

# SSM-540 Bifacial Solar Panel

540 – 570 Wp

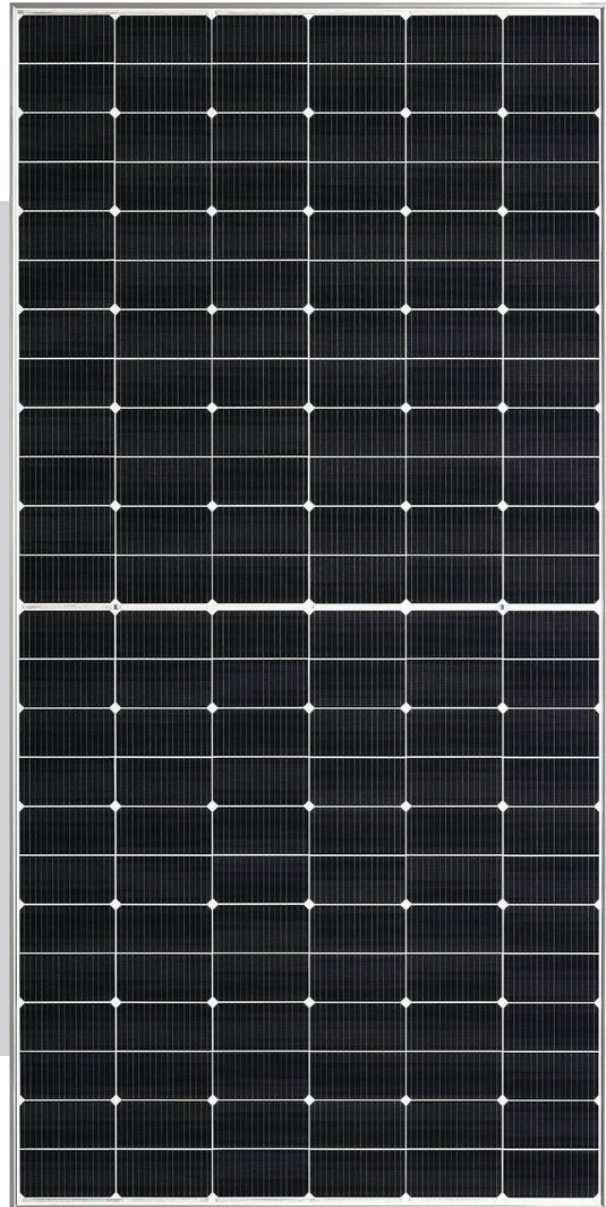
For ground-mounted solar power plants: Bifacial heterojunction high-performance solar module

**Highly profitable** More energy yield over the same area even on cloudy or hot days.

**Extremely durable** Outstanding cell stability and high breakage resistance

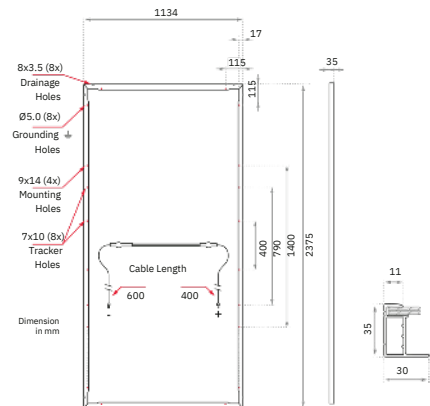
**Consistently sustainable** Regional value creation, made without lead and PFAS, produced using 100 % renewable energy.

**Extremely aesthetic** Elegant Swiss design suitable for all roof shapes and sophisticated architecture.



## Mechanical specification

|                      |                                                                                                                                     |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions [mm / in] | 2375 x 1134 x 35 / 93.5 x 44.6 x 1.4                                                                                                |
| Weight [kg / lbs]    | 34.4 / 75.8                                                                                                                         |
| Front cover          | Tempered solar glass, 2.0 mm / 0.08 in, with anti-reflective surface                                                                |
| Back cover           | Solar glass, 2.0 mm / 0.08 in                                                                                                       |
| Frame                | Silver anodized aluminum                                                                                                            |
| Solar cell type      | 144 half-cells, mono n-Si, HJT with SWCT® bifacial cell technology                                                                  |
| Junction boxes       | 3 diodes, IP68 rated in accordance with IEC 62790                                                                                   |
| PV Cable             | 4 mm² / 12 AWG, (-) 600 mm / 23.62 in, (+) 400 mm / 15.75 in length in accordance with EN 50618                                     |
| Connectors           | 1. n.a., 2. MC4-Evo2, 3. UKT Energy PV-C002, 4. TE Connectivity PV4-S1 in accordance with IEC 62852, IP68 rated only when connected |



## Electrical specification<sup>1</sup>

| Power class            | Efficiency<br>η<br>[%] | Power**                  |     |                    |     | Short circuit current     |      |                   |      | Open circuit Voltage      |      |                   |      | Current at MPP          |      | Voltage at MPP          |      |
|------------------------|------------------------|--------------------------|-----|--------------------|-----|---------------------------|------|-------------------|------|---------------------------|------|-------------------|------|-------------------------|------|-------------------------|------|
|                        |                        | P <sup>max</sup><br>[W]  |     |                    |     | I <sub>sc</sub><br>[A]    |      |                   |      | V <sub>oc</sub><br>[V]    |      |                   |      | I <sub>mpp</sub><br>[A] |      | V <sub>mpp</sub><br>[V] |      |
|                        |                        | STC                      |     | BiFi135<br>(BNPI)4 |     | BiFi300<br>(BSI)5         |      | BiFi135<br>(BNPI) |      | BiFi300<br>(BSI)          |      | BiFi135<br>(BNPI) |      | BiFi300<br>(BSI)        |      | STC                     |      |
| 540                    | 20.1                   | 409                      | 540 | 606                | 686 | 10.2                      | 12.7 | 14.2              | 16.1 | 50.8                      | 53.4 | 53.5              | 53.8 | 9.                      | 11.9 | 42.9                    | 45.3 |
| 545                    | 20.2                   | 412                      | 545 | 611                | 692 | 10.3                      | 12.8 | 14.3              | 16.2 | 50.8                      | 53.4 | 53.6              | 53.8 | 5                       | 12.0 | 43.0                    | 45.4 |
| 550                    | 20.4                   | 416                      | 550 | 617                | 699 | 10.3                      | 12.9 | 14.4              | 16.3 | 50.8                      | 53.4 | 53.6              | 53.8 | 9.                      | 12.1 | 43.1                    | 45.5 |
| 555                    | 20.6                   | 420                      | 555 | 623                | 705 | 10.4                      | 13.0 | 14.5              | 16.5 | 50.9                      | 53.5 | 53.6              | 53.9 | 6                       | 12.2 | 43.2                    | 45.6 |
| 560                    | 20.8                   | 424                      | 560 | 628                | 711 | 10.5                      | 13.1 | 14.6              | 16.6 | 50.9                      | 53.5 | 53.7              | 53.9 | 9.                      | 12.3 | 44.2                    | 45.7 |
| 565                    | 21.0                   | 428                      | 565 | 634                | 718 | 10.6                      | 13.2 | 14.8              | 16.7 | 50.9                      | 53.5 | 53.7              | 53.9 | 7                       | 12.4 | 44.3                    | 45.8 |
| 570                    | 21.2                   | 431                      | 570 | 639                | 724 | 10.7                      | 13.3 | 14.9              | 16.8 | 51.0                      | 53.6 | 53.8              | 54.0 | 9.                      | 12.4 | 43.4                    | 45.8 |
| Bifaciality factor [%] |                        | φP <sup>max</sup> 90 ± 5 |     |                    |     | φI <sub>sc</sub> 90.7 ± 5 |      |                   |      | φV <sub>oc</sub> 99.7 ± 5 |      |                   |      | 7                       |      |                         |      |

\* XXX = power class, y = connector type \*\* Power tolerance -0 W / +5 W for STC

### Temperature coefficients

|                                      |           |       |             |
|--------------------------------------|-----------|-------|-------------|
| Temperature coefficient of $I_{sc}$  | $\alpha$  | [%/K] | +0.033      |
| Temperature coefficient of $V_{oc}$  | $\beta_V$ | [%/K] | -0.234      |
| Temperature coefficient of $P_{max}$ | $\beta_P$ | [%/K] | -0.259      |
| Nominal Module Operating Temperature | NMOT3     | [°F]  | 109.4 ± 3.6 |

The temperature coefficients stated are linear values.

## Properties for system design

|                                                      |           |             |
|------------------------------------------------------|-----------|-------------|
| Max. system voltage                                  | [V] [A]   | 1500        |
| Overcurrent protection rating                        | [lbs/ft²] | 30          |
| Max. test load +/- (downforce / uplift) <sup>6</sup> |           | 112.8/75.2  |
| Max. design load +/- (downforce / uplift)            | [lbs/ft²] | 75.2/50.1   |
| Safety class                                         |           | II          |
| Fire type (UL 61730)                                 |           | 29          |
| Operation temperature                                | [°F]      | -40 to +185 |
| Module temperature rating [T <sub>98</sub> ] max     |           | 158         |
|                                                      | [°F]      |             |
|                                                      |           |             |

### I-V curves at different irradiances

