

NEW GENERATION PHOTOVOLTAIC MODULE

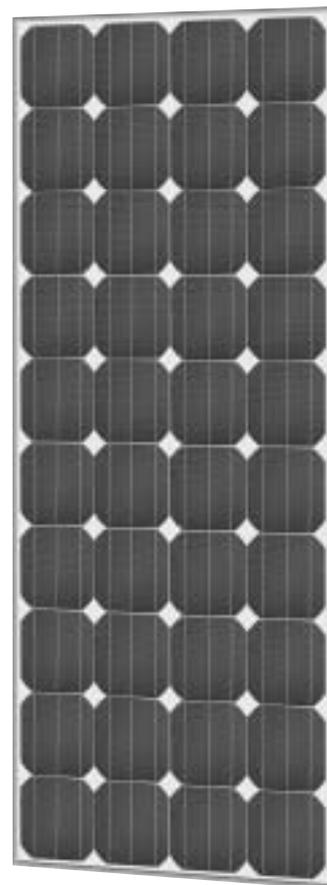
The **H1540** module represents the state of the art in the PV market and is particularly suitable to grid connection systems. It utilizes 40 HT 165 x 165 mm high efficiency I-MAX monocrystalline cells, developed by Helios to meet the market need of the new millennium. The high power of the **H1540** modules means that fewer units need to be left, installed and interconnected, comparing to the smaller modules. This is especially relevant to grid connected applications and large systems where low installation costs are desirable. Thanks to the I-MAX technology developed by Helios for its range of high efficiency modules, the **H1540** performs an increased current output by 10-17% at operating battery voltage when installed in a stand alone system. High power output, compact and light weight design, proven reliability, make this module to provide power in virtually any climate, under the toughest environmental and operating conditions.

Every single cell and module are tested throughout the manufacturing process to guarantee at least 30 years effective service life.

The **H1540** module is available in two power output versions, to better meet the customer's needs.

Robust construction and heavy duty anodized aluminium frame design make this module suitable to all power applications.

For an easy and quick serial connection the module can be optionally supplied equipped with multicontact connectors.



H1540 / 140W - 150W

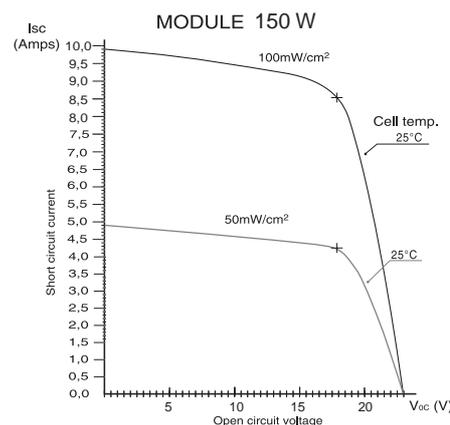
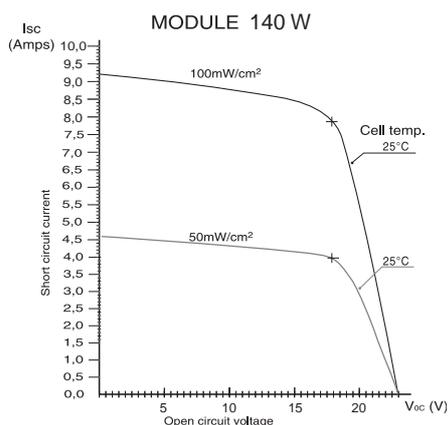
Guaranteed power \geq 80% 25 years

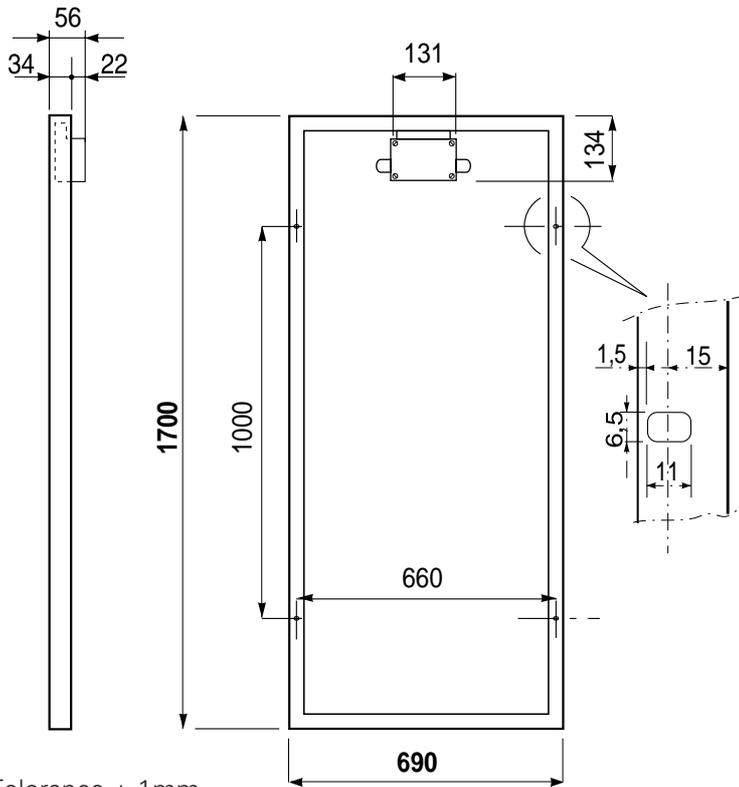
Relative humidity up to 100%
 Dimensions 1700 x 690 x 34 mm \pm 1 mm
 Weight Kg. 14,5
 Tolerance on technical data: \pm 5%



ELECTRICAL SPECIFICATIONS (at 100 mW/cm², 25°C, AM 1,5) MODULE H1540

Peak Power (Wp)	Watts	140	Watts	150
Short circuit current (Isc)	Amps	9.24	Amps	9.90
Open circuit voltage (Voc)	Volts	23.0	Volts	23.0
Voltage at maximum power (Vmp)	Volts	17.8	Volts	17.8
Current at maximum power (Imp)	Amps	7.86	Amps	8.42
Typical Current at battery operating voltage (12-13.8 V)	Amps	8.20	Amps	8.80
NOCT (Nominal operating cell temperature)	°C	43 \pm 2	°C	43 \pm 2
Change of Voc with temperature β	mv/°C	-100	mv/°C	-100
Wind loading or surface pressure	N/m ² 2400 (200 km/h equiv.)		N/m ² 2400 (200 km/h equiv.)	
Hailstone Impact Resistance	24 mm at 80 km/h		24 mm at 80 km/h	
Storage and operating temperature	°C from -40 to +95		°C from -40 to +95	
Maximum System Voltage	Volts	1000	Volts	1000





Tolerance $\pm 1\text{mm}$

MODULE PHYSICAL FEATURES

Helios modules incorporate the latest manufacturing technologies, and extensive experience gained in the field as well as many professional installer suggestions.

The result is a module frame with 4 slotted holes unmatched in the market for its practical design and attention to detail, making Helios modules the most adaptable, quick and easy to install.

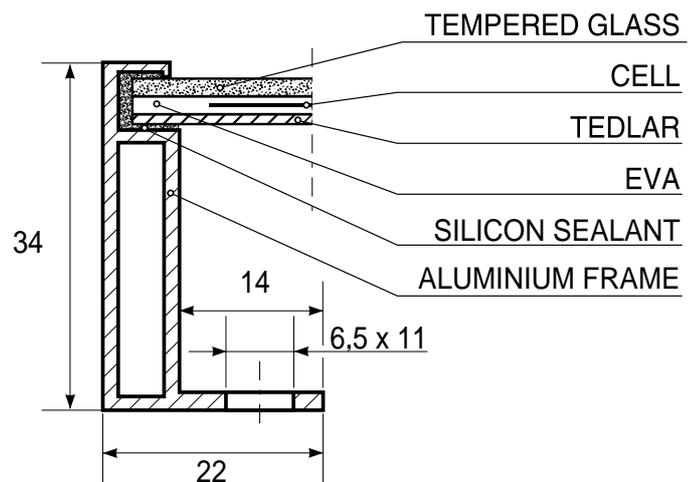
The corner/frame assembly system devised by Helios since 1982 has proven very effective in providing perfect electric continuity within the frame components for better safety on high voltage systems.

MODULE CROSS SECTION

The cells are laminated in permanent way between sheets of ethylene vinyl acetate (EVA), tempered glass and Tedlar, which offers an ideal weatherproof package against moisture and saline corrosion.

The high transparency, low iron, antireflection tempered glass is secured in the frame by silicon sealant providing protection against environmental and mechanical effects.

The high insulation between the cells and frame minimise current leakage so crucial in major PV high voltage installations where such leakage is the cause of major power losses.



JUNCTION BOX

A waterproof, high capacity junction box with protection grade IP65 contains two by-pass diodes and oversized connecting terminals. The junction box is equipped with two PG11 cable glands for easy interconnections. Always with the installers in mind:

1. All screws can be easily tightened using flat or star screwdrivers.
2. Cover screws are prevented from falling off even when loose.
3. All covers are hooked to the junction box, for easy handling and maintenance.
4. All connections are soldered for longer life.
5. The junction box components are PC board mounted, for easy replacement in case of damage by lightning.



Helios Technology reserves the right to change the technical features without notice.