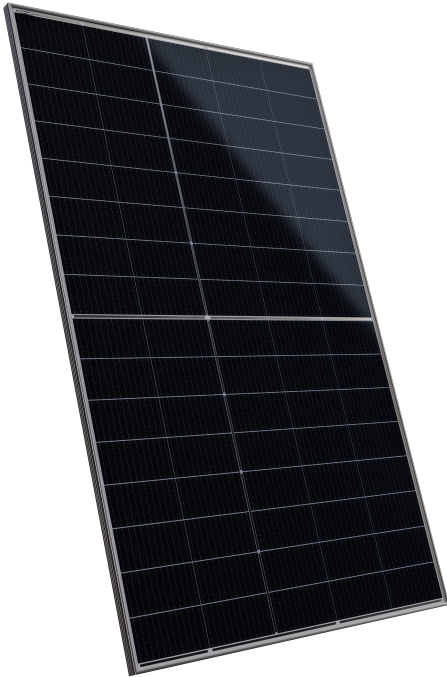


ASTORIOS

per aspera ad astra



HETEROJUNCTION BIFACIAL, DOUBLE GLASS PHOTOVOLTAIC MODULE

ASTR 80HCHD/12 Series 420-445 Wp

445Wp

MAXIMUM POWER OUTPUT

22.9%

MAXIMUM MODULE EFFICIENCY



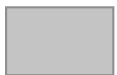
NEGLECTIBLE LID IMPACT

HJT is subject to minimal LID due to the absence of boron-oxygen complexes and superior surface passivation, enhancing stability and efficiency under sunlight exposure



HOT SPOTS RISK REDUCTION

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



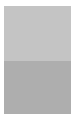
HIGH QUALITY GLASS

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



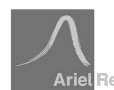
SAND, AMMONIA AND SALT MIST RESISTANCE

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



SUPERIOR SAFETY AND RELIABILITY

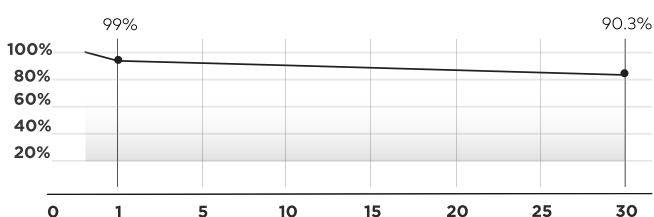
Tested to avoid microcracks and welding cracks, can withstand high pressure loads, passed multi-step quality control



REINSURANCE COVERAGE

Reinsured for 30 years of performance guarantee by Ariel Re (Syndicate 1910 at Lloyd's)

PERFORMANCE

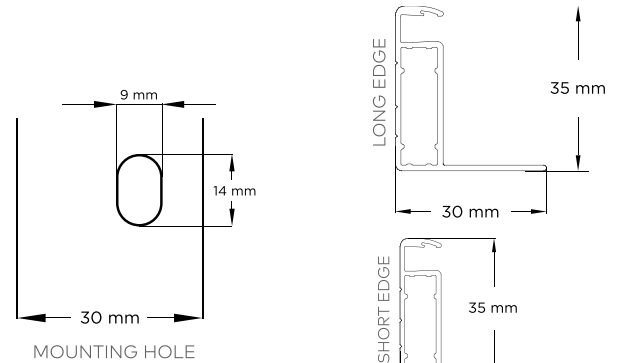
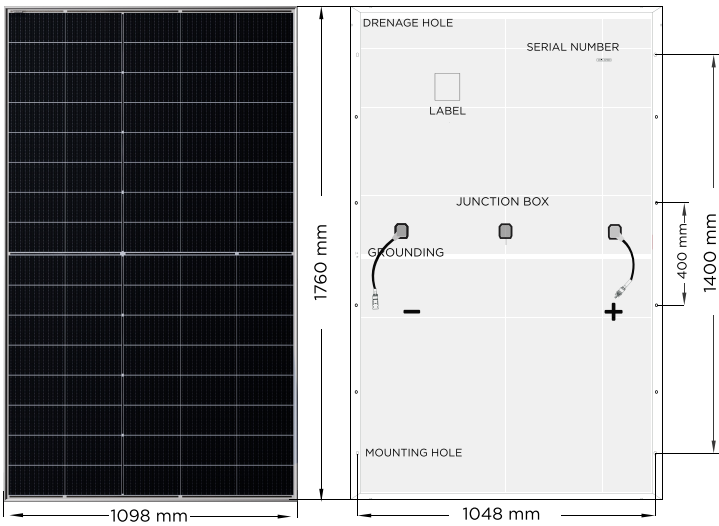


30 YEARS

Performance Guarantee

20 YEARS

Product Warranty



FRAME PROFILE

MATERIAL CHARACTERISTICS

Dimensions	1760 x 1098 x 35 mm
Weight	24.1kg
Number of cells	80 pcs (5x16)
Glass front/rear	2mm, High transparency, AR coated
Cell layout	HJT Mono 18BB/20BB
Frame	Silver color, 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	-0.243 % / °C
Temperature Coefficient of Voc	-0.223 % / °C
Temperature Coefficient of Isc	+0.026 % / °C
Operating Temperature	- 40°C to + 85°C
Normal Operating Cell Temperature (NOCT)	43±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	806 pcs

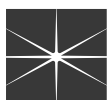
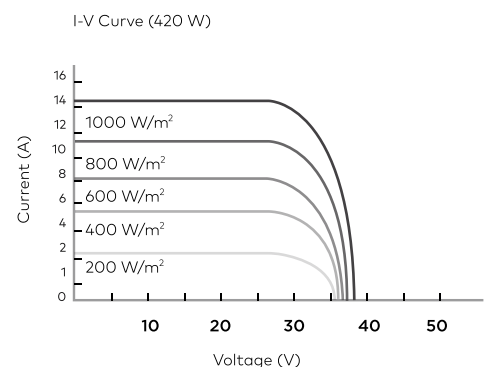
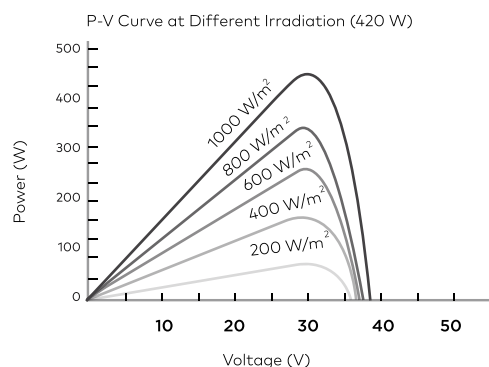
MODULE TYPE 80HCHD/12	420 Wp		425 Wp		430 Wp		435 Wp		440 Wp		445 Wp	
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
ELECTRICAL CHARACTERISTICS												
Maximum power (Pmax/Wp)	420	321	425	325	430	329	435	333	440	337	445	341
Open circuit voltage (Voc / V)	30.12	28.81	30.38	29.07	30.64	29.32	30.90	29.57	31.16	29.84	31.42	30.09
Short circuit current (Isc / A)	17.43	14.10	17.49	14.15	17.55	14.20	17.61	14.25	17.67	14.30	17.73	14.35
Maximum power voltage (Vmp / V)	25.25	23.87	25.46	24.07	25.67	24.26	25.88	24.45	26.09	24.65	26.30	24.84
Maximum power current (Imp / A)	16.64	13.45	16.70	13.49	16.76	13.55	16.81	13.62	16.87	13.68	16.93	13.73
Module efficiency at STC (ηm / %)	21.80		22.00		22.30		22.50		22.70		22.90	
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



ASTORIOS Holding Inc.
16192 Coastal Highway, Lewes,
Delaware 19958, USA
info@astorios.com