EN

12 WARRANTY 25

PHOTOVOLTAIC MODULE

e.Classic M

60 MONO PERC CELLS

86 PERCENT REAL-LIFE PERFORMANCE

SHADOW- AND TEMPERATURE MANAGEMENT

EUROSOLAR AWARD 2020

pv magazine
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energetica
PHOTOVOLTAIC INDUSTRIES

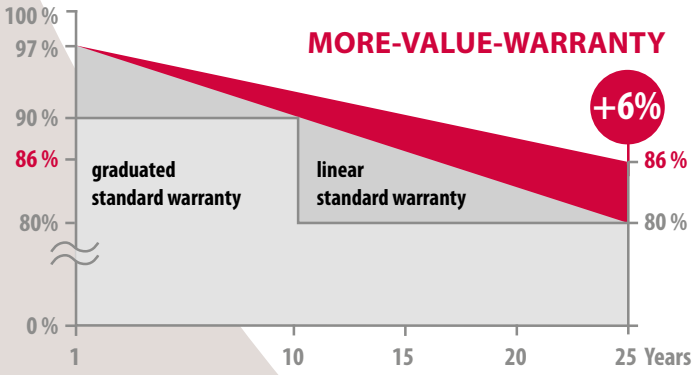
e.Classic M

Long-term performer with classic elegance.

Performance and aesthetics - not a contradiction but a challenge. Developed especially for homeowners, the e.Classic M elegantly blends in with its surroundings and enhances every home. 60 monocrystalline cells, 3.2 mm glass; the frame made of elegant, black aluminum - in addition, a backsheet to increase radiation. With up to 320 Wp, e.Classic M achieves the highest performance and stability in its class. In addition, the standard Energetica features: max. Energy yield through the patented e.ISP technology, low weight and long durability. The robust stacking and packaging system e.STAK from Energetica also guarantees that the modules arrive at their destination stable and without micro-cracks.

Innovation. Power. Sustainability. And that for 25 years.

Energetica Photovoltaic Industries GmbH is an independent, Austrian photovoltaic technology company with headquarters and production facility in Liebenfels.
The sustainable supply of renewable energy has been our goal for 25 years. The focus is on our high-tech product portfolio, which is developed, tested and produced in one of the world's most modern climate-neutral 4.0 production facilities.



1) For details of the performance guarantee (added value guarantee), see Energetica Approved Warranty in the first year 97 percent of the nominal output and min. 86 percent of the nominal power in the 25th year

Guarantees more performance.

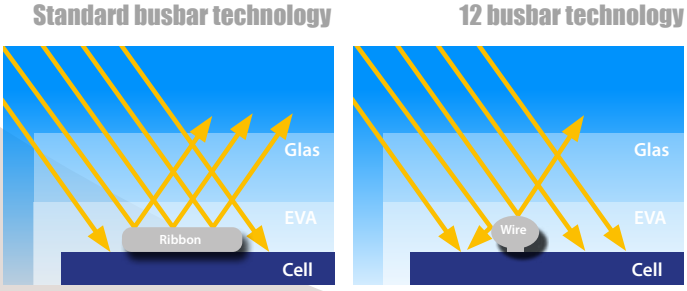
What makes a top-class PV module? Top performance? Longest lifespan? Sure, but we want to offer more:

- **Avoiding hot spots** through highly efficient control electronics,
- **more power** through 12-busbar technology,
- **higher yield** through anti-reflective glass technology.

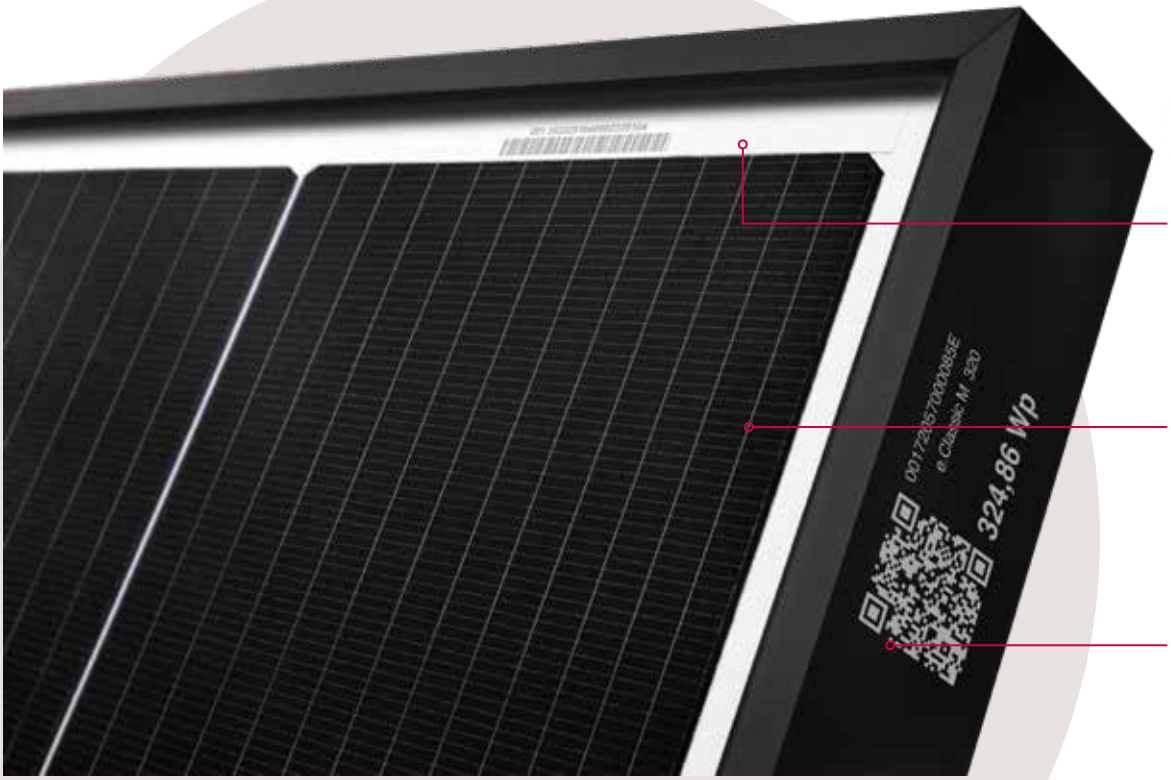
Our patented e.ISP® technology increases the energy yield compared to conventional modules and protects the cell strings by more precise shutdown in the event of shading. That is why we offer a linear added value guarantee[1] of 86 percent of the initial performance even after 25 years without hesitation.

Pioneering technologies.

The 12-busbar technology is used in the new e.Classic series. The energy generated is dissipated over 12 wafer-thin wires, instead of over wide collecting bars as before. This enables optimized shading management and the effizient use of resources in cell production. Result: the cell surface is used more efficiently and the energy yield increases while keeping the same module size. Furthermore, the e.ISP® technology ensures higher efficiency and an optimised energy yield in the sun as well as in case of shading.



WE PAY ATTENTION TO DETAIL



e.ISP PATENTED NR. 2517265

e.ISP TECHNOLOGY®

Integrated Shadow Protection (e.ISP) for improved efficiency and optimized energy yield in sun and shade.

12BB TECHNOLOGY

For optimized shading, maximum efficiency and improved reliability thanks to shorter electron paths.

CERTIFICATE OF PERFORMANCE

Certificate of weather resistance with QR code and barcode showing measured output, serial number and module type.

60 MONO PERC CELLS

e.Classic M

TOP QUALITY FROM THE HEART OF EUROPE

Energetica modules are engineered and produced exclusively in Austria – Europe. Modules are produced using the patented method of manufacturing and subsequently tested by independent institutes..

12 YEAR WARRANTY ON OUR PRODUCTS

The Energetica Approved Warranty includes a 12-year warranty on function, material and workmanship as well as an extended performance guarantee of 86 percent - even after 25 years.

REDUCED WEAR

Energetica products are tested beyond IEC and UL standards. The outcome of these results has shown that the annual degradation was reduced by 10 percent.

MAXIMUM PERFORMANCE ON SUNNY DAYS

Thanks to the improved temperature coefficient, Energetica modules can produce more energy on hot, sunny days.

HIGH PERFORMANCE EVEN ON CLOUDY DAYS

Thanks to the excellent low-light behaviour, Energetica modules enable high energy yields even in cloudy conditions.

INTEGRATED SHADOW- AND TEMPERATURE MANAGEMENT (e.ISP® TECHNOLOGY)

The integrated deactivation of the cell strings in the event of shading is only available in Energetica modules. The active electronics integrated in the laminate guarantee a higher output than conventional modules in both sun and shade.

CLIMATE NEUTRAL PRODUCTION

Sustainability is the main corporate goal of Energetica. We therefore avoid CO2 emissions in all areas. This includes the use of 100% clean energy in our production facilities as well as a fully electric car fleet for sales and technical service.

LIGHT AND HANDY

Thanks to the excellent low-light behaviour, Energetica modules enable high energy yields even in cloudy conditions.

TESTED AGAINST CHEMICAL INFLUENCES

Energetica modules are tested against chemical influences such as ammonia and salt spray. They are also ideal for agricultural areas and plants near the sea.

Note: This data sheet is a legally binding document and, in addition to the installation manual, it is part of the required documentation in accordance with OVE EN 50380. Due to constant technical innovations, R&D and improvements, technical data given in data sheets are subject to change. Energetica reserves the right to perform these changes at any time without prior notice. Product depictions are symbolic images and may deviate from the original in appearance and data provided herein.

e.Classic M

Electrical Data (STC)

Type	310	315	320
Maximum Power (P_{Max})	310 Wp	315 Wp	320 Wp
Open circuit voltage (V_{OC})	40,30 V	40,50 V	40,66 V
MPP Voltage (V_{MPP})	32,86 V	33,15 V	33,36 V
MPP Current (I_{MPP})	9,45 A	9,50 A	9,60 A
Short Circuit Current (I_{SC})	10,08 A	10,34 A	10,17 A
Module efficiency (η_{Modul})	19,10 %	19,40 %	19,70 %
Performance sorting	–0/+5 Wp	–0/+5 Wp	–0/+5 Wp

These measurements are valid under standard test conditions STC. All electrical values ± 10%.
Measurement tolerances: +/- 3% (air mass AM 1.5; irradiation of 1000W/m²; module temperature 25 °C)

Electrical Data (NMOT)

Type	310	315	320
Maximum Power (P_{Max})	229 Wp	232 Wp	236 Wp
MPP Voltage (V_{MPP})	30,41 V	30,68 V	30,87 V
MPP Current (I_{MPP})	7,53 A	7,57 A	7,65 A
Open circuit voltage (V_{OC})	37,21 V	37,40 V	37,55 V
Short Circuit Current (I_{SC})	8,15 A	8,35 A	8,22 A

NMOT (Nominal Module Operating Temperature): Irradiance 800 W/m2, ambient temperature 20 °C, wind speed 1 m/s

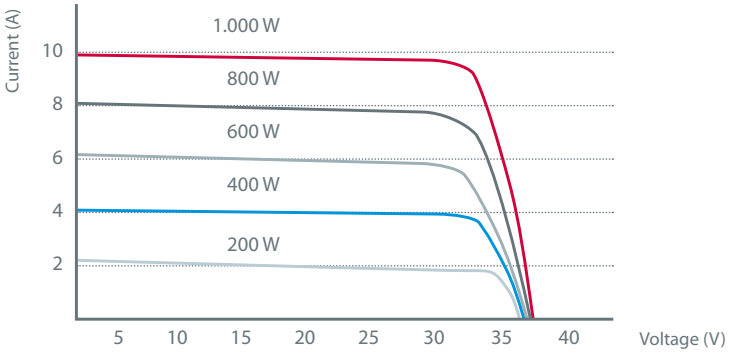
Permissible operating conditions

Temperature range	-40°C bis +90°C
Maximum system voltage	1.000 V, 1.500 V on request
Test load breaking load	tested according to IEC up to 5.4 kPa snow/2.4 kPa wind >6.0 kPa
Hail resistance	hailstone up to 25 mm Ø at 165,6 km/h v_{impact} hailstone up to 55 mm Ø at 120,6 km/h v_{impact}
Maximum reverse current	16 A*

*In any case, due to the integrated active electronics, it must be ensured that there are no reverse currents greater than 16 A.

Temperature coefficient (Tc)

Tc short circuit current	0,04 %/K
Tc open circuit voltage	-0,27 %/K
Tc maximum power	-0,34 %/K
NOCT	42°C +/- 2



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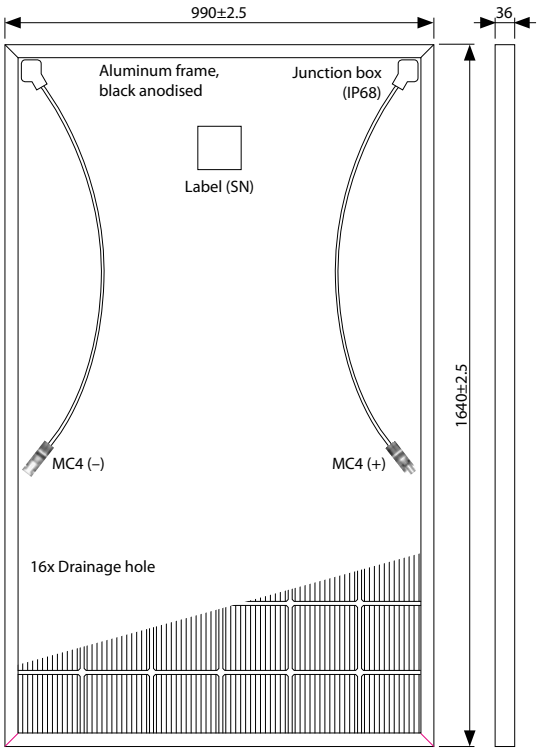
Certifications and Warranties

Certifcations	IEC 61215, IEC 61730-1/-2 IEC 62716 (Ammonia corrosion test) IEC 61701 (Salt mist corrosion test) ISO 9001, ISO 14001, OSHS 18001 Safety Class II
Module Fire Performance	Class C, Fire Class 1 (Italy)
Product Warranty	**12 years**
Output Warranty of P_{MAX} (Measurement Tolerance +/- 3%)	**25 years linear** acc. warranty conditions

Mechanical Data

Dimensions HxWxD	1640 x 990 x 36 mm
Weight	18 kg
Front glass	3,2 mm highly transparent tempered glass
Backsheet	co-extruded Polypropylen (PP)
Frame	black anodized aluminum
Cells	6 x 10 High efficiency solar cells (156,75 x 156,75 mm)
Cell type	mono PERC, 12 Busbars
Bypass control	active electronics at string level
Module connection	4/6mm² solar cable, (+,-) 1000 mm
Connectors	Multi-Contact MC4, IP68
Origin	**Made in Austria**

All indicated dimensions in mm



quality austria SYSTEM CERTIFIED

Energetica is certified according to the valid standards of ISO 9001, ISO 14001 and BS OHSAS 18001. Energetica is cooperation partner of the AIT (Austrian Institute of Technology).
All data in this data sheet comply with DIN EN 50380.
Energetica reserves the right to make production-related changes to this data sheet. The given data are without guarantee.

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