



# 144HC M10 SL Bifacial Module

144 Half-Cut Monocrystalline 520W – 540W

## 21%

Utilizes the latest M10 size super high efficiency Monocrystalline PERC cells. Half cut design further reduces cell to module (CTM) losses.

## 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

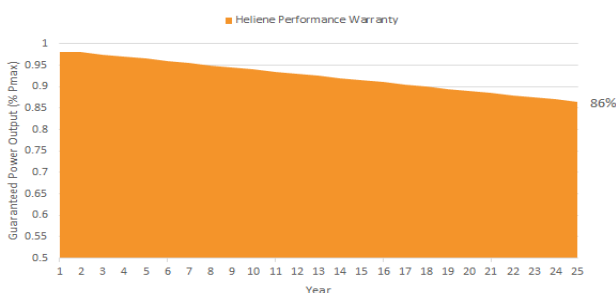
Premium solar glass with anti reflective coating delivers more energy throughout the day

## 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**

**Half-Cut Design with Split Junction Box Technology**

**Bifacial Technology Enabling Additional Energy Harvest from Rear Side**

**1500V System Voltage Rating**

### 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

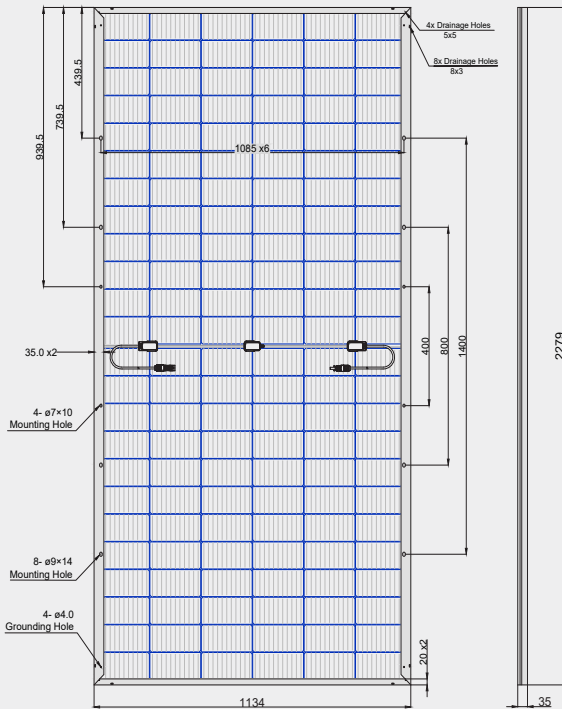
- Established in 2010, Heliene is recognized by Bloomberg New Energy Finance (BNEF) as Tier 1 manufacturer of solar modules and has been approved for use by the U.S. Department of Defense, U.S. Army Corps of Engineers and from numerous top tier utility scale project debt providers
- By investing heavily 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

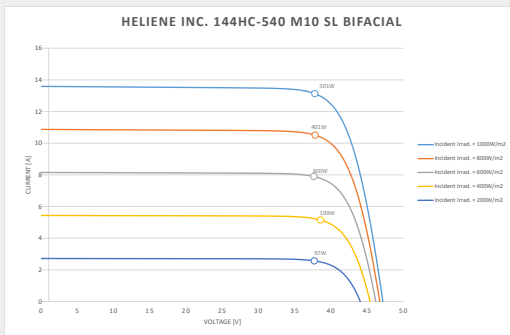
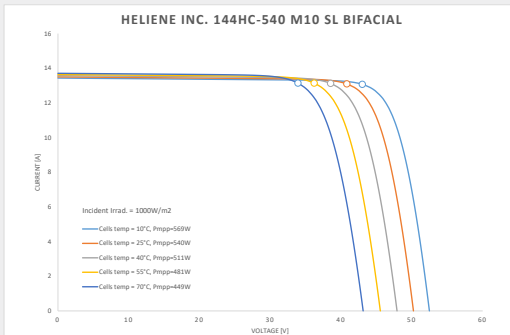
- With sales offices across the U.S. and Canada, Heliene prides itself on unsurpassed customer support for our clients. Heliene has become the brand of choice for many of the leading residential installers, developers and Independent Power Producers due to our innovative technology, product customization 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 144HC M10 SL Bifacial Series Modules



## I-V Curves for 144HC M10 SL Bifacial Series Modules



## Certifications



## Electrical Data (STC)

Peak Rated Power	P <sub>mpp</sub> (W)	540	535	530	525	520
Maximum Power Voltage	V <sub>mpp</sub> (V)	42.32	42.13	41.94	41.75	41.56
Maximum Power Current	I <sub>mpp</sub> (A)	12.77	12.70	12.64	12.58	12.52
Open Circuit Voltage	V <sub>oc</sub> (V)	50.22	49.97	49.72	49.23	48.73
Short Circuit Current	I <sub>sc</sub> (A)	13.50	13.44	13.37	13.32	13.28
Module Efficiency *	Eff (%)	20.9	20.7	20.5	20.3	20.1
Maximum Series Fuse Rating	MF (A)	30	30	30	30	30
Power Output Tolerance		[- 0/+3%]				
Bifaciality Factor		70%				

STC - Standard Test Conditions: Irradiation 1000 W/m<sup>2</sup> - Air mass AM 1.5 - Cell temperature 25 °C

## Electrical Data (NMOT)

Maximum Power	P <sub>mpp</sub> (W)	400	395	390	385	380
Maximum Power Voltage	V <sub>mpp</sub> (V)	39.19	38.58	38.58	37.97	37.96
Maximum Power Current	I <sub>mpp</sub> (A)	10.21	10.24	10.11	10.14	10.01
Open Circuit Voltage	V <sub>oc</sub> (V)	47.13	46.89	46.66	46.20	45.73
Short Circuit Current	I <sub>sc</sub> (A)	10.87	10.82	10.77	10.72	10.70

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

## Mechanical Data

Solar Cells	144 Half Cut, M10, 182mm, PERC Cells
Module Construction	Framed Glass-Backsheet
Dimensions (L x W x D)	2279 x 1134 x 35 mm (89.72 x 44.65 x 1.38 inch)
Weight	29.2 kg (64.3 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	IP-68 rated with 3 bypass diodes
Output Cables	0.3-meter Symmetrical Cables
Connectors	Multi-Contact/ Stäubli MC4

## Certifications

UL Certification

UL61215, UL61730

## Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	+45°C (±2°C)
Temperature Coefficient of P <sub>max</sub>	-0.36%/°C
Temperature Coefficient of V <sub>oc</sub>	-0.28%/°C
Temperature Coefficient of I <sub>sc</sub>	0.034%/°C

## Maximum Ratings

Operational Temperature	-40°C to +85°C
Max System Voltage	1500V
Mech. Load Test (Front)	113 psf / 5400 Pa
Mech. Load Test (Back)	50 psf / 2400 Pa
Fire Type	Type 1

## Warranty

15 Year Workmanship Warranty
25 Year Linear Power Guarantee

## Packaging Configuration

Modules per box:	31 pieces
Modules per 40' Container:	620 pieces
Modules per 53' Trailer:	806 pieces

