



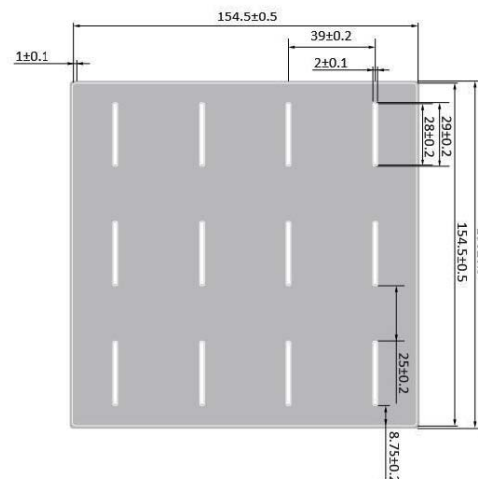
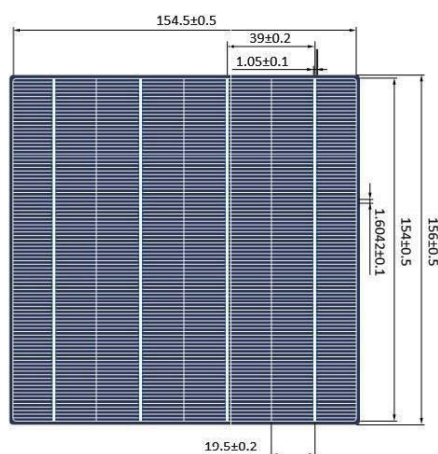
TK-P156-4 Polycrystalline Solar Cells

Tratek focuses precise production and provide customer with best cost-effective products. Excellent Solar products provided by Tratek bring clean and reliable energy to residential, commercial and industrial facilities around the world.

- High conversion efficiency, low degradation and high reliability.
- Excellent technology of texturing treatment to improve light absorption, thus increasing the photoelectric conversion efficiency.
- Sophisticated diffusion technique to form the core part "PN junction" via phosphorus diffusion technology to form external gettering.
- Reliable and stable technology to ensure excellent uniformity among cells, thus decreasing the loss of matching among cells.
- Advanced tube type PECVD filming technology to coat dark blue silicon nitride anti-reflection film, compact, uniform, and good-looking.
- Application of high quality metal paste on the electrode and backside field to reduce series resistance, to ensure excellent electrical conductivity, to increase filling factor, to make welding available and backside field smooth.
- Highly-precise printing and smoothness makes auto-welding and laser cutting of solar cells easier.

Mechanical Data and Design	
Size	156*156mm±0.5mm
Thickness	210µm±20µm
Front (+)	Silicon nitride anti-reflection film
	Width of busbar 1.05mm
Rear (-)	Al-back surface field (Al-BSF)
	Width 2 mm

Temperature Coefficients	
Open-circuit voltage temperature coefficient	-0.36%/K
Short-circuit current temperature coefficient	0.07%/K
Max. power temperature coefficient	-0.38%/K



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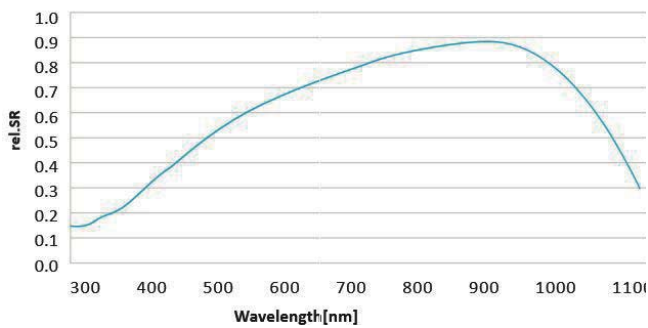
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Electrical Characteristics

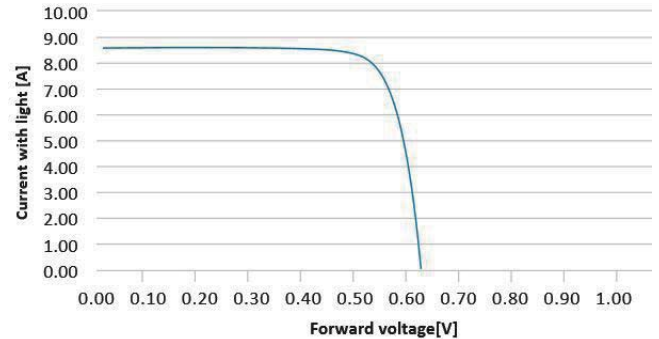
EFF	RANGE	Pmpp(W)	Impp(A)	Vmpp(V)	Isc(A)	Voc(V)	FF(%)
18.60%	18.60%~18.80%	4.53	8.276	0.547	8.788	0.638	80.80
18.40%	18.40%~18.60%	4.48	8.214	0.545	8.729	0.638	80.44
18.20%	18.20%~18.40%	4.43	8.153	0.543	8.667	0.637	80.24
18.00%	18.00%~18.20%	4.38	8.091	0.541	8.606	0.637	79.90
17.80%	17.80%~18.00%	4.33	9.043	0.538	8.576	0.635	79.59
17.60%	17.60%~17.80%	4.28	7.995	0.535	8.536	0.633	79.21
17.40%	17.40%~17.60%	4.23	7.946	0.532	8.512	0.631	78.76

Electrical characteristics tested at Standard Test Conditions (STC), defined as: Irradiance of 1000w/m², Spectrum AM1.5, and temperature of 25°C
Tolerance: Voc:±0.015V, Isc:±0.45A, FF:±0.9%

Spectral Response



I-V Curve



Intensity Dependence

Illumination intensity(W/m ²)	Vpm	Ipm
1000	1.000	1.000
800	0.990	0.800
600	0.978	0.600
200	0.930	0.200
100	0.900	0.100
60	0.878	0.060
30	0.848	0.030
15	0.818	0.015

Distributor Information

Please contact info@tratek.eu for more details.

