

30.7% XTJ Prime Space Qualified Triple Junction Solar Cell

- Best in Class - BOL & EOL
- AIAA-S111 & AIAA-S112 Space Qualified
- Heritage Upright Lattice-Matched XTJ Structure
- 26.7% EOL, 1E15 1MeV electron**
- Currently in Full Production
- Multiple Sizes Available (27cm² through 84cm²)

Operates 2° C Cooler
Than Other Space Grade Solar Cells



Cell Thickness = 140 μm - 225 μm
Cell Mass = 84 - 130 mg/cm²

XTJ Prime Post 1 MeV e- Retention (US Standard AIAA S-111-2005)

Parameters*	BOL	1e14 (10-yr LEO)	5e14	1e15 (15-yr GEO)	1e16
Efficiency _{mp}	30.7%	0.94	0.88	0.85	0.65
V _{oc} (V)	2.720	0.94	0.89	0.87	0.78
J _{sc} (mA/cm ²)	18.0	1.00	0.99	0.98	0.93
V _{mp} (V)	2.406	0.94	0.89	0.87	0.76
J _{mp} (mA/cm ²)	17.5	1.00	0.99	0.97	0.86

* Production average of >100,000 cells; AM0 (135.3 mW/cm², 28°C)

(Fluence of 1 MeV electrons/cm²)

XTJ Prime Post 1 MeV e- Retention (European standard-ECSS**)

Parameters*	BOL	1e14 (10-yr LEO)	5e14	1e15 (15-yr GEO)	1e16
Efficiency _{mp}	30.7%	0.94	0.90	0.87	0.70
V _{oc} (V)	2.720	0.94	0.90	0.88	0.80
J _{sc} (mA/cm ²)	18.0	1.00	0.99	0.99	0.94
V _{mp} (V)	2.406	0.94	0.91	0.89	0.80
J _{mp} (mA/cm ²)	17.5	1.00	0.99	0.98	0.88

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

(Fluence of 1 MeV electrons/cm²)



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30.7% XTJ Prime

Over 320 kW of XTJ Prime Delivered!

Temperature Coefficients (15°C - 125°C)

Parameters		BOL	1e14	5e14	1e15	1e16
Open Circuit Voltage	$\Delta V_{oc}/\Delta T$ [mV/°C]	-5.6	-5.8	-6.2	-6.4	-6.6
Short Circuit Current	$\Delta J_{sc}/\Delta T$ [$\mu A/cm^2/°C$]	10.0	10.0	10.3	10.8	11.8
Maximum Power Voltage	$\Delta V_{mp}/\Delta T$ [mV/°C]	-6.3	-6.4	-6.5	-6.6	-6.6
Maximum Power Current	$\Delta J_{mp}/\Delta T$ [$\mu A/cm^2/°C$]	5.0	6.5	8.9	9.5	12.1

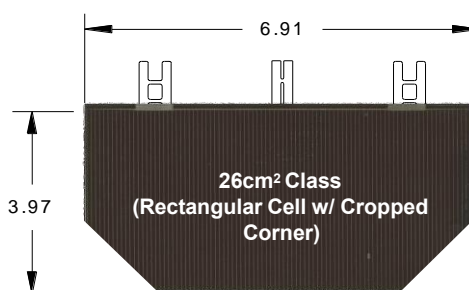
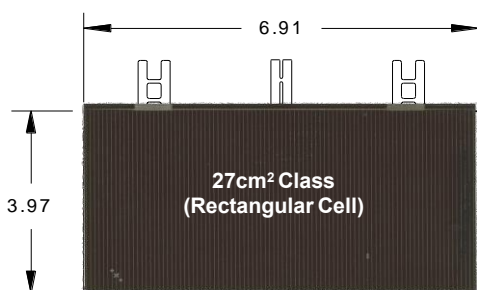
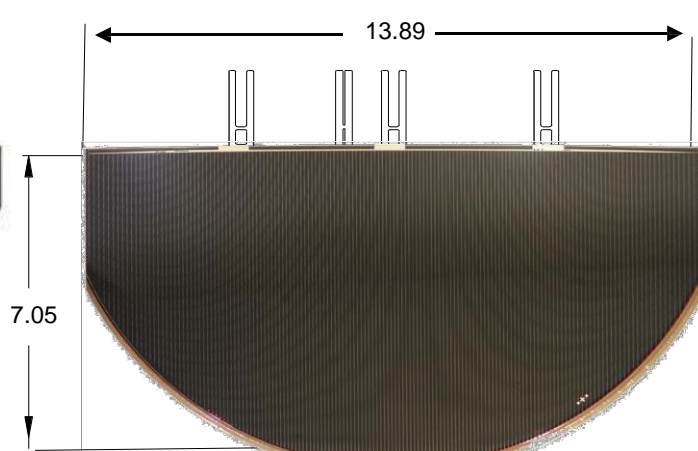
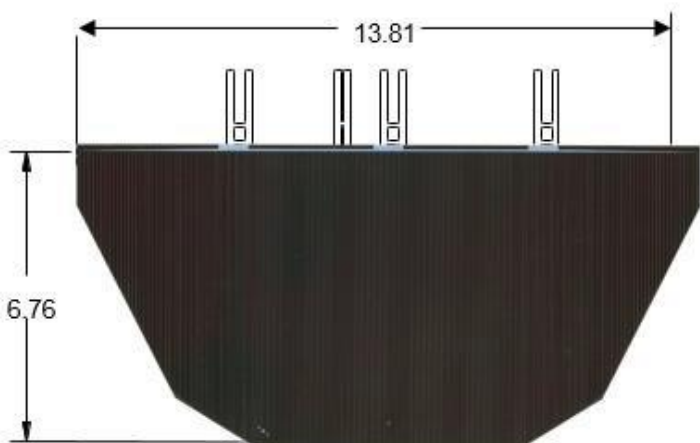
Standard Cell Sizes

Other cell sizes available

Thermal Parameters

Value

Solar Absorptance	0.88
Emittance	0.85



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ISO 14001

7/27/22