



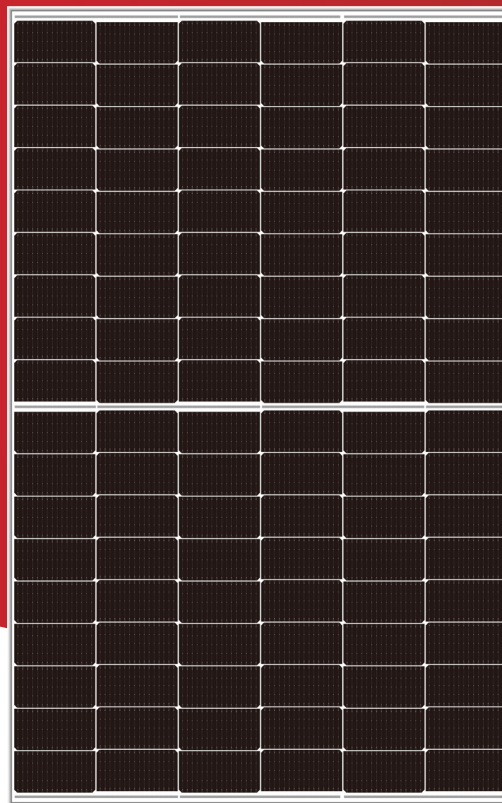
SUNOVA SOLAR

Leading one-stop PV Supplier

thor 4x

410-430W

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.



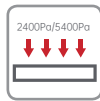
Better light trapping and current collection to improve module power output and reliability.



Industry leading lowest thermal co-efficient of power.



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

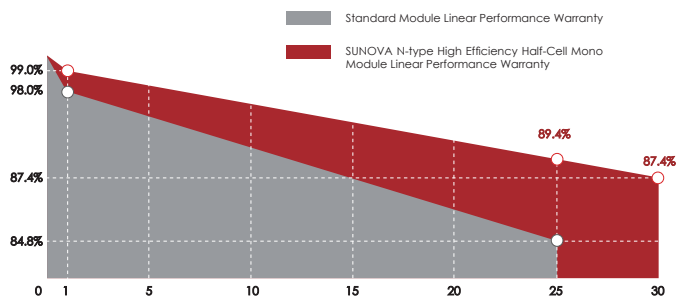


Certified to withstand: wind load (2400 Pa) and snow load (5400 Pa).



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

LINEAR PERFORMANCE WARRANTY



15 years

Product quality & process guarantee

30 years

Linear power guarantee

0.40 %

Annual Degradation

COMPREHENSIVE CERTIFICATES



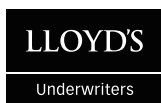
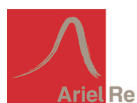
ISO 9001: Quality Management System

ISO 14001: Environmental Management System Standard

ISO 45001: International Occupational Health and Safety Assessment System Standard

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

PERFORMANCE INSURANCE



中国平安

PING AN P & C INSURANCE CO CN SZX

ELECTRIC CHARACTERISTICS

Model of modules	SS-410-54MDH(T)		SS-415-54MDH(T)		SS-420-54MDH(T)		SS-425-54MDH(T)		SS-430-54MDH(T)	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum power — P_{mp} (W)	410	308	415	312	420	316	425	320	430	323
Open-circuit voltage — V_{oc} (V)	37.76	35.87	37.95	36.05	38.14	36.23	38.33	36.41	38.52	36.59
Short-circuit current — I_{sc} (A)	13.9	11.22	13.98	11.28	14.06	11.35	14.14	11.43	14.22	11.48
Maximum power voltage — V_{mp} (V)	31.16	29.07	31.35	29.24	31.54	29.37	31.73	29.54	31.95	29.66
Maximum power current — I_{mp} (A)	13.16	10.60	13.24	10.67	13.32	10.75	13.4	10.83	13.47	10.9
Module efficiency — η_m (%)	20.5%		20.7%		21.0%		21.3%		22.0%	
Power tolerance (W)					(0,+5)					
Maximum system voltage (V)					1500					
Maximum rated fuse current (A)					25					
Current operating temperature (°C)					-40~+85 °C					

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25 °C, Spectra at AM1.5

NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20°C, Spectra at AM1.5, Wind at 1m/s

STRUCTURAL CHARACTERISTICS

Module size (L*W*H)	1722 x 1134 x 30 mm (67.80 x 44.65 x 1.18 inch)
Weight	21.5 kg (47.40 lbs)
Number of cells	108 cells
Cell	N-type Monocrystalline 182 x 91 mm (7.17 x 3.58 inch)
Glass	Tempered, 3.2 mm AR, High transmittance, Low iron
Frame	Anodized aluminum alloy
Junction box	IP68
Output wire	4.0 mm ²
Wire length	300mm/customized
Connector	MC4 Compatible
Mechanical load	5400 Pa / 2400 Pa

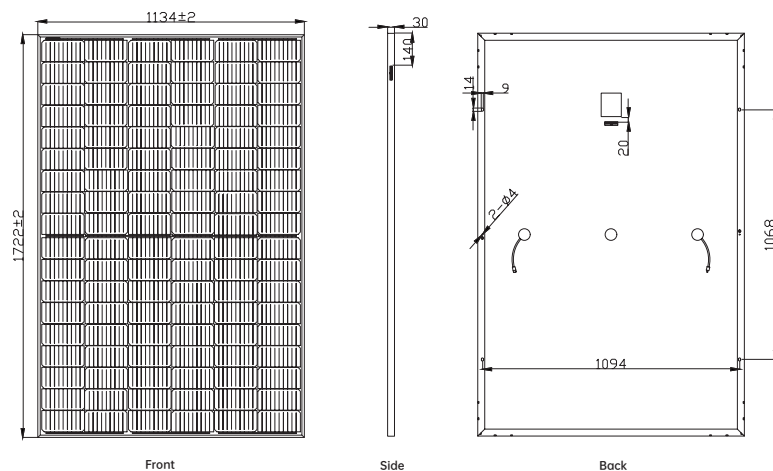
OPERATING PARAMETERS

Temperature coefficient (P_{max})	-0.310%/°C
Temperature coefficient (V_{oc})	-0.260 %/°C
Temperature coefficient (I_{sc})	+0.046 %/°C
Nominal operating cell temperature	42±2 °C

PACKAGING CONFIGURATION

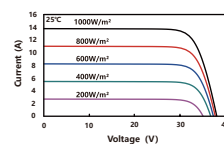
Container	40HQ
Quantity/pallet	36
Pallets/container	26
Quantity/container	936

MODULE DIMENSIONS (MM)

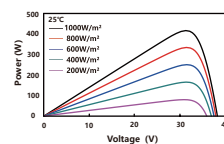


* The unmarked tolerance is ±1 mm
Length shown in mm

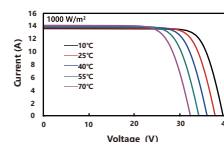
Characteristic Curves(415W)



I-V Characteristics
At Different Irradiances



P-V Characteristics
At Different Irradiances



I-V Characteristics
At Different Temperatures

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