

TSxxxS7-144

xxx=450-470 in step of 5W

MONO-FACIAL MODULE

P-Type

Positive power tolerance of 0~+3%

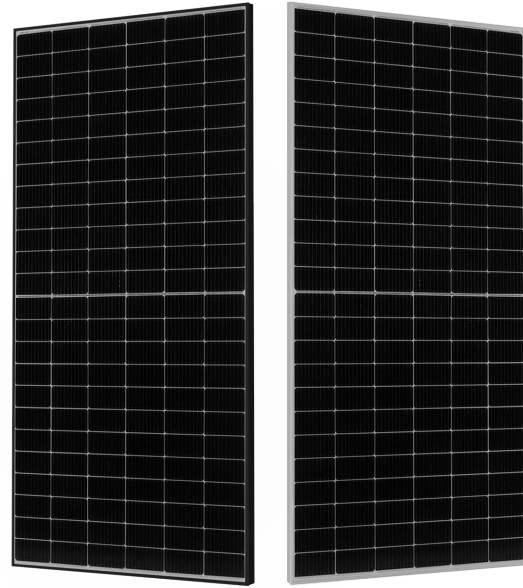
IEC61215(2016), IEC61730(2016)

ISO9001:2015: Quality Management System

ISO14001:2015: Environment Management System

ISO45001:2018

Occupational health and safety management systems



Key Features



Multi Busbar Technology

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



Reduced Hot Spot Loss

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



Longer Life-time Power Yield

0.55% annual power degradation and 25 year linear power warranty.



Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance.

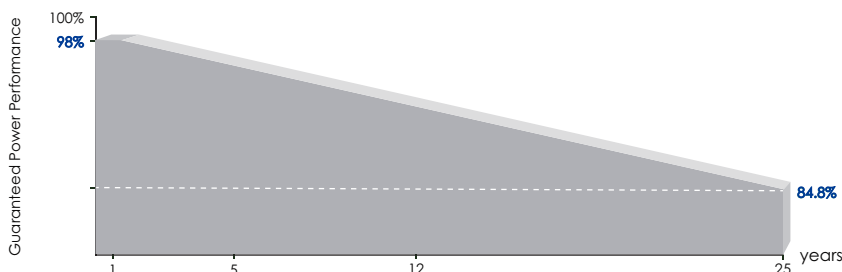


Enhanced Mechanical Load

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



LINEAR PERFORMANCE WARRANTY

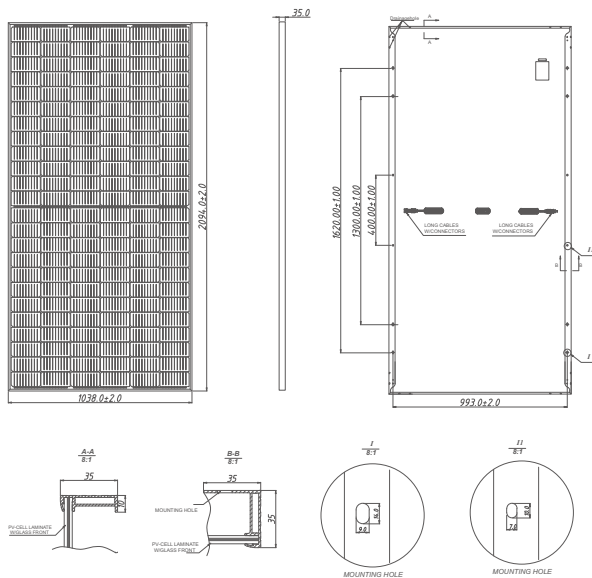


12 Year Product Warranty

25 Year Linear Power Warranty

0.55% Annual Degradation Over 25 years

Engineering Drawings



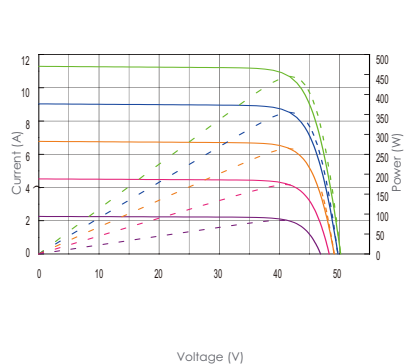
Packaging Configuration

(Two pallets = One stack)

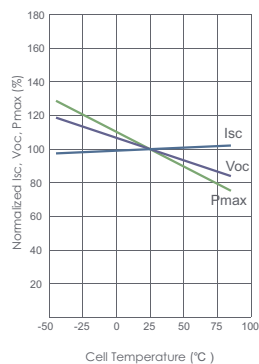
31 pcs/pallets, 62 pcs/stack, 682 pcs/ 40'HQ Container

Electrical Performance & Temperature Dependence

Current-Voltage & Power-Voltage Curves (450W)



Temperature Dependence of Isc, Voc, Pmax



Mechanical Characteristics

Cell Type	P type Mono-crystalline
No. of cells	144 (6×24)
Dimensions	2094×1038×35mm (82.44×40.87×1.38 inch)
Weight	23.5 kg (51.81 lbs)
Front Glass	3.2mm, Anti-Reflection Coating, High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68 Rated
Output Cables	TUV 1×4.0mm ² (+): 400mm, (-): 200mm or Customized Length

SPECIFICATIONS

Module Type	TS450S7-144		TS455S7-144		TS460S7-144		TS465S7-144		TS470S7-144	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	450Wp	335Wp	455Wp	339Wp	460Wp	343Wp	465Wp	346Wp	470Wp	350Wp
Maximum Power Voltage (Vmp)	40.90V	38.20V	41.10V	38.40V	41.30V	38.53V	41.50V	38.66V	41.70V	38.79V
Maximum Power Current (Imp)	11.01A	8.78A	11.08A	8.84A	11.15A	8.90A	11.22A	8.96A	11.29A	9.02A
Open-circuit Voltage (Voc)	49.60V	46.20V	49.80V	46.40V	50.00V	46.60V	50.20V	46.80V	50.40V	47.00V
Short-circuit Current (Isc)	11.54A	9.32A	11.61A	9.37A	11.68A	9.42A	11.75A	9.47A	11.82A	9.52A
Module Efficiency STC (%)	20.70%		20.93%		21.16%		21.39%		21.62%	
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1000/1500VDC (IEC)									
Maximum series fuse rating	20A									
Power tolerance	0~+3%									
Temperature coefficients of Pmax	-0.36%/°C									
Temperature coefficients of Voc	-0.26%/°C									
Temperature coefficients of Isc	0.043%/°C									
Nominal operating cell temperature (NOCT)	45±2°C									

*STC: Irradiance 1000W/m²

Cell Temperature 25°C

AM=1.5

NOCT: Irradiance 800W/m²

Ambient Temperature 20°C

AM=1.5

Wind Speed 1m/s

Specifications included in this datasheet are subject to change without notice.