



NB: The manufacturer reserves the right without prior notice to modify the composition of his products. Characteristics provided in this publication derive from data obtained under controlled test conditions. AXTER Limited makes no warranties, express or implied as to the properties and performance under any variations from such conditions in actual construction.

General Solar Model PV – 432

Axter's General Solar PV combines a high performance roof waterproofing system with thin film (amorphous) photovoltaic cells embedded in the surface for use on both flat and sloping roofs on new or remedial projects.

System benefits

- Photovoltaic cells fully integrated into the structure of the building.
- Lightweight $\leq 7.7 \text{ kg/m}^2$.
- Optimal waterproofing system; easy to install, no roof penetrations.
- Elevated energy production even at high working temperature and low radiation (diffused light).
- Bypass diodes for shadow tolerance.
- Power Output Warranty 85% at 25 years (of min. power).
- UL Listed to 600 VDC.
- Meets IEC 61646 and IEC 61730 requirements.
- BRE MCS certified.

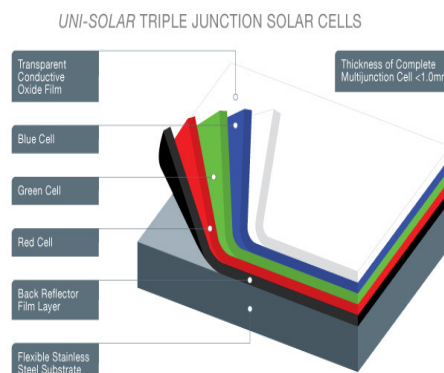
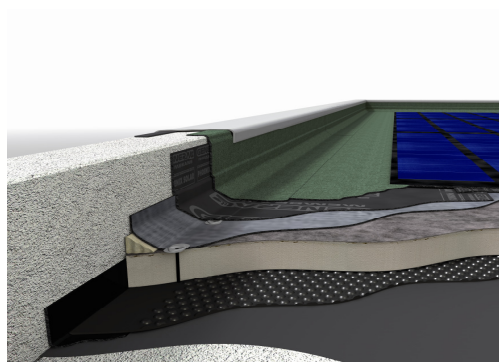
Photovoltaic

General Solar PV combines Uni-Solar laminate technology comprising unique triple-junction amorphous silicon solar cells, where the blue, green and red light of the sun is absorbed in different layers of the cell, securely bonded to the top of a reinforced specially blended polymer modified roof waterproofing membrane. The technology results in excellent performance in low and diffuse light conditions. The PV – 432 module is constructed with three 144 Wp Uni-Solar laminate strips, each strip comprises 22 separate cells with bypass diodes connected across every solar cell.

Rated Power Output (P_{max}) 432 W_p $\pm 5 \%$

Waterproofing

General Solar is a two layer high performance roof waterproofing system specially manufactured with high quality polymeric modifiers giving excellent resistance to ageing and heat absorption associated with solar gain. The system is adhered to the roof using conventional techniques taking due account of dimensional stability and wind uplift. General Solar PV can be laid over most types of thermal insulation. Full specification for use is available from Axter.



Flexible



Lightweight



Durable



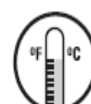
No-Glass



Shadow Tolerant



More kWh



High Temp Performance



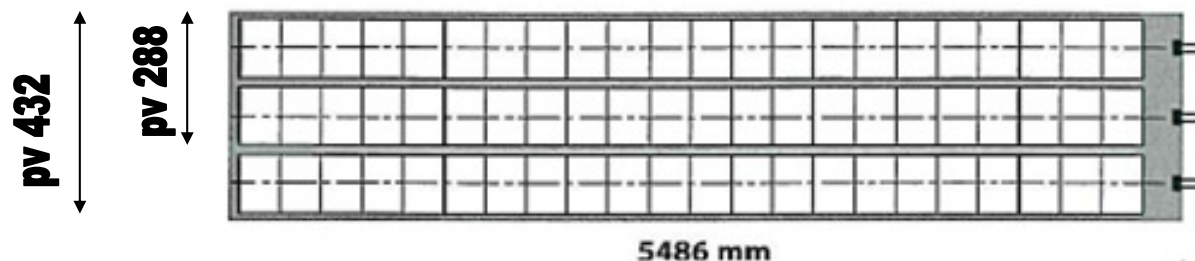
Low Light Performance

Characteristics (General Solar PV)

Photovoltaic laminate with potted terminal housing assembly with output cables and quick-connect terminals on top, factory bonded to a 4 mm thick reinforced polymer modified self-adhesive bituminous membrane.

Construction

Length 5486 mm, width 1200, height 7 mm (plus 8mm terminal housing assembly) –
Area 6.58 m²



Output cables: 4 mm² cable with weatherproof DC-rated quick connect terminals 560 mm long.

Encapsulation; Durable ETFE high light-transmissive polymer.

Cell type: 22 triple junction amorphous silicon solar cells 356 mm x 239 mm connected in series.

Electrical specifications

1 long strip 5486 mm – 22 solar cells.

	STC	NOCT
Max power (P_{max})	144 W	111 W
Voltage at P_{max} (V_{mp})	33.0 V	30.8 V
Current at P_{max} (I_{mp})	4.36 A	3.6 A
Short-circuit Current (I_{sc})	5.3 A	4.3 A
Open-circuit voltage (V_{oc})	46.2 V	42.2 V
Maximum Series Fuse Rating	8A	-
NOCT	-	46°C
Temperature coefficient (TC) At AM 1.5, 1000 W/m ² irradiance		
I_{sc}	0.001/°K (0.10%/°C)	
V_{oc}	-0.0038/°K (-0.38%/°C)	
P_{max}	-0.0021/°K (-0.21%/°C)	
I_{mp}	0.001/°K (-0.21%/°C)	
V_{mp}	-0.0031/°K (-0.31%/°C)	

STC: Standard test conditions 1000 W/m², AM 1.5, 25 ° cell temperature

NOCT: Nominal Operating cell temperature 800 W/m², AM 1.5, 1 m/sec wind

New modules available - General SOLAR PV 432 with increased output power.

Application criteria

Installed as part of the Phoenix Solar double layer waterproofing system.

Installation temperature 10°C to 40°C.

Maximum roof temperature 85°C.

Slope 3° < 60° (additional mechanical fixings may be necessary on steep slopes).

Note

1. During the first 8 – 10 weeks operation power output may be higher by 15%, operating voltage higher by 11% and operating current higher by 4% than specified ratings.
2. Electrical specifications are based on STC measurements
3. Actual performance may vary up to 10% from rated power due to low temperature operation, spectral and other related effects.
Maximum system open-circuit voltage not to exceed 600 VDC per UL.
4. Specifications are subject to change without notice.