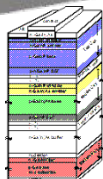


60<sup>th</sup>  
Anniversary!

# XTJ PRIME

**SPECTROLAB**  
A Boeing Company



## 30.7% Triple Junction Space Grade Solar Cell

- Currently in full production
- Best In class - BOL & EOL
- AIAA-S111 & AIAA-S112 Qualified
- Heritage Upright Lattice Matched XTJ Structure
- 26.7% EOL, 1E15 1MeV electron\*\*
- Multiple sizes available (27cm<sup>2</sup> through 84 cm<sup>2</sup>)

Cell Thickness = 80 μm - 225 μm

Cell Mass = 50 – 84mg/cm<sup>2</sup>

### XTJ Prime (US Standard- AIAA-S111-2005)

Parameters*	BOL	5E14	1E15	3E15	1E16
Efficiency <sub>mp</sub>	30.7%	.88	.85	.76	.65
V <sub>OC</sub> (V)	2.715	.89	.87	.83	.78
J <sub>sc</sub> (mA/cm <sup>2</sup> )	18.1	.99	.98	.96	.93
V <sub>mp</sub> (V)	2.390	.89	.87	.83	.76
J <sub>mp</sub> (mA/cm <sup>2</sup> )	17.4	.99	.97	.92	.86

\*Production Average; AMO (135.3 mW/cm<sup>2</sup>) 28°C

(Fluence 1MeV Electrons/cm<sup>2</sup>)

### XTJ Prime (European Standard - ECSS\*\*)

Parameters*	BOL	5E14	1E15	3E15	1E16
Efficiency <sub>mp</sub>	30.7%	.90	.87	.80	.70
V <sub>OC</sub> (V)	2.715	.90	.88	.85	.80
J <sub>sc</sub> (mA/cm <sup>2</sup> )	18.1	.99	.99	.97	.94
V <sub>mp</sub> (V)	2.390	.91	.89	.85	.80
J <sub>mp</sub> (mA/cm <sup>2</sup> )	17.4	.99	.98	.94	.88

\*\* Photon and temperature annealing according to ECSS-E-ST-20-08C

ENVIRONMENTAL MANAGEMENT SYSTEM  
CERTIFIED BY DNV  
**ISO 14001**

**AS9100**  
REGISTERED

REGISTERED  
**ISO 9001**  
2008

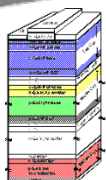
Spectrolab, Inc. 12500 Gladstone Avenue, Sylmar, California 91342 USA

• Phone: 818.365.4611 • FAX: 818.361.5102 • Website: www.spectrolab.com

60<sup>th</sup>  
Anniversary!

# XTJ PRIME

**SPECTROLAB**  
A Boeing Company



## 30.7% Triple Junction Space Grade Solar Cell

### Temperature Coefficients (15°C - 125°C)

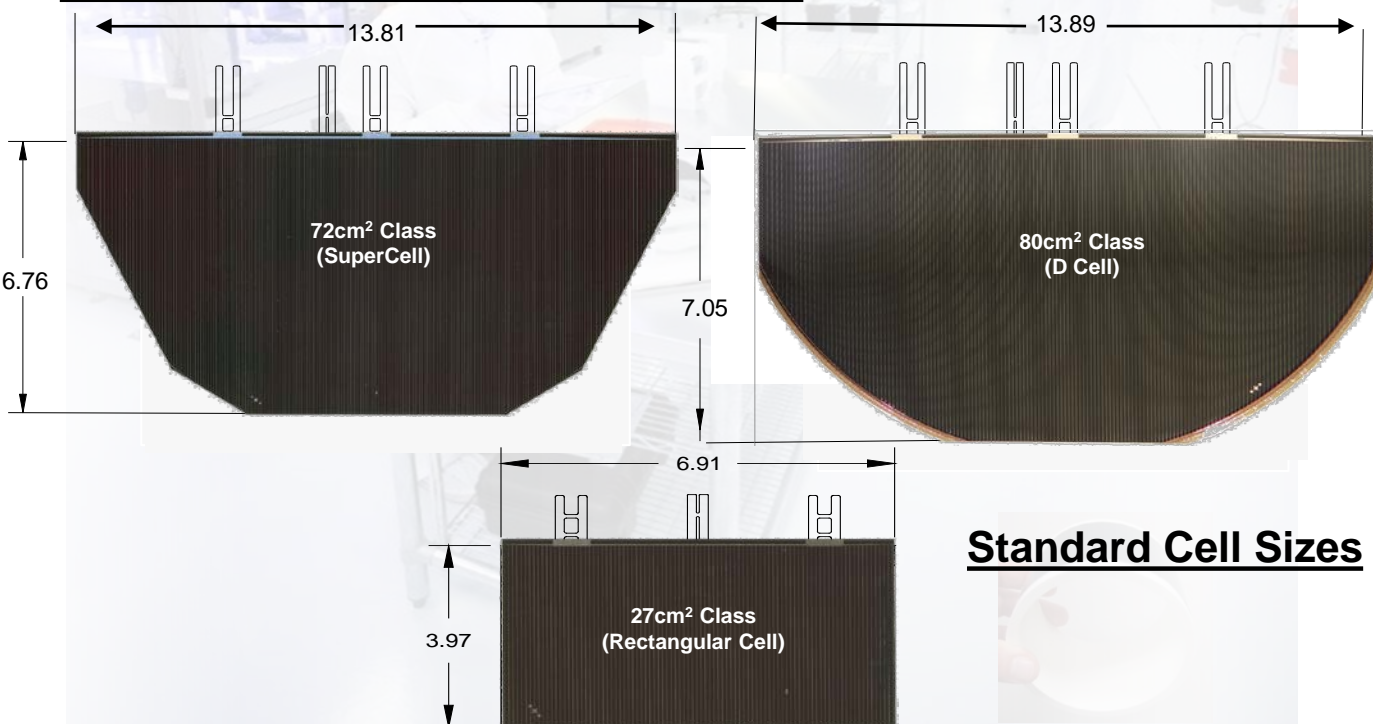
	Parameters		5E+14	1E+15	3E+15	1E+16
Open Circuit Voltage	$\Delta V_{oc}/\Delta T$	[mV/°C]	-6.2	-6.4	-6.5	-6.7
Short Circuit Current	$\Delta J_{sc}/\Delta T$	[mA/cm <sup>2</sup> /°C]	10.3	10.9	11.5	12.0
Maximim Power Voltage	$\Delta V_{mp}/\Delta T$	[mV/°C]	-6.5	-6.7	-6.7	-6.8
Maximim Power Current	$\Delta J_{mp}/\Delta T$	[mA/cm <sup>2</sup> /°C]	8.9	9.7	12.1	12.2

#### Thermal Parameters

#### Value

Solar Absorptance	0.88
Emittance	0.85

*Operates 2° C Cooler  
Than Other  
Space Grade Solar Cells*



### Standard Cell Sizes