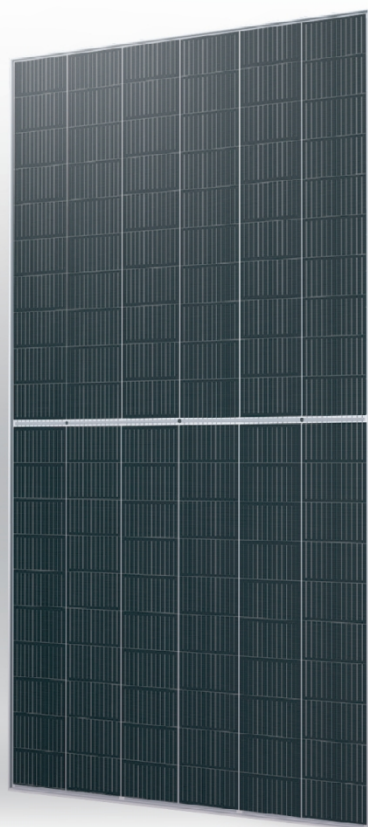


GCL- M12/60GDF

575-610 W

**Bifacial Dual Glass
Monocrystalline Module**



610W

Maximum Power
Output

21.6%

Maximum Module
Efficiency

0~+5W

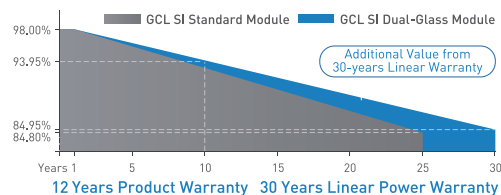
Power Output
Guarantee

GCL-GEMINI

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

Linear Performance Warranty



* Please refer to GCL standard warranty for details



Ideal choice for large
scale ground installation



Non-destructive cutting,
reduce potential micro crack
risk



Additional safety,
Fire class A certified



Withstand up to 1500V
system voltage effectively
reduce BOS cost



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



Large size silicon wafer
module can reduce the cost of
PV support bracket, combining
manifolds, cable, land and so
on, thus thinning the LCOE

Additional Insurance Backed by Swiss RE

* Please refer to GCL for details



Electrical Specification (STC*)

Maximum Power	P _{max} (W)	575	580	585	590	595	600	605	610
Maximum Power Voltage	V _{mp} (V)	33.55	33.75	33.95	34.15	34.35	34.55	34.75	34.95
Maximum Power Current	I _{mp} (A)	17.14	17.19	17.23	17.28	17.32	17.37	17.41	17.46
Open Circuit Voltage	V _{oc} (V)	40.64	40.84	41.04	41.24	41.44	41.64	41.84	42.04
Short Circuit Current	I _{sc} (A)	18.20	18.25	18.30	18.36	18.41	18.46	18.52	18.57
Module Efficiency	(%)	20.3	20.5	20.7	20.8	21.0	21.2	21.4	21.6
Power Output Tolerance	(W)	0~+5							

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

Electrical Specification (NMOT*)

Maximum Power	P _{max} (W)	435.0	438.8	442.6	446.4	450.2	454.0	457.7	461.5
Maximum Power Voltage	V _{mp} (V)	31.30	31.48	31.67	31.86	32.05	32.23	32.42	32.60
Maximum Power Current	I _{mp} (A)	13.90	13.94	13.97	14.01	14.05	14.09	14.12	14.16
Open Circuit Voltage	V _{oc} (V)	38.28	38.47	38.66	38.84	39.03	39.22	39.41	39.60
Short Circuit Current	I _{sc} (A)	14.67	14.71	14.76	14.80	14.84	14.88	14.93	14.97

* 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)	615.3	620.6	626.0	631.3	636.7	642.0	647.4	652.7
Maximum Power Voltage	V _{mp} (V)	33.55	33.75	33.95	34.15	34.35	34.55	34.75	34.95
Maximum Power Current	I _{mp} (A)	18.34	18.39	18.44	18.49	18.54	18.58	18.63	18.68
Open Circuit Voltage	V _{oc} (V)	40.64	40.84	41.04	41.24	41.44	41.64	41.84	42.04
Short Circuit Current	I _{sc} (A)	19.47	19.53	19.58	19.64	19.70	19.75	19.81	19.87

Irradiance ratio (rear/front) 10%

Mechanical Data

Number of Cells	120 Cells (6×20)
Dimensions of Module L*W*H (mm)	2172×1303×35mm (85.51×51.30×1.38 inches)
Weight (kg)	34.8 kg
Front Side Glass	High transparency solar glass 2.0mm (0.08 inches)
Back Side Glass	High transparency solar glass 2.0mm (0.08 inches)
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm ² (0.006 inches ²), Portrait: 280/280mm (11.02inches)
Number of diodes	3
Wind/ Snow Load	2400Pa/ 5400Pa*
Connector	MC Compatible
Bifaciality	70±5%

* For more details please check the installation manual of GCLSI

Temperature Ratings

Nominal Module Operating Temperature(NMOT)	42±2°C
Temperature Coefficient of I _{sc}	+0.05%/°C
Temperature Coefficient of V _{oc}	-0.28%/°C
Temperature Coefficient of P _{MAX}	-0.35%/°C

Packaging Configuration

Module per box	31 pieces
Module per 40' container	558 pieces

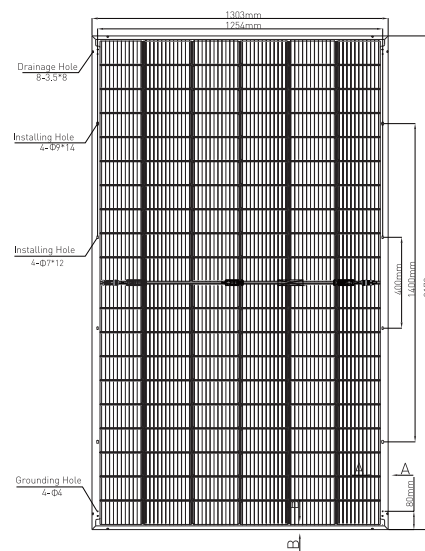
Maximum Ratings

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

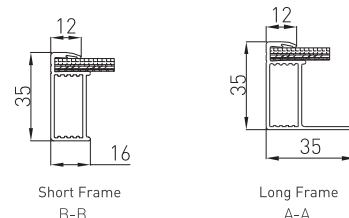
Optional

Connector: ☐ Original MC4

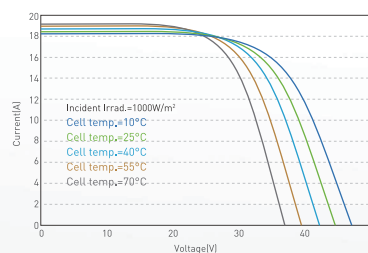
Module Dimension



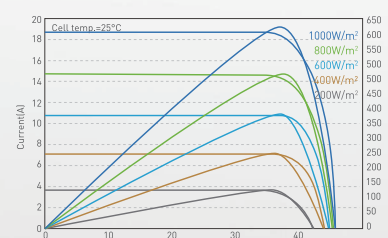
Back View



I-V Curve at Different Temperature (610W)



I-V/P-V Curve at Different Irradiation (610W)



CAUTION: READ INSTALLATION MANUAL BEFORE USING THE PRODUCT

Contact Us for More Information

website: www.gclsi.com email: gclsisales@gclsi.com