

0322.1355 Swiss Premium

# M310-60-b GF CF3

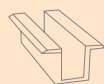
Glass-film / monocrystalline / 310Wp / Full Black /  
CleanFrame 3



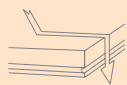
Made in Deitingen (Switzerland)



Meets highest aesthetic requirements



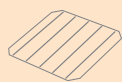
Compatible with all current insertion/clamping systems



Snow and soiling cannot stick



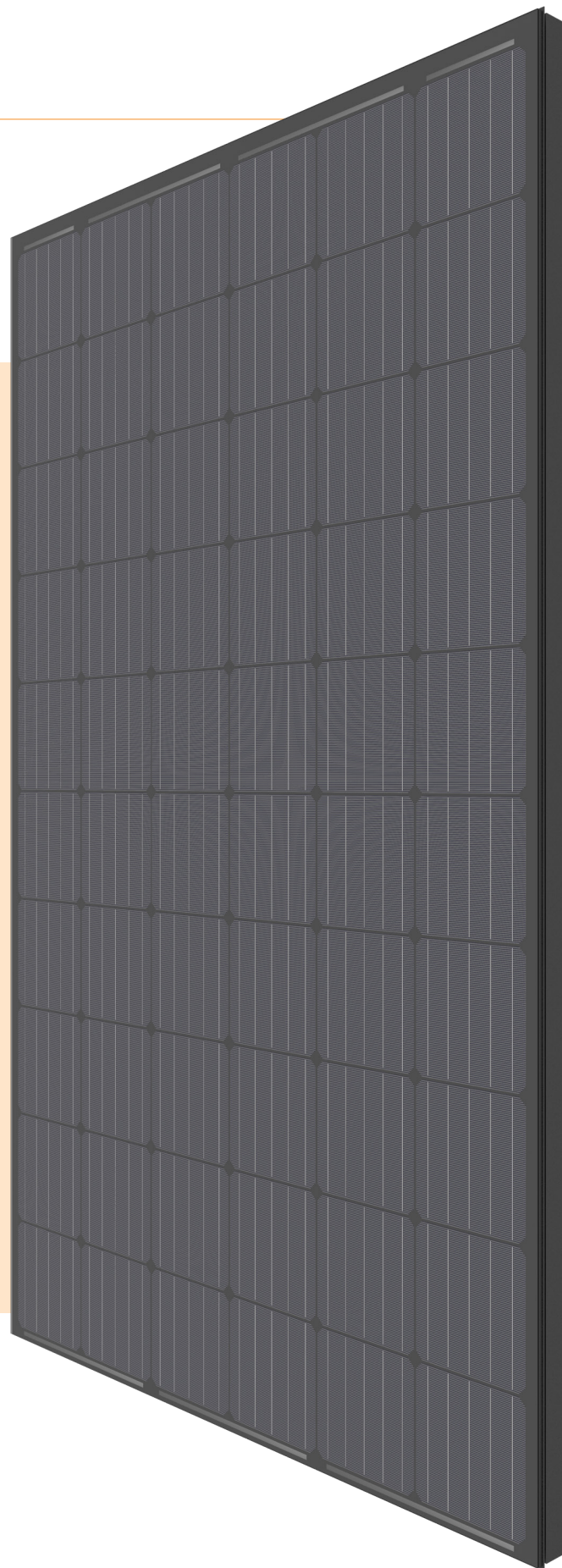
Optimized low-light performance



5-busbar technology



Full traceability of all raw materials



With CleanFrame, contrary to common installation solutions, neither frame nor module clamps will protrude. Snow and soiling can thus not stick – the perfect solution for conditions that involve slight inclination such as trapezoidal sheet roofs or flat roof systems.

**megaso**

innovation in power



Electrical data STC

Nominal power (Pmpp)	310 Wp
Nominal voltage (Umpp)	32.8 V
Nominal current (Impp)	9.47 A
Open circuit voltage (Uoc)	39.1 V
Short circuit current (Isc)	9.81 A
Cell efficiency	21.70 %
Module efficiency	19.05 %
Power sorting	-0/+ 5 %

STC (Standard Test Conditions): irradiance 1000 W/m<sup>2</sup>, cell temperature 25°C, AM 1.5  
Measuring tolerances ± 3 % (Pmpp); ± 10 % (Umpp, Impp, Uoc, Isc)

Electrical data at partial load

800 W/m<sup>2</sup>

Nominal power (Pmpp)	234 Wp
Nominal voltage (Umpp)	30.4 V
Nominal current (Impp)	7.72 A
Open circuit voltage (Uoc)	36.7 V
Short circuit current (Isc)	7.64 A

Measuring tolerances ± 5 % (Pmpp); ± 10 % (Umpp, Impp)

Thermal properties

Nominal operating cell temperature (NOCT)	45 ± 2 °C
Temperature coefficient Uoc	-0.26 %/°C
Temperature coefficient Isc	+0.031 %/°C
Temperature coefficient Pmpp	-0.37 %/°C

Operating conditions

Temperature range	-40 ... +85 °C
Max. system voltage	1000 V
Max. reverse current	20 A
Max. string fuse	16 A
Max. wind and snow loads *	Up to 5'400 N/m <sup>2</sup>
Hail resistance	Ø 30 mm at 23 m/s Hail protection class 3
Application class (acc. to IEC/EN 61730)	A

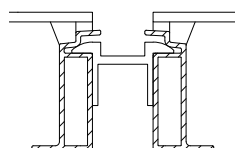
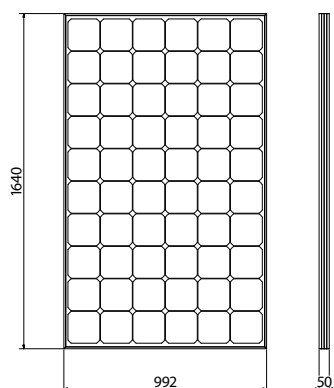
Fire protection

Top layer is made of heat-resistant glass. The component is considered to be non-combustible material as defined by the Cantonal Fire Insurances.

Protection class	II
Standards	IEC/EN 61215, 61730
Salt spray test	IEC/EN 61701 I+II
Ammonium corrosion test	IEC/EN 62716

\* Max. possible forces acting on the module. The maximum values in mounted condition depend on the substructure as well as the installation situation. If the requirements are higher than IEC/EN 61215, a project-specific dimensioning of the mounting system is necessary.

Technical drawing

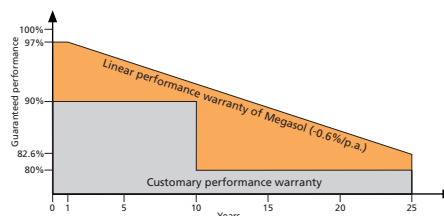


General data

Laminate structure	Glass-foil
Cell type	Monocrystalline, 5 busbars
Cell size	156x156 mm
Number of cells (matrix)	60 (6x 10)
Colour between cells	Black
Frame	CleanFrame 3 Aluminium, anodized black
Front side	3.2 mm solar glass High-transmission, tempered/toughened, nano-finished/antireflective surface
Encapsulation material	EVA with lowest yellowness index
Back side	Three-layer build-up (Polyester / PET / Tedlar) with lowest water vapour permeability
Junction box	3 bypass diodes, IP 67
Cable cross section	4 mm <sup>2</sup>
Connectors	MC4 compatible, IP 67
Dimensions (LxWxH) ± 3.0 mm	1640x992x50 mm
Modular dimensions (LxW)	Depending on the installation situation
Weight	19 kg

Quality and warranty

Quality characteristics	PID-free (no potential induced degradation) Yield-optimized low-light performance Full traceability of all raw materials
Product warranty	10 years
Linear performance warranty	25 years



Relative efficiency level in relation to the minimal output (%). At least 97% of the minimum output during the first year. Afterwards, max. 0.6% degradation per annum. At least 91.6% of the minimum output after 10 years. At least 82.6% of the minimum output after 25 years. All data within the measuring tolerances. Warranties according to the respective latest Megasol Warranty Conditions which can be found on [www.megasol.ch/warranty](http://www.megasol.ch/warranty).



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