# **HYUNDAI SOLAR MODULE**



# **Mono-Crystalline Type**

HiS-S270RG (BK) HiS-S275RG (BK) HiS-S280RG (BK) HiS-S285RG (BK) HiS-S290RG(BK)





For Residential **Applications** 



All Black Module For Sleek Design



Generation In Low Light



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.



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-Year Product Warranty
- · On materials and workmanship



- 25-Year Performance Warranty
- · Initial year: 97%
- · Linear warranty after second year: with 0.7% annual degradation, 80.2% is guaranteed up to 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















IEC 61215 (Ed.2) and IEC 61730 by VDE UL Listed (UL 1703), Type 1 for Class A Fire Rating
Advanced Mechanical Test (5,400 Pa) Passed (IEO /
Mechanical Load Test (40 lbs/ft?) Passed (UL)



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<b>Electrical Characteristics</b>		Mono-Crystalline Module (HiS-SRG (BK))				
		270	275	280	285	290
Nominal Output (Pmpp)	W	270	275	280	285	290
Open Circuit Voltage (Voc)	٧	38.2	38.4	38.5	38.7	38.8
Short Circuit Current (Isc)	А	9.2	9.3	9.4	9.5	9.7
Voltage at Pmax (Vmpp)	٧	31.4	31.6	31.7	31.8	32.0
Current at Pmax (Impp)	А	8.6	8.7	8.8	8.9	91
Module Efficiency	%	16.5	16.8	17.1	17.4	17.7
Cell Type	-	6", mono-crystalline silicon				
Maximum System Voltage	V	1,000				
Temperature Coefficient of Pmax	%/K	-0.40				
Temperature Coefficient of Voc	%/K	-0.29				
Temperature Coefficient of Isc	%/K	0.039				

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

# **Mechanical Characteristics**

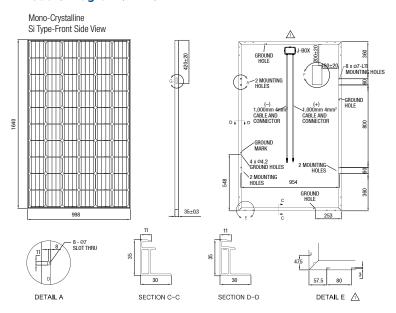
Dimensions	998 mm (39.29´)(W) × 1,640 mm (64.57´)(L) × 35 mm (1.38´)(H)			
Weight	Approx. 18.7 kg (41.2 lbs)			
Solar Cells	60 cells in series (6 ×10 matrix) (Hyundai cell, Made in Korea)			
Output Cables	4 mm² (12AWG) cables with polarized weatherproof connectors, IEC certified (UL listed), Length 1.0 m (39.4″)			
Junction Box	IP68, 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 (Black Color)			

# **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	<b>15A</b> (Up to 285W) <b>20A</b> (Above 290W)		

# Module Diagram (unit:mm)



#### **I-V Curves**

