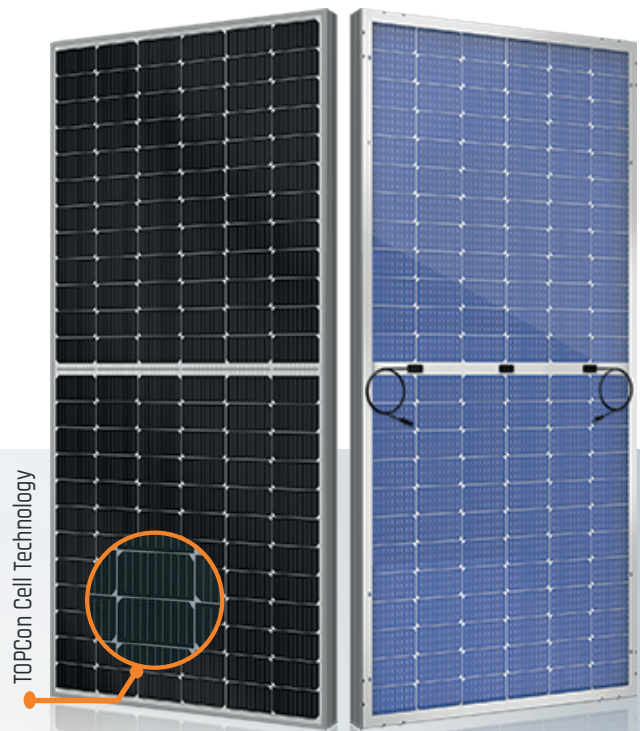


N-TYPE
TOPCon Technology



565-590WP
HIGH PERFORMANCE GLASS-BACKSHEET
BIFACIAL SERIES

MBB HALF-CUT BIFACIAL TOPCon CELL
 MONOCRYSTALLINE MODULE



UP TO 22.8% MODULE EFFICIENCY



HIGH OUTPUT POWER



BIFACIAL TOPCON CELL GAIN



LOW LID

SUNART PV

Lampart Lighting is which maintains its position as a leader in the lighting sector with the projects it has completed all over the world, was put into operation in 2023 with the aim of being the leading company in the Solar Panel Production Sector with our 34 years of experience and our state-of-the-art production line. Sunart Energy is a high-efficiency panel manufacturer whose mission is to develop photovoltaic R&D studies and renewable and sustainable energy. With our state-of-the-art production line, our modules have the highest quality standards.



HALF - CUT TOPCon TECHNOLOGY

Half - cell TOPCon technology modules reduce power loss, while 3 - piece junction box provides better performance in shadowing conditions.



REDUCED HOT SPOT LOSS

Optimized electrical design and lower operating current for reduced hot spot loss and better temperature coefficient.



ENHANCED MECHANICAL LOAD

Excelent wind load 2400Pa & snow load 5400Pa under certain installation method



MULTI BUSBAR TECHNOLOGY

Less power loss by minimizing the shading impact



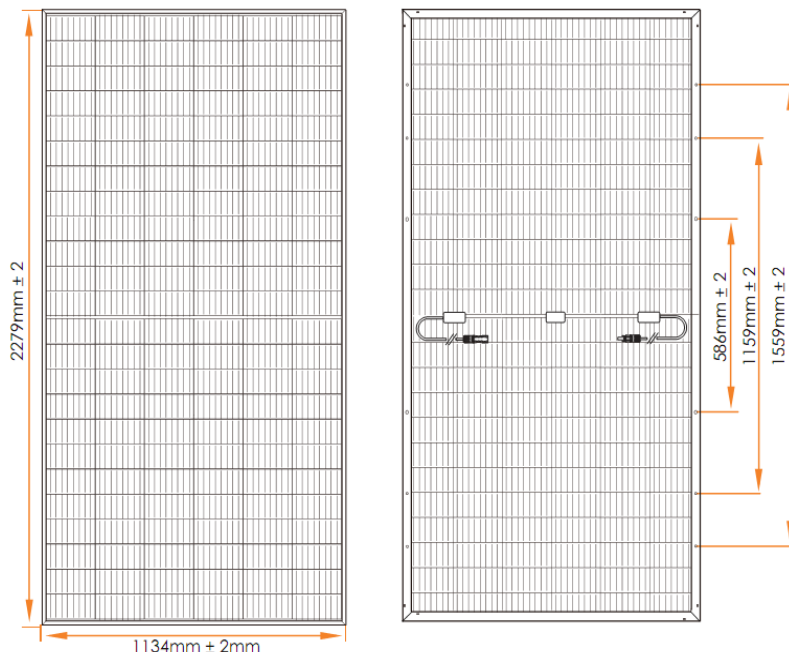
QUALIFICATIONS & CERTIFICATES

IEC 61215, IEC 61730-1/-2, IEC 61701, IEC 62716, IEC 62804 PID
 ISO 45001:2018, ISO 9001:2015, ISO 14001:2015



MECHANICAL DATA

Cell Type	N Type TOPCon
Cell Size	182x91mm
Number of Cells	144 (6x24), Half Cut
Dimensions (LxWxH)	2279x1134x35mm (89.7x44.6x1.38 inches)
Weight	28kg + 1kg
Glasses	3.2mm, AR coating, Low iron, Tempered
Frame	Anodized Aluminium
Junction Box	IP68, 1500VDC, 3 Schottky bypass diodes
Cable Diameter (IEC/UL)	4mm ² / 12AWG
Cable Length	Customized; (-)350/(+)350mm
Connector Type	MC4 / MC4 Compatible



OPERATING PARAMETERS

Operating Temperature Range	-40°C to +85°C
Maximum System Voltage	1500VDC (IEC)
Maximum Series Fuse Rating	30A
Power Output Tolerances (Pmax)	0/+5W
Maximum Power Bifaciality	70±5%

ELECTRICAL DATA WITH BIFACIAL GAIN

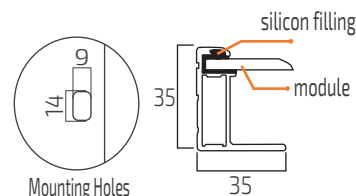
Module type	ART144-MB-GB-M	ART144-MB-GB-M	ART144-MB-GB-M	ART144-MB-GB-M	ART144-MB-GB-M	ART144-MB-GB-M
Maximum power (Pmpp/wp) *	565	570	575	580	585	590
Bifacial Gain 5% / 15% / 25% **	593 / 621 / 649	598 / 627 / 655	603 / 632 / 660	609 / 638 / 667	614 / 643 / 672	619 / 649 / 678
Open circuit voltage (Voc) *	50.70	50.85	51.05	51.25	51.40	51.60
Bifacial Gain 5% / 15% / 25% **	50.90	51.00	51.30	51.50	51.60	51.80
Short circuit current (Isc) *	13.90	13.95	14.03	14.09	14.12	14.21
Bifacial Gain 5% / 15% / 25% **	14.3 / 15.0 / 15.6	14.4 / 15.1 / 15.8	14.5 / 15.2 / 15.9	14.6 / 15.3 / 16.0	14.8 / 15.4 / 16.2	14.9 / 15.5 / 16.3
Maximum power voltage (Vmpp) *	42.65	42.76	42.95	43.13	43.31	43.47
Bifacial Gain 5% / 15% / 25% **	43.4 / 43.6 / 43.7	43.5 / 43.7 / 43.8	43.6 / 43.7 / 43.9	43.7 / 43.9 / 44.1	44.1 / 44.2 / 44.3	44.2 / 44.3 / 44.4
Maximum power current (Impp) *	13.25	13.33	13.39	13.45	13.51	13.59
Bifacial Gain 5% / 15% / 25% **	13.66 / 14.24 / 14.85	13.74 / 14.34 / 14.95	13.83 / 14.46 / 15.03	13.93 / 14.53 / 15.12	13.92 / 14.54 / 15.16	14.00 / 14.65 / 15.27
Module efficiency (%) *	21.8%	22.0%	22.2%	22.4%	22.6%	22.8%
Bifacial Gain 5% / 15% / 25% **	22.9 / 24.0 / 25.1	23.1 / 24.2 / 25.3	23.3 / 24.4 / 25.5	23.5 / 24.6 / 25.8	23.7 / 24.8 / 26.0	23.9 / 25.1 / 26.2

* STC Conditions: Irradiance 1000W/m², Cell temperature 25C, Air Mass AM1.5 according to EN 60904-3

** Bifacial Gain: The additional gain from the back side compared to the power of the front side at standart test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

THERMAL CHARACTERISTICS

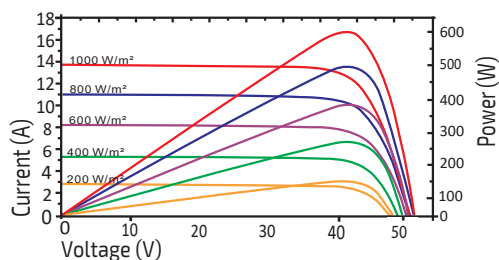
Temperature Coefficient (Pmpp)	-0.35%/°C
Temperature Coefficient (Voc)	-0.28%/°C
Temperature Coefficient (Isc)	+0.048%/°C



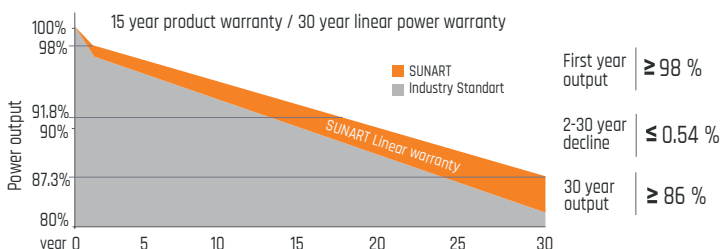
PACKAGING CONFIGURATION

	40 ft (HQ)	20 ft
Number of modules per container	682	155
Number of modules per pallet	31	31
Number of pallets per container	22	5
Box dimensions (LxWxH)	2320x1150x1300	2320x1150x1300
Box gross weight (kg)	920	920

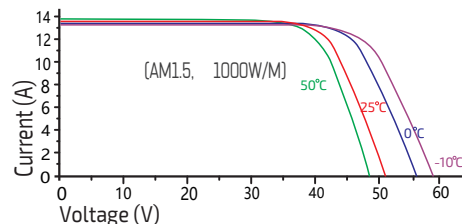
I-V CHARACTERISTICS AT DIFFERENT IRRADIATIONS



LINEAR PERFORMANCE WARRANTY



I-V CHARACTERISTICS AT DIFFERENT TEMPERATURES



SUNART-PV
PHOTOVOLTAIC TECHNOLOGY

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