HD HYUNDAI ENERGY SOLUTIONS

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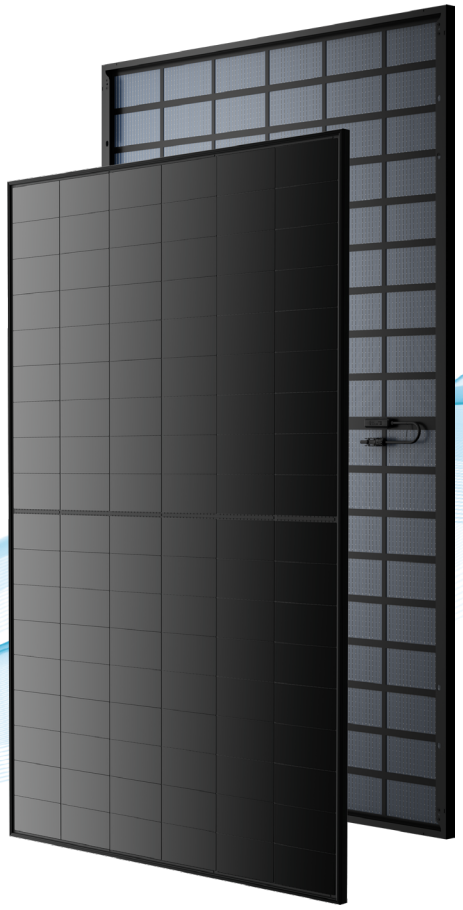
HD HYUNDAI SOLAR MODULE

BlackMax™ (RF-FB Series)

High-End Back Contact Module

HiX-B470RF-FB | HiX-B475RF-FB | HiX-B480RF-FB | HiX-B485RF-FB



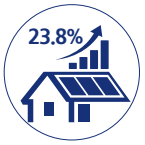
High-End Back Contact Technology

Full-Black Aesthetic Design

Superior Anti-Shading Performance

Enhanced Power Generation with low Temp. Coefficient

Maximize Power within the Same Roof Area



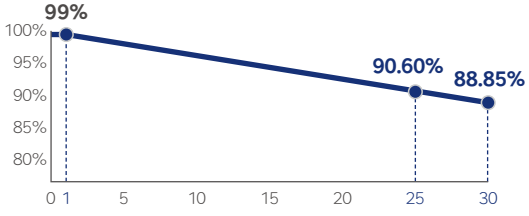
HD Hyundai's Warranty Provisions

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 0.35%p annual degradation, 88.85% 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*)

HiX-BxxxRF-FB					
Item	Unit	470	475	480	485
Nominal Output (Pmax)	W	470	475	480	485
Open Circuit Voltage (Voc)	V	40.31	40.42	40.53	40.64
Short Circuit Current (Isc)	A	14.78	14.88	14.98	15.08
Voltage at Pmax (Vmpp)	V	33.29	33.40	33.51	33.62
Current at Pmax (Impp)	A	14.13	14.23	14.33	14.43
Module Efficiency	%	23.0	23.3	23.5	23.8
Power Selection	%	0 ~ +3			
Temperature Coefficient of Pmax	%/℃	-0.26			
Temperature Coefficient of Voc	%/℃	-0.20			
Temperature Coefficient of Isc	%/℃	0.05			

*STC : Irradiance 1,000 W/m², cell temperature 25℃, AM=1.5 / Test uncertainty for Pmax ±3%; Voc ±5%; Isc ±5%

BNPI** (Bifacial Nameplate Irradiance)

Item	Unit	470	475	480	485
Nominal Output (Pmax)	W	515	520	526	531
Open Circuit Voltage (Voc)	V	40.31	40.42	40.53	40.64
Short Circuit Current (Isc)	A	16.17	16.28	16.40	16.51
Voltage at Pmax (Vmpp)	V	33.29	33.40	33.51	33.62
Current at Pmax (Impp)	A	15.46	15.57	15.68	15.80

**The electrical properties of BNPI are measured under the irradiance corresponding to 1000 W/m² on the module front and 135 W/m² on the module rear.

Mechanical Characteristics

Dimensions	1,800 mm (L) x 1,134 mm (W) x 30 mm (H)
Weight	23.5 kg
Solar Cells	N-Type Back Contact, 108 (6x18) monocrystalline half-cut bifacial cells
Output Cables	Cable : 4mm² / (+)1,200 mm, (-)1,200 mm / Customized length Connector : MC4-EVO2A
Junction Box	3-part, 3 bypass diodes, IP68 rated
Construction	Front : 2.0mm semi-tempered solar glass Rear : 1.6mm semi-tempered solar glass
Frame	Black Anodized aluminum alloy

Installation Safety Guide

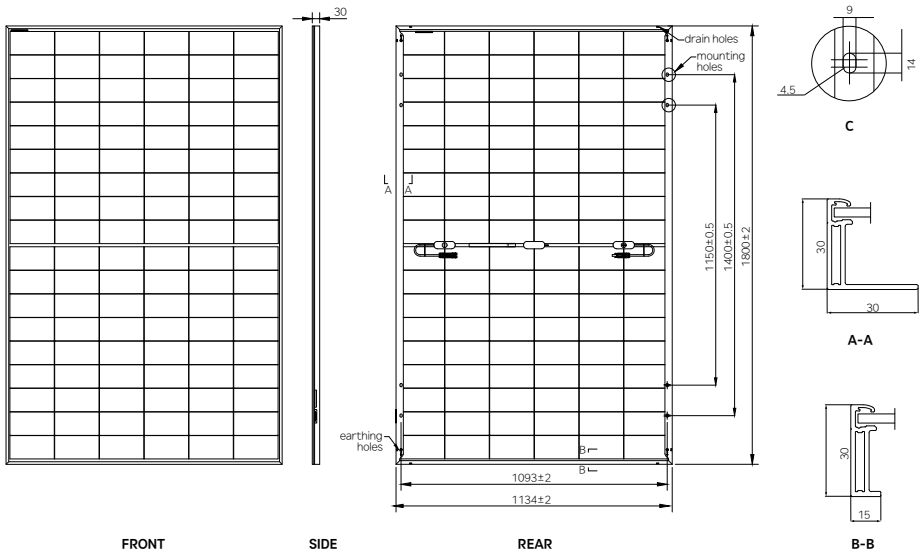
- Only qualified personnel should install or perform maintenance.
- Be aware of dangerous high DC voltage.
- Do not damage or scratch the rear surface of the module.
- Do not handle or install modules when they are wet.

Nominal Module Operation Temperature	45℃ ± 2℃
Operating Temperature	-40℃~+85℃
Maximum System Voltage	DC 1,500 V
Maximum Reverse Current	30A
Maximum Test Load	Front 5,400Pa Rear 2,400Pa
Fire Rating	Class A

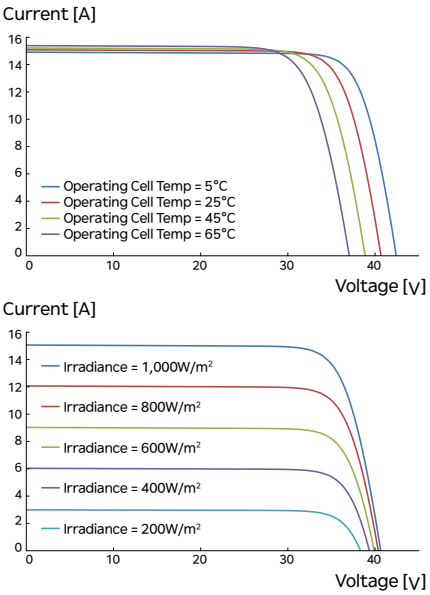
Shipping Configurations

Container Size (HC)	40	Modules Per Pallet (pcs)	37
Pallets Per Container (pcs)	24	Modules Per Container (pcs)	888

Module Diagram (unit : mm)



I-V Curves (HiX-B485RF-FB)



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HD Hyundai Energy Solutions reserves the right to update or modify the specifications and features listed in this datasheet without prior notice. Always check the latest version of the datasheet for accurate information. Before using the product, please refer to the Installation and Operation Manual and Warranty. We retain the right of final interpretation.

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