

GCL- M10/60H

435-470 W

Monocrystalline Module



470 W

Maximum Power Output

21.7%

Maximum Module Efficiency

0~+5W

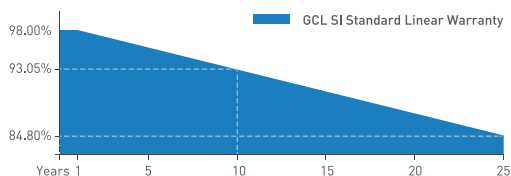
Power Output Guarantee



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

Linear Performance Warranty



12 Years Product Warranty 25 Years Linear Power Warranty

* Please refer to GCL standard warranty for details



Special cutting and soldering technology leads to low hotspot risk



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



Optimized system performance due to module level current sorting



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



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

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	460	465	470
Maximum Power Voltage	V _{mp} (V)	34.17	34.32	34.47	34.62	34.77	34.92	35.07	35.22
Maximum Power Current	I _{mp} (A)	12.73	12.82	12.91	13.00	13.08	13.17	13.26	13.35
Open Circuit Voltage	V _{oc} (V)	40.58	40.73	40.88	41.03	41.18	41.33	41.48	41.63
Short Circuit Current	I _{sc} (A)	13.36	13.44	13.53	13.61	13.69	13.78	13.86	13.95
Module Efficiency	(%)	20.1	20.3	20.6	20.8	21.0	21.3	21.5	21.7
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)	329.3	333.1	336.8	340.6	344.4	348.2	352.0	355.7
Maximum Power Voltage	V _{mp} (V)	31.70	31.84	31.97	32.11	32.25	32.39	32.53	32.67
Maximum Power Current	I _{mp} (A)	10.38	10.46	10.53	10.60	10.67	10.75	10.82	10.89
Open Circuit Voltage	V _{oc} (V)	38.31	38.45	38.59	38.74	38.88	39.02	39.16	39.30
Short Circuit Current	I _{sc} (A)	10.70	10.76	10.83	10.90	10.97	11.03	11.10	11.17

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

Mechanical Data

Number of Cells	120 Cells (6×20)
Dimensions of Module L*W*H (mm)	1908×1134×30mm (75.12×44.65×1.18 inches)
Weight (kg)	22.8 kg
Glass	High transparency solar glass 3.2mm (0.13 inches)
Backsheet	White
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

* For more details please check the installation manual of GCLSI

Temperature Ratings

Nominal Module Operating Temperature(NMOT)	43±2°C
Temperature Coefficient of I _{sc}	+0.05%/°C
Temperature Coefficient of V _{oc}	-0.28%/°C
Temperature Coefficient of P _{MAX}	-0.36%/°C

Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A

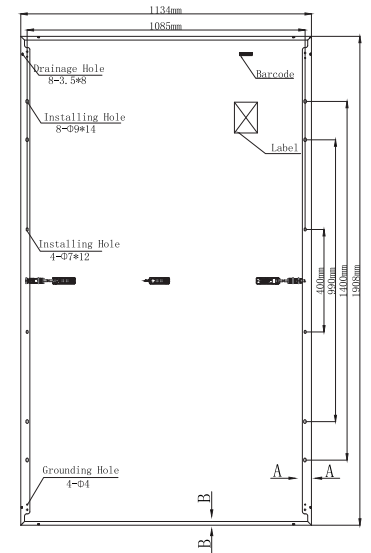
Optional

Connector: ☐ Original MC4

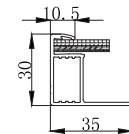
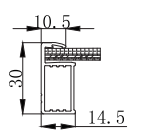
Packaging Configuration

Module per box	36 pieces
Module per 40' container	864 pieces

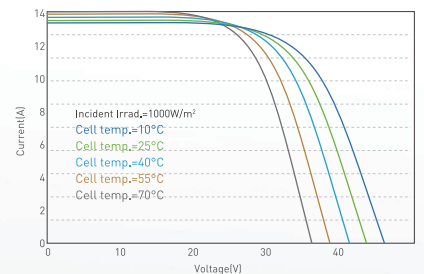
Module Dimension



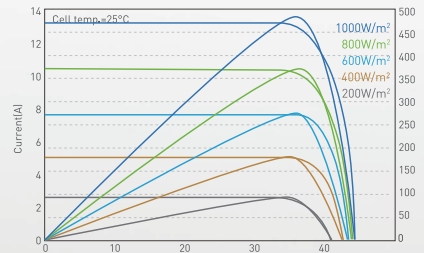
Back View

Long Frame
A-AShort Frame
B-B

I-V Curve at Different Temperature (470W)



I-V/P-V Curve at Different Irradiation (470W)



CAUTION: READ INSTALLATION MANUAL BEFORE USING THE PRODUCT

Contact Us for More Information

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