TSC®

PowerXT®-410R-PS | PowerXT®-415R-PS

Achieving over 20.9% efficiency, TSC PowerXT solar panels are one of the highest power panels in the residential and commercial market. Compared to traditional panels, PowerXT panels have fewer gaps between the solar cells and are manufactured with black backsheet and frames, giving them a striking appearance and higher efficiency.

Developed in America, cell cutting creates a highly reliable PowerXT cell where busbars and ribbon interconnections, common failure points, are eliminated. Panel assembly then packages the cells into the PowerXT solar panel, reducing inactive space between the cells. This process leads to an exceptionally attractive and efficient solar panel.

Higher Efficiency, Higher Power

TSC PowerXT panels achieve over 20.9% efficiency. TSC PowerXT panels are one of the highest power panels available.

Lower System Costs

PowerXT panels produce more power per square meter area. This reduces installation costs due to fewer balance of system components such as racking and cables.

Improved Shading Tolerance

Solar cell sub-strings are interconnected in parallel, within each of the module halves, which dramatically lowers the shading losses and boosts energy yield.

Improved Aesthetics

Compared to traditional panels, PowerXT panels have a more uniform appearance and superior aesthetics, with a pure black photovoltaic panel.

Durability and Reliability

Solder-less cell interconnections are highly reliable and designed to exceed the industry leading product and power warranty of 30 years.

PID Resistant

PowerXT panels are PID resistant. This insures stable and predictable energy production over time.

About TSC

TSC is the European division of an U.S. Silicon Valley company that has been operating in the photovoltaic (PV) industry for 20 years and holds over 250 issued and pending patents in PV solar cell and module technology. TSC and its parent company are leading the industry in high performance, Pure Black™ solar panels for residential and commercial applications.

Performance at STC (1000W/m², 25° C, AM 1.5)

PowerXT-		415R-PS	410R-PS
Max Power (Pmax)*	[W]	415	410
Efficiency	[%]	20.9	20.6
Open Circuit Voltage (Voc)*	[V]	41.5	41.4
Short Circuit Current (Isc)*	[A]	12.81	12.66
Max Power Voltage (Vmp)	[V]	34.4	34.4
Max Power Current (Imp)	[A]	12.07	11.92
Power Range	[W]	-0/+5	-0/+5

* Measurement Tolerance Pmax +/- 3%, Tolerance Voc +/- 3%, Tolerance Isc +/- 3%

Temperature Characteristics

NMOT	[ºC]	43 +/-2	43 +/-2
Temp. Coeff. of Pmax	[% / ºC]	-0.34	-0.34
Temp. Coeff. of Voc	[% / ºC]	-0.27	-0.27
Temp. Coeff. of Isc	[% / ºC]	0.04	0.04

Design Parameters

Operating temperature	[ºC]	-40 to +85	-40 to +85
Max System Voltage	[V]	1000	1000
Max Fuse Rating	[A]	25	25
Bypass Diodes	[#]	2	2

IV Curves vs. Irradiance

Cell temperature 25°C
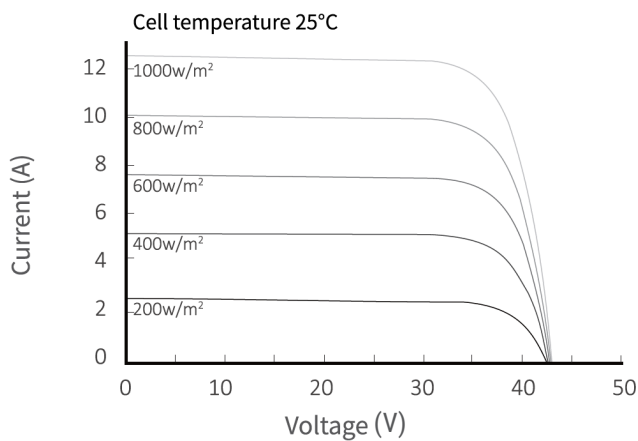
Comprehensive 30-Year Warranty

30-year Power, Parts and Labor from TSC
Typical Tier 1 industry warranty
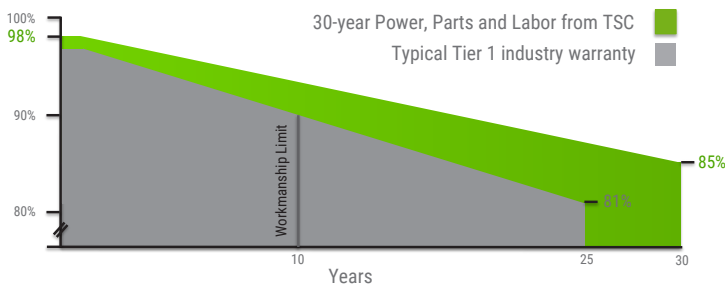
Mechanical Characteristics

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Cell Type	Monocrystalline Silicon
Dimensions (L x W x H)	1813mm x 1095mm x 30mm
Weight	20.7 kg
Glass Type / Thickness	AR Coated, Tempered / 3.2mm
Frame Type	Black Anodized Aluminium
Cable Type / Length	PV Wire / 1200mm
Connector Type	Stäubli MC4
Junction Box	IP68 / 2 diodes
Front Load	5400 Pa*
Rear Load	2400 Pa*

*Refer to Installation Manual for details

Certifications / Test / Warranty

Certifications	IEC 61215/61730
Fire Rating [1]	Class C
Safety Class	Class II
PID Test	IEC 62804
Salt Mist	IEC 60701 (Max Severity)
Ammonia Test	IEC 62716
Power, Parts & Labor Warranty	30 years*

* Warranty details at www.solaria.com/europe

Packaging by Container

Stacking Method	Vertical
Panels/ Pallet	24 pallets/36 panels
	2 pallets/30 panels
Pallet Dims (L x W x H)	24 at 1827mm x 1125mm x 1230 mm
	2 at 1820mm x 933mm x 1230mm
Pallet Weight	775kg / 650kg
Panels / 40-ft	924
Pallets / 40-ft	26
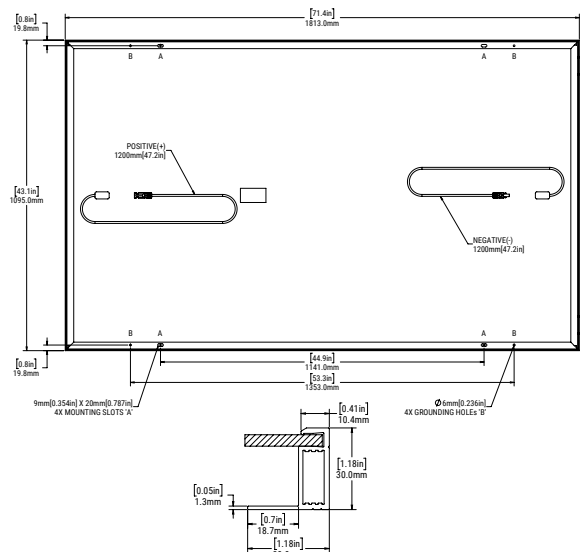
[1]Classe 1 (Italy Fire Test) on-going.