

## 108 HALF-CELL MONOFACIAL MODULE

# 390-410W

MSMxxxS - C54/Umh



### Features



#### High module conversion efficiency

Module efficiency up to 21.0% achieved through advanced cell technology and manufacturing process



#### Macsun Solar current sorting process

Up to 2% power loss caused by current mismatch could be diminished by current sorting technique to maximize system power output



#### Excellent weak light performance

More power output in weak light condition, such as cloudy, morning and sunset



#### Lower operating temperature

Lower operating temperature and temperature coefficient increases the power output



#### Extended wind and snow load tests

Module certified to withstand extreme wind (3800 Pascal) and snow loads (6000 Pascal) \*



#### Withstanding harsh environment

Reliable quality leads to a better sustainability even in harsh environment like desert, farm and coastline

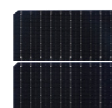
Certifications and standards:  
IEC 61215, IEC 61730, conformity to CE



### Trust Macsun Solar to Deliver Reliable Performance Over Time

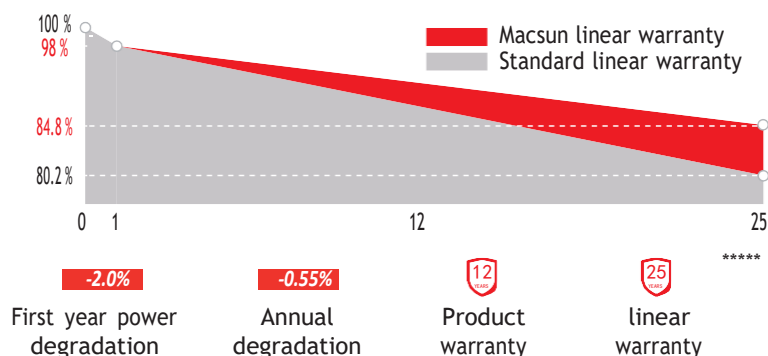
- World-class manufacturer of crystalline silicon photovoltaic modules
- Rigorous quality control meeting the highest international standards: ISO 9001, ISO 14001 and ISO17025
- Regular independently checked production process from international accredited institute/company
- Tested for harsh environments (IEC 61701, IEC 62716, DIN EN 60068-2-68) \*\*\*\*
- Long-term reliability tests
- 2 x 100% EL inspection ensuring defect-free modules

### Special Cell Design



MBB technology decreases the distance between bus bars and finger grid line which is benefit to power increase. Half-cell aims to eliminate the cell gap to increase module efficiency.

### Industry-leading Warranty based on nominal power



### IP68 Rated Junction Box



The Macsun Solar IP68 rated junction box ensures an outstanding waterproof level, supports installations in all orientations and reduces stress on the cables.

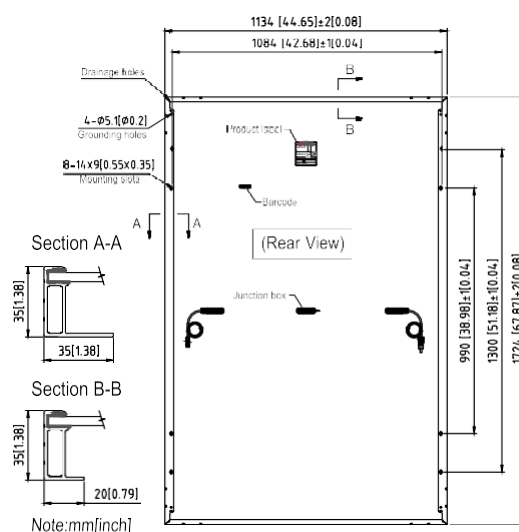
\* Please refer to Macsun Solar Standard Module Installation Manual for details. \*\* Macsun Solar reserves the right to the final interpretation of the warranty by Munich Re.  
 \*\*\* WEEE only for EU market. \*\*\*\* Please refer to Macsun Solar Product Near-coast Installation Guide for details.  
 \*\*\*\*\* Please refer to Macsun Solar Limited Warranty for details.

STC	MSMXXXS-C54/Umh				
Maximum Power at STC (Pmax)	410W	405W	400W	395W	390W
Optimum Operating Voltage (Vmp)	31.59V	31.38V	31.18V	30.98V	30.76V
Optimum Operating Current (Imp)	12.98A	12.91A	12.83A	12.76A	12.69A
Open Circuit Voltage (Voc)	37.45V	37.24V	37.04V	36.84V	36.62V
Short Circuit Current (Isc)	13.88A	13.81A	13.73A	13.66A	13.59A
Module Efficiency	21.0%	20.7%	20.5%	20.2%	19.9%
Operating Module Temperature	-40 °C to +85 °C				
Maximum System Voltage	1500 V DC (IEC)				
Maximum Series Fuse Rating	25 A				
Power Tolerance	0/+5 W				

STC: Irradiance 1000 W/m<sup>2</sup>, module temperature 25 °C, AM=1.5;  
Tolerance of Pmax is within +/- 3%;

NMOT	MSMXXXS-C54/Umh				
Maximum Power at NMOT (Pmax)	309.6W	306.0W	302.3W	298.6W	294.9W
Optimum Operating Voltage (Vmp)	29.2V	29.0V	28.8V	28.6V	28.4V
Optimum Operating Current (Imp)	10.62A	10.56A	10.50A	10.44A	10.38A
Open Circuit Voltage (Voc)	35.2V	35.0V	34.8V	34.6V	34.4V
Short Circuit Current (Isc)	11.16A	11.10A	11.04A	10.98A	10.93A

NMOT: Irradiance 800 W/m<sup>2</sup>, ambient temperature 20 °C, AM=1.5, wind speed 1 m/s.



### Temperature Characteristics

Nominal Module Operating Temperature (NMOT)	42 ± 2 °C
Temperature Coefficient of Pmax	-0.36%/°C
Temperature Coefficient of Voc	-0.304%/°C
Temperature Coefficient of Isc	0.050%/°C

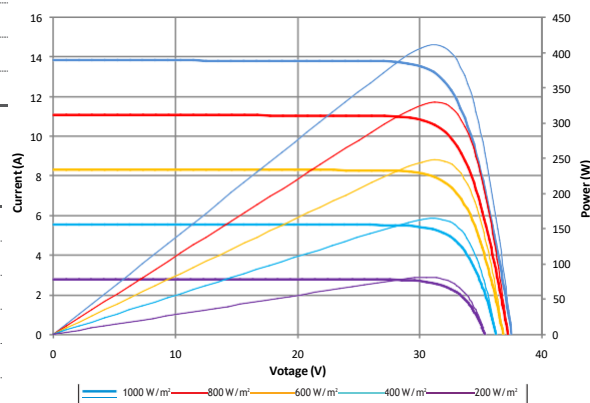
### Mechanical Characteristics

Solar Cell	Monocrystalline silicon 182 mm
No. of Cells	108 (6 × 18)
Dimensions	1724 × 1134 × 35 mm (67.9 × 44.6 × 1.4 inches)
Weight	22.1 kgs (48.7 lbs.)
Front Glass	3.2 mm (0.126 inches)
Frame	Anodized aluminium alloy
Junction Box	IP68 rated (3 bypass diodes)
Output Cables	4.0 mm <sup>2</sup> , (-) 350 mm and (+) 160 mm in length or customized length
Connectors	MC4 EVO2, Cable 01S

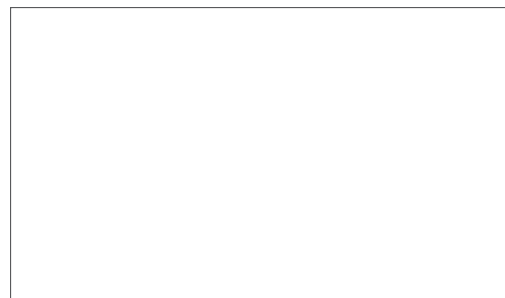
### Packing Configuration

Container	40' HC
Pieces per pallet	31
Pallets per container	26
Pieces per container	806
Packaging box dimensions	1755×1130×1245 mm
Packaging box weight	735 kg

### Current-Voltage & Power-Voltage Curve (410S)



### Dealer information



Information on how to install and operate this product is available in the installation instruction. All values indicated in this data sheet are subject to change without prior announcement. The specifications may vary slightly. All specifications are in accordance with standard EN 50380. Color differences of the modules relative to the figures as well as discolorations of/in the modules which do not impair their proper functioning are possible and do not constitute a deviation from the specification.