HYUNDAI BIFACIAL MODULE

Bifacial Mono PERL Module
HIS-S380GI  HIS-S385GI  HIS-S390GI  HIS-S395GI

144
Bifacial Cells
For commercial & Utility Applications
UL 1,500V Saves BOS Costs
More Power Generation In Low Light
Hyundai Cell Made in Korea

PERL Technology
PERL technology provides ultra-high efficiency with better performance in low irradiation. Maximizes installation capacity in limited space.

Anti-LID / PID
Both LID(Light Induced Degradation) and PID(Potential Induced Degradation) are strictly eliminated to ensure higher actual yield during lifetime.

Mechanical Strength
Double Tempered glass and reinforced frame design withstand rigorous weather conditions such as heavy snow and strong wind.

Reliable Warranty
Global brand with powerful financial strength provide reliable 30-year warranty.

Corrosion Resistant
Various tests under harsh environmental conditions such as ammonia and salt-mist passed.

UL / VDE Test Labs
Hyundai’s R&D center is an accredited test laboratory of both UL and VDE.

Hyundai’s Warranty Provisions
- 12-Years Product Warranty
  - On materials and workmanship
- 30-Year Performance Warranty
  - Initial year: 97.6%
  - Linear warranty after second year: with 0.6%/p annual degradation, 80% is guaranteed up to 30 years

About Hyundai Energy Solutions
Established in 1972, Hyundai Heavy Industries Group is one of the most trusted names in the heavy industries sector and is a Fortune 500 company. As a global leader and innovator, Hyundai Heavy Industries is committed to building a future growth engine by developing and investing heavily in the field of renewable energy.

As a core energy business entity of HHI, Hyundai Energy Solutions has strong pride in providing high-quality PV products to more than 3,000 customers worldwide.

Certification
- UL 1703 and UL61730 certified by UL, Type 19 for Fire Class A1
**Electrical Characteristics**

<table>
<thead>
<tr>
<th></th>
<th>Mono-Crystalline Type (HiS-S____GI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal Output</strong></td>
<td>W</td>
</tr>
<tr>
<td>(Pmpp)</td>
<td>380 385 390 395</td>
</tr>
<tr>
<td><strong>Open Circuit Voltage</strong></td>
<td>V</td>
</tr>
<tr>
<td>(Voc)</td>
<td>47.9 48.2 48.5 48.8</td>
</tr>
<tr>
<td><strong>Short Circuit Current</strong></td>
<td>A</td>
</tr>
<tr>
<td>(Isc)</td>
<td>10.09 10.13 10.18 10.23</td>
</tr>
<tr>
<td><strong>Voltage at Pmax</strong></td>
<td>V</td>
</tr>
<tr>
<td>(Vmppp)</td>
<td>39.6 39.9 40.2 40.5</td>
</tr>
<tr>
<td><strong>Current at Pmax</strong></td>
<td>A</td>
</tr>
<tr>
<td>(Imppp)</td>
<td>9.61 9.67 9.72 9.77</td>
</tr>
<tr>
<td><strong>Output Tolerance</strong></td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>0~ +3 %</td>
</tr>
</tbody>
</table>

**Additional Bifacial Output**

<table>
<thead>
<tr>
<th>Power Gain</th>
<th>380</th>
<th>385</th>
<th>390</th>
<th>395</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>W</td>
<td>399</td>
<td>404</td>
<td>410</td>
</tr>
<tr>
<td>10%</td>
<td>W</td>
<td>418</td>
<td>424</td>
<td>429</td>
</tr>
<tr>
<td>15%</td>
<td>W</td>
<td>437</td>
<td>443</td>
<td>449</td>
</tr>
<tr>
<td>20%</td>
<td>W</td>
<td>456</td>
<td>462</td>
<td>468</td>
</tr>
</tbody>
</table>

**Mechanical Characteristics**

- **Size**: 1001 mm (W) x 2039 mm (L) x 40 mm (H) (39.4” x 80.3” x 1.6”)
- **Weight**: Approx. 25.7 kg (56.7 lbs)
- **Solar Cells**: 144 half cells (2 parallel x 72 half cells in series)
- **Output Cables**: 4 mm² (12AWG) cables with polarized weatherproof MC4 compatible connectors, IEC certified (UL listed), Length 1400 mm (55.1”)
- **Junction Box**: 3 boxes-split, IP68, weatherproof, IEC certified (UL listed)
- **Bypass Diodes**: 3 bypass diodes to prevent power decrease by partial shade
- **Construction**:
  - Superstrate: Anti-reflection coated tempered glass, 2.0 mm (0.079”)
  - Encapsulant: EVA film
  - Substrate: Low-iron tempered glass 2.0 mm (0.079”)(white patterned glass)
- **Frame**: Clear anodized aluminum alloy type 6063-T5
- **Packing**: 594pcs/Container (27pcs x 22PLTs)

**Installation Safety Guide**

- Only qualified personnel should install or perform maintenance.
- Be aware of dangerous high DC voltage.
- Do not damage or scratch the rear surface of the module.
- Do not handle or install modules when they are wet.

**Module Diagram**

**I-V Curves**

- Nominal Operating Cell Temperature: 45°C ± 2
- Operating Temperature: -40 ~ +85°C
- Maximum System Voltage: DC 1,500V
- Maximum Reverse Current: 20A
- Maximum Test Load:
  - Front: 113 psf (5,400 Pa)
  - Rear: 75 psf (3,600 Pa)