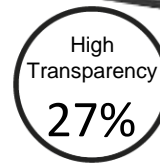
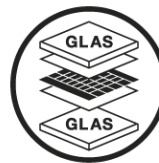


**EXCELLENT GLASS/GLASS M48
brilliant**

MONOCRYSTALLINE 215-230 WP



Transparency and Performance

The cell matrix is optimized for light transmission and maximum performance

The optimized cell matrix enables a light transparency of 27%

Optimizes electricity production whilst preserving daylight diffusion for agricultural greenhouses and buildings

Perfect architectural integration and control of natural light contribution for verandas, pergolas, awnings and carports

30 years linear performance guarantee
20 years product guarantee

Optional Total Care for the entire system

EXCELLENT GLASS/GLASS 215 | 220 | 225 | 230 M48

brilliant

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%

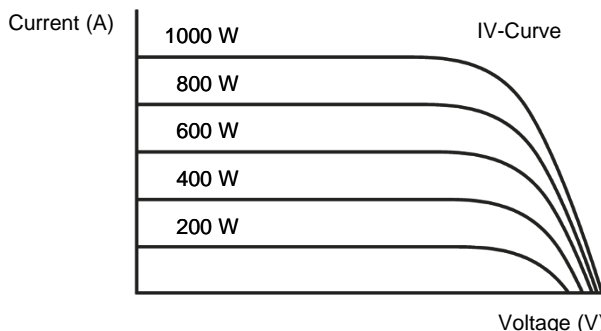
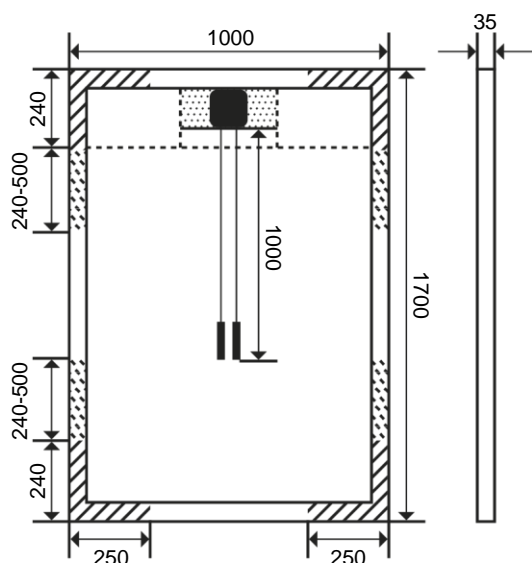
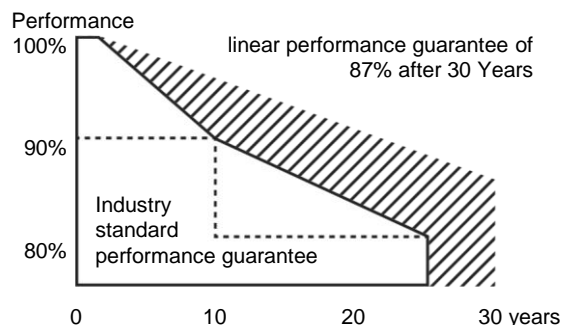
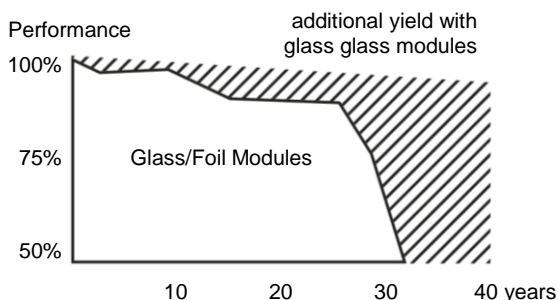
Nominal Power P _{mpp} (Wp)	215	220	225	230
Open Circuit Voltage U _{oc} (V)	30,13	30,54	30,91	31,16
Voltage U _{mpp} (V)	25,05	25,41	25,68	25,87
Short Circuit Current I _{sc} (A)	9,27	9,36	9,45	9,58
Current I _{mpp} (A)	8,58	8,66	8,76	8,89
Efficiency η (%)	12,6	12,9	13,2	13,5

Reduction of module efficiency at reduction from 1000 W/m² to 200 W/m²: 4,6% ± 0,2% (relative)

Performance NMOT

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

Nominal Power P _{mpp} (Wp)	165	169	173	177
Open Circuit Voltage U _{oc} (V)	27,98	28,36	28,70	28,93
Voltage U _{mpp} (V)	24,02	24,38	24,66	24,85
Short Circuit Current I _{sc} (A)	7,50	7,57	7,65	7,75
Current I _{mpp} (A)	6,86	6,92	7,00	7,10



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

measurements in mm

Other Technical Specification

Max. system voltage	1000 V
Weight	22.0 ± 0.5 kg
Reverse Current Load IR	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	48 cells
Type of cells	monocrystalline
Front	hardened solar glass
Frame	anodized aluminium
Frame height	35 mm

