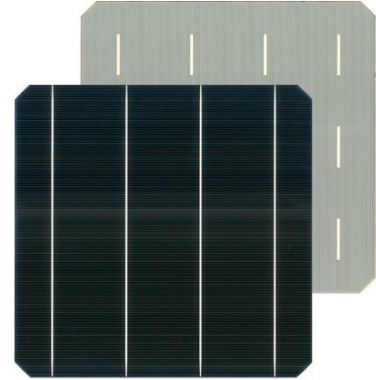


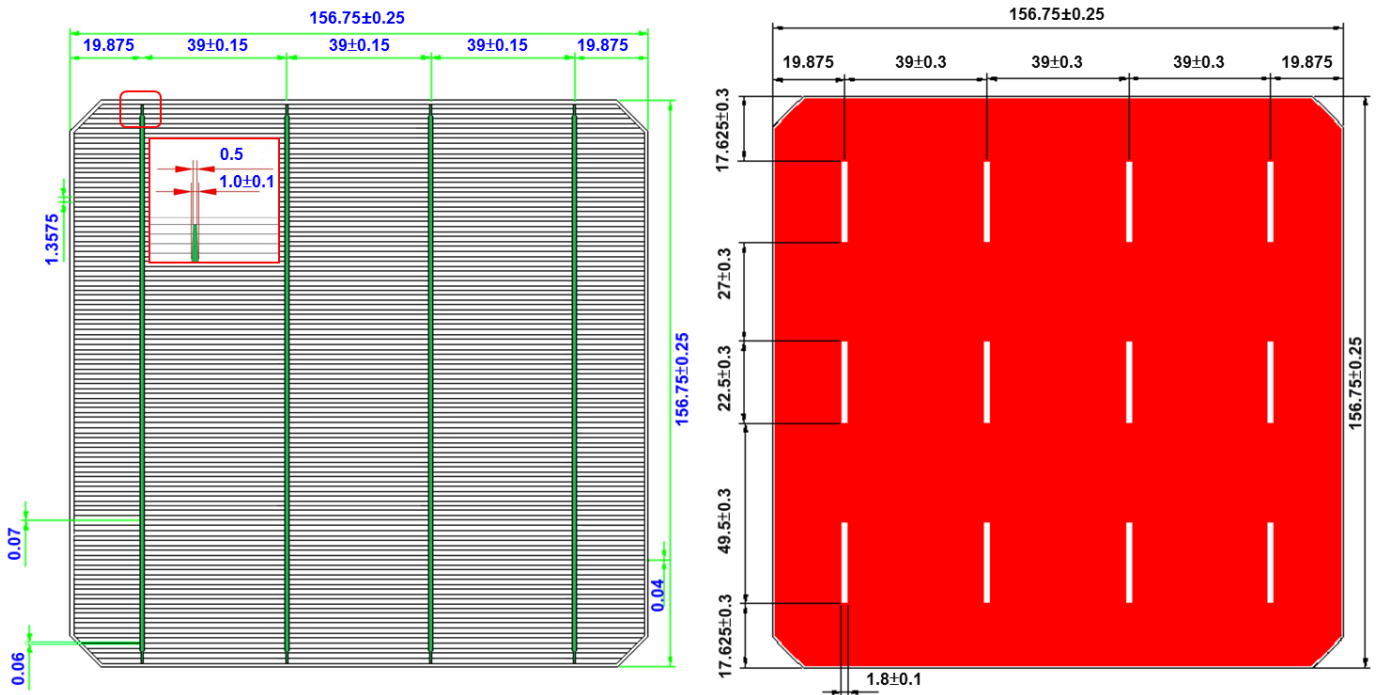


☀ Physical Characteristics

Dimension	156.75 mm x 156.75 mm ± 0.25 mm
Diagonal	210 mm ± 1.0 mm
Thickness(Si)	180 μm ± 20 μm, 200 μm ± 20 μm
Front side(-)	Blue silicon nitride anti-reflection coating 4 silver bus-bars (1.0 ± 0.1 mm), 115 fingers
Back side(+)	Full-Surface aluminum BSF, 4 x 3 soldering pads 1.8mm ± 0.1mm wide Silver / Aluminum bus-bar



☀ Cell Layout



☀ Production and Quality Control

- ❖ 100% PID Resistance.
- ❖ Precision cell efficiency sorting procedures.
- ❖ Reverse current and shunt resistance screening.
- ❖ Stringent criteria for color uniformity and appearance.
- ❖ 100% in-line inspection for optical.



明徽能源 MONO PERC CELL M2 4BB

MING HWEI ENERGY

☀ Features

Creating date: 2018/01/16

Revision status: Ver.06

- ❖ Uniform Color.
- ❖ Low breakage rate.
- ❖ High conversion efficiencies resulting.
- ❖ Superior output power in any condition.
- ❖ 100% inspected performance of products.
- ❖ All products conform to the regulation of RoHS.
- ❖ Excellent mechanical performance proven by all customers.
- ❖ Regularly monitor product performance and soldering properties.
- ❖ Less power deviation of modules ensured by precise matching of cells, sorted 100% in narrow current classes at constant test voltage.

☀ Electrical Performance

Efficiency Code		215	214	213	212	211	210
Efficiency	Eff(%)	21.50	21.40	21.30	21.20	21.10	21.00
Rated Power	Pmpp(W)	5.253	5.228	5.204	5.179	5.155	5.131
Max Power Voltage	Vmp(V)	0.571	0.569	0.567	0.566	0.564	0.562
Max Power Current	Imp(A)	9.201	9.187	9.178	9.151	9.140	9.128
Open Circuit Voltage	Voc(V)	0.664	0.663	0.661	0.660	0.658	0.655
Short Circuit Current	Isc(A)	9.706	9.685	9.674	9.661	9.647	9.635
Efficiency Code		209	208	207	206	205	204
Efficiency	Eff(%)	20.90	20.80	20.70	20.60	20.50	20.40
Rated Power	Pmpp(W)	5.106	5.082	5.057	5.033	5.008	4.984
Max Power Voltage	Vmp(V)	0.560	0.558	0.557	0.556	0.555	0.553
Max Power Current	Imp(A)	9.118	9.105	9.079	9.054	9.025	9.011
Open Circuit Voltage	Voc(V)	0.654	0.652	0.649	0.648	0.646	0.644
Short Circuit Current	Isc(A)	9.621	9.607	9.593	9.567	9.534	9.519

*Standard testing conditions(STC): 1000 W/m², AM 1.5, 25 °C. Measuring tolerance: Pmpp(W) ± 1.5% rel.

The measurement of cell is calibrated by Fraunhofer ISE. Product part number = **MBB56, MBB57**



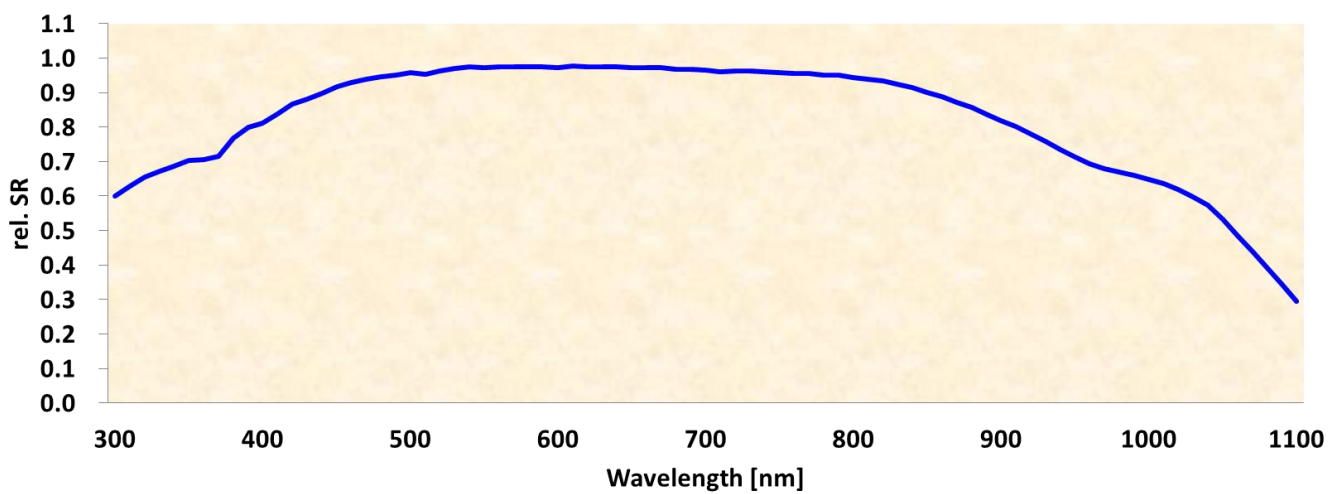
☀ Temperature Coefficients

❖ $V_{oc}(\alpha)$: -0.32 % / °C

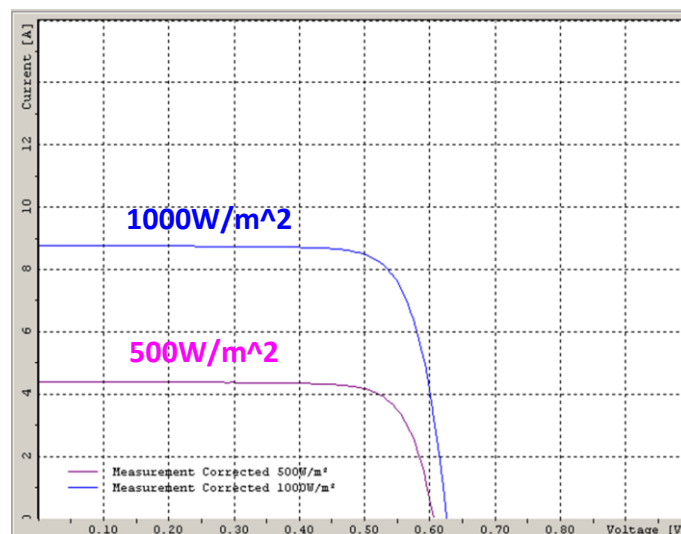
❖ $I_{sc}(\beta)$: 0.05 % / °C

❖ $P_{mp}(\gamma)$: -0.37 % / °C

☀ Spectral Response (SR)



☀ IV- Curve





明徽能源

MONO PERC CELL M2 4BB

MING HWEI ENERGY

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☀ Color Specification



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