

Landsat Collection 2 Level-1 Product Metadata Fields

NOTE: This information applies to the MTL.txt or XML.txt metadata files that are contained in the Collection 2 Level-1 product.

Legend	
 Group renamed or combined for Collection 2 (<i>Collection 1 name in red</i>)	 Parameter renamed for Collection 2 (<i>Collection 1 name in red</i>)
 Group added for Collection 2	 Parameter added for Collection 2
 Parameter name duplicated within Collection 2 metadata file	

GROUP = LANDSAT_METADATA_FILE (<i>GROUP = L1_METADATA_FILE</i>)
GROUP = PRODUCT_CONTENTS
ORIGIN = "Image courtesy of the U.S. Geological Survey"
DIGITAL_OBJECT_IDENTIFIER = "https://doi.org/10.5066/F7WH2P8G"
LANDSAT_PRODUCT_ID = "LE07_L1TP_029030_20010719_20191001_02_T1"
PROCESSING_LEVEL = "L1TP" (<i>DATA_TYPE = "L1TP"</i>)
COLLECTION_NUMBER = "02"
COLLECTION_CATEGORY = "T1"
OUTPUT_FORMAT = "GEOTIFF"
FILE_NAME_BAND_1 = "LE07_L1TP_029030_20010719_20191001_02_T1_B1.TIF"
FILE_NAME_BAND_2 = "LE07_L1TP_029030_20010719_20191001_02_T1_B2.TIF"
FILE_NAME_BAND_3 = "LE07_L1TP_029030_20010719_20191001_02_T1_B3.TIF"
FILE_NAME_BAND_4 = "LE07_L1TP_029030_20010719_20191001_02_T1_B4.TIF"
FILE_NAME_BAND_5 = "LE07_L1TP_029030_20010719_20191001_02_T1_B5.TIF"
FILE_NAME_BAND_6_VCID_1 = "LE07_L1TP_029030_20010719_20191001_02_T1_B6_VCID_1.TIF"
FILE_NAME_BAND_6_VCID_2 = "LE07_L1TP_029030_20010719_20191001_02_T1_B6_VCID_2.TIF"
FILE_NAME_BAND_7 = "LE07_L1TP_029030_20010719_20191001_02_T1_B7.TIF"
FILE_NAME_BAND_8 = "LE07_L1TP_029030_20010719_20191001_02_T1_B8.TIF"
FILE_NAME_QUALITY_L1_PIXEL = "LE07_L1TP_029030_20010719_20191001_02_T1_QA_PIXEL.TIF" (<i>FILE_NAME_BAND_QUALITY="LXSS_LLLL_PPPRRR_YYYYMMDD_yyyymmdd_CC_TX_BQA.TIF"</i>)
FILE_NAME_QUALITY_L1_RADIOMETRIC_SATURATION = "LE07_L1TP_029030_20010719_20191001_02_T1_QA_RADSAT.TIF"
FILE_NAME_GROUND_CONTROL_POINT = "LE07_L1TP_029030_20010719_20191001_02_T1_GCP.txt" (<i>GROUND_CONTROL_POINT_FILE_NAME = "LE07_L1TP_029030_20010719_20191001_02_T1_GCP.txt"</i>)
FILE_NAME_ANGLE_COEFFICIENT = "LE07_L1TP_029030_20010719_20191001_02_T1_ANG.txt" (<i>ANGLE_COEFFICIENT_FILE_NAME = "LE07_L1TP_029030_20010719_20191001_02_T1_ANG.txt"</i>)
FILE_NAME_ANGLE_SENSOR_AZIMUTH_BAND_4 = "LE07_L1TP_029030_20010719_20191001_02_T1_VAA.TIF"
FILE_NAME_ANGLE_SENSOR_ZENITH_BAND_4 = "LE07_L1TP_029030_20010719_20191001_02_T1_VZA.TIF"
FILE_NAME_ANGLE_SOLAR_AZIMUTH_BAND_4 = "LE07_L1TP_029030_20010719_20191001_02_T1_SAA.TIF"
FILE_NAME_ANGLE_SOLAR_ZENITH_BAND_4 = "LE07_L1TP_029030_20010719_20191001_02_T1_SZA.TIF"
FILE_NAME_METADATA_ODL = "LE07_L1TP_029030_20010719_20191001_02_T1_MTL.txt" (<i>METADATA_FILE_NAME = "LE07_L1TP_029030_20010719_20191001_02_T1_MTL.txt"</i>)
FILE_NAME_METADATA_XML = "LE07_L1TP_029030_20010719_20191001_02_T1_MTL.xml"
DATA_TYPE_BAND_1 = "UINT8"
DATA_TYPE_BAND_2 = "UINT8"
DATA_TYPE_BAND_3 = "UINT8"
DATA_TYPE_BAND_4 = "UINT8"
DATA_TYPE_BAND_5 = "UINT8"
DATA_TYPE_BAND_6_VCID_1 = "UINT8"
DATA_TYPE_BAND_6_VCID_2 = "UINT8"
DATA_TYPE_BAND_7 = "UINT8"
DATA_TYPE_BAND_8 = "UINT8"
DATA_TYPE_QUALITY_L1_PIXEL = "UINT16"
DATA_TYPE_QUALITY_L1_RADIOMETRIC_SATURATION = "UINT16"
DATA_TYPE_ANGLE_SENSOR_AZIMUTH_BAND_4 = "INT16"
DATA_TYPE_ANGLE_SENSOR_ZENITH_BAND_4 = "INT16"
DATA_TYPE_ANGLE_SOLAR_AZIMUTH_BAND_4 = "INT16"
DATA_TYPE_ANGLE_SOLAR_ZENITH_BAND_4 = "INT16"
END_GROUP = PRODUCT_CONTENTS
GROUP = IMAGE_ATTRIBUTES
SPACECRAFT_ID = "LANDSAT_7"
SENSOR_ID = "ETM"
WRS_TYPE = 2
WRS_PATH = 029
WRS_ROW = 030
DATE_ACQUIRED = 2001-07-19
SCENE_CENTER_TIME = "17:01:05.5894552Z"
STATION_ID = "EDC"
CLOUD_COVER = 9.00
CLOUD_COVER_LAND = 9.00
IMAGE_QUALITY = 9
SATURATION_BAND_1 = "Y"
SATURATION_BAND_2 = "Y"
SATURATION_BAND_3 = "Y"
SATURATION_BAND_4 = "Y"
SATURATION_BAND_5 = "Y"
SATURATION_BAND_6_VCID_1 = "N"
SATURATION_BAND_6_VCID_2 = "N"
SATURATION_BAND_7 = "Y"
SATURATION_BAND_8 = "N"
SUN_AZIMUTH = 131.34894091
SUN_ELEVATION = 60.17525347
EARTH_SUN_DISTANCE = 1.0161865
SENSOR_MODE = "SAM"
SENSOR_MODE_SLC = "OFF"
SENSOR_ANOMALIES = "NONE"
END_GROUP = IMAGE_ATTRIBUTES
GROUP = PROJECTION_ATTRIBUTES (<i>GROUP = PROJECTION_PARAMETERS; GROUP = PRODUCT_METADATA</i>)
MAP_PROJECTION = "UTM"
DATUM = "WGS84"

ELLIPSOID = "WGS84"
UTM_ZONE = 14
GRID_CELL_SIZE_PANCHROMATIC = 15.00
GRID_CELL_SIZE_REFLECTIVE = 30.00
GRID_CELL_SIZE_THERMAL = 30.00
PANCHROMATIC_LINES = 14321
PANCHROMATIC_SAMPLES = 15741
REFLECTIVE_LINES = 7161
REFLECTIVE_SAMPLES = 7871
THERMAL_LINES = 7161
THERMAL_SAMPLES = 7871

ORIENTATION = "NORTH_UP"

CORNER_UL_LAT_PRODUCT = 44.17077
CORNER_UL_LON_PRODUCT = -98.64975
CORNER_UR_LAT_PRODUCT = 44.12360
CORNER_UR_LON_PRODUCT = -95.69912
CORNER_LL_LAT_PRODUCT = 42.23658
CORNER_LL_LON_PRODUCT = -98.66065
CORNER_LR_LAT_PRODUCT = 42.19247
CORNER_LR_LON_PRODUCT = -95.80157
CORNER_UL_PROJECTION_X_PRODUCT = 528000.000
CORNER_UL_PROJECTION_Y_PRODUCT = 4890900.000
CORNER_UR_PROJECTION_X_PRODUCT = 764100.000
CORNER_UR_PROJECTION_Y_PRODUCT = 4890900.000
CORNER_LL_PROJECTION_X_PRODUCT = 528000.000
CORNER_LL_PROJECTION_Y_PRODUCT = 4676100.000
CORNER_LR_PROJECTION_X_PRODUCT = 764100.000
CORNER_LR_PROJECTION_Y_PRODUCT = 4676100.000

END_GROUP = PROJECTION_ATTRIBUTES (END_GROUP = PROJECTION_PARAMETERS, END_GROUP = PRODUCT_METADATA)

GROUP = LEVEL1_PROCESSING_RECORD (GROUP = PRODUCT_METADATA)

ORIGIN = "Image courtesy of the U.S. Geological Survey"

DIGITAL_OBJECT_IDENTIFIER = "https://doi.org/10.5066/F7WH2P8G"

REQUEST_ID = "1051910010040_00130"

LANDSAT_SCENE_ID = "LE70290302001200EDC00"

LANDSAT_PRODUCT_ID = "LE07_L1TP_029030_20010719_20191001_02_T1"

PROCESSING_LEVEL = "L1TP" (DATA_TYPE = "L1TP")

COLLECTION_CATEGORY = "T1"

OUTPUT_FORMAT = "GEOTIFF"

DATE_PRODUCT_GENERATED = 2019-10-01T17:39:34Z (FILE_DATE = YYYY-MM-DDTHH:MM:SSZ)

PROCESSING_SOFTWARE_VERSION = "LPGS_14.2.1"

FILE_NAME_BAND_1 = "LE07_L1TP_029030_20010719_20191001_02_T1_B1.TIF"

FILE_NAME_BAND_2 = "LE07_L1TP_029030_20010719_20191001_02_T1_B2.TIF"

FILE_NAME_BAND_3 = "LE07_L1TP_029030_20010719_20191001_02_T1_B3.TIF"

FILE_NAME_BAND_4 = "LE07_L1TP_029030_20010719_20191001_02_T1_B4.TIF"

FILE_NAME_BAND_5 = "LE07_L1TP_029030_20010719_20191001_02_T1_B5.TIF"

FILE_NAME_BAND_6_VCID_1 = "LE07_L1TP_029030_20010719_20191001_02_T1_B6_VCID_1.TIF"

FILE_NAME_BAND_6_VCID_2 = "LE07_L1TP_029030_20010719_20191001_02_T1_B6_VCID_2.TIF"

FILE_NAME_BAND_7 = "LE07_L1TP_029030_20010719_20191001_02_T1_B7.TIF"

FILE_NAME_BAND_8 = "LE07_L1TP_029030_20010719_20191001_02_T1_B8.TIF"

FILE_NAME_QUALITY_L1_PIXEL = "LE07_L1TP_029030_20010719_20191001_02_T1_QA_PIXEL.TIF" (FILE_NAME_BAND_QUALITY = "LXSS_LLLL_PPPRRR_YYYYMMDD_yyyymmdd_CC_TX_BQA.TIF")

FILE_NAME_QUALITY_L1_RADIOMETRIC_SATURATION = "LE07_L1TP_029030_20010719_20191001_02_T1_QA_RADSAT.TIF"

FILE_NAME_GROUND_CONTROL_POINT = "LE07_L1TP_029030_20010719_20191001_02_T1_GCP.txt" (GROUND_CONTROL_POINT_FILE_NAME = "LE07_L1TP_029030_20010719_20191001_02_T1_GCP.txt")

FILE_NAME_ANGLE_COEFFICIENT = "LE07_L1TP_029030_20010719_20191001_02_T1_ANG.txt" (ANGLE_COEFFICIENT_FILE_NAME = "LXSS_LLLL_PPPRRR_YYYYMMDD_yyyymmdd_CC_TX_ANG.txt")

FILE_NAME_ANGLE_SENSOR_AZIMUTH_BAND_4 = "LE07_L1TP_029030_20010719_20191001_02_T1_VAA.TIF"

FILE_NAME_ANGLE_SENSOR_ZENITH_BAND_4 = "LE07_L1TP_029030_20010719_20191001_02_T1_VZA.TIF"

FILE_NAME_ANGLE_SOLAR_AZIMUTH_BAND_4 = "LE07_L1TP_029030_20010719_20191001_02_T1_SAA.TIF"

FILE_NAME_ANGLE_SOLAR_ZENITH_BAND_4 = "LE07_L1TP_029030_20010719_20191001_02_T1_SZA.TIF"

FILE_NAME_METADATA_ODL = "LE07_L1TP_029030_20010719_20191001_02_T1_MTL.txt" (METADATA_FILE_NAME = "LXSS_LLLL_PPPRRR_YYYYMMDD_yyyymmdd_CC_TX_MTL.txt")

FILE_NAME_METADATA_XML = "LE07_L1TP_029030_20010719_20191001_02_T1_MTL.xml"

FILE_NAME_CPF = "LE07CPF_20010701_20010930_01.02" (CPF_NAME = "LXSSCPF_YYYY1MM1DD1_yyyy2mm2dd2_CC.NN")

DATA_SOURCE_ELEVATION = "GLS2000" (ELEVATION_SOURCE = "GLS2000")

GROUND_CONTROL_POINTS_VERSION = 4

GROUND_CONTROL_POINTS_MODEL = 197

GEOMETRIC_RMSE_MODEL = 5.406

GEOMETRIC_RMSE_MODEL_Y = 4.930

GEOMETRIC_RMSE_MODEL_X = 2.219

EPHEMERIS_TYPE = "DEFINITIVE"

END_GROUP = LEVEL1_PROCESSING_RECORD (END_GROUP = PRODUCT_METADATA)

GROUP = LEVEL1_MIN_MAX_RADIANCE (GROUP = MIN_MAX_RADIANCE)

RADIANCE_MAXIMUM_BAND_1 = 191.600

RADIANCE_MINIMUM_BAND_1 = -6.200

RADIANCE_MAXIMUM_BAND_2 = 196.500

RADIANCE_MINIMUM_BAND_2 = -6.400

RADIANCE_MAXIMUM_BAND_3 = 152.900

RADIANCE_MINIMUM_BAND_3 = -5.000

RADIANCE_MAXIMUM_BAND_4 = 241.100

RADIANCE_MINIMUM_BAND_4 = -5.100

RADIANCE_MAXIMUM_BAND_5 = 31.060

RADIANCE_MINIMUM_BAND_5 = -1.000

RADIANCE_MAXIMUM_BAND_6_VCID_1 = 17.040

RADIANCE_MINIMUM_BAND_6_VCID_1 = 0.000

RADIANCE_MAXIMUM_BAND_6_VCID_2 = 12.650

RADIANCE_MINIMUM_BAND_6_VCID_2 = 3.200
RADIANCE_MAXIMUM_BAND_7 = 10.800
RADIANCE_MINIMUM_BAND_7 = -0.350
RADIANCE_MAXIMUM_BAND_8 = 243.100
RADIANCE_MINIMUM_BAND_8 = -4.700

END_GROUP = LEVEL1_MIN_MAX_RADIANCE (END_GROUP = MIN_MAX_RADIANCE)

GROUP = LEVEL1_MIN_MAX_REFLECTANCE (GROUP = MIN_MAX_REFLECTANCE)

REFLECTANCE_MAXIMUM_BAND_1 = 0.305291
REFLECTANCE_MINIMUM_BAND_1 = -0.009879
REFLECTANCE_MAXIMUM_BAND_2 = 0.343464
REFLECTANCE_MINIMUM_BAND_2 = -0.011187
REFLECTANCE_MAXIMUM_BAND_3 = 0.325263
REFLECTANCE_MINIMUM_BAND_3 = -0.010636
REFLECTANCE_MAXIMUM_BAND_4 = 0.730305
REFLECTANCE_MINIMUM_BAND_4 = -0.015448
REFLECTANCE_MAXIMUM_BAND_5 = 0.454704
REFLECTANCE_MINIMUM_BAND_5 = -0.014640
REFLECTANCE_MAXIMUM_BAND_7 = 0.430635
REFLECTANCE_MINIMUM_BAND_7 = -0.013956
REFLECTANCE_MAXIMUM_BAND_8 = 0.597911
REFLECTANCE_MINIMUM_BAND_8 = -0.011560

END_GROUP = LEVEL1_MIN_MAX_REFLECTANCE (END_GROUP = MIN_MAX_REFLECTANCE)

GROUP = LEVEL1_MIN_MAX_PIXEL_VALUE (GROUP = MIN_MAX_PIXEL_VALUE)

QUANTIZE_CAL_MAX_BAND_1 = 255
QUANTIZE_CAL_MIN_BAND_1 = 1
QUANTIZE_CAL_MAX_BAND_2 = 255
QUANTIZE_CAL_MIN_BAND_2 = 1
QUANTIZE_CAL_MAX_BAND_3 = 255
QUANTIZE_CAL_MIN_BAND_3 = 1
QUANTIZE_CAL_MAX_BAND_4 = 255
QUANTIZE_CAL_MIN_BAND_4 = 1
QUANTIZE_CAL_MAX_BAND_5 = 255
QUANTIZE_CAL_MIN_BAND_5 = 1
QUANTIZE_CAL_MAX_BAND_6_VCID_1 = 255
QUANTIZE_CAL_MIN_BAND_6_VCID_1 = 1
QUANTIZE_CAL_MAX_BAND_6_VCID_2 = 255
QUANTIZE_CAL_MIN_BAND_6_VCID_2 = 1
QUANTIZE_CAL_MAX_BAND_7 = 255
QUANTIZE_CAL_MIN_BAND_7 = 1
QUANTIZE_CAL_MAX_BAND_8 = 255
QUANTIZE_CAL_MIN_BAND_8 = 1

END_GROUP = LEVEL1_MIN_MAX_PIXEL_VALUE (END_GROUP = MIN_MAX_PIXEL_VALUE)

GROUP = LEVEL1_RADIOMETRIC_RESCALING (GROUP = RADIOMETRIC_RESCALING)

RADIANCE_MULT_BAND_1 = 7.7874E-01
RADIANCE_MULT_BAND_2 = 7.9882E-01
RADIANCE_MULT_BAND_3 = 6.2165E-01
RADIANCE_MULT_BAND_4 = 9.6929E-01
RADIANCE_MULT_BAND_5 = 1.2622E-01
RADIANCE_MULT_BAND_6_VCID_1 = 6.7087E-02
RADIANCE_MULT_BAND_6_VCID_2 = 3.7205E-02
RADIANCE_MULT_BAND_7 = 4.3898E-02
RADIANCE_MULT_BAND_8 = 9.7559E-01
RADIANCE_ADD_BAND_1 = -6.97874
RADIANCE_ADD_BAND_2 = -7.19882
RADIANCE_ADD_BAND_3 = -5.62165
RADIANCE_ADD_BAND_4 = -6.06929
RADIANCE_ADD_BAND_5 = -1.12622
RADIANCE_ADD_BAND_6_VCID_1 = -0.06709
RADIANCE_ADD_BAND_6_VCID_2 = 3.16280
RADIANCE_ADD_BAND_7 = -0.39390
RADIANCE_ADD_BAND_8 = -5.67559
REFLECTANCE_MULT_BAND_1 = 1.2408E-03
REFLECTANCE_MULT_BAND_2 = 1.3963E-03
REFLECTANCE_MULT_BAND_3 = 1.3224E-03
REFLECTANCE_MULT_BAND_4 = 2.9360E-03
REFLECTANCE_MULT_BAND_5 = 1.8478E-03
REFLECTANCE_MULT_BAND_7 = 1.7504E-03
REFLECTANCE_MULT_BAND_8 = 2.3995E-03
REFLECTANCE_ADD_BAND_1 = -0.011120
REFLECTANCE_ADD_BAND_2 = -0.012583
REFLECTANCE_ADD_BAND_3 = -0.011959
REFLECTANCE_ADD_BAND_4 = -0.018384
REFLECTANCE_ADD_BAND_5 = -0.016487
REFLECTANCE_ADD_BAND_7 = -0.015706
REFLECTANCE_ADD_BAND_8 = -0.013959

END_GROUP = LEVEL1_RADIOMETRIC_RESCALING (END_GROUP = RADIOMETRIC_RESCALING)

GROUP = LEVEL1_THERMAL_CONSTANTS (GROUP = TIRS_THERMAL_CONSTANTS)

K1_CONSTANT_BAND_6_VCID_1 = 666.09
K2_CONSTANT_BAND_6_VCID_1 = 1282.71
K1_CONSTANT_BAND_6_VCID_2 = 666.09
K2_CONSTANT_BAND_6_VCID_2 = 1282.71

END_GROUP = LEVEL1_THERMAL_CONSTANTS (END_GROUP = TIRS_THERMAL_CONSTANTS)

GROUP = LEVEL1_PROJECTION_PARAMETERS (GROUP = PROJECTION_PARAMETERS)

MAP_PROJECTION = "UTM"
DATUM = "WGS84"
ELLIPSOID = "WGS84"
UTM_ZONE = 14
GRID_CELL_SIZE_PANCHROMATIC = 15.00
GRID_CELL_SIZE_REFLECTIVE = 30.00
GRID_CELL_SIZE_THERMAL = 30.00
ORIENTATION = "NORTH_UP"
RESAMPLING_OPTION = "CUBIC_CONVOLUTION"

END_GROUP = LEVEL1_PROJECTION_PARAMETERS (END_GROUP = PROJECTION_PARAMETERS)

GROUP = PRODUCT_PARAMETERS

CORRECTION_GAIN_BAND_1 = "CPF"
CORRECTION_GAIN_BAND_2 = "CPF"
CORRECTION_GAIN_BAND_3 = "CPF"
CORRECTION_GAIN_BAND_4 = "CPF"
CORRECTION_GAIN_BAND_5 = "CPF"
CORRECTION_GAIN_BAND_6_VCID_1 = "CPF"
CORRECTION_GAIN_BAND_6_VCID_2 = "CPF"
CORRECTION_GAIN_BAND_7 = "CPF"
CORRECTION_GAIN_BAND_8 = "CPF"
CORRECTION_BIAS_BAND_1 = "INTERNAL_CALIBRATION"
CORRECTION_BIAS_BAND_2 = "INTERNAL_CALIBRATION"
CORRECTION_BIAS_BAND_3 = "INTERNAL_CALIBRATION"
CORRECTION_BIAS_BAND_4 = "INTERNAL_CALIBRATION"
CORRECTION_BIAS_BAND_5 = "INTERNAL_CALIBRATION"
CORRECTION_BIAS_BAND_6_VCID_1 = "INTERNAL_CALIBRATION"
CORRECTION_BIAS_BAND_6_VCID_2 = "INTERNAL_CALIBRATION"
CORRECTION_BIAS_BAND_7 = "INTERNAL_CALIBRATION"
CORRECTION_BIAS_BAND_8 = "INTERNAL_CALIBRATION"
GAIN_BAND_1 = "H"
GAIN_BAND_2 = "H"
GAIN_BAND_3 = "H"
GAIN_BAND_4 = "L"
GAIN_BAND_5 = "H"
GAIN_BAND_6_VCID_1 = "L"
GAIN_BAND_6_VCID_2 = "H"
GAIN_BAND_7 = "H"
GAIN_BAND_8 = "L"
GAIN_CHANGE_BAND_1 = "HH"
GAIN_CHANGE_BAND_2 = "HH"
GAIN_CHANGE_BAND_3 = "HH"
GAIN_CHANGE_BAND_4 = "LL"
GAIN_CHANGE_BAND_5 = "HH"
GAIN_CHANGE_BAND_6_VCID_1 = "LL"
GAIN_CHANGE_BAND_6_VCID_2 = "HH"
GAIN_CHANGE_BAND_7 = "HH"
GAIN_CHANGE_BAND_8 = "LL"
GAIN_CHANGE_SCAN_BAND_1 = 0
GAIN_CHANGE_SCAN_BAND_2 = 0
GAIN_CHANGE_SCAN_BAND_3 = 0
GAIN_CHANGE_SCAN_BAND_4 = 0
GAIN_CHANGE_SCAN_BAND_5 = 0
GAIN_CHANGE_SCAN_BAND_6_VCID_1 = 0
GAIN_CHANGE_SCAN_BAND_6_VCID_2 = 0
GAIN_CHANGE_SCAN_BAND_7 = 0
GAIN_CHANGE_SCAN_BAND_8 = 0

END_GROUP = PRODUCT_PARAMETERS

END_GROUP = LANDSAT_METADATA_FILE (END_GROUP = L1_METADATA_FILE)

END