

# HYUNDAI SOLAR MODULE

## HG SERIES

### G12 PERC Shingled

HiE-S430HG(FB) HiE-S435HG(FB)  
HiE-S440HG(FB) HiE-S445HG(FB)



Shingled  
Technology



For Both Residential  
& Commercial  
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.



### 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.



### Reliable Warranty

Global Brand with powerful financial strength provide reliable 25-year warranty. (Australia and Europe Only)



### 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



- **25-Year Product Warranty**
- On material and workmanship  
**Australia and Europe Only**



- **25-Year Performance Warranty**
- Initial year: 98.0%
- Linear warranty after second year: with 0.55%p annual degradation, 84.80% 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



## Electrical Characteristics

		Mono-Crystalline Module (HIE-S__HG(FB))			
		445	440	435	430
Nominal Output (Pmpp)	W	445	440	435	430
Open Circuit Voltage(Voc)	V	43.8	43.7	43.6	43.5
Short Circuit Voltage (Isc)	A	13.01	12.90	12.79	12.68
Voltage at Pmax (Vmpp)	V	36.4	36.3	36.2	36.1
Cuurent at Pmax (Impp)	A	12.23	12.13	12.02	11.92
Module Efficiency	%	21.4	21.1	20.9	20.7
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.

\* Performance deviation of Voc [V], Isc [A], Vm[V] and Im[A]:±3%.

## Mechanical Characteristics

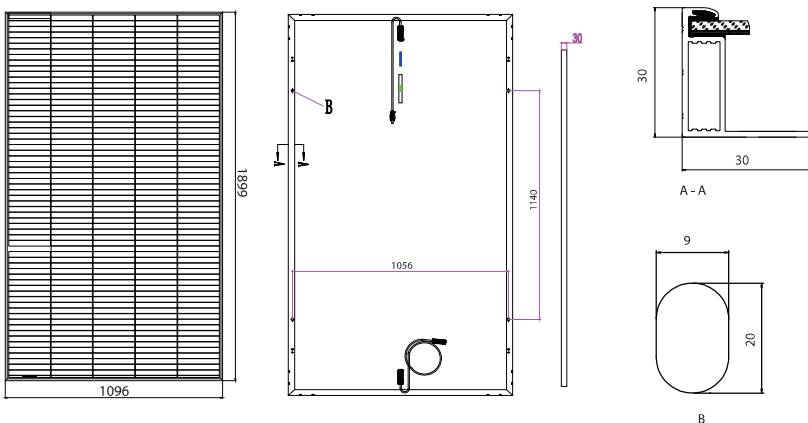
Dimensions	1,899 × 1,096 × 30 mm (L × W × H)		
Weight	21.8kg		
Solar Cells	320 Cells, PERC Mono-crystalline Shingled (210 × 210mm)		
Output Cables	4mm <sup>2</sup> ,+500mm/-1100mm(Vertical), +220mm/-180mm(Horizontal)	Connector	Stäubli : MC4-Evo2
Junction Box	IP68, TUV&UL, two diodes		
Construction	Front Glass: AR Coated tempered glass, 3.2mm Encapsulation: EVA (Ethylene-Vingl-Acetate)		
Frame	Anodized Aluminum		

## Installation Safety Guide

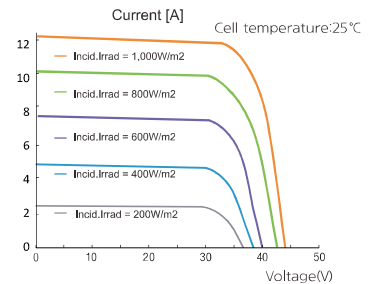
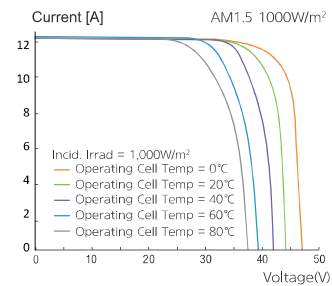
- Only qualified personnel should install or perform maintenance.
- Be aware of dangerous high DC voltage.
- Do not damage or scratch the rear surface of the module.
- Do not handle or install modules when they are wet.

Nominal Operating Cell Temperature	42.3°C ( ±2°C )
Operating Temperature	-40 ~ 85 °C
Maximum System Voltage	DC 1,500 / 1,000 (IEC)
Series Fuse Rating [A]	25
Maximum Surface Load Capacity	Front 5,400 Pa Rear 2,400 Pa

## Module Diagram (Unit: mm)



## I-V Curves



Manufactured in China



Sales & Marketing  
sales@hyundai-es.co.kr



**HYUNDAI**  
ENERGY SOLUTIONS

Printed Date : 06/2022