

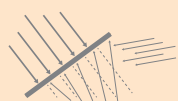
0322.1551 High performance module

M470-HC144-w BF GG U30b

Bifacial glass-glass module / White / 470 Wp /
Mono HiR half-cut / Black 30 mm U-frame



n-type HiR half-cut technology



Additional yields through enhanced bifaciality factor



High performance stability and maximum efficiency



Meets highest aesthetic requirements



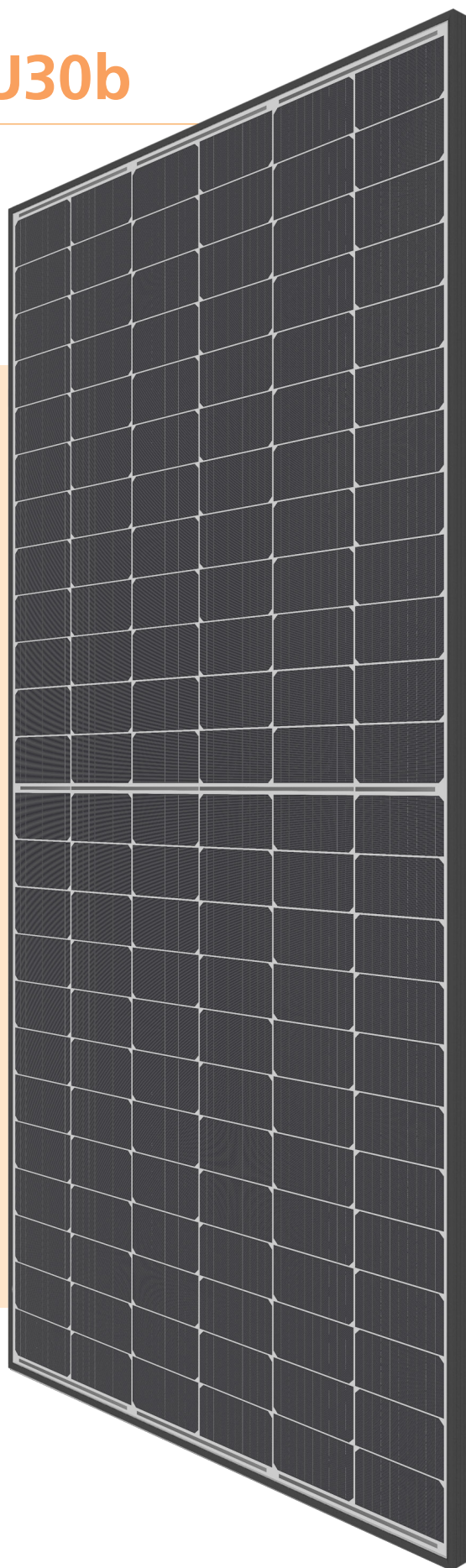
Very high durability due to glass-glass technology



Full traceability of all raw materials



Swiss development and warranty



Bifacial gain ¹

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

Electrical data STC

| | |
|-----------------------------|---------|
| Nominal power (Pmpp) | 470 Wp |
| Nominal voltage (Umpp) | 42.4 V |
| Nominal current (Impp) | 11.09 A |
| Open circuit voltage (Uoc) | 50.9 V |
| Short circuit current (Isc) | 11.75 A |
| Cell efficiency | 24.2 % |
| Bifaciality factor | ≥ 90 % |
| Module efficiency | 21.3 % |
| 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)

With bifacial gain ¹

| | |
|------|--------|
| 5 % | 493 Wp |
| 10 % | 517 Wp |
| 15 % | 540 Wp |
| 20 % | 564 Wp |
| 30 % | 611 Wp |

¹ Depending on installation situation, albedo of the substrate and external factors.

Electrical data at partial load

800 W/m²

| | |
|-----------------------------|--------|
| Nominal power (Pmpp) | 352 Wp |
| Nominal voltage (Umpp) | 39.7 V |
| Nominal current (Impp) | 8.88 A |
| Open circuit voltage (Uoc) | 48.7 V |
| Short circuit current (Isc) | 9.40 A |

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

Thermal properties

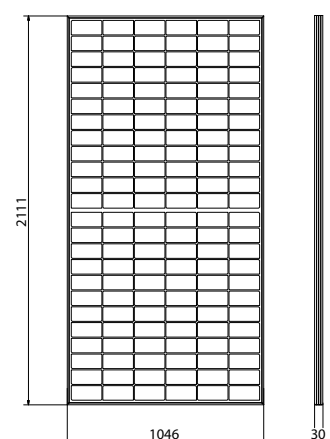
| | |
|---|-------------|
| Nominal operating cell temperature (NOCT) | 42 ± 2 °C |
| Temperature coefficient Uoc | -0.260 %/°C |
| Temperature coefficient Isc | +0.046 %/°C |
| Temperature coefficient Pmpp | -0.320 %/°C |

Operating conditions

| | |
|---|---|
| Temperature range | -40 ... +85 °C |
| Max. system voltage | 1500 V |
| Max. string fuse | 25 A |
| Max. snow loads * | Up to 6'000 N/m ² |
| Hail resistance | Ø30 mm at 23 m/s Hail protection class 3 |
| 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 |

* 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



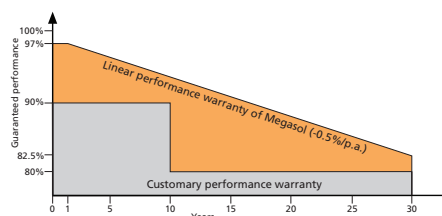
Note: The instructions in the installation manual must be strictly complied with. Further information about approved utilization of products can be found in the installation manual or can be requested from the technical service.

General data

| | |
|----------------------------|---|
| Laminate structure | Glass-glass |
| Cell technology | Megasol Mono HiR Bifacial |
| Cell format | M6 Half-cut 166x83 mm |
| Number of cells (matrix) | 144 (6x 24) |
| Colour between cells | White |
| Frame | U-frame 30 mm Aluminium, anodized black |
| Front side | 2.0 mm TVG High-transmission, nano-finished/antireflective surface |
| Encapsulation material | Special EVA (UV+/IR+) with lowest water vapour permeability |
| Back side | 2.0 mm TVG |
| Junction box | Split Box, IP 67 |
| Cable cross section | 4 mm ² |
| Connectors | Original Stäubli MC4-Evo 2 |
| Dimensions (LxWxH) ±3.0 mm | 2111 x 1046 x 30 mm |
| Modular dimensions (LxW) | Depending on the installation situation |
| Weight | 27.5 kg |

Quality and warranty

| | |
|-----------------------------|--|
| Quality characteristics | PID-free (no potential induced degradation) Yield-optimized low-light performance Full traceability of all raw materials HiR cell technology with enhanced bifaciality factor: additional yields when mounted on flat roof, railing, carport, etc. (depending on mounting distance and albedo of the substrate) |
| Product warranty | 15 years |
| Linear performance warranty | 30 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 87.5% of the minimum output after 20 years. At least 82.5% of the minimum output after 30 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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