

## Precision Solar Spectroradiometer (PSR) – L2

### Data\_Format\_Description

PSR 007 is installed at the Actinometric station of Athens' National Observatory. The exact parameters of the installation site are listed below.

Full location name:	National Observatory of Athens, Thiseio
Short location name:	Athens-NOA
Country of location:	Greece
Location latitude [deg]:	37.9878
Location longitude [deg]:	23.7750
Location altitude [m]:	130

This document describes L2 data products as obtained with the instrument and quality assured by operational algorithms created during the ASPIRE and gives guidelines on the correct use of the gathered data. Data retrieved from PSR measurements during a 12-month period (WP2: Experimental Campaign, months 4-15) include Global Horizontal Irradiance (GHI) and Direct Normal Irradiance (DNI) at 1024 wavelengths in the spectral region 300-1020nm.

### Output products

A comma-separated string for each output product contains the information in each case as described in detail below.

**Column 1:** Date stamp (dd-mmm-yyyy)

**Column 2:** Time stamp (hh:mm:ss)

**Column 3:** Solar zenith angle for measurement center (in degrees)

**Column 4:** Indicate the type of measurement either GHI or DNI

**Column 5:** Data Quality Flags. The main Quality Flag with value 0 if all tests are passed and 1 if at least one has failed.

**Column 6:** Stability Quality Flag, value 0 if standard deviation in the cycle of measurement is less than 1% and 1 if higher

**Column 7:** Broadband Quality Flag, value 0 if measurement is in the defined range of broadband measurement and 1 otherwise

**Column 8:** RTM Quality Flag, value 0 if 90% of wavelengths are in defined range around RTM estimation and 1 otherwise

**Column 9-11:** Wavelength Shift Quality Flags, for UV, visible and IR spectral ranges accordingly with value 0 if shift is less than 0.5nm and 1 if higher.

**Column 12-1035:** The recorded irradiance in  $W/m^2$  at each wavelength.

A separate file ('PSR\_wavelengths') indicates the exact wavelength for each column.