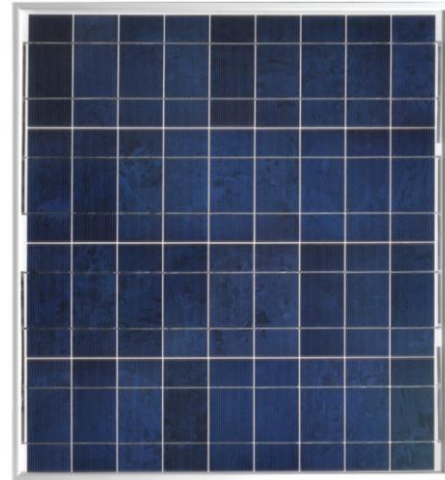


Solar Panel: SPxxx-12P

Temperature Coefficients

NOCT (Nominal Operating cell Temperature)	45°C +/-2°C
Voltage Temperature Coefficient (Voc)	-0.36%/°C
Current temperature coefficient (Isc)	+0.033%/°C
Power temperature coefficient (Pmpp)	-0.44%/°C
Cell efficiency	>16%



Mechanical Data

Solar Cell	36 Poly-Crystalline
Front Glass	Tempered Glass
Frame	Anodized Aluminum

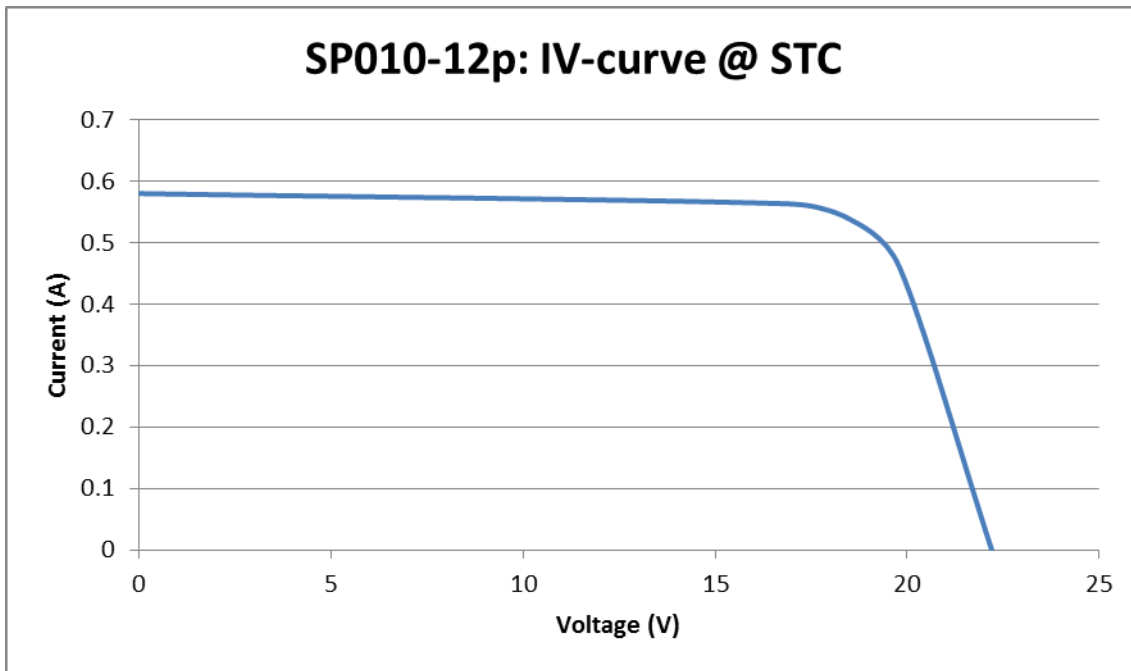
Electrical Data

Solar Panel Type	SP005-12P	SP010-12P	SP020-12P	SP045-12P	SP100-12P
Nominal Peak Power (W_p)	5W_p	10W_p	20W_p	45W_p	100W_p
Nominal Voltage (V _{mp})	18.1V	18.4V	18.6V	18.43V	18.4V
Nominal Current (I _{mp})	0.28A	0.54A	1.08A	2.44A	5.43A
Open-Circuit Voltage (Voc)	21.9V	22.2V	22.3V	22.2A	22.2V
Short-Circuit Current (Isc)	0.31A	0.58A	1.14A	2.6A	5.78A
Operating Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Weight	0.75kg	1.4kg	2.5kg	3.8kg	9 kg
Dimension *) some variation possible	203x288x18 mm	403x288x17 mm	353x447x17 mm	592x592x28 mm	669x1034x35 mm
Connections:	5m wire AWG20 with 5.5/2.5mm Barrel	5m wire AWG20 with 5.5/2.5mm Barrel	6m wire AWG18 with 5.5/2.5mm Barrel	Junction Box	Junction Box

All performance values under Standard Test Conditions STC: 1000W/m² @ 25°C

All Zimpertec Solar Panels are manufactured by a Factory producing also Panels according IEC 61215. Production of Zimpertec's small power Solar Panels uses same high quality materials and production process.

Attachment 1: IV Curve for **SP010-12P**



Attachment 2: IV Curve for **SP020-12P**

