








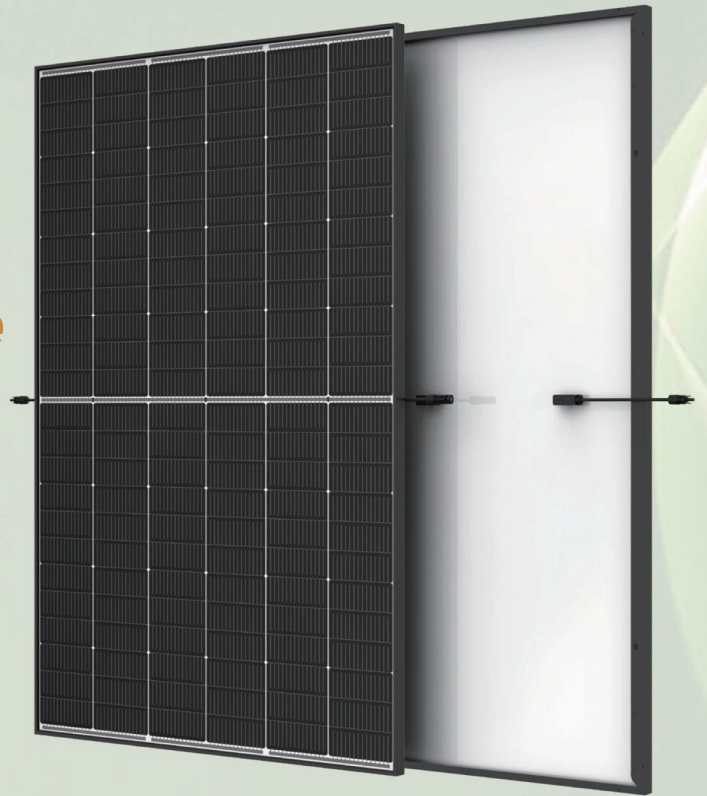




■ P-Type Solar Module

KEY FEATURES

-  Excellent performance in low-light environments
-  High quality junction box and connector systems
-  100% inspection, to guarantee the reliability of solar systems
-  Lower temperature
-  Anti PID
-  Enhanced safety by excellent fire resistance
-  Perfect for sandy, snowy and high latitude regions
-  Lower operating temperature, more reliable
-  Cutcell, Less internal power loss, Less mismatch loss



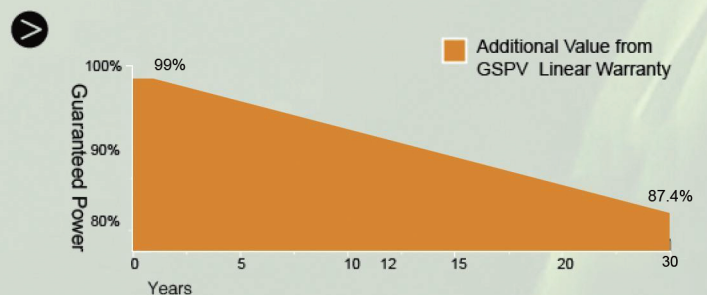
GSPV-M12/144H-425W-450W 425~450 Watt

➤ 210mm 144 Cells PV Solar Module

BLACK *BLACK FRAME/BLACK BACK-SHEET PRODUCTS ARE AVAILABLE UPON REQUEST

➤

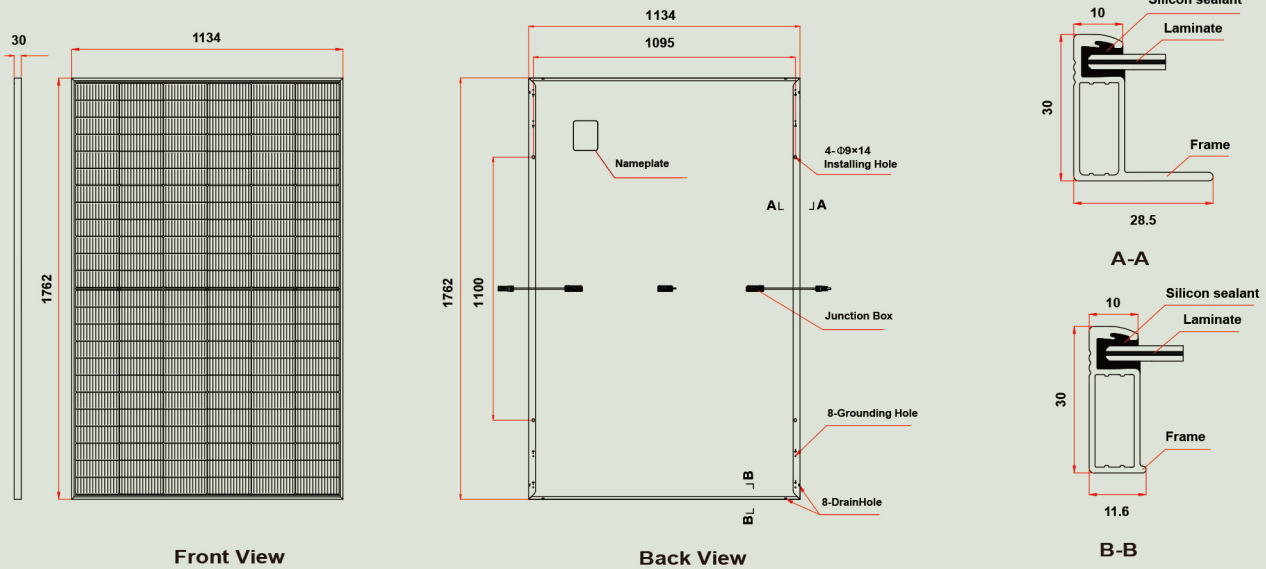
15 Years Product Workmanship Warranty	30 Years Power Warranty	0.40 % Annual Power Attenuation	
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IEC61215
IEC61730
UL61215
UL61730



DIMENSIONS OF PV MODULE(mm)



ELECTRICAL DATA (STC)

Peak Power Watts-P _{MAX} (Wp)*	425	430	435	440	445	450
Power Tolerance-P _{MAX} (W)	0 ~ +5					
Maximum Power Voltage-V _{MPP} (V)	42.9	43.2	43.6	44.0	44.3	44.6
Maximum Power Current-I _{MPP} (A)	9.92	9.96	9.99	10.01	10.06	10.09
Open Circuit Voltage-V _{OC} (V)	50.9	51.4	51.8	52.2	52.6	52.9
Short Circuit Current-I _{SC} (A)	10.56	10.59	10.64	10.67	10.71	10.74
Module Efficiency η _m (%)	21.3	21.5	21.8	22.0	22.3	22.5

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5. *Measuring tolerance: ±3%.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	144 cells
Module Dimensions	1762×1134×30 mm (69.06×43.15×1.18 inches)
Weight	21.0 kg (46.30 lb)
Front Glass	1.6 mm (0.06 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	EVA/POE
Back Glass	1.6mm(0.06 inches), Heat Strengthened Glass
Frame	30mm(0.06 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²) Portrait: 350/280 mm(13.78/11.02 inches) Length can be customized
Connector	MC4 EVO2 / TS4 Plus / TS4*

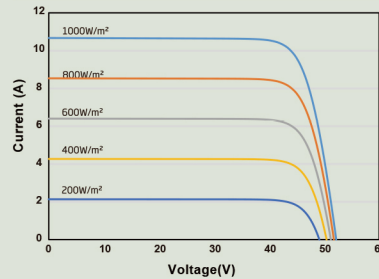
*Please refer to regional datasheet for specified connector.

ELECTRICAL DATA (NOCT)

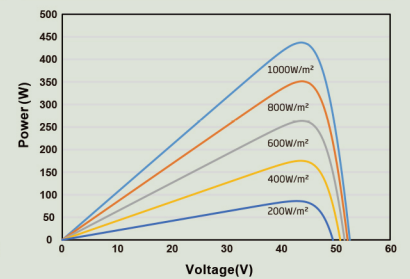
Maximum Power-P _{MAX} (Wp)	324	328	332	335	339	343
Maximum Power Voltage-V _{MPP} (V)	40.0	40.4	40.7	41.0	41.3	41.6
Maximum Power Current-I _{MPP} (A)	8.09	8.11	8.15	8.17	8.20	8.24
Open Circuit Voltage-V _{OC} (V)	48.2	48.7	49.1	49.4	49.8	50.1
Short Circuit Current-I _{SC} (A)	8.51	8.53	8.57	8.60	8.63	8.65

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

I-V CURVES OF PV MODULE(440W)



P-V CURVES OF PV MODULE(440W)



TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43°C (22°C)
Temperature Coefficient of P _{MAX}	-0.30%/°C
Temperature Coefficient of V _{OC}	-0.24%/°C
Temperature Coefficient of I _{SC}	0.04%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	20A

WARRANTY

15 year Product Workmanship Warranty
30 year Power Warranty
1% first year degradation
0.4% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING

Modules per box: 36 pieces
Modules per 40' container: 936 pieces