



**CERAMICA**  
ENERGY

# ALPIN Module

Glas / Glas - Bi-Facial - Transparent - Module

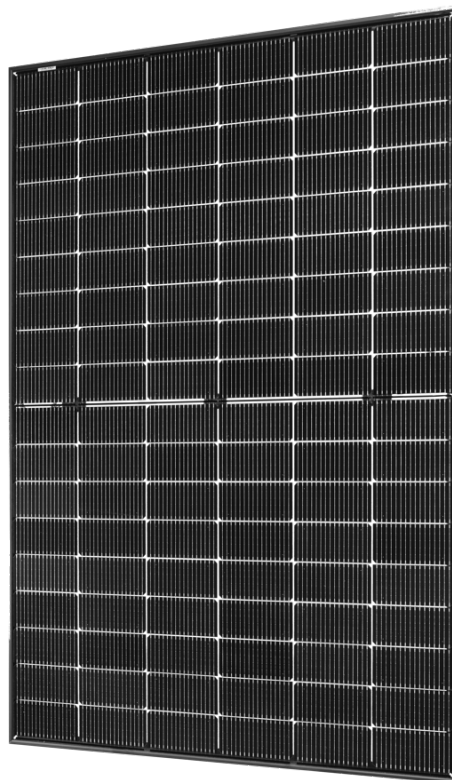
## ALPI18N-108 430-440W

TOPCon - Bifacial Module  
> 22.5 % Efficiency

Safety anti-reflection glass with 2x 3,2mm glass

Module withstand snow loads (10.000 Pa) and  
extreme wind (5.400 Pa)

25 YEARS Product warranty  
30 YEARS linear performance guarantee



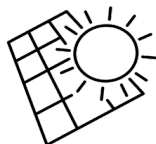
### Enhanced Power Output

Increased Efficiency: The use of high-quality half-cell technology improves module conversion efficiency, leading to greater power output.



### Superior Temperature Performance

Improved Output: Lower operating temperatures enhance overall performance, allowing the module to generate more power.



### Bifacial Effect Power Gain

Bifacial Effect: The ability to capture sunlight from both sides of the panel further boosts energy production.



### Long-Term Reliability

Durable Construction: Modules are constructed with reinforced glass to withstand harsh weather conditions and reduce the risk of cell damage, ensuring greater longevity.



### 30 Year Linear Performance Guarantee

30 Years performance guarantee with a max. annual reduction of 0.4% from the 2nd year

- 99% in the 1st year
- 92% at the end of the 20th year
- 87% at the end of the 30th year



### Certificates & Test Reports

IEC61215, IEC61730  
ISO9001, ISO 14001, ISO 45001  
Ammonia, Sand and Salt Resistance  
HW4 Hail Impact Protection Register  
Carbon Footprint & WEEE Recycling Partner

Product Specification	STC	NOCT	STC	NOCT
Module Type	<b>ALPI18N-108 430</b>		<b>ALPI18N-108 440</b>	
Maximum Power (Pmax) in Wp	430	326	440	334
Open-circuit Voltage (Voc) in V	39,74	37,36	40,19	37,78
Short-circuit Current (Isc) in A	13,61	11,27	13,77	11,42
Maximum Power Voltage (Vmp) in V	32,82	30,53	33,23	30,91
Maximum Power Current (Imp) in A	13,12	10,68	13,25	10,81

*STC: Irradiance 1000 W/m2 - Spectra 1.5 - Ambient Temperature 25 °C // NOCT: Irradiance 800 W/m2 - Spectra 1.5 - Ambient Temperature 20 °C, Wind at 1 m/s*

Module Efficiency STC in %	22,0	22,5
Operating Temperature in °C	-40 ~ +85	
Maximum system voltage in V (DC)	1500	
Maximum series fuse rating in A	30	
Power tolerance in Wp	0 ~ + 5	
Temperature coefficients of Pmax in % / °C	-0,30	
Temperature coefficients of Voc in % / °C	-0,25	
Temperature coefficients of Isc in % / °C	+0,045	
Nominal Operating Cell Temperature (NOCT) in °C	45 +/- 2	
Transparency in %	< 5%	

Mechanical Characteristics	
Dimensions in mm	1722 x 1134 x 30
Weight in kg	37,0
Front / Back Glass	2 x 3,2 mm Anti-Reflection Coating
Cell Type (Half Cut)	M10 N-Type Mono-Crystalline (180mm)
No. Of cells	108
Frame	Anodized Aluminium Alloy
Junction Box IP 67 - Cable 4mm2 in mm - MC4-Evo2	1200
Nominal Static Load Front / Rear in Pa	10.000 / 5.400
Hail Impact Protection Register	HW4

Packaging Configuration
( Two pallets = One stack )
36pcs / pallet; 684pcs / 40"HQ CTN

