HSL 60 | Poly

Hanwha Solar



Five Key Features

1. Guaranteed quality: 12 year product warranty, 25 year linear performance warranty *
2. Predictable output: Positive power sorting of 0 to + 5 W
3. Innovative solutions: Anti-reflecting coating for high sunlight absorption
4. Robust design: Module certified to withstand high snow loads, up to 5400 Pa
5. Tariff free: High performance Taiwan cells

* Please refer to Hanwha Solar Product Warranty for details.
** Please refer to Hanwha Solar module Installation Guide.

Quality and Environmental Certificates

- ISO 9001 quality standards and ISO 14001 environmental standards
- OHSAS 18001 occupational health and safety standards
- UL 1703 600 & 1000V certification pending
- CEC and FSEC listing pending

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CEC Listed

FSEC Listed

Certifications and Listings are in process and planned for completion in Q3, 2012.

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	230 W	235 W	240 W	245 W	250 W	255 W
Maximum Power (P_{max})	230 W	235 W	240 W	245 W	250 W	255 W
Open Circuit Voltage (V_{oc})	36.7 V	36.8 V	37.1 V	37.2 V	37.4 V	37.5 V
Short Circuit Current (I_{sc})	8.56 A	8.65 A	8.75 A	8.8 A	8.89 A	8.95 A
Voltage at Maximum Power (V_{mpp})	29 V	29.1 V	29.5 V	29.7 V	30 V	30.1 V
Current at Maximum Power (I_{mpp})	7.91 A	8.05 A	8.13 A	8.25 A	8.33 A	8.47 A
Module Efficiency (%)	13.9 %	14.2 %	14.5 %	14.8 %	15.1 %	15.4 %

P_{max}, V_{oc}, I_{sc}, V_{mpp}, and I_{mpp} tested at STC defined as irradiance of 1000 W/m² at AM 1.5 solar spectrum and temperature 25 ± 2 °C.
Electrical Characteristics: measurement tolerance of ± 3 %.

Maximum Ratings

Maximum System Voltage	600&1000V (Completion of UL Certification pending)
Series Fuse Rating	15 A
Maximum Reverse Current	Series fuse rating multiplied by 1.35

Mechanical Characteristics

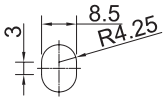
Dimensions	1652 mm × 1000 mm × 45 mm
Weight	21 kg
Frame	Aluminum alloy, available in silver or black finish
Front	Tempered glass
Encapsulant	EVA
Back Cover	White back sheet
Cell Technology	Polycrystalline (Taiwan)
Cell Size	156 mm × 156 mm
Number of Cells (Pieces)	60 (6 × 10)
Junction Box	Protection class IP67 with bypass-diode
Output Cables	Solar cable: 4 mm²; length 900 mm
Connector	Amphenol H4

System Design

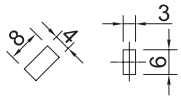
Operating Temperature	– 40 °C to 85 °C
Hail Safety Impact Velocity	25 mm at 23 m/s
Fire Safety Classification (IEC 61730)	Class C
Static Load Wind / Snow	2400 Pa / 5400 Pa

Packaging and Storage

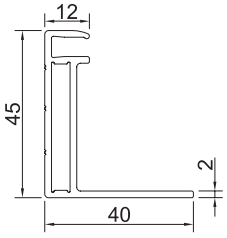
Storage Temperature	– 40 °C to 85 °C
Packaging Configuration	22 pieces per pallet
Loading Capacity (40 ft. HQ Container)	572 pieces



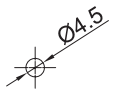
Mounting slots



Drainage holes



Frame section



Grouding holes

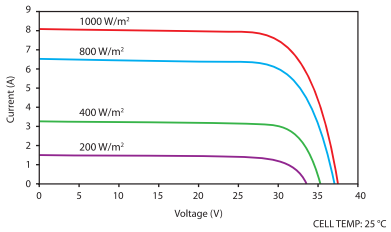
Nomenclature

Full product name:
HSL60P6-PA-0-*xxx*T, Color
xxx represents the power class
For Color, indicate 'Silver Frame' or 'Black Frame'

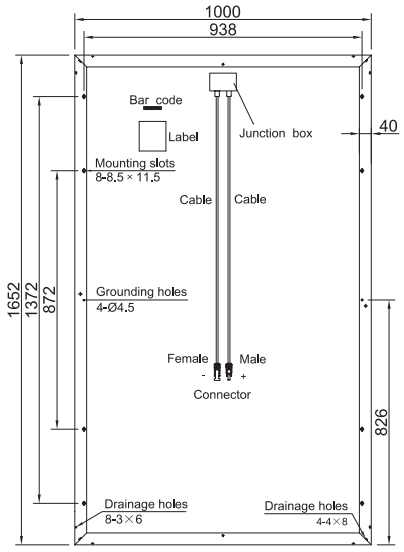
Performance at Low Irradiance:

The typical relative change in module efficiency at an irradiance of 200 W/m² in relation to 1000 W/m² (both at 25 °C and AM 1.5 spectrum) is less than 5 %.

Various Irradiance Levels



Basic Design



BACK VIEW

Hanwha Solar

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