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Solar Panel Guide Specification Data Sheet

Ferrania Solis S.r.l.

AM 48 200-215

AM 48-210

Also available on the web at
EnergyPal.com/ferrania-solis-s-r-l-solar-panels/am-48-210

Photovoltaic Modules AM 48 48 cells – Monocrystalline silicon

Silver Wp: 200 - 205 – 210 – 215

Black Wp: 200 – 205 – 210

Output Power exceeds nominal value



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



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 600 kg/m² (6000 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 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

- Special Component mechanical test

Mechanical load test for BIPV

- Fire Reaction Class (Class I)

UNI 9177



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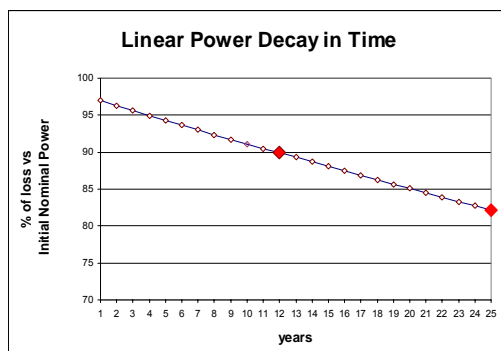


Photovoltaic Modules AM 48

Electrical Features

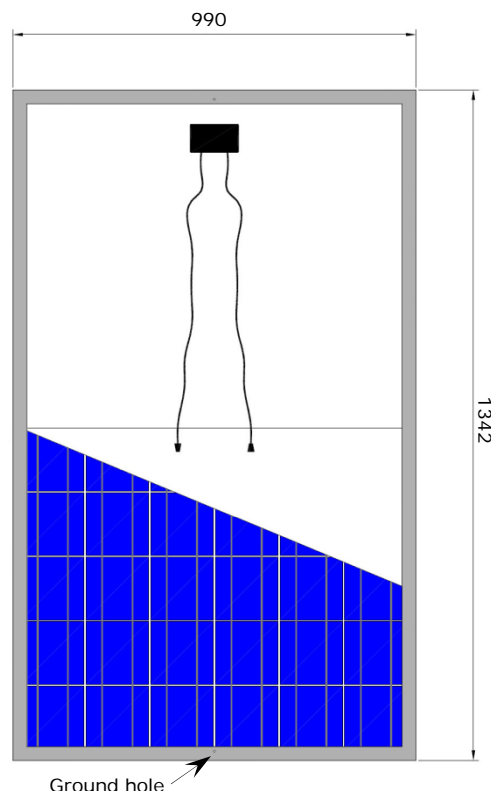
Type		AM 48-200	AM 48-205	AM 48-210	AM 48-215
Performance at Standard Conditions (STC): Irradiance 1000W/m²; Module temperature 25°C; AM 1.5					
Model	Color	Silver/Black	Silver/Black	Silver/Black	Silver
Nominal Power	P _{mpp} (W)	200	205	210	215
Maximum Power Voltage	V _{mpp} (V)	23.90	24.10	24.24	24.35
Maximum Power Current	I _{mpp} (A)	8.40	8.55	8.72	8.85
Open Circuit Voltage	V _{oc} (V)	30.40	30.50	30.64	30.75
Short Circuit Current	I _{sc} (A)	9.05	9.15	9.32	9.45
Fill Factor	%	72.97	73.46	73.52	73.99
Module efficiency	%	15.02	15.27	15.64	16.02
Power Tolerance	%	0 / +3%	0 / +3%	0 / +3%	0 / +3%
Working Temperature	(°C)	-40 / 85	-40 / 85	-40 / 85	-40 / 85
Maximum Voltage	(V _{oc})	1000	1000	1000	1000
NOCT (Silver)	(°C)	43 +/- 2	43 +/- 2	43 +/- 2	43 +/- 2
NOCT (Black)	(°C)	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)	148.0	151.0	155.0	159.0
Maximum Power Voltage	V _{mpp} (V)	23.20	23.30	23.44	23.55
Maximum Power Current	I _{mpp} (A)	6.34	6.49	6.62	6.72
Open Circuit Voltage	V _{oc} (V)	28.45	28.57	28.70	28.81
Short Circuit Current	I _{sc} (A)	6.95	7.11	7.15	7.16

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



Temperature Coefficients

I_{sc} (α) = 0,042 % / °C // 4,15 mA / °C
V_{oc} (β) = -0,318 % / °C // -0,126 V / °C
P_{max} (γ) = -0,427 % / °C // -1,281 W / °C



Design

Front	3.2 mm tempered glass
Cells	48 cells – Monocrystalline Silicon - 156 x 156 mm
Encapsulant	EVA (Etylene - Vinyle 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)	1342
Width	(mm)	990
Profile Thickness	(mm)	34
Weight	(kg)	14

Holes

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

Made in Italy

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