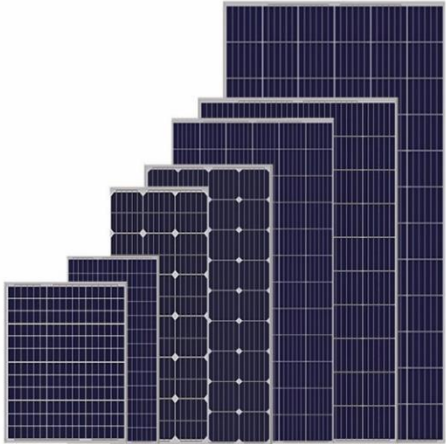
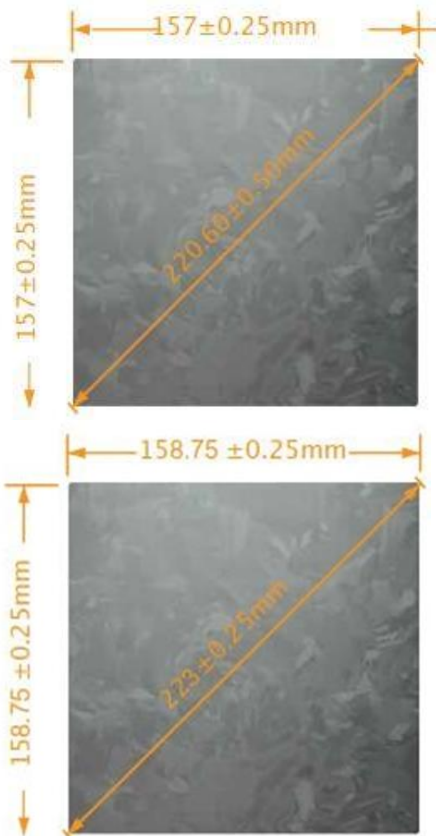


Solar Panel & Solar Cells

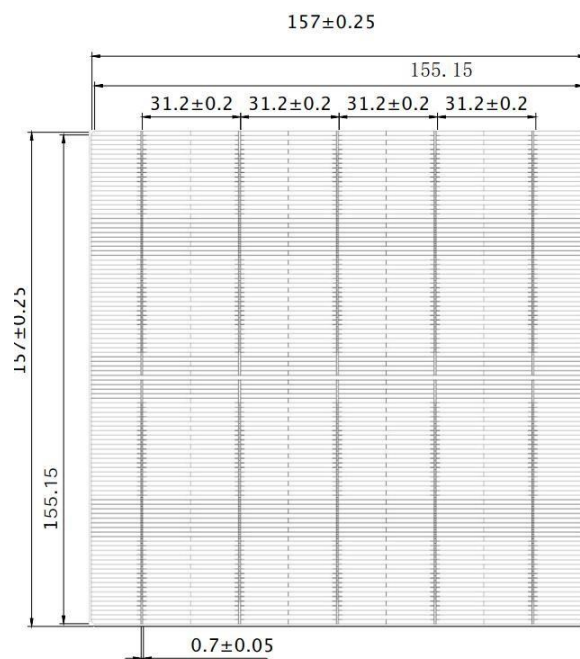
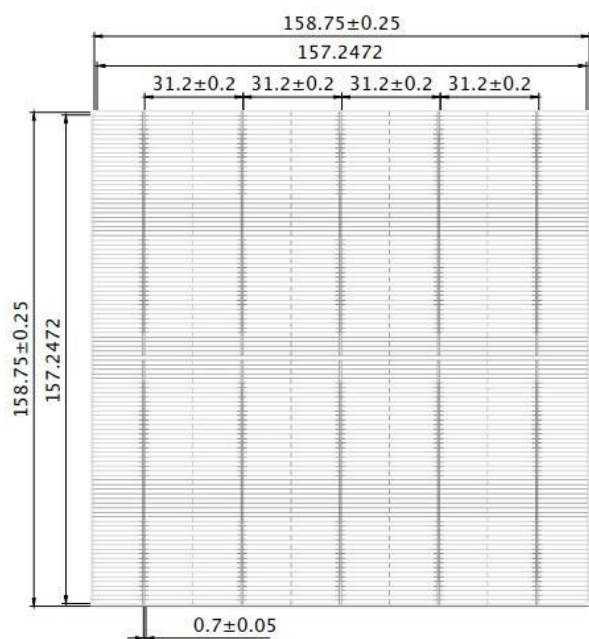
	<p>Short Description:</p> <p>Solar Panel Mono Panel, Poly Panel, BIPV Panel, Flexible Panel. Able to provide solar panel with technology of single glass, double glass, half cut, Bi-facial & whole black</p> <p>Solar Cells Mono Solar Cell, Poly Solar Cell, Poly Solar Wafer</p>
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Poly Solar Wafer



Item	Poly crystalline Wafer	Poly crystalline Wafer
Conductive type	Type P (boron)	Type P (boron)
Size of wafer (mm)	157±0.25	158.75 ±0.25
Diagonal (mm)	220.60±0.50	223±0.5
Chamfering(mm)	0.5-2mm	0.5-2mm
Thickness (μm)	180 (-10/+20)	180 (-10/+20)
Wafer angle	90°±0.3°	90°±0.3°
Warp degrees (warp/μm)	≤40	≤40
Variation of total thickness (μm)	≤30	≤30
Range of resistor (Ω cm)	1.0-3.0	1.0-3.0
Saw mark(μm)	≤15	≤15
Content of carbon (at/cm ³)	≤8×10 ¹⁷	≤8×10 ¹⁷
Content of oxygen (at/cm ³)	≤5×10 ¹⁷	≤5×10 ¹⁷
Minority carrier lifetime (μs)	≥4	≥4
Edge Chip	Depth ≤ 0.5mm, Length ≤ 1.5 mm , Max 2 pices /wafer	
Breakage	Not Allowed	
Hole	Not Allowed	
Surface Quality	No Surface Damage , Stains , Water Marks , or Contamination allowed	

Poly Solar Cell



ELECTRICAL CHARACTERISTICS(Standard Test Conditions:AM 1.5,1000W/m²,25°C)

158.75

Cell Efficiency	18.20%	18.40%	18.60%	18.80%	19.00%	19.20%	19.40%	19.60%
Maximum Power at STC(Pmax)	4.59	4.64	4.69	4.74	4.79	4.84	4.89	4.94
Open Circuit Voltage(Voc)	0.634	0.636	0.638	0.639	0.641	0.642	0.643	0.645
Maximum Power Voltage(Vmpp)	0.522	0.527	0.529	0.532	0.534	0.539	0.544	0.549
Short Circuit Current(Isc)	9.125	9.157	9.183	9.215	9.243	9.269	9.324	9.349
Maximum Power Current(Imp)	8.793	8.809	8.868	8.909	8.968	8.975	8.982	8.993

ELECTRICAL CHARACTERISTICS(Standard Test Conditions:AM 1.5,1000W/m²,25°C)

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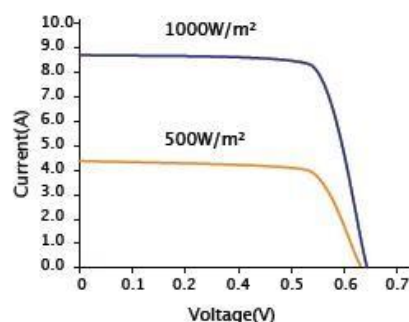
Cell Efficiency	18.20%	18.40%	18.60%	18.80%	19.00%	19.20%	19.40%	19.60%
Maximum Power at STC(Pmax)	4.59	4.64	4.69	4.74	4.79	4.84	4.89	4.94
Open Circuit Voltage(Voc)	0.634	0.636	0.638	0.639	0.641	0.642	0.643	0.645
Maximum Power Voltage(Vmpp)	0.522	0.527	0.529	0.532	0.534	0.539	0.544	0.549
Short Circuit Current(Isc)	9.125	9.157	9.183	9.215	9.243	9.269	9.324	9.349
Maximum Power Current(Imp)	8.793	8.809	8.868	8.909	8.968	8.975	8.982	8.993

TEMPERATURE COEFFICIENTS

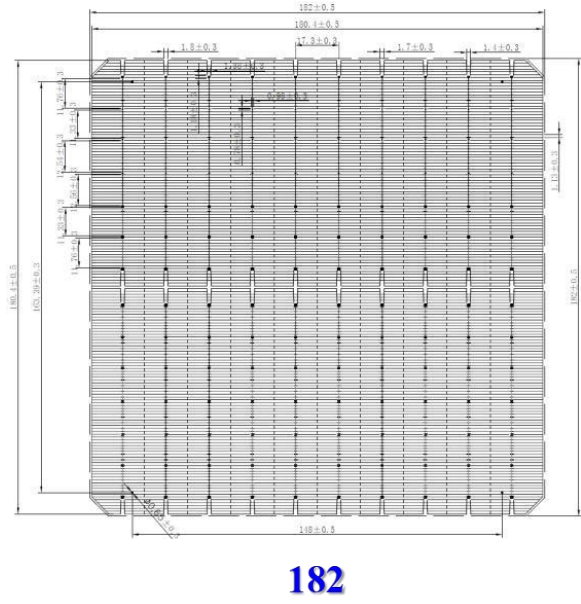
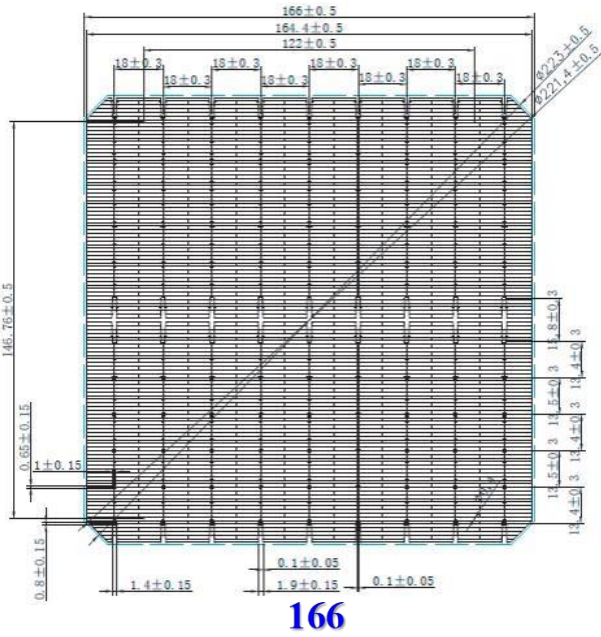
Standard Test Conditions:AM 1.5,1000W/m²,25°C

Current temperature coefficient	$\alpha(Isc)$	+0.05%/°C
Voltage temperature coefficient	$\beta(Voc)$	-0.33%/°C
Power temperature coefficient	$\gamma(Wp)$	-0.42%/°C

IV CURVE



Mono Solar Cell



ELECTRICAL CHARACTERISTICS (Standard Test Conditions: AM1.5, 1000W/m², 25 °C)

166

Cell Efficiency	22.60%	22.70%	22.80%	22.90%	23.00%	23.10%	23.20%	23.30%
Maximum Power at STC (Pmax)	6.20	6.22	6.25	6.28	6.31	6.33	6.36	6.39
Open Circuit Voltage (Voc)	0.684	0.685	0.686	0.688	0.689	0.690	0.692	0.693
Maximum Power Voltage (Vmpp)	0.582	0.584	0.585	0.587	0.588	0.590	0.592	0.593
Short Circuit Current (Isc)	11.17	11.18	11.20	11.21	11.23	11.24	11.26	11.28
Maximum Power Current (Impp)	10.63	10.65	10.67	10.69	10.71	10.73	10.75	10.80

ELECTRICAL CHARACTERISTICS (Standard Test Conditions: AM1.5, 1000W/m², 25 °C)

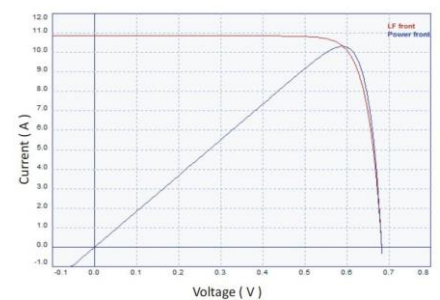
182

Cell Efficiency	22.60%	22.70%	22.80%	22.90%	23.00%	23.10%	23.20%	23.30%
Maximum Power at STC (Pmax)	7.46	7.49	7.53	7.56	7.59	7.63	7.66	7.69
Open Circuit Voltage (Voc)	0.686	0.687	0.688	0.689	0.690	0.691	0.692	0.693
Maximum Power Voltage (Vmpp)	0.585	0.586	0.587	0.588	0.589	0.590	0.592	0.593
Short Circuit Current (Isc)	13.54	13.55	13.56	13.56	11.57	13.58	13.59	13.60
Maximum Power Current (Impp)	12.75	12.78	12.82	12.85	12.88	12.92	12.96	12.99

TEMPERATURE COEFFICIENTS

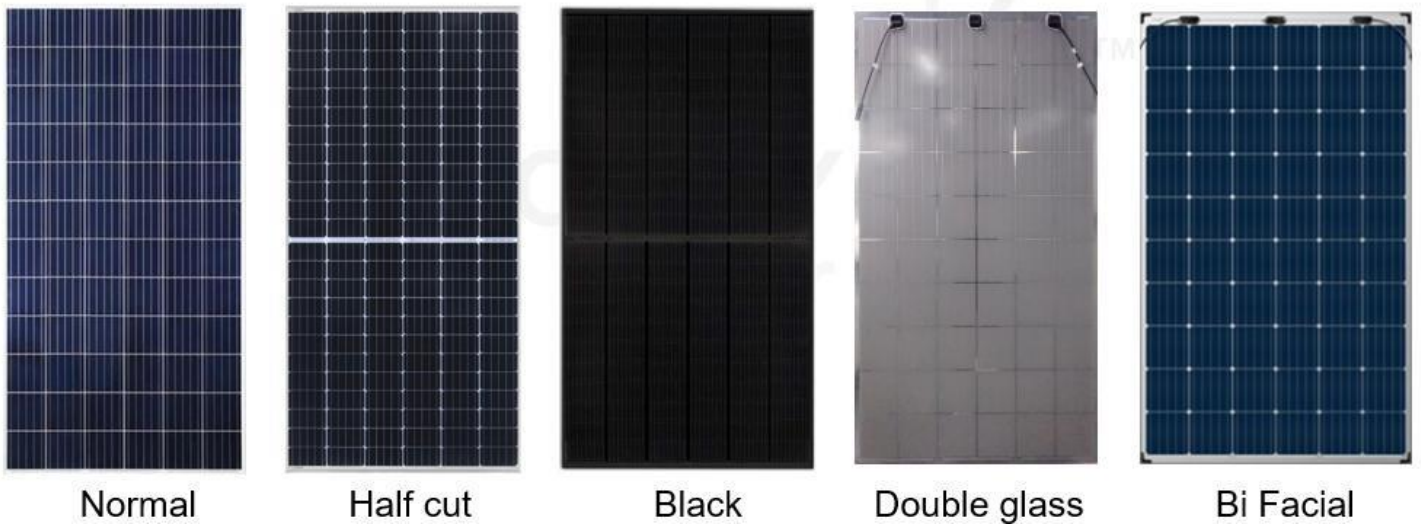
Standard Test Condition	AM1.5, 1000W/m ² , 25 °C
Current temperature coefficient	α (Isc) +0.05 %/°C
Voltage temperature coefficient	β (Voc) -0.33 %/°C
Power temperature coefficient	γ (Wp) -0.42 %/°C

IV CURVE



On Grid Solar Panel

Comprehensive product range. Able to provide solar panel with technology of single glass, double glass, half cut, Bi-facial & whole black.



Regular Solar Panel Specification

Power output (Watt)	Dimension (mm)	Cell Type	No. of Cell	Weight (kgs)	Container QTY (pcs/40' HQ)
535, 540, 545, 550	2278 * 1133 * 30	Mono, 182	144 half cut	28.0	720
400, 405, 410, 415	1722 * 1133 * 30	Mono, 182	108 half cut	20.5	936
435, 440, 445, 450	2094 * 1038 * 30	Mono, 166	144 half cut	23.5	792
360, 365, 370, 375	1755 * 1038 * 30	Mono, 166	120 half cut	19.0	936
335, 340, 345, 350	2008 * 1002 * 30	Poly, 158.75	144 half cut	21.5	836
430, 435, 440	2278 * 1133 * 30	Poly, 158.75	182 half cut	27.5	720
505, 510, 515	2278 * 1303 * 30	Poly, 157	112 full cell	31.0	648