



S3 Product Notice – OLCI

Mission		S3-A
Sensor		OLCI
Product		<ul style="list-style-type: none"> • OL_1_EFR in NRT and NTC • OL_1_ERR in NRT and NTC
Product Notice ID		
S3A.PN-OLCI-L1.02		
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1.0		
Preparation		
This Product Notice was prepared by the S3 Mission Performance Centre and by ESA and EUMETSAT experts		
Approval		
Joint ESA-EUM Mission Management		

Summary

This is a Product Notice for Sentinel-3 Ocean and Land Colour Instrument (OLCI) Level-1B products at Near Real Time (NRT) and Non Time Critical (NTC) timeliness. It corresponds to the abovementioned products generated by the processing baseline deployed for the Marine and Land Level 1 public release.

The Notice describes the OLCI current processing baseline, product and quality limitations, and product availability status.



Processing Baseline

Processing Baseline	<ul style="list-style-type: none"> IPF Processing Baseline: 2.23
IPFs version	<ul style="list-style-type: none"> OL_1 IPF version: 06.07 PUG version: 03.30

Current Operational Processing Baseline

IPF	IPF Version	In operation since (creation time)
OL1	06.07	<p>Land Centres:</p> <p>NRT mode: 11/10/2017 09:01 UTC NTC mode: 11/10/2017 08:27 UTC</p> <p>Marine Centre:</p> <p>NRT mode: 11/10/2017 07:32 UTC NTC mode: 11/10/2017 07:32 UTC</p>
PUG	03.30	<p>Land Centres:</p> <p>NRT mode: 23/10/2017 08:38 UTC NTC mode: 23/10/2017 08:49 UTC</p> <p>Marine Centre:</p> <p>NRT mode: 23/10/2017 09:00 UTC NTC mode: 23/10/2017 09:00 UTC</p>



Status of the Processing Baseline

The current processing baseline for Sentinel-3A OLCI Level-1B products is v2.23. The baseline was deployed in the processing centres on 11/10/2017 at the Land and Marine Centres. The status of the baseline is as follows:

The major changes from the last processing baseline 2.16 are the following:

- The OLCI Radiometric Model, including a long-term instrument sensitivity evolution term, has been revised on the basis of an extended Radiometric Calibration dataset now being available, and now accounts for the ageing of the radiometric diffuser. The latter is now significant enough for the first five bluest channels (from 0.15%/year for the most affected band – Oa1, to 0.05% for Oa5) to be accurately measured and modeled, and hence corrected for.
- The configuration of the Dark Correction has been revised to minimize horizontal striping that can appear over dark surfaces.
- Dark Offset correction tables are now built after filtering of High Energy Particles from Radiometric Calibration data, avoiding occurrence of vertical striping in Earth Observation data.

The quality status of this baseline products is as follows:

Geometric Calibration

- OLCI geolocation accuracy meets the mission requirements in terms of global RMS value (0.5 pixel according to [S3 MRTD, 2011](#)). Monitoring using Landsat ground control points shows that the geolocation accuracy varies per camera, given below:

Camera Module	Across Track Pixel Bias	Along Track Pixel Bias
1	-0.37	-0.25
2	-0.36	-0.18
3	-0.31	-0.55
4	-0.29	-0.11
5	-0.27	-0.08



Spectral Calibration

- OLCI spectral model accuracy meets the mission requirements ([S3 MRTD, 2011](#)). The model uses in-flight data from spectral calibrations. The calibrations bring small changes to the central wavelengths compared to OLCI pre-launch characterizations and a more significant change to channel Oa1 (400 nm) with up to 0.4nm difference. Consistently with the solar spectrum variability, the most significant change is in in-band irradiance of channel Oa1 (up to around 1.5%) with the same impact on radiometry. OLCI spectral response information and datasets are provided in a separate note ([S3 OLCI-A SRF, 2016](#)).

Radiometric Calibration

- Radiometric validation results demonstrate that OLCI absolute radiometric calibration is comparable with its heritage instrument, MERIS, and that OLCI has a positive bias of about 2 to 3 percent throughout all bands, with the exception of band Oa21 (1020nm) at about 6 percent, OLCI being too bright. Actions are in place to achieve OLCI radiometric compliancy (2% absolute accuracy below 900 nm, 5% above 900 nm, [S3 MRTD](#)).
- The OLCI Radiometric Model is based on the entire set of in-flight radiometric calibrations. It includes radiometric gain coefficients at a reference date and a long-term evolution model. The set of radiometric gain coefficients used to derive both the Reference Gains and the Evolution Model have been computed using up-to-date geometric and spectral calibration and instrument settings and most of all an upgraded diffuser BRDF model based on in-flight data and diffuser ageing (browning) correction. The Radiometric Model is continuously monitored against new Radiometric Calibration acquisitions.

Known product quality limitations

Geometric Calibration

- A drift of the along-track geometric performance of OLCI camera 3 has been identified. It induces mis-pointing slight above 0.5 pixels for this camera for recent data. Actions are in place to provide updated geometric calibration models.

Radiometric Calibration

- Vertical striping at the first 100 pixels at camera interfaces can be observed in bands O19 and O20. The effect is known as periodic noise. Correction is investigated.
- Single anomalous pixels, in particular in the region of the South Atlantic Anomaly, may occur due to prompt particle events.



Straylight

- Verification of the OLCI straylight correction is ongoing.

Flags

- Accuracy of OLCI L1B product flags is under assessment. No issue has been identified so far.

Per-pixel error estimates

- Error estimates for OLCI radiances for all bands are not yet available in the products.

Products Availability

- Copernicus Open Access Hub (<https://scihub.copernicus.eu/>), NRT and NTC
- Copernicus Online Data Access (<https://codal.eumetsat.int/>), NRT and NTC
- EUMETCast (<https://eoportal.eumetsat.int/>), NRT
- EUMETSAT Data Centre (<https://eoportal.eumetsat.int/>), NRT and NTC
- FTP server address login: login password: password
- Other

Product	EUMETCast	ODA*	CODA**	EUMETSAT Data Centre
L1 RR	NRT	NRT, NTC	NRT, NTC	NRT, NTC
L1 FR	NRT	NRT, NTC	NRT, NTC	NRT, NTC

* ODA is available only for Copernicus Services and S3VT users

** CODA is the pilot service Copernicus Online Data Access and is available to all users

Any other useful information

- None



User Support

- Questions about OLCI products can be ask to the Sentinel-3 User Support desk at:
 - eosupport@copernicus.esa.int
 - ops@eumetsat.int

References

- Sentinel-3 Mission Requirements Traceability Document (MRTD), C. Donlon, EOP-SM/2184/CD-cd, 2011. <https://sentinel.esa.int/documents/247904/1848151/Sentinel-3-Mission-Requirements-Traceability>
- Sentinel-3 OLCI-A spectral response functions (SRF), Sentinel 3 CalVal Team, S3-TN-ESA-OL-660, 2016: <https://sentinels.copernicus.eu/documents/247904/2700436/Sentinel-3-OLCI-A-spectral-response-functions>

Static L2 updated ADFs

- S3A_OL_1_CAL_AX_20170420T233158_20991231T235959_20170607T120000_____MPC_O_AL_017.SEN3
- S3A_OL_1_EO_AX_20160425T103700_20991231T235959_20170120T120000_____MPC_O_AL_009.SEN3

End of the Product Notice