

RED



Product Made in Italy



Warranty on production defects: 12 years



Classification Only positive MPP +3 / -0% = + kWh produced each year



Factory inspection periodica del TÜV Intercert



CLASS 1 Reaction to fire according to the UNI 9177 standard



Ammonia test according to IEC 62716



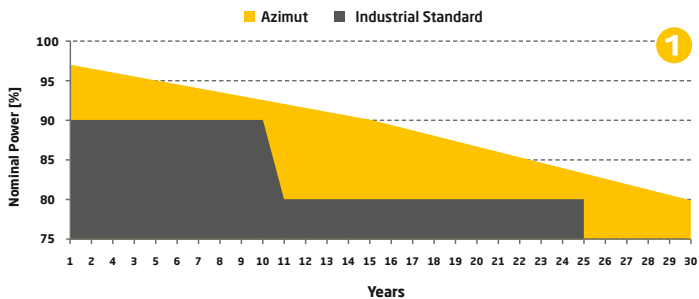
Member of the end-of-life panel recycling zero hassle to customers



Panel certifications IEC 61215 EN 61730



100% product traceability

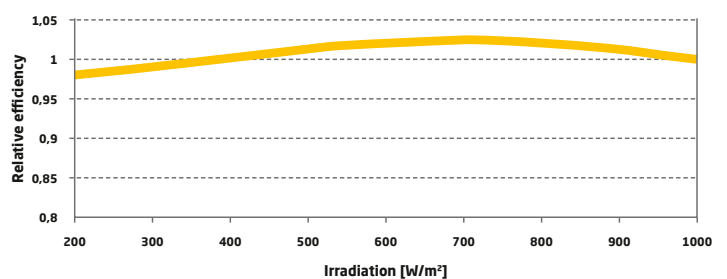
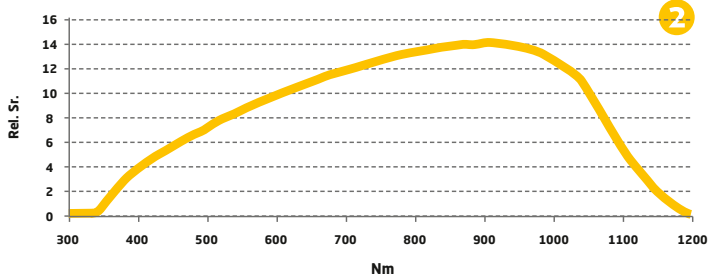


**1 Warranty on rated output**

30-year warranty period on output: 97% after 1 year, 90% after 15 years, 80% after 30 years

**2 Typical spectral response**

**3 Performance at low irradiance**



The graph shows the change in terms of module efficiency with a variation in irradiation spanning from 200 W/m<sup>2</sup> to 1000 W/m<sup>2</sup> (with 25 °C and AM 1.5 spectrum) is equal to -2% (relative).

## ELECTRICAL CHARACTERISTICS UNDER STC (AM 1,5, IRR 1000W/m<sup>2</sup>; temperature 25±2 °C)

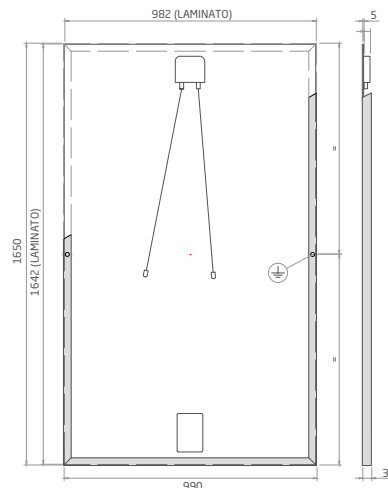
Model		RED 230	RED 250
Nominal power P <sub>nom</sub>	W	230	250
Classification in Power	%	- 0 / + 3	
Voltage at Pmax V <sub>mp</sub>	V	29,49	32,05
Current at Pmax I <sub>mp</sub>	A	7,80	7,80
Open-circuit voltage V <sub>oc</sub>	V	36,71	39,91
Short-circuit voltage I <sub>sc</sub>	A	8,20	8,20
Module efficiency	%	14,08%	14,01%

## ELECTRICAL CHARACTERISTICS UNDER NOCT CONDITIONS (IRR 800 w/m<sup>2</sup>; RT = 20°C; t. Cells = 43°C; wind speed = 1 m/s, AM 1,5)

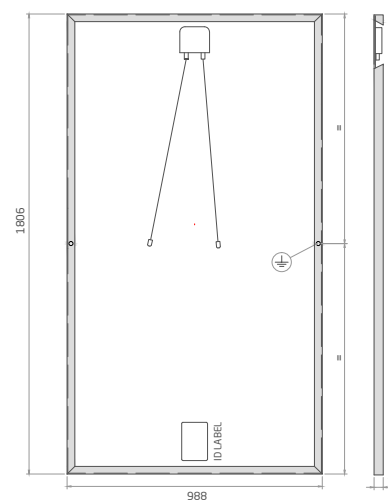
Nominal power P <sub>nomt</sub>	W	168	183
Voltage at Pmax V <sub>mp</sub>	V	27,00	29,35
Current at Pmax I <sub>mp</sub>	A	6,23	6,23
Open-circuit voltage V <sub>oc</sub>	V	33,59	36,51
Short-circuit voltage I <sub>sc</sub>	A	6,55	6,55

Precision of measurement under STC: MPP ≤ 3%; V<sub>oc</sub>, V<sub>mp</sub>, I<sub>sc</sub>, I<sub>mp</sub> ≤ 10%  
Precision of measurement under NOCT conditions: MPP ≤ 5%; V<sub>oc</sub>, V<sub>mp</sub>, I<sub>sc</sub>, I<sub>mp</sub> ≤ 10%

Glass	Tempered, prismatic, high transmittance glass. 3.2 mm thickness for the 60 cells version and 4 mm for the 66 cells version.
Cells	60 (6x10) polycrystalline, 156 x 156 mm 66 (6x11) polycrystalline, 156 x 156 mm
Junction box	IP65, 3 bypass diodes, 4 mm <sup>2</sup> cables w/length 100(+)/120(-) cm
Connectors	MC4 single-contact connectors
Dimensions	1650 x 990 mm +/- 1 mm (60 cells) 1806 x 988 mm +/- 1 mm (66 cells)
Weight	19,5 kg (60 cells) – 23,5 kg (66 cells)
Versions	laminated (LR) available only for the 60 cells version.



# RED 230



# RED 250

## Operation Characteristics/Build

Maximum system voltage	V	1000
Maximum series fuse rating I <sub>R</sub>	A	13
Temperature coefficient P <sub>mp</sub> (γ)	%/°C	-0,42
Temperature coefficient V <sub>oc</sub> (β)	%/°C	-0,32
Temperature coefficient I <sub>sc</sub> (α)	%/°C	0,08
NOCT	°C	43 +/-1
Service temperature	°C	from -40°C to +85°C
Safety class		II
Snow load / Max. wind speed	Pa	5400
Resistance to hail impact		Ø 25 mm at 83 km/h
Encapsulating agent	2 sheets of 0.46 mm EVA	
Protective backing	Multilayer/trasparent polyester lamination, 0.32 mm thick	
Frame	Al 6060 T5, thickness 38 mm	