www.hhi-green.com/solar/en

Hyundai Solar Module

Hyundai Heavy Industries was founded in 1972 and is a Fortune 500 company. The company employs more than 48,000 people, and has a global leading 7 business divisions with sales of 40.9 Billion USD in 2015. As one of our core businesses of the company, Hyundai Heavy Industries is committed to develop and invest heavily in the field of renewable energy.
Hyundai Solar is the largest and the longest standing PV cell and module manufacturer in South Korea. We have 800 MW of module production capacity and provide high-quality solar PV products to more than 3,000 customers worldwide. We strive to achieve one of the most efficient PV modules by establishing an R&D laboratory and investing more than 20 Million USD on innovative technologies.

RI-Series

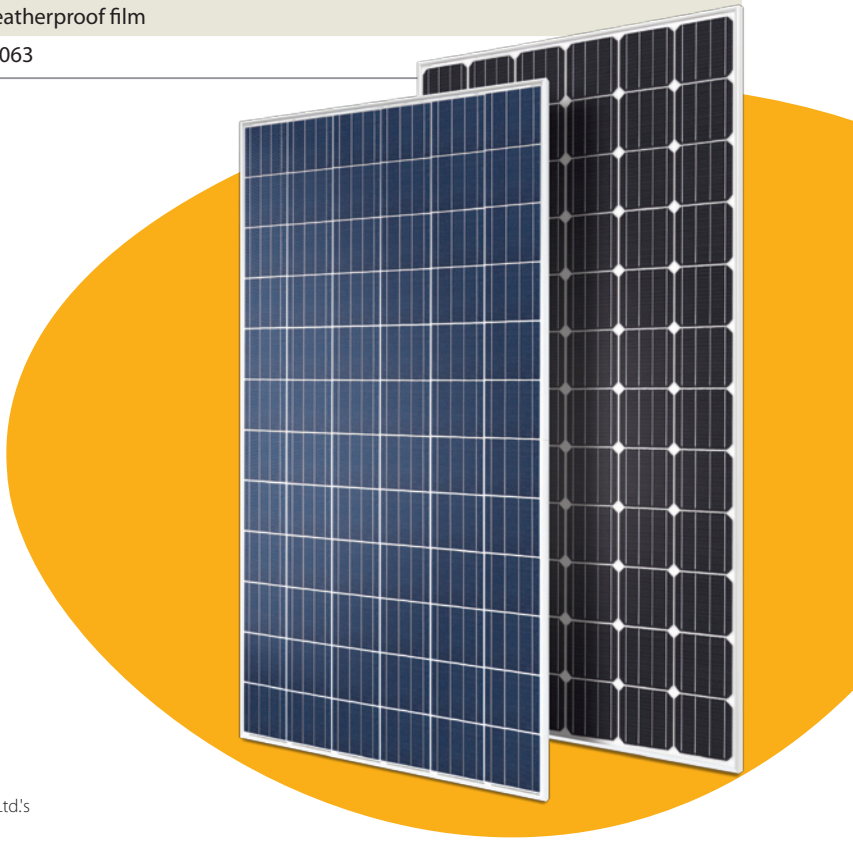
Poly-crystalline Type
HiS-M310RI | HiS-M315RI | HiS-M320RI | HiS-M325RI

Mono-crystalline Type
HiS-S330RI | HiS-S335RI | HiS-S340RI | HiS-S345RI | HiS-S350RI | HiS-S355RI

Mechanical Characteristics

※ Several models are under certification process.

Dimensions	998 mm (39.29")(W) × 1,960 mm (77.17")(L) × 40 mm (1.57")(H)
Weight	Approx. 22.9 kg (50.5 lbs)
Solar cells	72 cells in series (6 × 12 matrix) (Hyundai cell, Made in Korea)
Output cables	4 mm² (12AWG) cables with polarized weatherproof connectors, IEC certified (UL listed and UL 4703 certified), Length 1.2 m (47.2")
Junction box	IP67, weatherproof, IEC certified (UL listed)
Bypass diodes	3 bypass diodes to prevent power decrease by partial shade
Construction	Front : Anti-reflection coated glass (Anti reflection coated), 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 VDE
- UL listed (UL 1703), Type 1 for Class A Fire Rating
- Output power tolerance +3/-0 %
- ISO 9001:2000 and ISO 14001:2004 Certified
- OHSAS 18001:2007 Certified
- Advanced Mechanical Test (5,400 Pa) Passed (IEC) / Mechanical Load Test (40 lbs/ft²) Passed (UL)
- IEC 62716 (Ammonia Corrosion Resistance Test) Passed
- IEC 61701 (Salt Mist Corrosion Test) Passed
- Potential-Induced Degradation (PID) Test Passed (85˚C / 85 % / 600 hr-PVEL)

Accredited Test Lab

- VDE (Test Data Acceptance Program)
- UL (Witness Test Data Program)

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.

HYUNDAI HEAVY INDUSTRIES

Electrical Characteristics

| Poly-crystalline Type |

		HiS-M□□□RI			
		310	315	320	325
Nominal output (Pmpp)	W	310	315	320	325
Voltage at Pmax (Vmpp)	V	36.0	36.2	36.4	36.6
Current at Pmax (Impp)	A	8.6	8.7	8.8	8.8
Open circuit voltage (Voc)	V	45.3	45.5	45.7	45.9
Short circuit current (Isc)	A	8.9	9.0	9.0	9.1
Output tolerance	%	+3/-0			
No. of cells & connections	pcs	72 in series			
Cell type	-	6" Poly-crystalline silicon (Hyundai cell, Made in Korea)			
Module efficiency	%	15.8	16.1	16.4	16.6
Temperature coefficient of Pmpp	%/K	-0.41			
Temperature coefficient of Voc	%/K	-0.32			
Temperature coefficient of Isc	%/K	0.039			

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

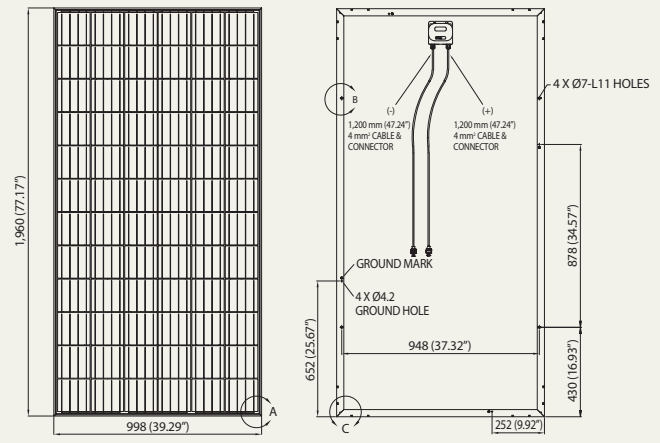
| Mono-crystalline Type |

		HiS-S□□□RI					
		330	335	340	345	350	355
Nominal output (Pmpp)	W	330	335	340	345	350	355
Voltage at Pmax (Vmpp)	V	38.0	38.2	38.4	38.6	38.7	38.9
Current at Pmax (Impp)	A	8.7	8.8	8.9	9.0	9.0	9.1
Open circuit voltage (Voc)	V	46.3	46.5	46.7	46.9	47.1	47.3
Short circuit current (Isc)	A	9.3	9.4	9.5	9.6	9.6	9.6
Output tolerance	%	+3/-0					
No. of cells & connections	pcs	72 in series					
Cell type	-	6" Mono-crystalline silicon (Hyundai cell, Made in Korea)					
Module efficiency	%	16.9	17.1	17.4	17.6	17.9	18.1
Temperature coefficient of Pmpp	%/K	-0.42					
Temperature coefficient of Voc	%/K	-0.30					
Temperature coefficient of Isc	%/K	0.047					

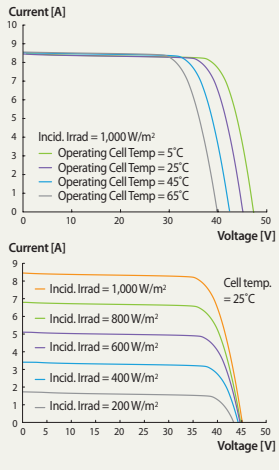
※All data at STC (Standard Test Conditions). Above data may be changed without prior notice.

| 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 1,000 V (UL)
Maximum Reverse Current	15 A

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