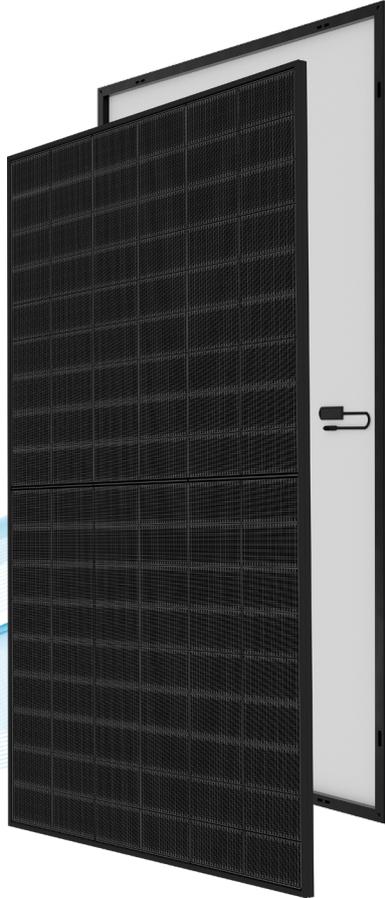


# HD HYUNDAI SOLAR MODULE

## HeteroMax™ (LE-FB(ZB) Series)

### Premium N-Type HJT module

HiT-H440LE-FB(ZB) | HiT-H445LE-FB(ZB) | HiT-H450LE-FB(ZB) | HiT-H455LE-FB(ZB) | HiT-H460LE-FB(ZB)



23.0%  
High Efficiency



High-End  
Heterojunction  
Technology



Enhanced Power  
Generation with low  
Temp. Coefficient



More Power  
Generation  
In Low Light



For Residential  
(Full Black Design)

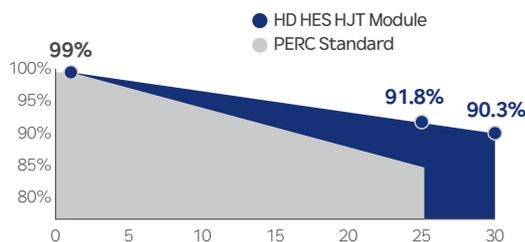
#### HD Hyundai's Warranty Provisions

30  
YEARS

- 30-Year Product Warranty
- Materials and workmanship

30  
YEARS

- 30-Year Performance Warranty
- First year degradation: 1%
- Linear warranty after initial year: with 0.3%p annual degradation, 90.3% is guaranteed up to 30years



\*Refer to HD HES standard warranty for details.

#### Certification



- ISO 9001:2015:ISO Quality Management System
- ISO 14001:2015:ISO Environment Management System
- ISO 45001:Occupational Health and Safety
- IEC 61215, IEC 61730



## Electrical Characteristics (STC\*)

HiT-HxxxLE-FB(ZB)						
Item	Unit	440	445	450	455	460
Nominal Output (Pmax)	W	440	445	450	455	460
Open Circuit Voltage (Voc)	V	36.52	36.62	36.72	36.82	36.92
Short Circuit Current (Isc)	A	15.31	15.42	15.53	15.64	15.75
Voltage at Pmax (Vmpp)	V	30.61	30.72	30.83	30.94	31.05
Current at Pmax (Impp)	A	14.38	14.49	14.60	14.71	14.82
Module Efficiency	%	22.0	22.3	22.5	22.8	23.0
Power Selection	W	0 ~ +5				
Temperature Coefficient of Pmax	%/°C	-0.24				
Temperature Coefficient of Voc	%/°C	-0.22				
Temperature Coefficient of Isc	%/°C	0.04				

\*STC : Irradiance 1,000 W/m<sup>2</sup>, cell temperature 25°C, AM=1.5 / Test uncertainty for Pmax ±3%; Voc ±3%; Isc ±5%

## NMOT

Item	Unit	440	445	450	455	460
Nominal Output (Pmax)	W	335	339	343	347	351
Open Circuit Voltage (Voc)	V	34.86	34.95	35.05	35.14	35.24
Short Circuit Current (Isc)	A	12.24	12.32	12.41	12.50	12.59
Voltage at Pmax (Vmpp)	V	29.23	29.34	29.45	29.55	29.65
Current at Pmax (Impp)	A	11.49	11.58	11.67	11.76	11.84

NMOT: Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s.

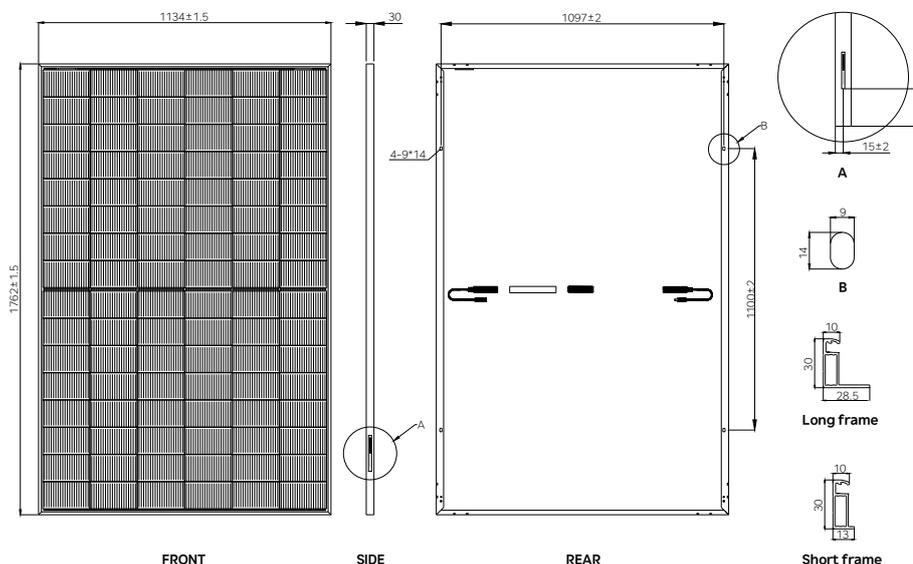
## Mechanical Characteristics

Dimensions	1,762 mm (L) x 1,134 mm (W) x 30 mm (H)
Weight	21.6 kg
Solar Cells	N-Type HJT, 96 (6x16) monocrystalline half-cut bifacial cells
Output Cables	Cable : 4mm <sup>2</sup> / 12AWG / (+)1,250 mm, (-)1,250 mm / Customized length Connector : MC4 / MC4-Evo2 / MC4-Evo2A / PV-H4 / Z4S-abcd / PV-ZH202B
Junction Box	3-part, 3 bypass diodes, IP68 rated
Construction	Front : 1.6mm semi-tempered solar glass with anti-reflective coating Rear : 1.6mm semi-tempered solar glass
Frame	Black Anodized aluminum alloy

## Shipping Configurations

Container Size (HC)	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.

Nominal Module Operation Temperature	44°C ± 2°C
Operating Temperature	-40°C ~ +85°C
Maximum System Voltage	DC 1,500 V
Maximum Reverse Current	30A
Maximum Test Load	Front 5,400Pa Rear 2,400Pa

## I-V Curves (HiT-H450LE-FB(ZB))

