

0322.1152 Swiss Premium

# M403-60-t BF GG NICER 2

Bifacial glass-glass module / monocrystalline /  
translucent / NICER 2 frame



Made in Deitingen (Switzerland)



Meets highest aesthetic requirements



Withstands highest static loads



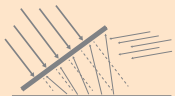
Safety glass for overhead glazing and facades



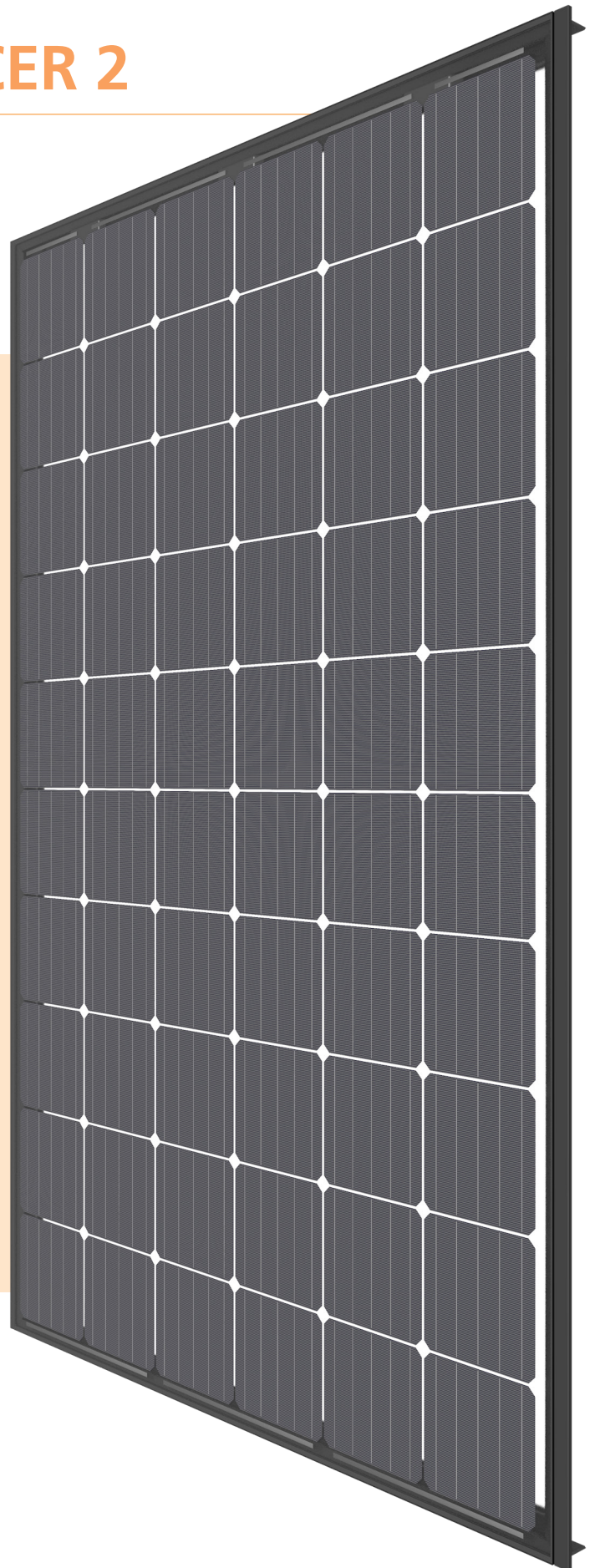
Lifespan of over 50 years due to glass-glass technology



Full traceability of all raw materials



Albedo effect: up to 35 % additional yield



## Bifacial gain

Low reflecting surface	<i>e.g. grass, brick</i>	<b>5 - 15 %</b>
Well reflecting surface	<i>e.g. sand, bright gravel or paint</i>	<b>15 - 25 %</b>
Highly reflecting surface	<i>e.g. ice, snow</i>	<b>25 - 35 %</b>

## Electrical data STC

With bifacial gain<sup>1</sup>

		5 %	10 %	20 %	30 %
Nominal power (Pmpp)	310 Wp	326 Wp	341 Wp	372 Wp	403 Wp
Nominal voltage (Umpp)	32.8 V	32.8 V	32.8 V	32.8 V	32.9 V
Nominal current (Impp)	9.47 A	9.94 A	10.40 A	11.34 A	12.25 A
Open circuit voltage (Uoc)	39.1 V	39.1 V	39.1 V	39.2 V	39.3 V
Short circuit current (Isc)	9.81 A	10.30 A	10.77 A	11.75 A	12.69 A
Module efficiency <sup>2</sup>	19.05 %	20.0 %	21.0 %	22.9 %	24.8 %
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)

<sup>1</sup> Depends on mounting distance and albedo of the substrate <sup>2</sup> Incl. proportional power from the back side

## Electrical data at partial load

Nominal power (Pmpp)	234 Wp	246 Wp	258 Wp	281 Wp	305 Wp
Nominal voltage (Umpp)	30.4 V	30.4 V	30.4 V	30.4 V	30.5 V
Nominal current (Impp)	7.72 A	8.10 A	8.47 A	9.24 A	9.98 A
Open circuit voltage (Uoc)	36.7 V	36.7 V	36.7 V	36.8 V	36.9 V
Short circuit current (Isc)	7.64 A	8.02 A	8.39 A	9.15 A	9.88 A

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

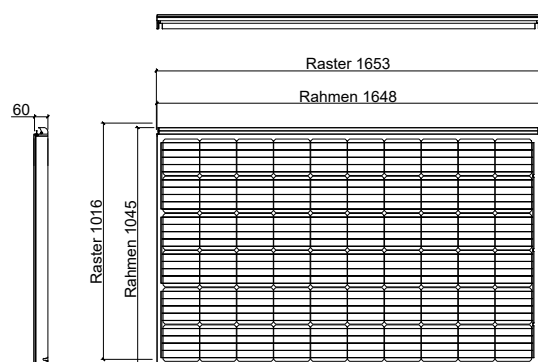
## Operating conditions

Temperature range	-40 ... +85 °C
Max. system voltage	1000 V optionally available for 1500 V
Max. reverse current	20 A
Max. string fuse	16 A
Max. snow loads <sup>3</sup>	Up to 12'000 N/m <sup>2</sup>
Hail resistance	ø40 mm at 23 m/s Hail protection class 4
Application class (acc. to IEC/EN61730)	A

Fire protection	Top and back layer are 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

<sup>3</sup> 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



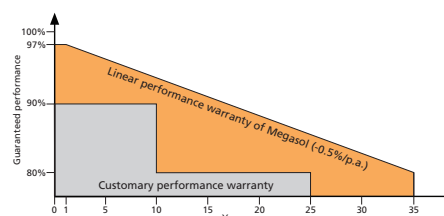
**Note:** The instructions in the installation manual must be strictly complied with. Further information about approved utilization of products can be found in the installation manual or can be requested from the technical service.

## General data

Laminate structure	Glass-glass
Cell type	Mono PERC, bifacial, 5 busbars
Cell size	156x156 mm
Number of cells (matrix)	60 (6x 10)
Colour between cells	Translucent
Frame	NICER 2 Aluminium, anodized black (RAL 9005)
Front side	3.2 mm solar glass High-transmission, tempered/toughened, nano-finished/antireflective surface
Encapsulation material	Special EVA (UV+/IR+) with lowest water vapour permeability
Back side	3.2 mm solar glass Tempered/toughened
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	1045x1648x60 mm
Modular dimensions (LxW)	1016x1653 mm
Weight	35 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	35 years



Relative efficiency level in relation to the minimal output (%). At least 97 % of the minimum output during the first year. Afterwards, max. 0.5 % degradation per annum. At least 92.5 % of the minimum output after 10 years. At least 85 % of the minimum output after 25 years. At least 80 % of the minimum output after 35 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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