref_arr	6156	float[9][9][19]	0.0-1000.0	EDFCB8-TBD-10280	Start of structure from IBand
sol_arr	36	float[9]	0.0-1000.0	EDFCB8-TBD-10280	
sat_arr	36	float[9]	0.0-1000.0	EDFCB8-TBD-10280	
azi_arr	76	float[19]	0.0-1000.0	EDFCB8-TBD-10280	
M5_ndvi_coef	480	float[3][10][4]	-72.0-1000.0	EDFCB8-TBD-10280	Start of structure Tunable coefficients for variable NDVI based M1 and M5 reflectance thresholds
M1_ndvi_coef	144	float[3][3][4]	-50.0-1000.0	EDFCB8-TBD-10280	Start of structure Tunable coefficients for variable NDVI based M1 and M5 reflectance thresholds
ShadowCastSwitch	4	Int	>=0	Unitless	

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3.2.2.4.7 VIIRS COP Ephemeral PC

Table 3.2.2.5.7-1, VIIRS COP Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
sza_threshold	4	32-bit floating point	Minfloat - Maxfloat	radians	Solar Zenith Angle Threshold
water_increment	4	32-bit floating point	Minfloat - Maxfloat	unitless	Together with the hi_water_ctt and low_water_ctt defined the maximum iterations for the solution of the IR equation
lo_water_ctt	4	32-bit floating point	Minfloat - Maxfloat	Kelivn	The minimum water cloud top temperature
hi_water_ctt	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The maximum water cloud top temperature
lo_water_re	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The minimum water cloud particle radius
hi_water_re	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The maximum water cloud particle radius
ice_increment	4	32-bit floating point	Minfloat - Maxfloat	unitless	Together with the hi_ice_ctt and lo_ice_ctt defined the maximum iterations for the solution of the IR equation
lo_ice_ctt	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The minimum ice cloud top temperature

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
hi_ice_ctt	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The maximum ice cloud top temperature
ice_thresh_btM15	4	32-bit floating point	Minfloat - Maxfloat	unitless	Threshold for determining which CTT alg to use
min_day_cot_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	The minimum daytime ice cloud optical thickness boundary value for quality flag
max_day_cot_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	The maximum daytime ice cloud optical thickness boundary value for quality flag
min_night_cot_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	The minimum night ice cloud optical thickness boundary value for quality flag
max_night_cot_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	The maximum night ice cloud optical thickness boundary value for quality flag
min_day_cot_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	The minimum daytime water cloud optical thickness boundary value for quality flag
max_day_cot_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	The maximum daytime water cloud optical thickness boundary value for quality flag

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_night_cot_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	The minimum night water cloud optical thickness boundary value for quality flag
max_night_cot_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	The maximum night water cloud optical thickness boundary value for quality flag
min_eps_ice	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The minimum ice effective particle size boundary value for quality flag
max_eps_ice	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The maximum ice effective particle size boundary value for quality flag
min_eps_water	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The minimum water effective particle size boundary value for quality flag
max_eps_water	4	32-bit floating point	Minfloat - Maxfloat	Micrometer	The maximum water effective particle size boundary value for quality flag
min_ctt_ice	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The minimum ice cloud top temperature boundary value for quality flag
max_ctt_ice	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The maximum ice cloud top temperature boundary value for quality flag

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_ctt_water	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The minimum water cloud top temperature boundary value for quality flag
max_ctt_water	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The maximum water cloud top temperature boundary value for quality flag
night_ice_cot_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	unitless	
night_ice_cot_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	unitless	
night_ice_eps_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
night_ice_eps_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
night_ice_ctt_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
night_ice_ctt_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
night_water_cot_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	unitless	
night_water_cot_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	unitless	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
night_water_eps_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
night_water_eps_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
night_water_ctt_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
night_water_ctt_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
day_ice_cot_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	unitless	
day_ice_cot_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	unitless	
day_ice_eps_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
day_ice_eps_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
day_ice_ctt_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
day_ice_ctt_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
day_water_cot_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	unitless	
day_water_cot_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	unitless	
day_water_eps_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
day_water_eps_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	micrometer	
day_water_ctt_convergence_thin	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
day_water_ctt_convergence_thick	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	
m12_conversion_factor	8	64-bit floating point	Minfloat - Maxfloat	micrometer/ (1000 * cm^-1)	Conversion factor for M12 to convert from SDR radiance units W/m^2/um/sr to the radiance needed by the algorithm mW/m^2/sr/cm^-1
m12_center_microns	8	64-bit floating point	Minfloat - Maxfloat	micrometers	Center value of M12
m12_bwidth_microns	8	64-bit floating point	Minfloat - Maxfloat	micrometers	Bandwidth value of M12

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
m12_lowlimit_wavenum	4	32-bit floating point	0.0-2820.0	cm^-1	Lower wave number limit of M12
m12_upplimit_wavenum	4	32-bit floating point	0.0-2688.52	cm^-1	Upper wave number limit of M12
m15_conversion_factor	8	64-bit floating point	Minfloat - Maxfloat	micrometer/ (1000 * cm^-1)	Conversion factor for M15 to convert from SDR radiance units W/m^2/um/sr to the radiance needed by the algorithm mW/m^2/sr/cm^-1
m15_center_microns	8	64-bit floating point	Minfloat - Maxfloat	micrometer	Center value of M15 in microns
m_coeffs	16	32-bit floating point	Minfloat - Maxfloat	unitless	Coefficients used to calculate scaling factor in nighttime IR Water Cloud Retrieval 1 Dimensional Array: Size of Dimension(s): 4
m15_center_wavenum	4	32-bit floating point	Minfloat - Maxfloat	cm^-1	Center value of M15 in wave number
equation57_alpha	4	32-bit floating point	-50.0-1000.0	unitless	Empirical constant used in Nighttime IR Cirrus Cloud Retrieval
equation57_beta	4	32-bit floating point	Minfloat - Maxfloat	unitless	Empirical constant used in Nighttime IR Cirrus Cloud Retrieval

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
k2	4	32-bit floating point	Minfloat - Maxfloat	unitless	Extinction coefficient for M15
init_mean_de_coeffs	16	32-bit floating point	Minfloat - Maxfloat	unitless	Coeffiicents to determine initial temperature (averaged EPS) from equation 52 1 Dimensional Array: Size of Dimension(s): 4
de_coeffs	12	32-bit floating point	Minfloat - Maxfloat	unitless	Coefficents De of equation 49 in the ATBD 1 Dimensional Array: Size of Dimension(s): 3
d_coeffs	96	64-bit floating point	-365.-1000.0	unitless	Coefficents Dn of Equation 50 in the ATBD 2 Dimensional Array: Size of Dimension(s): 3 x 4
m15_emiss_min_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum emissivity for ice cloud
m15_emiss_max_ice	4	32-bit floating point	Minfloat - Maxfloat	unitless	Maximum emissivity ice cloud
m15_emiss_min_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum emissivity for water cloud
m15_emiss_max_water	4	32-bit floating point	Minfloat - Maxfloat	unitless	Maximum emissivity water cloud

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
init_cot_min	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum initial cloud optical thickness
init_cot_max	4	32-bit floating point	Minfloat - Maxfloat	unitless	Maximum initial cloud optical thickness
k_ratio_min	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum value for K ratio
k_ratio_max	4	32-bit floating point	Minfloat - Maxfloat	unitless	Maximum value for K ratio
de_min	4	32-bit floating point	Minfloat - Maxfloat	Micrometers	Minimum value for Mean Effective Size (De)
de_max	4	32-bit floating point	Minfloat - Maxfloat	Micrometers	Maximum value for Mean Effective Size (De)
init_mean_de_min	4	32-bit floating point	Minfloat - Maxfloat	Micrometers	Minimum value for the initial mean temperature
init_mean_de_max	4	32-bit floating point	Minfloat - Maxfloat	Micrometers	Maximum value for the initial mean temperature
mean_iwc_min	4	32-bit floating point	Minfloat - Maxfloat	g/m3	Minimum value for the mean ice water content
mean_iwc_max	4	32-bit floating point	Minfloat - Maxfloat	g/m3	Maximum value for the mean ice water content

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ctt_min_water	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Minimum value for water cloud top temperature
ctt_max_water	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Maximum value for water cloud top temperature
ctt_min_ice	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Minimum value for ice cloud top temperature
ctt_max_ice	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Maximum value for ice cloud top temperature
diff_threshold	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Difference threshold for refinement of ice ctt
diff_max	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	Maximum difference for refinement of ice ctt
weight_of_De_of_k	4	32-bit floating point	Minfloat - Maxfloat	unitless	Weight of De_of_k in final determination of De
m14_center_microns	8	64-bit floating point	Minfloat - Maxfloat	Micrometer	Center value of M14 in microns
m16_center_microns	8	64-bit floating point	Minfloat - Maxfloat	Micrometer	Center value of M16 in microns

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
m14_conversion_factor	8	64-bit floating point	Minfloat - Maxfloat	micrometer/ (1000 * cm^-1)	Conversion factor for M14 to convert from SDR radiance units W/m^2/um/sr to the radiance needed by the algorithm mW/m^2/sr/cm^-1
m16_conversion_factor	8	64-bit floating point	Minfloat - Maxfloat	micrometer/ (1000 * cm^-1)	Conversion factor for M16 to convert from SDR radiance units W/m^2/um/sr to the radiance needed by the algorithm mW/m^2/sr/cm^-1
min_night_cot_water_init	4	32-bit floating point	Minfloat - Maxfloat	unitless	Initial minimum value of night over water for cloud optical thickness
max_night_cot_water_init	4	32-bit floating point	Minfloat - Maxfloat	unitless	Initial maximum value of night over water for cloud optical thickness
k_ratio_inbound_min	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum inbound value for k ratio
night_alpha_min	4	32-bit floating point	Minfloat - Maxfloat	unitless	Minimum value of night alpha
night_alpha_max	4	32-bit floating point	Minfloat - Maxfloat	unitless	Maximum value of night alpha
hi_water_ctt_conv	4	32-bit floating point	Minfloat - Maxfloat	Kelvin	The maximum water cloud top temperature

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
tmin	8	64-bit floating point	Minfloat – Maxfloat	K	Minimum temperature
tmax	8	64-bit floating point	Minfloat – Maxfloat	K	Maximum temperature
B12min	8	64-bit floating point	Minfloat – Maxfloat	K	Minimum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
B12max	8	64-bit floating point	Minfloat – Maxfloat	K	Maximum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
B14min	8	64-bit floating point	Minfloat - Maxfloat	K	Minimum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
B14max	8	64-bit floating point	Minfloat - Maxfloat	K	Maximum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
B15min	8	64-bit floating point	Minfloat - Maxfloat	K	Minimum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
B15max	8	64-bit floating point	Minfloat - Maxfloat	K	Maximum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
B16min	8	64-bit floating point	Minfloat - Maxfloat	K	Minimum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
B16max	8	64-bit floating point	Minfloat - Maxfloat	K	Maximum value for polynomial fit equations applicable for VIIRS temperature in deg K, radiance in W/m**2/micron/ster
M12_B_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate temperature (K) at a given band averaged Planck function value (W/m^2/micron/ster) 1 Dimensional Array: Size of Dimension(s): 6

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M12_TEMP_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate band averaged Planck function value (W/m^2/micron/ster) at a given temperature (K) 1 Dimensional Array: Size of Dimension(s): 6
M14_B_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate temperature (K) at a given band averaged Planck function value (W/m^2/micron/ster) 1 Dimensional Array: Size of Dimension(s): 6
M14_TEMP_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate band averaged Planck function value (W/m^2/micron/ster) at a given temperature (K) 1 Dimensional Array: Size of Dimension(s): 6

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M15_B_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate temperature (K) at a given band averaged Planck function value (W/m^2/micron/ster) 1 Dimensional Array: Size of Dimension(s): 6
M15_TEMP_COEF	48	64-bit floating point	Minfloat - Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate band averaged Planck function value (W/m^2/micron/ster) at a given temperature (K) 1 Dimensional Array: Size of Dimension(s): 6
M16_B_COEF	48	64-bit floating point	Minfloat – Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate temperature (K) at a given band averaged Planck function value (W/m^2/micron/ster) 1 Dimensional Array: Size of Dimension(s): 6

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
M16_TEMP_COEF	48	64-bit floating point	Minfloat – Maxfloat	unitless	VIIRS Polynomial fit coefficients used to calculate band averaged Planck function value (W/m^2/micron/ster) at a given temperature (K) 1 Dimensional Array: Size of Dimension(s): 6
degraded_ice_gt_ten	8	64-bit floating point	Minfloat – Maxfloat	unitless	Ice cloud pixel exclusion value for cot > 10
qf_excl_day_ice	8	64-bit floating point	Minfloat – Maxfloat	unitless	Day ice cloud pixel exclusion value for cot < 1
qf_excl_day_water	8	64-bit floating point	Minfloat – Maxfloat	unitless	Day water cloud pixel exclusion value for cot < 1
qf_excl_night_ice	8	64-bit floating point	Minfloat – Maxfloat	unitless	Night ice cloud pixel exclusion value for cot < 1
qf_excl_night_water	8	64-bit floating point	Minfloat - Maxfloat	unitless	Night water cloud pixel exclusion value for cot < 1

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3.2.2.4.8 VIIRS GCE Ephemeral PC

Table 3.2.2.5.8-1, VIIRS GCE Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
qf_cot_sza_threshold	4	float	(75*pi)/180	Radians	Cloud Optical Thickness solar zenith angle
c1	4	float	0.002644	Unitless	Height_conversion constant
c2	4	float	0.0089	Unitless	Height_conversion constant
c3	4	float	6245	Unitless	Height_conversion constant

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3.2.2.4.9 VIIRS Sea Ice Age Ephemeral PC

Table 3.2.2.5.9-1, VIIRS Sea Ice Age Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
h00	4	32-bit floating point	>0.0 Initial Value = 30.0	cm	Young/First Year ice thickness threshold
min_conc	4	32-bit floating point	0.0 ≤ min_conc ≤ 1.0 Initial Value = 0.10	unitless	Minimum ice concentration for ice age processing
min_twgt	4	32-bit floating point	0.0 ≤ min_twgt ≤ 1.0 Initial Value = 0.05	unitless	Minimum temperature weight for processing.
max_thick_dev	4	32-bit floating point	> 0.0 Initial Value = 5.0	cm	Maximum allowed difference between I1 and I2 thickness.
q0	4	32-bit floating point	> 0.0 Initial Value = 1368	W/m^2	Solar irradiance
atmo_const	8	32-bit floating point]	> 0.0 Initial Values = [0.65, 0.055]	unitless	Atmospheric constants (empirical) used to compute long wave heat flux as a function of humidity and temperature. 1 Dimensional Array: NUM_ATM_CONST Size of Dimension(s): 2

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ct	4	32-bit floating point	> 0.0 Initial Value = 0.0017	unitless	Coefficient of turbulent heat exchange (sensible heat).
ce	4	32-bit floating point	> 0.0 Initial Value = 0.0017	unitless	Coefficient of turbulent heat exchange (latent heat).
specific_heat	4	32-bit floating point	> 0.0 Initial Value = 1005	J/kg/K	Specific heat
latent_heat	4	32-bit floating point	> 0.0 Initial Value = 2.456e6	J/kg	Latent heat of evaporation
latent_heat_fus	4	32-bit floating point	> 0.0 Initial Value = 3.0e5	J/kg	Latent heat of fusion
sb_const	4	32-bit floating point	5.6704E-8 Initial Value = 5.6704E-8	W/m^2/K^4	Stephan-Boltzmann constant
emiss	4	32-bit floating point	0 <= emiss <= 1.0 Initial Value = 1.0	unitless	Surface emissivity.
ice_conduct	4	32-bit floating point	> 0.0 Initial Value = 2.093	W/m/K	Ice conductivity
snow_conduct	4	32-bit floating point	> 0.0 Initial Value = 0.279	W/m/K	Snow conductivity

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
t_freeze	4	32-bit floating point	Initial Value = 271.4	Kelvin	Freezing point of sea water
sza_thre_r	4	32-bit floating point	0< sza_thre_r < 90 Initial Value = 80.0	degree	Red/Yellow SZA threshold (degrees) for energy balance.
sza_thre_y	4	32-bit floating point	0< sza_thre_y < 90 Initial Value = 85.0	degree	Yellow/Green SZA threshold (degrees) for energy balance
trans_thre_r	4	32-bit floating point	0< trans_thre_r < 90 Initial Value = 76.0	degree	Red/Yellow SZA threshold (degrees) for transmittance
arctic_haze_aot_thresh	4	32-bit floating point	> 0.0 Initial Value = 0.1	unitless	Arctic haze aerosol optical thickness threshold
iceAirDeltaT	4	32-bit floating point	-999.0 Initial Value = -999.0	degree	Temperature difference threshold for Ice-Surface Air Temperature Note: Setting the threshold to -999.0 effectively disables a branch to classify ice age First Year using a temperature difference threshold. This will allow the algorithm to fully utilize the energy balance equation

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3.2.2.4.10 VIIRS IST EDR Ephemeral PC

Table 3.2.2.5.10-1, VIIRS IST EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_Bt_M15	4	float	Initially set to: 180	K	Min Brightness Temp for M15
max_Bt_M15	4	float	Initially set to 350	K	Max Brightness Temp for M15
min_Bt_M16	4	float	Initially set to 180	K	Min Brightness Temp for M16
max_Bt_M16	4	float	Initially set to 350	K	Max Brightness Temp for M16
Ice_Threshold	4	float	Initially set to 0.9999	unitless	Ice fraction threshold for "ICE"
max_SolZen_Lim	4	float	Initially set to 1.48353	radians	Max solar zenith angle defining day/night
Ice_Primary_Threshold	4	float	Initially set to 0.95	unitless	Ice fraction threshold for "PRIMARILY ICE"
Ice_No_Threshold	4	float	Initially set to 0.0	unitless	Ice fraction threshold for "NOT ICE"
min_Aot_Lim	4	float	Initially set to 0.0	unitless	Min AOT Value
max_Aot_Lim	4	float	Initially set to 1.0	unitless	Max AOT Value
ist_Min_Rept_Range	4	float	Initially set to 213	K	Minimum Reportable IST
ist_Max_Rept_Range	4	float	Initially set to 275	K	Maximum Reportable IST
min_Ice_Cov_N_Lat	4	float	Initially set to: 36° * DEG2RAD	radians	Southern extent of Ice Cov Zone in Northern Hemisphere

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
max_Ice_Cov_S_Lat	4	float	Initially set to: -50° * DEG2RAD	radians	Northern extent of Ice Cov Zone in Southern Hemisphere

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3.2.2.4.11 VIIRS LST EDR Ephemeral PC

Table 3.2.2.5.11-1, VIIRS LST EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_Bt_M12_M13	4	float	Initially set to 260	Kelvin	Min Brightness Temp for M12 and M13
max_Bt_M12_M13	4	float	Initially set to 350	Kelvin	Max Brightness Temp for M12 and M13
min_Bt_M15	4	float	Initially set to 240	Kelvin	Min Brightness Temp for M15
max_Bt_M15	4	float	Initially set to 350	Kelvin	Max Brightness Temp for M15
min_Bt_M16	4	float	Initially set to 240	Kelvin	Min Brightness Temp for M16
max_Bt_M16	4	float	Initially set to 350	Kelvin	Max Brightness Temp for M16
day_Sol_Zen_Ang_Lim	4	float	Initially set to 1.4835	radians	Solar Zenith Angle defining Day/Night Boundary
min_Sens_Zen_Lim	4	float	Initially set to 0.0	radians	Sensor Zenith Angle at Nadir
max_Sens_Zen_Lim	4	float	Initially set to 0.8779	radians	Sensor Zenith Angle at Edge of Scan

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_Term_Lim	4	float	Initially set to 1.4835	radians	Min Solar Zenith Angle Defines Terminator
max_Term_Lim	4	float	Initially set to 1.7453	radians	Max Solar Zenith Angle Defines Terminator
lst_Min_Rept_Range	4	float	Initially set to 180	K	Minimum Land Surface Temperature Threshold
lst_Max_Rept_Range	4	float	Initially set to 380	K	Maximum Land Surface Temperature Threshold
max_Sens_Zen_Lim	4	float	Initially set to 0.0	radians	Sensor Zenith Degradation Limit

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3.2.2.4.12 VIIRS NCC EDR Ephemeral PC

Table 3.2.2.5.12-1, VIIRS NCC EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
solar_Irradiance	4	32-bit floating point	Initially set to 0.01695	W/(cm^2 sr)	Solar Radiance Note: this is not, strictly speaking, an irradiance, since it contains sr in the denominator of the units. It is defined here as the radiance that would be observed from a 100% albedo surface where the solar zenith angle is zero. To convert to irradiance this value would need to be multiplied by pi
lza_Threshold	4	32-bit floating point	Initially set to 105	degrees	lunar zenith angle threshold
sza_Threshold	4	32-bit floating point	Initially set to 105	degrees	solar zenith angle threshold
max_lunar_arf	4	32-bit floating point	Initially set to 1.5	unitless	maximum lunar anisotropic reflectance factor
min_lunar_arf	4	32-bit floating point	Initially set to 0.5	unitless	minimum lunar anisotropic reflectance factor
max_solar_arf	4	32-bit floating point	Initially set to 1.5	unitless	maximum solar anisotropic reflectance factor
min_solar_arf	4	32-bit floating point	Initially set to 0.5	unitless	minimum solar anisotropic reflectance factor

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_ncc_radiance	4	32-bit floating point	Initially set to 1.0E-9	W/(cm^2 sr)	minimum near constant contrast radiance

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3.2.2.4.13 VIIRS Net Heat Flux Ephemeral PC

Table 3.2.2.5.13-1, VIIRS Net Heat Flux Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
minClear	4	float	Initially set to 0.8	unitless	Threshold for determining a clear pixel(fraction)
minIceWater	4	float	Initially set to 0.1	unitless	Threshold for determining water or ice pixels(fraction)
boundaryLayer	4	float	Initially set to 400	meters	Boundary layer threshold
minSSTp	2	integer	Initially set to 5	unitless	Minimum input data points needed
minISTp	2	integer	Initially set to 5	unitless	Minimum input data points needed for ice skin temperature
minODp	2	integer	Initially set to 1	unitless	Minimum input data points needed for aerosol optical depth(aot 550 nm) data
minSMp	2	integer	Initially set to 1	unitless	Minimum input data points needed for suspended matter index data
minCHLp	2	integer	Initially set to 5	unitless	Minimum input data points needed for chlorophyll data
minIAp	2	integer	Initially set to 1	unitless	Minimum input data points needed for ice age index data
minALBp		integer	Initially set to 1		Minimum for albedo data
defaultIA	2	integer	Initially set to 0	unitless	Data source flag(1 = default, 0 = retrieve if available) for ice age
defaultCHL	2	integer	Initially set to 0	unitless	Data source flag for chlorophyll
defaultSM	2	integer	Initially set to 0	unitless	Data source flag for Suspended matter
iaBase	2	integer	Initially set to 2	unitless	Default index to ice age model for ice roughness length

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
chloro	4	float	Initially set to 0.1	mg/m^3	Default value for chlorophyll concentration(mg/m3)
smBase	4	Integer	Initially set to 3	unitless	Default index to suspended matter model for optical depth distribution
aotBase	4	Float	Initially set to 0.1	unitless	Default base aerosol optical depth at .550 microns
nAotModels	2	integer	Initially set to 6	unitless	Number of AOT models as defined in the RRTM SW
bmAOT	4	float	Initially set to 0.05	unitless	Default value of base maritime optical depth
bbsAOT	4	float	Initially set to 0.004	unitless	Default value of bse stratospheric optical depth
newIce	4	Float	Initially set to 0.0001	m	Default value of roughness length over new ice(m)
firstyr	4	float	Initially set to 0.0005	m	Default value of roughness length over first year ice(m)
multiyr	4	float	Initially set to 0.001	m	Default value of roughness length over multi year ice(m)
co2mmr	4	float	Initially set to 0.000538301	kg/kg	Default value of gaseous species CO2(kg/kg)
ch4mmr	4	float	Initially set to 9.10876e-07	kg/kg	Default value for gaseous species CH4(kg/kg)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
n20mmr	4	float	Initially set to 4.65468e-07	kg/kg	Default value for gaseous species N2O(kg/kg)
cfc11mmr	4	float	Initially set to 1.28052e-09	kg/kg	Default value for gaseous species CFC-11(kg/kg)
cfc12mmr	4	float	Initially set to 2.00379e-09	kg/kg	Default value for gaseous species CFC-12(kg/kg)
emislwW	4	float	Initially set to 0.95	unitless	Default value for LW emissivity over water
emislwI	4	float	Initially set to 0.99	unitless	Default value for LW emissivity over ice
levels	104	float[26]	Initially set to [10, 20, 30, 50, 70, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 925, 950, 975, 1000]	hPa	Atmospheric Pressure levels in hPa 1 Dimensional Array Size of Dimension(s): 26
surfaceD	56	float[14]	Initially set to [0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.0]	unitless	Default values of surface albedo over water(diffuse) 1 Dimensional Array Size of Dimension(s): 14

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
surfaceP	56	float[14]	Initially set to [0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.05, 0.0]	unitless	Default values of surface albedo over water(parallel) 1 Dimensional Array Size of Dimension(s): 14
surfaceIceD	56	float[14]	Initially set to [0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07,0.0]	unitless	Default values of surface albedo over ice(diffuse) 1 Dimensional Array Size of Dimension(s): 14
surfaceIceP	56	float[14]	Initially set to [0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07, 0.07,0.0]	unitless	Default values of surface albedo over ice(parallel) 1 Dimensional Array Size of Dimension(s): 14
bands	64	float[16]	Initially set to [3.846, 3.077, 2.5, 2.15, 1.942, 1.626, 1.299, 1.242, 0.7782, 0.625, 0.4415, 0.3448, 0.2632, 0.2, 12.195, 3.846]	micrometers	Array of spectral channels for RRTM SW(in microns) 1 Dimensional Array Size of Dimension(s): 16

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3.2.2.4.14 VIIRS ACO/OCC Ephemeral PC

Table 3.2.2.5.14-1, VIIRS ACO/OCC Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
band1	4	32-bit floating point	Initially set to 1	unitless	M1 (412nm)
band2	4	32-bit floating point	Initially set to 2	unitless	M2 (445nm)
band3	4	32-bit floating point	Initially set to 3	unitless	M3 (488nm)
band4	4	32-bit floating point	Initially set to 4	unitless	M4 (555nm)
lam	20	32-bit floating point [5]	Initially set to [412, 443, 490, 555, 670]	nm	Wavelengths used in algorithm
bb_denom	4	32-bit floating point	Initially set to 0	unitless	For bb_denom = 0: backscatter coefficients are added to absorption coeffs to obtain 675nm abs coeff. For bb_demon = 1: Only absorption coeffs are used
d1	4	32-bit floating point	Initially set to 2.5	unitless	Threshold for determining “packaged” vs ‘unpackaged” bio-optical domains using the r12 vs r25 comparison
d2	4	32-bit floating point	Initially set to 0.95	unitless	Regression line Coefficient for r12 vs r25 comparison

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
d3	4	32-bit floating point	Initially set to 0.16	unitless	Regression line Coefficient (exponent) for r12 vs r25 comparison
delta	4	32-bit floating point	Initially set to 0.03	unitless	Difference used in determination phytoplankton packaging type
s	4	32-bit floating point	Initially set to 0.0225	nm^-1	Empirically determined coefficient used in calculation of absorption due to detritus and gelbstoff (CDOM)
bbw	20	32-bit floating point[5]	Initially set to [0.003341, 0.002406, 0.001563, 0.000929, 0.000388]	m^-1	Backscatter coefficients for water for the 5 wavelengths specified in the “lam” field.
aw	20	32-bit floating point[5]	Initially set to [0.0048, 0.00742, 0.01632, 0.0591, 0.43538]	m^-1	Absorption coefficients for water for the 5 wavelengths specified in the “lam” field.
ga0	20	32-bit floating point[5]	Initially set to [1.82, 3.05, 1.94, 0.39, 1.0]	unitless	Global a0 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field
ga1	20	32-bit floating point[5]	Initially set to [0.59, 0.69, 0.54, -0.18, 0.0]	unitless	Global a1 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field.

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
ga2	20	32-bit floating point[5]	Initially set to [-0.48, -0.48, -0.48, -0.48, -0.48]	unitless	Global a2 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field.
ga3	20	32-bit floating point[5]	Initially set to [0.014, 0.014, 0.014, 0.014, 0.014]	m^-1	Global a3 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field.
x0	4	32-bit floating point[5]	Initially set to -0.00182	m^-1	Empirical coefficient (MODIS derived) used to derive magnitude of particle backscattering (X)
x1	4	32-bit floating point	Initially set to 2.058	sr m^-1	Empirical coefficient (MODIS derived) used to derive magnitude of particle backscattering (X)
y_0	4	32-bit floating point	Initially set to -1.13	m^-1	Empirical coefficient (MODIS derived) used to derive Spectral Shape particle backscattering (Y)
y_1	4	32-bit floating point	Initially set to 2.57	m^-1	Empirical coefficient (MODIS derived) used to derive Spectral Shape particle backscattering (Y)
aph_lo	4	32-bit floating point	Initially set to 9.9999997e-05	m^-1	Min value used to obtain the root (bisection method) for the 675nm absorption coefficient
aph_hi	4	32-bit floating point	Initially set to 0.03	m^-1	Max value used to obtain the root (bisection method) for the 675nm absorption coefficient
gc0	4	32-bit floating point	Initially set to 0.354824	log10(mg/m^3)	Model Dependent Coefficients for Chlorophyll-a Concentration calculations (these values are used to calculate $\log_{10}$(chl a))
gc1	4	32-bit floating point	Initially set to -2.64124	log10(mg/m^3)	

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
gc2	4	32-bit floating point	Initially set to 1.13884	log10(mg/m^3)	
gc3	4	32-bit floating point	Initially set to -1.62316	log10(mg/m^3)	
gp0	4	32-bit floating point	Initially set to 1.7454	log10(mg/m^3)	Empirical (default) Dependent Coefficients for Chlorophyll-a Concentration calculations (these values are used to calculate $\log_{10}$(chl a))
gp1	4	32-bit floating point	Initially set to 1.0	log10(mg/m^3)	
gp2	4	32-bit floating point	Initially set to 0.0	log10(mg/m^3)	
low_412_thresh	4	32-bit floating point	Initially set to 0.0008	unitless	(Not currently used)
low_555_thresh	4	32-bit floating point	Initially set to 0.001	unitless	(Not currently used)
chl_inconsistent_thresh	4	32-bit floating point	Initially set to 0.4	unitless	Threshold used to check the value of the calculated modeled Cholorphyll a output
upa0	20	32-bit floating point[5]	Initially set to [2.2, 3.59, 2.27, 0.42, 1.0]	unitless	Unpackaged a0 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field
upa3	20	32-bit floating point[5]	Initially set to [0.0112, 0.0112, 0.0112, 0.0112, 0.0112]	m^-1	Unpackaged a3 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
pa0	20	32-bit floating point[5]	Initially set to [1.46778, 2.53786, 1.62954, 0.35552, 1.0]	unitless	Packaged a0 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field
pa3	20	32-bit floating point[5]	Initially set to [0.017276, 0.017276, 0.017276, 0.017276, 0.017276]	m^-1	Packaged a3 coeffiecients for total absorption (hyperbolic tangent function) for the 5 wavelengths specified in the “lam” field
upc0	4	32-bit floating point	Initially set to 0.2818	log10(mg/m^3)	Unpackaged c0 empirical coefficient for calculation of $\log_{10}$(chl a)
upc1	4	32-bit floating point	Initially set to -2.783	log10(mg/m^3)	Unpackaged c1 empirical coefficient for calculation of $\log_{10}$(chl a)
upc2	4	32-bit floating point	Initially set to 1.863	log10(mg/m^3)	Unpackaged c2 empirical coefficient for calculation of $\log_{10}$(chl a)
upc3	4	32-bit floating point	Initially set to -2.387	log10(mg/m^3)	Unpackaged c3 empirical coefficient for calculation of $\log_{10}$(chl a)
pc0	4	32-bit floating point	Initially set to 0.423284	log10(mg/m^3)	Packaged c0 empirical coefficient for calculation of $\log_{10}$(chl a)
pc1	4	32-bit floating point	Initially set to -2.50834	log10(mg/m^3)	Packaged c1 empirical coefficient for calculation of $\log_{10}$(chl a)
pc2	4	32-bit floating point	Initially set to 0.45994	log10(mg/m^3)	Packaged c2 empirical coefficient for calculation of $\log_{10}$(chl a)
pc3	4	32-bit floating point	Initially set to -0.90706	log10(mg/m^3)	Packaged c3 empirical coefficient for calculation of $\log_{10}$(chl a)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
upp0	4	32-bit floating point	Initially set to 1.715	log10(mg/m^3)	Unpackaged p0 modeled coefficient for calculation of $\log_{10}$(chl a)
upp1	4	32-bit floating point	Initially set to 1.0	log10(mg/m^3)	Unpackaged p1 modeled coefficient for calculation of $\log_{10}$(chl a)
upp2	4	32-bit floating point	Initially set to 0.0	log10(mg/m^3)	Unpackaged p2 modeled coefficient for calculation of $\log_{10}$(chl a)
pp0	4	32-bit floating point	Initially set to 1.7739	log10(mg/m^3)	Packaged p0 modeled coefficient for calculation of $\log_{10}$(chl a)
pp1	4	32-bit floating point	Initially set to 1.0	log10(mg/m^3)	Packaged p1 modeled coefficient for calculation of $\log_{10}$(chl a)
pp2	4	32-bit floating point	Initially set to 0.0	log10(mg/m^3)	Packaged p2 modeled coefficient for calculation of $\log_{10}$(chl a)
hpa0	20	32-bit floating point[5]	Initially set to [1.019, 1.893, 1.237, 0.316, 1.0]	unitless	Fully Packaged a0 modeled coefficients for for Phytoplankton Absorption Function aph
hpa1	20	32-bit floating point[5]	Initially set to [0.26, 0.45, 0.42, -0.08, 0.0]	unitless	Fully Packaged a1 modeled coefficients for for Phytoplankton Absorption Function aph
hpa2	20	32-bit floating point[5]	Initially set to [-0.45, -0.45, -0.45, -0.45, -0.45]	unitless	Fully Packaged a2 modeled coefficients for for Phytoplankton Absorption Function aph
hpa3	20	32-bit floating point[5]	Initially set to [0.021, 0.021, 0.021, 0.021, 0.021]	m^-1	Fully Packaged a3 modeled coefficients for for Phytoplankton Absorption Function aph

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
hpc0	4	32-bit floating point	Initially set to 0.51	log10(mg/m^3)	Fully Packaged c0 empirical coefficient for calculation of $\log_{10}$(chl a)
hpc1	4	32-bit floating point	Initially set to -2.34	log10(mg/m^3)	Fully Packaged c1 empirical coefficient for calculation of $\log_{10}$(chl a)
hpc2	4	32-bit floating point	Initially set to 0.4	log10(mg/m^3)	Fully Packaged c2 empirical coefficient for calculation of $\log_{10}$(chl a)
hpc3	4	32-bit floating point	Initially set to 0.0	log10(mg/m^3)	Fully Packaged c3 empirical coefficient for calculation of $\log_{10}$(chl a)
hpp0	4	32-bit floating point	Initially set to 1.9	log10(mg/m^3)	Fully Packaged p0 modeled coefficient for calculation of $\log_{10}$(chl a)
hpp1	4	32-bit floating point	Initially set to 1.0	log10(mg/m^3)	Fully Packaged p1 modeled coefficient for calculation of $\log_{10}$(chl a)
hpp2	4	32-bit floating point	Initially set to 0.0	log10(mg/m^3)	Fully Packaged p2 modeled coefficient for calculation of $\log_{10}$(chl a)
lambda0bb	4	32-bit floating point	Initially set to 555	nm	Reference wavelength for backscattering (related to absorption coefficient due to phytoplankton)
lambda0dom	4	32-bit floating point	Initially set to 400	nm	Reference wavelength for backscattering (related to absorption coefficient due to gelbstoff/DOM)

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
esol	20	32-bit floating point[5]	Initially set to [1651.9094, 1902.3727, 1979.4932, 1868.0762, 1527.4802]	W/(m2 micron)	Solar constant per band
bathy_thresh	4	32-bit floating point	Initially set to -50.0	meter	Bathymetry threshold for identification of shallow water conditions
rsr_thresh	4	32-bit floating point	Initially set to 0.32	sr^-1	Remote sensing reflectance threshold used to indicate no retrieval
rsr_min	4	32-bit floating point	Initially set to 9.9999999e-09	sr^-1	Remote sensing reflectance minimum used to indicate out of bounds
turbid_water_thresh	4	32-bit floating point	Initially set to 0.0012	sr^-1	Turbid water threshold (M5 RSR value) used to set exclusion condition
Max_nLw	4	32-bit floating point	Initially set to 40.0	W/(m2 um sr)	Max nLw value used to set Poor quality/Out of range flag
Min_nLw	4	32-bit floating point	Initially set to 1.0	W/(m2 um sr)	Min nLw value used to set Poor quality/out of range flag
Max_chlo	4	32-bit floating point	Initially set to 50	mg/m^3	Max Chlorophyll a value used to set Poor quality/Out of range flag
Min_chlo	4	32-bit floating point	Initially set to 0.05	mg/m^3	Min Chlorophyll a value used to set Poor quality/out of range flag

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Chlo_1	4	32-bit floating point	Initially set to 1.0	mg/m^3	Chlorophyll a values used to set the “Range of Chlorophyll Concentration” flag*
Chlo_10	4	32-bit floating point	Initially set to 10.0	mg/m^3	
Max_iopa	4	32-bit floating point	Initially set to 10.0	m^-1	IOP-a/IOP-s values used to set the quality flags
Max_iops	4	32-bit floating point	Initially set to 50.0	m^-1	
Min_iopa	4	32-bit floating point	Initially set to 0.01	m^-1	
Min_iops	4	32-bit floating point	Initially set to 0.01	m^-1	
NLW_M2_THRESH	4	32-bit floating point	Initially set to 1.1	W/(m^2 µm sr)	nLw values used to set good/poor quality flag for each (M1-M5) band
NLW_M4_THRESH	4	32-bit floating point	Initially set to 0.81	W/(m^2 µm sr)	
M2_M4_RATIO_MIN	4	32-bit floating point	Initially set to 0.6	unitless	
M2_M4_RATIO_MAX	4	32-bit floating point	Initially set to 1.1	unitless	

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3.2.2.4.15 VIIRS Snow Cover/Depth EDR Ephemeral PC

Table 3.2.2.5.15-1, VIIRS Snow Cover/Depth EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
cot_switch	4	int	0 or 1	unitless	Switch to flag the availability of the Cloud Optical Thickness IP 0 = COT Not Available (Use VCM mode) 1 = COT Available (Use COT mode) Initially set to zero

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3.2.2.4.16 DELETED

3.2.2.4.17 VIIRS Surface Reflectance IP Ephemeral PC

Table 3.2.2.5.17-1, VIIRS Surface Reflectance IP Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
min_SR	4	32-bit floating point	Initially set to: 0.0	unitless	Minimum value for surface reflectance
max_SR	4	32-bit floating point	Initially set to: 1.5	unitless	Maximum value for surface reflectance
min_AOT	4	32-bit floating point	Initially set to: 0.0	unitless (tau)	Min value for AOT
max_AOT	4	32-bit floating point	Initially set to: 2.0	unitless (tau)	Max value for AOT
min_ANC	4	32-bit floating point	Initially set to: 0.0	unitless	Min value for ANC
max_SDR	4	32-bit floating point	Initially set to: 1.0	unitless	Max value for SDR data
min_AMDL	4	unsigned 8-bit char	Initially set to: 1	unitless	Minimum value for AMDL data
max_AMDL	4	unsigned 8-bit char	Initially set to: 5	unitless	Maximum value for AMDL data
heavy_AOT	4	float	Initially set to: 1.0	unitless	Threshold value to determine heavy aerosol

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3.2.2.4.18 VIIRS SST EDR PCs

Table 3.2.2.5.18-1, VIIRS SST EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
btDThresh	4	32-bit floating point	Initially set to 0.8	kelvin	Moisture stratification threshold
dBtDThresh	4	32-bit floating point	Initially set to 0.2	kelvin	Moisture stratification threshold overlap
aotDegThresh	4	32-bit floating point	Initially set to 0.6	unitless	AOT degraded threshold
aotExclThresh	4	32-bit floating point	Initially set to 1.0	unitless	AOT exclusion threshold
szaDegThresh	4	32-bit floating point	Initially set to 40.0 * pi/180	radians	Sensor zenith angle unfavorable threshold
szaExclThresh	4	32-bit floating point	Initially set to 53.0 * pi/180	radians	Sensor zenith angle exclusion threshold
sstLowThresh	4	32-bit floating point	Initially set to 271.0	kelvin	SST low threshold
sstHighThresh	4	32-bit floating point	Initially set to 313.0	kelvin	SST low threshold
sstDegThresh	4	32-bit floating point	Initially set to 305.0	kelvin	SST degraded threshold

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iceConcThresh	4	32-bit floating point	Initially set to 0.1	unitless	Ice Concentration Threshold

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3.2.2.4.19 VIIRS Surface Type EDR Ephemeral PC

Table 3.2.2.5.19-1, VIIRS Surface Type EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Vegetation_Threshold	4	32-bit floating point	Initially set to 0.05	unitless	Threshold test for vegetation update
Snow_Fraction_Threshold	4	32-bit floating point	Initially set to 0.5	unitless	Threshold test for snow cover update
Veg_Fraction_Scale	4	32-bit integer	Initially set to 100	unitless	Veg_Fraction_Scale Value
Solar_Zenith_Angle_Threshold	4	32-bit floating point	Initially set to 1.22173	radians	Solar Zenith Angle Threshold Value
Solar_Zenith_Angle_Snow_Ice_Threshold	4	32-bit floating point	Initially set to 1.48353	radians	Solar Zenith Angle Snow/Ice Threshold Value

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3.2.2.4.20 VIIRS Vegetation Index EDR Ephemeral PC

Table 3.2.2.5.20-1, VIIRS Vegetation Index EDR Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
EVI_C	4	32-bit floating point	Initially set to 1.0	unitless	Constant used to adjust for the soil background, in the EVI calculation
EVI_I1	4	32-bit floating point	Initially set to 6.0	unitless	constant used in EVI calculation - derived from minimizing feedback and errors from soil and atmospheric effects
EVI_M3	4	32-bit floating point	Initially set to 7.5	unitless	Constant used in EVI calculation - derived from minimizing feedback and errors from soil and atmospheric effects
SZA_LOW	4	32-bit floating point	Initially set to 1.2217304763	radians	Solar Zenith Angle threshold (70 degrees) used to set the low/high QF
SZA_HI	4	32-bit floating point	Initially set to 1.4835298641	radians	Solar Zenith Angle threshold (85 degrees) used to set the SZA Exclusion flag
NDVI_MIN	4	32-bit floating point	Initially set to -1.0	unitless	Min allowable value for NDVI. Values less than this are set to FILL
NDVI_MAX	4	32-bit floating point	Initially set to 1.0	unitless	Max allowable value for NDVI. Values greater than this are set to FILL
EVI_MIN	4	32-bit floating point	Initially set to -1.0	unitless	Min allowable value for EVI. Values less than this are set to FILL

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
EVI_MAX	4	32-bit floating point	Initially set to 4.0	unitless	Max allowable value for EVI. Values greater than this are set to FILL
VI_SCALE_FACTOR	4	32-bit integer	Initially set to 10000	unitless	Not currently used in code – scaling is performed outside of VI algorithm

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3.2.2.4.21 VIIRS Bright Pixel Ephemeral PC

Table 3.2.2.5.21-1, VIIRS Bright Pixel Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
mode	21	8-bit unsigned char [21]	0 – 255	unitless	Mode 1 Dimensional Array: MODES Size of Dimension(s): 21

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3.2.2.4.22 VIIRS CTP Ephemeral PC

Table 3.2.2.5.22-1, VIIRS CTP Ephemeral PC

Field Name	Length (Bytes)	Data Type	Values (Initial)	Units	Comments
dayThresh	4	32-bit float	Initially set to 1.39626	radians	Day/Night solar zenith angle threshold
pw0	4	32-bit float	Initially set to 0.067	unitless	Precipitable Water regression coefficient
pw1	4	32-bit float	Initially set to -0.002	unitless	Precipitable Water regression coefficient
pw2	4	32-bit float	Initially set to 0.22	unitless	Precipitable Water regression coefficient
pw3	4	32-bit float	Initially set to 0.105	unitless	Precipitable Water regression coefficient
maxCth	4	32-bit float	Initially set to 20	Kilometers	Maximum height for CTH
minCth	4	32-bit float	Initially set to 0	Kilometers	Minimum height for CTH
maxCtp	4	32-bit float	Initially set to 1050	hPa	Maximum pressure for CTP
minCtp	4	32-bit float	Initially set to 50	hPa	Minimum pressure for CTP
maxCtt	4	32-bit float	Initially set to 310	K	Maximum temperature for CTT
minCtt	4	32-bit float	Initially set to 180	K	Minimum temperature for CTT
numAggAt	4	32-bit int	Initially set to 8	unitless	Number of pixels along track in analysis block
numAggXt	4	32-bit int	Initially set to 8	unitless	Number of pixels along scan in analysis block

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Field Name	Length (Bytes)	Data Type	Values (Initial)	Units	Comments
maxIterRt	4	32-bit int	Initially set to 10	unitless	Maximum number of allowed iteration of daywater CTP retreival
chiSqFit	4	32-bit float	Initially set to 1	unitless	Chi-square requirement for convergence
blkCloudCot	4	32-bit float	Initially set to 200	unitless	Default COT for black clouds in WindowIR retrieval
blkCloudEps	4	32-bit float	Initially set to 10	unitless	Default EPS for black clouds in WindowIR retrieval
thkCot1	4	32-bit float	Initially set to 1	unitless	COT threshold for cloud thickness table
thkCot2	4	32-bit float	Initially set to 3	unitless	COT threshold for cloud thickness table
thkCtp1	4	32-bit float	Initially set to 600	hPa	CTP threshold for cloud thickness table
thkCtp2	4	32-bit float	Initially set to 800	hPa	CTP threshold for cloud thickness table
cldThick	36	32-bit float	Initially set to [0][0] = 200 [0][1] = 100 [0][2] = 50 [1][0] = 150 [1][1] = 75 [1][2] = 38 [2][0] = 100 [2][1] = 50 [2][2] = 25	unitless	Cloud thickness as a function of COT and CTP as specified by thkCot1, thkCot2, thkCtp1, and thkCtp2 2 Dimensional Array: Size of Dimension(s): 3 x 3

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Field Name	Length (Bytes)	Data Type	Values (Initial)	Units	Comments
maxVertTemp	4	32-bit float	Initially set to 325	K	Maximum vertical temperature
minVertTemp	4	32-bit float	Initially set to 180	K	Minimum vertical temperature
maxVertWaterVap	4	32-bit float	Initially set to 10	g/kg	Maximum vertical water vapor
minVertWaterVap	4	32-bit float	Initially set to 9.9999997e-10	g/kg	Minimum vertical water vapor
minTempProf	4	32-bit float	Initially set to 100	K	Minimum valid temperature profile value

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3.2.2.4.23 VIIRS Gran to Grid Snow Ice Cover PCs

Table 3.2.2.5.23-1, VIIRS Gran to Grid Snow Ice Cover Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
iceFractionThreshold	4	32-bit floating point	0.5	unitless	Ice concentration threshold
concWeightThreshold	4	32-bit floating point	0.04	unitless	Concentration weight threshold
forceUpdateDayThreshold	4	32-bit integer	10	Days	Force Update Day Threshold - maximum time before the GIP must be updated

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3.2.2.4.24 VIIRS GridToGrid LSA Ephemeral PC

Table 3.2.2.5.24-1, VIIRS GridToGrid LSA Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
fullInversionMinCount	4	32-bit integer	7	unitless	Full Inversion Minimum Count
magInversionMinCount	4	32-bit integer	3	unitless	Magnitude Inversion Minimum Count
thresholdRMSELow	4	32-bit floating point	0.1	unitless	Threshold RMSE Low
thresholdRMSEHi	4	32-bit floating point	0.3	unitless	Threshold RMSE Hi
thresholdVarianceLow	4	32-bit floating point	0.75	unitless	Threshold Variance Low
thresholdVarianceHi	4	32-bit floating point	1.25	unitless	Threshold Variance Hi
thresholdMaxAlbedoVarianceLow	4	32-bit floating point	1.5	unitless	Threshold Maximum Albedo Variance Low
thresholdMaxAlbedoVarianceHi	4	32-bit floating point	2.5	unitless	Threshold Maximum Albedo Variance Hi
ndviThreshold	4	32-bit floating point	0.15	unitless	NDVI Threshold
hkThetaSInterval	4	32-bit floating point	0.00872665	unitless	Solar Zenith Angle increment in each of the LUT files

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
hkThetaSMax	4	32-bit floating point	1.4748	unitless	Maximum Solar Zenith Angle value in the LUT files
crownRelHeightParamLISparse	8	64-bit floating point	2.0	unitless	
crownRelShapeParamLISparse	8	64-bit floating point	1.0	unitless	
crownRelHeightParamLIDense	8	64-bit floating point	2.0	unitless	
crownRelShapeParamLIDense	8	64-bit floating point	1.0	unitless	
crownRelShapeParamRoujean	8	64-bit floating point	1.0	unitless	

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3.2.2.4.25 VIIRS Solar Diffuser Aggregation History PCs

Table 3.2.2.5.25-1, VIIRS Solar Diffuser Aggregation History Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
spaceViewThreshold	8	64-bit floating point	Minfloat – Maxfloat	unitless	Statistical covariance filter threshold
SDThreshold	8	64-bit floating point	Minfloat – Maxfloat	unitless	Statistical covariance filter threshold
maxSpaceViewIntensity_DN	4	unsigned 32-bit integer	MinInt – MaxInt	unitless	Maximum allowable space view intensity in detector counts for the SWIR band
nOrbitHistory	4	32-bit integer	MinInt – MaxInt	unitless	Number of orbits to store in history
nOrbitAgg	4	32-bit integer	MinInt – MaxInt	unitless	Number of orbits to aggregate
aggType	4	32-bit integer	MinInt – MaxInt	unitless	Type of aggregation (none, average, linear fit)
outlierThreshold	8	64-bit floating point	Minfloat – Maxfloat	unitless	Outlier removal (Nsigma on Fscan) Nsigma filter threshold
moonAngleThreshold	8	64-bit floating point	Minfloat – Maxfloat	radians	Moon angle filter threshold
dcr_C	48	64-bit floating point	Minfloat – Maxfloat	unitless	dc-restore conversion coefficients 1 Dimensional Array Size of Dimension(s): 6

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Tsd_i	72	64-bit floating point	Minfloat – Maxfloat	unitless	Instrument to SolarDiffuser transformation matrix 2 Dimensional Array Size of Dimension(s): 3 x 3
numUnusedGranualCount	4	32-bit integer	MinInt – MaxInt	unitless	Count of granules before processing SD data
minScanCount	4	32-bit integer	MinInt – MaxInt	unitless	Min count of scans before creating new SD data
sdsmCount	4	32-bit integer	MinInt – MaxInt	unitless	Max SDSM count

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3.2.2.4.26 VIIRS Surface Albedo PCs

Table 3.2.2.5.26-1, VIIRS Surface Albedo Ephemeral PC

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
SnowThreshold	4	32-bit floating point	0.5	unitless	Snow Fraction Threshold
NDVI_Threshold	4	32-bit floating point	0.15	unitless	NDVI Threshold
NumBins_SolarZenith	8	long	86	unitless	Number of Solar Zenith Angle Values/Bins
BinSize_SolarZenith	4	32-bit floating point	0.017453293	radians	Solar Zenith Angle Bin Size, angular increment
NumBins_KernelBlackSkyAlbedo	8	long	170	unitless	Number of Black Sky Albedo Bins in the LUTs
BinSize_KernelBlackSkyAlbedo	4	32-bit floating point	0.5	unitless	Bin size for each Kernel Black Sky Albedo
NumBins_AOT	8	long	101	unitless	Number of AOT Bins
BinSize_AOT	4	32-bit floating point	0.02	unitless	
NumKernels	8	long	8	unitless	Number of Surface Albedo LUTs
Num_Kernel_Lut	8	long	8	unitless	Number of Kernel Model LUTs

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Max_Lut_Dim	8	long	3	unitless	Maximum LUT Dimensions (Represents the 3 Geometry Parameters: Solar Zenith, View Zenith, and Relative Azimuth)
Bpsa_Num_Bins_Solar_Zenith	8	long	12	unitless	Number of Solar Zenith Angles LUT bins
Bpsa_Num_Bins_View_Zenith	8	long	17	unitless	Number of View Zenith Angle LUT bins
Bpsa_Num_Bins_Rel_Azimuth	8	long	11	unitless	Number of Relative Azimuth Angle LUT bins
BinCoord_SeaIce_SolarZenith	60	float	{0, 53.5, 57.5, 61, 63.5, 66, 68.25, 70.25, 72.25, 74.25, 76, 78, 79.5, 81, 83}	unitless	Grid coordinates for BPSA SEA ICE LUTs 1 Dimensional Array Size of Dimension(s): 15
BinCoord_SolarZenith	48	32-bit floating point	{5.0,15.0, 25.0,35.0, 45.0,52.5, 57.5,62.5, 67.5,72.5, 77.5,80.0}	unitless	Grid Coordinates for BPSA LUT for Solar Zenith Angles 1 Dimensional Array Size of Dimension(s): 12

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
BinCoord_ViewZenith	68	32-bit floating point	{2.5,7.5, 12.5,17.5, 22.5,27.5, 32.5,37.5, 42.5,47.5, 52.5,57.5, 62.5,67.5, 72.5,77.5, 82.5}	unitless	Grid Coordinates for BPSA LUT for View Zenith Angles 1 Dimensional Array Size of Dimension(s): 17
BinCoord_RelAzimuth	44	32-bit floating point	{2.5,7.5, 20.0,45.0, 75.0,105.0, 135.0,160.0, 172.5,177.5, 180.0}	unitless	Grid Coordinates for BPSA LUT for Relative Azimuth Angles 1 Dimensional Array Size of Dimension(s): 11
Lut_Size_Bpsa	8	long	Size = BPSA_NUM_BINS_SOLAR_ZENITH * BPSA_NUM_BINS_VIEW_ZENITH * BPSA_NUM_BINS_REL_AZIMUTH	unitless	Size of LUT for BPSA
Lut_Size_Bpsa_Sea_Ice			12*15	unitless	Size of LUT for BPSA for Sea Ice Pixels
Bpsa_Map_AeroModel	56	long	{ 1, 2, 3, 4, 5 }	unitless	Aerosol Model map used for interpolation 1 Dimensional Array Size of Dimension(s): 5

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3.2.2.4.27 DELETED

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3.2.2.4.28 DELETED

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3.2.2.4.29 DELETED

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3.2.2.4.30 DELETED

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3.2.2.4.31 VIIRS NHF Aggregation PC

Data Mnemonic	NP_NU-LM0234-007
Description/ Purpose	The NHF Aggregation PC This file is used by the VIIRS NHF EDR algorithm to aggregate moderate resolution pixels into NHF horizontal cells.
File-Naming Construct	See the File-Naming Convention for Auxiliary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	For File Size details see Table 3.2.1.4.4-1, VIIRS CCL/GCE Cloud Aggregation PC Data Format.
File Format Type	Binary
Production Frequency	As needed
Data Content and Data Format	This LUT format is identical to the format for the VIIRS CCL Cloud Aggregation PC. (Note that the field names and data types will be identical, the values stored in the table will be different.) For format details see Table 3.2.1.4.4-1, VIIRS CCL Cloud Aggregation PC Data Format.

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3.2.2.4.32 DELETED

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4.0 Provenance Data

Provenance files are used to capture the historical information for select Auxiliary Data and Static Ancillary files maintained by the NPOESS Program. The following data format is used to describe these files.

4.1 Provenance Files

Data Mnemonic	NP_NU-LM1010-000
Description/ Purpose	The provenance files provide structured text information on the source and change history of specified versions of their associated Auxiliary Data or Static Ancillary Data files. A single provenance file contains the history of all versions of the referenced file. Note that not all Auxiliary Data or Static Ancillary Data files will require an associated Provenance file.
File-Naming Construct	<Collection Short Name>.prv Where <Collection Short Name> is that of the file which the Provenance File is associated with. The Collection Short Name used in the filename is based on the table – see the CDFCB-X Volume I, D34862-01, for the applicable Collection Short Names.
File Size	1 KiB to 100 KiB
File Format Type	ASCII
Production Frequency	As needed
Data Content and Data Format	For details see Table 4.1-1, Provenance Files Data Format. An example is provided in Example 4.1-1, Provenance File example.

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Table 4.1-1, Provenance Files Data Format

Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Short Name	Varies	String	Collection Short Name	N/A	Collection Short Name of the associated file for this provenance file
Separator	18	String	"----------"	N/A	Version separator
Revision Date	Varies	String	"Revision Date: " + Valid Date (MM/DD/YYYY)	N/A	Date of update
Source	Varies	Parent Element	"Source:" Sub-elements: ECR Number Science Version Tech Memo Science Files	N/A	Section heading
ECR Number	Varies	String	"ECR: "+ text	N/A	Provides the ECR number associated with the update. May be "None"
Source Version	Varies	String	"Source version: " + text	N/A	Identifies the SCM VOB identifier containing the science drop source data. May be "N/A"
Tech Memo	Varies	String	"Tech Memo: " + text	N/A	Identifies the technical memo by Identifier. May be "None"
Source Files	Varies	Parent Element	"Source File(s): " Sub-elements: Filename	N/A	Optional Section heading

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Field Name	Length (Bytes)	Data Type	Range of Values	Units	Comments
Filename	Varies	String	One or more file names	N/A	Name(s) of the source file(s) translated to create the LUT. May be “N/A” if no translation or name change was required.
Provenance Version ID	Varies	String	“Provenance Version ID: ” + Text	N/A	See the Version ID Description of the File-Naming Convention for Auxiliary or Ancillary Data Formats, CDFCB-X Volume I, D34862-01, Section 3.4 or 3.5.
Build Identifier	Varies	String	“Build Identifier:” + Text	N/A	Configuration Management Build Identifier of initial version release.
MD5SUM	Varies	String	“MD5SUM:” + Text	N/A	Optional MD5SUM of deployed file for the version defined in this section. May be “N/A”
Notes	Varies	String	Free text	N/A	Description of the source changes and applicability of the version defined in this section.
Separator	18	String	“----------“	N/A	Version separator
Repeat above sections starting with Revision Date					Each Provenance version will have a completely repeated section from Date to Notes.

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Table 4.1-1, Provenance Files Data Format – ATMS-SDR-CC.prv

ATMS-SDR-CC

Revision Date: 05/15/2007
Source:
ECR: None
Source Version: ISTN_ATMS_NPP_PROXY_DATA_NGST_002
Tech Memo: None
Source File(s)
Constants_set1.dat
Provenance Version ID: 1-D-NPP-4
Build Identifier: 1.5.0.X1
MD5SUM: N/A
Notes: Chain Testing Table

Revision Date: 04/11/2007
Source:
ECR: A116
Source Version: ISTN_ATMS_NGST_3.1
Tech Memo: TM2007.510.0044 - Diagnostic mode processing
Source File(s):
Constants_set1.dat
Provenance Version ID: 1-D-NPP-1
Build Identifier: 1.5.0.X1
MD5SUM: 576A3B76335
Notes: Data used for Standalone IPAC testing, last digit of Version ID corresponds to Data Set Used
---
Revision Date: 04/11/2007
Source:
ECR: A116
Source Version: ISTN_ATMS_NGST_3.1
Tech Memo: TM2007.510.0044 - Diagnostic mode processing
Source File(s)
Constants_set2.dat
Provenance Version ID: 1-D-NPP-2
Build Identifier: 1.5.0.X1
MD5SUM: N/A
Notes: Data used for Standalone IPAC testing, last digit of Version ID corresponds to Data Set Used
---
Revision Date: 04/11/2007
Source:
ECR: A116
Source Version: ISTN_ATMS_NGST_3.1
Tech Memo: TM2007.510.0044 - Diagnostic mode processing

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Source File(s)
Constanst_set3.dat
Provenance Version Number: 1-D-NPP-3
Build Identifier: 1.5.0.X1
MD5SUM: N/A
Notes: Data used for Standalone IPAC testing, last digit of Version ID corresponds to Data Set Used
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APPENDIX A: DATA MNEMONIC TO INTERFACE MAPPING

See D34862-01, CDFCB-X Volume I for the Data Mnemonic to Interface Mapping details.

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