ALTA DEVICES

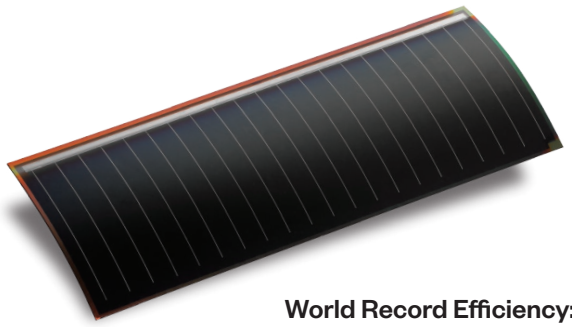
The World's Most Efficient Solar

TECHNOLOGY PERFORMANCE: SINGLE CELL

Standard Test Condition [STC]: 1000W/m^2, AM1.5, 25°C

Key Specifications

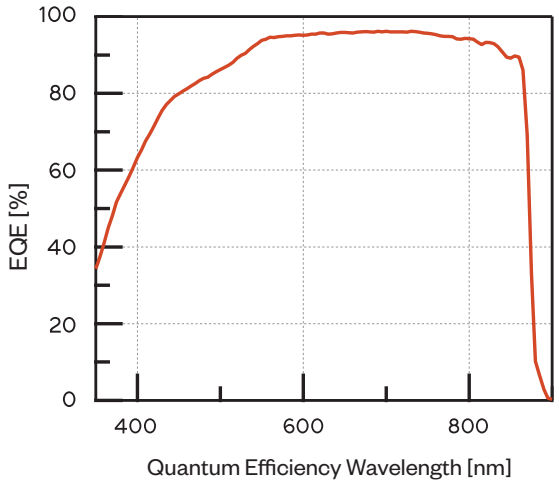
		Gen3	Gen4
Power-to-Weight	W/g	1.4	2.3
Power (Outdoor)	W/m^2	260	
Power (Indoor, 200 Lux LED)	µW/cm^2	15	
Thickness	[µm]	110	45
Area Density	[g/m^2]	187	115
Flexibility		2 cm radius of curvature	



World Record Efficiency: 28.8% and 31.6%

Cell Electrical Specifications

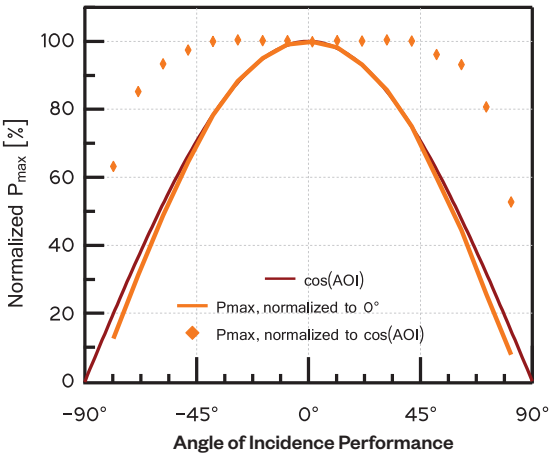
Efficiency	[%]	26
Power	[W]	0.226
Max Power Voltage	[V]	0.96
Max Power Current	[A]	0.236
Fill Factor	[%]	84
Open Circuit Voltage	[V]	1.09
Short Circuit Current	[A]	0.246



Temperature Coefficients

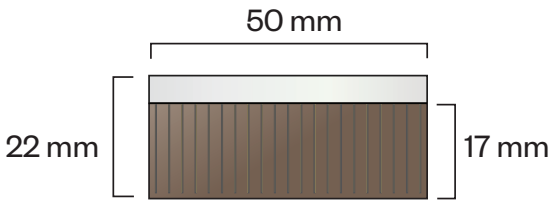
Voltage	[%/°C]	-0.187
Current	[%/°C]	+0.084
Power	[%/°C]	-0.095

*Percent change per °C from 25 °C



Cell Appearance and Dimensions

Material		Gallium Arsenide
Surface and Color		Textured, dark blue – black
Dimensions	[mm]	50 x 19.6 ± 0.5
Front	[-]	1.0 mm bus bar
Back	[+]	Vias for electrical contact



Single Cell
(1 V, 0.22 W)

TECHNOLOGY PERFORMANCE: MODULE

Lightweight Module Electrical Performance and Physical Properties

Standard Test Condition [STC]: 1000W/m^2, AM1.5, 25ºC

PET Front Sheet Module Key Specifications

		Gen 3	Gen 4
Avg. Thickness	[µm]	165	100
Area Density	[g/m^2]	270	253
Power-to-Weight	[W/kg]	740	789

*Values calculated using 33x5 module with bypass diodes and 5mm border

PET Front Sheet 5x1 Module Electrical Specifications

Efficiency	[%]	24
Power	[W]	0.948
Max Power Voltage	[V]	4.77
Max Power Current	[A]	0.198
Fill Factor	[%]	84
Open Circuit Voltage	[V]	5.41
Short Circuit Current	[A]	0.208

*5x1 refers to module with 5 cells in series

Heavy-Duty Module Electrical Performance and Physical Properties

Standard Test Condition [STC]: 1000W/m^2, AM1.5, 25ºC

3M Ultrabarrier Module Key Specifications

Avg. Thickness	[µm]	900
Area Density	[g/m^2]	898
Power-to-Weight	[W/kg]	235

*Values calculated using 33x5 module with bypass diodes and 5mm border

3M Ultrabarrier 5x1 Module Electrical Specifications

Efficiency	[%]	25
Power	[W]	1.00
Max Power Voltage	[V]	4.82
Max Power Current	[A]	0.208
Fill Factor	[%]	84
Open Circuit Voltage	[V]	5.47
Short Circuit Current	[A]	0.219

*5x1 refers to module with 5 cells in series

Indoor Electrical Performance

Cell Electrical Specifications

Power	[µW]	150
Max Power Voltage	[V]	0.70
Max Power Current	[µA]	210
Fill Factor	[%]	76
Open Circuit Voltage	[V}	0.84
Short Circuit Current	[µA]	230

AM0 Electrical Performance

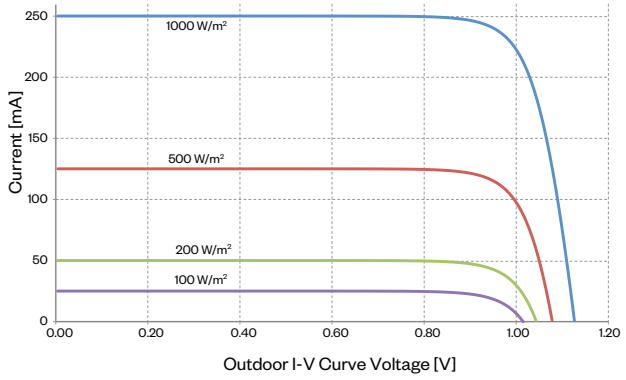
Standard Test Condition [STC]: 1366W/m^2, AM0

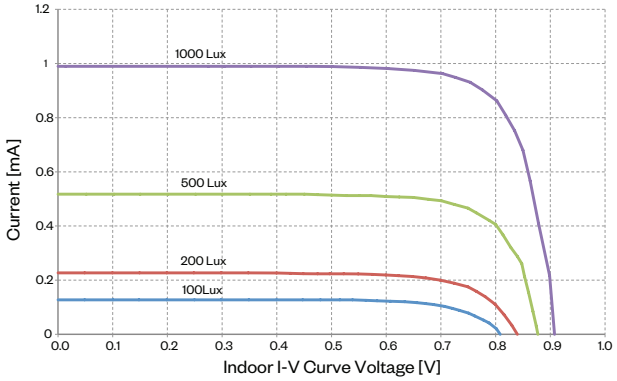
1x1 Bare Matrix

Efficiency	[%]	20
Power	[W]	0.226
Max Power Voltage	[V]	0.96
Max Power Current	[A]	0.246
Fill Factor	[%]	84
Open Circuit Voltage	[V]	1.09
Short Circuit Current	[A]	0.256

1x1 PET Module

Efficiency	[%]	19
Power	[W]	0.223
Max Power Voltage	[V]	0.97
Max Power Current	[A]	231
Fill Factor	[%]	84
Open Circuit Voltage	[V]	1.09
Short Circuit Current	[A]	244





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