

➔ **UNIFLAT 272 Wp thin-film module**

Solar power system for:  
 large-scale roofing – flat roofing – lightweight roofing

- ➔ 272 Watt a-Si thin-film module
- ➔ for profiled metal sheet roofing and sandwich plate roofing
- ➔ utilises roof surface area more efficiently than crystalline technology
- ➔ suitable for all roof angles as well as unfavourable alignments
- ➔ support material: aluminium-zinc plated steel sheeting
- ➔ high-grade UNI-SOLAR® laminate
- ➔ triple junction technology utilises three spectral light ranges and delivers higher returns despite
  - ➔ ... low light
  - ➔ ... high temperatures
  - ➔ ... partial shadow
  - ➔ ... flat surface installation



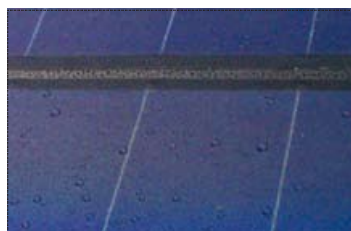
**High Performance**

UNI-SOLAR® thin-film cells  
 flexible – non-glass – lightweight



**Robust and Durable**

corrosion-resistant,  
 Self-cleaning



**Easy to Install**

mounted directly onto profiled sheeting, no substructure



## Technical Data UNIFLAT

### Electrical Specifications

	STC	NOCT
Module Power ( $P_{MPP}$ )	272 Wp	210 Wp
Maximum Nominal Power ( $P_{MPP}$ )	136 Wp	105 Wp
Voltage at $P_{max}$ ( $U_{MPP}$ )	33,0 V	30,8 V
Current at $P_{max}$ ( $I_{MPP}$ )	4,1 A	3,42 A
Short Circuit Current ( $I_{sc}$ )	5,1 A	4,1 A
Open Circuit Voltage ( $U_{oc}$ )	46,2 V	42,2 V
Maximum Series Fuse Rating	8 A	8 A

Electrical specifications ( $\pm 5\%$ ) after stabilisation. The actual output can vary up to 10% from the nominal values due to low temperatures, spectral fluctuation and other influences. During the first 8 to 10 weeks of operation the electrical parameters may exceed the values specified by the following values:

- Power  $PMPP + 15\%$ , open circuit voltage  $U_{oc} + 11\%$ , short circuit current  $I_{sc} + 4\%$
- 1) values per laminate, 2 laminates per module
- 2) under standard test conditions (STC = 1000 W/m<sup>2</sup>, AM 1.5, 25° cell temperature)
- 3) (NOCT = 800 W/m<sup>2</sup>, AM 1.5, 1m/sek. wind) NOCT: 46° C

### System Data

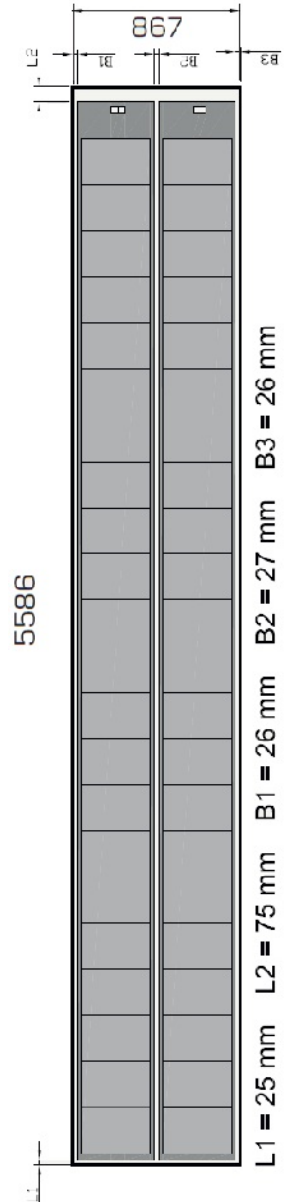
Surface	abrasion-resistant, highly light-transmissive ETFE (Tefzel®) Polymer	
Solar laminate	2 laminates each with 22 triple junction amorphous silicon solar cells	
Adhesive	UNI-SOLAR® laminate 22-L TQC, parallel bypass diodes connecting every cell	
Support sheeting	polymer-modified bitumen adhesive	
Dimensions	length	5586 mm (variance max. -0/+5 mm)
	width	867 mm (variance max. $\pm 0.5$ mm)
	thickness	4.7 mm, 16.7 mm at moulded junction box
	weight	45 kg (total module)
	connection cable	2 x 0.5 m, high quality solar plugs, IP 65°

### Temperature Coefficients (at AM 1.5, 1000 W/m<sup>2</sup> solar irradiation)

Power output coefficient of $P_{MPP}$	-286 mW/K	(-0.21%/°C)
Voltage coefficient of $U_{MPP}$	-102 mV/K	(-0.31%/°C)
Current coefficient of $I_{MPP}$	4.1 mA/K	(0.10%/°C)
Short circuit current coefficient of $I_{sc}$	5.1 mA/K	(0.10%/°C)
Open circuit voltage coefficient of $U_{oc}$	-176 mV/K	(-0.38%/°C)

### Quality Characteristics

Production tolerance	$\pm 5\%$
Output guarantee	10 years at 92% of power output 20 years at 84% of power output 25 years at 80% of power output for registered products
Product guarantee	5 years, 20-year guarantee against rust-corrosion of steel sheeting
Max. system voltage	1000 VDC corresponding to Protection Class II per TÜV Rheinland
Certificates	IEC 61646 and IEC 61730



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