# **HYUNDAI SOLAR MODULE**



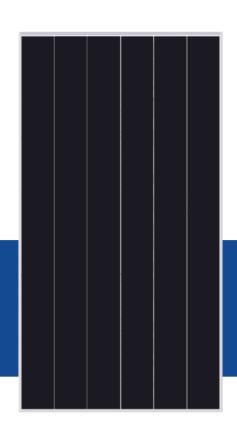
# **G12 PERC Shingled**

HiE-S655DJ HiE-S660DJ HiE-S665DJ HiE-S670DJ











### **G12 PERC Shingled**

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



### **Reliable Warranty**

Global Brand with powerful financial strength provide reliable 25-year warranty.



# **Mechanical Strength**

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



**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













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lectrical Characteristics		Mono-Crystalline Module (HiE-SDJ)			
		655	660	665	670
Nominal Output (Pmpp)	W	655	660	665	670
Open Circuit Voltage(Voc)	V	46.8	46.9	47.0	47.1
Short Circuit Voltage (Isc)	А	17.97	18.06	18.16	18.26
Voltage at Pmax (Vmpp)	V	38.8	38.9	39.0	39.1
Cuurent at Pmax (Impp)	А	16.89	16.98	17.07	17.16
Module Efficiency	%	20.9	21.2	21.4	21.6
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			

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

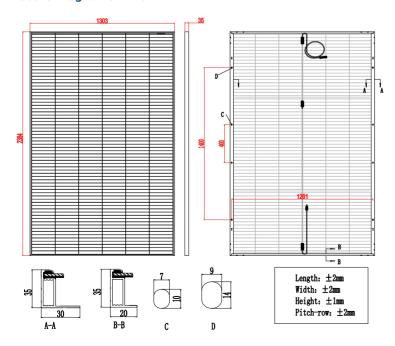
\*Tolerance of Pmax:0~+5W.

\*Measuring uncertainty of power:±3%.

#### **Mechanical Characteristics**

Dimensions	2,384 × 1,303 × 35mm (L × W × H)				
Weight	39kg				
Solar Cells	414 cells, PERC Mono-crystaline Shingled				
Output Cables	Length 1,200mm, 1×4mm <sup>2</sup> Connector Maker: Staublie 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				

### Module Diagram (Unit: mm)

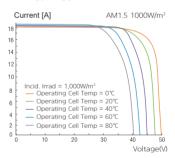


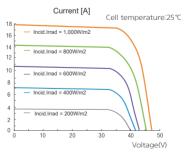
# **Installation Safety Guide**

- 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
Fire Rating	Class C
Series Fuse Rating	30A
Maximum Surface Load Capacity	Front 5,400 Pa Rear 2 400 Pa

### **I-V Curves**







Manufactured in China



<sup>\*</sup> Performance deviation of Voc [V], Isc [A], Vm[V] and  $Im[A]:\pm 3\%$ .