

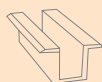
0322.1442 High performance module

M310-60-b CF3

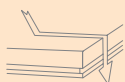
Glass-film / monocrystalline / 310 Wp / Full Black /
CleanFrame 3



Meets highest aesthetic requirements



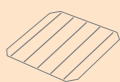
Compatible with all current insertion/clamping systems



Snow and soiling cannot stick



Optimized low-light performance



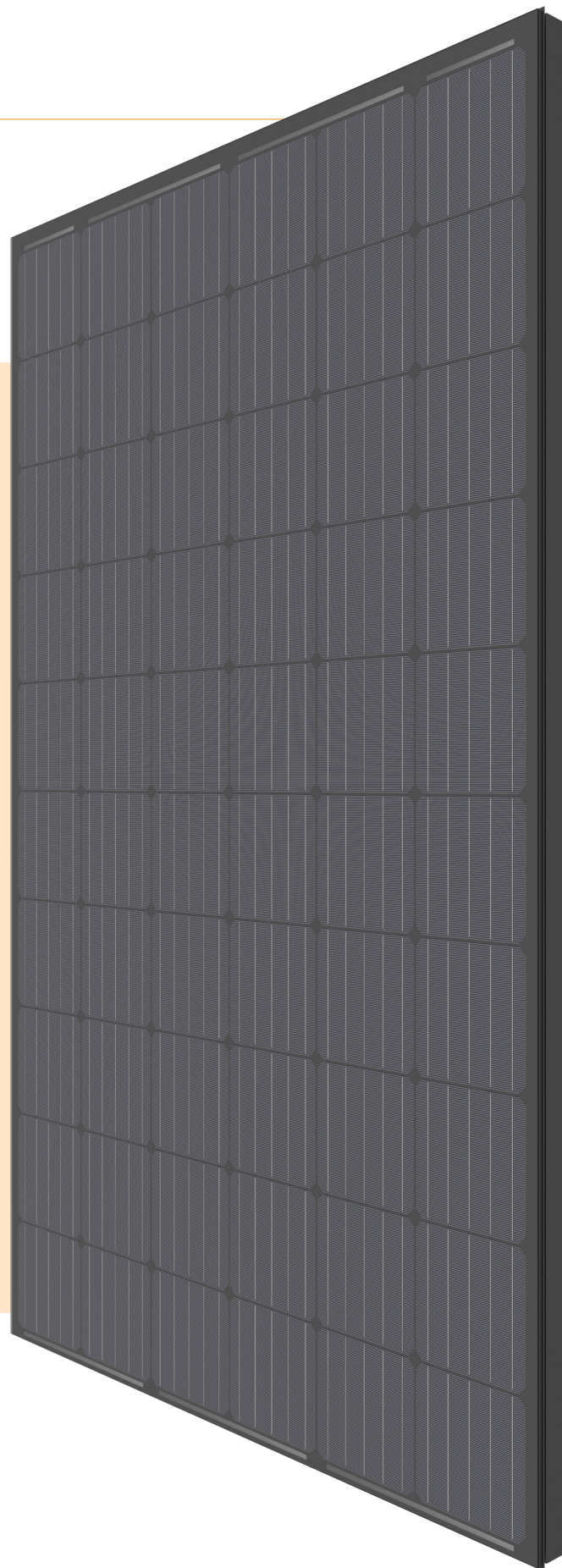
5-busbar technology



Full traceability of all raw materials



Swiss development and warranty



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.



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/m², cell temperature 25°C, AM 1.5
Measuring tolerances ± 3 % (Pmpp); ± 10 % (Umpp, Impp, Uoc, Isc)

Electrical data at partial load

800 W/m²

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 ²
Hail resistance	Ø 30 mm at 23 m/s Hail protection class 3
Application class (acc. to IEC/EN 61730)	A

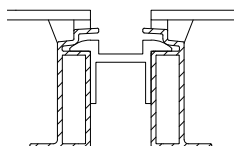
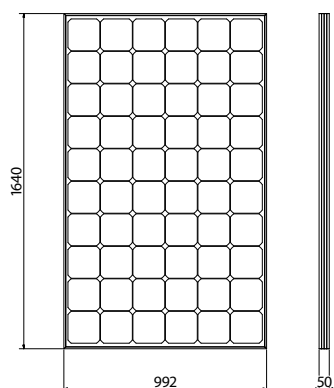
Fire protection

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

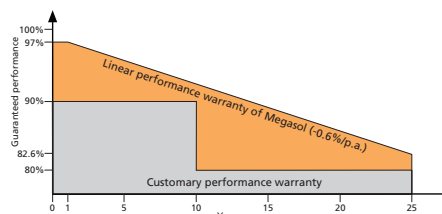


General data

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 ²
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.



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