

## REFLECTIVE LUTS V6.2.2.75 (Terra) / V6.2.3.0 (Aqua)

LUT NAME	DESCRIPTION	DIMENSIONS					Total Number of Elements	Terra (T) or Aqua (A) Only	TIME DEPENDENT LUTS ONLY		
		B	D	S	M	Other			# of Table Pieces		Type of Time Dependent LUT
									TERRA V6.2.2.75	AQUA V6.2.3.0	
B26_B5_Corr_Switch	Flag to turn on (1) or off (0) the Band 26 correction	1	1	1	1	1	1		1	Step Function LUT	
B26_B5_Corr	Correction coefficients for the Band 26 correction	1	10	1	1	1	10	3	1	Step Function LUT	
B26_B5_Frame_Offset	Frame offset to use for the Band 26 correction	1	10	1	1	1	10				
DN_obc_avg_first_frame_to_use	Index of 1st frame to use when computing average OBC DN.	1	1	1	1	1	1				
DN_obc_avg_number_of_frames_to_use	Number of frames to use to compute average OBC DN.	1	1	1	1	1	1				
dn_sat_ev	Value of EV pixel dn to treat as saturated					1340*	1340*	14	10	Step Function LUT	
dn_star_Max	Maximum dn** value for scaling to the product scaled integer	22	1	1	1	1	22				
dn_star_Min	Minimum dn** value for scaling to the product scaled integer	22	1	1	1	1	22				
E_sun_over_pi	RSR-weighted solar irradiance/pi for RSB detectors	1	330	1	1	1	330				
K_FPA	Focal Plane Array Temperature Correction Factor					1340*	1340*				
K_inst	Instrument Temperature Correction Factor					1340*	1340*	3	1	Step Function LUT	
m0	Reflectance Calibration offset					1340*	1340*				
m1	Reflectance Calibration linear terms					1340*	1340*	507	319	Piecewise Linear LUT	
RSB_specified_uncertainty	Factor used in computing uncertainty index	22	1	1	1	1	22				
RSB_SV_DN_moon_include_frames	Number of frames after sorting if moon in SVP	1	1	1	1	1	1				
RSB_UI_scaling_factor	Factor used in computing uncertainty index	22	1	1	1	1	22				
RVS_RefSB	Quartic coefficients for calculating the EV RVS for RSB	22	40	1	2	5	8800	211	226	Piecewise Linear LUT	
Serial Number of Reflective LUT	Version number of reflective calibration LUTs	1	1	1	1	1	1				
SWIR_OOB_correction_switch	Flag which turns on (1) or off (0) SWIR OOB leak correction.	1	1	1	1	1	1	1	1	Step Function LUT	
SWIR_OOB_sending_band	Number of the "sending band" for the SWIR OOB leak correction	1	1	1	1	1	1	2	1	Step Function LUT	
SWIR_OOB_sending_detector	Numbers of the "sending detector" for the SWIR OOB leak correction	1	10	1	1	1	10	1	1	Step Function LUT	
T_FPA_ref	Focal Plane temperature reference	1	1	1	1	4	4				
T_inst_ref	Instrument temperature reference	1	1	1	1	1	1	3	1	Step Function LUT	
X_OOB_0	Coefficients of quadratic SWIR band correction formula	4	20	2	2	1	320	1	1	Step Function LUT	
X_OOB_1	Coefficients of quadratic SWIR band correction formula	4	20	2	2	1	320	13	1	Step Function LUT	
X_OOB_2	Coefficients of quadratic SWIR band correction formula	4	20	2	2	1	320	1	1	Step Function LUT	
u1	The uncertainty due to calibrations using on-board calibrators.	1	330	1	1	1	330	16	1	Step Function LUT	
u2	The uncertainty term which is AOI and time independent.	1	330	1	2	7	4620	30	28	Step Function LUT	
u3	The uncertainty due to temperature impact.	1	330	1	2	1	660	16	1	Step Function LUT	
u4	Scene dependent noise to signal ratio.	22	40	4	2	3	21120	30	28	Step Function LUT	
swir_ui_factor	The factor for uncertainty due to cross talk correction for SWIR.	4	1	1	1	1	4	1	1	Step Function LUT	
u2_frames	Frames loaded with RSB u2 uncertainty.	1	1	1	1	7	7	1	1	Step Function LUT	

\* 1340 is the total of the products of the Bands, detectors, number of samples, and number of mirror sides for the 250m Bands, the 500m Bands, and the 1KM RSBs. LUTs with this dimension were dimensioned as 22 x 40 x 4 x 2 (B, D, S, M respectively) in LUT HDF files created for L1B Versions 3.1.0 and lower.

**QA LUTS V6.2.2.75 (Terra) / V6.2.3.0 (Aqua)**

LUT NAME	DESCRIPTION	DIMENSIONS					Total Number of Elements	Terra (T) or Aqua (A) Only	TIME DEPENDENT LUTS ONLY		
		B	D	S	M	Other			# of Table Pieces		Type of Time Dependent LUT
									TERRA V6.2.2.75	AQUA V6.2.3.0	
a1	Pre-launch averages of MODIS linear response term for each emissive detector.	16	10	1	1	1	160				
ALGORITHMPACKAGEACCEPTANCE DATE	Algorithm package date; written to ECS archive metadata.	1	1	1	1	1	1				
ALGORITHMPACKAGEMATURITYCODE	Algorithm package maturity code; written to ECS archive metadata.	1	1	1	1	1	1				
ASSOCIATEDPLATFORMSHORTNAME	Platform (e.g., TERRA or AQUA).	1	1	1	1	1	1				
BB Average Temperature Variance	Pre-launch variance of the average BB temperature.	1	1	1	1	1	1				
Cavity Temperature Variance	Pre-launch variance of the cavity temperature.	1	1	1	1	1	1				
Control options	Miscellaneous code switches	1	1	1	1	2	2				
Detector Quality Flag Values	Integer array identifying noisy, dead and anomalous detectors.	1	490	1	1	8	3920	50	26	Step Function LUT	
Detector Quality Flag2 Values	Integer array identifying noisy and dead subframes.	1	180	1	1	8	1440	1	1	Step Function LUT	
Instrument Temperature Variance	Pre-launch variance of the instrument temperature.	1	1	1	1	1	1				
LWIR FPA Temperature Variance	Pre-launch variance of the LWIR FPA temperature.	1	1	1	1	1	1				
Mirror Average Temperature Variance	Pre-launch variance of the average mirror side temperature.	1	1	1	1	1	1				
MirrorSide 1 Temperature Variance	Pre-launch variance of the mirror side 1 temperature.	1	1	1	1	1	1				
MirrorSide 2 Temperature Variance	Pre-launch variance of the mirror side 2 temperature.	1	1	1	1	1	1				
mission phase	Mission phase.	1	1	1	1	1	1				
Moon Offset Limits	Defines the limits of the "Keep-out" box relative to center of SVP. (This is not strictly a QA LUT because it is used in processing)	38	1	1	1	4	152				
MWIR FPA Temperature Variance	Pre-launch variance of the MWIR FPA temperature.	1	1	1	1	1	1				
NEdL	Pre-launch noise equivalent difference in radiance for each emissive detector.	16	10	1	1	1	160				
NIR FPA base variance	Pre-launch variance of the NIR FPA temperature	1	1	1	1	1	1				
QA serial number	Version of the science content of the QA LUTs	1	1	1	1	1	1				
Spacecraft_Roll_Threshold_Angle	Upper limit of the absolute deviation from nominal allowed in the spacecraft roll angle	1	1	1	1	1	1				
Spacecraft_Pitch_Threshold_Angle	Upper limit of the absolute deviation from nominal allowed in the spacecraft pitch angle	1	1	1	1	1	1				
Spacecraft_Yaw_Threshold_Angle	Upper limit of the absolute deviation from nominal allowed in the spacecraft yaw angle	1	1	1	1	1	1				
T_BB_Variance	Pre-launch variance of each of the 12 BB temperatures.	1	1	1	1	12	12				
visual FPA base variance	Pre-launch variance of the VIS FPA temperature	1	1	1	1	1	1				

### EMISSIVE LUTS V6.2.2.75 (Terra) / V6.2.3.0 (Aqua)

LUT NAME	DESCRIPTION	DIMENSIONS					Total Number of Elements	Terra (T) or Aqua (A) Only	TIME DEPENDENT LUTS ONLY		
		B	D	S	M	Other			# of Table Pieces		Type of Time Dependent LUT
									TERRA V6.2.2.75	AQUA V6.2.3.0	
A0	Quadratic coefficients for calculating a0	16	10	1	2	3	960		48	15	Step Function LUT
A2	Quadratic coefficients for calculating a2.	16	10	1	2	3	960		48	15	Step Function LUT
Band_21_b1	The value of b1 for each Band 21 detector.	1	10	1	2	1	20		46	31	Step Function LUT
Serial Number of Emissive LUT	Version number of emissive calibration LUTs	1	1	1	1	1	1				
BB_DN_first_frame_to_use	Index of 1st frame for computing BB DN averages	1	1	1	1	1	1				
BB_DN_number_of_frames_to_use	Number of frames for computing BB DN averages	1	1	1	1	1	1				
BB_T_sat_aqua	Saturation temperature for bands 33, 35, and 36	3	1	1	1	1	3	A			
bb_t_sat_default_b1_baseline_aqua	Default b1 baseline for bands 33, 35, and 36 to use if saturated on BB warmup	3	10	1	2	1	60	A		50	Step Function LUT
bb_t_sat_default_b1_c1_aqua	The scale factor for the temperature correction	3	10	1	2	1	60	A		39	Step Function LUT
bb_t_sat_default_b1_Tlwir_baseline_aqua	The baseline temperature for LWIR fpa	1	1	1	1	1	1	A		1	Step Function LUT
BB_T_sat_switch_aqua	Flag to switch to default b1 for bands 33, 35, 36 when BB temperature is above saturation temperature.	1	1	1	1	1	1	A			
BB_Weight	Weight factor used for computing average BB temperature.	1	1	1	1	12	12				
delta_T_bb_beta	The "b" term in the equation for calculating DT_bb.	16	10	1	1	1	160				
delta_T_bb_delta	The "D" term in the equation for calculating DT_bb.	16	10	1	1	1	160				
epsilon_bb	Black-body emissivity.	16	10	1	1	1	160				
epsilon_cav	Effective cavity emissivity.	16	10	1	1	1	160				
L_Max	Top end of radiance dynamic range	16	1	1	1	1	16				
L_Min	Bottom end of radiance dynamic range	16	1	1	1	1	16				
MCST_Version	4-digit ALGORITHMPACKAGEVERSION (e.g. "4.0.5.2_Terra")	1	1	1	1	1	1				
num_overlap_scans_b1	Number of scans in leading and trailing granules for cross-granule averaging of b1	1	1	1	1	1	1				
NWL	Number of values in RSR distribution.	16	10	1	1	1	160				
PC_XT	PC bands cross-talk correction parameters.	5	10	1	1	4	200				
PCX_correction_switch	Switch (0 = OFF, 1 = ON) for the Xtalk correction	1	1	1	1	1	1				
RSR*	Relative spectral responses	16	10	1	1	49	7840	T			
RVS_BB_SV_Frame_No	Frame number for calculating the BB and SV RVS	1	1	1	1	2	2				
RVS_TEB	Quadratic coefficients for calculating EV RVS for TEBs	16	10	1	2	3	960		3	1	Piecewise Linear LUT
pvlw_xt_coeff	PV LWIR bands cross-talk correction parameters	4	10	1	1	120	4800		233	4	Step Function LUT
mwir_xt_coeff	MWIR bands cross-talk correction parameters	7	10	1	1	210	14700	A		1	Step Function LUT
SV_DN_first_frame_to_use	Index of 1st frame for computing SV DN averages	1	1	1	1	1	1				
SV_DN_moon_include_frames	Number of frames after sorting if Moon in SVP	1	1	1	1	1	1				
SV_DN_number_of_frames_to_use	Index of 1st frame for computing SV DN averages	1	1	1	1	1	1				

\* Note that Terra and Aqua have differing numbers of allowed wavelengths for these tables.

\* more tables in the next page

**EMISSIVE LUTS V6.2.2.75 (Terra) / V6.2.3.0 (Aqua) (Cont'd)**

LUT NAME	DESCRIPTION	DIMENSIONS					Total Number of Elements	Terra (T) or Aqua (A) Only	TIME DEPENDENT LUTS ONLY		
		B	D	S	M	Other			# of Table Pieces		Type of Time Dependent LUT
									TERRA V6.2.2.75	AQUA V6.2.3.0	
T_cav_default	Default value of cavity temperature in K	1	1	1	1	1	1				
T_cav_function_flag	Identifies suitable cavity temperature thermistors.	1	1	1	1	4	4				
T_ins_default	Default value of instrument temperature in K	1	1	1	1	1	1				
T_ins_function_flag	Identifies suitable instrument temperature thermistors.	1	1	1	1	4	4				
T_ins_offset	Instrument temperature offset in K.	1	1	1	1	4	4				
T_mir_default	Default value of mirror temperature in K	1	1	1	1	1	1				
T_mir_function_flag	Identifies suitable mirror temperature thermistors.	1	1	1	1	2	2				
TEB_specified_uncertainty	Factor used in computing uncertainty index	16	1	1	1	1	16				
TEB_UI_scaling_factor	Factor used in computing uncertainty index	16	1	1	1	1	16				
WAVELENGTH*	Wavelengths at points of RSRs	16	10	1	1	49	7840	T			
		16	10	1	1	66	10560	A			
sigma_a0	Coefficients of polynomial fit of uncertainty due to a0.	16	10	1	2	3	960		29	22	Step Function LUT
sigma_a2	Coefficients of polynomial fit of uncertainty due to a2.	16	10	1	2	3	960		29	22	Step Function LUT
sigma_b1_B21	uncertainty due to band 21 b1.	1	10	1	2	1	20		29	23	Step Function LUT
sigma_epsilon_bb	uncertainty due to Black-body emissivity.	16	1	1	1	1	16		1	1	Step Function LUT
sigma_epsilon_cav	uncertainty duo to cavity emissivity.	16	1	1	1	1	16		1	1	Step Function LUT
sigma_L_lambda	uncertainty due to wavelength.	16	1	1	1	2	32		1	1	Step Function LUT
sigma_L_Tbb	uncertainty due to Black-body temperature	16	1	1	1	1	16		1	1	Step Function LUT
sigma_L_Tcav	uncertainty due to cavity temperature	16	1	1	1	1	16		1	1	Step Function LUT
sigma_L_Tsm	uncertainty due to scan mirror temperature	16	1	1	1	1	16		1	1	Step Function LUT
sigma_RVS_ev	Coefficients of polynomial fit of uncertainty due to RVS	16	10	1	2	3	960		1	1	Step Function LUT
pcx_ui_factor	The factor for uncertainty due to cross talk correction	5	1	1	1	1	5	A	0	1	Step Function LUT
xt_ui_factor	The factor for uncertainty due to cross talk correction	16	10	1	1	1	160	T	1	0	Step Function LUT

\* Note that Terra and Aqua have differing numbers of allowed wavelengths for these tables.