



The Nanosolar Utility Panel™ is the industry's first solar power panel specifically designed for utility-scale deployment. Its unique features and benefits include:

A Thin Panel of 160-220 Watts

- High power per panel.
- Reduces installation cost.

High-Current Design

- Enables longer panel arrays.
- Reduces cabling and labor.

Nanosolar Edge Connector™

- Simplifies electrical connection.
- Reduces labor time.

High System Voltage

- Industry-first 1500V certification.
- More efficient inverter utilization.

Rugged Glass/Glass Panel with Edge Seal

- Designed for maximum durability.
- Wide-span mounting.

Designed for Multi-MW Deployment Logistics

- Dense, re-usable pallet packing.
- Reduces shipping cost.

Performance

| | |
|---------------------|--|
| Maximum Rated Power | 160W – 220W |
| Tolerance* | +/- 5% |
| Limited Warranty* | 5 years material & workmanship 90% nominal power output for first 10 years 80% nominal power output for first 20 years |

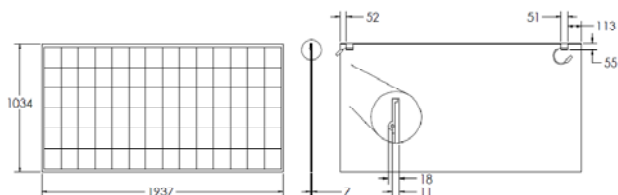
Mechanical Characteristics

| | |
|------------------|---|
| Dimensions | Length: 1937 mm (76") Width: 1034 mm (41") Height: 7 mm (0.28") |
| Weight | 32 kg (69 lbs) |
| Construction | Frameless glass/glass laminate 3 mm tempered solar glass front 3 mm tempered glass back |
| Solar Cells | 84 MWT CIGS cells in series |
| Cell Layout | 6 cells per string 14 strings per module |
| Output Cables | 80 mm cable (positive) 300 mm cable (negative) |
| Output Terminal | MC3 compatible |
| Mounting Systems | 4-clip for 2400 Pa uniform load Additional 2-rail for 5400 Pa |

Shipping Quantities

| | |
|-----------------------|-----|
| Per Pallet | 60 |
| Per 20' ISO Container | 660 |

Mechanical Drawing



Electrical Characteristics at STC†

| | | | | | | | |
|-----------------------------------|-------|------|------|------|------|------|------|
| Rated Power (W) | 160 | 170 | 180 | 190 | 200 | 210 | 220 |
| V _{MPP} (V) | 28.1 | 28.8 | 29.5 | 30.7 | 31.5 | 32.4 | 33.4 |
| I _{MPP} (A) | 5.7 | 5.9 | 6.1 | 6.2 | 6.4 | 6.5 | 6.6 |
| V _{OC} (V) | 39.5 | 40.1 | 40.8 | 42.1 | 43.1 | 44.0 | 44.8 |
| I _{SC} (A) | 7.3 | 7.4 | 7.5 | 7.5 | 7.6 | 7.6 | 7.6 |
| Max System Voltage | 1500V | | | | | | |
| Max Series Circuit Fuse | 25A | | | | | | |
| Normal Operating Cell Temperature | 47°C | | | | | | |

Electrical Characteristics at NOCT‡

| | | | | | | | |
|----------------------|------|------|------|------|------|------|------|
| Rated Power (W) | 160 | 170 | 180 | 190 | 200 | 210 | 220 |
| V _{MPP} (V) | 24.2 | 24.9 | 25.6 | 26.8 | 27.5 | 28.4 | 29.2 |
| I _{MPP} (A) | 4.6 | 4.8 | 4.9 | 5.0 | 5.1 | 5.2 | 5.3 |
| V _{OC} (V) | 35.6 | 36.2 | 36.9 | 37.9 | 38.8 | 39.6 | 40.2 |
| I _{SC} (A) | 6.0 | 6.1 | 6.1 | 6.1 | 6.2 | 6.2 | 6.2 |

Qualifying Test Conditions

| | |
|----------------------------|----------------------------|
| Temperature Cycling | -40°C to +85°C, 200 cycles |
| Damp Heat | 85% RH, 85°C, 1000 hr |
| Static Load Front and Back | 2400 Pa (50 psf) |
| Hailstone Impact | 25 mm diameter at 23 m/s |

Quality and Safety

- IEC 61646 & 61730
- UL 1703, Fire Resistance Class A
- TUV Safety Class II up to 1500VDC

* Contact Nanosolar for full warranty terms

† Standard Test Conditions (STC): 25°C, 1000 W/m², AM1.5G.

‡ NOCT Test Conditions: 47°C, 800 W/m², ≤ Wind 1m/s.