



## EarthCARE Product Disclaimer – BBR

<b>Mission</b>	EarthCARE	
<b>Sensor</b>	Broadband Radiometer - BBR	
<b>Product</b>	<ul style="list-style-type: none"> <li>• Level 1B B-NOM</li> <li>• Level 1B B-SNG</li> </ul>	
<b>Product Notice ID</b>		
<b>Issue/Rev Date</b>	2.0	10.01.2025
<b>Preparation</b>	ESA L1 Processor Team	
<b>Approval</b>	ESA Project Management	

### Summary

This Product disclaimer addresses EarthCARE Broadband Radiometer (BBR) Level-1B processing baselines that were released to users on 14/01/2025

The notice describes the B-NOM and B-SNG Level-1B status of baseline AD in terms of known issues and limitations of the data.

Users shall be reminded that both products, B-NOM and B-SNG, contain filtered radiances [RD-1]. Therefore, the effect of the instrument spectral response function will only be accounted for in the unfiltered radiances at the Level-2 BM-RAD product [RD-2].



### Processing Baselines

Processing Baseline	<ul style="list-style-type: none"> <li>AD</li> </ul>
ECGP version	<ul style="list-style-type: none"> <li>BBR ECGP v.4.5</li> </ul>

### Current Operational Processing Baselines

ECGP	ECGP Version	Into operations since
BBR ECGP	v 4.5	14/01/25



## Known product quality limitations

BBR Level-1B ECGP version v.4.5 has the following known limitations, unless explicitly mentioned all points are applicable to both B-NOM and B-SNG:

### Geolocation

- Geolocation of B-SNG and B-NOM products have generally been reported within the requirements, but in some specific areas, the geolocation has been reported inaccurate. Characterization and investigation are still ongoing. The geolocation of the product is to be used with caution.

### Radiometric accuracy

- Radiometric accuracy is still being assessed through dedicated validation activities. Preliminary comparisons of the nadir telescope radiances with the CERES FLASHFlux product suggest that the BBR solar radiances may be overestimated, while the thermal radiances may be underestimated. Further investigations are underway, and these comparisons will be refined using the Edition CERES products, once available. The analysis will also include data from the aft and fore views for a more comprehensive evaluation.

### Product flagging

- Flagging of the products shall not to be relied upon.

### Solar calibration

- No evaluation of performed solar calibrations. Therefore, unknown aging of the Characterization and Calibration Data Base (CCDB) reported properties since pre-launch characterization.

### Missing Nadir View Edges in Full-Resolution Products (B-NOM)

- For the full-resolution product, the edges (latitude and longitude of one\_weight\_edge and zero\_weight\_edge) are provided as common to all telescopes. However, the nadir view has a smaller ground footprint compared to oblique views, resulting in different edges. These specific edges for the nadir view are not included in the B-NOM products.



### **Radiance Discrepancies in Overlap Areas**

- Discrepancies in radiance values have been reported within the overlap area of two consecutive frames (post-margin of the first frame and pre-margin of the second frame). These differences, observed for the same ground point, are linked to radiometric calibration issues that may arise at the beginning of a processing sequence (a frame). In such cases, the radiance value from the earlier frame (margin at the end of the product) should be considered as the reference.

### **Additional limitations for B-SNG:**

All issues previously reported in the B-NOM disclaimer remain applicable to B-SNG products unless explicitly stated otherwise. In addition, the following issues are specific to B-SNG products:

### **Radiometric Error**

- Reported Radiometric Errors reported in the product shall not be considered as they do not reflect the actual errors yet.

### **Dead pixel**

- There is a known dead-pixel in the B-SNG product, which shall not be used:

Pixel ID:

FORE view, Pixel-ID: 5 (counting from 0)

## **References**

- [RD-1] Eisinger, M., Marnas, F., Wallace, K., Kubota, T., Tomiyama, N., Ohno, Y., Tanaka, T., Tomita, E., Wehr, T., and Bernaerts, D.: The EarthCARE mission: science data processing chain overview, Atmos. Meas. Tech., 17, 839–862, <https://doi.org/10.5194/amt-17-839-2024>, 2024.



[RD-2] Velázquez Blázquez, A., Baudrez, E., Clerbaux, N., and Domenech, C.: Unfiltering of the EarthCARE Broadband Radiometer (BBR) observations: the BM-RAD product, Atmos. Meas. Tech., 17, 4245–4256, <https://doi.org/10.5194/amt-17-4245-2024>, 2024.

***End of the Product Notice***