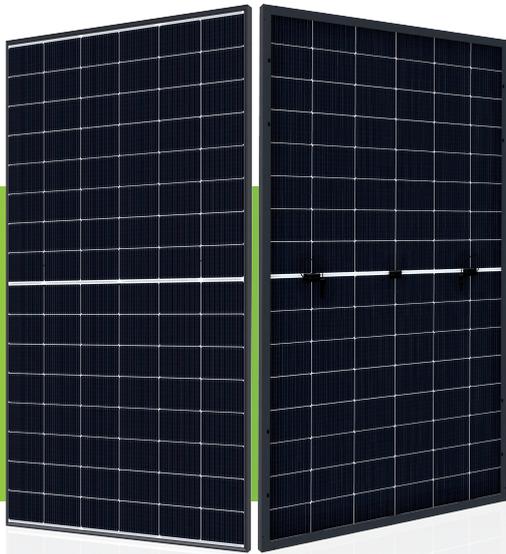


**ELNSM48M-HC-HV-N Series**



**MBB HC BIFACIAL  
RECTANGULAR TOPCON CELL  
PV MODULE  
435 - 460W**

**Bifacial N Type Glass Glass Series**

Sirius redefined the high-efficiency module series by integrating 182\*210 mm silicon wafers with multi-busbar and half-cutcell technologies. Sirius combined creative technology with 182\*210 mm N Type module. This caused effectively and extremely improved the module efficiency and power output.

**KEY FEATURES**



With the composite frame, lower carbon footprint, severe weather endurance, enhanced PID protection and exceptional corrosion shielding.  
*(These features are only valid when the composite frame is used.)*



Less mismatch to get more power.



Less power loss by minimizing the shading impact.



Competitive low light performance.



**SMBB Technology**  
Better light trapping and current collection to improve module power output and reliability.



In stringent environment condition:  
• Sand, acid, salt and hailstones  
• 2400 Pa wind load and 5400 Pa snow load.  
• PID free



3 times EL test to ensure best quality

**QUALITY SYSTEM**

- ISO 9001:2015 / Quality Management System
- ISO 14001:2015 / Environmental Management System
- ISO 45001: 2018 / Occupation Health Safety Management System
- ISO 50001:2018 / Energy Management System
- ISO 27001:2013 / Information Security Management System
- ISO 10002:2018 / Customer Satisfaction Management System
- ISO 37001:2016 / Anti-bribery Management Systems
- ISO 26000:2021 / Social Responsibility Management System

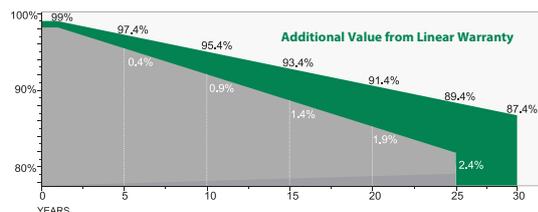
**PRODUCT CERTIFICATION**



IEC 61215 / 61730 , IEC 62804 (PID)  
TS EN 61215 , TS EN 61730  
UL 61730-1 , UL 61730-2

**WARRANTY**

**12 YEARS** Guarantee On Product      **30 YEARS** Linear Power Output Warranty



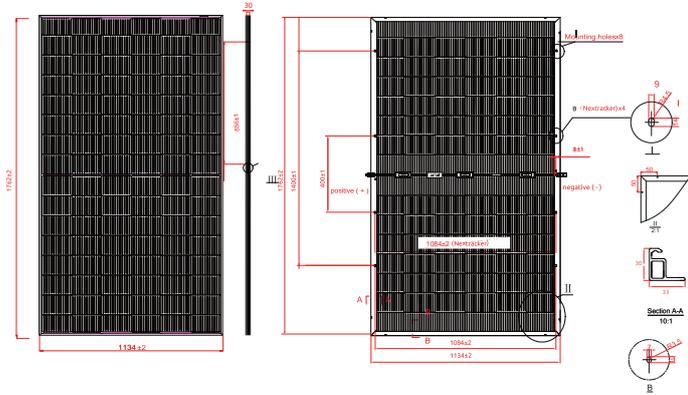


# SIRIUS

powered by **ELiN**



## ELNSM48M-HC-HV-N Series



### MECHANICAL SPECIFICATIONS

External Dimension	1762 x 1134 x 30 mm
Weight	26 kg
Solar Cells	Topcon 182 x 105 mm (96 pcs)
Glass	Dual Glass 2.0+2.0 mm AR coating tempered glass, low iron
Frame*	Composite(black)
Junction Box	IP68,3 diodes
Output Cables	4.0mm <sup>2</sup> (IEC), 12 AWG (UL)
Cable Length**	350 mm (+) / 350 mm (-) or Customized Length
Packing Configuration	36pcs / Pallet, 864 pcs / 24 Pallet / 40' Container

\*The frame is constructed from composite materials. If an aluminum frame is selected, it can be customized as silver/black.

\*\*Output cable lengths should be specified at the time of order.

### ELECTRICAL SPECIFICATIONS (STC)

Module Type : ELNSM48M-HC-HV-N

Maximum Power-P <sub>mp</sub> (W)	435	440	445	450	455	460
Open Circuit Voltage-V <sub>oc</sub> (V)	35.18V	35.38V	35.58V	35.78V	35.98V	36.18V
Short Circuit Current-I <sub>sc</sub> (A)	15.75A	15.80A	15.85A	15.90A	15.95A	16.00A
Maximum Power Voltage-V <sub>mp</sub> (V)	29.21V	29.41V	29.61V	29.81V	30.01V	30.21V
Maximum Power Current-I <sub>mp</sub> (A)	14.90A	14.97A	15.03A	15.10A	15.17A	15.23A
STC Module Efficiency-η <sub>m</sub> (%)	21.77%	22.02%	22.27%	22.52%	22.77%	23.02%

\*Measurement Tolerance +/- 3%  
STC: Irradiance 1000W/m<sup>2</sup>, module temperature 25°C, AM=1.5  
BNPI: front: 1000 W/m<sup>2</sup>/rear: 135 W/m<sup>2</sup>

### ELECTRICAL SPECIFICATIONS (BNPI)

Module Type: ELNSM48M-HC-HV-N

Maximum Power-P <sub>mp</sub> (W)	482	488	493	499	504	510
Open Circuit Voltage-V <sub>oc</sub> (V)	35.26V	35.46V	35.66V	35.86V	36.06V	36.26V
Short Circuit Current-I <sub>sc</sub> (A)	17.45A	17.51A	17.56A	17.62A	17.67A	17.73A
Maximum Power Voltage-V <sub>mp</sub> (V)	29.29V	29.49V	29.69V	29.89V	30.09V	30.29V
Maximum Power Current-I <sub>mp</sub> (A)	16.46A	16.53A	16.61A	16.68A	16.75A	16.83A

BNPI: Front Side 1000 W/m<sup>2</sup>, Rear Side 135 W/m<sup>2</sup>.

### REAR SIDE POWER GAIN (ELNSM48M-HC-HV-N-450)

Module Type ELNSM48M-HC-HV-N

Power Gain	10%	15%	20%	25%	30%
Maximum Power-P <sub>mp</sub> (W)	495	518	540	563	585
Open Circuit Voltage-V <sub>oc</sub> (V)	35.78	35.78	35.78	35.78	35.78
Short Circuit Current-I <sub>sc</sub> (A)	17.49	18.29	19.08	19.88	20.67
Maximum Power Voltage-V <sub>mp</sub> (V)	29.81	29.81	29.81	29.81	29.81
Maximum Power Current-I <sub>mp</sub> (A)	16.61	17.37	18.12	18.88	19.63

### TEMPERATURE PARAMETERS

Power Tolerance (W)	(0, +4.99)
P <sub>max</sub> Temperature Coefficient	-0.29 %/°C
V <sub>oc</sub> Temperature Coefficient	-0.25 %/°C
I <sub>sc</sub> Temperature Coefficient	+0.046 %/°C

### APPLICATION CONDITIONS

Maximum System Voltage	1500 VDC
Maximum Series Fuse Rating	30A
Operating Temperature	-40~+85°C
Nominal Operating Cell Temperature	45+2°C
Bifaciality	80%±5%
Mechanical Load	Front Side 5400 Pa / Rear Side 2400 Pa
I <sub>sc</sub> Temperature Coefficient	UL Type 29 / C Class

Specifications included in this datasheet are subject to change without prior notice.  
Made in Türkiye.

### I - V CURVE

