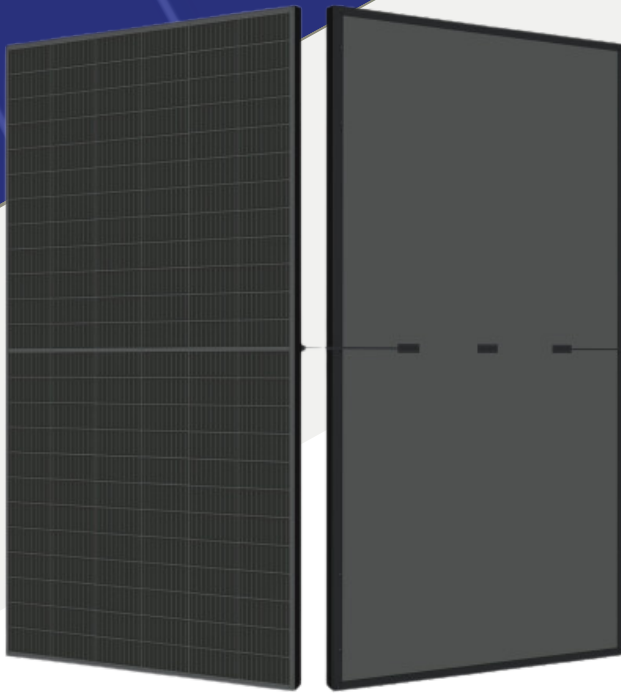


TOPSUN

ALL BLACK

HIGH PERFORMANCE
MONOCRYSTALLINE
N- TYPE TECHNOLOGY

156



TOP - 610/630M-156AB

156 CELL
Mono N - Type Module

610 - 630Wp
Power Output Range

1500VDC
Maximum System Voltage

22.53%
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

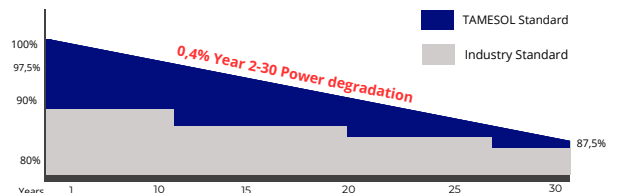
TAMESOL is a global provider of high-efficiency PV panels with a 10GW annual production capacity and a 100% automated production line, innovating state-of-the-art products for over 15 years. Our panels have been installed in more than 50 countries, with over 20 million panels already connected to the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

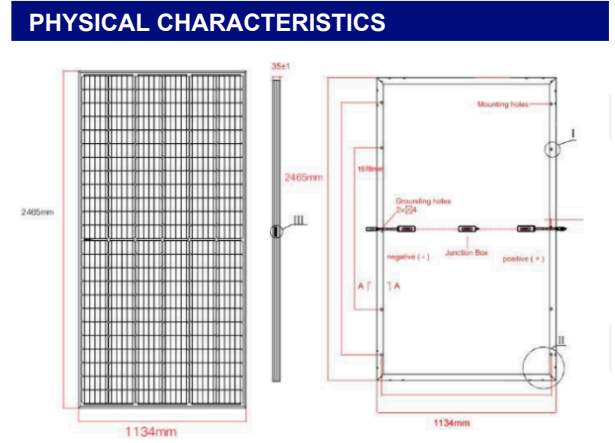
22,53% MAX MODULE EFFICIENCY	0 - 3% POWER TOLERANCE	1,0% FIRST YEAR POWER DEGRADATION	0,40% YEAR 2-30 POWER DEGRADATION	N-TYPE CELL Lower operating temperature
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ELECTRICAL CHARACTERISTICS STC: AM1.5 1.000W/m2 NOTC: AM1.5 800W/m2 20° 1 m/s Test uncertainty for Pmax 0 - +3%											
Module type	TOP - 610M-156AB		TOP - 615M-156AB		TOP - 620M-156AB		TOP - 625M-156AB		TOP - 630M-156AB		
Testing condition	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	
Maximum Power (Pmax/w)	610	459	615	463	620	467	625	470	630	473	
Open Circuit Voltage (Voc/V)	55.33	52.56	55.48	52.70	55.63	52.84	55.78	52.98	55.93	53.12	
Short Circuit Current (Isc/A)	14.09	11,37	14,16	11,43	14.23	11,48	14,30	11,54	14.37	11,60	
Voltage at Maximum Power (Vmp/V)	45.66	42.28	45.76	42.49	45.86	42.61	45.96	42.72	46.06	42.83	
Current at maximum Power (Imp/A)	13,36	10,83	13,44	10,89	13.52	10,95	13,60	11,01	13.67	11,04	
Module Efficiency (%)	22.02%		22,20%		22,38%		22,44%		22,53%		

MECHANICAL PARAMETERS	
Cell Orientation	single crystal N-Topcon 182x91mm (156 pieces)
Junction Box	IP68, three diodes
Output Cable	1200mm (can be customized)
Glass	3.2mm high transparency, tempered glass
Frame	Anodized aluminum alloy frame
Weight	31kg
Dimensión	2465*1134*35mm
Packaging	31 pcs*pallet / 496 pcs*40HQ

OPERATING PARAMETERS	
Operational Temperature	-40°C - +85°C
Power Output Tolerance	(0, +3%)
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	25 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	496
Number of modules per pallet	31
Number of pallets per container	20



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

TEMPERATURA RATINGS (STC)	
Temperature Coefficient of Isc	+0.046%/°C
Temperature Coefficient of Voc	-0.27%/°C
Temperature Coefficient of Pmax	-0.30%/°C

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.