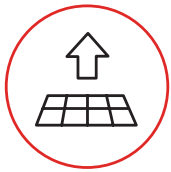


# IMM- $\alpha$ SPACE SOLAR CELL

Highest Efficiency Space Solar Cell in Production



# 32.0%

Minimum Average  
Efficiency

Fully tested to the AIAA-S111-2014  
space qualification and  
characterization Standard.

## FEATURES

- › Inverted metamorphic n-on-p solar cell
- › Solar cell mass of 49mg/cm<sup>2</sup> which represents a 42% reduction as compared to the ZTJ solar cell
- › Radiation hardened design @ 1-MeV, 1E15 e-/cm<sup>2</sup> fluence P/Po = 0.87 (ECSS post-radiation annealing)
- › Compatible with corner-mounted silicon bypass diode for individual cell reverse bias protection
- › Superior mechanical strength for reduced attrition during assembly and laydown
- › Weldable or solderable contacts
- › Custom sizes available

# IMM- $\alpha$ SPACE SOLAR CELL

## BOL Performance

Typical Parameters @ AMO (135.3 mW/cm<sup>2</sup>), 28°C

Typical Values	
BOL Efficiency at Maximum Power Point (%)	32.0
Voc (V)	4.78
Jsc (mA/cm <sup>2</sup> )	10.66
Vmp (V)	4.28
Jmp (mA/cm <sup>2</sup> )	10.12

## EOL Remaining Factors after exposure to 1-MeV Electron Irradiation

Annealed to ECSS-E-ST-20-08C Rev.1 post-radiation annealing procedure

Fluence (e-/cm <sup>2</sup> )	Voc	Jsc	Vmp	Jmp	Pmp
5E14	0.92	0.99	0.93	0.98	0.91
1E15	0.90	0.97	0.89	0.98	0.87
5E15	0.84	0.87	0.84	0.85	0.71

## Temperature Coefficients

BOL & EOL (1-MeV electron irradiation)

Fluence (e-/cm <sup>2</sup> )	Voc (mV/°C)	Jsc ( $\mu$ A/cm <sup>2</sup> /°C)	Vmp (mv/°C)	Jmp ( $\mu$ A/cm <sup>2</sup> /°C)
BOL	-10.5	9.8	-11.2	6.7
5E14	-11.7	9.9	-12.5	5.2
1E15	-11.9	9.7	-12.0	3.3
5E15	-12.5	9.0	-12.8	7.6

\*Projected temperature coefficients based upon data for similar materials and device structures

## IMM- $\alpha$ CIC Mass

Coverglass Thickness (mil)	CIC Mass (mg/cm <sup>2</sup> )
2	70.6
3	76.9
4	83.3
6	96.0



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