



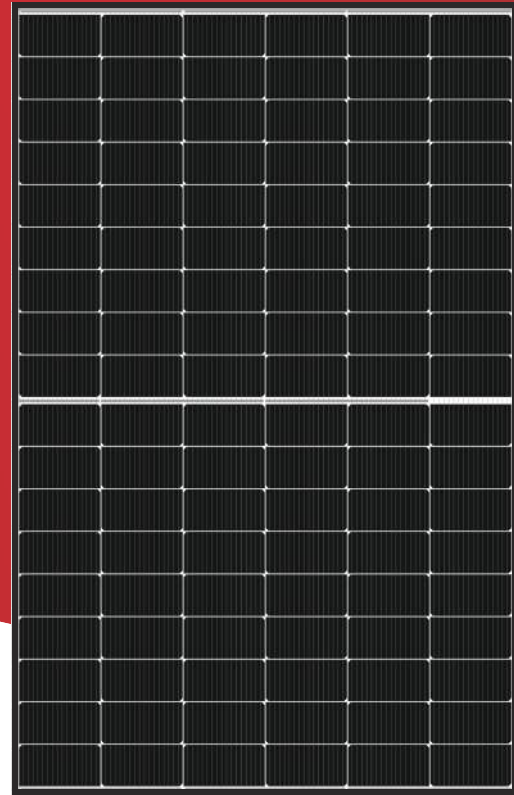
# SUNOVA SOLAR

Pv Tech Expert.

## Thor 4X

# 430-445W

N-type High Efficiency Half-Cell Mono Module



30 years lifespan brings 10-30% additional power generation comparing with conventional P-type module



N-type solar cell has no LID naturally which can increase power generation



Excellent low irradiance performance.



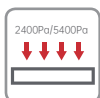
Better light trapping and current collection to improve module power output and reliability.



Industry leading lowest thermal co-efficient of power.



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

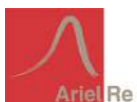


Certified to withstand: wind load (2400 Pa) and snow load (5400 Pa).



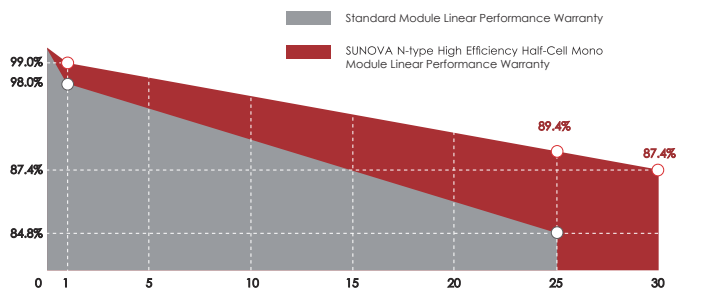
100% triple EL test enabling remarkable reduction of hidden crack rate of modules

### PERFORMANCE INSURANCE



\* Optional performance warranty insurance. Please contact our local sales staff for more information.

### LINEAR PERFORMANCE WARRANTY



25 years

Product quality & process guarantee

30 years

Linear power guarantee

0.40%

Annual Degradation

### COMPREHENSIVE CERTIFICATES



ISO 9001: Quality Management System

ISO 14001: Environmental Management System Standard

ISO 45001: International Occupational Health and Safety Assessment System Standard

SA 8000: 2014 Social Accountability Management System

\* Different markets have different certification requirements. Also, the products are under rapid innovation. Please confirm the certification status with regional sales representatives.

MADE IN CHINA / VIETNAM

www.sunova-solar.com

## ELECTRIC CHARACTERISTICS

Model of modules	SS-430-54MDH(T)		SS-435-54MDH(T)		SS-440-54MDH(T)		SS-445-54MDH(T)	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum power — $P_{mp}$ (W)	430	320	435	324	440	328	445	331
Open-circuit voltage — $V_{oc}$ (V)	39.18	36.98	39.35	37.14	39.52	37.30	39.69	37.47
Short-circuit current — $I_{sc}$ (A)	13.64	11.02	13.70	11.07	13.76	11.12	13.82	11.17
Maximum power voltage — $V_{mp}$ (V)	33.34	31.21	33.52	31.38	33.73	31.58	33.91	31.74
Maximum power current — $I_{mp}$ (A)	12.90	10.27	12.98	10.33	13.05	10.38	13.12	10.44
Module efficiency — $\eta_m$ (%)	21.52%		21.77%		22.02%		22.27%	
Power tolerance (W)					(0,+5)			
Tolerance of rated Pmpp (%)					±3			
Maximum system voltage (V)					1500			
Maximum rated fuse current (A)					25			
Current operating temperature (°C)					-40~+85 °C			

**STC** (Standard Testing Conditions): Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25 °C, Spectra at AM1.5

**NOCT** (Nominal Operating Cell Temperature): Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Spectra at AM1.5, Wind at 1m/s

## STRUCTURAL CHARACTERISTICS

Module size (L*W*H)	1762 x 1134 x 30 mm
Weight	22.0 kg
Number of cells	108 cells
Cell	N-type Monocrystalline 186 x 93 mm
Glass	Tempered, 3.2 mm AR, High transmittance, Low iron
Frame	Anodized aluminum alloy
Junction box	IP68
Output wire	4.0 mm <sup>2</sup>
Wire length	300mm/1200mm/customized
Connector	PV-KST4-EVO 2/xy_UR,PV-KBT4-EVO 2/xy_UR
Mechanical load	5400 Pa / 2400 Pa

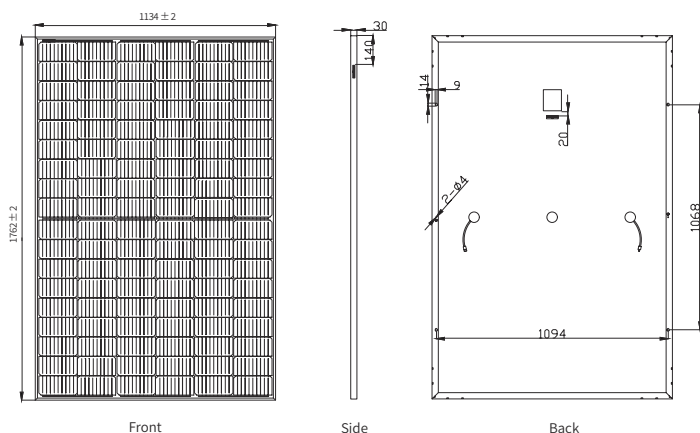
## TEMPERATURE RATINGS

Temperature coefficient ( $P_{max}$ )	-0.32%/°C
Temperature coefficient ( $V_{oc}$ )	-0.26%/°C
Temperature coefficient ( $I_{sc}$ )	+0.046%/°C
Nominal operating cell temperature	43±2 °C
Fire safety class	C

## PACKAGING CONFIGURATION

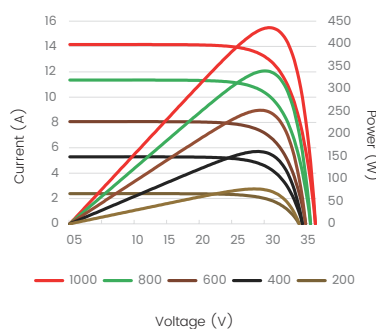
Container	40HQ
Quantity/pallet	36
Pallets/container	26
Quantity/container	936

## MODULE DIMENSIONS (MM)



\* The tolerance is ±1 mm  
Length shown in mm

Characteristic Curves (435W)



Temperature Dependence of  $I_{sc}, V_{oc}, P_{max}$

