

# 현대중공업 그린에너지 태양광 모듈

## RI SERIES

### Multi-Crystalline Type

HiS-M310RI HiS-M315RI HiS-M320RI

### Mono-Crystalline Type

HiS-S330RI HiS-S335RI HiS-S340RI HiS-S345RI  
HiS-S350RI HiS-S355RI HiS-S360RI



# 72

Cells



For Commercial & Utility Applications



More Power Generation In Low Light

MADE IN KOREA

Hyundai Cell, Made in Korea



### PERL Technology

PERL technology provides ultra-high efficiency with better performance in low irradiation. Maximizes installation capacity in limited space.



### Low LID / PID

Both LID(Light Induced Degradation) and PID(Potential Induced Degradation) are strictly eliminated to ensure higher actual yield during lifetime.



### Mechanical Strength

Tempered glass and reinforced frame design withstand rigorous weather conditions such as heavy snow and strong wind.



### Reliable Warranty

Global brand with powerful financial strength provide reliable 25-year warranty.



### Corrosion Resistant

Various tests under harsh environmental conditions such as ammonia and salt-mist passed.



### UL / VDE Test Labs

Hyundai's R&D center is an accredited test laboratory of both UL and VDE.

### Hyundai's Warranty Provisions

10  
YEARS

- 10-Year Product Warranty
- on materials and workmanship

25  
YEARS

- 25-Year Performance Warranty
- 90% of guaranteed min. power for 10 years
- 80% of guaranteed min. power for 25 years

### About Hyundai Solar

Established in 1972, Hyundai Heavy Industries (HHI) is one of the most trusted names in the heavy industries sector with 48,000 employees and more than 40 Billion USD in annual sales (2015). As a global leader and innovator, Hyundai Heavy Industries is committed to building a future growth engine by developing and investing heavily in the field of renewable energy.

Started as a core business division of HHI, Hyundai Solar (Hyundai Heavy Industries Green Energy) now stands as an independent company and an affiliate of HHI as from December 2016. It is the largest and the longest standing PV cell and module manufacturer in South Korea with 800 MW of module production capacity. We have strong pride in providing high-quality solar PV products to more than 3,000 customers worldwide.

### Certification



현대중공업그린에너지

## Electrical Characteristics

		Multi-Crystalline Module (HiS-M RI)			Mono-Crystalline Module (HiS-S RI)						
		310	315	320	330	335	340	345	350	355	360
Nominal Output (P <sub>mpp</sub> )	W	310	315	320	330	335	340	345	350	355	360
Open Circuit Voltage (V <sub>oc</sub> )	V	45.3	45.3	45.5	46.3	46.5	46.7	46.9	47.1	47.3	47.4
Short Circuit Current (I <sub>sc</sub> )	A	8.9	9.0	9.0	9.3	9.4	9.5	9.6	9.6	9.7	9.8
Voltage at P <sub>max</sub> (V <sub>mpp</sub> )	V	36.0	36.2	36.4	38.0	38.2	38.4	38.6	38.7	38.9	39.1
Current at P <sub>max</sub> (I <sub>mpp</sub> )	A	8.6	8.7	8.8	8.7	8.8	8.9	9.0	9.0	9.1	9.2
Module Efficiency	%	15.8	16.1	16.4	16.9	17.1	17.4	17.6	17.9	18.1	18.4
Cell Type	-	6", multi-crystalline silicon			6", mono-crystalline silicon						
Maximum System Voltage	V	1,000			1,000						
Temperature Coefficient of P <sub>max</sub>	%/K	-0.41			-0.42						
Temperature Coefficient of V <sub>oc</sub>	%/K	-0.32			-0.30						
Temperature Coefficient of I <sub>sc</sub>	%/K	0.039			0.047						

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

## Mechanical Characteristics

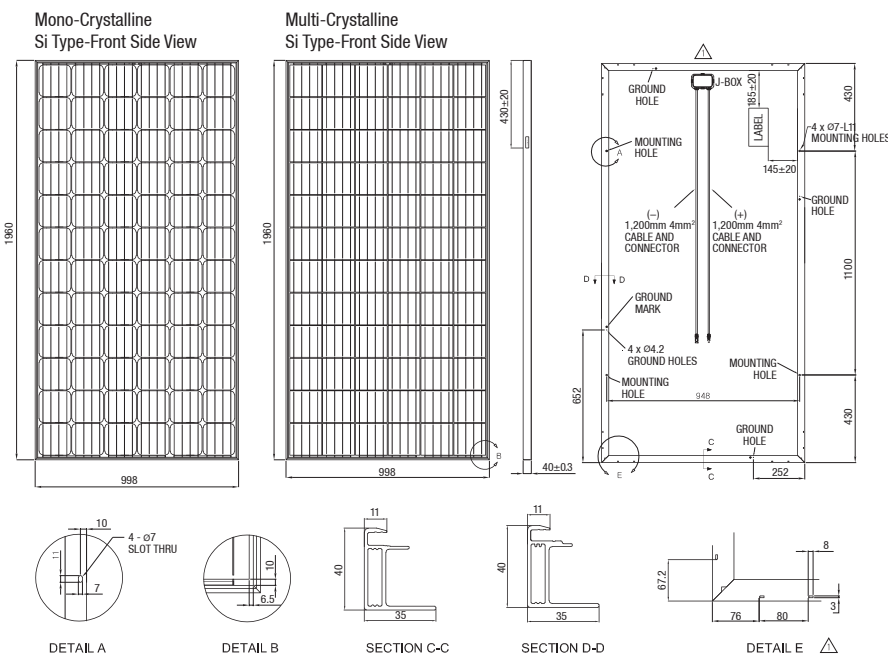
Dimensions	998 mm (39.29") (W) x 1,960 mm (77.17") (L) x 40 mm (1.57") (H)
Weight	Approx. 22.9 kg (50.5 lbs)
Solar Cells	72 cells in series (6 x 12 matrix) (Hyundai cell, Made in Korea)
Output Cables	4 mm <sup>2</sup> (12AWG) cables with polarized weatherproof connectors, IEC certified (UL listed and 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, 3.2 mm (0.126") Encapsulant : EVA   Back Sheet : Weatherproof film
Frame	Clear anodized aluminum alloy type 6063

## 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

## Module Diagram (unit : mm)



## I-V Curves

