

## Smart Panel

Monocrystalline PERC Panel with Half-Cut Cell Technology and Integrated Power Optimiser For Australia

SPV410-R54JWML / SPV415-R54JWML



### PV to grid solution including full service from SolarEdge

- / 25-year panel warranty and performance warranty
- / Easy installation with the Power Optimiser pre-assembled on the PV panel
- / Optimised energy output by constantly tracking the maximum power point (MPPT) of each panel individually
- / Built-in SafeDC™ enabling panel-level voltage shutdown whenever inverter or AC power is turned off, for maximum installer and firefighter safety
- / Specifically designed to work with SolarEdge inverters
- / Full visibility of system performance from panel to grid
- / Excellent mechanical loading and shock resistance performance
- / Detects abnormal PV connector behavior, reducing potential safety issues
- / Faster installations with simplified cable management

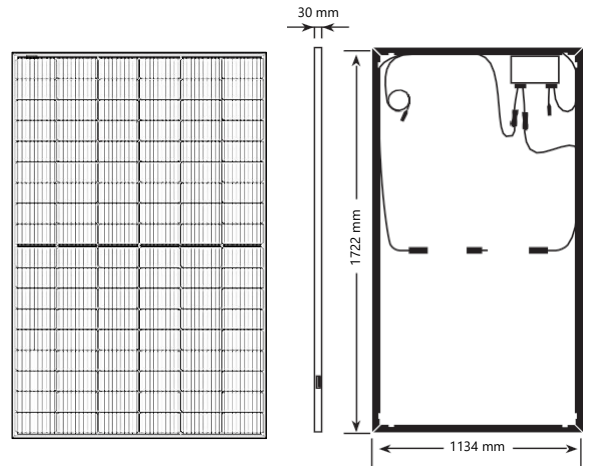
# Smart Panel

## SPV410-R54JWML / SPV415-R54JWML

| PANEL ELECTRICAL PROPERTIES | SPV410-R54JWML | SPV415-R54JWML | UNITS |
|-----------------------------|----------------|----------------|-------|
| <b>STC<sup>(1)</sup></b>    |                |                |       |
| Panel Power                 | 410            | 415            | W     |
| Maximum Power Voltage (Vmp) | 31.62          | 31.92          | V     |
| Maximum Power Current (Imp) | 12.97          | 13.00          | A     |
| Open Circuit Voltage (Voc)  | 37.21          | 37.56          | V     |
| Short Circuit Current (Isc) | 13.79          | 13.83          | A     |
| Maximum Panel Voltage       |                | 1500           | Vdc   |
| Maximum Series Fuse Rating  |                | 25             | A     |
| Panel Efficiency            | 20.99          | 21.25          | %     |
| Power Bin Sorting           |                | 0 ~ +5         | W     |
| Power Production Tolerance  |                | ± 3            | %     |
| <b>NMOT<sup>(2)</sup></b>   |                |                |       |
| Panel Power                 | 310.2          | 313.4          | W     |
| Maximum Power Voltage (Vmp) | 29.89          | 30.14          | V     |
| Maximum Power Current (Imp) | 10.38          | 10.40          | A     |
| Open Circuit Voltage (Voc)  | 35.13          | 35.46          | V     |
| Short Circuit Current (Isc) | 11.10          | 11.13          | A     |

\* Measurement tolerance: Pmax: ±3%, Voc: ±3%, Isc: ±5%

| PANEL MECHANICAL PROPERTIES              |                              |    |
|--|------------------------------|----|
| Cells                                    | 108 (6 x 18)                 |    |
| Cell Type                                | Monocrystalline PERC         |    |
| Cell Dimensions                          | 182 x 91                     | mm |
| Dimensions (L x W x H)                   | 1722 x 1134 x 30             | mm |
| Front Side Maximum Load (Snow)           | 5400                         | Pa |
| Rear Side Maximum Load (Wind)            | 2400                         | Pa |
| Weight (with Power Optimiser)            | 21.4                         | kg |
| Front Glass                              | 3.2mm, coated tempered glass |    |
| Frame                                    | Anodized aluminum            |    |
| Junction Box                             | IP68, three diodes           |    |
| Connector Type                           | Genuine MC4                  |    |
| Fire Safety Class                        | Class C                      |    |
| Operating Temperature                    | -40 to +85                   | °C |
| Packaging Information (units per pallet) | 36                           |    |



| CERTIFICATIONS & WARRANTY |  |  |
|---------------------------|--|--|
| Panel Certifications      | IEC61215:2016, IEC61730:2016, CEC listing AU                 |  |
| Product Warranty          | Power Optimiser – 25-year warranty, Panel – 25-year warranty |  |
| Output Warranty of Pmax   | 25-year linear panel warranty <sup>(3)</sup>                 |  |

| TEMPERATURE CHARACTERISTICS           |        |        |
|---------------------------------------|--------|--------|
| Temperature Coefficient Power (Pm)    | -0.34  | % / °C |
| Temperature Coefficient Voltage (Voc) | -0.29  | % / °C |
| Temperature Coefficient Current (Isc) | 0.04   | % / °C |
| Operating Cell Temperature (NMOT)     | 43 ± 2 | °C     |

(1) STC: Irradiance 1000 W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.

(2) NMOT: Irradiance at 800 W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1 m/s.

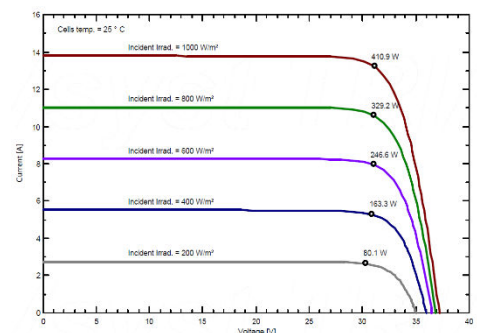
(3) 1st year: 98%, 84.8% power output over 25 years.

**Linear Warranty**  
25-Year Product Warranty  
+25-Year Linear Power Warranty



Made in China

Panel I-V Curve (SPV41x-R54JWML)



# Smart Panel

## SPV410-R54JWML / SPV415-R54JWML

| POWER OPTIMISER PROPERTIES  | S440  | UNITS |
|---|---|-------|
| <b>INPUT</b>  |   |       |
| Rated Input DC Power <sup>(1)</sup>   | 440   | W     |
| Absolute Maximum Input Voltage (Voc)  | 60  | Vdc   |
| MPPT Operating Range  | 8 - 60  | Vdc   |
| Maximum Short Circuit Current (Isc) of Connected PV Panel                                 | 14.5  | Adc   |
| Maximum Efficiency  | 99.5  | %     |
| Weighted Efficiency   | 98.6  | %     |
| Overvoltage Category  | II  |       |
| Input Overcurrent Protection  | 15  | Adc   |
| <b>OUTPUT DURING OPERATION</b>  |   |       |
| Maximum Output Current  | 15  | Adc   |
| Maximum Output Voltage  | 60  | Vdc   |
| <b>OUTPUT DURING STANDBY (POWER OPTIMISER DISCONNECTED FROM INVERTER OR INVERTER OFF)</b> |   |       |
| Safety Output Voltage per Power Optimiser   | 1 ± 0.1   | Vdc   |
| <b>STANDARD COMPLIANCE</b>  |   |       |
| EMC   | FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3 |       |
| Safety  | IEC62109-1 (class II safety), UL1741            |       |
| RoHS  | Yes   |       |
| Fire Safety   | VDE-AR-E 2100-712:2018-12                       |       |
| <b>INSTALLATION SPECIFICATIONS</b>  |   |       |
| Maximum Allowed System Voltage  | 1000  | Vdc   |
| Dimensions (W x L x H)  | 129 x 155 x 30                                  | mm    |
| Weight (including cables)   | 655   | gr    |
| Input Connector   | MC4 <sup>(2)</sup>                              |       |
| Input Wire Length   | 0.1 / 0.9 <sup>(3)</sup>                        | m     |
| Output Connector  | MC4   |       |
| Output Wire Length  | (+) 2.3, (-) 0.10                               | m     |
| Operating Temperature Range <sup>(4)</sup>  | -40 to +85                                      | °C    |
| Protection Rating   | IP68 / NEMA6P                                   |       |
| Relative Humidity   | 0 - 100   | %     |

(1) Rated power of the panel at STC will not exceed the Power Optimiser Rated Input DC Power. Panels with up to +5% power tolerance are allowed.

(2) For other connector types please contact SolarEdge. Please note that with other connector types, the wire length will be 0.16m. The Sense Connect feature will not detect thermal events on these connectors.

(3) The Sense Connect feature will not detect thermal events on input connectors when the input wire length is 0.9m.

(4) For ambient temperature above +70°C / +158°F power de-rating is applied. Refer to Power Optimisers [Temperature De-Rating Technical Note](#) for more details.

| PV System Design Using a SolarEdge Inverter        | SolarEdge Home Genesis / SolarEdge Home Hub | Three Phase Residential | Three Phase Commercial |   |
|--|---|-------------------------|------------------------|---|
| Minimum String Length                              | 8   | 9                       | 16                     |   |
| Maximum String Length                              | 25  |                         | 50                     |   |
| Maximum Continuous Power per String <sup>(5)</sup> | 5700 (6000 with SE8250H / SE10000H)         | 5625                    | 11250 <sup>(6)</sup>   | W |

(5) If the inverters rated AC power ≤ maximum nominal power per string, then the maximum power per string will be able to reach up to the inverters maximum input DC power. Refer to the [Single String Design Guidelines Application Note](#).

(6) When using more than a single string, it is allowed to install up to 13500W per string when the maximum power difference between each string is up to 2000W.

(7) It is not allowed to mix S-series and P-series Power Optimisers in new installations.

SolarEdge is a global leader in smart energy technology. By leveraging world-class engineering capabilities and with a relentless focus on innovation, SolarEdge creates smart energy solutions that power our lives and drive future progress.

SolarEdge developed an intelligent inverter solution that changed the way power is harvested and managed in photovoltaic (PV) systems. The SolarEdge DC optimized inverter maximizes power generation while lowering the cost of energy produced by the PV system.

Continuing to advance smart energy, SolarEdge addresses a broad range of energy market segments through its PV, storage, EV charging, UPS, and grid services solutions.

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