

TOPSUN

BISOL

HIGH PERFORMANCE
MONOCRYSTALLINE
N-TYPE TECHNOLOGY
DOUBLE GLASS

108

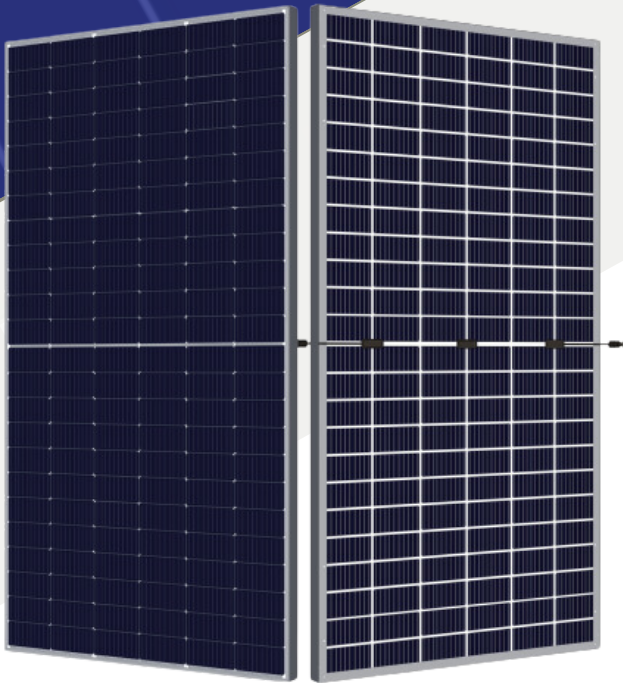
TOP - 430/455M-108BI

108 CELL
Mono N - Type Module









430 - 455Wp
Power Output Range

1500VDC
Maximum System Voltage

22.80%
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



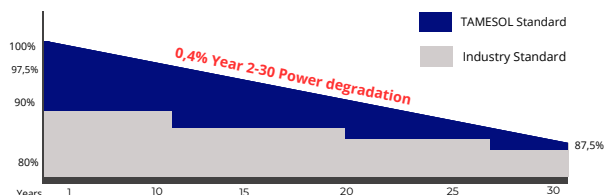
TAMESOL BUILDING A GREEN FUTURE S.L

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.

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LINEAR PERFORMANCE WARRANTY

25 year Product Warranty / 30-Year Linear Power Warranty



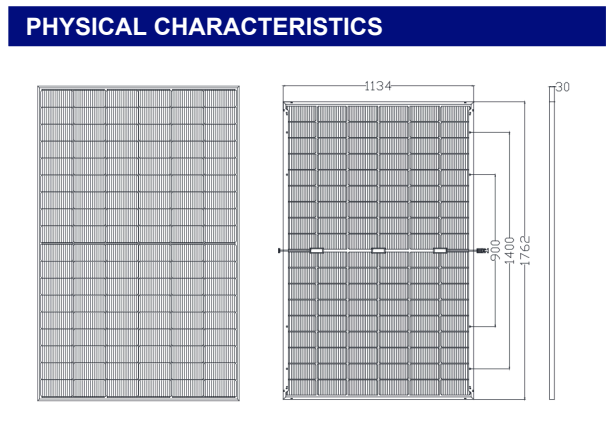
TAMESOL
— be bright, go solar —

Since 2007, building a green future

22,80% 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 +-3%									
Module type	TOP - 435M-108BI		TOP - 440M-108BI		TOP - 445M-108BI		TOP - 450M-108BI		TOP - 455M-108BI		
Testing condition	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	
Maximum Power (Pmax/w)	435	327	440	331	445	335	450	338	455	342	
Open Circuit Voltage (Voc/V)	38,70	36,77	38,90	36,96	39,10	37,15	39,30	37,34	39,50	37,53	
Short Circuit Current (Isc/A)	14,23	11,26	14,31	11,33	14,40	11,41	14,48	11,45	14,56	11,52	
Voltage at Maximum Power (Vmp/V)	32,29	30,68	32,47	30,85	32,65	31,02	32,82	31,18	33,00	31,35	
Current at maximum Power (Imp/A)	13,47	10,66	13,55	10,73	13,63	10,80	13,71	10,84	13,79	10,91	
Module Efficiency (%)	21,80%	16,4%	22,00%	16,6%	22,3%	16,8%	22,5%	16,9%	22,80%	17,1%	

MECHANICAL PARAMETERS	
Cell Orientation	single crystal N-Topcon 182x94mm (108 pieces)
Junction Box	IP68, three diodes
Output Cable	4.0mm² 300mm(+) / 300mm(-) or customized
Glass	1.6mm tempered coated glass, low iron
Frame	Anodized aluminum alloy frame
Weight	22 kg
Dimensión	1762*1134*30mm
Packaging	36 pcs*pallet / 366pcs*20GP / 936pcs*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	30 A
Nominal Operating Cell Temperature	45±2°C
Protection Glass	Class II
Fire Rating	Class C
Bifacial - Factor	80% ± 10%

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	+0.046%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Pmax	-0.30%/°C

PACKING MANNER	
Container	40ft(HQ)
Number of modules per container	936
Number of modules per pallet	36
Number of pallets per container	26

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.