

GCL- NT10/78GDF

630-650 W

**Bifacial Dual Glass
Monocrystalline Module**



650W

Maximum Power
Output

23.3%

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



High conversion efficiency
due to top quality wafers and
advanced cell technology



Ideal choice for
large scale ground
installation

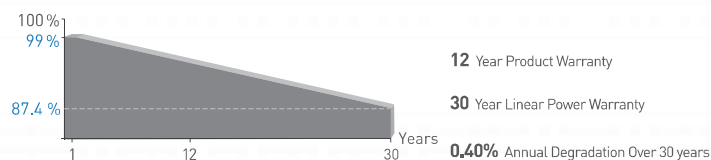


N type technology: The
N-type module has better
reliability and lower
LID/LETID



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

Linear Performance Warranty



* Please refer to GCL standard warranty for details



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



Electrical Specification (STC*)

Maximum Power	P _{max} (W)	630	635	640	645	650
Maximum Power Voltage	V _{mp} (V)	48.28	48.48	48.68	48.87	49.06
Maximum Power Current	I _{mp} (A)	13.05	13.10	13.15	13.20	13.25
Open Circuit Voltage	V _{oc} (V)	56.85	57.00	57.15	57.30	57.45
Short Circuit Current	I _{sc} (A)	13.80	13.85	13.90	13.95	14.00
Module Efficiency	(%)	22.5	22.7	22.9	23.1	23.3

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

Electrical Specification (NOCT*)

Maximum Power	P _{max} (W)	472.9	476.5	480.1	483.7	487.4
Maximum Power Voltage	V _{mp} (V)	44.91	45.08	45.25	45.42	45.59
Maximum Power Current	I _{mp} (A)	10.53	10.57	10.61	10.65	10.69
Open Circuit Voltage	V _{oc} (V)	53.49	53.62	53.75	53.88	54.01
Short Circuit Current	I _{sc} (A)	11.14	11.18	11.22	11.26	11.30

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

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

Maximum Power	P _{max} (W)	680.3	686.0	691.3	696.9	702.0
Maximum Power Voltage	V _{mp} (V)	48.28	48.48	48.68	48.87	49.06
Maximum Power Current	I _{mp} (A)	14.09	14.15	14.20	14.26	14.31
Open Circuit Voltage	V _{oc} (V)	56.85	57.00	57.15	57.30	57.45
Short Circuit Current	I _{sc} (A)	14.90	14.96	15.01	15.07	15.12

Mechanical Data

Number of Cells	156 Cells (6×26)
Dimensions of Module L*W*H (mm)	2465×1134×30mm [97.05×44.65×1.18 inches]
Weight (kg)	34.1kg
Front Side Glass	2.0mm [0.08 inches], High transparency solar glass
Back Side Glass	2.0mm [0.08 inches], Heat Strengthened Glass
Frame	Anodized aluminium alloy
Cable	4.0mm ² , 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 I _{sc}	+0.045%/°C
Temperature Coefficient of V _{oc}	-0.25%/°C
Temperature Coefficient of P _{max}	-0.29%/°C

Packaging Configuration

Module per box	36 pieces
Module per 40' container	576 pieces

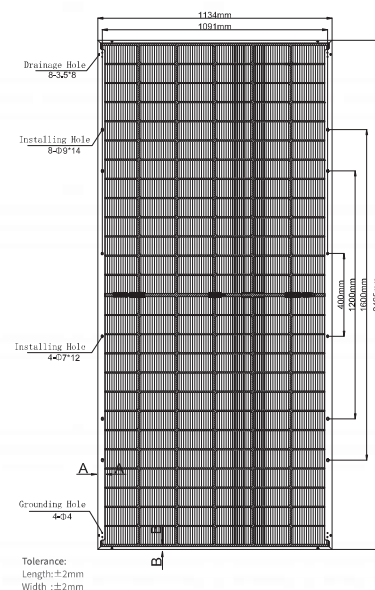
Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	30A

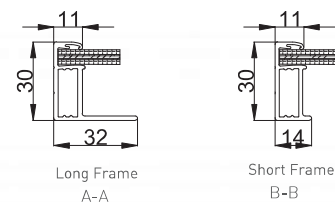
Optional

Connector: ☐ Original MC4

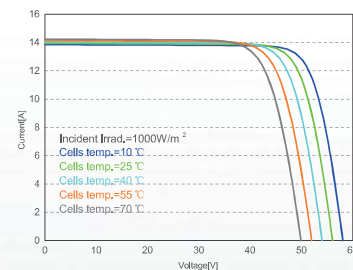
Module Dimension



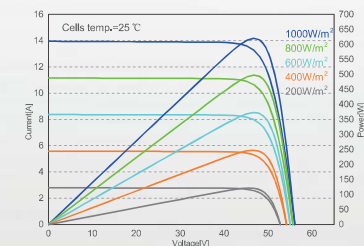
Back View



I-V Curve at Different Temperature (640W)



I-V/P-V Curve at Different Irradiation (640W)



CAUTION: READ INSTALLATION MANUAL BEFORE USING THE PRODUCT

Contact Us for More Information

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