








# MBB PERC MONOFACIAL MODULE

## 455W-460W-465W



- **MBB PERC MONOFACIAL MODULE**  
High Performance Half-Cut Cells  
With White or Black Backsheet  
Photovoltaic Modules

### ● KEY FEATURES

-  MBB 1/2 Cut Bifacial Cell Technology
-  Lower Risk Of HotSpot
-  Higher Power Output
-  High Snow (5400Pa) and Wind Loads (2400Pa)
-  Dual EI Inspection
-  Excellent Low Light Performance
-  Excellent PID Resistance

### ● LINEAR HIGH PERFORMANCE GUARANTEED

12 Years Product Warranty on **91.95%** of the Nominal Performance

25 Years Linear Power Output Warranty on **84.80%** of the Nominal Performance



According to Ifri-sol product and performance warranty

### ● CERTIFICATIONS

Management system TÜV-Certified  
 ISO 9001:2015: ID 011001317684  
 ISO 14001: 2015: ID 011041317684  
 ISO 45001:2018: ID 011131815622



### Electrical Specification

Module Type	Nominal Power Pmpp	Nominal Voltage Umpp	Nominal Current Impp	Open Circuit Voltage (Uoc)	Short Circuit Current (Isc)	Module Conversion Efficiency
IF-HWM455-120	455 Wp	34.93 V	13.04 A	41.64 V	13.93 A	21.19%
IF-HWM460-120	460 Wp	35.14 V	13.13 A	41.91 V	14.01 A	21.42%
IF-HWM465-120	465 Wp	35.35 V	13.22 A	42.18 V	14.09 A	21.65%

Electrical Data At STC (STANDARD TEST CONDITIONS): 1000W/m<sup>2</sup> Irradiance, 25°C Cell Temperature, AM1.5g Spectrum According to EN 60904-3. Manufacturing Tolerance (Pmax,Voc,Isc) : ±3%

### NMOT

Module Type	Nominal Power Pmpp	Nominal Voltage Umpp	Nominal Current Impp	Open Circuit Voltage (Uoc)	Short Circuit Current (Isc)
IF-HWM455-120	339.9 Wp	32.56 V	10.42 A	39.24 V	11.24 A
IF-HWM460-120	344.7 Wp	32.78 V	10.47 A	39.46 V	11.31 A
IF-HWM465-120	349.7 Wp	33.01 V	10.56 A	39.73V	11.39 A

Electrical Data At NMOT: 800W/m<sup>2</sup> Irradiance, 20°C Ambient Temperature, 1m/s Wind Speed. Manufacturing Tolerance (Pmax,Voc,Isc) : ±3%

### Design

Front Glass	3.2mm High transmission Low Iron Tempered Glass AR Coated
Encapsulant	Ethylene Vinyl Acetate (E.V.A)
Cell	MBB PERC Bifacial /182 mm X 91mm - 120Pcs
Backside	White or Black Composite Film
Frame	35 mm Anodized Aluminum Alloy Type 6063-T6 (Silver/Black)

### Temperature Coefficients

voltage Uoc (β)	-0.26%/°C
Current Isc(α)	+0.048%/°C
Output Power(γ)	-0.35%/°C
NMOT	43±2°C

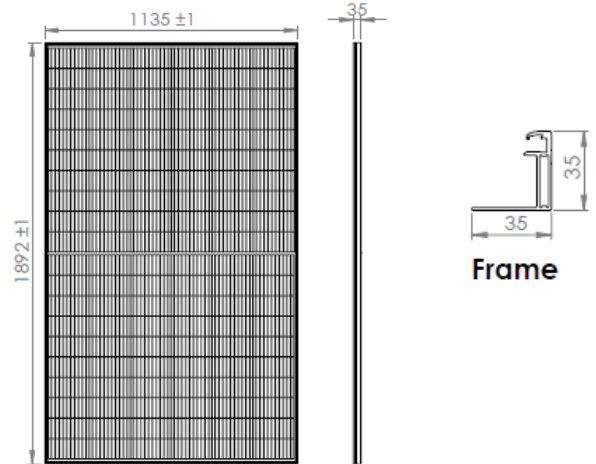
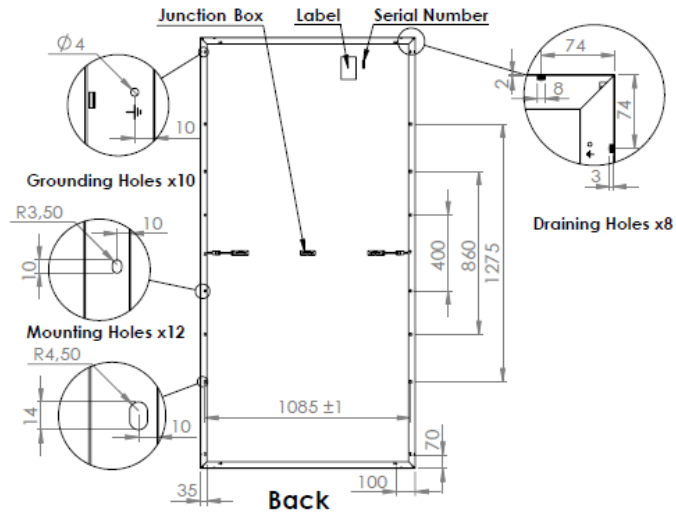
### Operating conditions

Maximum System Voltage	1500 VDC
Maximum Series Fuse	25 A
Operating Temperature Range	From -40°C to 85°C
Mechanical Load test (Front/Back)	5400Pa/2400Pa

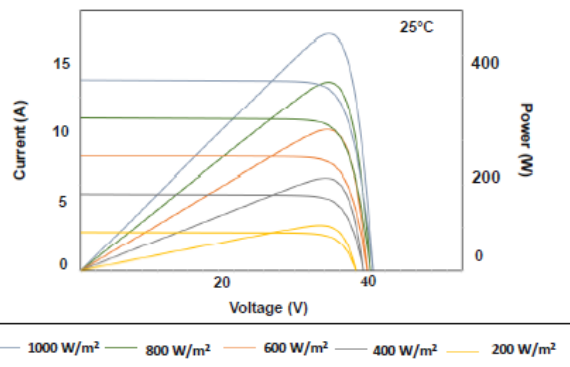
### Power Connection

Junction Box	3xIP68 Junction Box With Bypass Diodes
Solar Cable	Length 300mm, 4mm <sup>2</sup> Prefabricated with Latching Type Connectors
Safety Class	Class II (According to IEC 61140)

### Technical drawing



### Current-Voltage/Power-Voltage Curves, IF-HWM455-120



### Mechanical Specification

Dimensions (LxWxH)	1892mm x 1135 mm x 35 mm (±2mm)
Weight	24.2 Kg

### Packaging specification

Dimensions (LxWxH)	1920mm x 1150mm x 1265mm	Modules Qty per Carton	31	Modules Qty per Container 40' HC	744
--------------------	--------------------------	------------------------	----	----------------------------------	-----