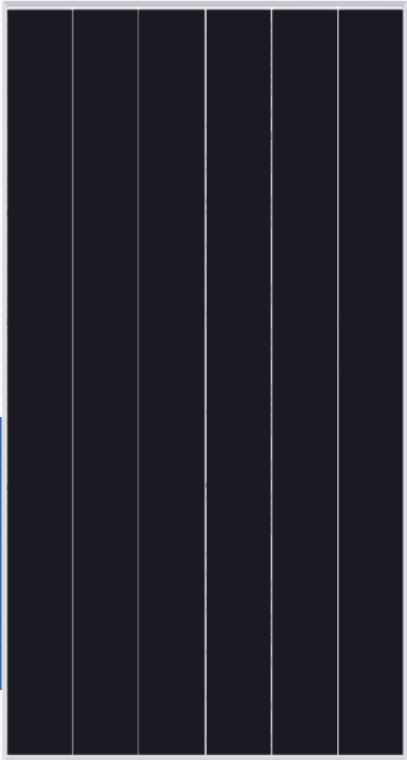


# HYUNDAI SOLAR MODULE



## G12 PERC Shingled

HiE-S635DJ      HiE-S640DJ  
HiE-S645DJ      HiE-S650DJ



Shingled  
Technology



For Utility-Scale  
Applications



More Power  
Generation  
In Low Light



### G12 PERC Shingled

G12 PERC Shingled Technology provides ultra-high efficiency with better performance in low irradiation. Maximizes installation capacity in limited space.



### 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.



### UL / VDE Test Labs

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

## Hyundai's Warranty Provisions



- **25-Year Product Warranty**
- On material and workmanship



- **30-Year Performance Warranty**
- Initial year: 98.0%
- Linear warranty after second year: with 0.45%p annual degradation, 84.95% is guaranteed up to 30 years

## About Hyundai Energy Solutions Co.,Ltd

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



Electrical Characteristics

		Mono-Crystalline Module (HiE-S____DJ)			
		635	640	645	650
Nominal Output (Pmpp)	W	635	640	645	650
Open Circuit Voltage(Voc)	V	46.4	46.5	46.6	46.7
Short Circuit Voltage (Isc)	A	17.54	17.64	17.74	17.84
Voltage at Pmax (Vmpp)	V	38.5	38.6	38.7	38.8
Cuurent at Pmax (Impp)	A	16.49	16.58	16.68	16.77
Module Efficiency	%	20.4	20.6	20.8	20.9
Cell Type	-	PERC Mono-Crystalline Silicon Shingled			
Maximum System Voltage	V	1,500			
Temperature Coefficiency of Pmax	%/°C	-0.34			
Temperature Coefficiency of Voc	%/°C	-0.27			
Temperature Coefficiency of Isc	%/°C	0.04			

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

\*Tolerance of Pmax:0~+5W.  
\*Measuring uncertainty of power:±3%.  
\* Performance deviation of Voc [V], Isc [A], Vm[V] and Im[A]:±3%.

Mechanical Characteristics

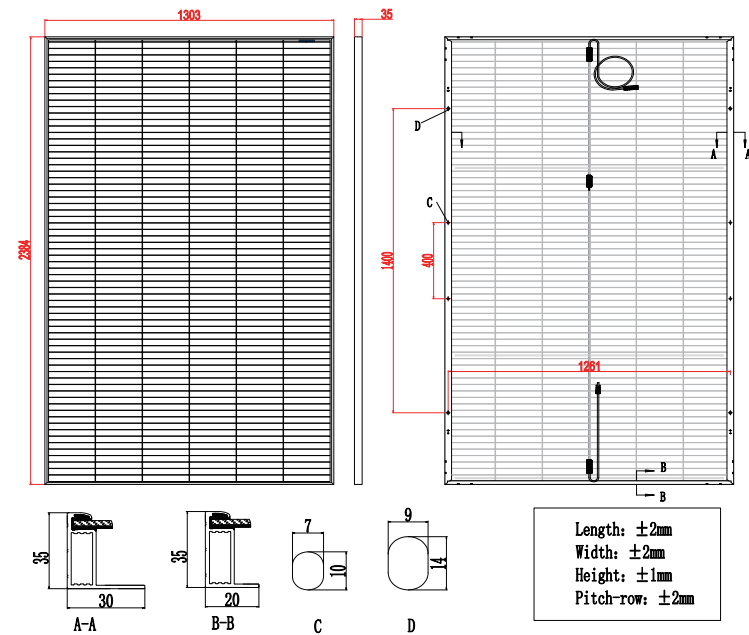
Dimensions	2,384 × 1,303 × 35mm (L × W × H)		
Weight	39kg		
Solar Cells	414 cells, PERC Mono-crystalline Shingled		
Output Cables	Length 1,200mm, 1×4mm <sup>2</sup>	Connector	PV-KST4-EVO2/xy_UR PV-KBT4-EVO
Junction Box	IP68, TUV&UL, Three Diodes		
Construction	Front Glass: Tempered glass, 2.0mm Encapsulation: EVA (Ethylene-Vingl-Acetate)		
Frame	Anodized Aluminum		

Installation Safety Guide

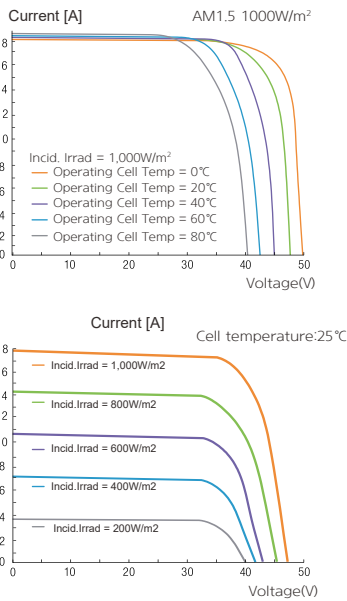
- Only qualified personnel should install or perform maintenance.
- Be aware of dangerous high DC voltage.
- Do not damage or scratch the rear surface of the module.
- Do not handle or install modules when they are wet.

Nominal Operating Cell Temperature	42.3°C ( ± 2°C )
Operating Temperature	-40 ~ 85° C
Maximum System Voltage	DC 1,500
Series Fuse Rating	30A
Maximum Surface Load Capacity	Front 5,400 Pa Rear 2,400 Pa

Module Diagram (Unit: mm)



I-V Curves



Manufactured in China



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Printed Date : 12/2021