



435Wp High-Efficiency Graphene PV Module



Features

- More Power per sq.ft.
- Less Impact On shading
- No Micro-crack Effect

Mechanical Parameters

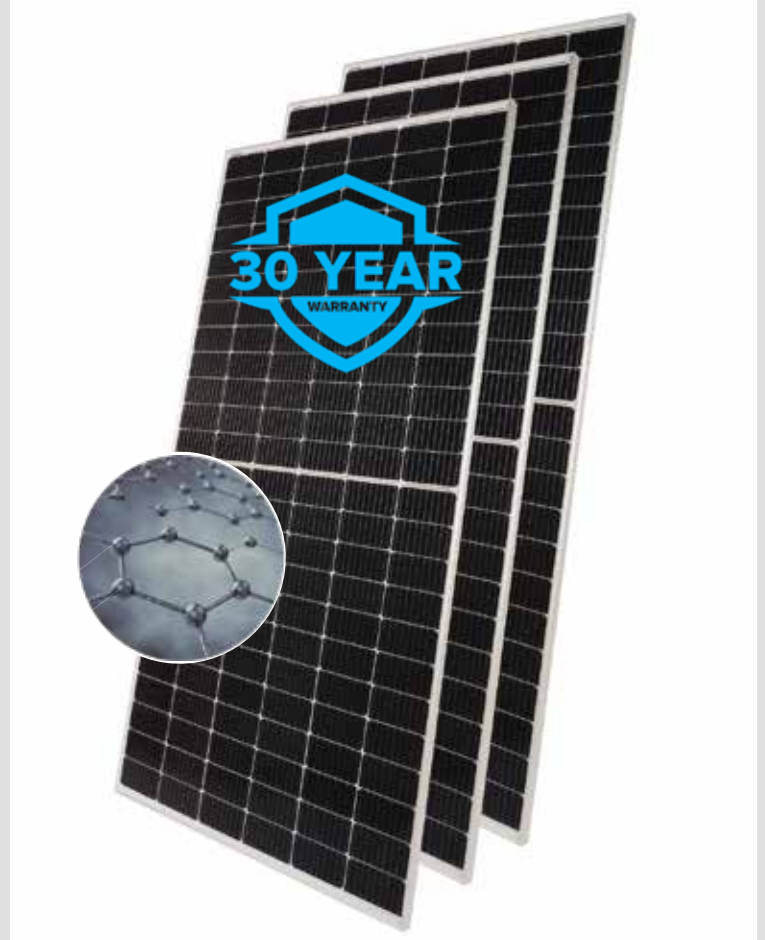
Length:	67.80 in.
Width:	44.65 in.
Thickness:	1.18 in.
Weight:	46.30 lbs.
Frame:	Anodized Aluminium

Thermal Parameters

Temperature coefficient of power:	- 0.2755% /K
Temperature coefficient of voltage:	- 0.2375% /K
Temperature coefficient of current:	0.04725% /K
Nominal operating cell temperature:	109 ^{+/-} 36 °F

Certifications & Warranty

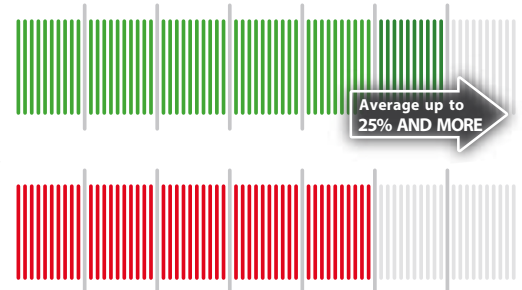
Certification:	IEC 61215
Warranty:	30 Years
PID & LID Protection:	100%
Performance Warranty:	0.2% Per Year
Fire Resistance Rating:	Type 2



GRAPHENE



STANDARD TECHNOLOGY





435Wp High-Efficiency Graphene PV Module



New Technology

The Graphene technology is a true breakthrough in the construction of photovoltaic modules. The Graphene increases efficiency by up to 25%. At the same time, it ensures long-term, trouble-free operation - the product comes with an impressive 30-year warranty! The modules degradation is only 0.2% per year, marking yet another milestone in the field of renewable energy.

Unique Features of Graphene

- Transparent (absorbs only 2.3% of light)
- Extremely strong (100–200 times stronger than steel)
- Flexible (can stretch up to 20%)
- Excellent thermal conductivity - approximately 5000 W/mK
- Very low electrical resistance
- Very high electron mobility (200,000 cm²/V·s)
- Incredible electron flow speed – (1/300) of the speed of light

Mechanical Parameters

Cell:	Mono 7.17 × 3.58 in
Number of Cells:	108 (6 × 18)
Module Dimensions:	67.80 × 44.65 × 1.18 in
Weight:	46.3 lbs
Coatings:	0.13 in anti-reflective coating ARC
Frame:	Anodized aluminum
Junction Box (J.Box):	IP68, 3 diodes
Cable Cross-section:	4 mm ²
Cable Length:	Vertical -11.80 in; horizontal - 47.20 in
Connectors:	MC4 or MC4 - compatible

Electrical Parameters

Voltage at MPP:	32.20 V
Current at MPP (I _{mpp}):	13.36 A
Open-circuit voltage (V _{oc}):	38.40 V
Short-circuit current (I _{sc}):	14.06 A
Nominal power (P _{nom}):	410+ W
Maximum power (P _{max}):	435+ W
Graphene efficiency:	23.54%

Key Benefits



- ▣ Increased strength and durability of the cells
- ▣ 30-year warranty for 94% of nominal power
- ▣ Studies have shown a maximum power loss of only 0.2% per year

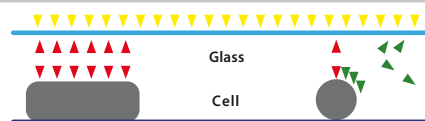
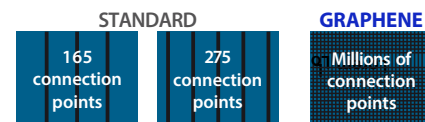


- ▣ Shorter investment payback period
- ▣ 25% higher energy production compared to standard BusBar technology
- ▣ Improved absorption of diffused sunlight



- ▣ Elimination of the impact of microcracks on module performance
- ▣ Reduced shading impact on energy yield
- ▣ Lower operating costs

Differences in Technologies



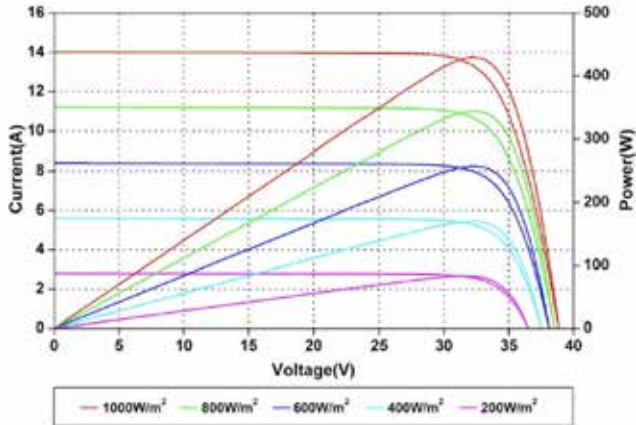


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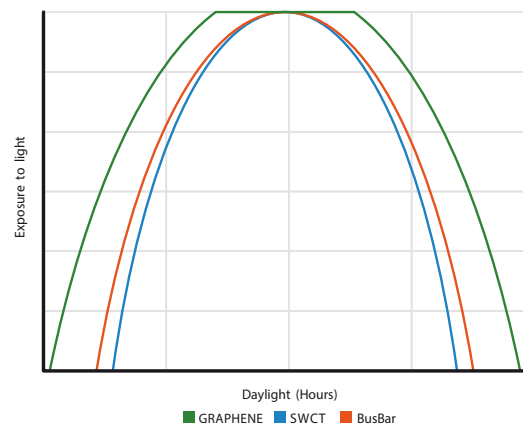
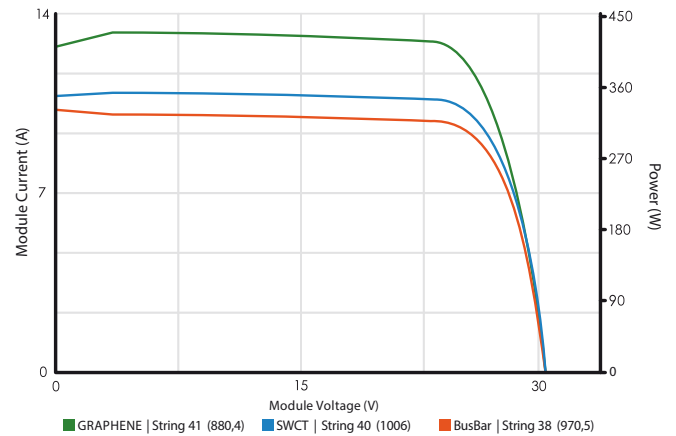
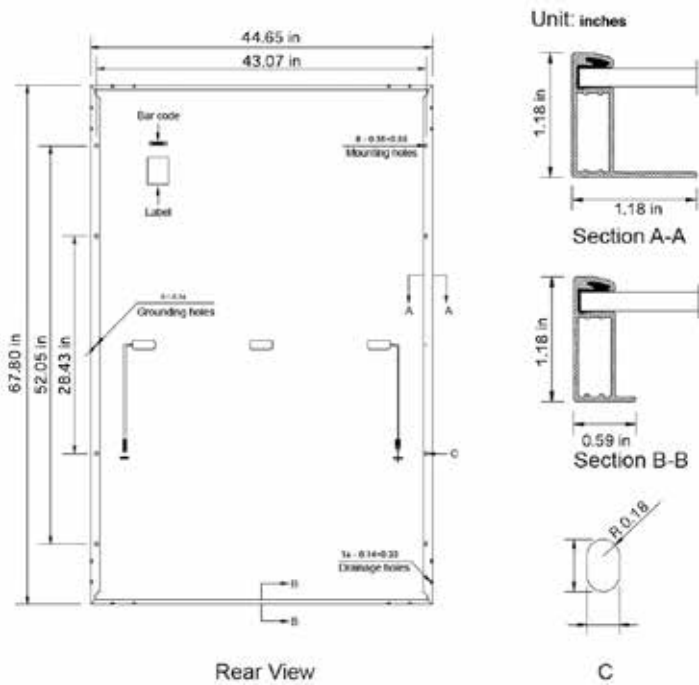
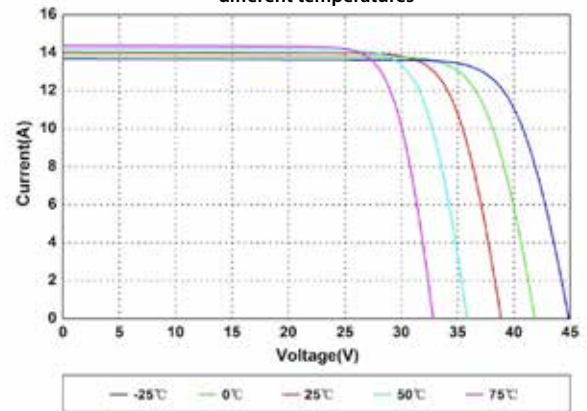


AMTEK

Current-voltage and power-voltage curves for different irradiance levels



Current-voltage curves at different temperatures



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