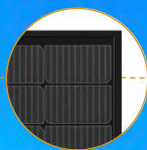


Smart



Full Black



Optional: Junction box
1500 Volt



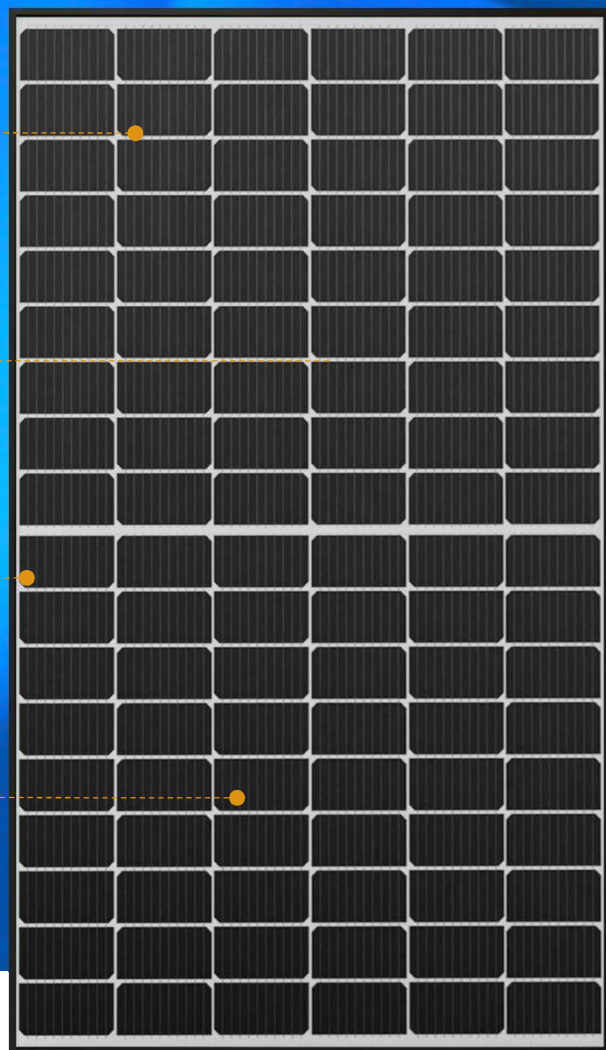
Optional: Heavy snow
load frame



Optional: 25 yrs
guarantee



Optional: Total-
Care Insurance



SAPPHIRE N M108

445 - 450 WP

MONOCRYSTALLINE

Long lifetime even under extreme conditions

Extended clamping areas and upside down installation possible

Maximum test load 8.100 Pa. ²

Original MC4 plugs and fire resistant cables

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
DIN EN ISO 45001:2018

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

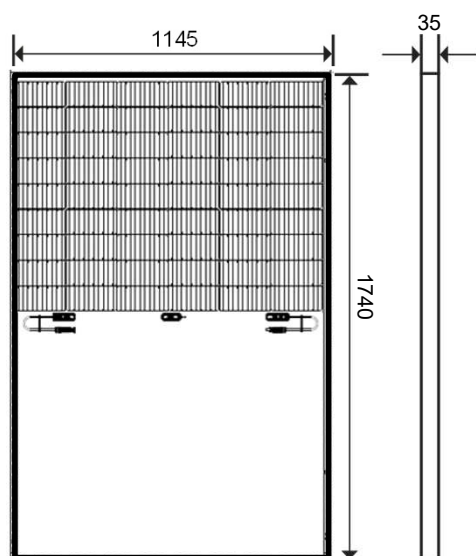
³ Subject to recertification

SAPPHIRE N 445 | 450 M108 smart | full black

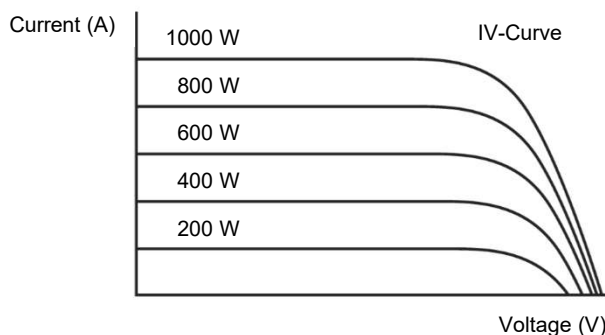
Performance STC

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)	445	450
Open Circuit Voltage U _{oc} (V)	38,66	38,82
Voltage U _{mpp} (V)	32,88	33,07
Short Circuit Current I _{sc} (A)	14,56	14,66
Current I _{mpp} (A)	13,56	13,64
Efficiency η (%)	22,3	22,5



Maßangaben in mm



Other Technical Specification

Max. system voltage	1000 V
Weight	22.0 ± 0.5 kg
Reverse current load I _R	25 A
Junction Box	IP65/ IP68
Connector	IP65/ IP68, MC4
Fire Class Rating	Class C
Operating temperature	-40°C ... +85°C
design load: snow*	5.400 Pa
maximum test load	8.100 Pa
design load: wind*	2.400 Pa
maximum test load	3.600 Pa

* safety factor 1.5

Thermal Properties

TC P _{mpp}	-0.39 %/K
TC U _{oc}	-0.28 %/K
TC I _{sc}	0.040 %/K
NMOT	45 +/- 2 °C

Material Used

Number of cells	108 half-cut cells
Cell type	mono perc
Front cover	hardened solar glass
Frame material	anodized aluminium
Frame height	35 mm

Applied Standards

ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
IEC 61215:2016 & IEC 61730:2016
IEC 61701:2020