

Photovoltaic Modules AP 72

72 cells – Multicrystalline silicon

Silver Wp: 270 - 280 - 290 - 300 - 310 - 320

Black Wp: 270 - 280 - 290 - 300 - 310



Made in EU

Characteristics & Performance

Available in Silver and Black versions

- **Quality and Robustness**
 - High Quality raw materials
 - Advanced production technology
 - Deep quality and process control
- **Resistance to critical environment**
 - Static load at 540 kg/m² (5400 Pa)
 - Dynamic load at 300 kg/m² - wind 150 km/h
 - Hail with diameter of 25mm and speed of 83 km/h
- **High productivity**
 - Special anti-reflective glass for higher energy yields: up to 4% more
 - Current/power range strictly classified

Product Warranty

- 10 years warranty on manufacturing defects

Performance Warranty

- 12 years warranty on 90% of the nominal power
- 25 years warranty on 80% of the nominal power

Disposal Warranty and Recycling

- COBAT (for Italy)

cobat

System Certifications

Integrated Management System

- Quality - UNI EN ISO 9001:2008
- Environment - UNI EN ISO 14001:2004
- Health & Safety - OHSAS 18001:2007
- Certiquality Certificate of Excellence



Product Tests and Certifications



Safety Class II

- **Conformity and Factory Inspection**
- **"MADE IN EU" Attestation for Italy**
- **Type Approval**
IEC 61215 - Quality and Robustness
IEC 61730 - 1 / 2 - Safety



- **Salt Mist Fog Resistance Test-IEC 61701:2011**
Resistance in seaside areas

- **Ammonia Resistance Test-IEC 62716:2013**
Resistance in farms



- **Special Component mechanical test**
Mechanical load test for BIPV



- **PID Free (Potential Induced Degradation)**

- **Ageing Resistance Test**
2000h Heat-Dump Test (85°C/85%R.H.)
40 years ageing in average environmental condition



- **Fire Reaction Class (Class I)**
UNI 9177



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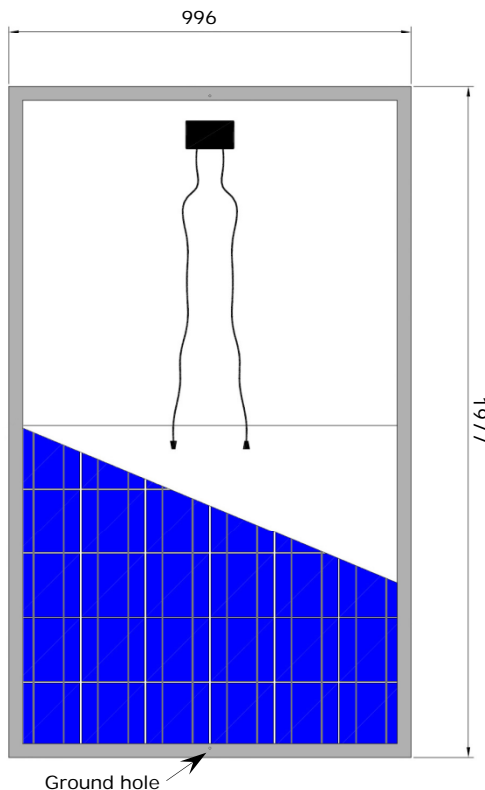
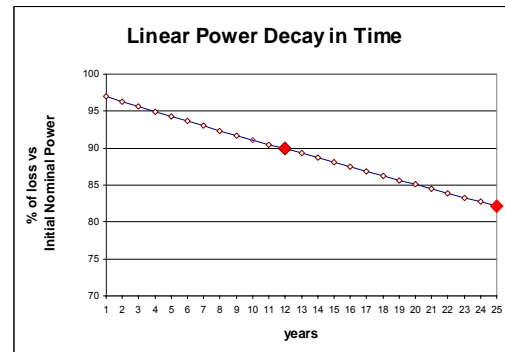
Electrical Features

Type		AP 72-270	AP 72-280	AP 72-290	AP 72-300	AP 72-310	AP 72-320
Performance at Standard Conditions (STC): Irradiance 1000W/m²; Module temperature 25°C; AM 1.5							
Nominal Power	P _{mpp} (W)	270	280	290	300	310	320
Maximum Power Voltage	V _{mpp} (V)	35,22	35,40	35,65	35,94	36,34	36,66
Maximum Power Current	I _{mpp} (A)	7,67	7,90	8,13	8,33	8,53	8,73
Open Circuit Voltage	V _{oc} (V)	45,00	45,35	45,80	46,30	46,77	47,12
Short Circuit Current	I _{sc} (A)	8,20	8,40	8,62	8,80	9,01	9,22
Fill Factor	%	73,21	73,40	73,42	73,48	73,55	73,66
Module efficiency	%	13,67	14,18	14,68	15,19	15,70	16,20
Power Tolerance*	%	0 / +3%	0 / +3%	0 / +3%	0 / +3%	0 / +3%	-3 / 3%
Working Temperature	(°C)	-40 / 85	-40 / 85	-40 / 85	-40 / 85	-40 / 85	-40 / 85
Maximum Voltage	(V _{oc})	1000	1000	1000	1000	1000	1000
NOCT (Silver)	(°C)	43 +/- 2	43 +/- 2	43 +/- 2	43 +/- 2	43 +/- 2	43 +/- 2
NOCT (Black)	(°C)	44 +/- 2	44 +/- 2	44 +/- 2	44 +/- 2	44 +/- 2	/
Performance at NOCT: Irradiance 800W/m²; Module temperature 43°C Silver/45°C Black; AM 1.5							
Maximum Power	P _{max} (W)	196	203,4	210,7	218,0	225,2	232,5
Maximum Power Voltage	V _{mpp} (V)	32,01	32,18	32,40	32,67	33,03	33,32
Maximum Power Current	I _{mpp} (A)	6,13	6,32	6,50	6,66	6,82	6,98
Open Circuit Voltage	V _{oc} (V)	41,28	41,60	42,01	42,47	42,90	43,22
Short Circuit Current	I _{sc} (A)	6,59	6,75	6,92	7,07	7,24	7,41

All electrical measures ±10% tolerance (but P_{mpp} and NOCT)

Temperature Coefficients

of I_{sc} (α) = 0.06 % / °C // 5.429 mA / °C
 of V_{oc} (β) = -0.31 % / °C // -0.116 V / °C
 of P_{max} (γ) = -0.43 % / °C // 0.969 W / °C



Design

Front	3.2 mm tempered glass
Cells	72 cells – Multicrystalline Silicon - 156 x 156 mm
Encapsulant	EVA (Etylene - Vinyl Acetate co/polymer)
Backsheet	Polymeric laminate - white backside white sunny side for silver modules black sunny side for black modules
Profile	Anodized Aluminium in silver and black versions
Junction Box	IP 65 - Class II - 3 by-pass diodes
Cables	2 unipolar, 4 mm ² wires - 1 m lenght
Connectors	MC4 compatible - rapid clutch

Dimensions

Lenght	(mm)	1977
Width	(mm)	996
Profile Thickness	(mm)	34
Weight	(kg)	21.5

Holes

Ground Hole	1 hole with identification label
Drain Holes	2 drain holes on each side

Made in Italy

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