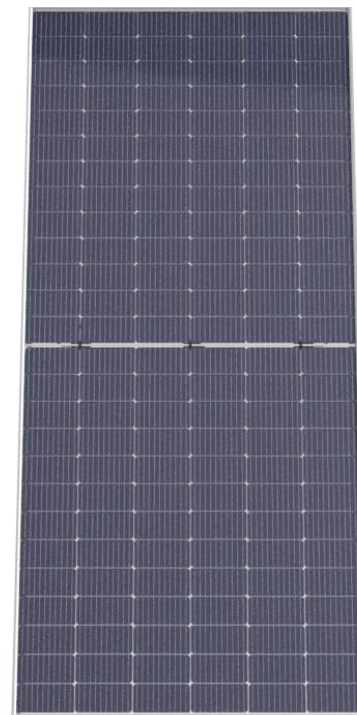




156HC M10 SL Bifacial Module

156 Half-Cut Monocrystalline 565W – 595W



21.3%

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



Hail Resistance

3.2mm fully tempered frontside glass for superior hail resistance.

Manufactured Using International Quality System Standards: ISO9001

Half-Cut Design with Split Junction Box Technology

Anti-Reflective

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

Bifacial Technology Enabling Additional Energy Harvest from Rear Side

High Reliability

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

2% First Year Degradation & 0.5% Annual Power Degradation

No Compromise Guarantee

**15 Year Product Warranty
25 Year Linear Performance Guarantee**

World-class Quality

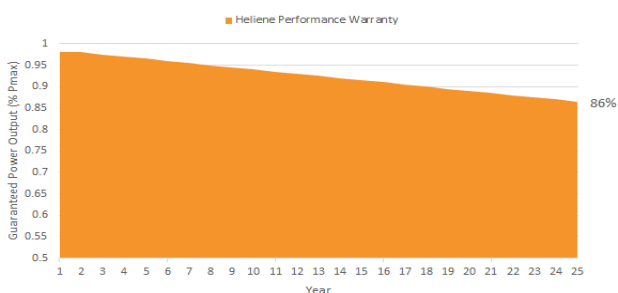
- Heliene's fully automated manufacturing facilities with state-of-the-art robotics and computer aided inspection systems ensure the highest level of product quality and consistency
- All manufacturing locations are compliant with international quality standards and are ISO 9001 certified
- Heliene modules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

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

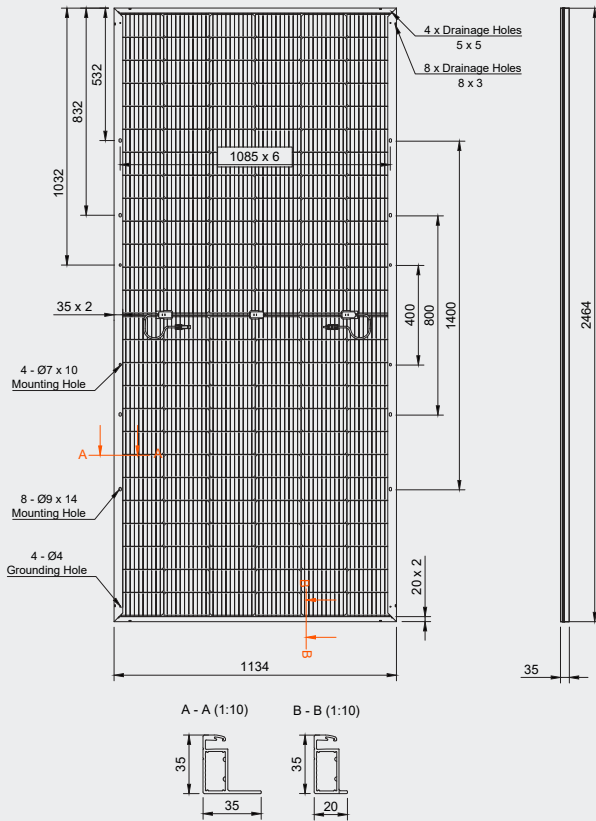
Bankable Reputation

- Established in 2010, Heliene is recognized as highly bankable 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





Dimensions for 156HC M10 SL Bifacial Series Modules



Electrical Data (STC)

Peak Rated Power*	P_{mpp} (W)	595	590	585	580	575	570	565
Maximum Power Voltage	V_{mpp} (V)	46.26	46.06	45.85	45.64	45.44	45.23	45.02
Maximum Power Current	I_{mpp} (A)	12.89	12.83	12.77	12.70	12.64	12.58	12.52
Open Circuit Voltage*	V_{oc} (V)	54.59	54.50	54.41	54.13	53.86	53.59	53.32
Short Circuit Current**	I_{sc} (A)	13.54	13.52	13.50	13.48	13.46	13.44	13.42
Module Efficiency	Eff (%)	21.3	21.1	20.9	20.8	20.6	20.4	20.2
Maximum Series Fuse Rating	MF (A)	30	30	30	30	30	30	30
Power Sorting Range		[- 0/+3%]						

Bifaciality Factor***

70 ± 5%

STC - Standard Test Conditions: Irradiation 1000 W/m² - Air mass AM 1.5 - Cell temperature 25 °C,

* P_{mpp} Production Tolerance ± 3%, * V_{oc} Production Tolerance ± 3%, ** I_{sc} Production Tolerance ± 4%

***Bifaciality Factor = $P_{mpp, rear} / P_{mpp, front}$ where $P_{mpp, rear}$ and $P_{mpp, front}$ are tested at STC

Electrical Data (NMOT)

Maximum Power	P_{mpp} (W)	444	440	436	432	429	425	421
Maximum Power Voltage	V_{mpp} (V)	43.95	43.76	43.56	43.36	43.17	42.97	42.77
Maximum Power Current	I_{mpp} (A)	10.09	10.05	10.01	9.97	9.93	9.89	9.85
Open Circuit Voltage	V_{oc} (V)	51.86	51.78	51.68	51.43	51.17	50.91	50.66
Short Circuit Current	I_{sc} (A)	10.94	10.92	10.91	10.89	10.88	10.86	10.84

NMOT - Nominal Module Operating Temperature:

Irradiance at 800W/m², Ambient Temperature 20°C, Wind speed 1m/s

Mechanical Data

Solar Cells	156 Half Cut, M10x, PERC Cells
Module Construction	Framed Glass--Backsheet
Dimensions (L x W x D)	2464 x 1134 x 35 mm (97.01 x 44.65 x 1.38 inch)
Weight	31 kg (68.34 lbs)
Frame	Double Webbed 15-Micron Anodized Aluminum Alloy
Glass	3.2mm Fully Tempered, High-Transmission, PV Solar Glass with Anti Reflective Coating
Junction Box	IP-68 rated with 3 bypass diodes
Output Cables	4mm ² (12AWG), 0.3-meter Symmetrical Cables Optional: 1.2-meter Symmetrical Cables upon request
Connectors	Multi-Contact/ Stäubli MC4

Certifications

UL Certification UL61215, UL61730, CSA C22.2 No. 61730

Temperature Ratings

Nominal Module Operating Temperature (NMOT)	+45°C (±2°C)
Temperature Coefficient of P_{max}	-0.34%/°C
Temperature Coefficient of V_{oc}	-0.25%/°C
Temperature Coefficient of I_{sc}	0.05%/°C

Maximum Ratings

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

Warranty

15 Year Product Warranty
25 Year Linear Power Guarantee

Packaging Configuration

Modules per Pallet 40' Container:	31 pieces
Modules per 40' Container:	496 pieces
Modules per Pallet 53' Trailer:	28 pieces
Modules per 53' trailer:	588 pieces

I-V Curves for 156HC M10 SL Bifacial Series Modules

