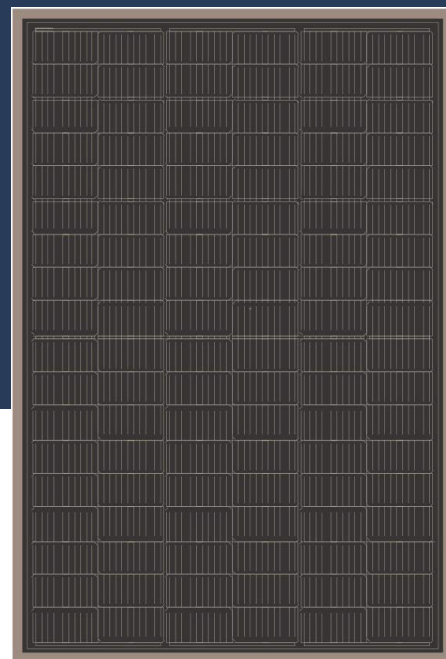


Zosma™ S Black 400-415W

High Efficiency Half-Cell Mono PERC Module



Excellent low irradiance performance



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



Industry-leading, lowest thermal coefficient



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

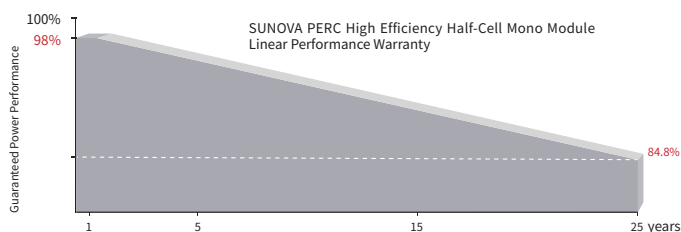


Certified to withstand 2400 Pa of wind load and 5400 Pa of snow load



100% triple EL test, which greatly reduces the hidden cracks rate

LINEAR PERFORMANCE WARRANTY



25 years

Product quality & process guarantee

25 years

Linear power guarantee

0.55 %

Annual degradation over 25 years

COMPREHENSIVE CERTIFICATES



IEC61215/IEC61730/IEC61701/IEC62716/
IEC62804/IEC60068/UL61730

ISO 9001: Quality Management System

ISO 14001: Environmental Management System Standard

ISO 45001: International Occupational Health and Safety Assessment System Standard

SA8000: 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.

WARRANTY INSURANCE



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

ELECTRICAL CHARACTERISTICS

Model of modules	TS-SBT54(400)		TS-SBT54(405)		TS-SBT54(410)		TS-SBT54(415)	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum power — P_{mp} (W)	400	300	405	304	410	308	415	312
Open-circuit voltage — V_{oc} (V)	37.2	34.2	37.4	34.4	37.6	34.6	37.8	34.8
Short-circuit current — I_{sc} (A)	13.70	11.10	13.76	11.15	13.82	11.20	13.88	11.25
Maximum power voltage — V_{mp} (V)	31.0	28.2	31.2	28.4	31.4	28.6	31.6	28.8
Maximum power current — I_{mp} (A)	12.91	10.64	12.99	10.71	13.06	10.77	13.14	10.84
Module efficiency — η_m (%)	20.49		20.74		21.00		21.25	
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 dimensions (L*W*H)	1722 x 1134 x 30 mm
Weight	21.5 kg
Number of cells	108(6X18) cells
Cell	PERC Monocrystalline 182x91 mm
Glass	Tempered, 3.2 mm AR, High transmittance, Low iron
Frame	Anodized aluminum alloy
Junction box	IP68, 3 diodes
Output wire	4.0 mm ² , wire length: 300mm / 1200mm / customized
Connector	MC4 Compatible
Mechanical load	Snow load: 5400 Pa / Wind load: 2400 Pa

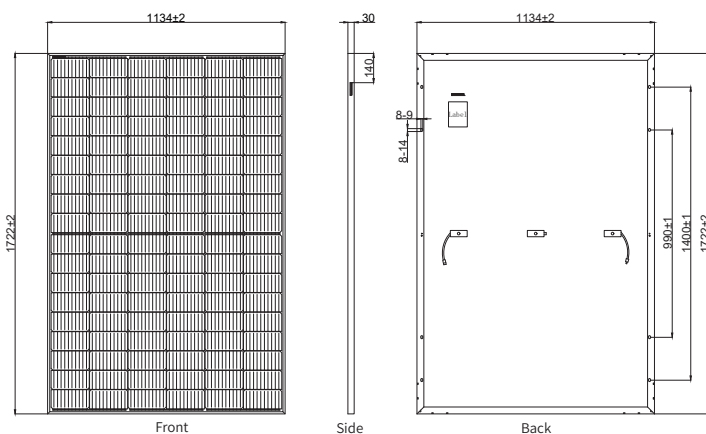
TEMPERATURE RATINGS

Temperature coefficient (P_{max})	-0.33 %/°C
Temperature coefficient (V_{oc})	-0.26 %/°C
Temperature coefficient (I_{sc})	+0.05 %/°C
Nominal operating cell temperature	43±2 °C

PACKAGING CONFIGURATION

Container	40HQ
Quantity/pallet	31
Pallets/container	26
Quantity/container	806

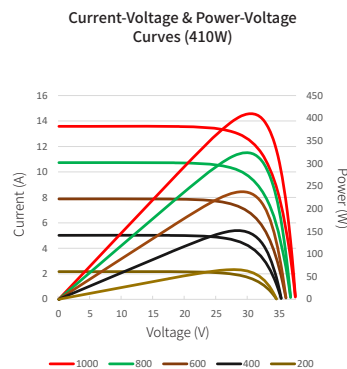
MODULE DIMENSIONS (MM)



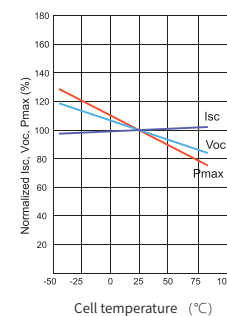
* The unmarked tolerance is ±1 mm
Length shown in mm



Scan the QR code to get more information



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



Web: www.thornovasolar.com

E-mail: info@thornovasolar.com

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