# HD HYUNDAI SOLAR MODULE



# HeteroMax™ **Premium N-Type HJT module**

HiT-H430~450MF-FB



Heterojunction Technology



Full Black Design for Home roof



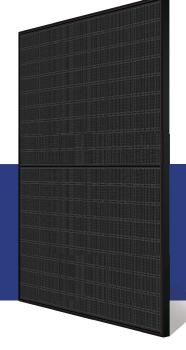
Generation In Low Light



Designed in Korea



Product & Performance Warranty





# **High Efficiency with HJT Technology**

HJT (Heterojunction Technolgy) cells with excellent light absorption and passivation effects can increase module efficiency compared to TOPCon and PERC modules.



#### **Enhanced Power** Generation with low Temp. Coefficient

Low temperature coefficient (-0.26%/°C) enables modules to generate more electricity than PERC & TOPCon modules in high temperature environments which allows the perfect suitability for rooftop installation with large temperature fluctuations.



# Long-Term Reliability

HeteroMax<sup>™</sup> feature a double-glass design that shows the best moisture resistance. It enhances waterproof performance and ensures durability and reliability in diverse environments.



# No LID/PID

HJT cells based on n-type silicon wafer result in no LID (light Induced degradation) and the use of TCO film enables no PID (potential induced degradation) guaranteeing more energy and profitability.



# **Certified Test Labs**

HD Hyundai's R&D center is an accredited test laboratory of UL, international certification institutions, and guarantees the best quality in the world through rigorous product testing.



# **Reliable Warranty**

HD Hyundai Energy Solutions, Global brand with powerful financial strength, offers a 30year warranty and comprehensive customer after-sales service.

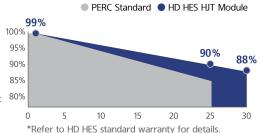
# **HD Hyundai's Warranty Provisions**



- 30-Year Product Warranty
- · Materials and workmanship



- 30-Year Performance Warranty
- · First year degradation: 1%
- · Linear warranty after second year: with 0.375%p annual degradation, 88% is guaranteed up to 30 years



#### **About HD Hyundai Energy Solutions**

Established in 1972, HD Hyundai 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, HD Hyundai 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 HD Hyundai, HD Hyundai Energy Solutions has strong pride in providing high-quality PV products to more than 3,000 customers worldwide.

# Certification

















<b>Electrical Characteristics</b>		HiT-HxxxMF-FB				
(STC*)		430	435	440	445	450
Nominal Output (Pmpp)	W	430	435	440	445	450
Open Circuit Voltage (Voc)	V	41.37	41.64	41.91	42.18	42.44
Short Circuit Current (Isc)	А	12.95	13.00	13.05	13.10	13.15
Voltage at Pmax (Vmpp)	V	34.60	34.86	35.12	35.38	35.63
Current at Pmax (Impp)	А	12.43	12.48	12.53	12.58	12.63
Module Efficiency	%	22.02	22.28	22.53	22.79	23.04
Maximum System Voltage	V			DC 1,500V (IEC)		
Temperature Coefficient of Pmax	%/°C	-0.26				
Temperature Coefficient of Voc	%/°C	-0.24				
Temperature Coefficient of Isc	%/°C	0.04				

\*STC: Irradiance 1,000 W/m², cell temperature 25°C, AM=1.5 / Measurement tolerances Pmpp ±3%; Voc ±3%; Isc ±5%

NOCT**		430	435	440	445	450
Nominal Output (Pmpp)	W	327	331	335	338	342
Voltage at Pmax (Vmpp)	٧	32.64	32.91	33.17	33.34	33.60
Current at Pmax (Impp)	Α	10.02	10.06	10.10	10.14	10.18
Open Circuit Voltage (Voc)	٧	39.48	39.74	40.00	40.26	40.50
Short Circuit Current (Isc)	А	10.44	10.48	10.52	10.56	10.60

\*\*NOCT : Irradiance 800 W/m², Ambient temperature 20°C, Wind Speed 1 m/s.

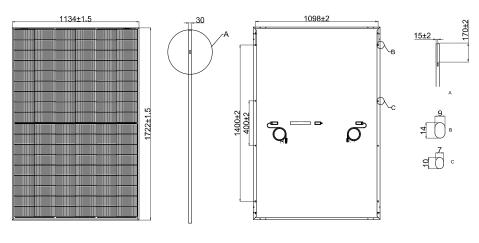
#### **Mechanical Characteristics**

Dimensions	1,722 mm (L) x 1,134 mm (W) x 30 mm (H)
Weight	22 kg
Solar Cells	N-Type HJT, 182mm x 91.75mm, 108 cells
Output Cables	Cable : (+)1,200 mm, (-)1,200mm / 4mm² / UV resistant Connector : Stäubli MC4-Evo2
Junction Box	IP68
Construction	Front Glass : anti-reflective solar glass, 1.6mm Rear Glass : solar glass, 1.6mm
Frame	Anodized aluminum alloy

# **Shipping Configurations**

Container Size	40	Modules Per Pallet (pcs)	36
Pallets Per Container	26	Modules Per Container (pcs)	936

# 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.

44°C ± 2°C
-40°C ~ +85°C
DC 1,500V (IEC)
25A
Front 5,400 Pa Rear 2,400 Pa

# I-V Curves (HiT-H430MF-FB)

