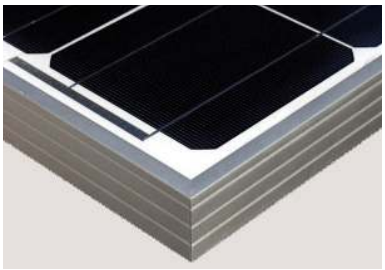
München Solar
MAXIMALENERGIE





12 year product warranty

25 year power output warranty

M Series

Monocrystalline MSMxxxAS-36

ABOUT MUNCHEN SOLAR

MÜNCHEN SOLAR is one of the most innovation, reliability, quality and value focussed companies in the entire sector thanks to its focus on solar modules and technology ranging from roof systems to full-scale power plants. With markets in Germany, Japan, China, Australia and the Americas, München Solar is truly a global provider in the field of solar power.

Whether you're picking solar modules for your residential / commercial roof system or power plant, you know you can rely on the München Solar brand. Customers who choose München Solar know we will deliver maximum performance with the highest quality product at the best value.

PERFORMANCE

Tight positive power tolerance of -0%/W to +3%/W ensures you receive modules at or above nameplate power and contributes to minimizing module mismatch losses leading to improved system yield.

Monocrystalline silicon solar cells with low-iron tempered high transmission and textured glass deliver a module efficiency of up to 16.0%, maximizing the kWh output of your system per unit area.

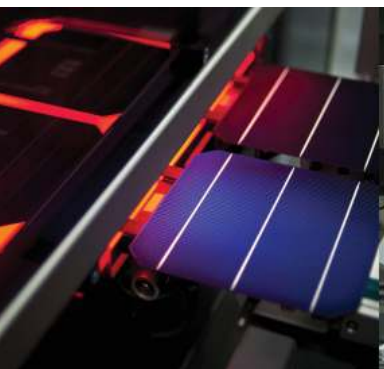
QUALITY & RELIABILITY

- Rigorous quality controls meet the highest international standards: ISO 9001: 2008, ISO 14001: 2004 and ISO 17025: 2005
- Tested for harsh environments (salt mist and ammonia corrosion testing: IEC 61701, DIN 50916:1985 T2)
- Modules independently tested to ensure conformance with certification and regulatory standards.

WARRANTIES

12 year limited product warranty
25 year limited power output warranty
Please refer to our Warranty Terms and Conditions

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M Series

Monocrystalline MSMxxxAS-36

ELECTRICAL PERFORMANCE

Electrical parameters at Standard Test Conditions (STC)

Module Type	MSMxxxAS-36 (xxx=P_{max})				
Power output	P_{max}		190	195	200
Power output tolerances	ΔP_{max}	%	0 / +3		
Module efficiency	η_m	%	14.88	15.27	15.67
Voltage at Pmax	V_{mpp}	V	38.92	39.07	39.48
Current at Pmax	I_{mpp}	A	4.88	4.99	5.07
Open circuit voltage	V_{oc}	V	45.83	45.90	46.10
Short circuit current	I_{sc}	A	5.22	5.34	5.42

STC: 1000W/m² irradiance, 25°C cell temperature, AM1.5g spectrum according to EN 60904-3.
Average relative efficiency reduction of 5% at 200W/m² according to EN 60904-1.

THERMAL CHARACTERISTICS

Nominal operating cell temperature	NOCT	°C	47 +/-2
Temperature coefficient of P_{max}	γ	% / °C	-0.44
Temperature coefficient of V_{oc}	β_{Voc}	% / °C	-0.31
Temperature coefficient of I_{sc}	α_{Isc}	% / °C	+0.04
Temperature coefficient of V_{mpp}	βVmpp	% / °C	-0.35

NOCT: open-circuit module operation temperature at 800W/m² irradiance, 20°C ambient temperature, 1m/s wind speed.

OPERATING CONDITIONS

Max. System Voltage	1000VDC
Max. series fuse rating	15A
Limiting reverse current	15A
Operating temperature range	-40°C to 85°C
Max. static load, front (e.g., snow and wind)	5400Pa
Max. static load, back (e.g., wind)	2400Pa
Max. hailstone impact (diameter / velocity)	25mm / 23m/s

MECHANICAL CHARACTERISTICS

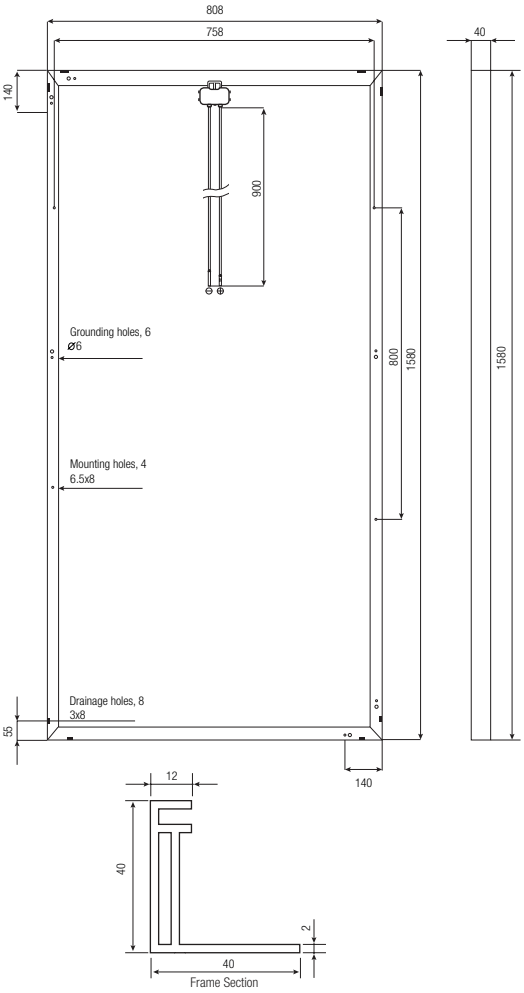
Front Cover (material / thickness)	low-iron tempered glass / 3.2mm
Cell (quanity / material / dimensions)	72 / monocrystalline silicon / 5" x 5"
Encapsulant (material)	EVA
Frame material	anodized aluminum alloy
Junction box (protection degree)	≥ IP65 with bypass-diode
Cable (length / cross sectional area)	900mm / 4mm²
Plug connector (type / protection degree)	MC4 / IP67
Fire Safety Classification (IEC 61730)	Class C

Specifications are subject to change without notice.

GENERAL CHARACTERISTIC

Dimensions	1580mm / 808mm / 40mm
Weight	15kg

Unit: mm



PARTNERS

MünchenSolar
MAXIMALENERGIE

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