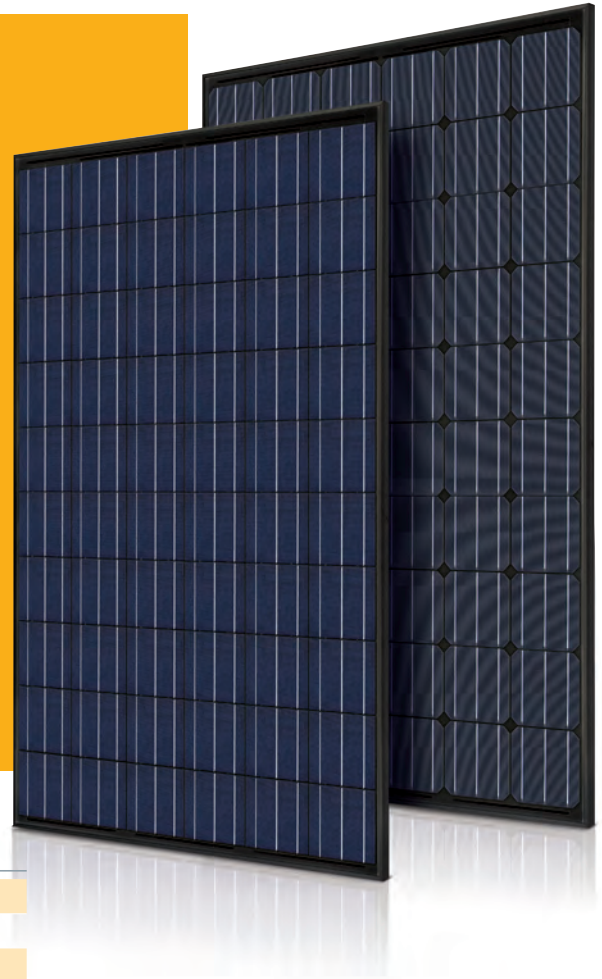


# Hyundai Solar Module

## Black-Black | MG-Series |



- **Multi-crystalline Type**  
 HiS-M225MG(BK) | HiS-M230MG(BK)  
 HiS-M235MG(BK) | HiS-M240MG(BK)
- **Mono-crystalline Type**  
 HiS-S240MG(BK) | HiS-S245MG(BK)

### 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 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 (Black)
Frame	Clear anodized aluminum alloy type 6063 (Black)

### 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)

### 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

## I Multi-crystalline Type I

		HiS-M□□MG			
		225	230	235	240
Nominal output (Pmpp)	W	225	230	235	240
Voltage at Pmax (Vmpp)	V	30.1	30.2	30.4	30.7
Current at Pmax (Impp)	A	7.5	7.7	7.8	7.9
Open circuit voltage (Voc)	V	36.8	37.1	37.3	37.5
Short circuit current (Isc)	A	8.0	8.1	8.2	8.3
Output tolerance	%	+3/-0			
No. of cells & connections	pcs	60 in series			
Cell type	-	6" Multi-crystalline silicon			
Module efficiency	%	13.9	14.2	14.5	14.8
Temperature coefficient of Pmpp	%/K	-0.43	-0.43	-0.43	-0.43
Temperature coefficient of Voc	%/K	-0.32	-0.32	-0.32	-0.32
Temperature coefficient of Isc	%/K	0.056	0.056	0.056	0.056

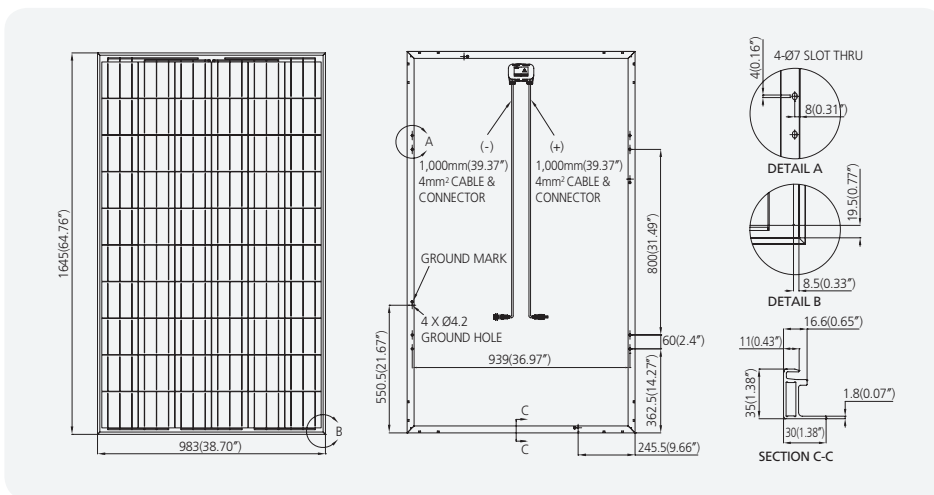
※ All data at STC (Standard Test Conditions). Above data may be changed without prior notice.

## I Mono-crystalline Type I

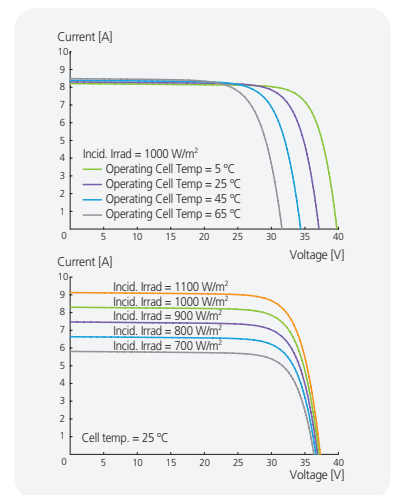
		HiS-S□□MG	
		240	245
Nominal output (Pmpp)	W	240	245
Voltage at Pmax (Vmpp)	V	30.9	31.1
Current at Pmax (Impp)	A	7.8	7.9
Open circuit voltage (Voc)	V	37.4	37.5
Short circuit current (Isc)	A	8.3	8.5
Output tolerance	%	+3/-0	
No. of cells & connections	pcs	60 in series	
Cell type	-	6" Mono-crystalline silicon	
Module efficiency	%	14.8	15.2
Temperature coefficient of Pmpp	%/K	-0.44	-0.44
Temperature coefficient of Voc	%/K	-0.34	-0.34
Temperature coefficient of Isc	%/K	0.052	0.052

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

## I Module Diagram I



## I I-V Curves I



## I Installation Safety Guide I

- 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

