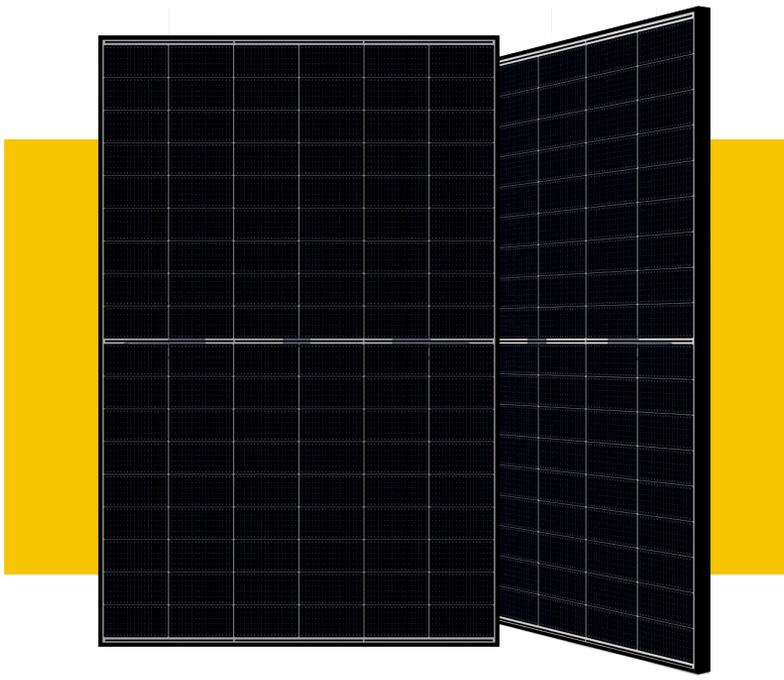
München Energieprodukte
MAXIMALENERGIE

MSMDxxxM10-HJT108DSN

430-450w

108-cell Bifacial Half Cell
Double-glass Solar Module



Product Advantages

HJT 3.0
Combining gettering process and double-sided μc-Si to maximize cell efficiency and module power.

-0.26%/℃ Pmax temperature coefficient
More stable power generation performance and even better in hot climate.

Small Chamfer Design
Bigger power generation area on the solar cell, increasing 1% cell power of single piece.

SMBB design with Half-Cut Technology
Shorter current transmission distance, less resistive loss and higher cell efficiency.

Up to 90% Bifaciality
Natrual symmetrical bifacial structure bringing more energy yield from the backside.

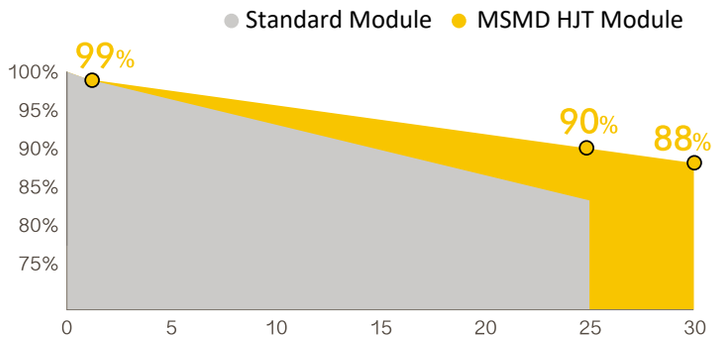
Sealing with PIB based sealant
Stronger water resistance, greater air impermeability to extent module lifespan.

Higher reliability
Industrial leading product and performance warranty, ensuring module's consistent outstanding performance.

Ideal choice for residential rooftop

23.04%	450W
Module efficiency	Highest power output

Performance Warranty



-1.00%	30 Years	30 Years
First year power degradation	Materials and workmanship warranty	Linear power warranty

-0.375%
Annual degradation

Product Certification

info@muenchen-energieprodukte.de

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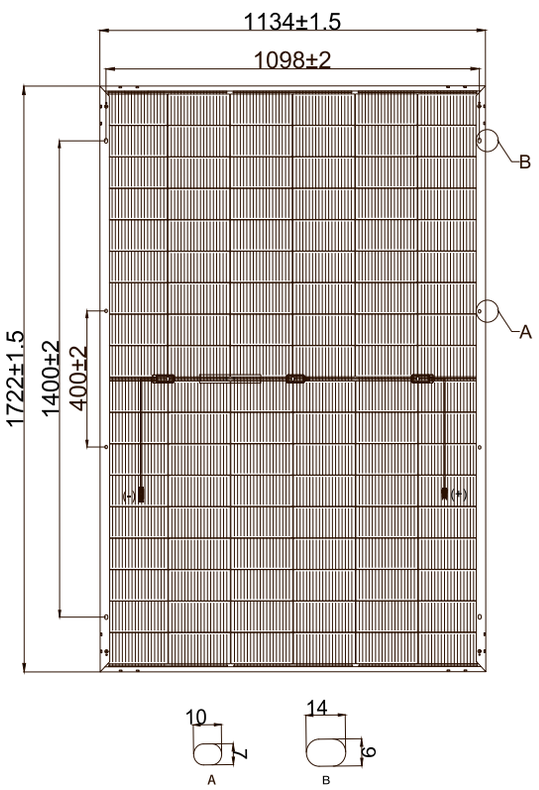
Engineering Drawings

Unit: mm



Electrical Characteristics (STC*)

MSMDxxxM10-HJT108DSN		430	435	440	445	450
Maximum Power	(Pmax)	430W	435W	440W	445W	450W
Module Efficiency	(%)	22.02%	22.28%	22.53%	22.79%	23.04%
Optimum Operating Voltage	(Vmp)	34.60V	34.86V	35.12V	35.38V	35.63V
Optimum Operating Current	(Imp)	12.43A	12.48A	12.53A	12.58A	12.63A
Open Circuit Voltage	(Voc)	41.37V	41.64V	41.91V	42.18V	42.44V
Short Circuit Current	(Isc)	12.95A	13.00A	13.05A	13.10A	13.15A
Operating Module Temperature		-40 to +85℃				
Maximum System Voltage		DC1500V (IEC)				
Maximum Series Fuse		25A				
Power Tolerance		0~+5W				
Bifaciality		90±5%				

*STC: Irradiance 1000 W/m², cell temperature 25℃, AM=1.5. Tolerance of Pmax is within +/- 3%.

BSTC**

Maximum Power	(Pmax)	480W	485W	490W	495W	500W
Optimum Operating Voltage	(Vmp)	34.60V	34.86V	35.12V	35.38V	35.63V
Optimum Operating Current	(Imp)	13.88A	13.92A	13.96A	14.00A	14.04A
Open Circuit Voltage	(Voc)	41.37V	41.64V	41.91V	42.18V	42.44V
Short Circuit Current	(Isc)	14.46A	14.49A	14.53A	14.57A	14.61A

**BSTC: Front side irradiation 1000W/m², back side reflection irradiation 135W/m², AM=1.5, ambient temperature 25℃.

Mechanical Characteristics

Cell Type	HJT Mono 182×91.75mm
Cell Connection	108 (6×18)
Module Dimension	1722×1134×30 mm
Weight	26/22 kg
Junction Box	IP68
Output Cable	4mm², 1200mm in length, length can be customized / UV resistant
Connectors Type	MC4 original
Frame	Anodised aluminum alloy (Black)
Front Load	5400 Pa
Rear Load	2400 Pa
Glass Thickness	Double glass, 2.0mm/1.6mm

Temperature Characteristics

Nominal Operating Cell Temp. (NOCT)	44℃±2℃
Temperature Coefficiency of Pmax	-0.26%/℃
Temperature Coefficiency of Voc	-0.24%/℃
Temperature Coefficiency of Isc	0.04%/℃

Safety & Warranty

Safety Class	Class II
Product Warranty	30 yrs Workmanship
Performance Warranty	30 yrs Linear Warranty*

* 1st year 99%, after 2nd year 0.375% annual degradation to year 30.

Shipping Configurations

		HC
Container Length		40'
Pallets Per Container		26
Modules Per Pallet	(pcs)	36
Modules Per Container	(pcs)	936

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