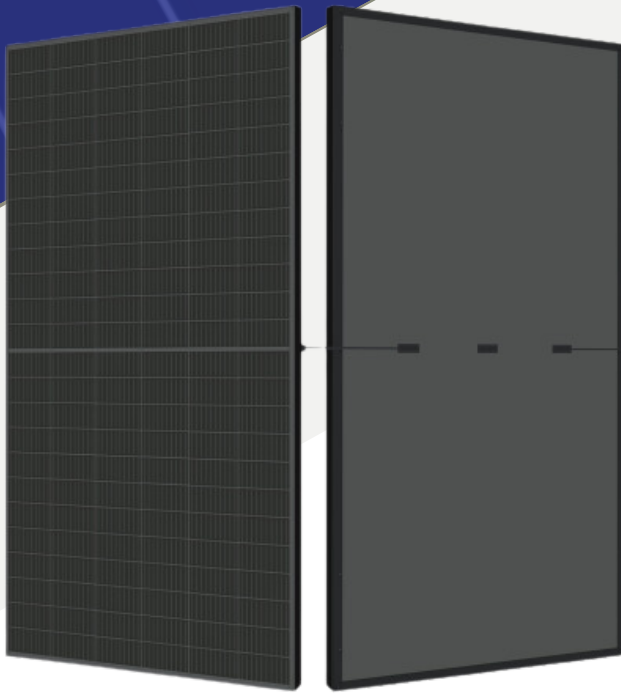


PERC**MAX**

ALL BLACK

HIGH PERFORMANCE
MONOCRYSTALLINE
P.E.R.C MODULE

132



TM - 650/670M-132AB

132 CELL
Mono PERC Module

650 - 670Wp
Power Output Range

1500VDC
Maximum System Voltage

21.60%
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



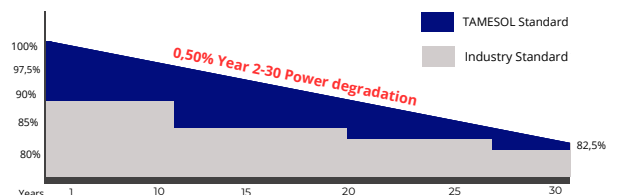
TAMESOL BUILDING A GREEN FUTURE S.L

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 Website: www.tamesol.com

LINEAR PERFORMANCE WARRANTY

15 year Product Warranty / 30-Year Linear Power Warranty



Since 2007, building a green future

21,60% MAX MODULE EFFICIENCY	0 - +3% POWER TOLERANCE	2,0% FIRST YEAR POWER DEGRADATION	0,55% YEAR 2-30 POWER DEGRADATION	PERC CELL Lower operating temperature
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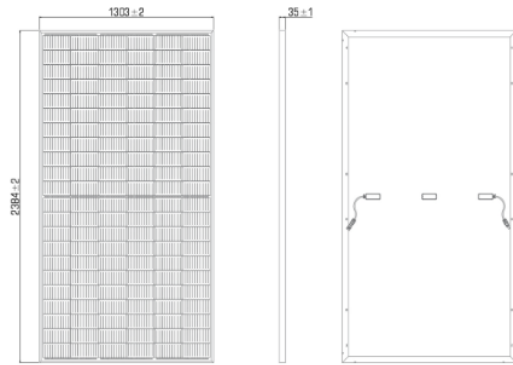
ELECTRICAL CHARACTERISTICS STC: AM1.5 1.000W/m2 NOTC: AM1.5 800W/m2 20° 1 m/s Test uncertainty for Pmax 0 - +3%

Module type	TM - 650M-132AB		TM - 655M-132AB		TM - 660M-132AB		TM - 665M-132AB		TM - 670M-132AB	
	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC
Maximum Power (Pmax/w)	650	491	655	495	660	499	665	503	670	507
Open Circuit Voltage (Voc/V)	45.60	43.32	45,80	43.51	46.00	43,70	46.20	43,89	46.50	44.18
Short Circuit Current (Isc/A)	17.83	14,26	17.87	14,30	17.91	14,33	17.95	14,36	17.99	14,39
Voltage at Maximum Power (Vmp/V)	38.08	35.98	38.29	36.18	38.49	36,37	38,68	36,56	38,88	36,75
Current at maximum Power (Imp/A)	17,07	13,66	17,11	13,69	17,15	13,72	17,19	13,75	17,23	13,78
Module Efficiency (%)	20,90%		21,10%		21,30%		21,40%		21,60%	

MECHANICAL PARAMETERS

Cell Orientation	single crystal PERC 210x105mm (132 pieces)
Junction Box	IP68, three diodes
Output Cable	3.00mm, 1200mm(can be customized)
Glass	3.2mm high transparency, tempered glass
Frame	Anodized aluminum alloy frame
Weight	34 kg
Dimensión	2384*1303*35mm
Packaging	31 pcs*pallet / 558pcs*40HQ

PHYSICAL CHARACTERISTICS



OPERATING PARAMETERS

Operational Temperature	-40°C - +85°C
Power Output Tolerance	(0, +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

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.