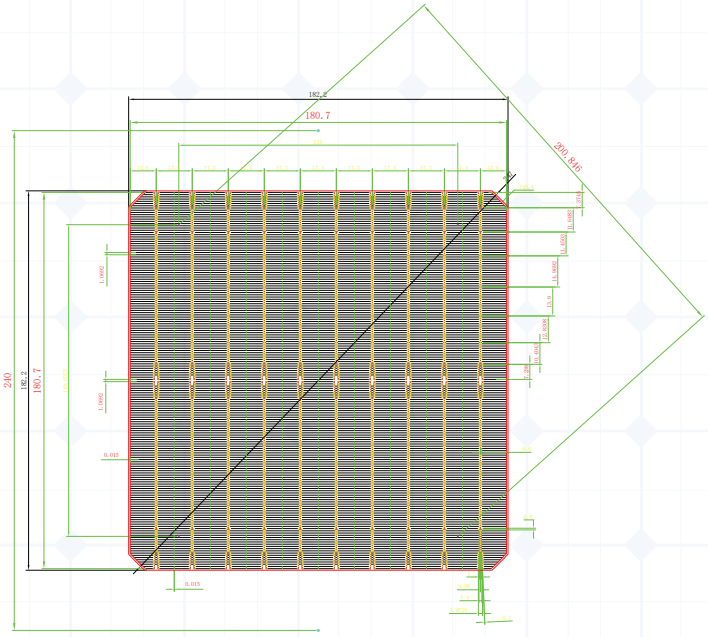
Mono Perc Bifacial Solar Cell Data Sheet

QRD-QCD-26/REV.01/DATE 03.01.2025

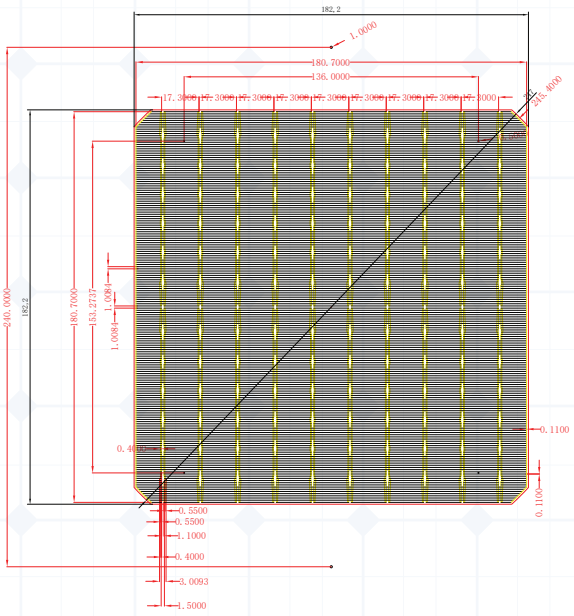
Mechanical Data

Model	182.2
Cell Type	Mono PERC Bifacial Solar Cell
Cell Format	182.2 x182.2 ± 0.25mm
Cell Thickness (with Metallization)	166 ± 16 µm
Cell Diagonal	247±0.50mm
Front side (-)	10*0.10±0.05mm Bus Bar (Silver) Blue (Dark blue) antireflection layer (SiONx), Front side 180.7 ± 0.30mm length,170±5 Silver Fingers, Half cut design, 14 no. soldering pads/ bus bar (04 no. head pad of 1.4x1.2mm±0.20mm and 10 no. middle pad of 1.0x0.8mm±0.20mm)
Back side (+)	12 no. soldering pads/bus, rear electrode (Silver) covered with Aluminum fingers, Half cut design
Center to center Bus Bar distance	17.3 ± 0.15 mm

Cell Printing Layout



Front side printing layout



Rear side printing layout

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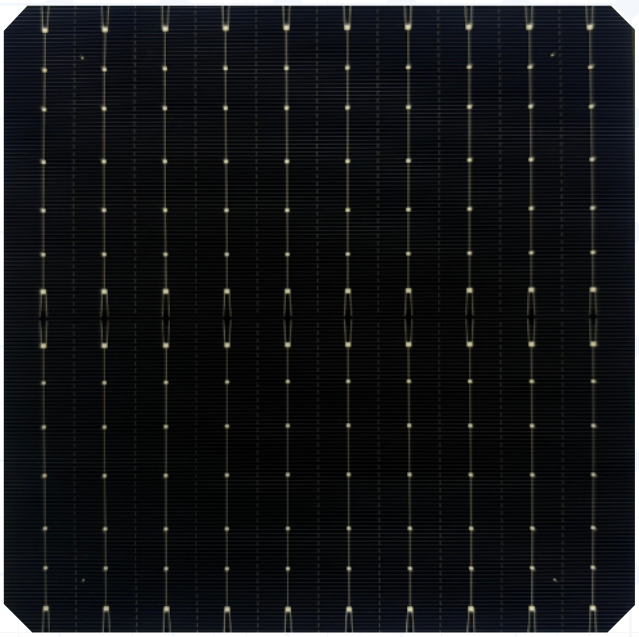
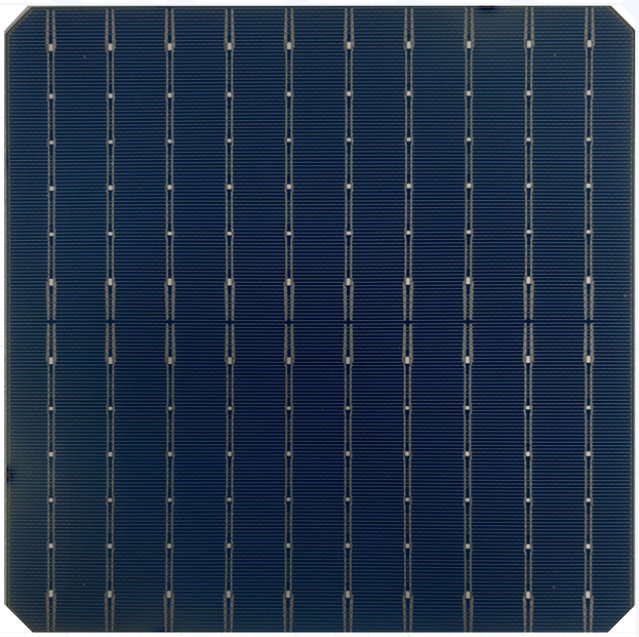
Cell Appearance



Front side layout



Rear side layout

Electrical Performance

- Shunt resistance: Greater than 60Ω with 98% population greater than 100Ω
- Leakage current @ -12V: Maximum Irev 0.8A with 98% population having Irev less than 0.50A
- 100% PID Resistive, Compliance as per IEC 62804, MNRE
- 100% Inline EL Testing
- Fill Factor > 80.5%
- Optimum RI
- Uniform Color Quality
- Compliance as per RoHS Directive (EU) 2015/863
- Outstanding Power output even in low light or high temperature condition
- Optimum Cell Layout

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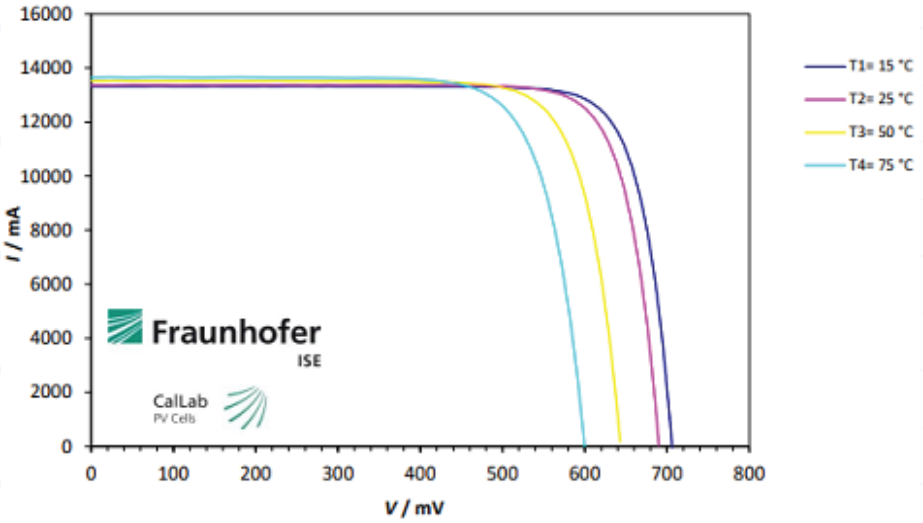
Electrical Data

Efficiency Range	Product Code	Pmax	Voc	Isc	FF	Umpp	Impp
>23.50	23.50L7.77W I1	7.77	0.689	13.624	82.79	0.597	13.018
23.4-23.50	23.40L7.74W I1	7.74	0.688	13.632	82.49	0.596	12.983
23.30-23.40	23.30L7.71W I1	7.71	0.687	13.631	82.31	0.595	12.953
23.20-23.30	23.20L7.67W I1	7.67	0.686	13.616	82.13	0.594	12.916
23.10-23.20	23.10L7.64W I1	7.64	0.685	13.61	81.94	0.592	12.909
23.00-23.10	23.00L7.61W I1	7.61	0.684	13.611	81.71	0.591	12.869
22.90-23.00	22.90L7.57W I1	7.57	0.683	13.594	81.54	0.589	12.857
22.80-22.90	22.80L7.54W I1	7.54	0.682	13.575	81.45	0.587	12.838
22.70-22.80	22.70L7.51W I1	7.51	0.680	13.582	81.29	0.585	12.833
22.60-22.70	22.60L7.48W I1	7.48	0.678	13.576	81.26	0.583	12.829
22.50-22.60	22.50L7.44W I1	7.44	0.677	13.54	81.19	0.581	12.804
22.40-22.50	22.40L7.41W I1	7.41	0.676	13.534	80.98	0.58	12.778
22.30-22.40	22.30L7.38W I1	7.38	0.675	13.522	80.84	0.578	12.768
22.20-22.30	22.20L7.34W I1	7.34	0.674	13.488	80.75	0.576	12.738
22.10-22.20	22.10L7.31W I1	7.31	0.672	13.479	80.69	0.574	12.738
22.00-22.10	22.00L7.28W I1	7.28	0.670	13.493	80.51	0.572	12.731

All data measured at standard testing conditions: 1000W/m², 25°C, AM1.5G IEC60904-3 (2020) and Reference cell calibrated by the Fraunhofer ISE in Freiburg.

Temperature Coefficient



Tk Voltage	:	-0.259%/K
Tk Current	:	+0.041%/K
Tk Power	:	-0.320%/K

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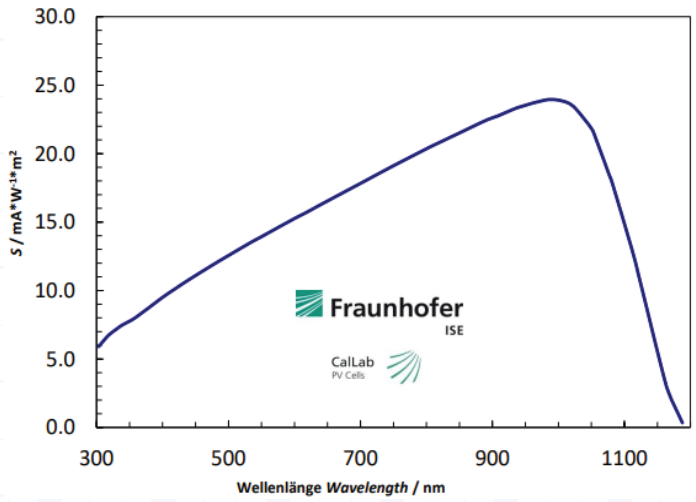
Intensity Dependence

Intensity W/m2	VOC	ISC
1000	1.000	1.000
800	0.991	0.801
400	0.962	0.402
200	0.922	0.199

Spectral Response



The amplitude of Voc/Isc decreasing with irradiation intensity based on STC (1000w/m²)

Reliability

Peak force on soldering pad ≥ 1.0N (Both FBB & RBB).

Processing Recommendations

Solder Joint: 0.30mm (round) including Sn60Pb40 coating thickness 15 to 20 um on both sides

Storage Recommendations

Solar cells are fragile and sensitive to storage conditions. So, cells should be stored indoor in the condition of good ventilation, dry, relative humidity below 60% and temperature below 40°C. Solar cells are extremely susceptible to humidity. It is recommended to make panels using the cells within Six months of the storage period for paramount performance. Once cells are opened from its original primary packing then cells should be used within 4 hrs.

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