



POWERING **PROGRESS,**
ENERGIZING **LIVES**



SOLAR PANELS



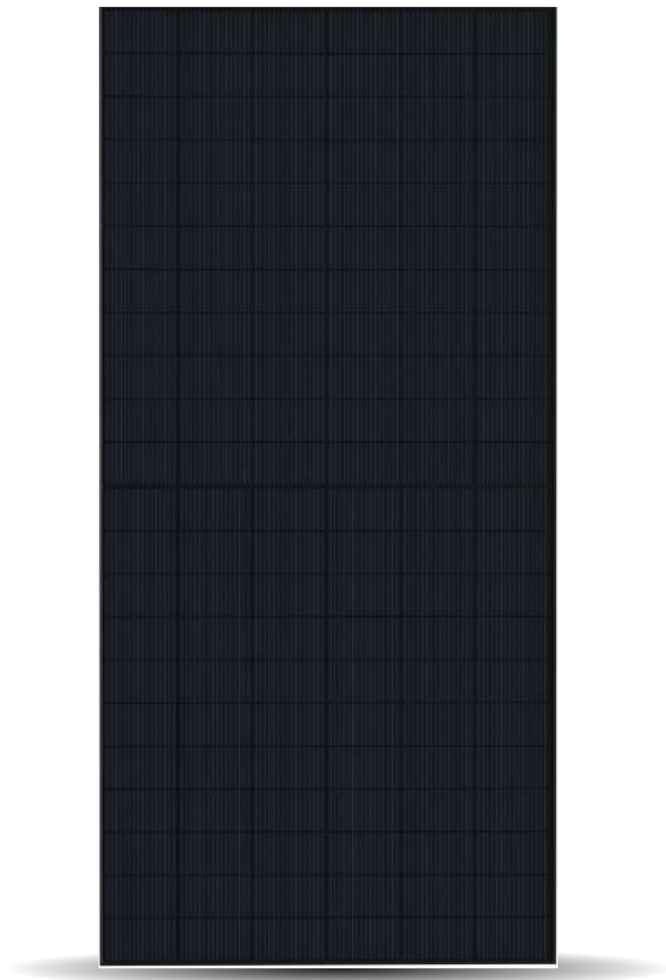
SOLAR PANELS

TOPCon Panel

N - Type Bifacial

TOPCon Panel

The CLN Energy TOPCon Module Series is designed to deliver high efficiency and reliable power output for residential, commercial, and industrial solar projects. Built with advanced cell technology and high-quality materials, these modules ensure excellent performance, durability, and long-term energy generation even in challenging environmental conditions.



Product Features

-  Higher output power
-  Lower LCOE (Levelized Cost of Energy)
-  Ammonia Resistance
-  Module efficiency up to 23.60%
-  High Power output leads to lower BOS cost

Technical Specifications

Parameter	55W	130W-12V	200W-24V	250W (12V)	275W Bi-Facial
Power (W)	55	130	200	250	275
Voc (V)	21.44	24.84	40.74	22.72	25.09
Isc (A)	3.38	6.79	6.73	13.63	13.39
Vmp (V)	17.64	20.37	31.96	19.51	21.46
Imp (A)	3.12	6.38	6.26	12.84	12.82
Max System Voltage (V)	600	600	1000	600	1000
Cells per Module	32	36	60	64	72
Dimensions (mm)	435x775x35	610x1134x35	980x1134x35	1550x775x35	1730x775x35
Weight (kg)	4.5	8.3	11	15	17
Construction Features					
Cell Type	Topcon N-Type	TOPCon -16BB	TOPCon -16BB	TOPCon 16BB	TOPCON
Glass	Tempered Low Iron	Non-ARC, Tempered Low Iron	Non-ARC, Tempered Low Iron	2.8mm, Tempered Glass	Low Iron Tempered Glass
Encapsulation	EPE	EVA	EVA	PID & UV Resistant	
Frame	Anodized Aluminum	Anodized Aluminum	Anodized Aluminum	Silver Anodized Aluminum	Anodized Aluminum Alloy
Junction Box	IP67	IP67	2 Diode IP67	IP68	Split
Warranty	1% first year degradation, then 0.4%/year from year 2 to 27				
Temperature Coefficient					
Voltage (Voc) %/°C	-0.35	-0.35	-0.35	-0.26	-0.26
Current (Isc) %/°C	0.1	0.1	0.1	0.045	0.04
Power (Pmax) %/°C	-0.47	-0.47	-0.47	-0.32	-0.31
NOCT (°C)	47±2	47±2	47±2	45±2	
I-V Curve at STC	Refer source PDF for I-V curve plot under STC (1000 W/m², AM1.5, 25°C).				

Applications



Factory rooftops



Office buildings



Warehouses



Cold storage facilities



Shopping malls

N - Type Bifacial

The CLN Energy N - Type Bifacial Module Series is engineered to generate power from both the front and rear sides of the panel, increasing overall energy output. By capturing reflected sunlight from the ground surface, these modules significantly improve system efficiency and return on investment.



Product Features

-  Excellent temperature coefficient: $-0.29/^{\circ}\text{C}$
-  Higher performance in hot weather
-  Strong low-light efficiency
-  Extended generation in morning & evening hours
-  Lower LID/LeTID degradation
-  $80\% \pm 5\%$ bifaciality for higher rear-side gain
-  Reduced LCOE with increased energy yield

Technical Specifications

SPECIFICATION (STC) Irradiance at 1000 W/m², Cell Temp 25°C, Air Mass AM1.5

MODEL TYPE	PRO-CLN610-33V	PRO-CLN630	MAX-CLN710	MAX-CLN730
Rated Peak Power-Pmax(Wp)	610.00	630.00	710.00	730.00
Maximum Power Voltage-Vmp(V)	40.46	41.02	40.78	41.25
Maximum Power Current-Imp(A)	15.08	15.36	17.41	17.70
Open Circuit Voltage-Voc(V)	48.68±3%	49.48±3%	48.84±3%	49.40±3%
Short Circuit Current-Isc(A)	15.96±3%	16.20±3%	18.40±3%	18.71±3%
Module Efficiency(%)	22.60	23.30	22.86	23.50

ELECTRICAL DATA(NMOT) Irradiance at 800 W/m², Ambient Temp 20°C, Wind Speed 1 m/s.

Rated Peak Power-Pmax(Wp)	462.00	477.00	787.00	809.00
Maximum Power Voltage-Vmp(V)	38.28	38.80	40.90	41.37
Maximum Power Current-Imp(A)	12.07	12.29	19.24	19.56
Open Circuit Voltage-Voc(V)	46.05±3%	46.81±3%	48.99±3%	49.55±3%
Short Circuit Current-Isc(A)	12.73±3%	12.97±3%	20.33±3%	20.67±3%

MECHANICAL CHARACTERISTICS

Cell Type (mm)	182*105 N-Type Mono *	210*105 N-Type Mono
No. Of Cells	132(12 11)	
Module Dimensions(mm)	2384*1134*30	2384*1303*33
Weight	32.40 kg	38.00 kg
Bifacial Glass Front Glass(mm)	2.0mm AR Coating Tempered Glass	
Bifacial Glass Back Glass(mm)	2.0mm Glazed Glass	
Frame	Anodized Aluminium Alloy(Black)	Anodized Aluminium Alloy(Silver)
Junction Box	IP68,1500VDC, 3 Schottky Bypass Diodes	
Cables	4.0mm ² ,Positive(+)350mm, Negative (-) 350mm, Or Customized Length	4.0mm ² ,Positive(+)300mm, Negative (-) 300mm, Or Customized Length
Connector	IP68	
Snow Load/Wind Load	5400Pa/2400Pa	
Class Of Safety Protection	Class II	
IEC Component Fire Rating	Class C	Class A

OPERATING PARAMETERS

Maximum System Voltage	1500V
Operational Temp	-40~+85 °C
Max Series Fuse Rating	30A
Nominal Module Operating Temp (NMOT)	45±2°C

TEMP COEFFICIENT

Temp Coefficient Of Pmax	-0.290%/°C
Temp Coefficient Of Voc	-0.250%/°C
Temp Coefficient Of Isc	+0.045%/°C

PACKING STANDARD 40ft (HQ)

Number Of Modules Per Pallet	37	33
Number Of Pallets Per Container	20	18
Number Of Modules Per Container	740	594

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