

# Hyundai Solar Module

## MG-Series

### Poly-crystalline Type

HiS-M230MG | HiS-M233MG | HiS-M235MG | HiS-M238MG | HiS-M240MG | HiS-M245MG | HiS-M250MG

### Mono-crystalline Type

HiS-S245MG | HiS-S248MG | HiS-S250MG | HiS-S255MG | HiS-S260MG | HiS-S265MG

## Mechanical Characteristics

Dimensions	983 mm (38.7")(W) × 1,645 mm (64.76")(L) × 35 mm (1.38")(H)
Weight	Approx. 18.5 kg (40.8 lbs)
Solar cells	60 cells in series (6 × 10 matrix)
Output cables	4 mm <sup>2</sup> (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 (silver or black color)

## 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/ft<sup>2</sup>) 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.



# Electrical Characteristics

## | Poly-crystalline Type |

		HIS-M□□□MG						
		230	233	235	238	240	245	250
Nominal output (Pmpp)	W	230	233	235	238	240	245	250
Voltage at Pmax (Vmpp)	V	30.1	30.3	30.3	30.4	30.5	30.7	30.9
Current at Pmax (Impp)	A	7.7	7.7	7.8	7.8	7.9	8.0	8.1
Open circuit voltage (Voc)	V	37.1	37.3	37.4	37.4	37.7	38.0	38.2
Short circuit current (Isc)	A	8.2	8.2	8.3	8.3	8.3	8.4	8.6
Output tolerance	%	+3/-0						
No. of cells & connections	pcs	60 in series						
Cell type	-	6" Poly-crystalline silicon						
Module efficiency	%	14.2	14.4	14.5	14.7	14.8	15.2	15.5
Temperature coefficient of Pmpp	%/K	-0.43	-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	-0.32
Temperature coefficient of Isc	%/K	0.048	0.048	0.048	0.048	0.048	0.048	0.048

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

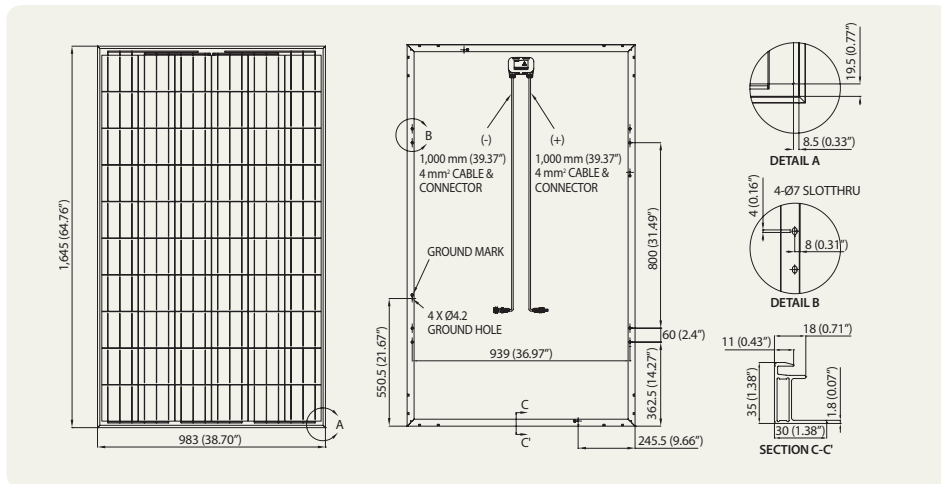
## | Mono-crystalline Type |

		HIS-S□□□MG					
		245	248	250	255	260	265
Nominal output (Pmpp)	W	245	248	250	255	260	265
Voltage at Pmax (Vmpp)	V	30.3	30.3	30.5	30.8	31.0	31.2
Current at Pmax (Impp)	A	8.1	8.2	8.2	8.3	8.4	8.5
Open circuit voltage (Voc)	V	37.4	37.5	37.5	37.7	37.8	37.9
Short circuit current (Isc)	A	8.6	8.7	8.7	8.8	8.9	9.0
Output tolerance	%	+3/-0					
No. of cells & connections	pcs	60 in series					
Cell type	-	6" Mono-crystalline silicon					
Module efficiency	%	15.2	15.3	15.5	15.8	16.1	16.4
Temperature coefficient of Pmpp	%/K	-0.45	-0.45	-0.45	-0.45	-0.45	-0.45
Temperature coefficient of Voc	%/K	-0.33	-0.33	-0.33	-0.33	-0.33	-0.33
Temperature coefficient of Isc	%/K	0.032	0.032	0.032	0.032	0.032	0.032

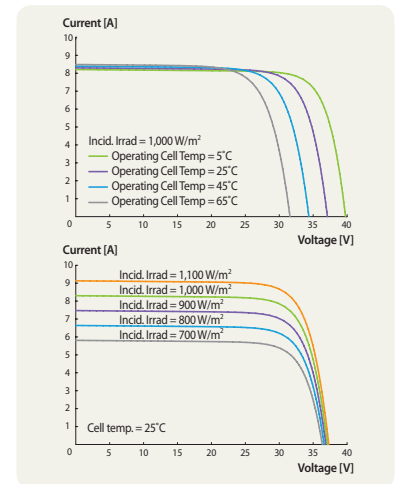
※All data at STC (Standard Test Conditions). Above data may be changed without prior notice.

## | 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

[Printed Date : April 2013]



**Sales & Marketing**  
 2nd Fl., Hyundai Bldg., 75, Yulgok-ro, Jongno-gu, Seoul 110-793, Korea  
 Tel : +82-2-746-8406, 7422 Fax : +82-2-746-7675

**HYUNDAI**  
 HEAVY INDUSTRIES CO.,LTD.