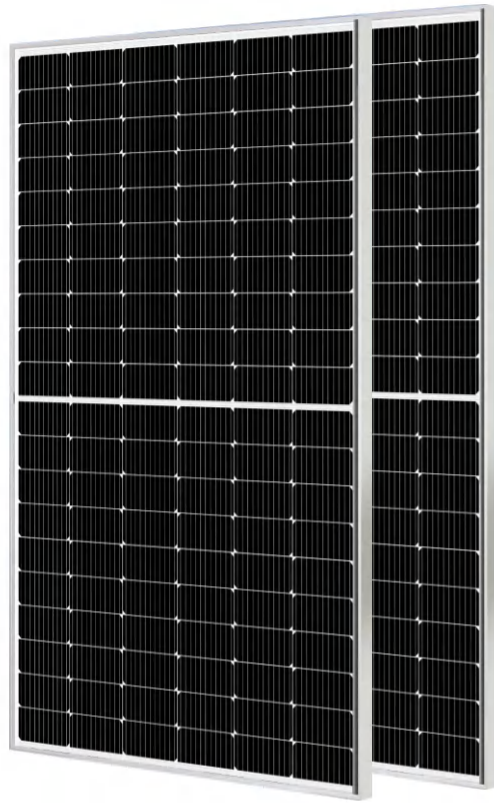


# Module Picture



## MSD450M-120

Mono Half-cut Single/Double Glass Module

430-455/MB Series

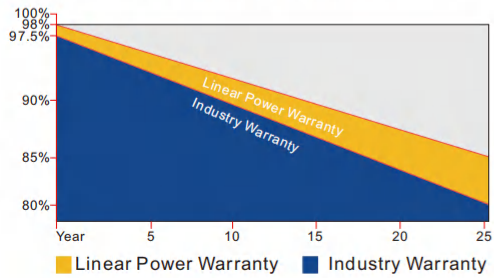
**INTRODUCTION**  
 MONO half-cut single / double glass module, assembled with multi-busbar PERC technique and half-cut structure, which can not only absorb the energy from the front of the module, but also absorb the reflected light and the scattered light from the back, offer the advantages of higher power output, reduce shading effect on the energy generation, enhance the mechanical load bearing capacity as well.

### LCOE save 6-8%

- ↓6% Saving logistics cost
- ↓7% Saving cable cost
- ↓8% Saving bracket cost
- ↓9% Saving labor cost

### First-class Quality Assurance

- 10-year warranty for material and technology
- 25-year linear power output warranty

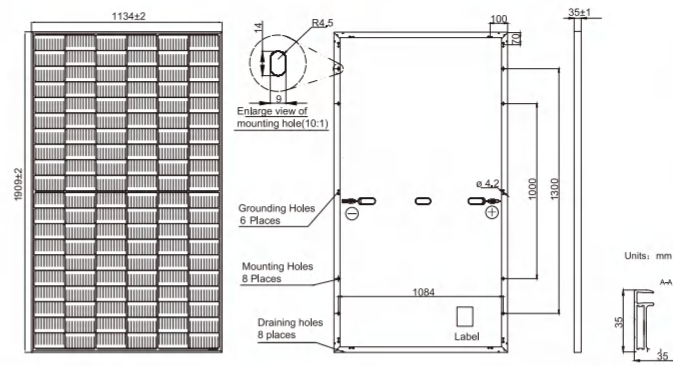


### Comprehensive Certificates

- IEC61215, IEC61730
- ISO9001:2015 Quality management systems
- ISO45001: Environmental management systems
- ISO45001:2018 Occupational health and safety management systems



# Mechanical Diagrams



PS: Frame color and cable length can be customized

### Electrical Parameters at STC

Module Type	MSD430P	MSD435P	MSD440P	MSD445P	MSD450P	MSD455P
Rate Maximum Power(Pmax/W)	430	435	440	445	450	455
Module Efficiency(%)	19.90	20.10	20.30	20.60	20.80	21.10
Open Circuit Voltage(Voc/V)	40.65	40.80	40.95	41.10	41.25	41.40
Short Circuit Current(Isc/A)	13.59	13.67	13.74	13.82	13.89	13.97
Voltage at Pmax(Vmp/V)	33.89	30.09	34.28	34.48	34.67	34.87
Current at Pmax(Imp/A)	12.69	12.77	12.84	12.91	12.98	13.05
Power Tolerance	0~+5w					
Temperature Coefficient of Isc	+0.046%/°C					
Temperature Coefficient of Voc	-0.276%/°C					
Temperature Coefficient of Pmax	-0.350%/°C					

STC Irradiance 1000W/m<sup>2</sup> Cell Temperature 25°C AM1.5  
 Remark: Electrical data in this catalogue does not refer to a single module, and it's not part of the offer. It only serves for the comparison among different module types.

### Electrical Parameters at NOCT

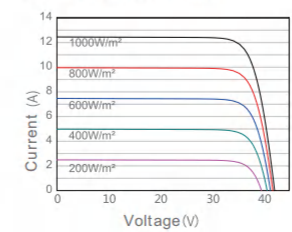
Module Type	MSD430P	MSD435P	MSD440P	MSD445P	MSD450P	MSD455P
Rate Maximum Power(Pmax/W)	327	330	333	336	340	343
Open Circuit Voltage(Voc/V)	38.15	38.28	38.40	38.53	38.65	38.77
Short Circuit Current(Isc/A)	10.91	10.95	10.99	11.03	11.08	11.12
Voltage at Pmax(Vmp/V)	31.89	32.05	32.19	32.35	32.51	32.67
Current at Pmax(Imp/A)	10.26	10.30	10.35	10.40	10.46	10.51

### Operating Conditions

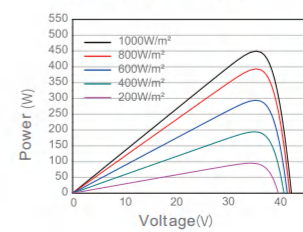
Operating Temperature	-40~+85°C
Maximum System Voltage	1500VDC
NOCT	45±2°C
Fireproof Performance	Glass C
Maximum Series Fuse	25A
Temperature Coefficient of Voc	-0.276%/K
Temperature Coefficient of Isc	+0.046%/K

### Characteristics

Current Voltage Curve MSD450P



Power Voltage Curve MSD450P



Current Voltage Curve MSD450P

