



# 60M G1 All Black Module

60 Cell Monocrystalline 305W - 320W

## 19.2%

Utilizes the latest high efficiency Monocrystalline PERC cells.

## Stability & Looks

Rugged, double webbed frame design withstands wind, snow, and other mechanical stresses. Framed Glass-Backsheet aesthetic is ideal for high visibility installation.

## Anti-Reflective

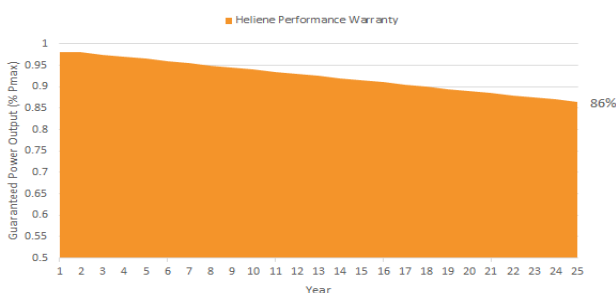
Premium solar glass with anti reflective coating delivers more energy throughout the day

## High Reliability

Proven resistance to PID and reliable in high temperature and humidity environments.

## No Compromise Guarantee

15 Year Workmanship Warranty  
25 Year Linear Performance Guarantee



## Manufactured Using International Quality System Standards: ISO9001

### World-class Quality

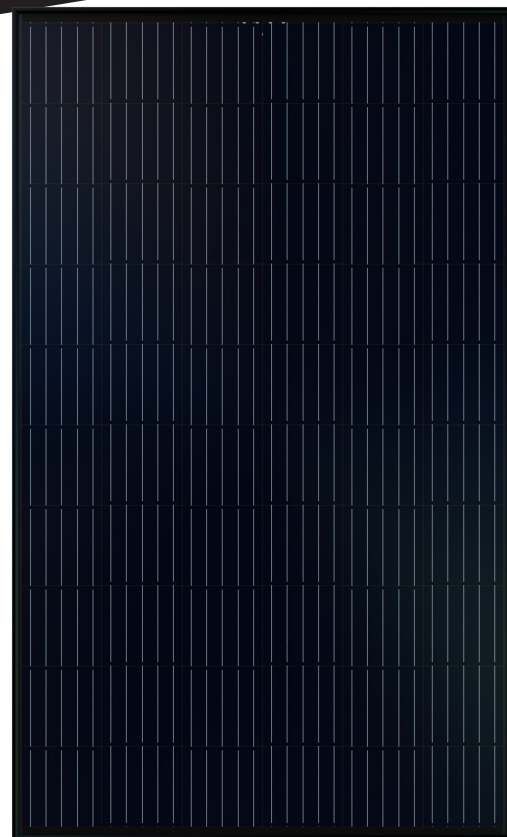
- Heliene's fully automated manufacturing facilities with state-of-the-art robotics and computer aided inspection systems ensure the highest level of product quality and consistency
- All manufacturing locations are compliant with international quality standards and are ISO 9001 certified
- Heliene modules have received Top Performer rankings in several categories from PV Evolution Labs (PV EL) independent quality evaluations

### Bankable Reputation

- Established in 2010, Heliene is recognized by Bloomberg New Energy Finance (BNEF) as Tier 1 manufacturer of solar modules and has been approved for use by the U.S. Department of Defense, U.S. Army Corps of Engineers and from numerous top tier utility scale project debt providers
- By investing heavily in research and development, Heliene has been able to stay on the cutting edge of advances in module technology and manufacturing efficiency

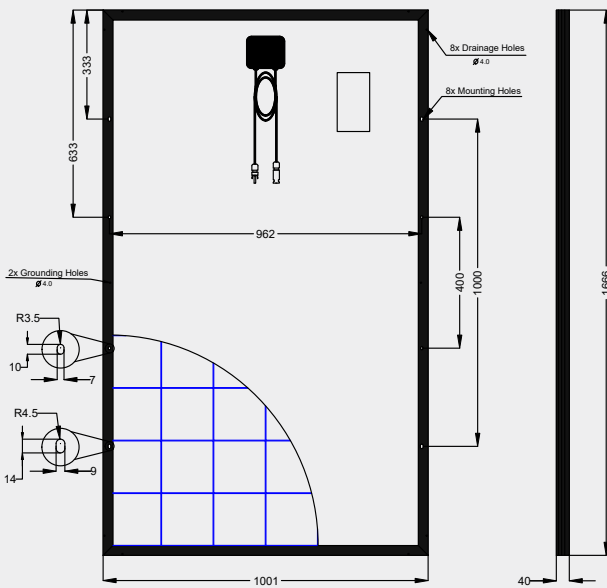
### Local Sales, Service, and Support

- With sales offices across the U.S. and Canada, Heliene prides itself on unsurpassed customer support for our clients. Heliene has become the brand of choice for many of the leading residential installers, developers and Independent Power Producers due to our innovative technology, product customization capability and just in time last-mile logistics support
- Local sales and customer support means answered phone calls and immediate answers to your technical and logistics questions. We understand your project schedules often change with little warning and endeavor to work with you to solve your project management challenges





Dimensions for 60M G1 All Black Series Modules



Electrical Data (STC)

Peak Rated Power	$P_{mpp}$ (W)	320	315	310	305
Maximum Power Voltage	$V_{mpp}$ (V)	34.10	33.70	33.54	33.60
Maximum Power Current	$I_{mpp}$ (A)	9.37	9.33	9.27	9.07
Open Circuit Voltage	$V_{oc}$ (V)	40.50	40.32	40.13	39.98
Short Circuit Current	$I_{sc}$ (A)	10.20	10.16	10.22	9.67
Module Efficiency *	Eff (%)	19.21	18.92	18.78	18.28
Maximum Series Fuse Rating	MF (A)	20	20	20	20
Power Output Tolerance		[- 3 , +3] %			

STC - Standard Test Conditions: Irradiation 1000 W/m<sup>2</sup> - Air mass AM 1.5 - Cell temperature 25 °C  
\* Calculated using maximum power based on full positive output tolerance [-3 , +3] %

Electrical Data (NMOT)

Maximum Power	$P_{mpp}$ (W)	235	230	225	220
Maximum Power Voltage	$V_{mpp}$ (V)	31.30	30.76	30.43	30.30
Maximum Power Current	$I_{mpp}$ (A)	7.51	7.48	7.39	7.26
Open Circuit Voltage	$V_{oc}$ (V)	38.09	37.92	37.75	37.61
Short Circuit Current	$I_{sc}$ (A)	8.22	8.19	8.24	7.79

NMOT - Nominal Module Operating Temperature:  
Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind speed 1m/s

Mechanical Data

Solar Cells	60 Monocrystalline cells (158.75 x 158.75 mm)
Module Construction	Framed Glass-Backsheet
Dimensions (L x W x D)	1666 x 1001 x 40 mm (65.5 x 39.4 x 1.6 inch)
Weight	19 kg (41.9 lbs)
Frame	Double Webbed 15-Micron Anodized Aluminum Alloy
Glass	3.2mm Low-Iron Content, High-Transmission, PV Solar Glass with Anti Reflective Coating
Junction Box	IP68 Rated Junction Box with 3 Bypass Diodes
Output Cables	1.2-meter (47.24-inch) Symmetrical Cables
Connectors	Multi-Contact (Staubli) MC4

Certifications

UL Certification UL61215, UL61730

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	+45°C (±2°C)
Temperature Coefficient of $P_{max}$	-0.36%/°C
Temperature Coefficient of $V_{oc}$	-0.27%/°C
Temperature Coefficient of $I_{sc}$	0.040%/°C

Maximum Ratings

Operational Temperature	-40°C to +85°C
Max System Voltage	1500V (1000V Optional)
Mech. Load Test (Front)	113 psf / 5400 Pa
Mech. Load Test (Back)	50 psf / 2400 Pa

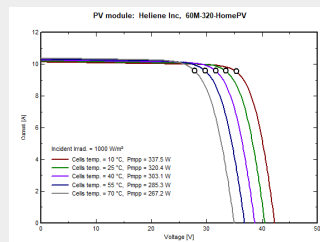
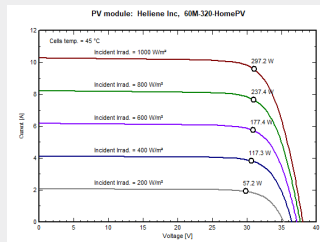
Warranty

- 15 Year Manufacturer's Workmanship Warranty
- 25 Year Linear Power Guarantee

Packaging Configuration

- Modules per box: 26 pieces
- Modules per 53' trailer: 936 pieces

I-V Curves for 60M G1 All Black Series Modules



Certifications



The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the ongoing innovation and product enhancements. Heliene Inc. reserves the right to make necessary adjustment to the information described herein at any time without prior notice. PV modules should be handled and installed only by qualified people. Please carefully read safety and installation instructions available for download from Heliene website before using Heliene PV modules. For warranty details, please refer to Product Warranty Document, also available for download from Heliene website.