

PERC**MAX**

# BIFACIAL

HIGH PERFORMANCE  
BIFACIAL MONOCRYSTALLINE  
P.E.R.C MODULE

144

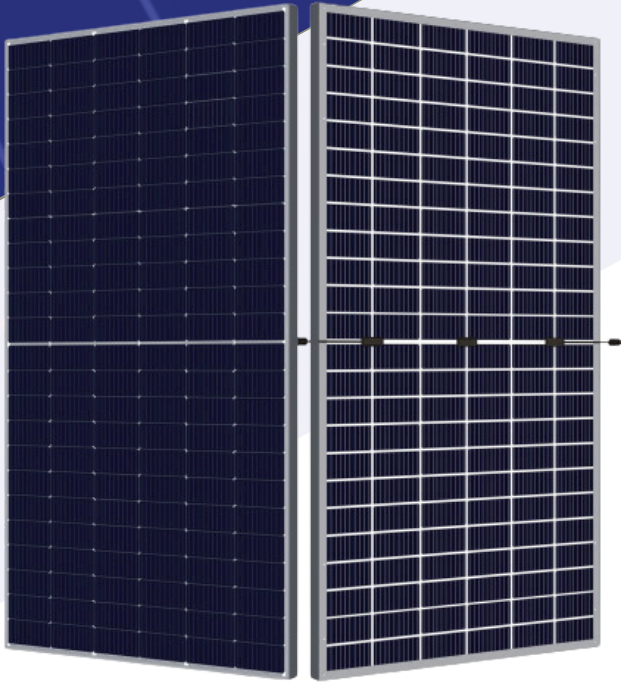
## TM - 455/475M-144BI

**144 CELL**  
Mono PERC Module









**455 - 475Wp**  
Power Output Range

**1500VDC**  
Maximum System Voltage

**21.90%**  
Maximum Efficiency



### KEY SALIENT FEATURES

-  Industry leading lowest thermal co-efficient of power
-  Industry leading 15 years product warranty
-  Excellent low irradiance performance
-  Excellent PID resistance
-  Positive power tolerance of 0~+3%
-  Fully automated production at all stages
-  Fully Reduced power loss by minimizing the effect of shadow shading ( 9 - 18 Busbar)
-  European Warranty & After - Sales Service



### TAMESOL BUILDING A GREEN FUTURE S.L

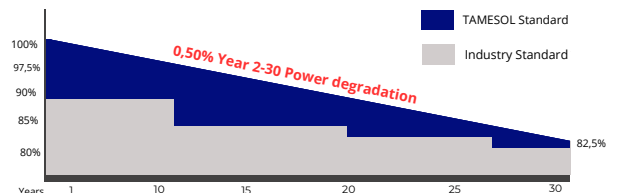
TAMESOL is a global provider of high-efficiency PV panels with a 10GW annual production capacity and a 100% automated production line, innovating state-of-the-art products for over 15 years. Our panels have been installed in more than 50 countries, with over 20 million panels already connected to the grid.

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### LINEAR PERFORMANCE WARRANTY

15 year Product Warranty / 30-Year Linear Power Warranty



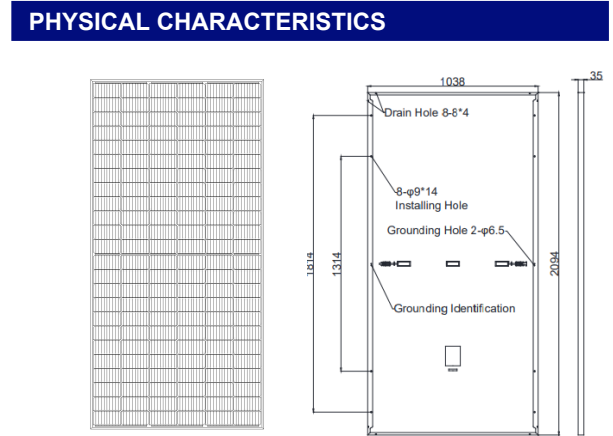
**TAMESOL** 15  
YEARS

*Since 2007, building a green future*

<b>21,90%</b> MAX MODULE EFFICIENCY	<b>0 - +3%</b> POWER TOLERANCE	<b>2,0%</b> FIRST YEAR POWER DEGRADATION	<b>0,50%</b> YEAR 2-30 POWER DEGRADATION	<b>PERC CELL</b> Lower operating temperature
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ELECTRICAL CHARACTERISTICS		STC: AM1.5 1.000W/m2 NOTC: AM1.5 800W/m2 20° 1 m/s Test uncertainty for Pmax 0 - +3%									
Module type	TM - 455M-144BI		TM - 460M-144BI		TM - 465M-144BI		TM - 470M-144BI		TM - 475M-144BI		
	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	
Maximum Power (Pmax/w)	455	339.6	460	343.3	465	347.1	470	350.9	475	354.8	
Open Circuit Voltage (Voc/V)	49.64	46.20	49.96	46.50	50.32	46.80	50.67	47.10	54.03	47.40	
Short Circuit Current (Isc/A)	11.42	9.13	11.47	9.16	11.52	9.19	11.56	9.22	11.61	9.25	
Voltage at Maximum Power (Vmp/V)	41.83	39.30	42.11	39.60	42.37	39.90	42.65	40.20	42.91	40.507	
Current at maximum Power (Imp/A)	10.88	8.64	10.93	8.67	10.98	8.70	11.02	8.73	11.07	8.76	
Module Efficiency (%)	20,90%		21,20%		21,40%		21,60%		21,90%		

MECHANICAL PARAMETERS	
Cell Orientation	single crystal PERC166x83mm (144 pieces)
Junction Box	IP68, three diodes
Output Cable	4.0mm <sup>2</sup> , 300mm /1300mm
Glass	3.2mm tempered coated glass, low iron
Frame	Anodized aluminum alloy frame
Weight	26.7kg
Dimensión	2094*1038*30mm
Packaging	35 pcs*pallet / 700*40HQ



OPERATING PARAMETERS	
Operational Temperature	-40°C - +85°C
Power Output Tolerance	(0, +3%)
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	20 A
Nominal Operating Cell Temperature	45±2°C
Protection Glass	Class II
Fire Rating	Class C
Bifacial- Factor	70%±5%

MECHANICAL LOADING	
Front Side Maximum Static Loading	5400 PA
Rear Side Maximum Static Loading	2400 PA

TEMPERATURA RATINGS (STC)	
Temperature Coefficient of Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.28%/°C
Temperature Coefficient of Pmax	-0.36%/°C

PACKING MANNER	
Container	40ft(HQ)
Number of modules per container	700
Number of modules per pallet	35
Number of pallets per container	20

TAMESOL Authorized Solar Dealer

**Note:** The specifications are obtained under the Standard Test Conditions (STCs): 1000 W/m2 solar irradiance, 1.5 Air Mass, and cell temperature of 25°C. The NOCT is obtained under the Test Conditions: 800 W/m2, 20°C ambient temperature, 1m/s wind speed, AM 1.5 spectrum. Please contact [info@tamesol.com](mailto:info@tamesol.com) for technical support. The actual transactions will be subject to the contracts. This parameter is for reference only and it is not a part of the contracts. The specifications are subject to change without prior notice.