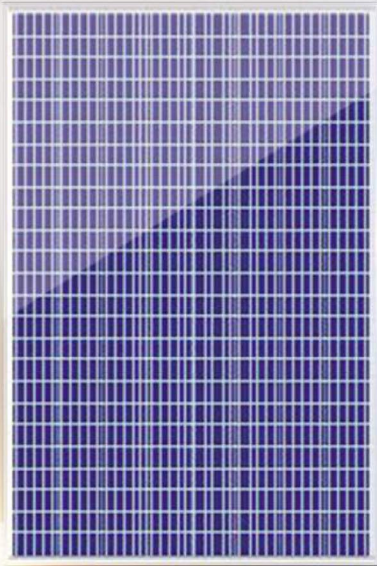


# MULTI CRYSTALLINE SOLAR MODULE 435-460 Wp



### TEMPERATURE COEFFICIENTS

VOLTAGE	-0.289 % / °C
CURRENT	0.035 % / °C
POWER	-0.42 % / °C
NOCT AVG	45 °C ±3

### LIMITS

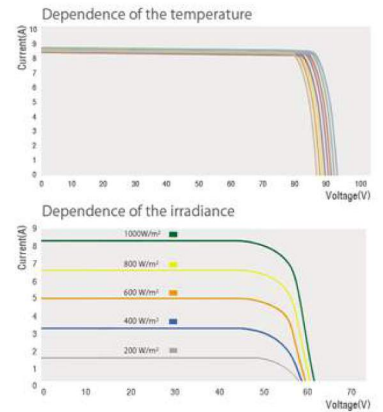
MAX. SYSTEM VOLTAGE  
DC 1.000V

OPERATING MODULE TEMPERATURE  
-40°C TO +90°C

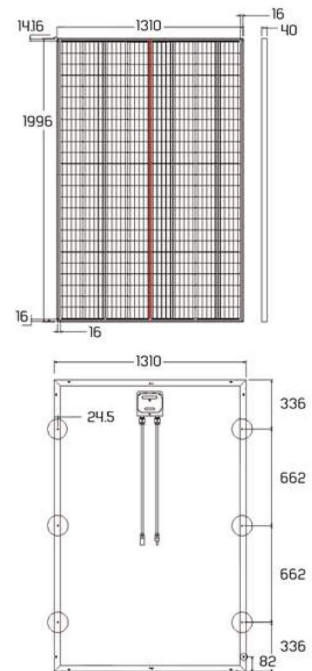
STORM RESISTANCE/STATIC LOAD  
Tested to IEC61215 for loads  
up to 5400Pa (113psf).  
hail and wind resistant

**WARRANTY - 10 YEARS**  
**POWER OUTPUT 90% - 10 YEARS , 80% - 25 YEARS**

## \* I-V Curve



## \* TECHNICAL DRAWINGS



## \* MECHANICAL CHARACTERISTICS

Solar cells	Multi crystalline cells
Front cover	Low iron tempered glass 4.0mm, AR
Back cover	White polyester
Frame	Silver anodized aluminum alloy (40mm)
Output Cables	12 AWG(4mm <sup>2</sup> ) cables with polarized weatherproof connectors, cable length 1.25m (49.21in.)
Junction box	NEMA IP67 rated; 4 internal bypass diodes
Dimensions	1996(78.58in) X 1310(51.57in) X 40(1.57in)
Approximate Weight	36.5kg(80.46lbs)

## \* ELECTRICAL SPECIFICATION

	TSH-M435	TSH-M440	TSH-M445	TSH-M450	TSH-M460
Nominal power[Wp] - Pmpp	435	440	445	450	460
Voltage at nominal power[V] - Vmpp	50.82	51.11	51.40	51.69	52.27
Current at nominal power[A] - Impp	9.06	9.11	9.16	9.21	9.31
Open-circuit voltage[V] - Voc	63.21	63.59	63.97	64.35	65.11
Short-circuit current[A] - Isc	8.56	8.61	8.66	8.71	8.81
Module efficiency level[%]	16.64 %	16.83 %	17.02 %	17.21 %	17.59 %

Performance under standard test conditions (STC) : 1000W/m<sup>2</sup>, 25°C, AM 1.5 / Output tolerance[%] 0~+3%