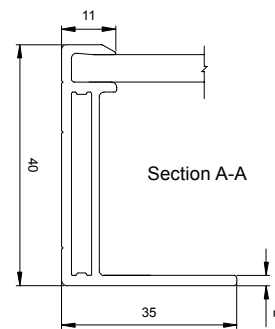
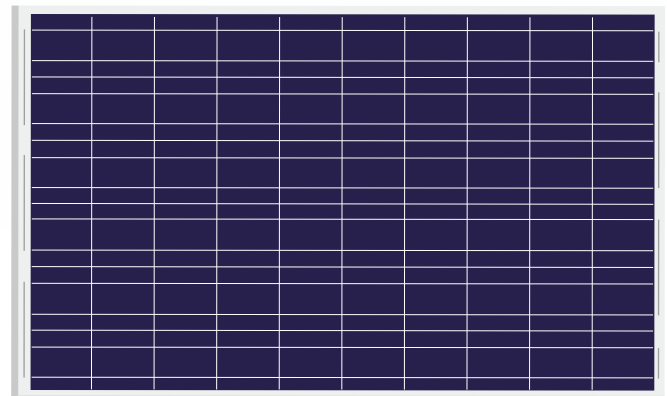
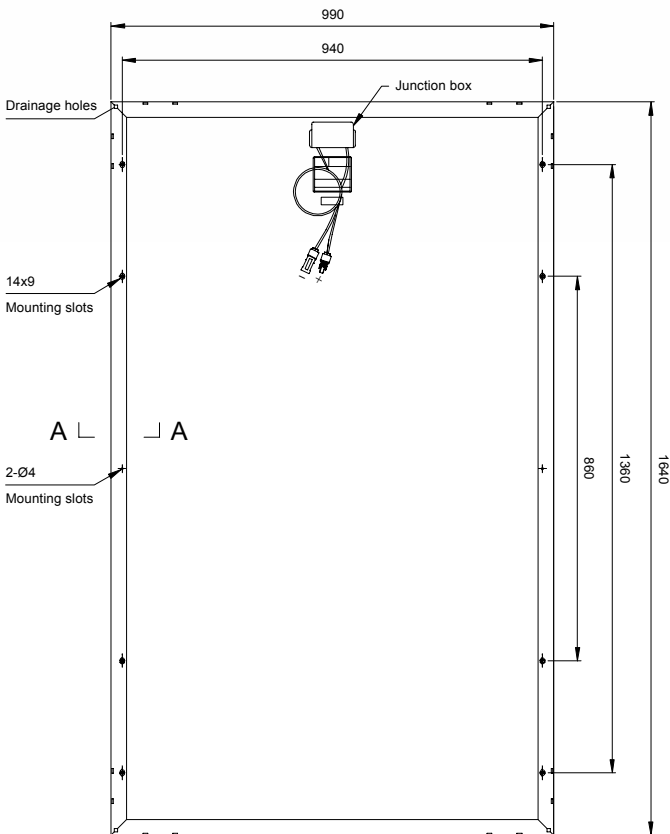


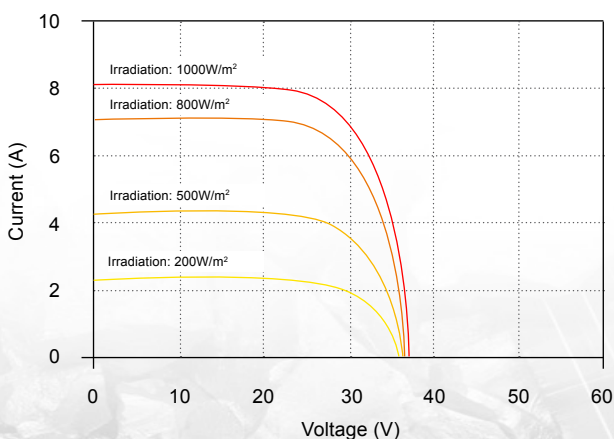
TPV220-PO Photovoltaic panel family

It adopts high transparent low iron, tempered glass and self-supporting solar cells in order to improve conversion efficiency on our solar modules. The TPV220-PO series modules consist of 60 pcs 156×156mm poly-crystalline silicon solar cells which are in high efficiency, individually characterized and electronically matched before interconnection. Laminated with high quality toughened glass, EVA and TPT, the operating characteristics of solar cells can be ensured under any climatic conditions. After assembled by anodized aluminum alloy frame and with junction box, cable with connector, the solar modules are designed for long service life, easy to install, withstand the storm, high wind and hail impact etc.



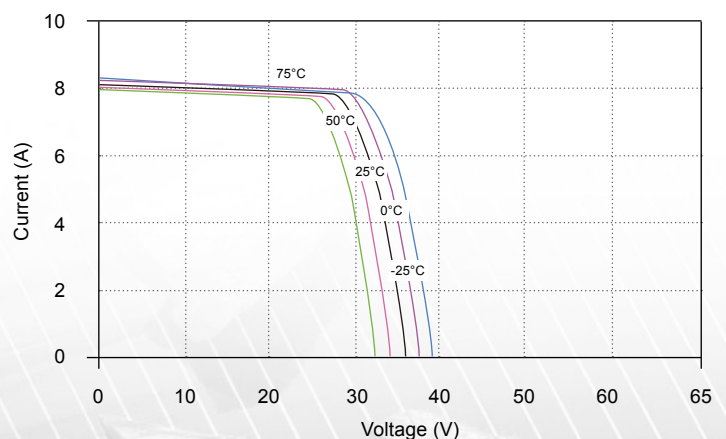
IV-Curves

IV-Curve (STC)



Test condition: @STC 1000W/m², AM1.5, 25°C, P_{mpp}: ± 1.5% rel.
 Test Method according to: IEC6094-8 6094-3-ED/2008, 60904-1

IV-Curve (Temperature)



Test condition: @1000W/m², AM1.5, -25 / 0 / 50 / 75°C
 P_{mpp}: ± 1.5% rel.

TPV220-PO Photovoltaic panel family

Module family		TPV 220-PO / XXX Wp				
Module Type		TPV 220-PO 220W	TPV 220-PO 230W	TPV 220-PO 235W	TPV 220-PO 240W	TPV 220-PO 245W
Ellectrical parameter 1000W/m² (STC)						
Maximum Power (P Max)	[W]	220	230	235	240	245
Maximum system Voltage (V)	[V]			1000		
Maximum Power Voltage (Vmp)	[V]	29,5	29,8	30,05	30,2	30,91
Maximum Power Current (Imp)	[A]	7,45	7,72	7,82	7,88	7,93
Open Circuit Voltage (Voc)	[V]	37	37,19	37,29	37,38	37,56
Short Circuit Current (Isc)	[A]	8,1	8,29	8,39	8,48	8,53
Module Efficiency	%	13,55	14,17	14,47	14,78	15,09
NOCT	°C			46±2		
Short-circuit Current temperature coefficient	% / °C			0,08		
Open-circuit Voltage temperature coefficient	% / °C			-0,32		
Peak power temperature coefficient	% / °C			-0,38		
Electrical protection				Class II		
Diodes				6 by-pass		
Junction box				1000V / IP65 TÜV		
IP safety				IP65		
Cable				4 mm ² / 1000mm / 1000V TÜV		
Connector				Solar-3 or Solar-4		
Cells						
Cell technology				Polycrystalline silicon cells		
Quantity of cells	db			60 (6x10)		
Dimension of cells	[mm]			156x156		
Cells connection				copper conductor		
Cell efficiency	%	15,6-15,8	16-16,2	16,4-16,6	16,6-16,8	16,8-17
Dimensions of module						
Lenght	[mm]			1640		
Width	[mm]			990		
Thickness	[mm]			40 / 45 / 50		
Thickness of glass	[mm]			High Transmiss, Low Iron, tempered glass 3,2mm		
Weight	[kg]			<21		
Common data						
Power tolerance	%			±3		
Operating temperature	°C			-40...+85		
Hail protection				227g steel ball fall down from 1m height and 60m/s wind		
Wind load	m/sec			60 (5400 Pascal)		
Performance warranty	% / year			Pm is not less than 90% in 10years and 80% in 25years		
Warranty	year			5		