HSL 72 | Poly

Hanwha Solar

Key Feature Set

1. Robust Design: Module withstands up to 7.000 Pa (>690 kg/m^2) Snow / 4.000 Pa (>210 km/h) Wind loads *
2. Anti-PID: Modules are qualified to withstand PID related degradation **
3. Guaranteed Quality: 12 Year Workmanship and 25 Years linear Performance Warranty ***
4. Predictable Output: Positive Power Sorting of 0 to +5 Watt
5. Higher Yield: Module Current Sorting provides up to 2.5% more Energy
6. Innovative Solution: Anti-Reflection Glass with Self-Clean hydrophobic Layer
7. Harsh Environment: Verified against Salt Mist and Ammonia Corrosion (IEC 61701 and IEC 62716)
8. Weak Light: Excellent Performance even under low Irradiation

* Please refer to Hanwha Solar Module Installation Guide
** Test conditions: Module negatively charged with 1000 Volts at 25°C for 168 hours with Al-Foil coverage
*** Please refer to Hanwha Solar Product Warranty for details

Quality and Environmental Certificates

- ISO 9001 quality standards and ISO 14001 environmental standards
- OHSAS 18001 occupational health and safety standards
- IEC 61215 & IEC 61730 Application Class A certifications
- Conformity to CE (low Voltage Directive and EMI), fire tested class E (EN 13501-1)

About Hanwha Solar

Hanwha Solar is a vertically integrated manufacturer of photovoltaic modules designed to meet the needs of the global energy consumer.

- High reliability, guaranteed quality, and excellent cost-efficiency due to vertically integrated production and control of the supply chain
- Optimization of product performance and manufacturing processes through a strong commitment to research and development
- Global presence throughout Europe, North America and Asia, offering regional technical and sales support

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Electrical Characteristics

Electrical Characteristics at Standard Test Conditions (STC)

Power Class	285 W	290 W	295 W	300 W	305 W
Maximum Power (P_{max})	285 W	290 W	295 W	300 W	305 W
Open Circuit Voltage (V_{oc})	44.3 V	44.5 V	44.8 V	44.9 V	45.1 V
Short Circuit Current (I_{sc})	8.65 A	8.69 A	8.75 A	8.78 A	8.85 A
Voltage at Maximum Power (V_{mpp})	35.1 V	35.4 V	35.8 V	36.1 V	36.3 V
Current at Maximum Power (I_{mpp})	8.13 A	8.20 A	8.26 A	8.32 A	8.42 A
Module Efficiency (%)	14.8 %	15.0 %	15.3 %	15.5 %	15.8 %

P_{max}, V_{oc}, I_{sc}, V_{mpp} and I_{mpp} tested at Standard Testing Conditions (STC) defined as irradiance of 1000W/m² at AM 1.5 solar spectrum and a temperature of 25±2°C. Module power class have positive power sorting: 0 to +5W. Measurement tolerance: ±3% (P_{max})

Electrical Characteristics at Normal Operating Cell Temperature (NOCT)

Power Class	285 W	290 W	295 W	300 W	305 W
Maximum Power (P_{max})	208 W	212 W	216 W	220 W	223 W
Open Circuit Voltage (V_{oc})	41.3 V	41.5 V	41.7 V	41.8 V	42.0 V
Short Circuit Current (I_{sc})	7.00 A	7.03 A	7.08 A	7.10 A	7.18 A
Voltage at Maximum Power (V_{mpp})	31.8 V	32.1 V	32.5 V	32.7 V	32.9 V
Current at Maximum Power (I_{mpp})	6.55 A	6.61 A	6.65 A	6.73 A	6.78 A

P_{max}, V_{oc}, I_{sc}, V_{mpp} and I_{mpp} tested at Normal Operating Cell Temperature (NOCT, 45±3°C) defined as irradiance of 800W/m²; Ambient temperature 20°C; Wind speed 1m/s. Measurement tolerance: ±3% (P_{max})

Temperature Characteristics

Normal Operating Cell Temperature (NOCT)	45±3°C
Temperature Coefficients of P	- 0.43 % / °C
Temperature Coefficients of V	- 0.31 % / °C
Temperature Coefficients of I	+ 0.05 % / °C

Maximum Ratings

Maximum System Voltage	1000 V (IEC)
Series Fuse Rating	15 A
Maximum Reverse Current	Series fuse rating multiplied by 1.35

Mechanical Characteristics

Dimensions	1956 mm × 988 mm × 45 mm
Weight	27±0.5kg
Frame	Aluminum-alloy, anodized
Front	4mm tempered anti-reflection glass
Encapsulant	EVA
Back Cover	Composite sheet
Cell Technology	Polycrystalline
Cell Size	156 mm × 156 mm (6in ×6in)
Number of Cells (Pieces)	72 (6 × 12)
Junction Box	Protection class IP 67; 3 sets of diodes
Output Cables	Solar cable: 4 mm²; length: 1200 mm
Connector	Amphenol H4

System Design

Operating Temperature	– 40 °C to 85 °C
Hail Safety Impact Velocity	25 mm at 23 m/s
Fire Safety Classification (IEC 61730)	Class C
Static Load Wind / Snow	4000 Pa / 7000 Pa

Packaging and Storage

Storage Temperature	– 40 °C to 85 °C
Packaging Configuration	22 pieces per pallet
Loading Capacity (40 ft. HQ Container)	484 pieces

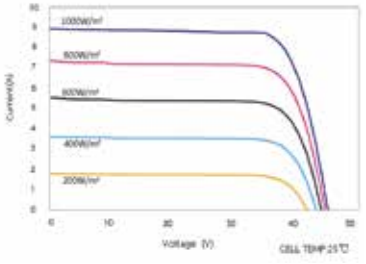
Nomenclature

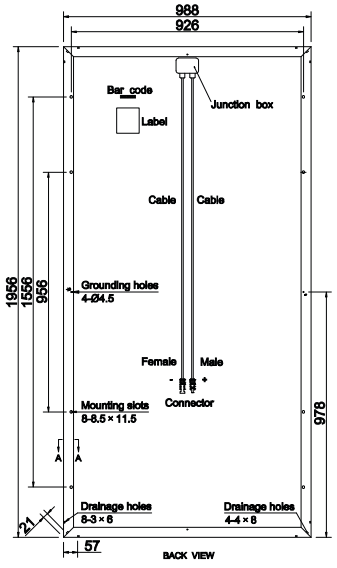
Full product name:
HSL72P6-PB-1-xxx
xxx represents the power class

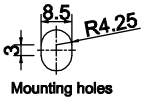
Performance at Low Irradiance:

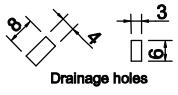
The typical efficiency at 200 W/m² in relation to 1000 W/m², (25°C, AM 1.5) is at least 96 % of STC efficiency.

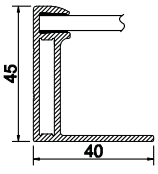
Various Irradiance Levels











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