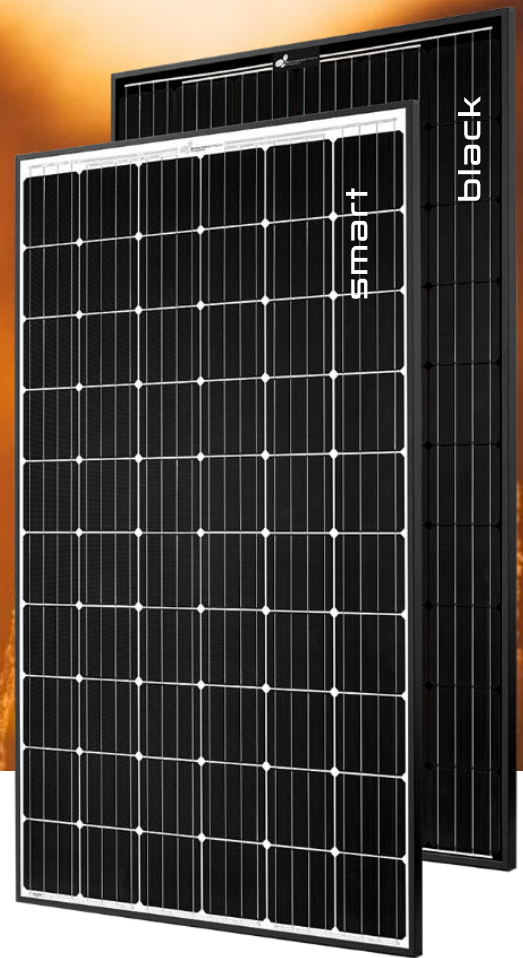


Optional
 Snow load module edition
 1500 volts module edition
 Full black module edition
 Total Care for the entire system
 Extended product guarantee



EXCELLENT M60
smart | black

MONOCRYSTALLINE 275-290 WP

**Aesthetic design,
 simple installation and
 maximum stability**

Optionally available as full black edition

Extended clamping areas and upside down installation possible

Maximum test load 8.100 Pascal ²

Stability optimized for increased requirements due to slipping snow loads (optional)

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

EXCELLENT 275 | 280 | 285 | 290 M60 smart | black

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%

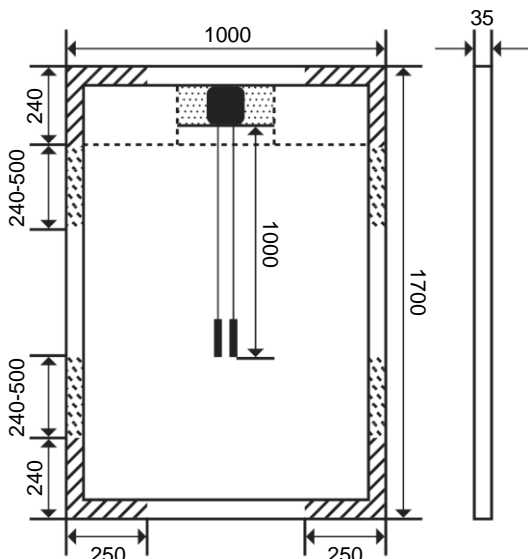
Nominal Power P _{mpp} (Wp)	275	280	285	290
Open Circuit Voltage U _{oc} (V)	38,99	39,16	39,33	39,48
Voltage U _{mpp} (V)	31,27	31,64	32,01	32,37
Short Circuit Current I _{sc} (A)	9,37	9,46	9,54	9,63
Current I _{mpp} (A)	8,80	8,87	8,90	8,95
Efficiency η (%)	16,2	16,5	16,8	17,1

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

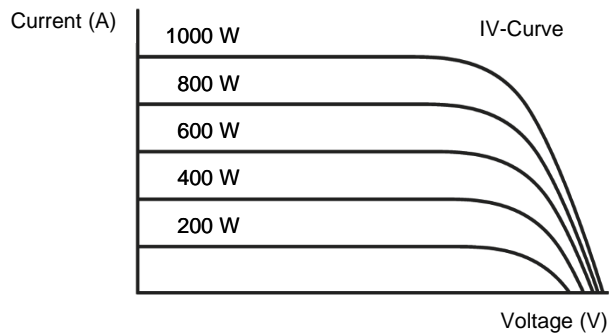
Performance NMOT

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

Nominal Power P _{mpp} (Wp)	215	219	222	226
Open Circuit Voltage U _{oc} (V)	36,21	36,36	36,52	36,66
Voltage U _{mpp} (V)	30,58	30,91	31,23	31,55
Short Circuit Current I _{sc} (A)	7,58	7,65	7,72	7,79
Current I _{mpp} (A)	7,03	7,09	7,11	7,15



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	19.0 ± 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	35 mm

