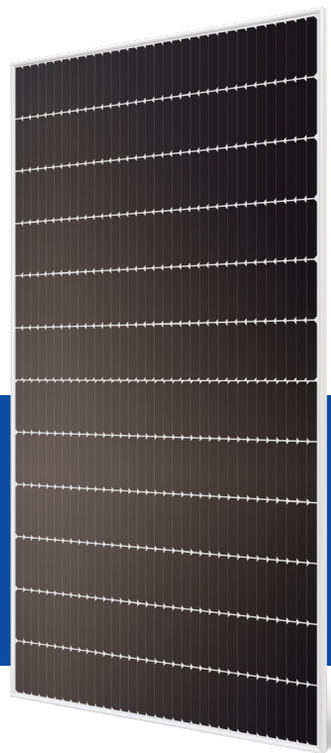
HYUNDAI SOLAR MODULE

SI SERIES

PERC Shingled

HiE-S410SI HiE-S415SI HiE-S420SI



Shingled Technology

For Utility-Scale Applications

More Power Generation In Low Light

PERC Shingled Technology

PERC Shingled Technology provides ultra-high efficiency with better performance in low irradiation. Maximizes installation capacity in limited space.

Anti-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.

Extended Product Warranty

Global brand with powerful financial strength provide reliable 20-year product 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

- 20-Year Product Warranty
  - On materials and workmanship
- 25-Year Performance Warranty
  - Initial year: 98.0%
  - Linear warranty after second year: with 0.55%p annual degradation, 84.8% is guaranteed up to 25 years

About Hyundai Energy Solutions

Established in 1972, Hyundai Heavy Industries Group is one of the most trusted names in the heavy industries sector and is a Fortune 500 company. 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.

As a core energy business entity of HHI, Hyundai Energy Solutions has strong pride in providing high-quality PV products to more than 3,000 customers worldwide.

Certification

HYUNDAI ENERGY SOLUTIONS

Electrical Characteristics

		Mono-Crystalline Module (HiE-S____SI)		
		410	415	420
Nominal Output (Pmpp)	W	410	415	420
Open Circuit Voltage (Voc)	V	45.3	45.4	45.5
Short Circuit Current (Isc)	A	11.43	11.47	11.53
Voltage at Pmax (Vmpp)	V	37.5	37.6	37.7
Current at Pmax (Impp)	A	10.93	11.04	11.14
Module Efficiency	%	19.7	20.0	20.2
Cell Type	-	Mono-Crystalline Silicon		
Maximum System Voltage	V	1,500		
Temperature Coefficient of Pmax	%/°C	-0.34		
Temperature Coefficient of Voc	%/°C	-0.27		
Temperature Coefficient of Isc	%/°C	0.04		

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

Mechanical Characteristics

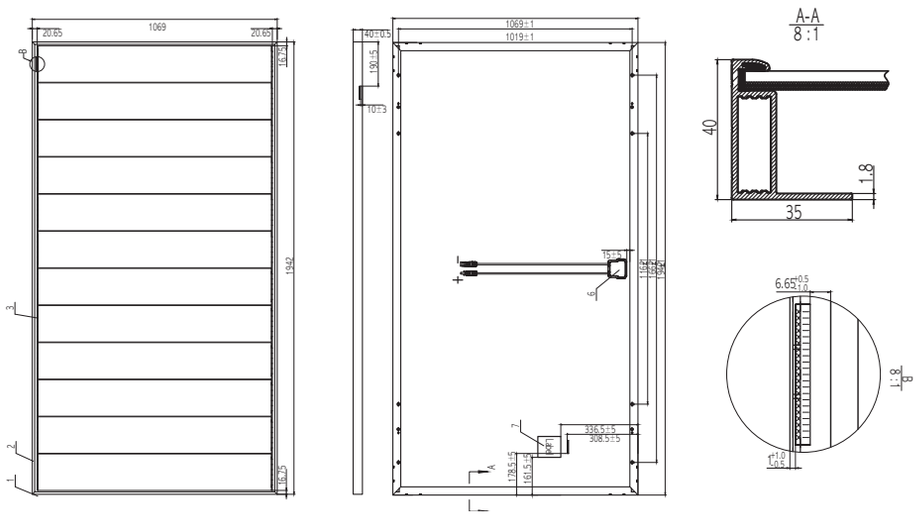
Dimensions	1,942 × 1,069 × 40mm (L × W × H)		
Weight	24.0kg		
Solar Cells	408 cells, 6” PERC Mono-crystaline sillicon solar cells (in increment of 5)		
Output Cables	Length 1200mm, 1×4mm²	**Connector**	Compatible with MC4
Junction Box	Rated current : 15A, IP67, TUV&UL		
Construction	Front Glass : White toughened safety glass, 3.2mm Encapsulation : EVA (Ethylene-Vinyl-Acetate)		
Frame	Anodized aluminum profile		

Installation Safety Guide

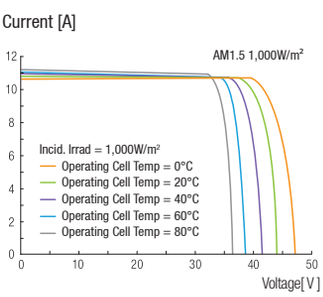
- Only qualified personnel should install or perform maintenance.
- Be aware of dangerous high DC voltage.
- Do not damage or scratch the rear surface of the module.
- Do not handle or install modules when they are wet.

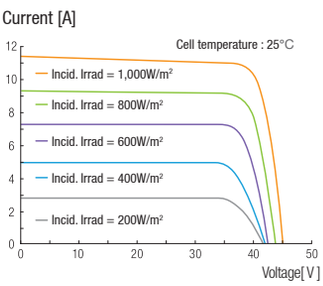
Nominal Operating Cell Temperature	42.3 ± 2°C
Operating Temperature	-40 ~ 85°C
Maximum System Voltage	DC 1,500 / 1,000 (IEC)
Maximum Reverse Current	20A
Maximum Surface Load Capacity	Front 5,400 Pa Rear 2,400 Pa

Module Diagram (unit : mm)



I-V Curves





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