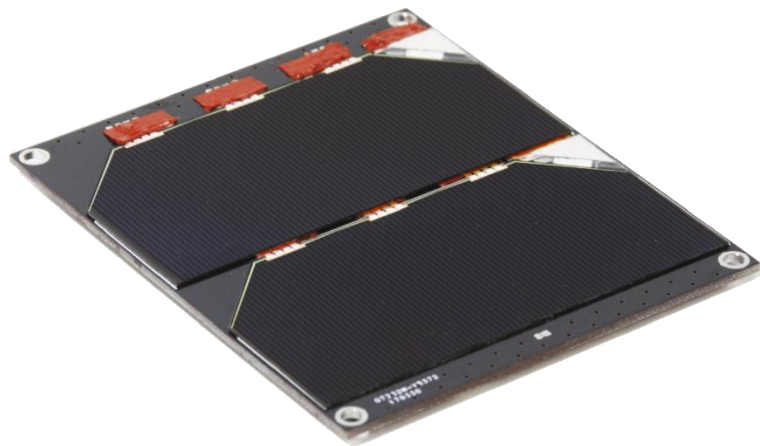


Solar Panels

Cassiopeia Cubesat Modules



Electrical Interface

The solar panels utilize Hirose 1.25mm connectors for both power and digital interfaces, with a 4-pin connector for power output and a 8-pin connector for the temperature and light sensor. This configuration is used up to an 3U panel. A 6U configuration with two strings provides two sets of 4 pin connectors for power output.

Qualification and Options

The panels have passed thermal cycle, thermal vacuum, outgassing, and random vibration tests. Each unit is tested prior to shipment and packed in a clean container under ISO Class 5 environments. Contact Aphelion for alternate configurations and interfaces, as well as to inquire for compatibility with other products.

Overview

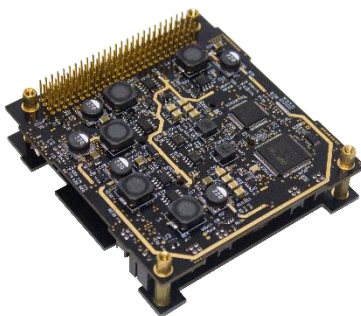
The Aphelion Cubesat solar panels utilize flight-proven, high efficiency 30.5% triple junction solar cells and a reliable bonding technique. The radiation hardened cells come with cover glass and an antireflective coating. The solar panels are available in 1U, 2U, 3U, 6U, and custom configurations providing up to 150W, with panels up to 3U containing one series string and the 6U panel containing two series strings of cells providing up to 22V output. A temperature sensor and integrated light sensor allows panel monitoring and diagnostics.

Features

- Radiation tolerance provide minimum 2 years lifespan in LEO
- Cells qualified according to ESA and Ru479.0061JT standards
- Built-in LM76 temperature sensor and rough sun sensor
- Thermal design considerations prevent warping and improves reliability
- IPC 610 Class 3 Assembly
- Gold plated and shielded FR4 PCB
- Wiring harness included
- Individually tested with outgassing/random vibration qualification

Direct Integration with Aphelion Modules

The PBM is an integrated EPS and OBC solution designed for mission-critical, volume constrained environments. Features such as maximum power point tracking, individually switchable and monitored output rails, high discharge battery compatibility, and a high-performance Cortex M4 processor allow the PBM to be adaptable for multiple mission scenarios.



Price: \$3500
(+ Battery Module: \$900)

Specifications

Mass	48g - 380g
Dimensions (cell)	40.15mm X 80.15mm
Efficiency	>30.5%
Current per cell (at 2200mV)	495mA
Mass per cell	4.5g
Power connector	4-pin Hirose 1.25mm
Data connector	8-pin Hirose 1.25mm
Temperature range	-40 to 125°C
Price	\$1499 - \$13500