Space Solar Panels

Features

- High Conversion Efficiency
 - Beginning of Life & End of life
- · State-of-the-art Reliability
- · A wide range of hardened applications
 - Space environment effects
 - Custom products



	Single Junction: GaAs/Ge	Dual Junction: GalnP ₂ /GaAs/Ge	Triple Junction (TJ): GalnP ₂ /GaAs/Ge	Improved Triple Junction (ITJ): GalnP ₂ /GaAs/Ge	Ultra Triple Junction (UTJ): GalnP ₂ /GaAs/Ge
Power (28°C, Beginning Of Life) • Panel Area > 2.5 m ² • Panel Area < 2.5 m ²	241 W/m² 228 W/m²	266 W/m² 252 W/m²		330 W/m² 316 W/m²	
Mass (add-on to substrate) • 3 mil Ceria Doped Coverslide • 6 mil Ceria Doped Coverslide	1.61 kg/m² 1.89 kg/m² (5.5 mil thick equivalent solar cell for		(5.5 mil thick cell) 2.06 kg/m ²	(5.5 mil thick cell) 2.06 kg/m ² (5.5 mil thick cell)	(5.5 mil thick cell) 2.06 kg/m ² (5.5 mil thick cell)
Thermal Control • Front: Ceria Doped Coverslide* • Rear	both cases above) $\alpha = 0.89 \qquad \epsilon = 0.86$ $\alpha = 0.1 - 0.9 \epsilon = 0.9$	both cases above) $\alpha = 0.92 \qquad \epsilon = 0.86$ $\alpha = 0.1 - 0.9 \epsilon = 0.9$	α = 0.92 ϵ = 0.86 α = 0.1-0.9; ϵ = 0.9	(7.5 mil thick cell) $\alpha = 0.92 \epsilon = 0.86$ $\alpha = 0.1-0.9; \epsilon = 0.9$	α = 0.92 ϵ = 0.86 α = 0.1-0.9; ϵ = 0.9
Magnetic Dipole Moment	Standard: < 0.5 Am ² ; Special: 0.0 Am ² (Magnetic Field < 3 nT Measured At End Of Array Wing) Demonstrated 0.999 for 5kW Array				
Reliability	Demonstrated 0.999 1	or okvv Array			



Option: Spectrolab can facilitate full scale environmental testing: vibroacoustic, thermal vacuum, thermal cycling.

* Lower absorptance values can be obtained using special coatings.



Spectifoliab [

Photovoltaic Products

www.spectrolab.com



Flight Hardware Heritage

Mission EnvironmentsLow Earth Orbit:5 YearsMid Earth Orbit:10 YearsGeosynchronous Orbit:15 Years

Planetary: Mars, Venus, Asteroid

Circuit Configuration Series Connections, Wire Terminations:

Soldered (Standard, High Temperature)

Welded

Component Integration Interconnects: • Fatigue Resistant

Magnetic or Non-Magnetic

Wiring: • Radiation Tolerant

Connectors: • Crimped

• Flex Print

Subminiature Shell

Thermal Control Paint

Second Surface Mirrors

Silverized Teflon

Electrostatic Discharge

(As qualified on Aluminum and

Composite Substrate Face-Sheets)

Conductively Coated Coverglass And Wiring





SPECTROLAB

A BOEING COMPANY

The information contained on this sheet is for reference only. Specifications subject to change without notice. 10/28/2004