

BIFACIAL Twin Cell

High-efficiency PV Module



>22.5%
MODULE EFFICIENCY

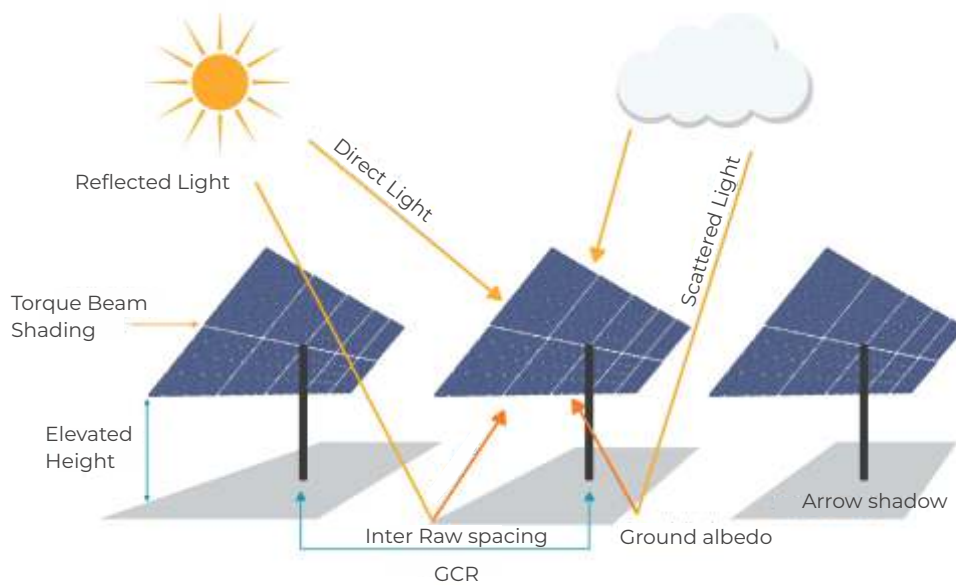
LATEST TECHNOLOGIES
BIFACIAL | TOPCON
TWIN CELL | PERC
MBB | SJB | LTC

DESIGNED TO MAXIMIZE POWER AND PERFORMANCE OVER GENERATIONS.



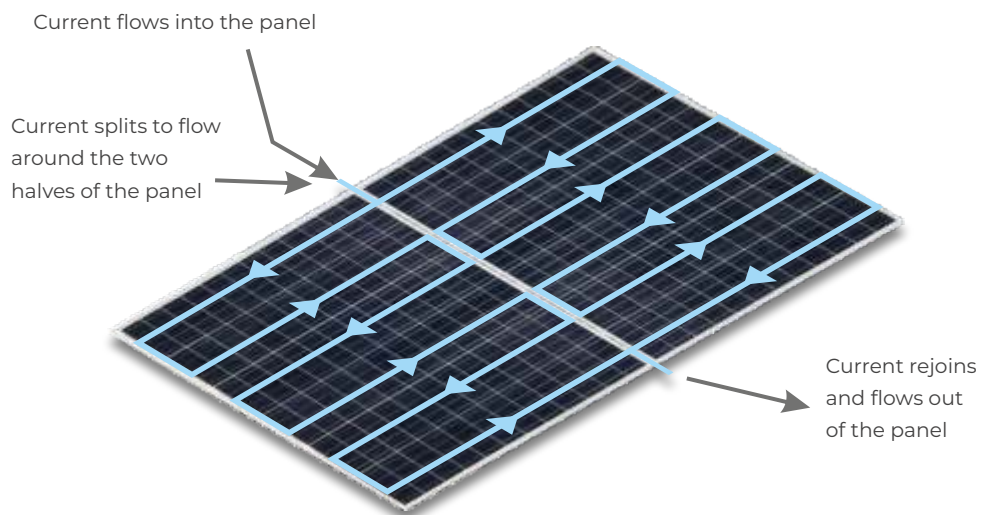
BIFACIAL GAINS

Higher power generation compared with standard module in cloudy, foggy and low light condition.



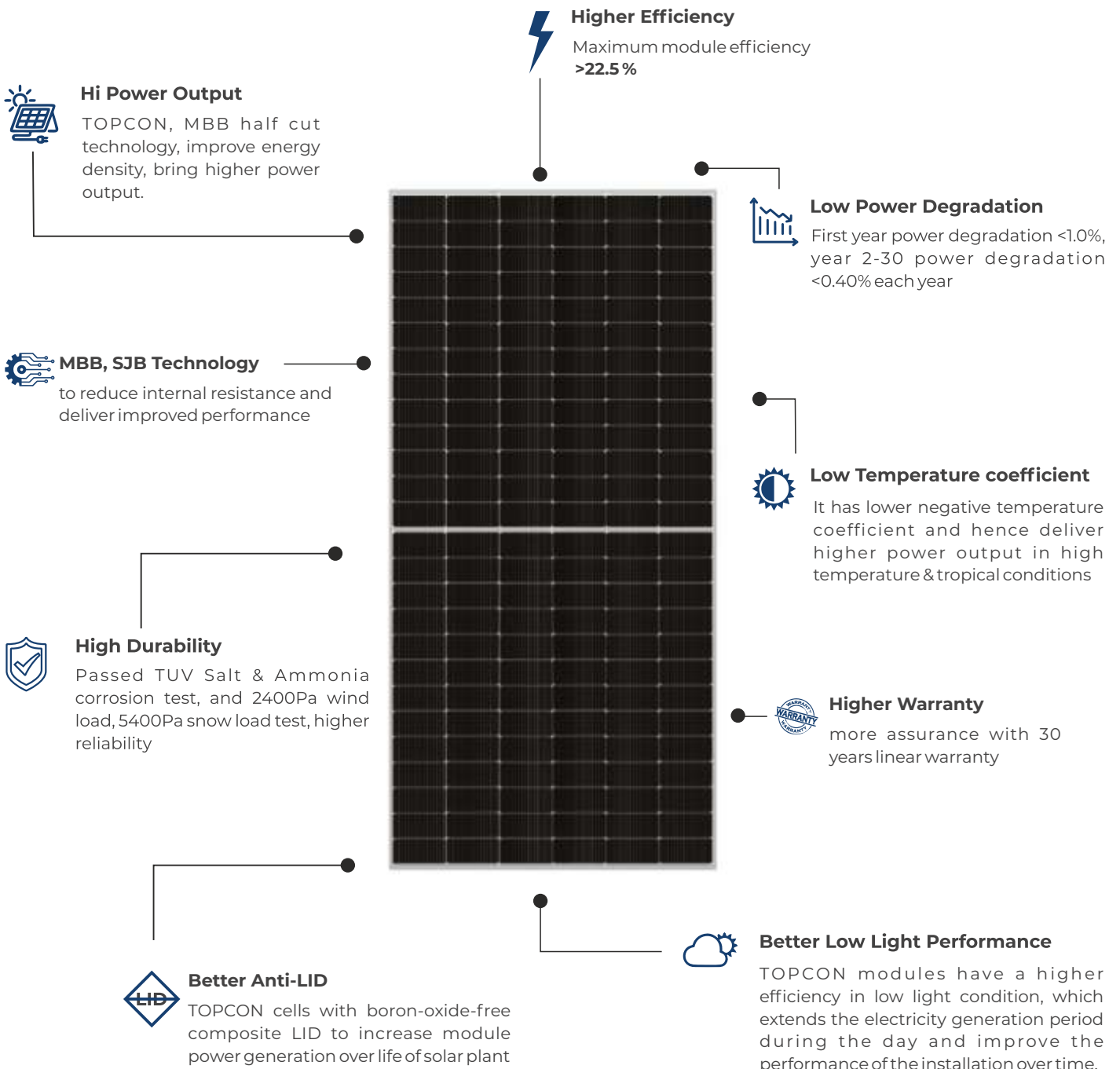
TWIN CELL CIRCUIT

The twin sections reduce internal resistance and ensure continued production of energy when partially shaded as soiled. It also improve performance in higher temperature condition.



TOPCON BIFACIAL TECHNOLOGY

TOPCON technology brings lot of benefits in performance.



MORE POWER & MORE RELIABLE

GENERAL FEATURES



Low power loss in cell connection



Low NMOT: $42 \pm 3^{\circ}\text{C}$



Heavy snow load up to 5400 pa,
wind load up to 3600 Pa*



Better shading tolerance

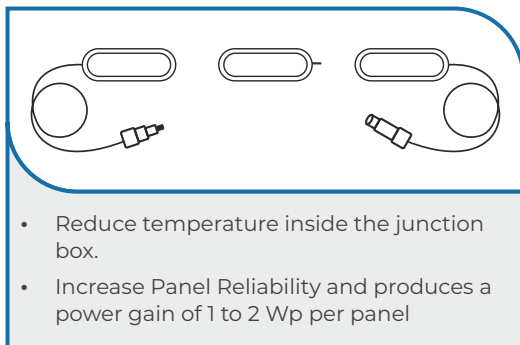


Lower hot spot temperature



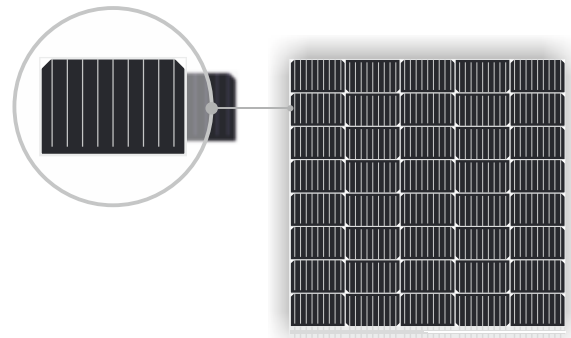
Minimizes micro-cracks

SPLIT JUNCTION BOX



- Reduce temperature inside the junction box.
- Increase Panel Reliability and produces a power gain of 1 to 2 Wp per panel

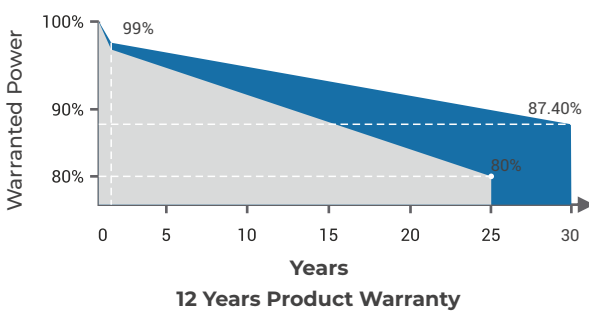
MBB TECHNOLOGY



TOPCON WARRANTY

- Novergy Linear power warranty
- Standard Warranty

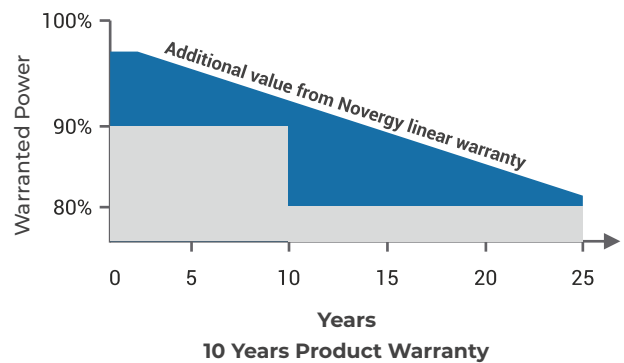
30
YRS
WARRANTY



STANDARD WARRANTY

- Novergy linear performance warranty
- Standard Warranty

25
YRS
WARRANTY

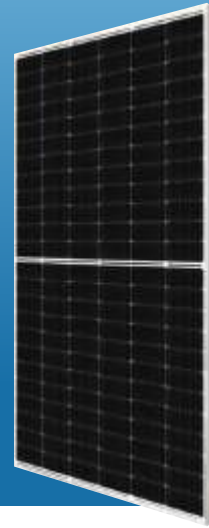


TOPCON BIFACIAL TWIN CELL SERIES

MCAL-TC-SERIES (144 TWIN CELL MONO)

(570-600 Wp)

(TOPCON BIFACIAL)



Electrical Properties | STC*

Testing Condition							
Peak Power (Pmax) (W)	570	575	580	585	590	595	600
MPP Voltage (Vmp)(V)	45.9	46.1	46.3	46.5	46.7	46.9	47.1
MPP Current (Imp) (A)	13.29	13.35	13.41	13.47	13.53	13.59	13.65
Open Circuit Voltage (Voc)(V)	54.9	55.1	55.3	55.5	55.7	55.9	56.1
Short Circuit Current (Isc) (A)	14.04	14.1	14.16	14.22	14.28	14.34	14.4

Bifacial Power Generation Parameters (Backside Gains)

Peak Power (Pmax) (W)	570	575	580	585	590	595	600
10%	627	633	638	644	649	655	660
15%	656	661	667	673	679	684	690
20%	684	690	696	702	708	712	720
25%	713	719	725	731	738	744	750
30%	741	748	754	761	767	774	780

Mechanical Data

Cell Type	182 X 91 mm Mono TOPCON Bifacial n-type
Cell Orientation	144 (6 X 24)
Module Dimensions	2278 X 1134 X 3035mm
Weight	28.0 kg
Front Layer	3.2 / 2.0 mm solar toughened ARC glass
Back layer	2.0 mm Transparent Back sheet / 2.0 solar toughened glass
Frame Material	Anodized aluminum alloy
Junction Box	Protection class IP68
Cable	4.0 mm ² positive pole: 200 mm negative pole: 250 mm (wire length may vary or can be customized)
Connector	MC4 compatible connector

Temperature Coefficients

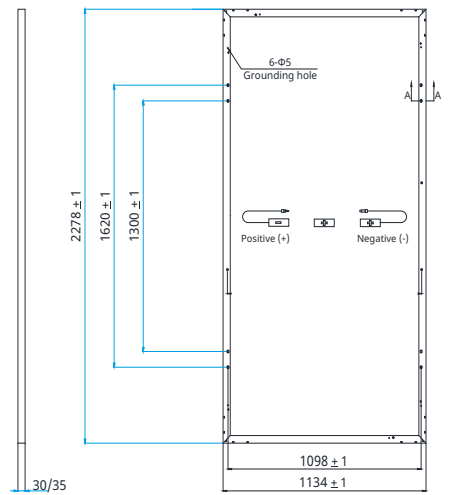
Temperature Coefficient (Pm)	-0.300%/°C
Temperature Coefficient (Voc)	-0.250%/°C
Temperature Coefficient (Isc)	0.045%/°C
NMOT (Nominal Module Operating Temperature)	41± 3°C

Packaging

Transportation methods	No. of modules	No. of modules per pallet
40 HQ container	720 pcs	36 pcs + 36 pcs

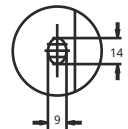
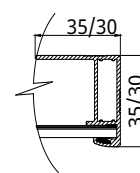
Module Dimensions (mm)

Rear View

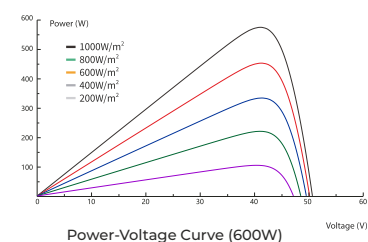
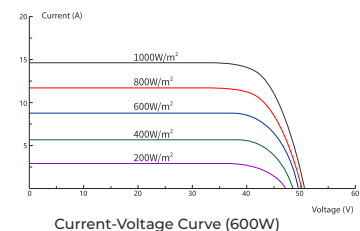


Frame Cross Section A-A

Mounting Hole



IV Curve

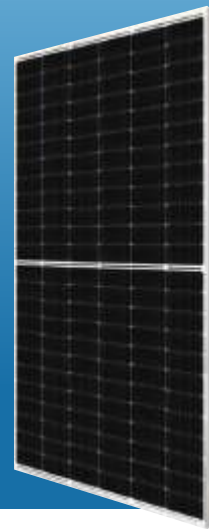


TOPCON BIFACIAL TWIN CELL SERIES

MCAL-TC-SERIES (156 TWIN CELL MONO)

(610-645 Wp)

(TOPCON BIFACIAL)



Electrical Properties | STC*

Testing Condition

Peak Power (Pmax) (W)	610	615	620	625	630	635	640	645
MPP Voltage (Vmp)(V)	47.5	47.7	47.9	48.1	48.3	48.5	48.7	48.9
MPP Current (Imp) (A)	13.77	13.83	13.89	13.95	14.01	14.07	14.13	14.19
Open Circuit Voltage (Voc)(V)	56.5	56.7	56.9	57.1	57.3	57.5	57.7	57.9
Short Circuit Current (Isc) (A)	14.52	14.58	14.64	14.7	14.76	14.82	14.88	14.94

Bifacial Power Generation Parameters (Backside Gains)

Peak Power (Pmax) (W)	610	615	620	625	630	635	640	645
10%	671	677	682	688	693	699	704	710
15%	702	707	713	719	725	730	736	742
20%	732	738	744	750	756	762	768	774
25%	763	769	775	781	788	794	800	806
30%	793	800	806	813	819	826	832	839

Mechanical Data

Cell Type	182 X 91 mm Mono TOPCON Bifacial n-type
Cell Orientation	156 (6 X 26)
Module Dimensions	2465 X 1134 X 30/35mm
Weight	28 / 32 kg
Front Layer	3.2 / 2.0 mm solar toughened ARC glass
Back layer	Transparent Back sheet / 2.0 solar toughened glass
Frame Material	Anodized aluminum alloy
Junction Box	Protection class IP68
Cable	4.0 mm ² positive pole: 300 mm negative pole: 180 mm (wire length may vary or can be customized)
Connector	MC4 compatible connector

Temperature Coefficients

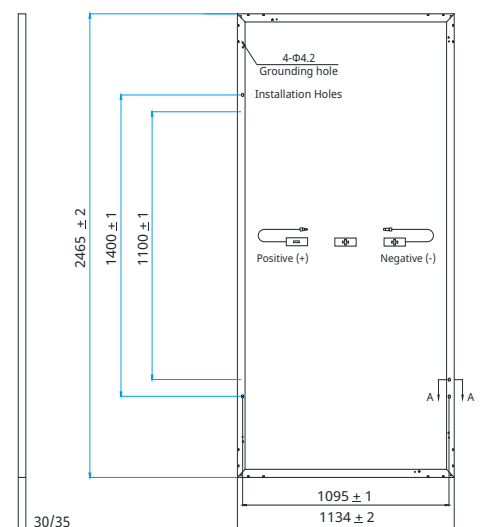
Temperature Coefficient (Pm)	-0.300%/°C
Temperature Coefficient (Voc)	-0.250%/°C
Temperature Coefficient (Isc)	0.045%/°C
NMOT (Nominal Module Operating Temperature)	42± 2°C

Packaging

Transportation methods	No. of modules	No. of modules per pallet
40 HQ container	576 pcs	36 pcs + 36 pcs

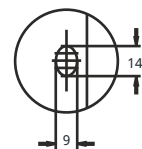
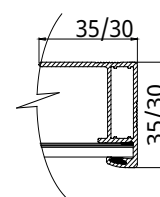
Module Dimensions (mm)

Rear View

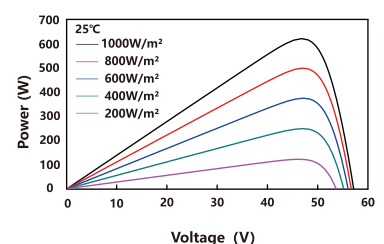
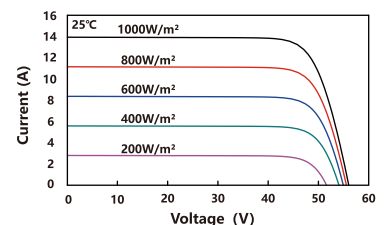


Frame Cross Section A-A

Mounting Hole



IV Curve

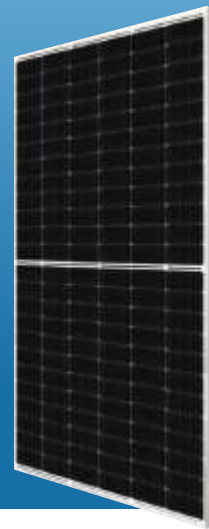


TOPCON BIFACIAL TWIN CELL SERIES

MCAL-TC-SERIES (144 TWIN CELL MONO)

(545-580 Wp)

(BIFACIAL)



Electrical Properties | STC*

Testing Condition

Peak Power (Pmax) (W)	545	550	555	560	565	570	575	580
MPP Voltage (Vmp)(V)	41.90	42.10	42.30	42.52	42.74	42.96	43.17	43.37
MPP Current (Imp) (A)	13.01	13.07	13.13	13.18	13.22	13.27	13.32	13.37
Open Circuit Voltage (Voc)(V)	49.90	50.10	50.30	50.50	50.70	50.90	61.10	61.3
Short Circuit Current (Isc) (A)	13.90	13.95	14.00	14.05	14.10	14.15	14.20	14.25

Bifacial Power Generation Parameters (Backside Gains)

Peak Power (Pmax) (W)	545	550	555	560	565	570	575	580
10%	600	605	611	616	622	627	633	638
15%	627	633	638	644	650	656	661	667
20%	654	660	666	672	678	684	690	696
25%	681	688	694	700	706	713	719	725
30%	709	715	722	728	735	741	748	754

Mechanical Data

Cell Type	182X91 mm Mono Bifacial p-type
Cell Orientation	144 (6X24)
Module Dimensions	2278 X 1134 X 30/35mm
Weight	26.6 / 31 kg
Front Layer	3.2 /2.0 mm solar toughened ARC glass
Back layer	Transparent Back sheet / 2.0 solar toughened glass
Frame Material	Anodized aluminum alloy
Junction Box	Protection class IP68
Cable	4.0 mm ² positive pole: 200 mm negative pole: 250 mm (wire length may vary or can be customized)
Connector	MC4 compatible connector

Temperature Coefficients

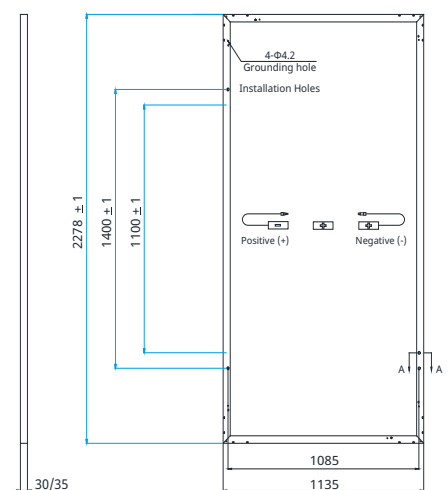
Temperature Coefficient (Pm)	-0.34%/°C
Temperature Coefficient (Voc)	-0.27%/°C
Temperature Coefficient (Isc)	0.048%/°C
NMOT (Nominal Module Operating Temperature)	41± 3°C

Packaging

Transportation methods	No. of modules	No. of modules per pallet
40 HQ container	720 pcs	36 pcs + 36 pcs

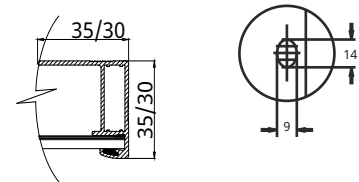
Module Dimensions (mm)

Rear View



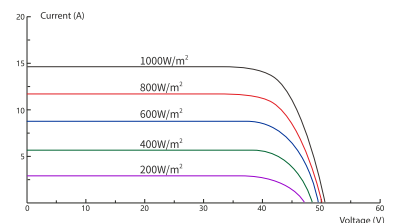
Frame Cross Section A-A

Mounting Hole

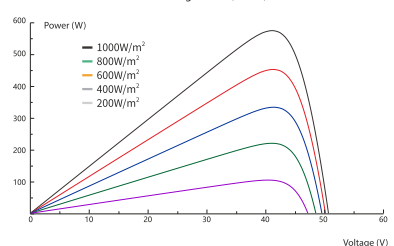


IV Curve

Current-Voltage Curve(580W)



Power-Voltage Curve(580W)

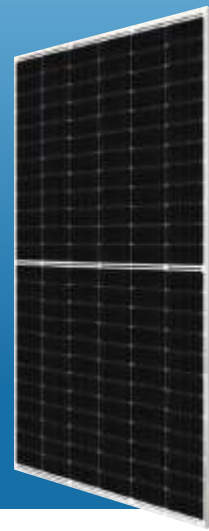


TOPCON BIFACIAL TWIN CELL SERIES

MCAL-TC-SERIES (132 TWIN CELL MONO)

(660-700 Wp)

(BIFACIAL)



Electrical Properties | STC*

Testing Condition

Peak Power (Pmax) (W)	660	665	670	675	680	685	690	695	700
MPP Voltage (Vmp)(V)	46.72	46.87	47.02	47.17	47.32	47.47	47.62	47.77	47.92
MPP Current (Imp) (A)	14.19	14.26	14.33	14.40	14.47	14.54	14.61	14.68	14.75
Open Circuit Voltage (Voc)(V)	55.92	56.07	56.22	56.37	56.52	56.67	56.82	56.97	57.12
Short Circuit Current (Isc) (A)	14.84	14.92	15.00	15.08	15.16	15.24	15.32	15.40	15.48

Bifacial Power Generation Parameters (Backside Gains)

Peak Power (Pmax) (W)	660	665	670	675	680	685	690	695	700
10%	726	732	737	743	748	754	759	765	770
15%	759	765	771	776	782	788	794	799	805
20%	792	798	804	810	816	822	828	834	840
25%	825	831	838	844	850	856	863	869	875
30%	858	865	871	878	884	891	897	904	910

Mechanical Data

Cell Type	210 X 105 mm Mono Bifacial p-type
Cell Orientation	132 (6 X 22)
Module Dimensions	2384 X 1303 X 35/30mm
Weight	27 / 31 kg
Front Layer	3.2 / 2.0 mm solar toughened ARC glass
Back layer	Transparent Back sheet / 2.0 mm solar toughened glass
Frame Material	Anodized aluminum alloy
Junction Box	Protection class IP68
Cable	4.0 mm ² positive pole: 250 mm negative pole: 250 mm (wire length may vary or can be customized)
Connector	MC4 compatible connector

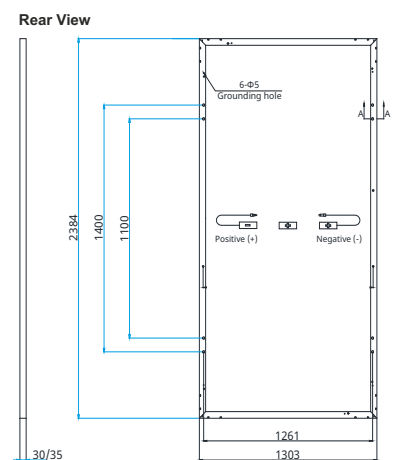
Temperature Coefficients

Temperature Coefficient (Pm)	-0.34%/°C
Temperature Coefficient (Voc)	-0.27%/°C
Temperature Coefficient (Isc)	0.048%/°C
NMOT (Nominal Module Operating Temperature)	41± 3°C

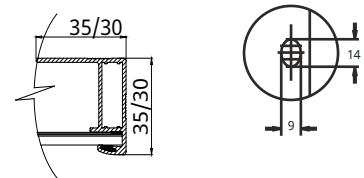
Packaging

Transportation methods	No. of modules	No. of modules per pallet
40 HQ container	527 pcs	31 pcs + 31 pcs

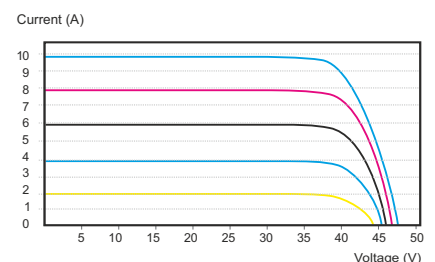
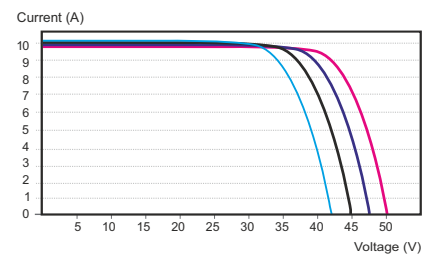
Module Dimensions (mm)



Frame Cross Section A-A Mounting Hole



IV Curve



Specifications are subject to change without prior notice.
Dimensions have tolerance of +/- 2 mm.

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