

OR10H450MNDB (FB)

OR Series – 450 W

108 cells

MONO M10 HALF | N-TYPE



Extra-EU module

Manufactured in **our production factory**



TOPCon bifacial technology



Anti-reflective double glass

Maximum efficiency and high performance



Compact and sturdy frame

Anchorable also on the short side ⁽⁵⁾



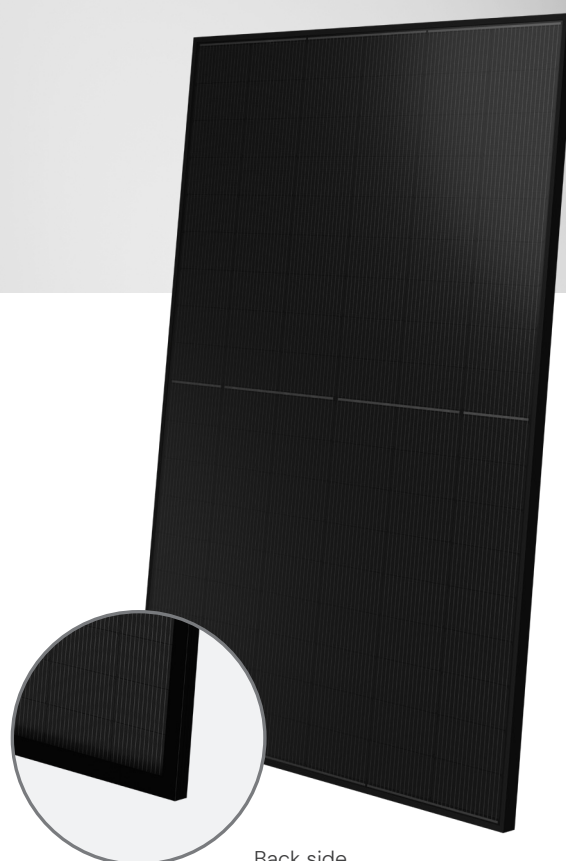
Class of reaction to fire

Class 1 (UNI 9177),
B-s1, d0 (EN 13501-1)
B_{ROOF}(t1) (EN 13501-5)



RoHS compliance

(Restriction of Hazardous Substances Directive 2011/65/UE)



Back side



30 years

Linear power warranty

25 years

Product warranty



QBE insurance

QBE Product Liability Insurance

QBE is a global leader in the insurance sector, offering comprehensive solutions for business risk management. With a worldwide network, it protects clients against a wide range of risks and provides flexible insurance solutions tailored to various industries, including the energy sector.

Electrical Characteristics (STC) ⁽¹⁾

Nominal Output (P _{max}) ⁽²⁾	450 W
Sorting Tolerance	0/+5 W
Voltage at P _{max} (V _{mp})	33,25 V
Current at P _{max} (I _{mp})	13,53 A
Open Circuit Voltage (V _{oc}) ⁽²⁾	38,99 V
Short Circuit Current (I _{sc}) ⁽²⁾	14,25 A
Maximum System Voltage	1500 V
Maximum Series Fuse Rating	30 A
Module Efficiency	23,04% 22,52%
Protection class against electric shock	Class II

1. STC: (Standard Test Condition) Irradiance 1000 W/m²; Module Temperature 25 °C; Air Mass 1,52. P_{max}, V_{oc}, I_{sc} measurement tolerance: ±3%**Electrical Characteristics with rear side power gain**

P _{max} gain	5%	10%	15%	20%	25%
Nominal Output (P _{max})	472 W	495 W	517 W	540 W	562 W
Voltage at P _{max} (V _{mp})	33,25 V	33,25 V	33,25 V	33,25 V	33,25 V
Current at P _{max} (I _{mp})	14,21 A	14,88 A	15,56 A	16,24 A	16,91 A
Open Circuit Voltage (V _{oc})	38,99 V	38,99 V	38,99 V	38,99 V	38,99 V
Short Circuit Current (I _{sc})	14,96 A	15,68 A	16,39 A	17,10 A	17,81 A

Mechanical Characteristics

Solar Cells	108 M10 HALF monocrystalline N-TYPE
Solar Cells Size	182 x 91 mm / 7,16 x 3,58"
Front Cover	2,0 mm / 0,08" thick, low iron tempered glass
Back Cover	2,0 mm / 0,08" thick, low iron tempered glass
Encapsulant	EVA / POE
Frame	Anodized aluminium alloy, double wall
Frame finishing	Black
Diodes	3 Bypass diodes
Junction Box	IP68 rated
Connector	MC4 or compatible connector
Cables Length	1100 mm / 43,30"
Cables Section	4,0 mm ² / 0,006 in ²
Dimensions	1722 x 1134 x 30 mm / 67,79 x 44,64 x 1,18" 1762 x 1134 x 30 mm / 69,37 x 44,64 x 1,18"
Weight	23,24 kg / 51,2 lbs - 23,77 kg / 52,4 lbs
Max Load (Test Load) - SF	5400 Pa - 1,5 ⁽⁵⁾

5. Consult the installation manual for the relative mounting configurations

Temperature Characteristics

NMOT ⁽³⁾	43±2 °C
Temperature Coefficient of P _{max}	-0,29 %/°C
Temperature Coefficient of V _{oc}	-0,25 %/°C
Temperature Coefficient of I _{sc}	0,046 %/°C
Operating Temperature	-40 °C ~ +85 °C

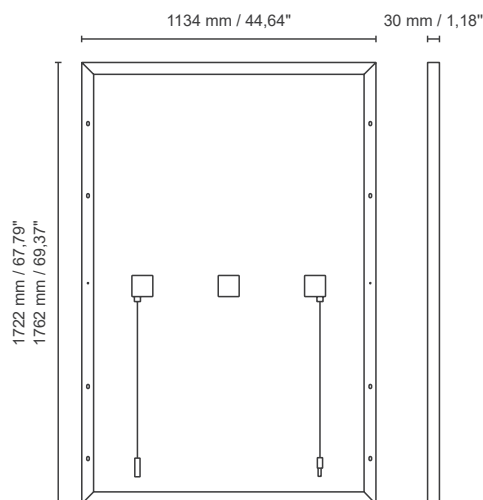
3. NMOT: Nominal Module Operating Temperature: Irradiance 800 W/m²; Air 20 °C; Wind speed 1 m/s**Packaging ⁽⁴⁾**

Pallet dimensions	Pieces per pallet - Weight
1750 x 1130 x 1265 mm / 68,9 x 44,5 x 49,8"	36 pcs - 864 kg / 1904,8 lbs
1750 x 1130 x 1265 mm / 68,9 x 44,5 x 49,8"	37 pcs - 888 kg / 1957,7 lbs
1780 x 1130 x 1265 mm / 70,1 x 44,5 x 49,8"	36 pcs - 883 kg / 1946,68 lbs

4. Pallets can be stacked up to two

Certifications

Reaction to fire	Class 1 (UNI 9177), B-s1, d0 (EN 13501-1), B _{ROOF} (t1) (EN 13501-5)
Product Certificate	IEC 61215-1, IEC 61215-1-1, IEC 61215-2, IEC 61730-1, IEC 61730-2
RoHS - Directive 2011/65/EU	EN 62321

Dimensions**Current/Voltage Characteristics**