








MBB PERC BIFACIAL MODULE

480W-485W-490W



- **MBB PERC BIFACIAL MODULE**
High Performance Half-Cut Cells
With Transparent 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)
-  Triple EL 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 P _{mpp} | Nominal Voltage U _{mpp} | Nominal Current I _{mpp} | Open Circuit Voltage (U _{oc}) | Short Circuit Current (I _{sc}) | Module Conversion Efficiency |
|--------------|--------------------------------|----------------------------------|----------------------------------|---|--|------------------------------|
| IF-HTM480-96 | 480 Wp | 27.88 V | 17.22 A | 37.90 V | 18.09 A | 21.05% |
| IF-HTM485-96 | 485 Wp | 28.12 V | 17.26A | 38.01 V | 18.11 A | 21.27% |
| IF-HTM490-96 | 490 Wp | 28.36 V | 17.28 A | 38.31 V | 18.13 A | 21.49% |

Electrical Data At STC (STANDARD TEST CONDITIONS): 1000W/m² Irradiance, 25°C Cell Temperature, AM1.5 Spectrum According to EN 60904-3. Manufacturing Tolerance (P_{max},V_{oc},I_{sc}) : ±3%

NMOT

| Module Type | Nominal Power P _{mpp} | Nominal Voltage U _{mpp} | Nominal Current I _{mpp} | Open Circuit Voltage (U _{oc}) | Short Circuit Current (I _{sc}) |
|--------------|--------------------------------|----------------------------------|----------------------------------|---|--|
| IF-HTM480-96 | 358.82 Wp | 26.04 V | 13.77 A | 31.64 V | 14.48 A |
| IF-HTM485-96 | 362.75 Wp | 26.27 V | 13.80 A | 31.73 V | 14.50 A |
| IF-HTM490-96 | 366.27 Wp | 26.49 V | 13.82 A | 32.13 V | 14.52 A |

Electrical Data At NMOT: 800W/m² Irradiance, 20°C Ambient Temperature, 1m/s Wind Speed. Manufacturing Tolerance (P_{max},V_{oc},I_{sc}) : ±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 /210 mm X 105mm - 96Pcs |
| Backside | Transparent Composite Film |
| Frame | 35 mm Anodized Aluminum Alloy Type 6005-T6 (Silver/Black) |

Temperature Coefficients

| | |
|-----------------------------|-----------|
| voltage U _{oc} (β) | -0.26%/°C |
| Current I _{sc} (α) | +0.05%/°C |
| Output Power(γ) | -0.34%/°C |
| NMOT | 43±2°C |

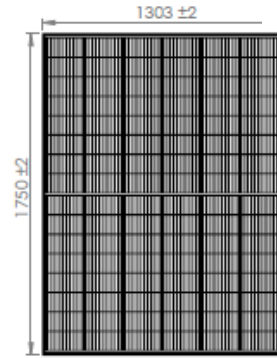
Operating conditions

| | |
|-----------------------------------|--------------------|
| Maximum System Voltage | 1500 VDC |
| Maximum Series Fuse | 30 A |
| Operating Temperature Range | From -40°C to 85°C |
| Mechanical Load test (Front/Back) | 5400Pa/2400Pa |

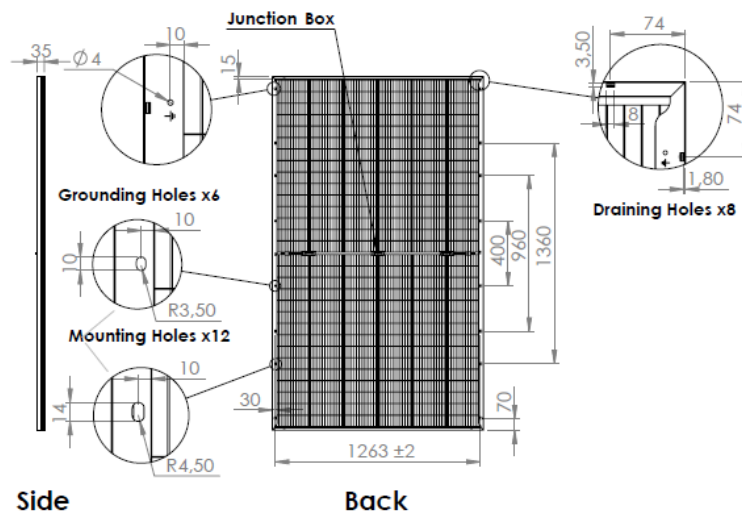
Power Connection

| | |
|--------------|--|
| Junction Box | 3xIP68 Junction Box With Bypass Diodes |
| Solar Cable | Length 350mm, 4mm ² Prefabricated with Latching Type Connectors |
| Safety Class | Class II (According to IEC 61140) |

Technical drawing



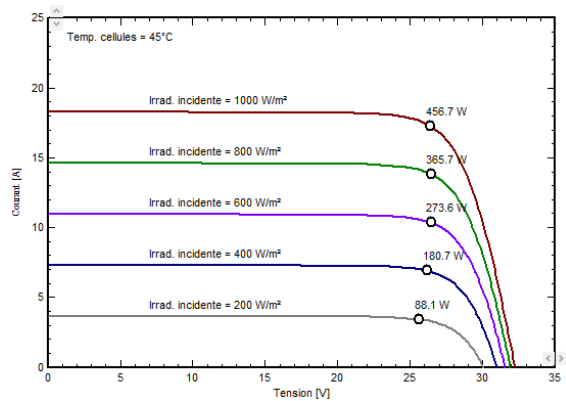
Front



Side

Back

Current-Voltage/Power-Voltage Curves, IF-HTM490-96



Mechanical Specification

| | |
|--------------------|---------------------------------|
| Dimensions (LxWxH) | 1750mm x 1303 mm x 35 mm (±2mm) |
| Weight | 25,5 Kg |

Packaging specification

| | | | | | |
|--------------------|--------------------------|------------------------|----|----------------------------------|-----|
| Dimensions (LxWxH) | 1325mm x 1150mm x 1890mm | Modules Qty per Carton | 31 | Modules Qty per Container 40' HC | 558 |
|--------------------|--------------------------|------------------------|----|----------------------------------|-----|