

# **156HC M10 SL Bifacial Module**

156 Half-Cut Monocrystalline 565W - 585W



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

# **Hail Resistance**

Framed Glass-backsheet construction is ideal for Hail resistance upto 55mm.

# **Anti-Reflective**

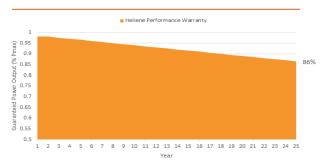
Premium solar glass with anti reflective coating delivers more energy throughout the day

# **High Reliability**

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

## **No Compromise Guarantee**

15 Year Product 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

#### 2% First Year Degradation & 0.5% Annual Power Degradation

#### **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 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

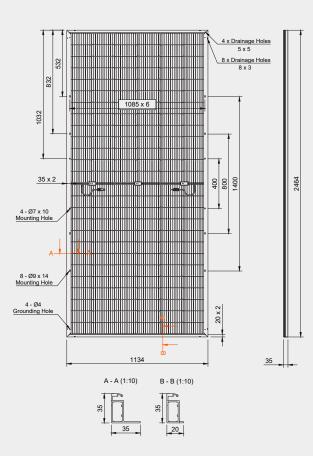
#### Local Sales, Service, and Support

- 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

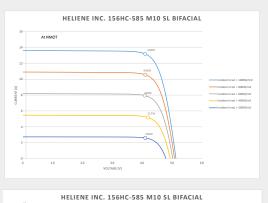


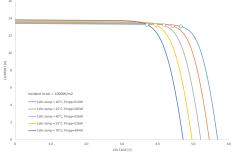
#### **156HC M10 SL Bifacial Module**

#### Dimensions for 156HC M10 SL Bifacial Series Modules



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





## Electrical Data (STC)

| Peak Rated Power*          | P <sub>mpp</sub> (W) | 585   | 580     | 575   | 570   | 565   |
|----------------------------|----------------------|-------|---------|-------|-------|-------|
| Maximum Power Voltage      | $V_{mpp}(V)$         | 45.85 | 45.64   | 45.44 | 45.23 | 45.02 |
| Maximum Power Current      | I <sub>mpp</sub> (A) | 12.77 | 12.70   | 12.64 | 12.58 | 12.52 |
| Open Circuit Voltage*      | $V_{_{ m oc}}(V)$    | 54.41 | 54.13   | 53.86 | 53.59 | 53.32 |
| Short Circuit Current**    | I <sub>sc</sub> (A)  | 13.50 | 13.48   | 13.46 | 13.44 | 13.42 |
| Module Efficiency          | Eff (%)              | 20.9  | 20.8    | 20.6  | 20.4  | 20.2  |
| Maximum Series Fuse Rating | MF (A)               | 30    | 30      | 30    | 30    | 30    |
| Power Sorting Range        |                      |       | [- 0/+3 | %]    |       |       |

#### Bifaciality Factor\*\*\*

70 ± 5%

STC - Standard Test Conditions: Irradiation 1000 W/m<sup>2</sup> - Air mass AM 1.5 - Cell temperature 25 °C, \*P<sub>mpp</sub> Production Tolerance ± 3%, \*V<sub>w</sub> Production Tolerance ± 3%, \*\*t<sub>w</sub> Production Tolerance ± 4% \*\*\*Bifaciality Factor= Pmpp<sub>mp</sub>/Pmpp<sub>mon</sub> where Pmpp<sub>mear</sub> and Pmpp<sub>front</sub> are tested at STC

### Electrical Data (NMOT)

| Maximum Power         | P <sub>mpp</sub> (W)                | 436   | 432   | 429   | 425   | 421   |
|-----------------------|-------------------------------------|-------|-------|-------|-------|-------|
| Maximum Power Voltage | V <sub>mpp</sub> (V)                | 43.56 | 43.36 | 43.17 | 42.97 | 42.77 |
| Maximum Power Current | I <sub>mpp</sub> (A)                | 10.01 | 9.97  | 9.93  | 9.89  | 9.85  |
| Open Circuit Voltage  | $V_{oc}(V)$                         | 51.68 | 51.43 | 51.17 | 50.91 | 50.66 |
| Short Circuit Current | I <sub>sc</sub> (A)<br>Temperature: | 10.91 | 10.89 | 10.88 | 10.86 | 10.84 |

Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind speed 1m/s

#### **Mechanical Data**

| Solar Cells            | 156 Half Cut, M10, 182mm, 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 Low-Iron Content, High-Transmission, PV Solar Glass with Anti<br>Reflective Coating                     |
| Junction Box           | IP-68 rated with 3 bypass diodes  |
| Output Cables          | 4mm <sup>2</sup> (12AWG), 0.3-meter Symmetrical Cables<br>Optional: 1.2-meter Symmetrical Cables upon request |
| Connectors             | Multi-Contact/ Stäubli MC4  |

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### Certifications

## UL Certification UL61215, UL61730 Temperature Ratings

| Nominal Module Operating<br>Temperature (NMOT) | +45°C (±2°C) |
|--|--------------|
| Temperature Coefficient of $P_{_{\text{max}}}$ | -0.34%/°C    |
| Temperature Coefficient of $\rm V_{\rm oc}$    | -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 / 5400 Pa |
| 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:        | 620 pieces |
| Modules per Pallet 53' Trailer:   | 28 pieces  |
| Modules per 53' trailer:          | 588 pieces |

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.

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