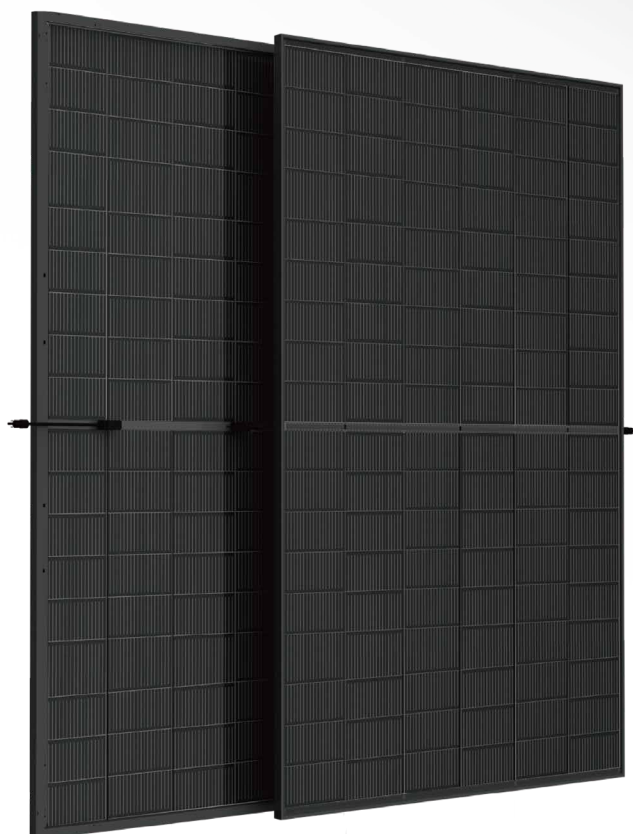
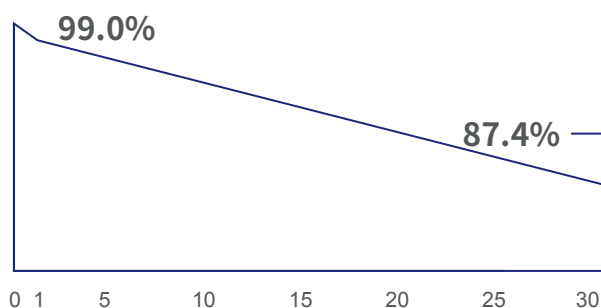




CHGMN54D1 Linear performance warranty



IEC61215(2016), IEC61730(2016)
 ISO14001: 2015 Environment Management System
 ISO9001: 2015: Quality Management System
 ISO45001: 2018: Occupational health and safety management systems

CHG ENSOL Efficient PV Module N-TOPCon Technology

CHGMN54D1

N-type Mono Double Glass
Bifacial All Black PV Module

430-455W

455W

Maximum
Power Output

23.3%

Maximum
Module Efficiency

0~+5W

Positive power
tolerance



Excellent Power Output

Ultra efficient N-type cell technology, the module with higher power and better reliability



Excellent Temperature Coefficient

The product has excellent temperature coefficient, outstanding outdoor power generation performance and longer lifespan



Ultra-multi-busbar Technology

The rearside of the module effectively utilizes the reflected and scattered light in the environment, the high rearside power gain can reduce the LCOE



No LeTID/LID

While achieving efficiency gains in N-type photovoltaic cells, virtually no LID loss



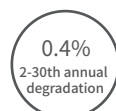
Excellent Irradiance Response

Superior weak-light power generation performance in environments such as early morning, evening, and cloudy conditions.



Aesthetic Appearance

108pcs half cells, all black appearance



Electrical Properties | STC*

Peak Power (Pmax/W)	430	435	440	445	450	455
MPP Voltage (Vmp/V)	32.67	32.93	33.18	33.41	33.63	33.85
MPP Current (Imp/A)	13.16	13.21	13.26	13.32	13.38	13.44
Open Circuit Voltage (Voc/V)	39.29	39.49	39.69	39.89	40.09	40.29
Short Circuit Current (Isc/A)	13.79	13.84	13.89	13.95	14.01	14.07
Module Efficiency (%)	22.0	22.3	22.5	22.8	23.0	23.3

*STC (Standard Test Conditions): Irradiance 1000 W/m², cell Temperature 25°C, AM 1.5

Mechanical Properties

Cell Type	n-type half cell
Number of Cells	108pcs(2*54)
Module Dimension	1722mm*1134mm*30mm
Weight	24.1kg
Front / Rear Glass	2.0mm/2.0mm
Frame	Anodized Aluminum Alloy
Junction Box	IP68
Output cables	TUV 1x4.0mm ² , +300mm/-300mm or Customized Length

Temperature Coefficient

Temperature coefficients of Pmax	-0.29% / °C
Temperature coefficients of Voc	-0.25% / °C
Temperature coefficients of Isc	+0.045% / °C
Nominal Module Operating Temperature	42±2 °C

Operating Properties

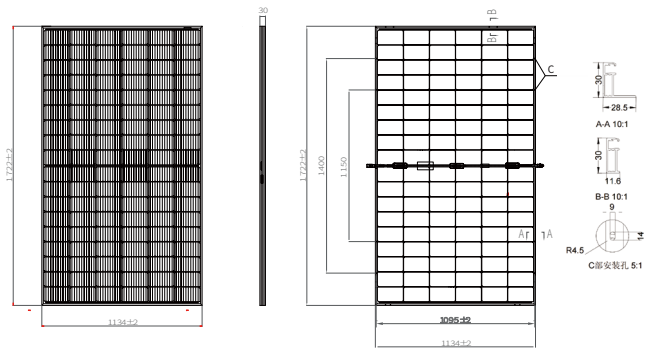
Operating Temperature (°C)	-40°C~+85°C
Maximum System Voltage (V)	1500V DC (IEC)
Maximum Series Fuse Rating (A)	30A
Power Tolerance	0~+5W
Bifaciality	80%±5%
Static load	Snow load 5400Pa, Wind load 2400Pa
Packaging Configuration	36pcs/pallet, 1008pcs/13m flatcar 36pcs/pallet, 1368pcs/17.5m flatcar

Electrical Properties | NMOT*

Peak Power (Pmax/W)	476	482	488	493	499	504
MPP Voltage (Vmp/V)	32.67	32.95	33.20	33.42	33.65	33.87
MPP Current (Imp/A)	14.57	14.63	14.70	14.75	14.83	14.88
Open Circuit Voltage (Voc/V)	39.31	39.51	39.71	39.91	40.11	40.31
Short Circuit Current (Isc/A)	15.28	15.33	15.39	15.46	15.52	15.59

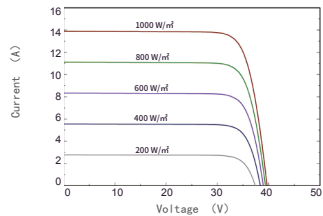
*BNPL: Irradiance: front 1000w/m², rear 135W/m², Cell Temperature 25°C, AM=1.5

Engineering Drawings (unit: mm)

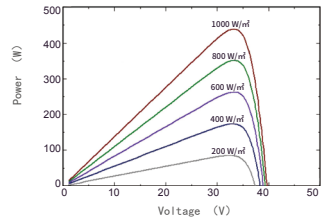


For specific dimensions and tolerance ranges, please refer to the corresponding component drawings.

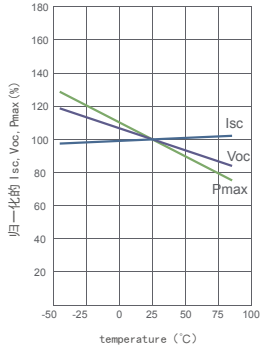
Characteristic Curves: CHGMN54D1



Current and voltage curves under different irradiances



Power and voltage curves under different irradiances



Temperature Curves of Isc, Voc, Pmax under Different Temperatures