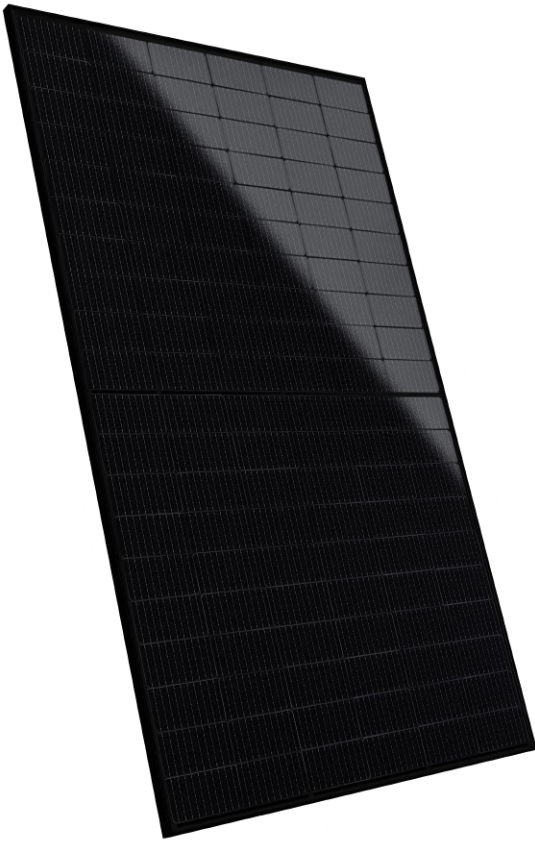


# ASTORIOS

per aspera ad astra



## PHOTOVOLTAIC MODULE

ASTR 120 HC/12 Series 605-615 Wp

HALF CUT PERC CELLS

**615 Wp**

MAXIMUM POWER OUTPUT

**21.8%**

MAXIMUM MODULE EFFICIENCY



### MORE YIELD

PV modules are positive tolerance current level sorted bringing to increase in energy yield and avoiding solar panel degradation due to mismatch



### HOT SPOTS RISK REDUCTION

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



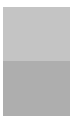
### HIGH QUALITY GLASS

Additional yield and easy maintenance are provided by high transparent and self-cleaning glass



### 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

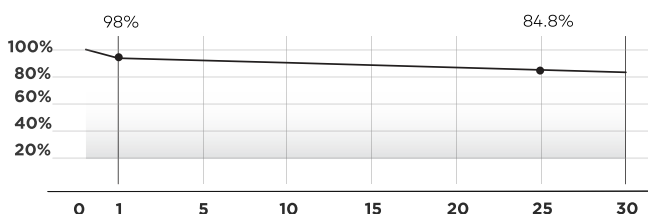
Sand blowing, ammonia and salt mist resistance tests have been passed by international standards to ensure operation in harsh conditions



### SUPERIOR SAFETY AND RELIABILITY

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

## PERFORMANCE

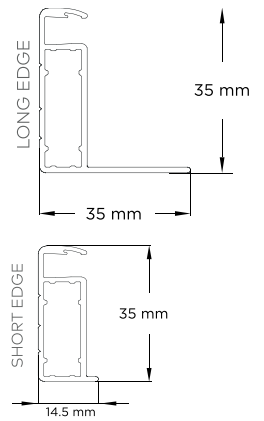
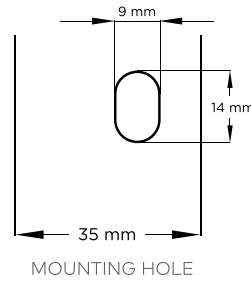
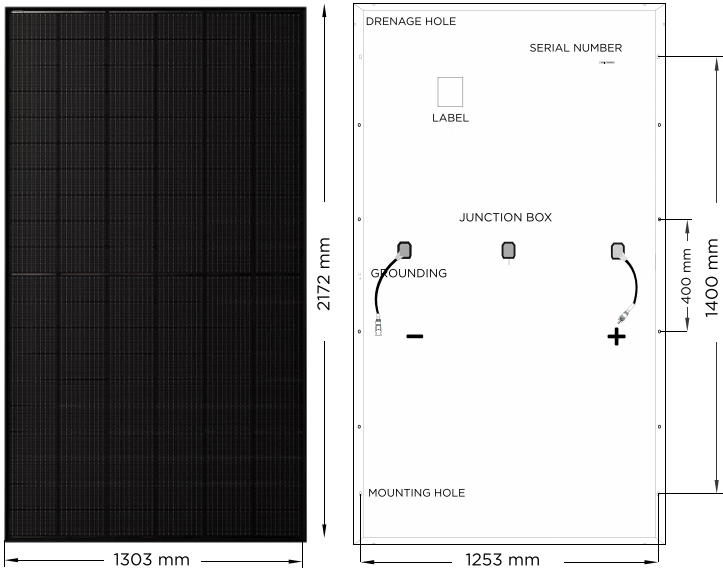


**30 YEARS**

Performance Guarantee

**15 YEARS**

Product Warranty



FRAME PROFILE

### MATERIAL CHARACTERISTICS

Dimensions	2172 x 1303 x 35 mm
Weight	30.9kg
Number of cells	120 pcs (6x20)
Glass	3.2mm, High transparency, AR coated
Cell layout	Bifacial Half Cut PERC 12BB (182 mm)
Frame	Black color, anodized aluminum alloy
Junction box	IP68 Rated, 3 bypass diodes
Connector type	Staubli MC4-Evo 2 / MC4 (Original)
Cable	4 mm <sup>2</sup> , 300 mm

### TEMPERATURE PARAMETERS

Temperature Coefficient of Pmax	-0.35 % / °C
Temperature Coefficient of Voc	-0.27 % / °C
Temperature Coefficient of Isc	+0.048 % / °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	558 pcs

MODULE TYPE 120HC/12	605 Wp		610 Wp		615 Wp	
ELECTRICAL CHARACTERISTICS	STC	NMOT	STC	NMOT	STC	NMOT
Maximum power (Pmax/Wp)	555	458	560	462	565	466
Open circuit voltage (Voc / V)	41.70	39.30	41.90	39.50	42.10	39.70
Short circuit current (Isc / A)	18.57	14.96	18.63	15.00	18.68	15.04
Maximum power voltage (Vmp / V)	34.60	32.20	34.80	32.40	35.00	32.60
Maximum power current (Imp / A)	17.49	14.23	17.52	14.26	17.56	14.30
Module efficiency at STC (ηm / %)	21.40		21.60		21.80	
Power tolerance (Pmax)			0-+3%			

NMOT: Irradiance 800 W/m<sup>2</sup>, ambient temperature 20°C and wind speed 1 m/s

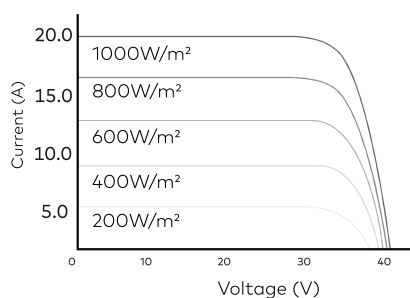
STC: Irradiance of 1000 W/m<sup>2</sup> with spectrum AM 1.5 and a module temperature of 25°C

### CERTIFICATES

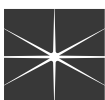
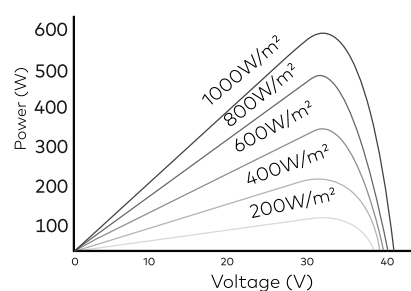
IEC62716 (Ammonia)  
IEC60068-2-68 (Sand)  
IEC61215 / 61730 / 61701



I-V Curve at Different Temperature (600 W)



P-V Curve (600 W)



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