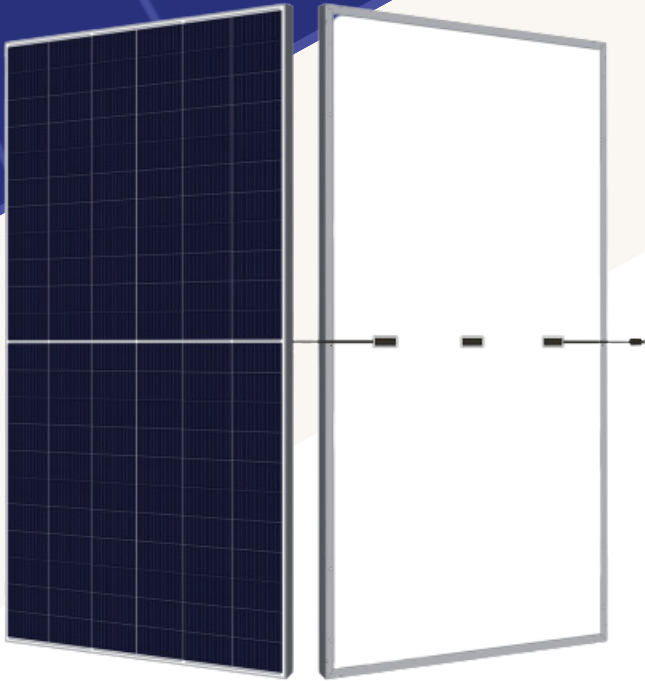


# PERC**MAX**

HIGH PERFORMANCE  
MONOCRYSTALLINE  
P.E.R.C MODULE



144

## TM - 430/450M-144HC

**144 CELL**  
Mono PERC Module

**430 - 450Wp**  
Power Output Range

**1500VDC**  
Maximum System Voltage

**20.7%**  
Maximum Efficiency

### KEY SALIENT FEATURES

-  Industry leading lowest thermal co-efficient of power
-  Industry leading 25 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.

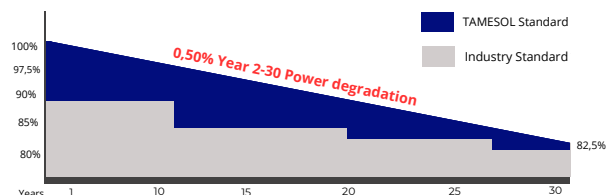
Tel : +34 872 222 388

E - mail: [info@tamesol.com](mailto:info@tamesol.com) Website: [www.tamesol.com](http://www.tamesol.com)

**TAMESOL**  
— be bright, go solar —

### LINEAR PERFORMANCE WARRANTY

25 year Product Warranty / 30-Year Linear Power Warranty



*Since 2007, building a green future*

**20,7%**  
MAX MODULE  
EFFICIENCY

**0 - 3%**  
POWER  
TOLERANCE

**2,0%**  
FIRST YEAR POWER  
DEGRADATION

**0,50%**  
YEAR 2-30  
POWER DEGRADATION

**PERC CELL**  
Lower operating temperature

## ELECTRICAL CHARACTERISTICS

STC: AM1.5 1.000W/m<sup>2</sup> NOTC: AM1.5 800W/m<sup>2</sup> 20° 1 m/s Test uncertainty for Pmax +3%

Module type	TM - 430M-144HC		TM - 435M-144HC		TM - 440M-144HC		TM - 445M-144HC		TM - 450M-144HC	
	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC
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%	14,72%	20,01%	14,91%	20,24%	15,04%	20,47%	15,23%	20,70%	15,41%

## MECHANICAL PARAMETERS

Cell Orientation	single crystal PERC166x83mm (144 pieces)
Junction Box	IP68, three diodes
Output Cable	4.0mm <sup>2</sup> 300mm(+) / 300mm(-) or customized
Glass	3.2mm tempered coated glass, low iron
Frame	Anodized aluminum alloy frame
Weight	23 kg
Dimensión	2094*1038*35mm
Packaging	31+2* pcs*pallet / 255pcs*20GP / 726pcs*40HC

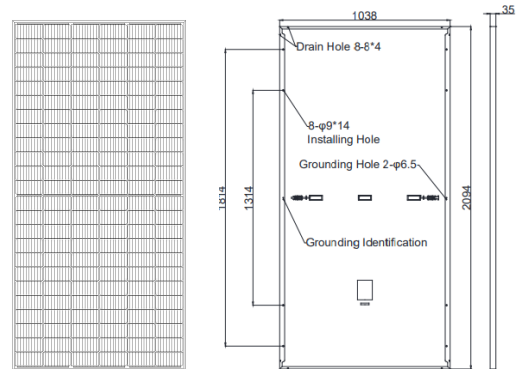
## OPERATING PARAMETERS

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

## PACKING MANNER

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

## PHYSICAL CHARACTERISTICS



## 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

TAMESOL Authorized Solar Dealer

**Note:** The specifications are obtained under the Standard Test Conditions (STCs): 1000 W/m<sup>2</sup> solar irradiance, 1.5 Air Mass, and cell temperature of 25°C. The NOCT is obtained under the Test Conditions: 800 W/m<sup>2</sup>, 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.