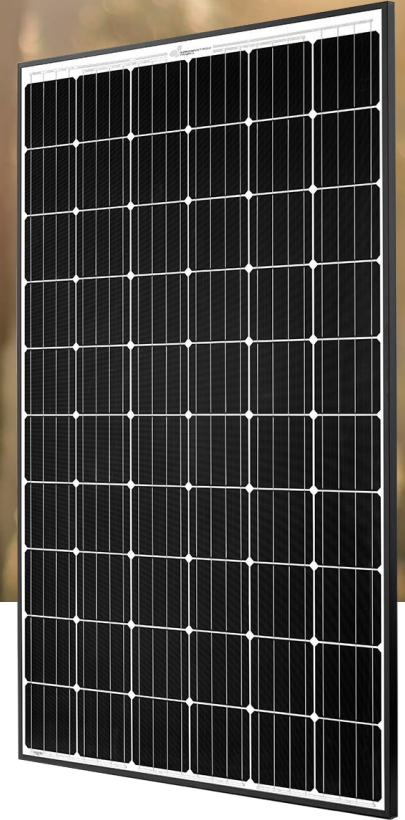




**SONNENSTROM
FABRIK**



PROFESSIONAL M60 Low Carbon

MONOCRYSTALLINE 280-295 WP

Certified sustainable manufacturing

Sustainable manufacturing
certified by Certisolis

Carbon emissions during
production are 50% lower
than industry average

**low
CO₂**



Optimized for performance

PID-free monocrystalline
high performance solar
cells

Antireflective-coated
solar glass

Low-light optimized

Positively classified
-0/+4.99 Wp

Industry-leading
NMOT values

Highest quality standards

Manufactured
according to
DIN EN ISO 9001:2015
DIN EN ISO 14001:2015
BS OHSAS 18001:2007

PV-module
type approval
according to
IEC 61215:2016 ³

PV-module
safety qualification
according to
IEC 61730:2016 ³

Guaranteed performance ¹

26 years of linear
performance guarantee

12 years product
guarantee, optional
extension to 25 years

Total Care for the entire
system (optional)

¹ For detailed information please consult the CS Wismar GmbH warranty conditions

² See backside for detailed test loads

³ Subject to recertification

PROFESSIONAL 280 | 285 | 290 | 295 M60 LOW CARBON

Performance STC

Under standard Test Conditions STC:
1000 W/m²; spectrum AM 1.5;
Cell temperature 25°C
Measurement tolerance STC:
P_{mpp} ±3%; I_{sc} ±10%; U_{oc} ±10%

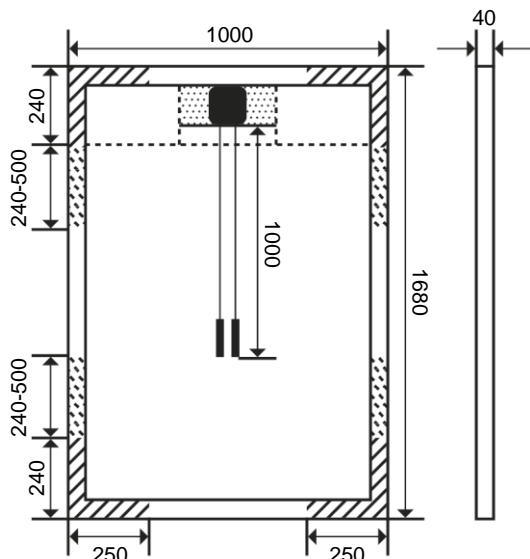
Nominal Power P _{mpp} (Wp)	280	285	290	295
Open Circuit Voltage U _{oc} (V)	39,16	39,33	39,48	39,64
Voltage U _{mpp} (V)	31,64	32,01	32,37	32,66
Short Circuit Current I _{sc} (A)	9,46	9,54	9,63	9,71
Current I _{mpp} (A)	8,87	8,90	8,95	9,02
Efficiency η (%)	16,7	17,0	17,3	17,6

Reduction of module efficiency at reduction from 1000 W/m² to 200 W/m²: 1,4% ± 0,8% (relative)

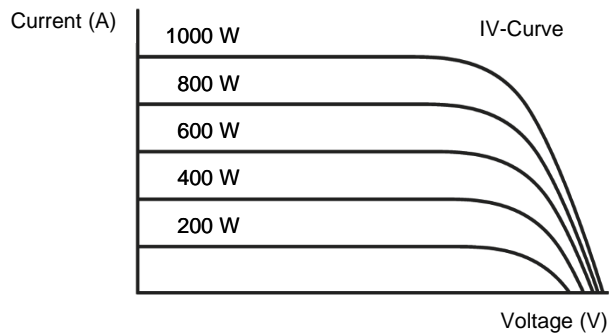
Performance NMOT

Nominal operating temperature of module
800 W/m², NMOT, AM 1.5

Nominal Power P _{mpp} (Wp)	219	222	226	229
Open Circuit Voltage U _{oc} (V)	36,36	36,52	36,66	36,81
Voltage U _{mpp} (V)	30,91	31,23	31,55	31,81
Short Circuit Current I _{sc} (A)	7,65	7,72	7,79	7,86
Current I _{mpp} (A)	7,09	7,11	7,15	7,21



measurements in mm



clamping area
 approved up to 2.400 Pa
 no contact between junction box and mounting profile permitted in this area.
 approved up to 5.400 Pa

Other Technical Specification

Max. system voltage	1000 V
Weight	19.5 ± 0.5 kg
Reverse Current Load I _R	15 A
Junction box	IP 67 with 3 bypass diodes
Connectors	IP 67, MC4
Fire rating	class C
Operating temperature	-40°C ... +85°C
Design load: snow	5.400 Pa *
Max test load	8.100 Pa
Design load: wind	2.400 Pa *
Max test load	3.600 Pa

* safety factor 1.5

Thermal Properties

TC P _{mpp}	-0.41 %/K
TC U _{oc}	-0.31 %/K
TC I _{sc}	0.045 %/K
NMOT	45 +/- 2 °C

Material Used

No. of cells	60 cells
Type of cells	monocrystalline
Front	hardened solar glass
Frame	anodized aluminium
Frame height	40 mm

