München Energieprodukte
MAXIMALENERGIE

MSMDxxxM12-60

495-505w

210mm cells half cut cell technology

Product Advantages

High power up to 505W

- Large area cells based on 210mm silicon wafers and half cut cell technology
- Up to 21.1% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection

21.1%
Module efficiency

505W
Highest power output

High reliability

- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Resistant to harsh environments such as salt,ammonia,sand,high temperature and high humidity areas
- Mechanical performance up to 5400Pa positive load and 2400Pa negative load

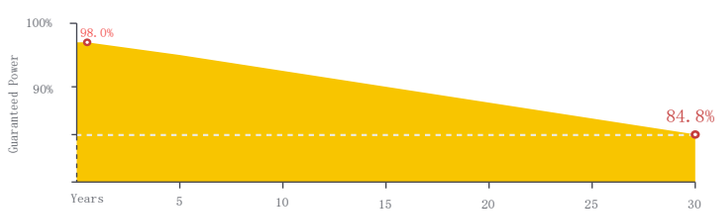
High energy yield

- Excellent IAM(Incident Angle Modifier) and low irradiation performance validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Up to 25% additional power gain from back side depending on albedo

Easy to install

- Frame design makes module compatible with all racking and installation methods
- Easy to handle and install as normal framed module during transportation

Performance Warranty



-2.00%
First year power degradation

-0.55%
Annual degradation

12 Years
Materials and workmanship warranty

30 Years
Linear power warranty

Product Certification

info@muenchen-energieprodukte.de

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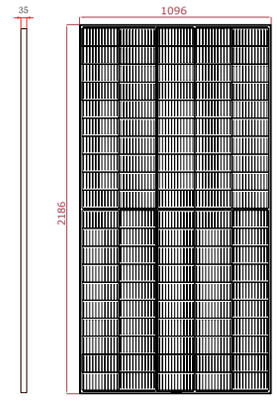
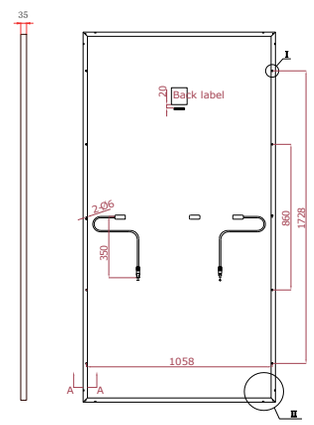
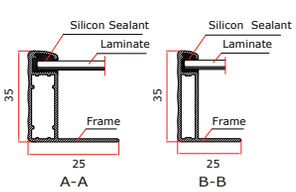
DIMENSIONS OF PV MODULE(mm)



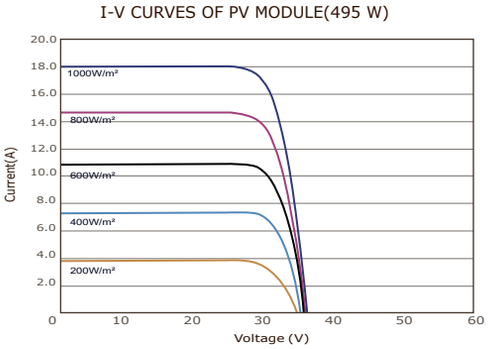
Front View



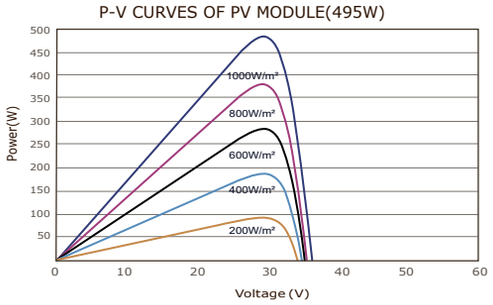
Back View



I-V CURVES OF PV MODULE(495 W)



P-V CURVES OF PV MODULE(495W)



ELECTRICAL DATA (STC)

Peak Power Watts	P_{MAX}(Wp)*	495	500	505
Power Tolerance	P_{MAX}(W)		0 ~ +5	
Maximum Power Voltage	V_{MPP}(V)	28.02	28.23	28.44
Maximum Power Current	I_{MPP}(A)	17.67	17.72	17.76
Open Circuit Voltage	V_{OC}(V)	33.77	34.02	34.28
Short Circuit Current	I_{SC}(A)	18.76	18.81	18.86
Module Efficiency	η_m(%)	20.67	20.87	21.08

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5.
*Measuring tolerance: ±3%.

ELECTRICAL DATA (NOCT)

Maximum Power	P_{MAX}(Wp)	374.73	378.51	382.30
Maximum Power Voltage	V_{MPP}(V)	26.08	26.27	26.47
Maximum Power Current	I_{MPP}(A)	14.37	14.41	14.44
Open Circuit Voltage	V_{OC}(V)	31.83	32.06	32.30
Short Circuit Current	I_{SC} (A)	15.11	15.16	15.19

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

MECHANICAL DATA

Solar Cells	Monocrystalline
Cell Orientation	100 cells
Module Dimensions	2186x1096x35mm
Weight	23.5kg
Glass	3.2mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	EVA
Backsheet	White
Frame	35mm Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm² Cable length 350mm or customized length
Connector	MC4 Compatible

*Please refer to regional datasheet for specified connector.

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43° C (±2 °C)
Temperature Coefficient of P_{MAX}	- 0.36%/°C
Temperature Coefficient of V_{OC}	- 0.26%/°C
Temperature Coefficient of I_{SC}	0.04%/ °C

MAXIMUMRATINGS

Operational Temperature	-40~+85 °C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	30A

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

WARRANTY

12 years Product Workmanship Warranty
30 year Power Warranty
2% first year degradation
0.55% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGUREATION

Modules per box: 31 pieces
Modules per 40'container: 660 pieces