GCL-NT12R/48GDF

450-470W

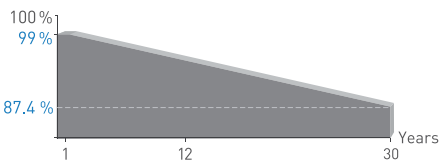
Bifacial Dual Glass Monocrystalline Module

470W	23.52%	0~+5W
Maximum Power Output	Maximum Module Efficiency	Power Output Guarantee

GCL Delivers Reliable Performance Over Time

- World-class manufacturer of crystalline silicon photovoltaic modules
- Fully automatic facility and world-class technology
- Rigorous quality control to meet the highest standard: ISO 9001, ISO 14001 and ISO 45001
- Tested for harsh environments (salt mist, ammonia corrosion and sand blowing test: IEC 61701, IEC 62716, DIN EN 60068-2- 68)
- Long term reliability tests
- 2×100% EL inspection ensuring defect-free modules

Linear Performance Warranty



12 Year Product Warranty

30 Year Linear Power Warranty

0.40% Annual Degradation Over 30 years

* Please refer to GCL standard warranty for details

Highly transparent self-cleaning glass brings additional yield and easy maintenance

Ideal choice for residential rooftop

N type technology: The N-type module has better reliability and lower LID/LETID

Sand blowing test, salt mist test and ammonia test passed to endure harsh environments

Selected encapsulating material and stringent production process control ensure the product is highly PID resistant and snail trails free

Special cutting and soldering technology leads to low hotspot risk

Additional Insurance Backed by Swiss RE

* Please refer to GCL for details

Bifacial Dual Glass Monocrystalline Module | GCL-NT12R/48GDF | 450-470 W

Electrical Specification (STC*)

Maximum Power	Pmax(W)	450	455	460	465	470
Maximum Power Voltage	Vmp(V)	29.71	29.94	30.15	30.36	30.56
Maximum Power Current	Imp(A)	15.15	15.20	15.26	15.32	15.38
Open Circuit Voltage	Voc(V)	35.05	35.30	35.51	35.72	35.92
Short Circuit Current	Isc(A)	15.95	16.00	16.06	16.13	16.20
Module Efficiency	(%)	22.52	22.77	23.02	23.27	23.52

* Irradiance 1000W/m², Cell Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Maximum Power	Pmax (W)	338.8	342.5	346.2	350.1	353.6
Maximum Power Voltage	Vmp (V)	27.68	27.89	28.08	28.28	28.47
Maximum Power Current	Imp (A)	12.24	12.28	12.33	12.38	12.42
Open Circuit Voltage	Voc(V)	33.05	33.28	33.47	33.67	33.87
Short Circuit Current	Isc (A)	12.88	12.92	12.97	13.03	13.08

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Electrical characteristics with different power bin (reference to 10% Irradiance ratio)

Maximum Power	Pmax (W)	486.1	491.6	496.9	502.2	507.6
Maximum Power Voltage	Vmp (V)	29.71	29.94	30.15	30.36	30.56
Maximum Power Current	Imp (A)	16.36	16.42	16.48	16.54	16.61
Open Circuit Voltage	Voc(V)	35.05	35.30	35.51	35.72	35.92
Short Circuit Current	Isc (A)	17.23	17.28	17.35	17.42	17.49

Mechanical Data

Number of Cells	96Cells (6×16)
Dimensions of Module L*W*H (mm)	1762×1134×30mm (69.37×44.65×1.18 inches)
Weight (kg)	21.5kg
Front Side Glass	1.6mm (0.06 inches), High transparency solar glass
Back Side Glass	1.6mm (0.06 inches), Heat strengthened glass
Frame	Anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² , Portrait: +300/-200mm length can be customized
Number of diodes	3
Wind/ Snow Load	2400Pa/ 5400Pa*
Connector	MC Compatible
Bifaciality	80±5%

* For more details please check the installation manual of GCLSI

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	45±2°C
Temperature Coefficient of Isc	+0.045%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Pmax	-0.29%/°C

Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	35A

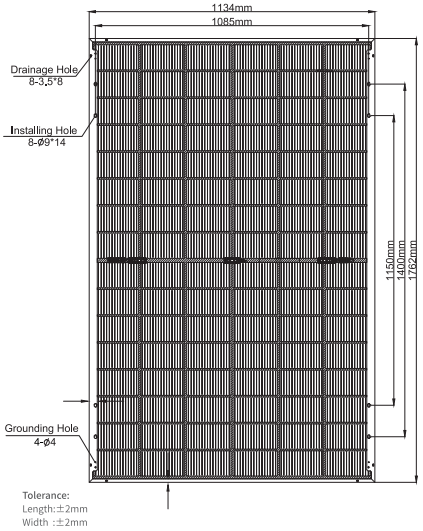
Optional

Connector:	☐ Original MC4

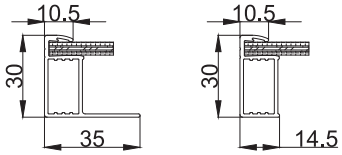
Packaging Configuration

Module per box	36 pieces
Module per 40' container	936 pieces

Module Dimension

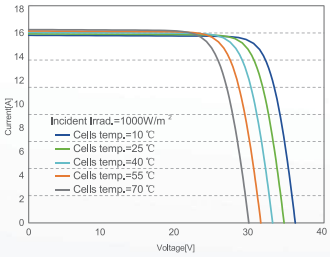


Back View

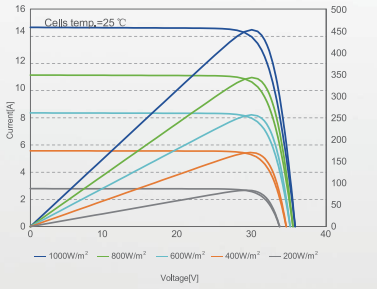


Long Frame A-A | Short Frame B-B

I-V Curve at Different Temperature (450W)



I-V/P-V Curve at Different Irradiation (450W)



CAUTION: READ INSTALLATION MANUAL BEFORE USING THE PRODUCT

Contact Us for More Information

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Bringing Green Power To Life