CLN ENERGY

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

INVERTERS

SWITCH TO LITHIUM

INVERTERS

01. On Grid Inverter

02. Off Grid Inverter

03. Hybrid Inverter

04. Solar Panels

ON GRID INVERTER

Single Phase

Three Phase

01

Inverter: On Grid

The CLN Energy Grid-Tie Inverter is an advanced solar power solution engineered to seamlessly connect solar systems directly to the utility grid (230/400V) without the need for a transformer. Designed with efficiency and reliability in mind, it ensures optimal power conversion and consistent energy delivery for both residential and commercial applications.
Equipped with an intuitive LCD display and user-friendly controls, it simplifies installation, operation, and maintenance — making it especially suitable for remote and distributed installations. Integrated MPPT (Maximum Power Point Tracking) technology maximizes solar energy harvest, while built-in safety features such as anti-islanding protection guarantee secure and stable grid interaction.
Built for performance, durability, and smart energy management, the CLN Energy Grid-Tie Inverter delivers dependable and efficient solar power integration.

Product Features

- **High Efficiency up to 98.7%:** Ensures maximum energy conversion with minimal power loss, delivering higher output and better system performance.
- **Anodized Aluminum Unibody Design:** Durable, corrosion-resistant housing with excellent heat dissipation for long-lasting performance.
- **Low Start-Up DC Voltage:** Enables early morning start and late evening shutdown, maximizing daily energy generation.
- **Advanced Cooling System with External Inductors:** Improved thermal management ensures reliable operation in high-temperature environments.
- **Up to 50% DC Overloading Capability:** Supports higher PV input capacity for improved yield and better return on investment.
- **Integrated Type III Surge Protection:** Protects the inverter from voltage spikes and lightning surges for enhanced safety.
- **Wide AC Voltage Range:** Stable operation even with grid voltage f luctuations, ideal for residential and industrial applications.
- **Smart Monitoring & Connectivity:** Built-in Wi-Fi / Ethernet / GPRS support with sensor touch controls for real-time monitoring via mobile app or web portal.

Technical Specifications

Single Phase

Model	CLN-3KWT-GT-1P	CLN-5KWT-GT-1P
PV Input Data		
Max. DC Power (W)	4200	7000
Max. DC Voltage (V)	500Vdc	600Vdc
MPPT Voltage Range (V)	50-500	70-550
MPPT Full Power Voltage Range (V)	220-500	180-550
Rated Input Voltage (V)	360	360
Startup Voltage (V)	50	70
Max. Input Current (A)	18Adc	18Adc x 2
Max. Short Current (A)	24Adc	24Adc x 2
No. of String/MPPT	01-Jan	02-Feb
Input Connector Type	MC4	MC4
AC Output Data		
Max. Output Power (VA)	3300	5500
Nominal Output Power (W)	3000	5000
Max. Output Current (A)	15Aac	24Aac
Nominal Output Voltage (V)	230Vac	230Vac
Grid Voltage Range	180Vac-276Vac (According to local standard)	
Nominal Output Frequency (Hz)	50/60Hz	
Grid Frequency Range	45-55Hz/55-65Hz (According to local standard)	
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)	
Output Current THD	<3%	
Efficiency		
Max. Efficiency	98.13%	98.20%
Euro Efficiency	97.50%	97.90%
Protection		
DC Polarity Reverse Connection Protection	YES	
AC Output Overcurrent Protection	YES	
AC Short Circuit Protection	YES	
AC Output Overvoltage Protection	YES	
AC Over Voltage Protection	YES	
AC Output Short Circuit Protection	YES	
Thermal Protection	YES	
DC Terminal Insulation Impedance Monitoring	YES	
DC component monitoring	YES	
Ground fault current monitoring	YES	
Arc fault circuit interrupter (AFCI)	Optional	
Power Network monitoring	YES	
Island protection monitoring	YES	
Earth Fault Detection	YES	
DC Input Switch	YES	
Overvoltage Load Drop Protection	YES	
Residual Current (RCD) Detection	YES	
Zero-export function	Optional	
Surge Protection	Integrated (Type II)	
Communication interface	RS485	
Monitor Data	4G/WIFI/GPRS (optional)	
Display	LCD/LED	

General Data		
Dimensions (W x H x D) (mm)	285x260x116	365 x 360 x 142
Weight (kg)	6	10
Enclosure Material	Sheet Metal	
Protection on Degree	IP65	
Ambient Temperature Range (°C)	-25°C to 60°C	
Humidity Range	0-100%	
Topology	Transformer less	
Communication interface	RS485 / WiFi / Ethernet / GPRS (optional)	
Cooling Concept	Convection	
Night Power Consumption (W)	<1	
Max. Operation Altitude (m)	4000	
Noise Emission (dB)	<21dB	<25dB

Three Phase

Model	CLN-5KWT-GT-3P	CLN-10KWT-GT-3P	CLN-15KWT-GT
PV Input Data			
Max. DC Power (W)	7500	15000	22500
Max. DC Voltage (V)	1100	1100	1100
MPPT Voltage Range (V)	150-1000Vdc	150-1000Vdc	150-1000Vdc
MPPT Full Power Voltage Range (V)	200-850	500-850	500-850
Rated Input Voltage (V)	620	620	620
Start-up Voltage (V)	150	150	150
Max. Input Current (A)	2 x 18Adc	2 x 18Adc	20+32Adc
Max. Short Current (A)	2 x 20Adc	2 x 20Adc	30+48Adc
No. of String/MPPT	02-Feb	02-Feb	03-Feb
Input Connector Type	MC4	MC4	MC4
AC Output Data			
Max. Output Power (VA)	5500	11000	16500
Nominal Output Power (W)	5000	10000	15000
Max. Output Current (A)	8.5A/Ph	17A/Ph	27A/Ph
Nominal Output Voltage (V)	380Vac L-L	380Vac L-L	380Vac L-L
Grid Voltage Range	260Vac-519Vac (According to local standard)		
Nominal Output Frequency (Hz)	50/60Hz		
Grid Frequency Range	45-55Hz/55-65Hz(according to local standard)		
Output Power Factor	1 default (adjustable from 0.8 leading to 0.8 lagging)		
Output Current THD	<3%		
Efficiency			
Max. Efficiency	98.30%	98.70%	98.70%
Euro Efficiency	98.00%	98.23%	98.23%

Protection		
PV Reverse Polarity Protection	YES	
PV Insulation Resistance Detection	YES	
AC Short Circuit Protection	YES	
AC Over Current Protection	YES	
AC Over Voltage Protection	YES	
Anti-islanding Protection	YES	
Residual Current Detection	YES	
Over Temperature Protection	YES	
Integrated DC switch	YES	
Zero-export function	Optional	
Surge Protection	Integrated (Type II)	
Smart IV Curve Scanning	YES	
Quick AC Fault Circuit Interruption	Optional	
General Data		
Dimensions (W x H x D), (mm)	370x510x167	370x510x192
Protection on Degree	IP65	
Enclosure Material	Sheet Metal	
Ambient Temperature Range (°C)	-25°C to 60°C	
Humidity Range	0-100%	
Topology	Transformer less	
Communication interface	RS485 / WiFi / Ethernet / GPRS (optional)	
Cooling Concept	Convection	Intelligent Fan Cooling
Night Power Consumption (W)	<1	
Max. Operation Altitude (m)	≤4000	

CLN-EM4200T-24L / CLN-EM6200T-48L

CLN-CM3500-24S

CLN-M11000T-48PL - Plus

OFF GRID INVERTER

02

CLN-EM4200T-24L / CLN-EM6200T-48L

The CLN-EMT Series Off-Grid Solar Inverter is a high-performance energy solution designed to deliver uninterrupted power for residential, commercial, and remote applications. Available in 4.2kW & 6.2kW capacities, the CLN-EMT Series combines advanced solar charging technology, intelligent battery management, and pure sine wave output to ensure stable and efficient power generation.

Engineered for compatibility with LiFePO4 batteries, the inverter supports modern energy storage systems while maximizing battery life through intelligent charging and equalization functions. Its dual-output design enables smart load management, allowing critical appliances to remain powered while optimizing overall energy consumption.

Product Features

- Dual output for smart load management
- Lithium battery activation function by PV or Utility
- Compatible work with LiFePO4 battery via RS485
- PV Input 500Vdc Max
- Built-in MPPT 100A/120A/160A
- Capable to work without battery
- Detachable dust cover for harsh environment
- WIFI remote monitoring optional
- Support multiple output priority: UTL,SOL,SBU,SUB
- EQ function to optimize battery performance and extend lifecycle

Technical Specifications

MODEL	CLN-EM4200T-24L	CLN-EM6200T-48L
PHASE	1-Phase In /1-Phase Out	
Maximum PV Input Power	6200W	9000W
Maximum Main Output Power	4200VA/4200W	6200VA/6200W
Maximum Second Output Power	4200VA/4200W	6200VA/6200W
Maximum Total Output Power	4200VA/4200W	6200VA/6200W
Parallel Capability	NO	NO
Lithium Battery activation	YES (By PV or Utility)	YES(By PV or Utility)
Lithium Battery communication	YES(RS485	YES(RS485
WIFI	Optional	
AC INPUT		
Nominal Voltage	230VAC	
Acceptable Voltage Range	170-280VAC(For Personal Computer);90-280VAC(For Home Appliances)	
Frequency	50/60 Hz (Auto sensing)	
AC OUTPUT		
Nominal Voltage	220/230VAC±5%	
Surge Power	8400VA	12400VA
Frequency	50/60 Hz	
Waveform	Pure Sine wave	
Dual Outputs	Yes	
Transfer Time	10ms(For Personal Computer);20ms(For Home Appliances)	
Peak Efficiency	94%	
Overload Protection	5s@＞=140% load; 10s@100%~140% load	
Admissible Power Factor	0.6~1 (inductive or capacitive)	
BATTERY		
Battery Voltage	24VDC	48VDC
Floating Charge Voltage	27VDC	54VDC
OverCharge Protection	33VDC	63VDC
Charging Method	CC/CV	CC/CV
SOLAR CHARGER & AC CHARGER		
Solar Charger TYPE	MPPT	
Max.PV Array Power	6200W	9000W
Max. PV Array Open Circuit Voltage	500VDC	
PV Array MPPT Voltage Range	60VDC~500VDC	
Max. Solar Input Current	1/27A	1/27A
Max. Solar Charge Current	120A	120A
Max. AC Charge Current	120A	120A
Max. Charge Current	120A	120A
PHYSICAL		
Dimensions, D x W x H(mm)	371.8x342x116.5	
Package Dimensions,D x W x H(mm)	478x408x195	
Net Weight (Kgs)	7.9	
Gross weight(Kgs)	8.9	
Communication Interface	RS485(RJ45)/RS232(RJ45)	
ENVIRONMENT		
Operating Temperature Range	-10°C to 50°C	
Storage temperature	-15°C~ 60°C	
Humidity	5% to 95% Relative Humidity (Non-condensing)	
Ingress Protection	IP21	

CLN-CM3500-24S

The CLN-CM Series Off-Grid Solar Inverter is a compact and efficient energy solution designed for residential, small commercial, and remote power applications. Available in 3.5kW models, the CLN-CM Series delivers reliable power conversion, advanced battery management, and optimized solar energy utilization for uninterrupted performance.

Equipped with a high-efficiency MPPT solar charge controller, the inverter maximizes solar power generation while ensuring intelligent battery charging. Its compatibility with LiFePO4 batteries through RS485 communication makes it an ideal choice for modern energy storage systems. The lightweight and compact design enables easy installation while providing dependable off-grid power for daily energy needs.

Product Features

- Pure Sine Wave
- PV Input 500Vdc Max
- Built-in MPPT 60A-100A
- Detachable dust cover for harsh environment
- Wifi remote monitoring optional
- Support multiple output priority: UTL,SOL,SBU,SUB
- EQ function to optimize battery performance and extend lifecycle

Technical Specifications

MODEL	CLN-CM3500-24S
Capacity	3500VA/3500W
Parallel Capability	NO
Lithium Battery Activation	YES(By PV)
Lithium battery Communication	NO
INPUT	
Nominal Voltage	230VAC
Acceptable Voltage Range	170-280VAC(For Personal Computer);90-280VAC(For Home Appliances)
Frequency	50/60 Hz (Auto sensing)
OUTPUT	
Nominal Voltage	220/230VAC±5%
Rated Power	3500VA/3500W
Battery Mode Power	3000VA/3000W
Surge Power	7000VA
Frequency	50/60 Hz
Waveform	Pure Sine wave
Transfer Time	10ms(For Personal Computer);20ms(For Home Appliances)
Peak Efficiency（PV to INV）	96%
Peak Efficiency（Battery to INV）	93%
Overload Protection	5s@＞=140% load; 10s@100%~140% load
Crest Factor	3:1
Admissible Power Factor	0.6~1 (inductive or capacitive)
BATTERY	
Battery Voltage	24Vdc
Floating Charge Voltage	27Vdc
OverCharge Protection	32Vdc
Charging Method	CC/CV
SOLAR CHARGER & AC CHARGER	
Solar Charger TYPE	MPPT
Max.PV Array Power	4000W
Max. PV Array Open Circuit Voltage	500VDC
PV Array MPPT Voltage Range	30VDC~500VDC
Max. Solar Input Current	15A
Max. Solar Charge Current	100A
Max. AC Charge Current	60A
Max. Charge Current(AC+PV)	100A
PHYSICAL	
Dimensions, D x W x H(mm)	334x293x98.5
Package Dimensions, D x W x H(mm)	402x368x174
Net Weight (Kgs)	4.4
Communication Interface	5.25
Communication Interface	RJ45 For WiFi
ENVIRONMENT	
Operating Temperature Range	-10°C to 55°C
Storage temperature	-15°C~ 60°C
Humidity	5% to 95% Relative Humidity (Non-condensing)
Ingress Protection	IP21

CLN-M11000T-48PL - Plus

The CLN-MT Series Off-Grid Solar Inverter is an advanced solar power solution engineered to provide dependable electricity for residential, commercial, and light industrial applications. Available in 11kW models, the CLN-MT Series combines high-efficiency MPPT technology, intelligent battery management, and seamless solar integration to deliver maximum energy savings and uninterrupted power.

Designed for modern energy storage systems, the inverter supports LiFePO4 batteries through RS485 communication and features dual AC outputs for intelligent load management. With high PV input voltage capability, parallel operation support, and battery-free functionality.

Product Features

- Dual AC output
- Built-in 2 MPPT
- Parallel max up to 6 units
- Compatible work with LiFePO4 battery via RS485
- Pure Sine Wave
- PV Input 500Vdc Max
- Capable to work without battery
- Detachable dust cover for harsh environment
- WIFI remote monitoring optional
- EQ function to optimize battery performance and extend lifecycle

Technical Specifications

MODEL	CLN-M11000T-48PL - Plus
CAPACITY	11KVA/11KW
Maximum PV Input Power	11KW
Twin AC Output Function	YES
Maximum Main Output Power	11KVA/11KW
Maximum Second Output Power	5.5KVA/5.5KW
Maximum Total Output Power	11KVA/11KW
Parallel Capability	YES, 6units
Lithium Battery Communication	YES(RS485)
Lithium Battery Activation	YES(By PV or Utility)
Built-in WIFI	YES
INPUT	
Nominal Voltage	230VAC
Acceptable Voltage Range	170-280VAC(For Personal Computer);90-280VAC(For Home Appliances)
Frequency	50/60 Hz (Auto sensing)
OUTPUT	
Nominal Voltage	220/230/240VAC
Surge Power	22000VA
Frequency	50/60 Hz
Waveform	Pure Sine wave
Transfer Time	10ms(For Personal Computer);20ms(For Home Appliances)
Peak Efficiency（PV to INV）	94%
Peak Efficiency（Battery to INV）	93%
Overload Protection	5.5s@＞=140% load; 10.5s@110%~140% load
Crest Factor	3:1
Admissible Power Factor	0.6~1 (inductive or capacitive)
BATTERY	
Battery Voltage	48VDC
Maximum Discharge Current	220A
Floating Charge Voltage	54VDC
OverCharge Protection	63VDC
Charging Method	CC/CV
SOLAR CHARGER & AC CHARGER	
Solar Charger TYPE	MPPT
Max.PV Array Power	5500W*2
Max. PV Array Open Circuit Voltage	500VDC
PV Array MPPT Voltage Range	60VDC~500VDC
Max. Solar Input Current	27*2
Max. Solar Charge Current	160A
Max. AC Charge Current	120A
Max. Charge Current	160A
PHYSICAL	
Dimensions, D x W x H(mm)	544.5x414.5x123
Package Dimensions, D x W x H(mm)	637x495x214
Net Weight (Kgs)	16.3
Gross weight(Kgs)	18.4
Communication Interface	WiFi/RS485/Dry-contact
LCD	YES
ENVIRONMENT	
Operating Temperature Range	-10°C to 55°C
Storage temperature	-15°C~ 60°C
Humidity	5% to 95% Relative Humidity (Non-condensing)
Ingress Protection	IP21

3 - 12 KVA

14 - 20 KVA

30 - 50 KVA

HYBRID INVERTER

03

CLN-HY-3 to 50KVA

CLN Hybrid Inverter is an advanced and intelligent power solution designed for both on-grid and off-grid applications. Engineered with smart energy management technology, it efficiently integrates solar power, grid supply, and battery storage to deliver uninterrupted and optimized performance for residential and commercial systems.
Built with an IP20-rated indoor design, the ECO Series ensures reliable operation with enhanced safety and user-friendly controls. The inverter supports lithium battery compatibility with BMS communication, enabling smarter battery charging and longer backup life.
With real-time remote monitoring via mobile app and web portal, users can easily track system performance, manage loads, and optimize energy consumption anytime, anywhere.

3 - 12 KVA

14 - 20 KVA

30 - 50 KVA

Product Features

- 48V low-voltage battery with transformer isolation
- 6 programmable charging & discharging time periods
- AC coupling support for existing solar systems
- Parallel operation of up to 10 units
- Compatible with both on-grid & off-grid setups
- Supports multiple batteries in parallel
- Energy storage support from diesel generators
- 100% unbalanced output capability
- Up to 50% rated output on each phase

Technical Specifications : 3 to 12KVA

Model	CLN-3K-SG04LP3-EU	CLN-4K-SG04LP3-EU	CLN-5K-SG04LP3-EU	CLN-6K-SG04LP3-EU	CLN-8K-SG04LP3-EU	CLN-10K-SG04LP3-EU	CLN-12K-SG04LP3-
Battery Input Data							
Battery Type	Lead-acid or Li-ion						
Battery Voltage Range (V)	40-60						
Max. Charging/Discharging Current (A)	70	95	120	140	190	210	240
Charging Strategy for Li-ion Battery	Self-adaption to BMS						
Number of Battery Input	1						
PV String Input Data							
Max. PV Input Power (W)	6000	8000	10000	12000	16000	20000	24000
Max. PV Input Power with AC Coupling (W)	4800	6400	8000	9600	12800	16000	19200
Max. PV Input Voltage (V)	800						
Start-up Voltage (V)	160						
MPPT Voltage Range (V)	200-650						
Rated PV Input Voltage (V)	550						
Max. Operating PV Input Current (A)	20+20	20+20	20+20	20+20	20+20	26+26	26+26
Max. Input Short-Circuit Current (A)	30+30	30+30	30+30	30+30	30+30	39+39	39+39
MPPT Trackers / Strings per MPPT	2/1+1	2/1+1	2/1+1	2/1+1	2/1+1	2/2+2	2/2+2
AC Input/Output Data							
Rated AC Input/Output Active Power (W)	3000	4000	5000	6000	8000	10000	12000
Max. AC Input/Output Apparent Power (VA)	3300	4400	5500	6600	8800	11000	13200
Rated AC Input/Output Current (A)	4.6/4.4	6.1/5.8	7.6/7.3	9.1/8.7	12.2/11.6	15.2/14.5	18.2/17.4
Max. AC Input/Output Current (A)	5/4.8	6.7/6.4	8.4/8.0	10/9.6	13.4/12.8	16.7/16	20/19.2
Max. Continuous AC Passthrough (A)	45						
Peak Power (off-grid)	2 times of rated power, 10 s						
Power Factor Adjustment Range	0.8 leading to 0.8 lagging						
Rated Input/Output Voltage	220/380V, 230/400V 0.85Un 3L+N+PE						
Rated Grid Frequency/Range (Hz)	50/45-55, 60/55-65						
Total Harmonic Distortion THDi	<3% (of nominal power)						
DC Injection Current	<0.5% In						
Efficiency							
Max. Efficiency	97.6%						
Euro Efficiency	97.0%						
MPPT Efficiency	>99%						
Equipment Protection							
Integrated Protection	DC Reverse Polarity Protection, AC Output Over-current Protection, Thermal Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, DC Component Monitoring, Arc Fault Circuit Interrupter (AFCI), Anti-islanding Protection, DC Switch, Insulation Impedance Detection, Residual Current Detection						
Surge Protection Level	Type II (DC), Type II (AC)						
Interface							
Display	LCD						
Communication	WiFi, RS485, CAN						
Monitor Mode	No						
General Data							
Operating Temperature Range (°C)	-40 to +60°C, >45°C derating						
Permissible Ambient Humidity	0-100%						
Altitude (m)	3000m						
Noise (dB)	<55						
Ingress Protection	IP65						
Inverter Topology	Non-isolated (Solar), Isolated (Battery)						
Over Voltage Category	OVC II (AC), OVC III (DC)						
Cabinet Size (W×H×D mm)	386×660×245 (Excluding Connectors and Brackets)						
Weight (kg)	35.2						
Type of Cooling	Intelligent Air Cooling						
Warranty	5 Years/10 Years the Warranty Period Depends the Final Installation Site of Inverter, More Info Please Refer to Warranty Policy						
Grid Regulation	IEC 61727, IEC 62116, CEI 0-21, EN 50549, NRS 097, RD 140, UNE 217002, OVE-Richtlinie R25, G99, VDE-AR-N 4105						
Safety/EMC Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2						

Technical Specifications : 14 to 20KVA

Model	CLN-14K-SG05LP3-EU-SM2	CLN-15K-SG05LP3-EU-SM2	CLN-16K-SG05LP3-EU-SM2	CLN-18K-SG05LP3-EU-SM2	CLN-20K-SG05LP3-EU-SM2
Battery Input Data					
Battery Type	Lead-acid or Lithium-ion				
Battery Voltage Range (V)	40-60				
Max. Charging/Discharging Current (A)	240	280	300	330	350
Charging Strategy for Li-ion Battery	Self-adaption to BMS				
Number of Battery Inputs	2				
PV String Input Data					
Max. PV Access Power (W)	28000	30000	32000	36000	40000
Max. PV Input Power (W)	22400	24000	25600	28800	32000
Max. PV Input Voltage (V)	800				
Start-up Voltage (V)	160				
MPPT Voltage Range (V)	160-650				
Rated PV Input Voltage (V)	550				
Max. Operating PV Input Current (A)	36+36				
Max. Input Short-Circuit Current (A)	54+54				
MPP Trackers / Strings per MPPT	2/2+2				
AC Input/Output Data					
Rated AC Output Active Power (W)	14000	15000	16000	18000	20000
Max. AC Input/Output Apparent Power	15400	16500	17600	19800	22000
Rated AC Input/Output Current (A)	21.3/20.3	22.8/21.8	24.3/23.2	27.3/26.1	30.4/29
Max. AC Input/Output Current (A)	23.4/22.4	25/24	26.7/25.5	30/28.7	33.4/31.9
Max. Continuous AC Passthrough (A)	70				
Peak Power (off-grid)	2 times of rated power, 10 s				
Power Factor Adjustment Range	0.8 leading to 0.8 lagging				
Rated Input/Output Voltage	220/380V, 230/400V 0.85Un-1.1Un 3L+N+PE				
Rated Input/Output Grid Frequency/Range (Hz)	50/45-55, 60/55-65				
Total Current Harmonic Distortion	<3% (of nominal power)				
DC Injection Current	<0.5% In				
Efficiency					
Max. Efficiency	97.6%				
Euro Efficiency	97.0%				
MPPT Efficiency	>99%				
Equipment Protection					
Integrated Protection	DC Reverse Polarity Protection, AC Output Over-current Protection, Thermal Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, DC Component Monitoring, Arc Fault Circuit Interrupter (AFCI), Anti-islanding Protection, DC Switch, Insulation Impedance Detection, Residual Current Detection				
Surge Protection Level	Type II (DC), Type II (AC)				
Interface					
LCD/LED Display	LCD				
Communication Interface	WiFi, RS485, CAN				
Monitor Mode	No				
General Data					
Operating Temperature Range (°C)	-40 to +60°C, >45°C Derating				
Permissible Ambient Humidity	0-100%				
Permissible Altitude	3000 m				
Noise (dB)	<60				
Ingress Protection (IP Rating)	IP65				
Inverter Topology	Non-isolated (Solar), Isolated (Battery)				
Over Voltage Category	OVC II (DC), OVC III (AC)				
Cabinet Size (W×H×D mm)	456×750×268 (Excluding Connectors and Brackets)				
Weight (kg)	51.9				
Type of Cooling	Intelligent Air Cooling				
Warranty	5 Years/10 Years the Warranty Period Depends the Final Installation Site of Inverter, More Info Please Refer to Warranty Policy				
Grid Regulation	IEC 61727, IEC 62116, CEI 0-21, EN 50549, NRS 097, RD 140, UNE 217002, OVE-Richtlinie R25, G99, VDE-AR-N 4105				
Safety/EMC Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2				

Technical Specifications : 30 to 50KVA

Model	CLN-29.9K-SG02HP3-EU-BM3	CLN-30K-SG02HP3-EU-BM3	CLN-35K-SG02HP3-EU-BM3	CLN-40K-SG02HP3-EU-BM4	CLN-50K-SG02HP3-EU-BM4
Battery Input Data					
Battery Type	Lithium-ion				
Battery Voltage Range (V)	160-800				
Max. Charging/Discharging Current (A)	100				
Charging Strategy for Li-ion Battery	Self-adaption to BMS				
Number of Battery Inputs	1				
PV String Input Data					
Max. PV Access Power (W)	59800	60000	70000	80000	100000
Max. PV Input Power (W)	47840	48000	56000	64000	80000
Max. PV Input Voltage (V)	1000				
Start-up Voltage (V)	180				
MPPT Voltage Range (V)	150-850				
Rated PV Input Voltage (V)	600				
Max. Operating PV Input Current (A)	36+36+36	36+36+36	36+36+36	36+36+36+36	36+36+36+36
Max. Input Short-Circuit Current (A)	55+55+55	55+55+55	55+55+55	55+55+55+55	55+55+55+55
MPPT Trackers / Strings per MPPT	3/2+2+2	3/2+2+2	3/2+2+2	4/2+2+2	4/2+2+2
AC Input/Output Data					
Rated AC Input/Output Active Power (W)	29900	30000	35000	40000	50000
Max. AC Input/Output Apparent Power (VA)	29900	33000	38500	44000	55000
Rated AC Input/Output Current (A)	45.4/43.4	45.5/43.5	53.1/50.8	60.7/58.0	75.8/72.5
Max. AC Input/Output Current (A)	45.4/43.4	50/47.9	58.4/55.8	66.7/63.8	83.4/79.8
Max. Continuous AC Passthrough (A)	200				
Peak Power (off-grid)	1.5 times of rated power, 10 s				
Power Factor Adjustment Range	0.8 leading to 0.8 lagging				
Rated Input/Output Voltage	220/380V, 230/400V, 0.85Un-1.1Un, 3L+N+PE				
Rated Grid Frequency/Range (Hz)	50/45-55, 60/55-65				
Total Current Harmonic Distortion THDi	<3% (of nominal power)				
DC Injection Current	<0.5% In				
Efficiency					
Max. Efficiency	97.6%				
Euro Efficiency	97.0%				
MPPT Efficiency	>99%				
Equipment Protection					
Integrated Protection	DC Reverse Polarity Protection, AC Output Over-current Protection, Thermal Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, DC Component Monitoring, Arc Fault Circuit Interrupter (AFCI), Anti-islanding Protection, DC Switch, Insulation Impedance Detection, Residual Current Detection				
Surge Protection Level	Type II (DC), Type II (AC)				
Interface					
LCD/LED Display	LCD				
Communication Interface	WiFi / RS485 / CAN				
Monitor Mode	GPRS / WiFi / Bluetooth / 4G				
General Data					
Operating Temperature Range (°C)	-40 to +60°C, >45°C Derating				
Permissible Ambient Humidity	0-100%				
Permissible Altitude	3000 m				
Noise (dB)	<65				
Ingress Protection (IP Rating)	IP65				
Inverter Topology	Non-isolated				
Over Voltage Category	OVC II (DC), OVC III (AC)				
Cabinet Size (W×H×D mm)	528×793×278 (excluding connectors and brackets)				
Weight (kg)	65				
Type of Cooling	Intelligent Air Cooling				
Warranty	5 Years/10 Years				
Grid Regulation	IEC 61727, IEC 62116, CEI 0-21, EN 50549, NRS 097, RD 140, UNE 217002, OVE-Richtlinie R25, G99, VDE-AR-N 4105				
Safety/EMC Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2				

TOPCon Panel

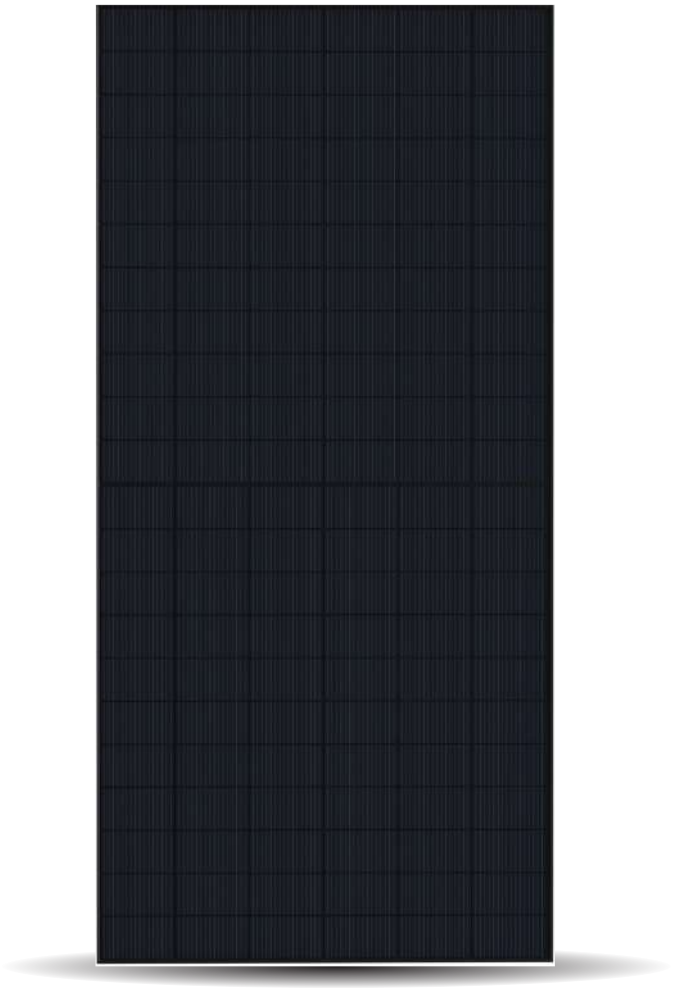
N - Type Bifacial

SOLAR PANELS

04

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 23.30%
- High Power output leads to lower BOS cost

Technical Specifications

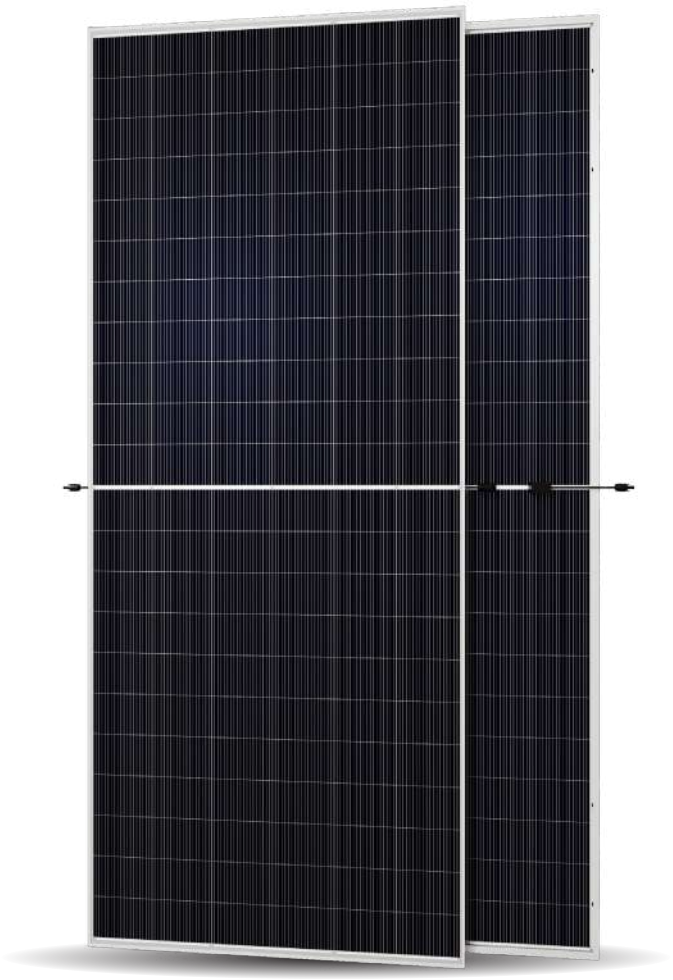
Parameter	55W	130W-12V	200W-24V	250W (12V)	275W Bi-Facial
Power (W)	55	130	200	250	275
Voc (V)	21.44	24.84	40.74	22.72	25.09
Isc (A)	3.38	6.79	6.73	13.63	13.39
Vmp (V)	17.64	20.37	31.96	19.51	21.46
Imp (A)	3.12	6.38	6.26	12.84	12.82
Max System Voltage (V)	600	600	1000	600	1000
Cells per Module	32	36	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/°C
- Higher performance in hot weather
- Strong low-light efficiency
- Extended generation in morning & evening hours
- Lower LID/LeTID degradation
- 80% ± 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 MHDBRz	PRO-CLN630 33V-MHDBRz	MAX-CLN710-33V-MHD	MAX-CLN730-33V-MHD
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 CHARACTERISRTICS				
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	4.0mm²,Positive(+)350mm, Negative (-) 350mm, Or Customized Length		4.0mm²,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			
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	-0.29%/°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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