



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



Hyundai Solar Module

| SG-Series |

Multi-crystalline Type

HiS-M218SG | HiS-M221SG | HiS-M224SG
HiS-M227SG | HiS-M230SG | HiS-M233SG

Mono-crystalline Type

HiS-S221SG | HiS-S224SG | HiS-S227SG
HiS-S230SG | HiS-S233SG | HiS-S236SG

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 ² (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 (UL1703), 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

Limited Warranty

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

Fast and Inexpensive Mounting

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



※ Important Notice on Warranty

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

Electrical Characteristics

Multi-crystalline Type

		HiS-M SG					
		218	221	224	227	230	233
Nominal output (P _{mp})	W	218	221	224	227	230	233
Voltage at P _{max} (V _{mp})	V	28.9	29.0	29.2	29.3	29.4	29.6
Current at P _{max} (I _{mp})	A	7.6	7.7	7.7	7.8	7.9	7.9
Open circuit voltage (V _{oc})	V	36.4	36.6	36.7	36.8	36.9	37.1
Short circuit current (I _{sc})	A	8.3	8.3	8.3	8.3	8.4	8.4
Output tolerance	%	+3/-0					
No. of cells & connections	pcs	60 in series					
Cell type	—	6" Multi-crystalline silicon					
Module efficiency	%	13.5	13.7	13.9	14.0	14.2	14.4
Temperature coefficient of P _{mp}	%/K	-0.43	-0.43	-0.43	-0.43	-0.43	-0.43
Temperature coefficient of V _{oc}	%/K	-0.32	-0.32	-0.32	-0.32	-0.32	-0.32
Temperature coefficient of I _{sc}	%/K	0.056	0.056	0.056	0.056	0.056	0.056

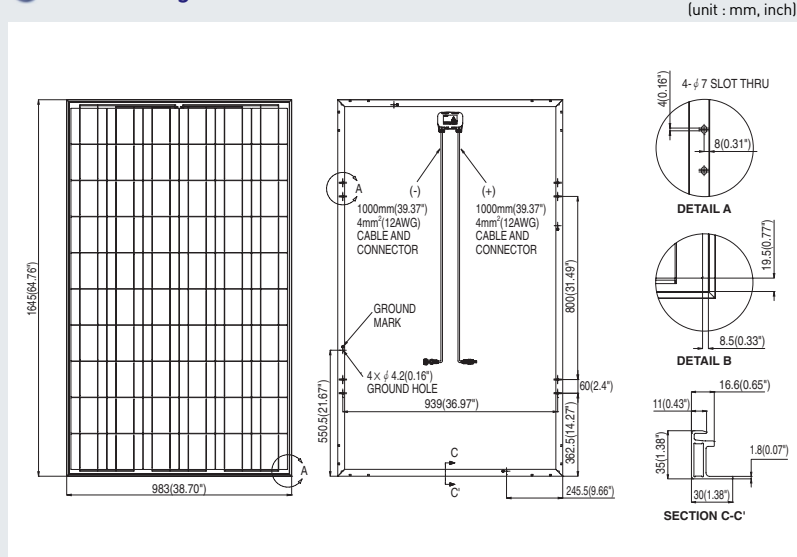
※ All data at STC (Standard Test Conditions). Above data may be changed without prior notice.

Mono-crystalline Type

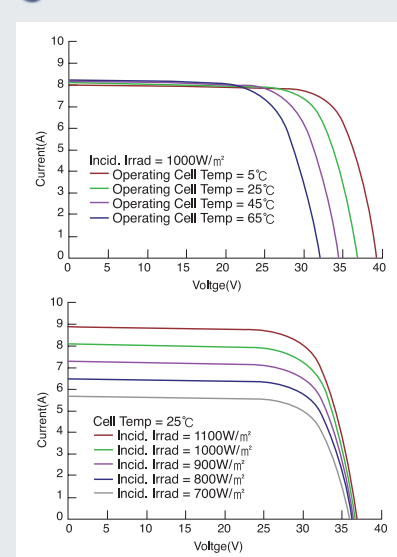
		HiS-S SG					
		221	224	227	230	233	236
Nominal output (P _{mp})	W	221	224	227	230	233	236
Voltage at P _{max} (V _{mp})	V	29.1	29.2	29.3	29.4	29.6	29.7
Current at P _{max} (I _{mp})	A	7.6	7.7	7.7	7.9	7.9	8.0
Open circuit voltage (V _{oc})	V	36.6	36.7	36.8	37.0	37.1	37.2
Short circuit current (I _{sc})	A	8.3	8.3	8.3	8.4	8.4	8.4
Output tolerance	%	+3/-0					
No. of cells & connections	pcs	60 in series					
Cell type	—	6" Mono-crystalline silicon					
Module efficiency	%	13.8	14.0	14.2	14.4	14.6	14.8
Temperature coefficient of P _{mp}	%/K	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44
Temperature coefficient of V _{oc}	%/K	-0.34	-0.34	-0.34	-0.34	-0.34	-0.34
Temperature coefficient of I _{sc}	%/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



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