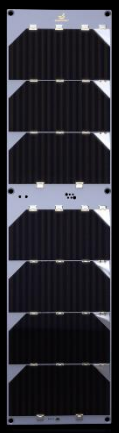
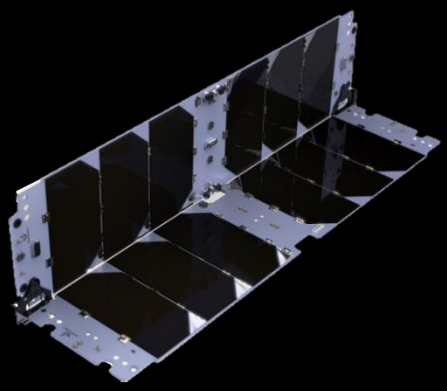
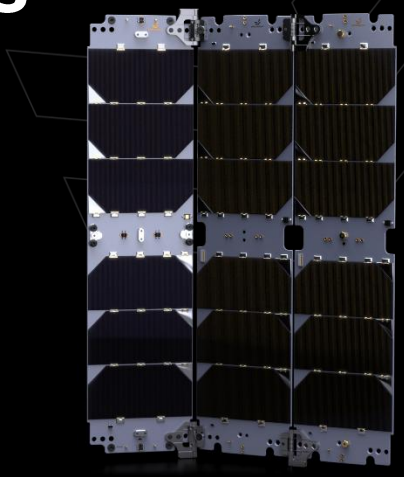
DATASHEET

3U Solar Arrays







Key Features

- Solar Cells with an efficiency above 30% @ BOL and 29% @ EOL for a 5 years lifetime in a LEO orbit
- Single 5V power supply needed for operation of the panel.
- Single and double deployable configurations available
- Analog Sun Sensors available in all Solar Arrays, and an RBF inhibition mechanism available in the stationary solar array configuration
- Designed for a 5 year mission lifetime
- Cell assembly fully qualified under ESA standard ECSS E ST20-08C for LEO and GEO
- 1-Hour of Engineering Support

Related Products

CubeSat Power System

3U CubeSat

6U CubeSat

8U CubeSat

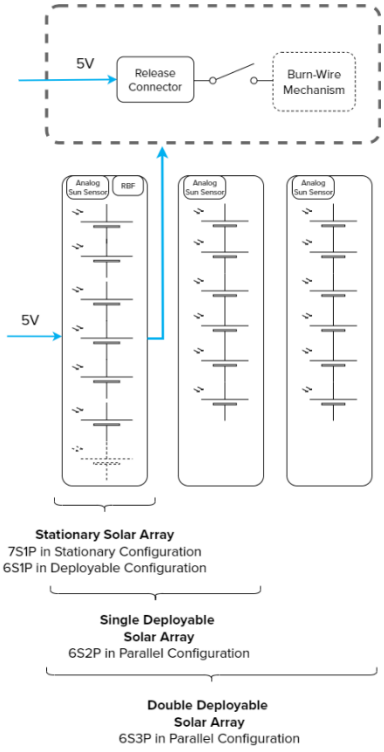
Overview

EnduroSat's 3U Solar Arrays are designed to provide high energy generation capability and ensure smooth operations in LEO.

Each Solar panel is equipped with six triple junction photovoltaic solar cells (seven if in a stationary configuration), which present an effiency above 30% @BOL. In Stationary Solar array, a RBF mechanism is available. All panels present power bus connectors and analog sun sensors.

For the deployable configurations, Release Connectors are provided, in addition to a connector board which allows to combine the power output of all solar panels into single or multiple power outputs. These can then be connected in a paralllel configuration or separately, based on the client's EPS (Electrical Power System).

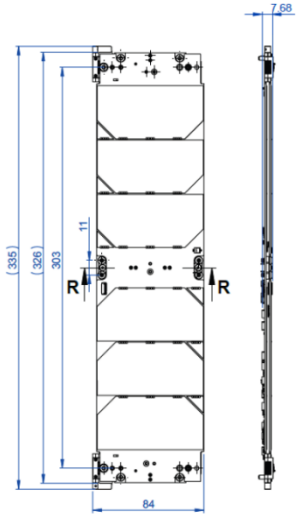
The Solar Arrays are highly customizable: multiple connector and interface options, not present by default, can be added (further details in Optional Components table). Additionally, the mounting configuration can be adjusted upon specific requests.



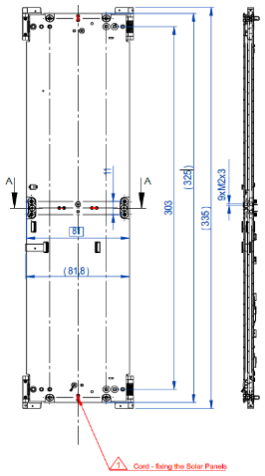
DATASHEET

3U Solar Arrays

All dimensions in mm



3U X/Y Single Deployable Solar Array



3U X/Y Double Deployable Solar Array

Note: Mechanical Drawing for representation. For additional mechanical outlines, please contact Sales representative.

General Specifications Stationary Panel	
Dimensions	82.6 mm x 325 mm x 5.65 mm
Mass	147 g
General Specifications X/Y Single Deployable Panel	
Dimensions	84 mm x 335 mm x 7.68 mm
Mass	285 g (No Cells in Stationary Panel) / 315 g
General Specifications X/Y Double Deployable Panel	
Dimensions	87 mm x 335 mm x 8.5 mm
Mass	438 g (No Cells in Stationary Panel) / 468 g
Solar Arrays Specifications	
Solar Cell Efficiency @BOL	> 30 %
Power per cell @BOL	1.23 W
Solar Cell Area	30.15 cm^2
Number Cells per Solar Array	7 in Stationary Configuration, 6 in Deployable
Spectral Sensitivity	0.55 A/W
Deployment	Direct Release Mechanism with Redundancy
Hinge	Long side, 90° or 135° configuration
Analog Sun Sensors	One on the fixed panel, two on a deployable panel/s
Available in default configuration	RBF (Stationary Only)
Optional Components	
Digital Sun Sensors	One on the fixed panel, one on a deployable panel
Temperature Sensor	One on the stationary solar panel
Others	Integrated H-Bridge for control of an external magnetorquer, Low-Power MCU, Gyroscope
Environmental Qualification	
Photovoltaic Assemblies	ECSS-E-ST-20-08C
Random Vibration	ECSS-E-ST-10-03C/GSFC-STD-7000B
Shock	ECSS-E-ST-10-03C/GSFC-STD-7000B
Temperature Cycling	Acceptance testing performed for 5% of the entire batch at GSFC-STD-7000B levels
TID	≥ 40 kRad, component level non-shielded

Product Codes

PRT-30SP-XX - Stationary Solar Array (variants to be discussed upon request)

PRT-30SPS-XX - Single Deployable X/Y Solar Array (variants to be discussed upon request)

PRT-30SPD-XX - Double Deployable X/Y Solar Array (variants to be discussed upon request)

Contact

sales@endurosat.com

https://www.endurosat.com

Designator — Variant

PRT-30SP-XX

Product-Line

All EnduroSat products are assembled and packed in a clean room environment Class 7 ISO 14644