



# GCL-M8/72GDF

## Bifacial Dual Glass Monocrystalline Module

440-475 W



**475W**

Maximum Power Output

**21.3%**

Maximum Module Efficiency

**0~+5W**

Power Output Guarantee



Ideal choice for large scale ground installation



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



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



Additional safety, Fire class Acertified



Withstand up to 1500V system voltage effectively reduce BOS cost

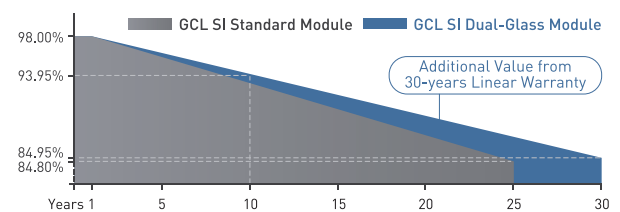


Sand blowing test, salt mist test and ammonia test passed to endure harsh environments

### 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 30 Years Linear Power Warranty

\* Please refer to GCL standard warranty for details

Additional Insurance Backed by Swiss RE



\* Please refer to GCL for details

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## Bifacial Dual Glass Monocrystalline Module

440-475W

### Electrical Specification (STC\*)

Maximum Power	Pmax(W)	440	445	450	455	460	465	470	475
Maximum Power Voltage	Vmp(V)	41.01	41.25	41.56	41.83	42.11	42.37	42.65	42.91
Maximum Power Current	Imp(A)	10.73	10.79	10.83	10.88	10.93	10.98	11.02	11.07
Open Circuit Voltage	Voc(V)	48.51	48.89	49.26	49.61	49.96	50.32	50.67	51.03
Short Circuit Current	Isc(A)	11.27	11.33	11.37	11.42	11.47	11.52	11.56	11.61
Module Efficiency	(%)	19.7	19.9	20.2	20.4	20.6	20.8	21.1	21.3
Power Output Tolerance	(W)	0~+5							

\* Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass 1.5

### Electrical Specification (NMOT\*)

Maximum Power	Pmax (W)	328.3	332.0	335.8	339.6	343.3	347.1	350.9	354.8
Maximum Power Voltage	Vmp (V)	38.40	38.70	39.00	39.30	39.60	39.90	40.20	40.50
Maximum Power Current	Imp (A)	8.55	8.58	8.61	8.64	8.67	8.70	8.73	8.76
Open Circuit Voltage	Voc(V)	45.30	45.60	45.90	46.20	46.50	46.80	47.10	47.40
Short Circuit Current	Isc (A)	9.04	9.07	9.10	9.13	9.16	9.19	9.22	9.25

\* Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s

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

Maximum Power	Pmax (W)	470.8	476.2	481.5	486.9	492.2	497.6	502.9	508.3
Maximum Power Voltage	Vmp (V)	41.01	41.25	41.56	41.83	42.11	42.37	42.65	42.91
Maximum Power Current	Imp (A)	11.48	11.55	11.59	11.64	11.69	11.74	11.80	11.84
Open Circuit Voltage	Voc(V)	48.51	48.89	49.26	49.61	49.96	50.32	50.67	51.03
Short Circuit Current	Isc (A)	12.06	12.12	12.17	12.22	12.27	12.33	12.37	12.42
Irradiance ratio (rear/front)		10%							

### Mechanical Data

Number of Cells	144 Cells (6x24)
Dimensions of Module L*W*H (mm)	2130x1048x30mm(83.86x41.26x1.18 inches)
Weight (kg)	28.5 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 <sup>2</sup> (0.006 inches <sup>2</sup> ), Portrait: 230/230mm (9.06inches)
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 Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.28%/°C
Temperature Coefficient of P <sub>MAX</sub>	-0.35%/°C

### Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	20A

### Optional

Connector:  Original MC4

### Packaging Configuration

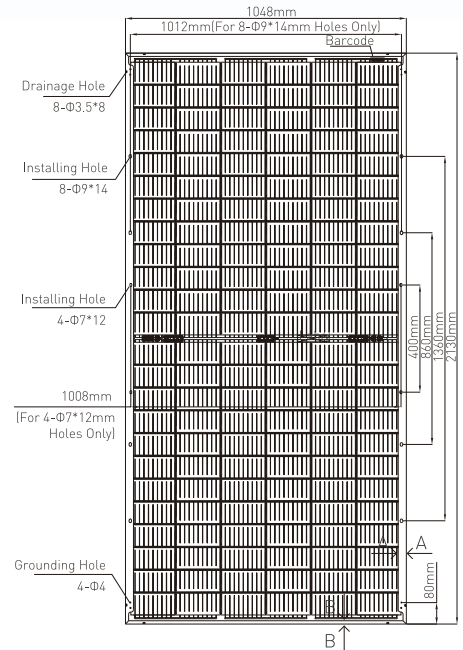
Module per box	35 pieces
Module per 40' container	700 pieces



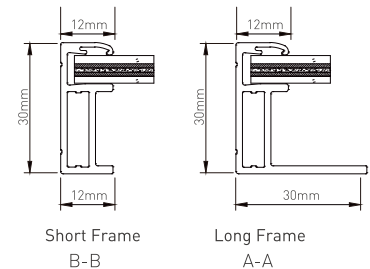
Contact Us for More Information

website: [www.gclsi.com](http://www.gclsi.com) email: [gclsisales@gclsi.com](mailto:gclsisales@gclsi.com)

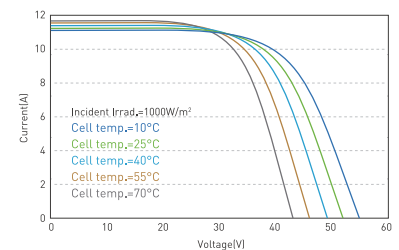
### Module Dimension



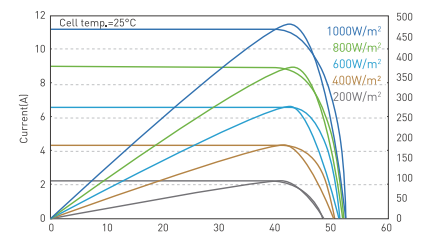
Back View



### I-V Curve at Different Temperature (475W)



### I-V/P-V Curve at Different Irradiation (475W)



CAUTION: READ INSTALLATION MANUAL BEFORE USING THE PRODUCT