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Solar Panel Guide Specification Data Sheet

Sunset Energietechnik GmbH PM-60 SUNplatinum® 240-270 PM 240/60

SUNSET SUNplatinum® PM Series 240 - 270 W,

As a solar specialist with 35 years of experience, SUNSET Energietechnik GmbH makes a significant contribution to a ground breaking progress in solar technology.

A result of our long term experience is the PM SUNplatinum® series, a photovoltaic module with poly crystalline cells and thin-glass-glass technology. These outstanding modules produce a continuous and reliable yield, even under extreme conditions. By running as glass-glass module, longevity is further increased and the load characteristics are further improved. Ultrathin glasses enable minimal module weight in combination with heighest stability, due to the possibility of framing. Therefore modules of the SUNplatinum® series are able to replace known module types easily. Modules of the SUNplatinum® SOLAR MADE IN SOLAR MADE IN GERMAN frameless version excellent for building integrations (BIPV).



SUNSET PM SUNplatinum® series at a glance

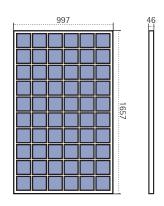
- 60 high-performance poly crystalline silicon solar cells made from SUNsilicon® with an efficiency up to 21 %
- Textured cell surface for particularly high electricity yields
- Use of tempered white high resistant solar glass, EVA plastic and an anodised aluminium frame for long-term use
- Translucent, therefore excellent for BIPV ("Building Integrated PV") applications
- Increased stability against environmental conditions (damp/salt/ammoniac)
- Certified production facility in Germany
- Extended warranty terms compared to conventional modules

The world's future energy



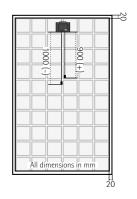
Module series SUNplatinum® /60 PM 240, 245, 250, 255, 260, 265, 270 /60

| Technical specifications PM (STC)* | | | 240 | 245 | 250 | 255 | 260 | 265 | 270 |
|------------------------------------------|-------------------|---------|------|------|------|------|------|------|------|
| Nominal power (±5% production tolerance) | P_{max} | $[W_p]$ | 240 | 245 | 250 | 255 | 260 | 265 | 270 |
| Rated current | I_{MP} | [A] | 7.95 | 8.05 | 8.17 | 8.32 | 8.45 | 8.57 | 8.70 |
| Rated voltage | V_{MP} | [V] | 30.3 | 30.4 | 30.5 | 30.6 | 30.7 | 30.9 | 31.0 |
| Short circuit current | I _{sc} | [A] | 8.50 | 8.65 | 8.80 | 8.85 | 8.90 | 9.00 | 9.10 |
| Open circuit voltage | V_{oc} | [V] | 37.2 | 37.3 | 37.4 | 37.4 | 37.4 | 37.6 | 37.9 |



Rated values under Standard Test Conditions (STC: 1000 W/m², 25°C, spectrum AM 1,5)*

| Technical specifications PM (NOCT)* | | 240 | 245 | 250 | 255 | 260 | 265 | 270 | |
|-------------------------------------|-------------------|---------|------|------|------|------|------|------|------|
| Nominal power | P_{max} | $[W_p]$ | 177 | 181 | 184 | 188 | 192 | 195 | 199 |
| Rated current | I_{MP} | [A] | 6.20 | 6.28 | 6.38 | 6.49 | 6.59 | 6.69 | 6.79 |
| Rated voltage | V_{MP} | [V] | 28.6 | 28.7 | 28.8 | 28.9 | 29.0 | 29.1 | 29.2 |
| Short circuit current | I_{sc} | [A] | 6.79 | 6.91 | 7.03 | 7.07 | 7.11 | 7.19 | 7.27 |
| Open circuit voltage | V_{oc} | [V] | 34.9 | 35.0 | 35.0 | 35.0 | 35.2 | 35.5 | 35.7 |



Rated values under Nominal Operating Cell Temperature (NOCT: 800 W/m², 43± 2°C, spectrum AM 1,5)*

Characteristics for system design*

| <i>'</i> | 3 | | | | | | |
|--------------------------------------------------------------|----------------|-----|------|------------------------------------------|---|-------|---------------|
| Protection class | | | II | Temperature range (TC) | | [°C] | -40 +85 (± 0) |
| System voltage | $V_{\rm SYS}$ | [V] | 1000 | Temperature coefficient I _{sc} | α | [%/K] | + 0.039 |
| Reverse current | I _R | [A] | 20 | Temperature coefficient V _{oc} | β | [%/K] | - 0.311 |
| Relative efficiency ratio (@200W/m² based on STC efficiency) | | [%] | 98.5 | Temperature coefficient P _{MPP} | γ | [%/K] | - 0.46 |

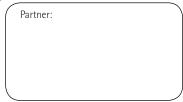
Mechanical characteristics*

| Front covering | 2.1 mm solar glass (Anti Reflective) | Protection class | junction box IP 65 |
|----------------|--------------------------------------|-----------------------------|--------------------------------------|
| Back covering | 2.1 mm solar glass | Cable connection | Multi Contact MC4 or. compatible |
| Type of cell | poly crystalline | Heavy load test | 5400 Pa |
| Dimensions | 1657 x 997 x 46 mm (± 3 mm) | Bypass-Diodes (no./voltage) | 3 / 1000 V |
| Weight | 22.4 kg (± 1 kg) | Frame (material/colour) | aluminium / silver (black as option) |

Over the years SUNSET Energietechnik GmbH has set high benchmarks with its high quality standards.

Continuous tests guarantee a consistently high level of quality. All modules undergo visual, mechanical, and electrical inspections. Each module is high voltage (HV) tested and examined by electro luminescence (EL). This is recognisable by means of the original SUNSET label, the serial number and the SUNSET guarantee:

- 10 years product warranty
- 10 years linear warranty for a power output of 90% (according to warranty terms)
- 30 years linear warranty for a power output of 80% (according to warranty terms)
- Our warranty terms will be handed out on request or can be found on our homepage (see below)
- EL picture and HV test of each module
- Registered at PV-Cycle, WEEE-Nr.: DE 68887899
- Certified according to IEC 61215, 61730, 61701, 62716 and MIL-STD-810G
- Production facility certified according to ISO 9001, 14001 and 18001















unless stated otherwise



SUNSET Energietechnik GmbH

- Industriestraße 8-22 D-91325 Adelsdorf
 Telefon +499195/9494-0 Telefax +499195/9494-290
 E-Mail: support@sunset-solar.com
 - Web: www.sunset-solar.com
- Specifications subject to technical changes.

 * All values/parameters vary up to ±10%,