

HYUNDAI SOLAR MODULE

HG SERIES

G12 PERC Shingled

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



Mechanical Strength

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



HYUNDAI

Reliable Warranty

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



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 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 ₁ HG(FB))		
		430	435	440
Nominal Output (P _{mpp})	W	430	435	440
Open Circuit Voltage(V _{oc})	V	43.5	43.6	43.7
Short Circuit Voltage (I _{sc})	A	12.68	12.79	12.90
Voltage at P _{max} (V _{mpp})	V	36.1	36.2	36.3
Current at P _{max} (I _{mp})	A	11.92	12.02	12.13
Module Efficiency	%	20.7	20.9	21.1
Cell Type	-	PERC Mono-Crystalline Silicon Shingled		
Maximum System Voltage	V	1,500		
Temperature Coefficient of P _{max}	%/°C	-0.34		
Temperature Coefficient of V _{oc}	%/°C	-0.27		
Temperature Coefficient of I _{sc}	%/°C	0.04		

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

*Tolerance of P_{max}:0~+5W.

*Measuring uncertainty of power:±3%.

* Performance deviation of V_{oc} [V], I_{sc} [A], V_m[V] and I_m[A]:±3%.

Mechanical Characteristics

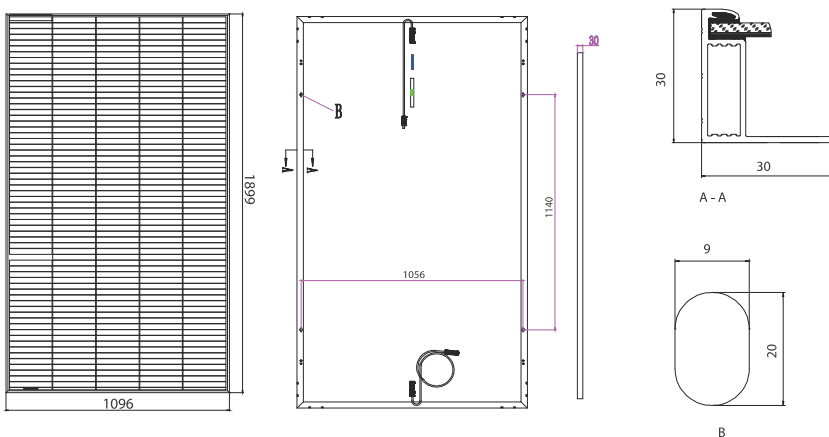
Dimensions	1,899 × 1,096 × 30 mm (L × W × H)		
Weight	21.8kg		
Solar Cells	320 Cells, PERC Mono-crystalline Shingled (210 × 210mm)		
Output Cables	4mm ² ,+500mm/-1100mm(Vertical), +220mm/-180mm(Horizontal)	Connector	Stäubli : MC4-Evo2
Junction Box	IP68, TUV&UL, two diodes		
Construction	Front Glass: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

Installation Safety Guide

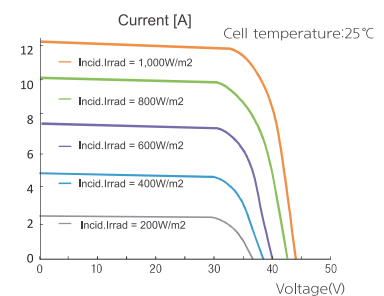
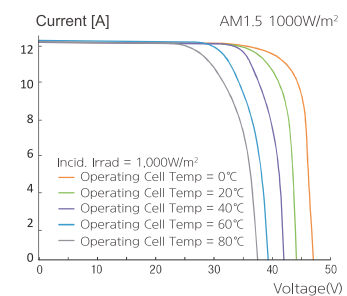
- Only qualified personnel should install or perform maintenance.
- Be aware of dangerous high DC voltage.
- Do not damage or scratch the rear surface of the module.
- Do not handle or install modules when they are wet.

Nominal Operating Cell Temperature	42.3°C (±2°C)
Operating Temperature	-40 ~ 85 °C
Maximum System Voltage	DC 1,500 / 1,000 (IEC)
Fire Rating	Class C
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

HYUNDAI
ENERGY SOLUTIONS

Axpert VM II Off-Grid Inverter

Operation without battery



- Pure sine wave solar inverter
- Output power factor 1
- High PV input voltage range
- Battery independent design
- Built-in 80A and 100A MPPT solar charger for 1.2K/2.5K/3K Premium and 3K/5K respectively
- Battery equalization function to optimize battery performance and extend lifecycle
- Built-in anti-dust kit for harsh environment (only for 3K/5K models)

Axpert VM II Off-Grid Inverter Selection Guide

MODEL	Axpert VM II 1200-12	Axpert VM II 2500-24	Axpert VM II Plus 3000-24	Axpert VM II 3000-24	Axpert VM II 5000-48
RATED POWER	1200VA/1200W	2500VA/2500W	3000VA/3000W	3000VA / 3000W	5000VA / 5000W
INPUT					
Voltage	230 VAC				
Selectable Voltage Range	170-280 VAC (For Personal Computers) ; 90-280 VAC (For Home Appliances)				
Frequency Range	50 Hz/60 Hz (Auto sensing)				
OUTPUT					
AC Voltage Regulation (Batt. Mode)	230VAC \pm 5%				
Surge Power	2400VA	5000VA	6000VA	6000VA	10000VA
Efficiency (Peak)	93%				
Transfer Time	10 ms (For Personal Computers) ; 20 ms (For Home Appliances)				
Waveform	Pure sine wave				
BATTERY					
Battery Voltage	12 VDC	24 VDC	24 VDC	24 VDC	48 VDC
Floating Charge Voltage	13.5 VDC	27 VDC	27 VDC	27 VDC	54 VDC
Overcharge Protection	16 VDC	32 VDC	32 VDC	33 VDC	63 VDC
SOLAR CHARGER & AC CHARGER					
Maximum PV Array Open Circuit Voltage	350 VDC	450 VDC	450 VDC	500 VDC	500 VDC
Maximum PV Array Power	2000W	3000W	3000W	4000 W	5000 W
MPP Range @ Operating Voltage	60-300 VDC	60-400 VDC	60-400 VDC	120~450 VDC	120~450 VDC
Maximum Solar Charge Current	80 A		80A	100 A	100 A
Maximum AC Charge Current	80 A		80A	100 A	100 A
Maximum Charge Current	80 A		80A	100 A	100 A
PHYSICAL					
Dimension, D x W x H (mm)	90 x 288 x 357		100 x 288 x 390	100 x 300 x 440	
Net Weight (kgs)	6.5	7.1	8.0	9	10
Communication Interface	RS232		RS232	USB/RS232 (optional USB/Dry contact)	
ENVIRONMENT					
Humidity	5% to 95% Relative Humidity (Non-condensing)				
Operating Temperature	-10°C to 50°C				
Storage Temperature	-15°C to 60°C				

Product specifications are subject to change without further notice.