

GCL- NT12R/48GDF



435-455W

**Bifacial Dual Glass
Monocrystalline Module**

455W

Maximum Power
Output

22.77%

Maximum Module
Efficiency

0~+5W

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
- 2x100% EL inspection ensuring defect-free modules



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

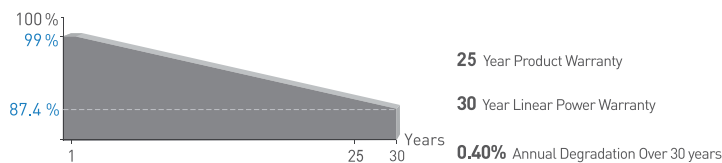


Selected encapsulating
material and stringent
production process control
ensure the product is highly
PID resistant and snail
trails free



Special cutting and soldering
technology leads to low
hotspot risk

Linear Performance Warranty



* Please refer to GCL standard warranty for details

Additional Insurance Backed by Swiss RE

* Please refer to GCL for details



Electrical Specification (STC*)

Maximum Power	P _{max} (W)	435	440	445	450	455
Maximum Power Voltage	V _{mp} (V)	29.00	29.24	29.48	29.71	29.94
Maximum Power Current	I _{mp} (A)	15.00	15.05	15.10	15.15	15.20
Open Circuit Voltage	V _{oc} (V)	34.30	34.55	34.80	35.05	35.30
Short Circuit Current	I _{sc} (A)	15.80	15.85	15.90	15.95	16.00
Module Efficiency	(%)	21.77	22.02	22.27	22.52	22.77

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

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

Maximum Power	P _{max} (W)	469.8	475.2	480.8	486.1	491.6
Maximum Power Voltage	V _{mp} (V)	29.00	29.24	29.48	29.71	29.94
Maximum Power Current	I _{mp} (A)	16.20	16.25	16.31	16.36	16.42
Open Circuit Voltage	V _{oc} (V)	34.30	34.55	34.80	35.05	35.30
Short Circuit Current	I _{sc} (A)	17.06	17.12	17.17	17.23	17.28

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	4.0mm ² , Portrait: +300/-200mm length can be customized
Number of diodes	3
Connector	GCL-01/GCL-02/MC4-EVO2/others
Wind/ Snow Load	2400Pa/ 5400Pa*
Bifaciality (%)	80±5

* For more details please check the installation manual of GCLSI

Temperature Ratings

Temperature Coefficient of I _{sc}	+0.045%/°C
Temperature Coefficient of V _{oc}	-0.25%/°C
Temperature Coefficient of P _{MAX}	-0.29%/°C

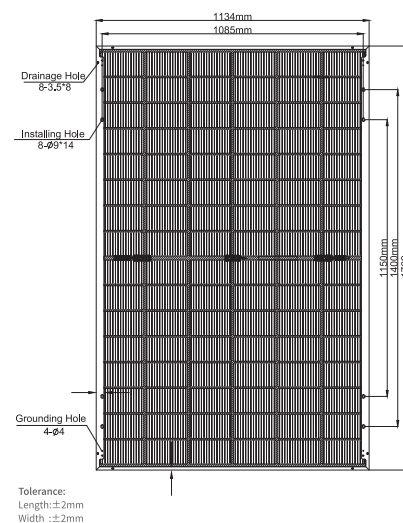
Maximum Ratings

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

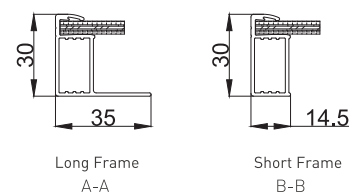
Packaging Configuration

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

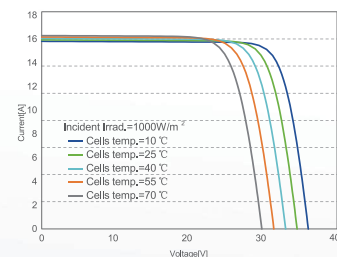
Module Dimension



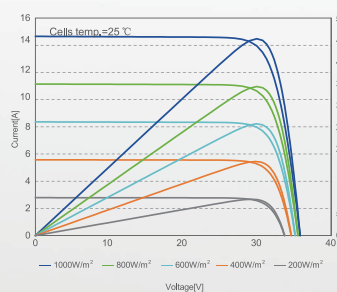
Back View



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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