

MBB Half-cell Monofacial Full-black Module (54)

TW390~415MAP

M10-108-H-F

PRODUCT FEATURES



High Power Output
Low LCOE



Maximum Power
415W*



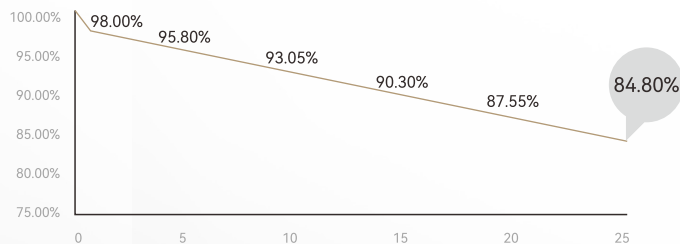
High
Reliability



Low
LID

POWER WARRANTY

1st year <2%, 0.55% power degradation per year from 2 to 25 years



12-year warranty for materials



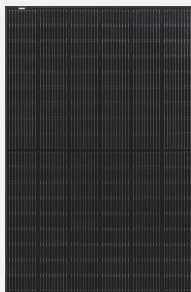
25-year warranty for linear power output

PRODUCT CERTIFICATIONS

ISO9001: 2015/Quality Management System

ISO14001: 2015/Environment Management System

ISO45001: 2018/Occupational Health and Safety



Front



Rear



Electrical Characteristics (STC)

Module type: TW***MAP-108-H-F

Maximum power: P _m (W)	390	395	400	405	410	415
Open circuit voltage: V _{oc} (V)	36.48	36.63	36.78	36.93	37.08	37.23
Short circuit current: I _{sc} (A)	13.33	13.42	13.52	13.61	13.70	13.80
Voltage at maximum power point: V _m (V)	30.71	30.86	31.01	31.16	31.31	31.46
Current at maximum power point: I _m (A)	12.70	12.80	12.90	13.00	13.09	13.19
Module efficiency: η (%)	20.0	20.2	20.5	20.7	21.0	21.3

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass1.5, Measuring tolerance: ±3%

Electrical Characteristics (NMOT)

Maximum power: P _m (W)	295.2	299.0	302.8	306.6	310.3	314.1
Open circuit voltage: V _{oc} (V)	34.44	34.58	34.72	34.86	35.00	35.15
Short circuit current: I _{sc} (A)	10.67	10.75	10.82	10.90	10.97	11.05
Voltage at maximum power point: V _m (V)	28.49	28.62	28.76	28.90	29.04	29.18
Current at maximum power point: I _m (A)	10.36	10.44	10.52	10.60	10.68	10.76

NMOT: Irradiance 800W/m², Ambient Temperature 20 °C, Wind Speed 1m/s

Mechanical Parameters

Cells	Monocrystalline silicon cell
Orientation	108 (6×18)
Size	1722±2×1134±2×30mm
Weight	20.5kg
Glass	3.2mm high transmittance, AR coated heat strengthened glass
Backsheet	Black inside and white outside / All black
Frame	Anodized aluminum alloy frame with black
Junction Box	IP68, 3 diodes
Cable	4.0mm ² , Landscape: 1200/1200mm
Connector	MC4 Compatible
Wind/Snow Load	2400Pa/5400Pa
Packaging	36pcs per pallet, 936pcs per 40'HC

Operating Parameters

Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	25A
Power Output Tolerance	0~+5W

Temperature Ratings

Temperature Coefficient (P _{max})	-0.35%/°C
Temperature Coefficient (V _{oc})	-0.27%/°C
Temperature Coefficient (I _{sc})	0.045%/°C
NMOT	43±2°C

Drawings (Unit: mm)

