

MBB Half-cell Monofacial Black-frame Module (54)  
**TW395~415MAP**  
 M10-108-H (Black Frame)

**PRODUCT FEATURES**

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High Power Output  
Low LCOE
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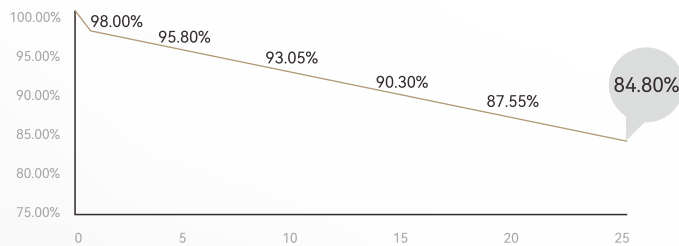
Maximum Power  
420W+
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High Reliability
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Low LID

**POWER WARRANTY**

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

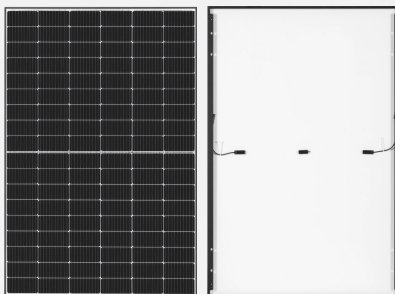


**12** 12-year warranty for materials

**25** 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 (Black Frame)

Maximum power: Pm (W)	395	400	405	410	415
Open circuit voltage: Voc (V)	36.75	37.00	37.25	37.50	37.75
Short circuit current: Isc (A)	13.69	13.78	13.86	13.94	14.02
Voltage at maximum power point: Vm (V)	30.85	31.05	31.24	31.43	31.64
Current at maximum power point: Im (A)	12.81	12.89	12.97	13.05	13.13
Module efficiency: $\eta$ (%)	20.2	20.5	20.7	21	21.3
STC: Irradiance 1000W/m <sup>2</sup> , Cell Temperature 25°C, Air Mass1.5, Measuring tolerance: $\pm$ 3%					

## Electrical Characteristics (NMOT)

Maximum power: Pm (W)	294.0	298.0	302.0	306.0	310.0
Open circuit voltage: Voc (V)	34.60	34.80	35.10	35.30	35.50
Short circuit current: Isc (A)	11.04	11.11	11.17	11.24	11.30
Voltage at maximum power point: Vm (V)	28.80	29.00	29.20	29.30	29.60
Current at maximum power point: Im (A)	10.23	10.30	10.36	10.42	10.48
NMOT: Irradiance 800W/m <sup>2</sup> , 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	White
Frame	Anodized aluminum alloy frame
Junction Box	IP68, 3 diodes
Cable	4.0mm <sup>2</sup> , Landscape: 1200/1200mm
Connector	MC4 Original
Wind/Snow Load	2400Pa/5400Pa
Packaging	36pcs per pallet, 936pcs per 40HC

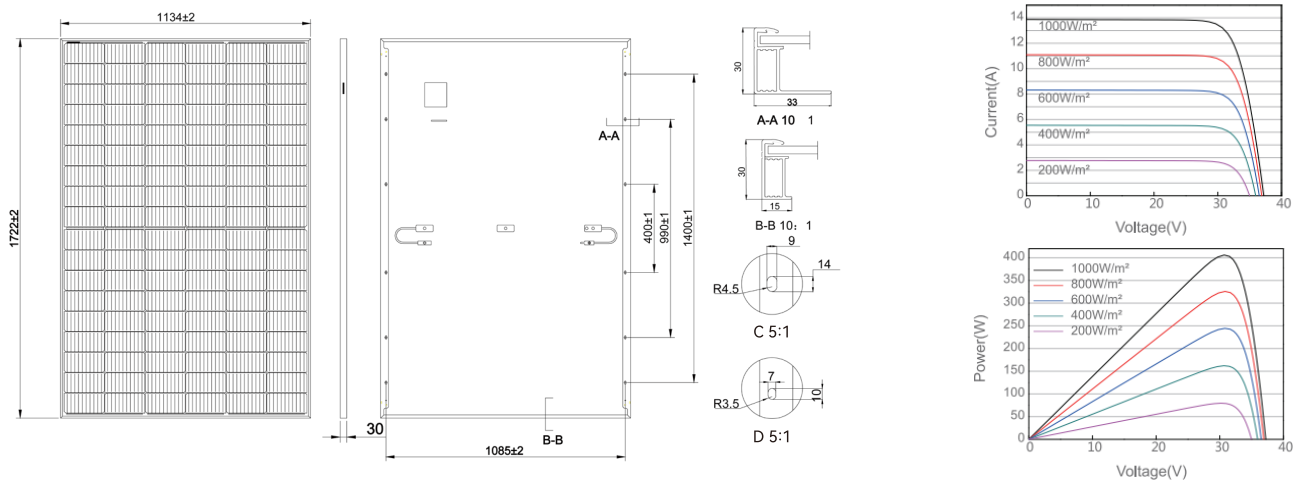
## Operating Parameters

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 (Pmax)	-0.35%/°C
Temperature Coefficient (Voc)	-0.26%/°C
Temperature Coefficient (Isc)	0.048%/°C
NMOT	43±2°C

## Drawings (Unit: mm)



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