

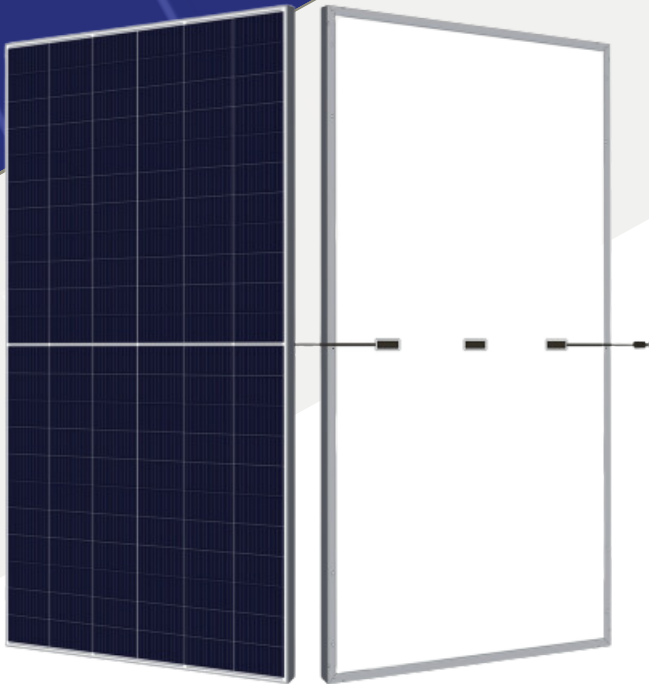
## TOP - 415/435M-108HC

**108 CELL**  
Mono N - Type Module









**415 - 435Wp**  
Power Output Range

**1500VDC**  
Maximum System Voltage

**22.28%**  
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



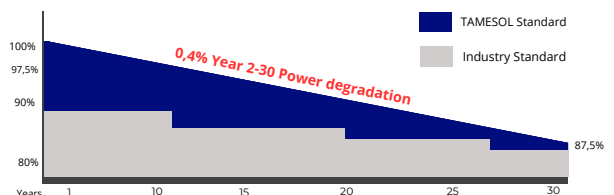
### TAMESOL BUILDING A GREEN FUTURE S.L

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

### LINEAR PERFORMANCE WARRANTY

15 year Product Warranty / 30-Year Linear Power Warranty



**22,28%**

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

## 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 - 415M-108HC		TOP - 420M-108HC		TOP - 425M-108HC		TOP - 430M-108HC		TOP - 435M-108HC	
	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC	STC	NOTC
Testing condition										
Maximum Power (Pmax/w)	415	312	420	316	425	320	430	323	435	327
Open Circuit Voltage (Voc/V)	37,92	36,02	38,11	36,20	38,30	36,39	38,49	36,57	38,68	36,75
Short Circuit Current (Isc/A)	13,99	11,07	14,07	11,15	14,15	11,22	14,23	11,26	14,31	11,33
Voltage at Maximum Power (Vmp/V)	31,32	29,75	31,51	29,93	31,70	30,12	31,88	30,29	32,06	30,46
Current at maximum Power (Imp/A)	13,25	10,49	13,33	10,56	13,41	10,63	13,49	10,67	13,57	10,74
Module Efficiency (%)	21,25%		21,51%		21,76%		22,02%		22,28%	

## MECHANICAL PARAMETERS

Cell Orientation Single crystal N-Topcon 182x91/182mm (108 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

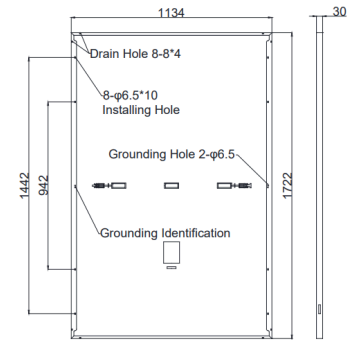
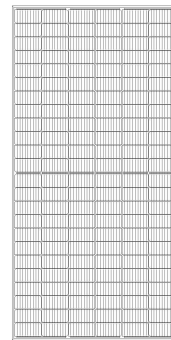
Frame Anodized aluminum alloy frame

Weight 21 kg

Dimensión 1722\*1134\*30mm

Packaging 31/36 pcs\*pallet /806/ 936pcs\*40HC

## PHYSICAL CHARACTERISTICS



## 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

## 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 -0.25%/°C

Temperature Coefficient of Pmax -0.30%/°C

## PACKING MANNER

Container 40ft(HQ)

Number of modules per container 806/936

Number of modules per pallet 31/36

Number of pallets per container 26

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.