Building a better future
Global Leader

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Hyundai Solar Module

| MG-Series |

- **Multi-crystalline Type**
  HiS-M228MG | HiS-M230MG | HiS-M233MG
  HiS-M235MG | HiS-M238MG | HiS-M240MG
- **Mono-crystalline Type**
  HiS-S238MG | HiS-S240MG | HiS-S243MG
  HiS-S245MG | HiS-S248MG | HiS-S250MG

Mechanical Characteristics

Dimensions	983 mm (38.7″) (W) × 1645 mm (64.76″) (L) × 35 mm (1.38″) (H)
Weight	Approx. 19.0 kg (41.9 lbs)
Solar cells	60 cells in series (6×10 matrix)
Output cables	4 mm² (12AWG) cables with polarized weatherproof connectors, IEC certified (UL listed), Length 1.0 m (39.4″)
Junction box	IP65, weatherproof, IEC certified (UL listed)
Bypass diodes	3 bypass diodes to prevent power decrease by partial shade
Construction	Front : High transmission low-iron tempered glass, 3.2 mm (0.126″) Encapsulant : EVA Back Sheet : Weatherproof film
Frame	Clear anodized aluminum alloy type 6063

High Quality

- IEC 61215 (Ed.2) and IEC 61730 by TÜV Rheinland
- UL listed (UL 1703), Class C Fire Rating
- Output power tolerance +3/-0%
- ISO 9001:2000 and ISO 14001:2004 Certified
- Advanced Mechanical Test (5,400 Pa) Passed (IEC) /Mechanical Load Test (40 lbs/ft²) Passed (UL)
- Ammonia Corrosion Resistance Test Passed
- IEC 61701 (Salt Mist Corrosion Test) Passed

Fast and Inexpensive Mounting

- Delivered ready for connection
- Pre-confectioned cables
- IEC (UL) certified and weatherproof connectors
- Integrated bypass diodes

Limited Warranty

- 10 years for product defect
- 10 years for 90% of warranted min. power
- 25 years for 80% of warranted min. power

※ **Important Notice on Warranty**
The warranties apply only to the PV modules with Hyundai Heavy Industries Co., Ltd.'s logo (shown below) and product serial number on it.

• Qualified, IEC 61215
• Safety tested, IEC 61730
• Periodic inspection

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Electrical Characteristics

| Multi-crystalline Type |

		HiS-M□□□MG					
		228	230	233	235	238	240
Nominal output (Pmpp)	W	228	230	233	235	238	240
Voltage at Pmax (Vmpp)	V	30.0	30.1	30.3	30.3	30.4	30.5
Current at Pmax (Impp)	A	7.6	7.7	7.7	7.8	7.8	7.9
Open circuit voltage (Voc)	V	37.1	37.1	37.3	37.4	37.4	37.7
Short circuit current (Isc)	A	8.2	8.2	8.2	8.3	8.3	8.3
Output tolerance	%	+3/-0					
No. of cells & connections	pcs	60 in series					
Cell type	–	6" Multi-crystalline silicon					
Module efficiency	%	14.1	14.2	14.4	14.5	14.7	14.8
Temperature coefficient of Pmpp	%/K	-0.43	-0.43	-0.43	-0.43	-0.43	-0.43
Temperature coefficient of Voc	%/K	-0.32	-0.32	-0.32	-0.32	-0.32	-0.32
Temperature coefficient of Isc	%/K	0.056	0.056	0.056	0.056	0.056	0.056

※ All data at STC (Standard Test Conditions). Above data may be changed without prior notice.

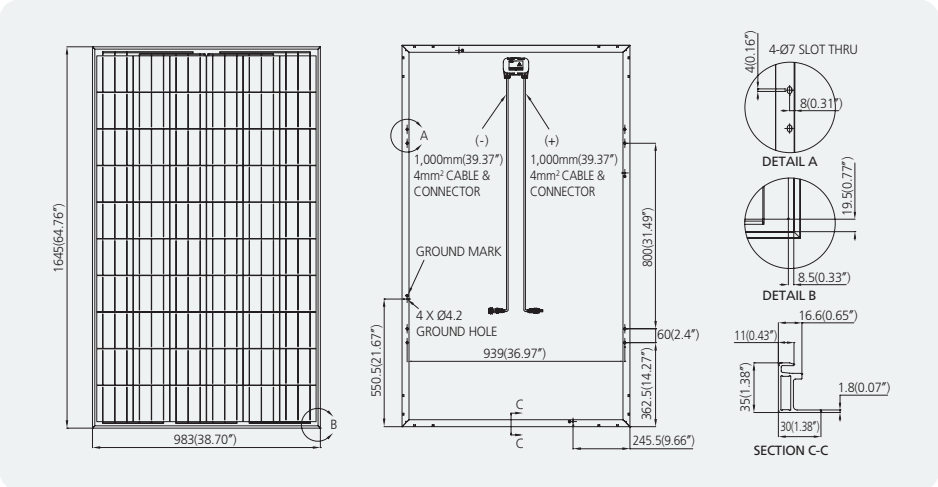
| Mono-crystalline Type |

		HiS-S□□□MG					
		238	240	243	245	248	250
Nominal output (Pmpp)	W	238	240	243	245	248	250
Voltage at Pmax (Vmpp)	V	29.8	30.1	30.1	30.3	30.3	30.5
Current at Pmax (Impp)	A	8.0	8.0	8.1	8.1	8.2	8.2
Open circuit voltage (Voc)	V	37.0	37.3	37.3	37.4	37.5	37.5
Short circuit current (Isc)	A	8.5	8.5	8.6	8.6	8.7	8.7
Output tolerance	%	+3/-0					
No. of cells & connections	pcs	60 in series					
Cell type	–	6" Mono-crystalline silicon					
Module efficiency	%	14.7	14.8	15.0	15.2	15.3	15.5
Temperature coefficient of Pmpp	%/K	–0.44	–0.44	–0.44	–0.44	–0.44	–0.44
Temperature coefficient of Voc	%/K	–0.34	–0.34	–0.34	–0.34	–0.34	–0.34
Temperature coefficient of Isc	%/K	0.052	0.052	0.052	0.052	0.052	0.052

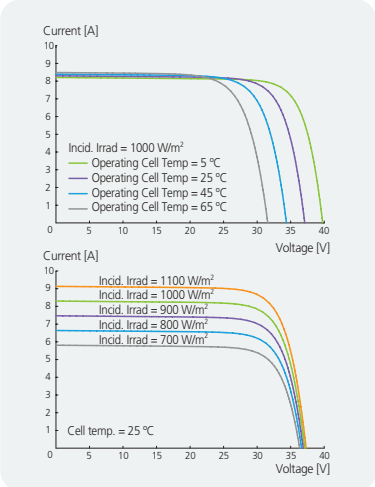
※ All data at STC (Standard Test Conditions). Above data may be changed without prior notice.

| Module Diagram |

(unit : mm, inch)



| I-V Curves |



| 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.

Nominal Operating Cell Temperature	46 ˚C ± 2
Operating Temperature	–40 - 85 ˚C
Maximum System Voltage	DC 1,000 V (IEC) DC 600 V (UL)
Maximum Reverse Current	15 A

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Latest Update: July 2011