

**APPLIES TO: SPR-X21-345, SPR-X21-345-COM, SPR-X21-335-BLK, SPR-X21-335, SPR-X20-327-COM,
SPR-X20-327-BLK, SPR-X21-255, SPR-X20-250-BLK, SPR-X20-245, SPR-X19-240-BLK**

TESTS AND CERTIFICATIONS	
Standard tests	UL 1703, Class C Fire Rating, IEC 61215, IEC 61730
Quality tests	ISO 9001:2008, ISO 14001:2004
EHS Compliance	RoHS, OHSAS 18001:2007,
Ammonia test	IEC 62716
Salt-spray test	IEC 61701 (max. severity)
PID test	Potential-Induced Degradation free:1000V
Max Load	Wind: 50 psf, 2400 Pa, 245 kg/m front-back Snow: 112 psf, 5400 Pa, 550kg/m front
Operating Temps	- 40 F to +185 F (- 40 C to +85 C)

WARRANTY, IMPACT RESISTANCE, FUSE RATING, J-BOX	
WARRANTIES	25-YEAR LINEAR POWER WARRANTY
	25-YEAR LIMITED PRODUCT WARRANTY
Impact Resistance	(hail) 25mm (1 inch) diameter at 23 m/s (52 mph)
Max Series Fuse	20 Amp rating
Connectors	MC4 Compatible with cable lengths, 700mm (128 cell) and 1000mm (96 & 72 cell)
Junction Box	JBox, IP 65, no larger than (cm) 2.5 x 11.5 x 13.1. For specifics, contact regional sales team

X-SERIES MAJOR GLOBAL MARKET LISTINGS		
Commercial & Residential Modules	72-Cell Modules	96-Cell Modules
Major Market Listings*	CEC, UL, TUV, MCS	CEC, UL, TUV, MCS

*Platforms options available in listed markets, but every individual sku may not be available in each referenced market

PLATFORM ELECTRICAL DATA, STC

Module	Platform (Number of cells)	Nominal Power	Power Tolerance (%)	At Standard Test Conditions					
				Rated Voltage (Vmp)	Rated Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current, Isc (A)	Max System Voltage UL (Vmax)	Max System Voltage IEC (Vmax)
SPR-X21-345	96	345	+5/-0	57.3	6.02	68.2	6.39	600	1000
SPR-X21-345-COM	96	345	+5/-3	57.3	6.02	68.2	6.39	1000	1000
SPR-X21-335-BLK	96	335	+5/-0	57.3	5.85	67.9	6.23	600	1000
SPR-X21-335	96	335	+5/-0	57.3	5.85	67.9	6.23	600	1000
SPR-X20-327-COM	96	327	+5/-3	57.3	5.71	67.6	6.07	1000	1000
SPR-X20-327-BLK	96	327	+5/-0	57.3	5.71	67.6	6.07	600	1000
SPR-X21-255	72	255	+5/-0	42.8	5.95	51.0	6.30	600	1000
SPR-X20-250-BLK	72	250	+5/-0	42.8	5.84	50.9	6.20	600	1000
SPR-X20-245	72	245	+5/-0	42.8	5.72	50.8	6.08	600	1000
SPR-X19-240-BLK	72	240	+5/-0	42.8	5.61	50.6	5.98	600	1000

TEMPERATURE COEFFICIENTS & EFFICIENCY REFERENCES

Module	At STC		Basic Temperature Data				Efficiency Numbers		
	Nominal Power	Avg Power	Current (Isc) Temp. Coeff. (mA/°C)	Voltage (Voc) Temp. Coeff. (mV/°C)	Power Temp. Coeff. (%/°C)	NOCT @ 20 °C (Value +/- 2 C)	Average Power Efficiency (%)	Nominal Peak Power per Unit Area (W/m ²)	Nominal Peak Power per Unit Area (W/ft ²)
SPR-X21-345	345	350	3.5	-167.4	-0.30%	41.5	21.5%	214.6	19.9
SPR-X21-345-COM	345	350	3.5	-167.4	-0.30%	41.5	21.5%	214.6	19.9
SPR-X21-335-BLK	335	344	3.5	-167.4	-0.30%	43.0	21.1%	210.9	19.6
SPR-X21-335	335	343	3.5	-167.4	-0.30%	41.5	21.0%	210.3	19.5
SPR-X20-327-COM	327	331	3.5	-167.4	-0.30%	41.5	20.3%	202.9	18.8
SPR-X20-327-BLK	327	331	3.5	-167.4	-0.30%	43.0	20.3%	203.0	18.9
SPR-X21-255	255	263	3.5	-125.6	-0.30%	41.5	21.1%	211.4	19.6
SPR-X20-250-BLK	250	253	3.5	-125.6	-0.30%	43.0	20.3%	203.4	18.9
SPR-X20-245	245	250	3.5	-125.6	-0.30%	41.5	20.1%	200.8	18.7
SPR-X19-240-BLK	240	245	3.5	-125.6	-0.30%	41.5	19.7%	196.9	18.3

PLATFORM PERFORMANCE AT NOCT

(800 W/m², 20°C ambient, 1 m/s wind speed)

Module	At STC Nominal Power	Nominal Electrical data at NOCT (NOCT : 800W/m ² , 20 °C amb. Temp., 1m/s wind speed)					
		NOCT Pnom	NOCT Vmpp	NOCT Impp	NOCT Voc	NOCT Isc	NOCT % of rated
SPR-X21-345	345	261	53.8	4.85	64.9	5.16	75.6%
SPR-X21-345-COM	345	261	53.8	4.85	64.9	5.16	75.6%
SPR-X21-335-BLK	335	252	53.5	4.71	64.3	5.04	75.3%
SPR-X21-335	335	253	53.8	4.71	64.5	5.03	75.7%
SPR-X20-327-COM	327	248	53.8	4.60	64.3	4.90	75.7%
SPR-X20-327-BLK	327	250	54.4	4.60	64.0	4.91	76.5%
SPR-X21-255	255	193	40.2	4.79	48.5	5.09	75.6%
SPR-X20-250-BLK	250	188	40.0	4.71	48.2	5.01	75.2%
SPR-X20-245	245	185	40.2	4.61	48.3	4.91	75.6%
SPR-X19-240-BLK	240	182	40.2	4.52	48.1	4.83	75.6%

PLATFORM PERFORMANCE AT LOW IRRADIANCE

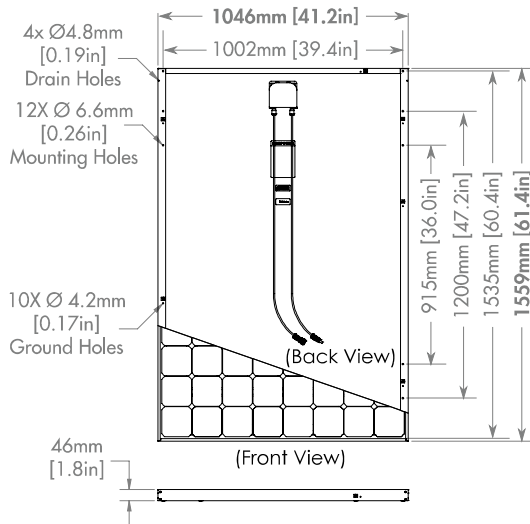
(200 W/m², 25°C cell temperature, air mass 1.5 SSID*)

Module	At STC Nominal Power	Irradiance vs. Power at Low Irradiance (200W/m ² and @25°C (SNL coefficients))			
		Low irradiance Pmpp (W)	Low irradiance Vmpp (V)	Low irradiance Impp (A)	Pctg. of nominal power
SPR-X21-345	345	66.4	54.6	1.22	19.2%
SPR-X21-345-COM	345	66.4	54.6	1.22	19.2%
SPR-X21-335-BLK	335	64.5	54.6	1.18	19.3%
SPR-X21-335	335	64.5	54.6	1.18	19.3%
SPR-X20-327-COM	327	63.0	54.6	1.15	19.3%
SPR-X20-327-BLK	327	63.0	54.6	1.15	19.3%
SPR-X21-255	255	49.0	40.8	1.20	19.2%
SPR-X20-250-BLK	250	48.1	40.8	1.18	19.2%
SPR-X20-245	245	47.2	40.8	1.16	19.2%
SPR-X19-240-BLK	240	46.2	40.8	1.13	19.2%

MODULE PLATFORM DIMENSIONS

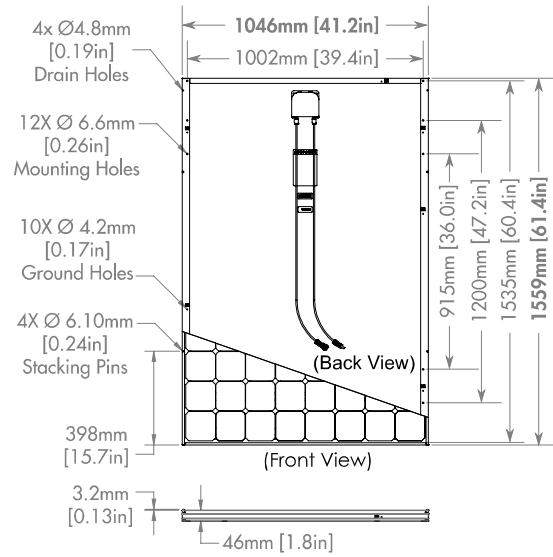
96 CELL

(SPR-X21-345, SPR-X21-335-BLK, SPR-X21-335, SPR-X20-327-BLK)



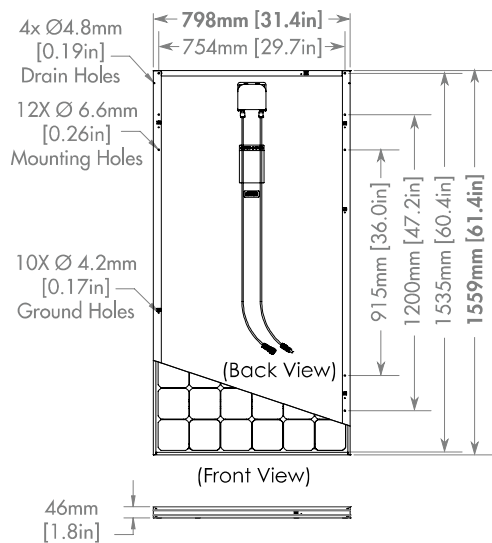
96 CELL (with stacking pins)

(SPR-X21-345-COM, SPR-X20-327-COM)



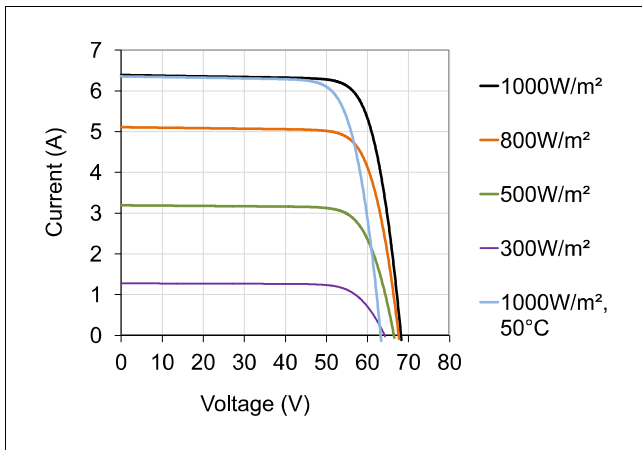
72 CELL

SPR-X21-255, SPR-X20-250-BLK, SPR-X20-245, SPR-X19-240-BLK

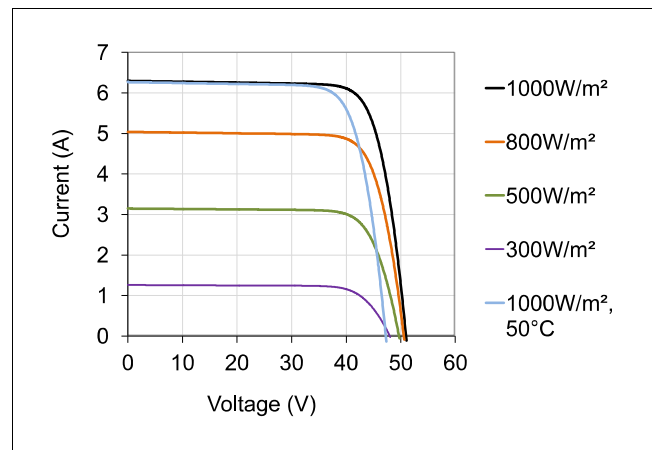


IV CURVES OF PRIMARY PLATFORM MODELS

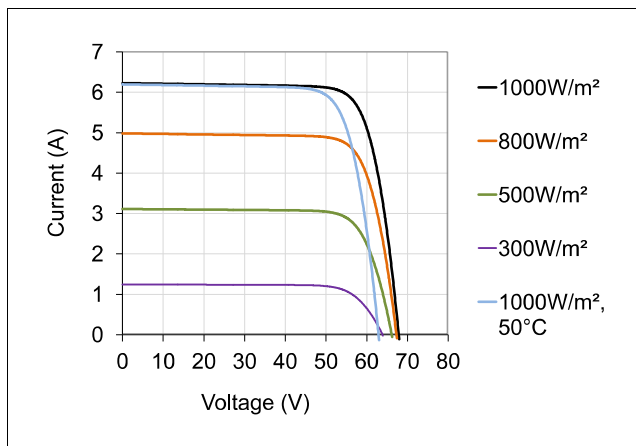
SPR-X21-345



SPR-X21-255



SPR-X21-335-BLK



SPR-X21-250-BLK

