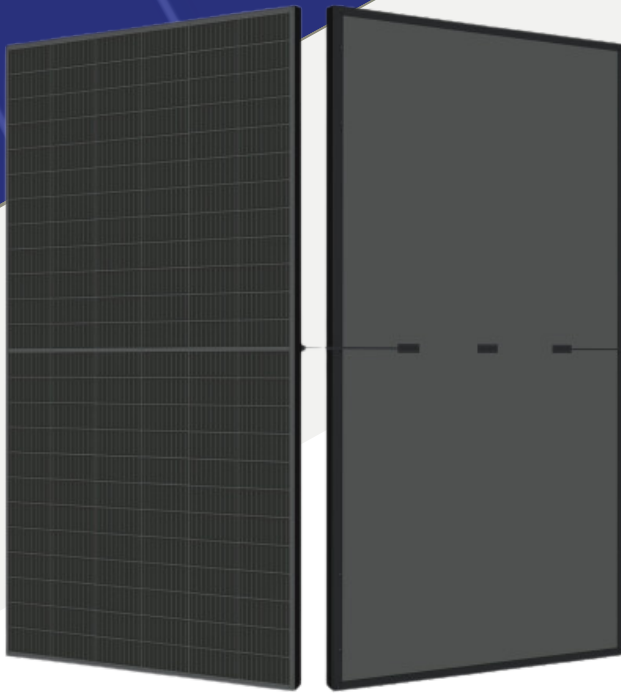


PERC**MAX**

# ALL BLACK

HIGH PERFORMANCE  
MONOCRYSTALLINE  
P.E.R.C MODULE

144



## TM - 430/450M-144AB









**144 CELL**  
Mono PERC Module

**430 - 450Wp**  
Power Output Range

**1500VDC**  
Maximum System Voltage

**20.70%**  
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



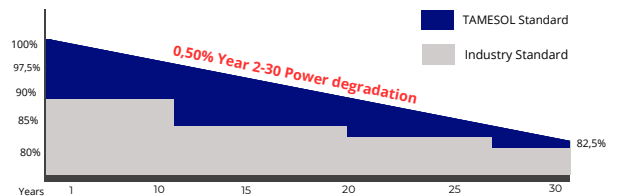
### TAMESOL BUILDING A GREEN FUTURE S.L

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.

Tel : +34 872 222 388  
E - mail: [info@tamesol.com](mailto:info@tamesol.com) Website: [www.tamesol.com](http://www.tamesol.com)

### LINEAR PERFORMANCE WARRANTY

15 year Product Warranty / 30-Year Linear Power Warranty

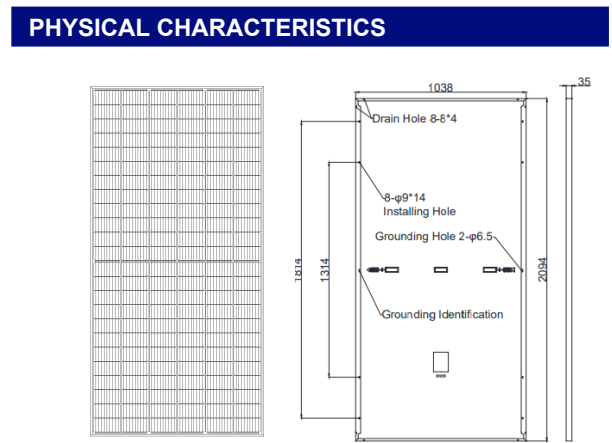


*Since 2007, building a green future*

<b>20,70%</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 +-3%									
Module type	TM - 430M-144AB		TM - 435M-144AB		TM - 440M-144AB		TM - 445M-144AB		TM - 450M-144AB		
Testing condition	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	
Maximum Power (Pmax/w)	430	320	435	324	440	327	445	331	450	335	
Open Circuit Voltage (Voc/V)	49,3	46,6	49,5	46,8	49,7	47,0	49,9	47,2	50,1	47,4	
Short Circuit Current (Isc/A)	11,32	8,90	11,4	8,96	11,47	9,00	11,54	9,09	11,61	9,15	
Voltage at Maximum Power (Vmp/V)	41,2	38,8	41,3	39,0	41,4	39,2	41,6	39,3	41,8	39,5	
Current at maximum Power (Imp/A)	10,44	8,25	10,54	8,31	10,63	8,35	10,7	8,43	10,77	8,49	
Module Efficiency (%)	19,78%		20,01%		20,24%		20,47%		20,70%		

MECHANICAL PARAMETERS	
Cell Orientation	single crystal PERC166x83mm (144 pieces)
Junction Box	IP68, three diodes
Output Cable	4.0mm² 300mm(+)/ 300mm(-) or customized
Glass	3.2mm high transparency, tempered glass
Frame	Anodized aluminum alloy frame
Weight	23 kg
Dimensión	2094*1038*35mm
Packaging	31+2* pcs*pallet / 726pcs*40HC



OPERATING PARAMETERS	
Operational Temperature	-40°C - +85°C
Power Output Tolerance	(0, +3%)
Voc and Isc Tolerance	±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

MECHANICAL LOADING	
Front Side Maximum Static Loading	5400 PA
Rear Side Maximum Static Loading	2400 PA
Hailstone Test	Diameter 25mm, impact speed 23m/s

TEMPERATURA RATINGS (STC)	
Temperature Coefficient of Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.27%/°C
Temperature Coefficient of Pmax	-0.35%/°C

PACKING MANNER	
Container	40ft(HQ)
Number of modules per container	726
Number of modules per pallet	31+2*
Number of pallets per container	22

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.