

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

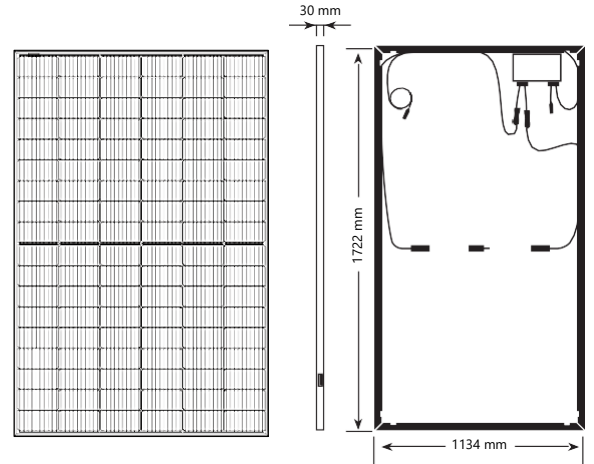
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SPV410-R54JWML / SPV415-R54JWML

PANEL ELECTRICAL PROPERTIES	SPV410-R54JWML	SPV415-R54JWML	UNITS
STC⁽¹⁾			
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	%
NMOT⁽²⁾			
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 ⁽³⁾	

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

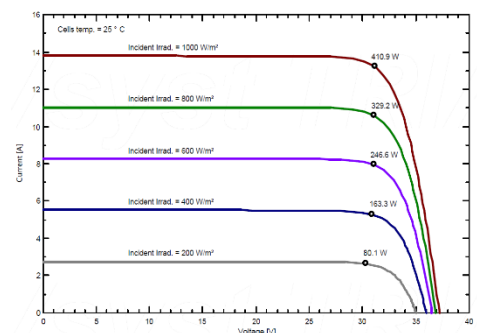
(1) STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5.
 (2) NMOT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.
 (3) 1st year: 98%, 84.8% power output over 25 years.

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



Made in China

Panel I-V Curve (SPV41x-R54JWML)



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POWER OPTIMISER PROPERTIES	S440	UNITS
INPUT		
Rated Input DC Power ⁽¹⁾	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
OUTPUT DURING OPERATION		
Maximum Output Current	15	Adc
Maximum Output Voltage	60	Vdc
OUTPUT DURING STANDBY (POWER OPTIMISER DISCONNECTED FROM INVERTER OR INVERTER OFF)		
Safety Output Voltage per Power Optimiser	1 ± 0.1	Vdc
STANDARD COMPLIANCE		
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	
INSTALLATION SPECIFICATIONS		
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 ⁽²⁾	
Input Wire Length	0.1 / 0.9 ⁽³⁾	m
Output Connector	MC4	
Output Wire Length	(+) 2.3, (-) 0.10	m
Operating Temperature Range ⁽⁴⁾	-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 ⁽⁵⁾	5700 (6000 with SE8250H / SE10000H)	5625	11250 ⁽⁶⁾	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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