



FPD-M660

60 MONOCRYSTALLINE CELLS
DOUBLE-GLAZED PV MODULE

19.00% MAX. EFFICIENCY
310W MAX. OUTPUT
PLUS TOLERANCE **0~+3%**

APPLICATIONS



Commercial building & factory rooftop



Residential rooftop



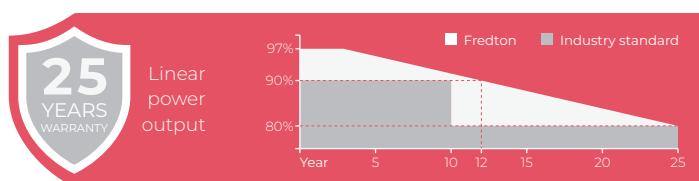
Ground-mounted photovoltaic power station

CHOOSING FREDTON

Specialized vendor with ability to supply all the elements like PV module, inverter, mounting system, and also UPS system.

Reliable partner of distributors, installers and system integrators with local warehousing, delivery service and after sales support.

Manufacturing with international quality management standards and environment management system ISO 9001 and ISO 14001.



10 years manufacturing warranty – **12 years** warranty at 90% power output

KEY FEATURES



Modules certified by TÜV for Snow Zone III, anti-PID, salt mist corrosion and ammonia corrosion.



Special PV module insurances by world leading insurance company.

Free module recycling through membership in the PV Cycle Association.

Excellent performance under low light for better kWh/kW ratio & more electricity in cloudy days.

Proprietary 800°C online coating technology improves light absorption & reduces surface dust.



Junction box and bypass diodes guarantee the module free of overheating.



ELECTRICAL CHARACTERISTICS

Performance at Standard Test Condition (STC: Irradiance = 1000 W/m², Module Temperature = 25°C, Air Mass = 1.5)

| Part Number | | FPD-M660-XXX | | (XXX = Pmax) | | | | |
|------------------------------|----------|--------------|--------|--------------|--------|--------|--------|--------|
| Maximum Power | Pmax (W) | 280 | 285 | 290 | 295 | 300 | 305 | 310 |
| Short Circuit Current | Isc (A) | 9.35 | 9.40 | 9.50 | 9.60 | 9.72 | 9.80 | 9.90 |
| Open Circuit Voltage | Voc (V) | 39.40 | 39.50 | 39.60 | 39.70 | 39.80 | 40.00 | 40.20 |
| Maximum Power Current | Impp (A) | 8.90 | 9.00 | 9.10 | 9.22 | 9.34 | 9.42 | 9.53 |
| Maximum Power Voltage | Vmpp (V) | 31.50 | 31.70 | 31.90 | 32.00 | 32.13 | 32.40 | 32.53 |
| Encapsulated Cell Efficiency | | 19.77% | 20.12% | 20.48% | 20.83% | 21.18% | 21.53% | 21.89% |
| Module Efficiency | | 17.16% | 17.47% | 17.77% | 18.08% | 18.39% | 18.69% | 19.00% |
| Power Tolerance | | 0/+3% | 0/+3% | 0/+3% | 0/+3% | 0/+3% | 0/+3% | 0/+3% |

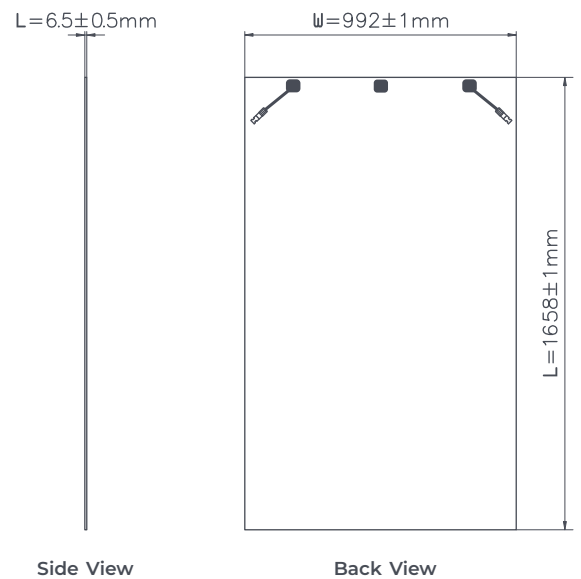
Performance at Normal Operating Cell Temperature (NOCT: Irradiance = 800 W/m², Air Temperature = 20°C, Wind Velocity = 1 m/s)

| | | | | | | | | |
|-----------------------|----------|--------|--------|--------|--------|--------|--------|--------|
| Maximum Power | Pmax (W) | 202.94 | 206.57 | 210.19 | 213.82 | 217.44 | 221.06 | 224.69 |
| Short Circuit Current | Isc (A) | 7.63 | 7.67 | 7.75 | 7.83 | 7.93 | 8.00 | 8.08 |
| Open Circuit Voltage | Voc (V) | 36.41 | 36.50 | 36.59 | 36.68 | 36.78 | 36.96 | 37.14 |
| Maximum Power Current | Impp (A) | 6.97 | 7.05 | 7.13 | 7.23 | 7.32 | 7.38 | 7.48 |
| Maximum Power Voltage | Vmpp (V) | 29.11 | 29.29 | 29.48 | 29.57 | 29.69 | 29.94 | 30.06 |

The typical relative change in module efficiency at an irradiance of 200 W/m² in relation to 1000 W/m² (both at 25°C and Air Mass 1.5 spectrum) is less than 6%.

MECHANICAL SPECIFICATIONS

| | |
|-------------------------------|---|
| Cell Type | Monocrystalline 156.75 x 156.75 mm (6-inch) |
| Number of Cells | 60 (6 x 10 cells) |
| Dimensions (L x W x H) | 1658 x 992 x 6.5 mm |
| Weight | 20.5 Kg |
| Front Glass | 2.5 mm low iron tempered glass |
| Frame | N/A |
| Junction Box | IP67 rated, with bypass diodes |
| Connector | MC4 compatible |
| Output Cables | TÜV, 4.0 mm ² , 900 mm length |



TEMPERATURE CHARACTERISTICS

| | | |
|------------------------------------|------|-----------|
| Nominal Operating Cell Temperature | NOCT | 44 ± 2°C |
| Temperature Coefficient of Pmax | γ | -0.4 %/K |
| Temperature Coefficient of Voc | β | -0.37 %/K |
| Temperature Coefficient of Isc | α | -0.05 %/K |

SYSTEM INTEGRATION PARAMETERS

| | |
|--------------------------------------|------------------|
| Maximum System Voltage | DC 1000 V/1500 V |
| Maximum Series Fuse | 15 A |
| Maximum Reverse Current | 21.5 A |
| Increased Snowload acc. to IEC 61215 | 5400 Pa |
| Operating Temperature | -40 ~ +85°C |
| Number of Bypass Diodes | 3 |

PACKAGING CONFIGURATION

| | | | |
|-----------------------|--------|--------|--------|
| Modules per Box | 30 | | |
| | 20' GP | 40' GP | 40' HQ |
| Modules per Container | 360 | 840 | 896 |

Specifications subject to change without prior notice.

