








MBB PERC MONOFACIAL MODULE

405W-410W-415W



- **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 P _{mp}	Nominal Voltage U _{mp}	Nominal Current I _{mp}	Open Circuit Voltage (U _{oc})	Short Circuit Current (I _{sc})	Module Conversion Efficiency
IF-HWM405-108	405 Wp	31.25 V	12.97 A	37.24 V	13.85 A	20.87%
IF-HWM410-108	410 Wp	31.44 V	13.05 A	37.48 V	13.93 A	21.13%
IF-HWM415-108	415 Wp	31.63 V	13.13 A	37.72 V	14.01 A	21.39%

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

NMOT

Module Type	Nominal Power P _{mp}	Nominal Voltage U _{mp}	Nominal Current I _{mp}	Open Circuit Voltage (U _{oc})	Short Circuit Current (I _{sc})
IF-HWM405-108	302.2 Wp	29.21 V	10.35 A	35.13 V	11.16 A
IF-HWM410-108	305.9 Wp	29.33V	10.43 A	35.32 V	11.24 A
IF-HWM415-108	310.2 Wp	29.58 V	10.49 A	35.51V	11.31 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 /182 mm X 91mm - 108 Pcs
Backside	White or Black Composite Film
Frame	35 mm Anodized Aluminum Alloy Type 6063-T6 (Silver/Black)

Temperature Coefficients

voltage U _{oc} (β)	-0.26%/°C
Current I _{sc} (α)	+0.048%/°C
Output Power(γ)	-0.35%/°C
NMOT	43±2°C

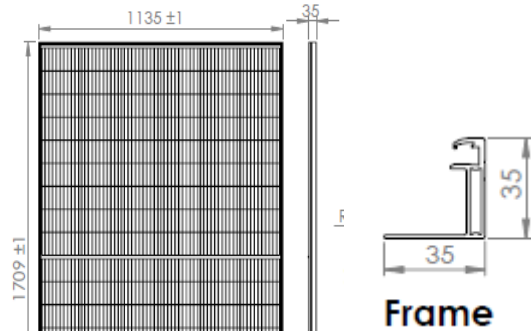
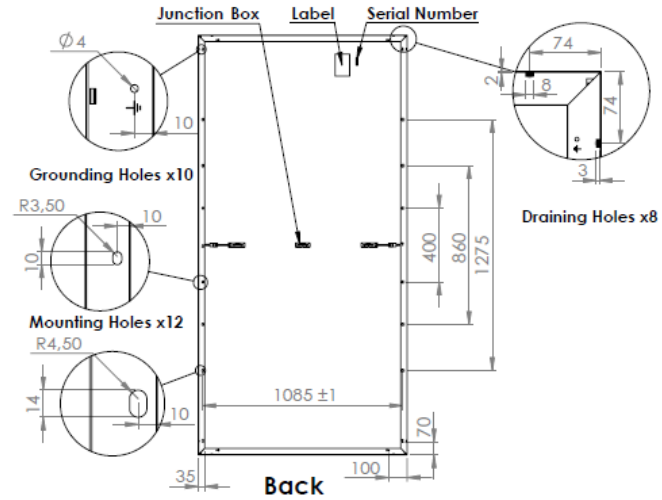
Operating conditions

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

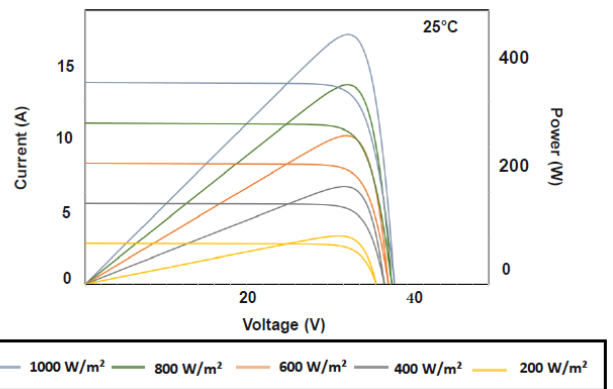
Power Connection

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

Technical drawing



Current-Voltage/Power-Voltage Curves, IF-HWM400-108



Mechanical Specification

Dimensions (LxWxH)	1709 mm x 1135 mm x 35 mm (±2mm)
Weight	21.4 Kg

Packaging specification

Dimensions (LxWxH)	1730mm x 1150mm x 1265mm	Modules Qty per Carton	31	Modules Qty per Container 40' HC	806
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