



# GCL-M8/72GDF

## Bifacial Dual Glass Monocrystalline Module

### 415-445W



## 445W

Maximum Power Output

## 19.9%

Maximum Module Efficiency

## 0~+5W

Power Output Guarantee



Ideal choice for large scale ground installation



More evenly distributed soldering points and better reliability and lower hot spot risk



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

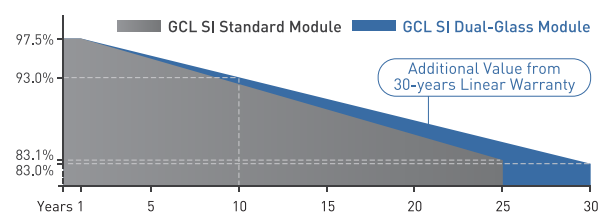


Sand blowing test, salt mist test and ammonia test passed to endure harsh environments

### 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: ISO9001:2015, ISO14001: 2015 and OHSAS: 18001 2007
- 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

415-445W

### Electrical Specification (STC\*)

Test Condition		Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear
Maximum Power	P <sub>max</sub> (W)	415	291	420	294	425	298	430	301	435	305	440	308	445	312
Maximum Power Voltage	V <sub>mp</sub> (V)	39.49	39.89	39.78	40.18	40.10	40.50	40.38	40.78	40.70	41.10	41.01	41.41	41.25	41.65
Maximum Power Current	I <sub>mp</sub> (A)	10.51	7.28	10.56	7.32	10.60	7.35	10.65	7.38	10.69	7.41	10.73	7.44	10.79	7.48
Open Circuit Voltage	V <sub>oc</sub> (V)	46.93	46.23	47.22	46.52	47.54	46.84	47.82	47.12	48.14	47.44	48.45	47.75	48.83	48.13
Short Circuit Current	I <sub>sc</sub> (A)	11.00	7.72	11.05	7.76	11.09	7.79	11.14	7.82	11.18	7.85	11.22	7.88	11.28	7.92
Module Efficiency	(%)	18.6	13.0	18.8	13.2	19.0	13.3	19.3	13.5	19.5	13.6	19.7	13.8	19.9	14.0
Power Output Tolerance	(W)	0~+5													

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

### Electrical Specification (NOCT\*)

Test Condition		Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear
Maximum Power	P <sub>max</sub> (W)	309.96	216.16	313.60	218.67	317.25	221.19	320.92	223.72	324.61	226.26	328.32	228.82	332.18	232.52
Maximum Power Voltage	V <sub>mp</sub> (V)	36.90	36.70	37.20	37.00	37.50	37.30	37.80	37.60	38.10	37.90	38.40	38.20	38.67	39.07
Maximum Power Current	I <sub>mp</sub> (A)	8.40	5.89	8.43	5.91	8.46	5.93	8.49	5.95	8.52	5.97	8.55	5.99	8.59	5.95
Open Circuit Voltage	V <sub>oc</sub> (V)	43.80	43.10	44.10	43.40	44.40	43.70	44.70	44.00	45.00	44.30	45.30	44.60	45.60	44.90
Short Circuit Current	I <sub>sc</sub> (A)	8.89	6.24	8.92	6.27	8.95	6.30	8.98	6.33	9.01	6.36	9.04	6.39	9.13	6.41

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

### Mechanical Data

Number of Cells	144 Cells (6×24)
Dimensions of Module L*W*H (mm)	2130×1048×30mm [83.86×41.26×1.18 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: 200/200mm [7.87 inches]
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 Operating Cell Temperature (NOCT)	43±2°C
Temperature Coefficient of I <sub>sc</sub>	+0.06%/°C
Temperature Coefficient of V <sub>oc</sub>	-0.30%/°C
Temperature Coefficient of P <sub>MAX</sub>	-0.38%/°C

### Maximum Ratings

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

### Optional

Connector:  Original MC4

### Packaging Configuration

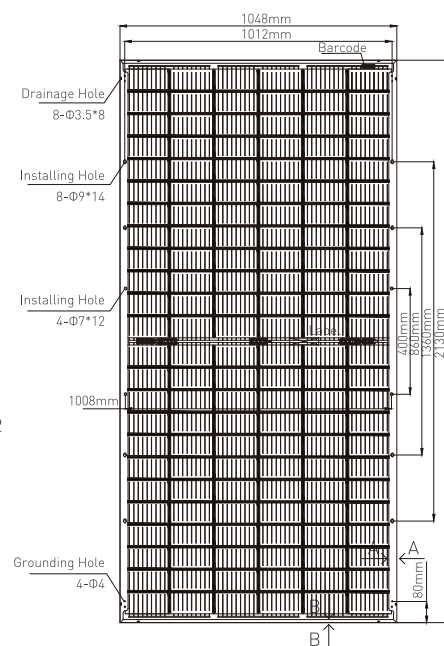
Module per box	35 pieces
Module per 40' container	700 pieces



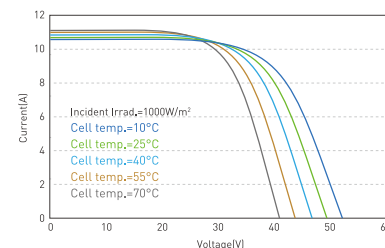
Contact Us for More Information

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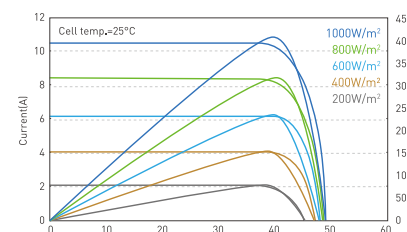
### Module Dimension



### I-V Curve at Different Temperature (435W)



### I-V/P-V Curve at Different Irradiation (435W)



CAUTION: READ INSTALLATION MANUAL BEFORE USING THE PRODUCT