

# FVG 60-156

## POLYCRYSTALLINE 6"



**Silicon-wafer Polycrystalline photovoltaic module with power peak from 225 W to 240 W**

### APPLICATIONS



Residential, commercial and agricultural



PV parks



Architectural integration (French market)

### FEATURES



Excellent performances even during low solar radiation (cloudiness, morning or evening)



4 mm solar-grade tempered prismatic glass



Heavy load mechanical resistance: TÜV certified (5.400 Pa tested against snow and 2.400 Pa test against wind)



Strict and continuous quality controls during all the production phases up to shipment



High efficiency level up to 14.70%



Custom-made modules even in "All Black" version



Positive tolerance on power peak of individual module



### ITALIAN WARRANTY

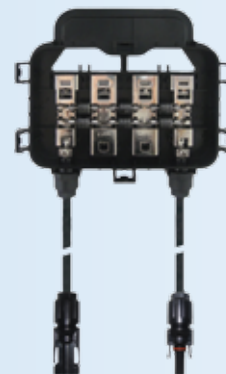
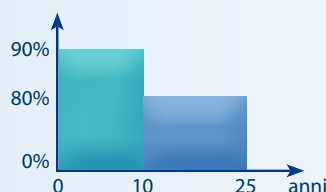
**10 years commercial warranty – 25 years performance warranty**

#### Commercial

- 10 years on materials and manufacturing defects

#### Performance

- Power not less than 90% of power peak during the first 10 years
- Power not less than 80% of power peak during the subsequent 15 years



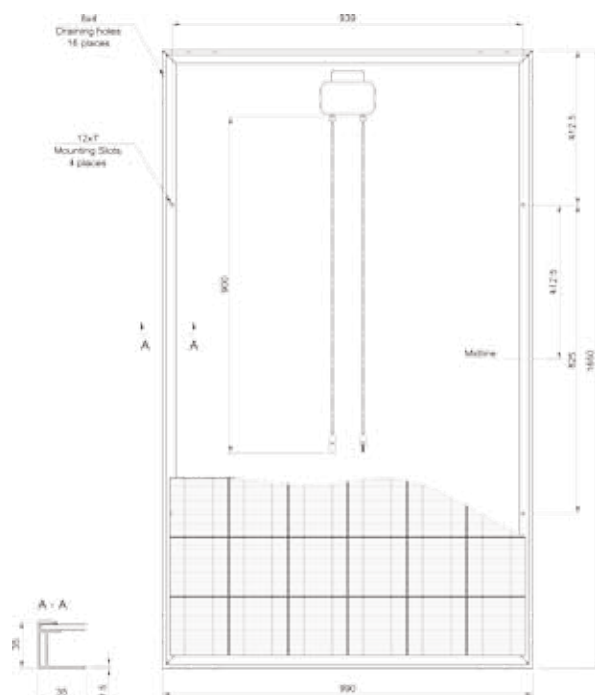
### JUNCTION BOX

Strong and reliable with 6 by-pass diodes. High performance IP67 connectors guarantee maximum safety and duration over time to maximise the power generated by the modules.



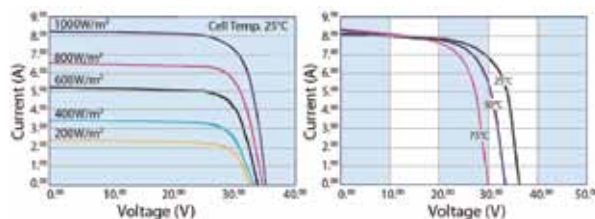
### ELECTRICAL FEATURES

		STC			
Type	Model	xxx Rated Power [W]			
<b>FVG 60-156</b>	<b>FVG xxxP-MC*</b>	<b>225</b>	<b>230</b>	<b>235</b>	<b>240</b>
Module Efficiency	$\eta_m$ (%)	13.77	14.08	14.38	14.70
Cell Efficiency	$\eta_c$ (%)	15.45	15.80	16.15	16.50
Power Peak	$P_m$ (W)	225	230	235	240
Maximum Power Voltage	$V_m$ (V)	30.00	30.30	30.40	30.50
Maximum Power Current	$I_m$ (A)	7.50	7.60	7.75	7.88
Open Circuit Voltage	$V_{oc}$ (V)	37.00	37.20	37.40	37.60
Short Circuit Current	$I_{sc}$ (A)	8.07	8.14	8.21	8.28
Maximum System Voltage	(VDC)	1000			
Power Output Tolerance	(W)	0 / + 5			
Max-Series Fuse	(A)	20			
Operating/Storage Temp.	(°C)	- 40 ~ + 85			
Dielectric Insulation Voltage	(VDC)	3000 max			
Code	MFP	50235	50236	50237	50238
STC: Irradiance 1000 W/m <sup>2</sup> , module temperature 25 °C, AM=1.5					
Power measurement tolerance: ± 3%					



		NOCT			
Typical Power at NOCT	$P_m$ (W)	165	169	173	176
Maximum Power Voltage	$V_m$ (V)	26.90	27.20	27.30	27.40
Maximum Power Current	$I_m$ (A)	6.12	6.22	6.35	6.45
Open Circuit Voltage	$V_{oc}$ (V)	33.80	34.00	34.20	34.40
Short Circuit Current	$I_{sc}$ (A)	6.65	6.71	6.77	6.84
NOCT: Irradiance 800 W/m <sup>2</sup> , ambient temperature 20 °C, wind speed 1 m/s					
Power measurement tolerance: ± 3%					

### CURVE CURRENT - VOLTAGE



### TEMPERATURE CHARACTERISTICS - STC

NOCT - Nominal Operating Cell Temperature	(°C)	45 ± 2
$P_m$ Temperature Coefficient	(%/°C)	- 0.44
$V_{oc}$ Temperature Coefficient	(%/°C)	- 0.33
$I_{sc}$ Temperature Coefficient	(%/°C)	0.055

### MECHANICAL FEATURES

Cell Size	(mm)	156 x 156
Number of cells		60 cells - polycrystalline silicon
Module Dimensions	(mm)	1650 x 990 x 35
Module Weight	(kg)	21.50
Front Glass		4 mm tempered glass
Frame		anodized aluminum alloy
Junction box		6 by-pass diodes
Connectors		IP67 MC4
Output Cables	(mm)	900

### PACKING FEATURES

Carton Dimensions	(mm)	1700 x 1050 x h85
Pallet Dimensions	(mm)	1700 x 1100 x h2000
Pallet Weight	(kg)	1090
1 Carton		2 modules
1 Pallet		22 cartons (44 modules)
Container Loading Capacity	20(ft)	264 modules (6 pallets)
	40(ft)	572 modules (13 pallets)

\* xxx suffix indicates Rated Power [W]