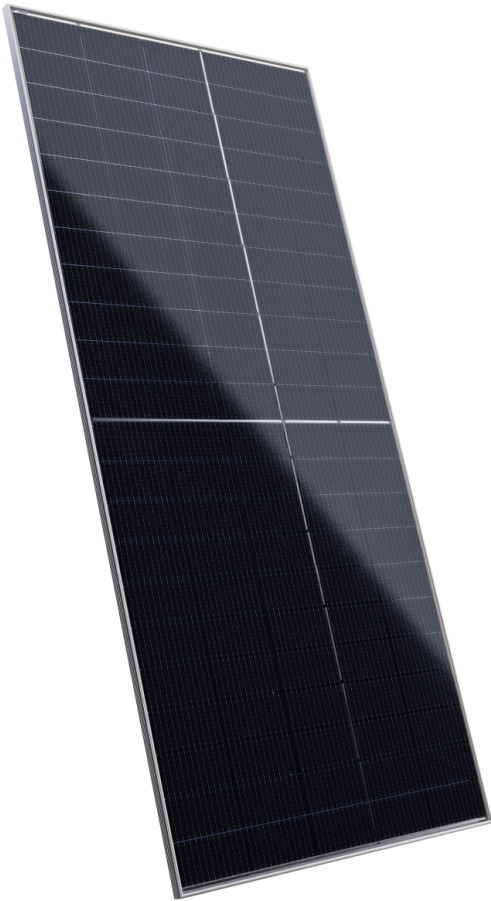


ASTORIOS

per aspera ad astra



HIGH EFFICIENCY BIFACIAL, DOUBLE GLASS PHOTOVOLTAIC MODULE

ASTR 110HCND/12 Series 590-595 Wp

TOPCON N-TYPE HALF CUT CELLS

595 Wp

MAXIMUM POWER OUTPUT

22.8%

MAXIMUM MODULE EFFICIENCY



NEGLIGIBLE LID IMPACT

TOPCon cells exhibit an almost zero susceptibility to Light Induced Degradation, ensuring sustained high efficiency over time despite exposure to sunlight



HOT SPOTS RISK REDUCTION

Sophisticated electrical design, cells sorting, cutting and soldering technology leads to low hot spot risk and temperature control



HIGH EFFICIENCY

N-type cells technology provides the highest efficiency modern multi busbar configuration at affordable cost



MULTI BUSBAR TECHNOLOGY

Better light absorption and current collection for better power output



MINIMIZING THE SHADING IMPACT

Better partial-shade tolerance due to separated half panel string wiring



PID RESISTANT

Selected encapsulants, precision in manufacturing quality control makes modules highly PID resistant and snail trails free



SAND, AMMONIA AND SALT MIST RESISTANCE

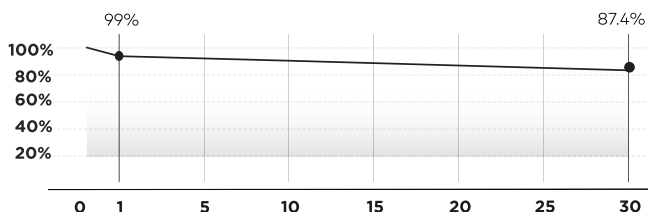
Sand blowing, ammonia and salt mist resistance tests have been passed by international standards to ensure operation in harsh conditions



SUPERIOR SAFETY AND RELIABILITY

Tested to avoid microcracks and welding cracks, can withstand high pressure loads, passed multi-step quality control

PERFORMANCE

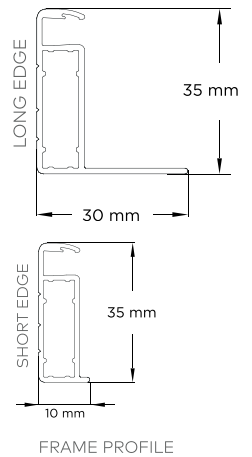
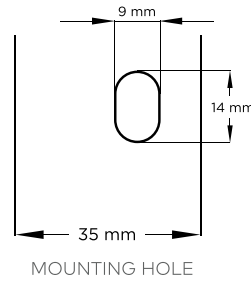
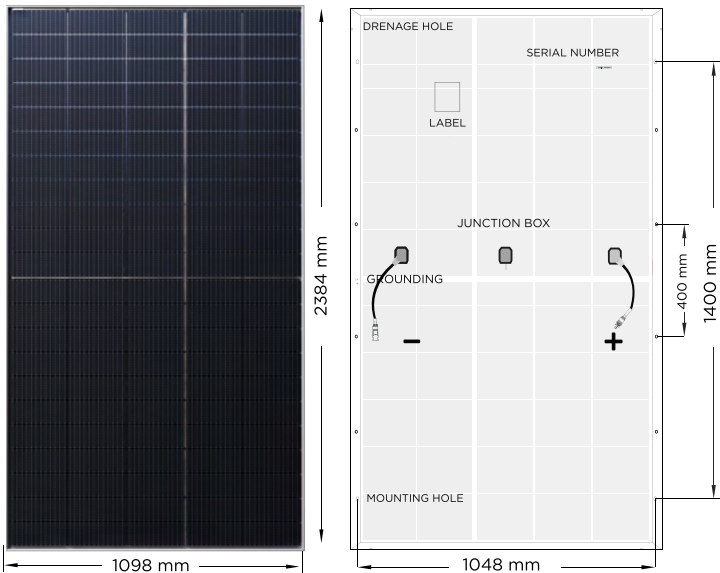


30 YEARS

Performance Guarantee

20 YEARS

Product Warranty



MATERIAL CHARACTERISTICS

Dimensions	2384 x 1098 x 35 mm
Weight	32.1kg
Number of cells	110 pcs (5x22)
Glass front/back	2mm, High transparency, AR coated
Cell layout	Half Cut N-Type, Bifacial 18BB (210mm)
Frame	Silver color (Black optional), anodized aluminum alloy
Junction box	IP68 Rated, 3 bypass diodes
Connector type	Staubli MC4-Evo 2 / MC4 (Original)
Cable	4 mm ² , 300 mm

TEMPERATURE PARAMETERS

Temperature Coefficient of Pmax	-0.30 % / °C
Temperature Coefficient of Voc	-0.25 % / °C
Temperature Coefficient of Isc	+0.046 % / °C
Operating Temperature	- 40°C to + 85°C
Normal Operating Cell Temperature (NOCT)	44±2°C

MAXIMUM RATINGS

Max. System Voltage	1500V DC - (H)
Max. Series Fuse Rating	35A
Uplift load (wind)	2400 Pa*
Downforce (snow)	5400 Pa*

*For more information please refer to Instruction Manual

PACKAGING INFORMATION

One pallet quantity	31 pcs
40 ft HC/HQ container	620 pcs

MODULE TYPE 110HCND/12

ELECTRICAL CHARACTERISTICS	590 Wp		595 Wp	
	STC	NMOT	STC	NMOT
Maximum power (Pmax/Wp)	590	446	595	450
Open circuit voltage (Voc / V)	40.40	37.50	40.60	37.70
Short circuit current (Isc / A)	18.36	15.01	18.41	15.06
Maximum power voltage (Vmp / V)	33.80	31.43	34.00	31.63
Maximum power current (Imp / A)	17.46	14.15	17.50	14.18
Module efficiency at STC (ηm / %)	22.60		22.80	
Power tolerance (Pmax)			0-+3%	

NMOT: Irradiance 800 W/m², ambient temperature 20°C and wind speed 1 m/s

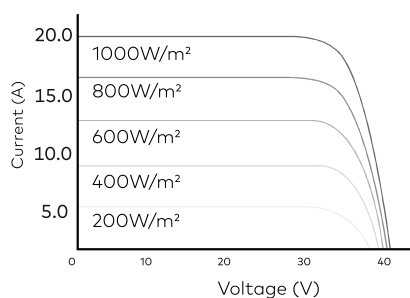
STC: Irradiance of 1000 W/m² with spectrum AM 1.5 and a module temperature of 25°C

CERTIFICATES

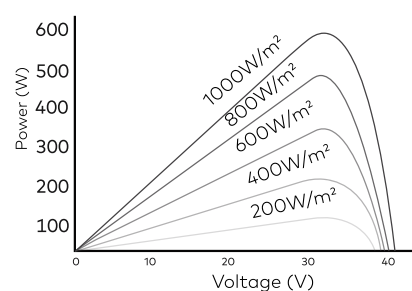
IEC62716 (Ammonia)
IEC60068-2-68 (Sand)
IEC61215 / 61730 / 61701



I-V Curve at Different Temperature (600 W)



P-V Curve (600 W)



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