

Helios Technology, thanks to its over-thirty-years experience, presents the new H3A240-260M series that provides the highest level of efficiency, quality and reliability.

The cells and modules production are subjected to stringent quality controls to obtain a product that makes the investment in photovoltaics safe and profitable.

### Properties

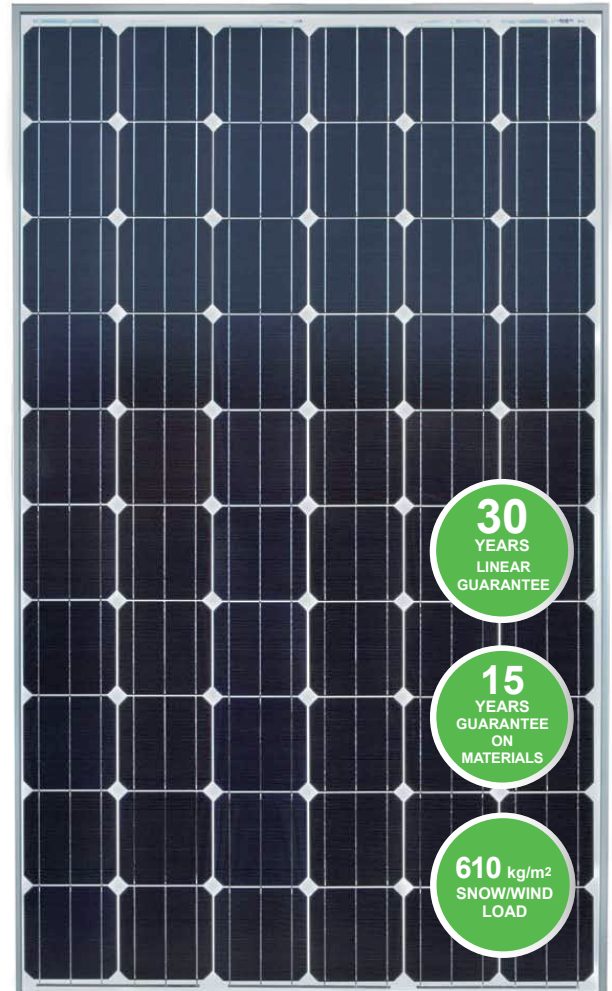
- Module made with 60 high-efficiency monocrystalline cells with 3 bus bars
- Italian production
- Positive tolerance only on module power (0/+5 W), to obtain the maximum electrical performance
- **15 years guarantee on materials and manufacturing defects**
- **30 years linear guarantee on power loss**
- **Record resistance for heavy snow loads - high wind up to 610 kg/m<sup>2</sup> with 800 mm distance on the long side**
- Module fixing possible both on the long and the short side with several distances
- Junction Box with 120 cm long cables and connectors for quick connection, for every type of configuration
- Electrical performance stability over time by using only high quality raw materials and crystalline silicon technology
- Excellent spectral response and low insolation behavior through advanced cells and modules production techniques:  $I_{REV}$  and  $R_{SH}$  controlled on 100% of production
- Minimization of mismatch thanks to  $R_s$  control on 100% of production
- Reduced weight and overall size
- Frame with holes for Helios Technology's antitheft system optical fiber
- Mounting system of the frame that allows greater precision and regularity of the distances and diagonals

### Quality and reliability

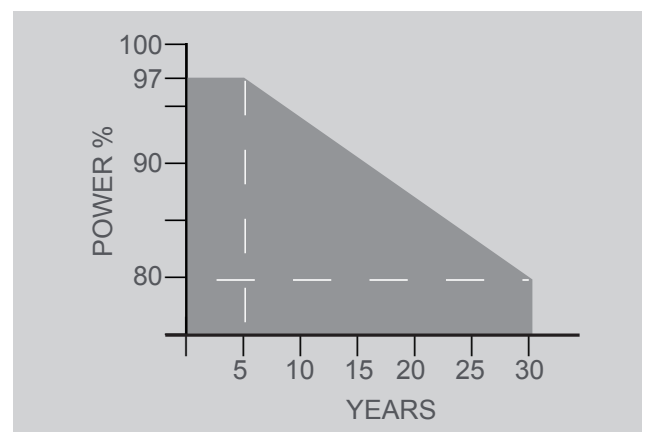
- The production is fully automated with 100% quality control and product traceability
- Use of only certified materials at the highest quality standards
- Electrical tests with reference modules calibrated by the Fraunhofer Institut and regular calibration of the solar simulator
- Reliability of the module thanks to 30+ years of experience proved by ENEA and other independent institutes reports on outdoor tests more than 25 years long
- Accelerated aging tests in climatic chambers positively passed, with over 3000 h in damp heat (3 times more that standard ones)
- Production processes of cells and modules with low environmental impact, thanks to patented I.W.T. system

### Certifications

- IEC 61215 for heavy snow - high wind loads
- IEC 61730-1-2 safety class II up to 1000VDC
- Regular Factory Inspection carried out by TÜV InterCert



### Linear guarantee on power loss



Since 1981



## Electrical characteristics

		at STC (1000 W/m <sup>2</sup> - AM 1,5 - 25°C)					at NOCT (800 W/m <sup>2</sup> )*				
MODULE		H3A240M	H3A245M	H3A250M	H3A255M	H3A260M	H3A240M	H3A245M	H3A250M	H3A255M	H3A260M
Module power (Pmax)	Wp	240	245	250	255	260	172,8	176,4	180,0	183,6	187,2
Maximum power voltage (Vpmax)	V	31,25	31,75	32,26	32,77	33,28	27,44	27,90	28,36	28,82	29,28
Maximum power current (Ipmax)	A	7,68	7,71	7,75	7,79	7,83	6,30	6,32	6,35	6,38	6,41
Open circuit voltage (Voc)	V	37,66	37,77	37,87	37,97	38,07	34,65	34,75	34,84	34,94	35,04
Short circuit current (Isc)	A	8,36	8,44	8,52	8,6	8,68	6,86	6,92	6,97	7,04	7,11
Module efficiency	%	14,7	15,0	15,3	15,6	15,9	10,6	10,8	11,0	11,2	11,4
Fill factor	%	76,2	76,9	77,5	78,2	78,9	72,8	73,4	74,1	74,8	75,3
Maximum system voltage	VDC	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Tolerance values for power	W	0/+5	0/+5	0/+5	0/+5	0/+5	-	-	-	-	-

\* NOCT (800 W/m<sup>2</sup>; Room T = 20°C; Cell T = 46°C; Wind speed = 1 m/s, AM 1,5)  
Uncertainty of measurement +/-2%

## Operating characteristics

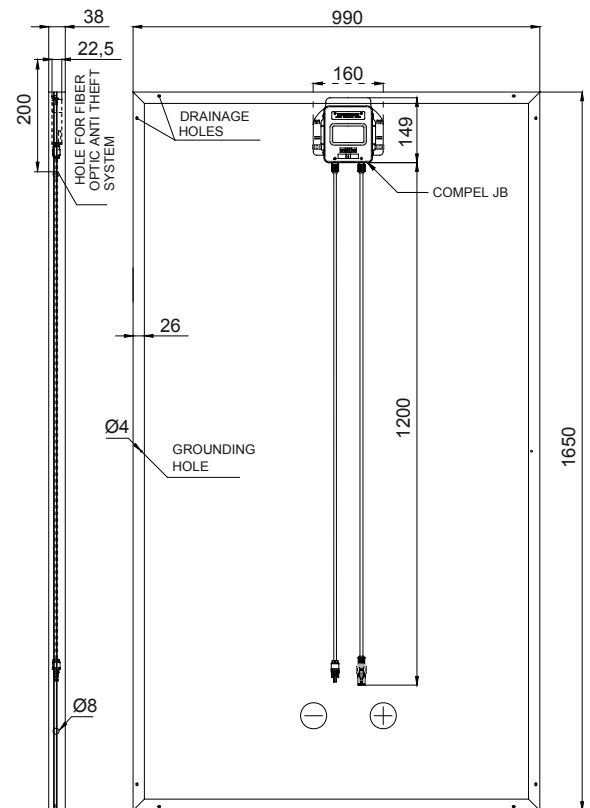
Temperature coefficient of Isc (α)	+0,04 % / °C
Temperature coefficient of Voc (β)	-0,144 V / °C
Temperature coefficient of Pmax (γ)	-0,52 % / °C
NOCT (Nominal Operating Cell Temperature)	46°C
Operating temperature	from -40°C to +85°C
Maximum surface load	610 kg/m <sup>2</sup>
Fixing centre certified on short side	from 500 to 750 mm
Fixing centre certified on long side	from 800 to 941 mm
Impact resistance to hail	ø 25 mm at 83 km/h

## Physical characteristics

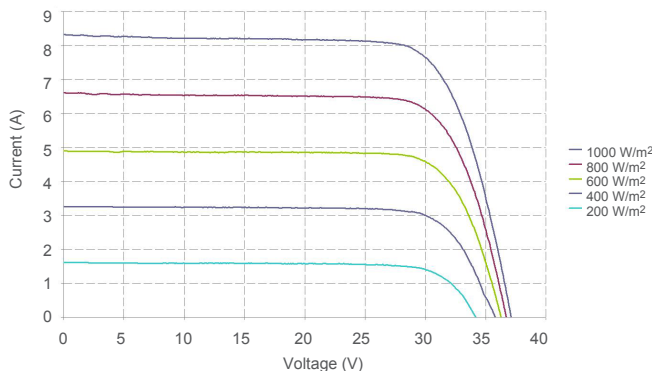
Length	1650 ± 1 mm
Width	990 ± 1 mm
Thickness	38 mm
Weight	18,7 kg
Front glass	Low Fe 3,2 mm thick glass
Encapsulant	EVA (Ethylene-Vinyl Acetate)
Backsheet	Multilayer polyester-based
Frame	Anodized Al 6060 T5 - 15 µm
Junction Box	Compel® IP65, with 3 by-pass diodes
Connecting cables, section	1,2 m with two Compel/Tyco® connectors

### CELLS

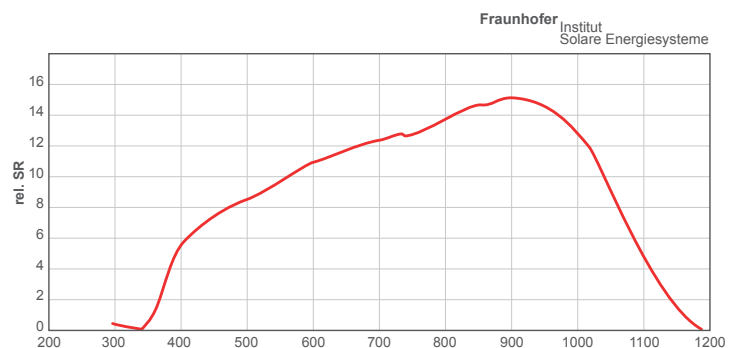
Technology	Monocrystalline silicon with 3-busbars
Size	156 x 156 mm
Quantity	60 (6x10)



## H3A240M electrical characteristics at different irradiances



## H3A240M spectral response



Helios Technology S.p.A. - Subject to direction and coordination of AION Renewables S.p.A.

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