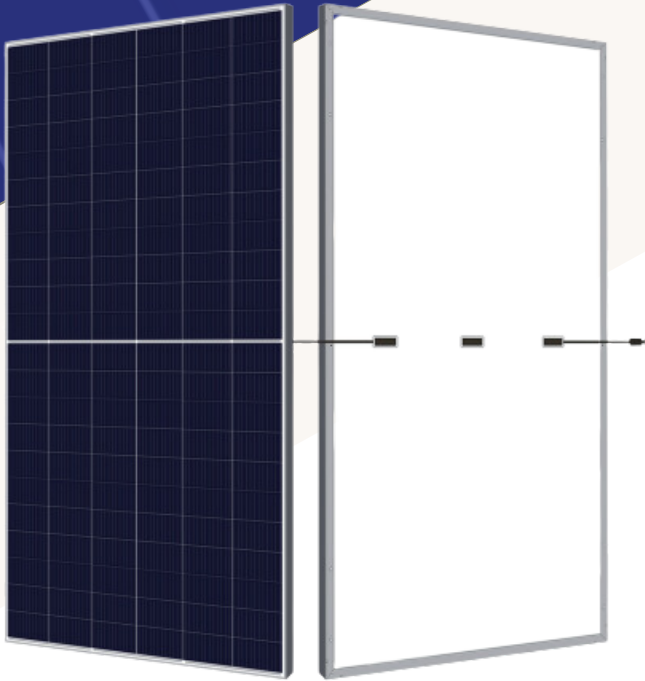


PERC**MAX**

HIGH PERFORMANCE
MONOCRYSTALLINE
P.E.R.C MODULE



132

TM - 650/670M-132HC

132 CELL
Mono PERC Module

650 - 670Wp
Power Output Range

1500VDC
Maximum System Voltage

21.6%
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

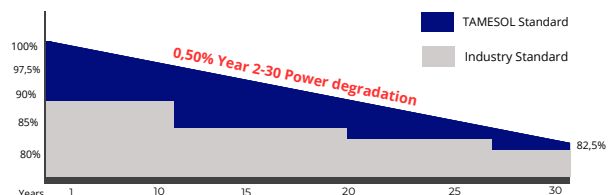
TAMESOL is a global provider of high-efficiency PV panels with a 10GW annual production capacity and a 100% automated production line, innovating state-of-the-art products for over 15 years. Our panels have been installed in more than 50 countries, with over 20 million panels already connected to the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

Tel : +34 872 222 388

E - mail: info@tamesol.com Website: www.tamesol.com

LINEAR PERFORMANCE WARRANTY

25 year Product Warranty / 30-Year Linear Power Warranty



TAMESOL
— be bright, go solar —

Since 2007, building a green future

21,6%
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

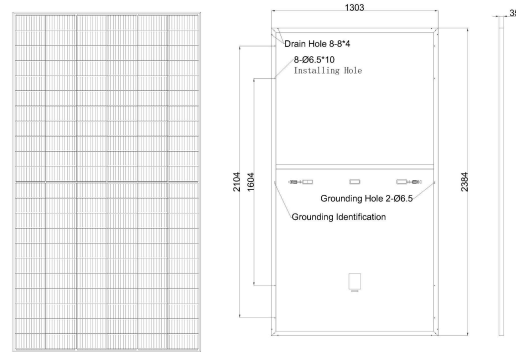
STC: AM1.5 1.000W/m² NOTC: AM1.5 800W/m² 20° 1 m/s Test uncertainty for Pmax +3%

Module type	TM - 650M-132HC		TM - 655M-132HC		TM - 660M-132HC		TM - 665M-132HC		TM - 670M-132HC	
	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)	650	484	655	487	660	491	665	495	670	498
Open Circuit Voltage (Voc/V)	45.0	42,6	45,2	42,8	45,4	43,0	45,6	43,1	45,8	43,3
Short Circuit Current (Isc/A)	18,39	14,41	18,43	14,43	18,47	14,48	18,51	14,57	18,55	14,58
Voltage at Maximum Power (Vmp/V)	37,6	35,7	37,8	35,9	38.0	36,05	38,2	36,1	38,4	36,3
Current at maximum Power (Imp/A)	17,29	13,56	17,33	13,57	17,37	13,62	17,41	13,71	17,45	13,72
Module Efficiency (%)	20,90%	15,58%	21,10%	15,68%	21,30%	15,81%	21,40%	15,94%	21,60%	16,03%

MECHANICAL PARAMETERS

Cell Orientation	single crystal PERC 210x105mm (132 pieces)
Junction Box	IP68, three diodes
Output Cable	4.0mm ² 300mm(+) / 300mm(-) or customized
Glass	3.2mm tempered coated glass, low iron
Frame	Anodized aluminum alloy frame
Weight	32 kg
Dimensión	2384*1303*35mm
Packaging	31 pcs*pallet / 124pcs*20GP / 558pcs*40HC

PHYSICAL CHARACTERISTICS



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	30 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	558
Number of modules per pallet	31
Number of pallets per container	18

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 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.