

CHG ENSOL Efficient PV Module

N-TOPCon Technology

CHGMN78D1

N-type Mono High Efficiency
Double Glass Bifacial PV Module

635-660W

660W

Maximum
Power Output

23.61%

Maximum
Module Efficiency

0~+5W

Positive power
tolerance



Excellent Power Output

Adopting large-sized, highly efficient cell technology and leading manufacturing processes to effectively enhanced product power



Excellent Temperature Coefficient

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



Ultra-multi-busbar Technology

Better light utilization and current collection capability, effectively improving product power output and reliability



No LeTID/LID

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



Excellent Irradiance Response

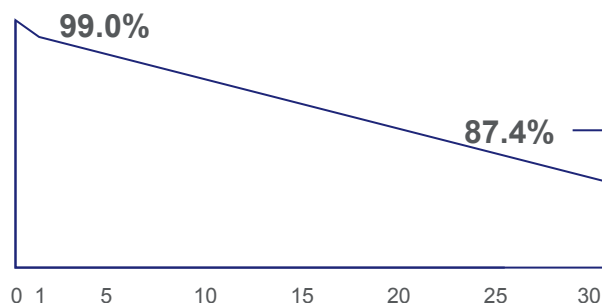
Superior weak-light power generation performance in environments such as early morning, evening, and cloudy conditions.



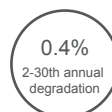
High Profitability

Effectively reducing the system's BOS costs, achieving lower cost of electricity, and increasing project return

CHGMN78D1 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



Electrical Properties | STC*

Peak Power (Pmax/W)	635	640	645	650	655	660
MPP Voltage (Vmp/V)	47.89	48.08	48.28	48.47	48.66	48.85
MPP Current (Imp/A)	13.26	13.31	13.36	13.41	13.46	13.51
Open Circuit Voltage (Voc/V)	57.33	57.53	57.73	57.93	58.13	58.33
Short Circuit Current (Isc/A)	13.89	13.94	13.99	14.04	14.09	14.14
Module Efficiency (%)	22.72	22.90	23.07	23.25	23.43	23.61

*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	156pcs(2*78)
Module Dimension	2465mm*1134mm*30mm
Weight	33.9kg
Front / Rear Glass	2.0mm/2.0mm
Frame	Anodized Aluminum Alloy
Junction Box	IP68
Output cables	TUV 1x4.0mm², +300mm/-200mm 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

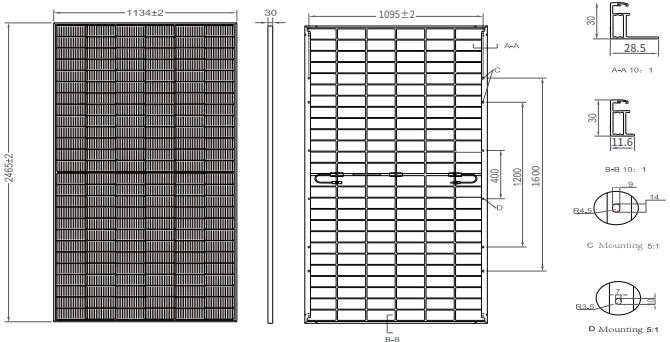
Operating Temperature (°C)	-40°C~+85°C
Maximum System Voltage (V)	1500V DC (IEC)
Maximum Series Fuse Rating (A)	30A
Power Tolerance	0~+5W
Bifaciality	80%±5%
Static load	Snow load 5400Pa, Wind load 2400Pa
Packaging Configuration	36pcs/pallet, 720pcs/13m flatcar 36pcs/pallet, 864pcs/17.5m flatcar

Electrical Properties | BNPI*

Peak Power (Pmax/W)	704	709	715	720	726	731
MPP Voltage (Vmp/V)	47.89	48.10	48.28	48.48	48.66	48.85
MPP Current (Imp/A)	14.70	14.74	14.81	14.85	14.92	14.96
Open Circuit Voltage (Voc/V)	57.35	57.55	57.75	57.95	58.15	58.35
Short Circuit Current (Isc/A)	15.39	15.45	15.50	15.56	15.61	15.66

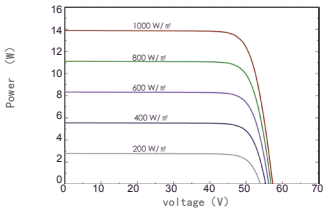
*Bifacial Test Conditions (BNPI): Front-side irradiance 1000W/m², back-side irradiance 135W/m², temperature 25°C, AM1.5

Engineering Drawings (unit: mm)

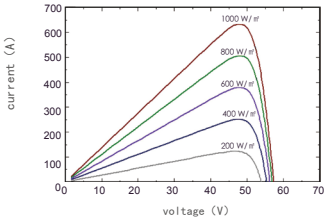


For specific dimensions and tolerance ranges, please refer to the corresponding component drawings.

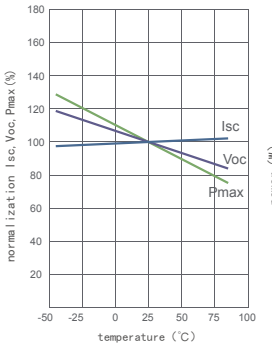
Characteristic Curves: CHGMN78D1



Current and voltage curves under different irradiances



Power and voltage curves under different irradiances



Temperature Curves of Isc, Voc, Pmax under Different Temperatures