

Alpha Investment Solar Panels Private Brand

Photovoltaic Modules

- World-class manufacturer of crystalline silicon photovoltaic r Fully automatic facility and world-class technology Special cutting and dule
- 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
- 2 × 100% EL inspection ensuring defect-free modules



Special cutting and soldering technology leads to low hotspot risk



Ideal choice for residential rooftop



Optimized system performance due to module level current sorting



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



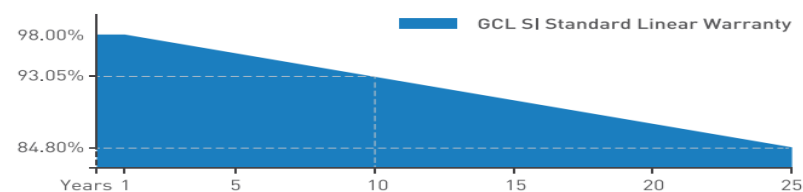
Selected encapsulating material and stringent production process control ensure the product is highly PID resistant and snail trails free



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



Linear Performance Warranty



12 Years Product Warranty 25 Years Linear Power Warranty

Monocrystalline module - M10/54H

Electrical Specification (STC*)

Maximum Power	P _{max} (W)	385	390	395	400	405	410	415	420
Maximum Power Voltage	V _{mp} (V)	30.56	30.71	30.86	31.01	31.16	31.31	31.46	31.61
Maximum Power Current	I _{mp} (A)	12.60	12.70	12.80	12.90	13.00	13.09	13.19	13.29
Open Circuit Voltage	V _{oc} (V)	36.33	36.48	36.63	36.78	36.93	37.08	37.23	37.38
Short Circuit Current	I _{sc} (A)	13.24	13.33	13.42	13.52	13.61	13.70	13.80	13.89
Module Efficiency	(%)	19.7	20.0	20.2	20.5	20.7	21.0	21.3	21.5
Power Output Tolerance	(W)	0~+5							

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

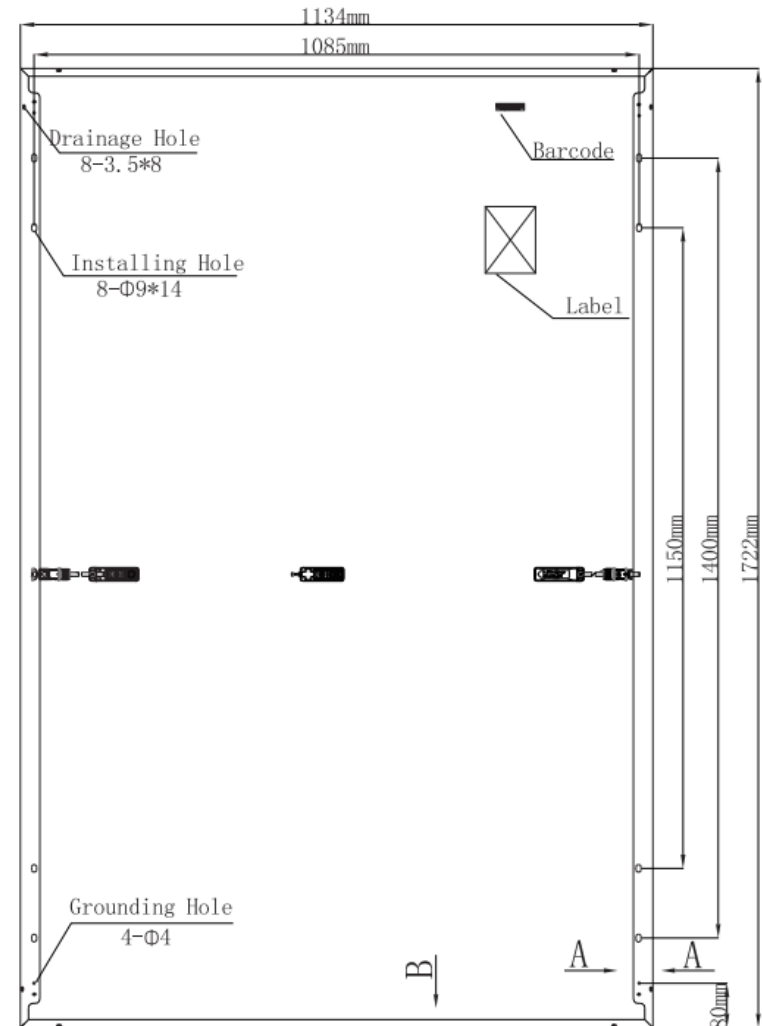
Electrical Specification (NMOT*)

Maximum Power	P _{max} (W)	291.4	295.2	299.0	302.8	306.6	310.3	314.1	317.9
Maximum Power Voltage	V _{mp} (V)	28.35	28.49	28.62	28.76	28.90	29.04	29.18	29.32
Maximum Power Current	I _{mp} (A)	10.28	10.36	10.44	10.52	10.60	10.68	10.76	10.84
Open Circuit Voltage	V _{oc} (V)	34.30	34.44	34.58	34.72	34.86	35.00	35.15	35.29
Short Circuit Current	I _{sc} (A)	10.60	10.67	10.75	10.82	10.90	10.97	11.05	11.12

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

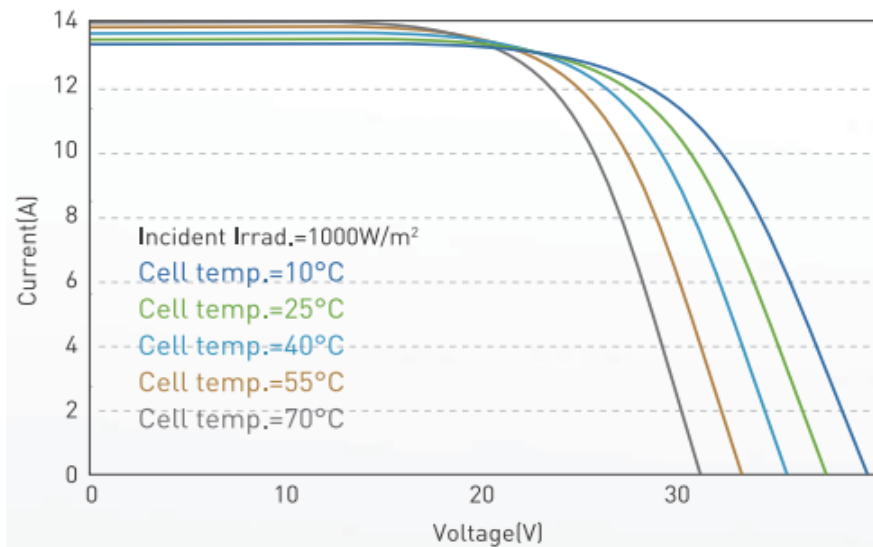
Mechanical Data

Number of Cells	108 Cells (6×18)
Dimensions of Module L*W*H (mm)	1722×1134×30mm (67.80×44.65×1.18 inches)
Weight (kg)	20.5 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

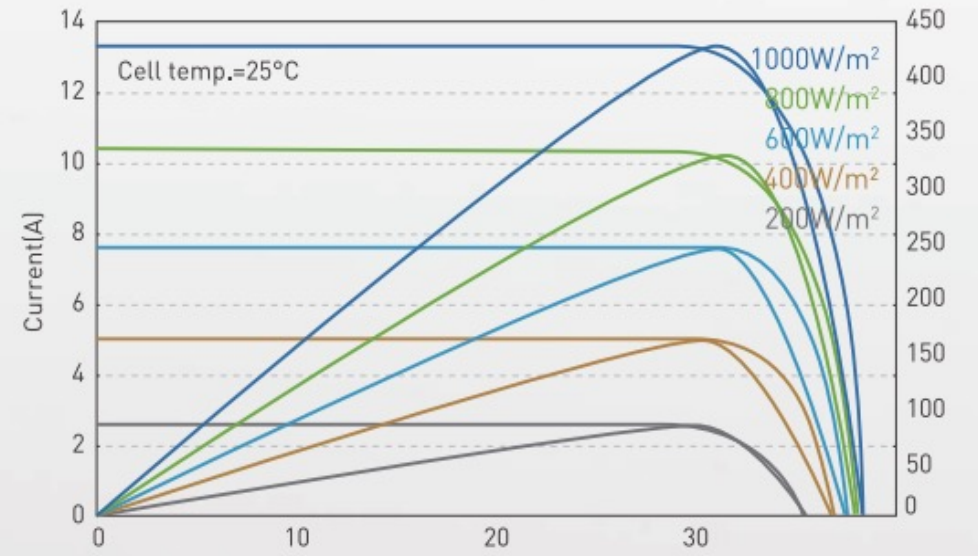


Monocrystalline module - M10/54H

I-V Curve at Different Temperature (420W)



I-V/P-V Curve at Different Irradiation (420W)



Temperature Ratings

Nominal Module Operating Temperature(NMOT)	43±2°C
Temperature Coefficient of Isc	+0.05%/°C
Temperature Coefficient of Voc	-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

Packaging Configuration

Module per box	36 pieces
Module per 40' container	936 pieces

Monocrystalline module - M10/60GDF

Electrical Specification (STC*)

Maximum Power	P _{max} (W)	435	440	445	450	455	460	465	470
Maximum Power Voltage	V _{mp} (V)	33.37	33.63	33.89	34.12	34.35	34.58	34.84	35.10
Maximum Power Current	I _{mp} (A)	13.04	13.09	13.14	13.19	13.24	13.29	13.34	13.39
Open Circuit Voltage	V _{oc} (V)	39.69	39.97	40.25	40.53	40.81	41.09	41.37	41.65
Short Circuit Current	I _{sc} (A)	13.58	13.63	13.68	13.73	13.78	13.83	13.88	13.93
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

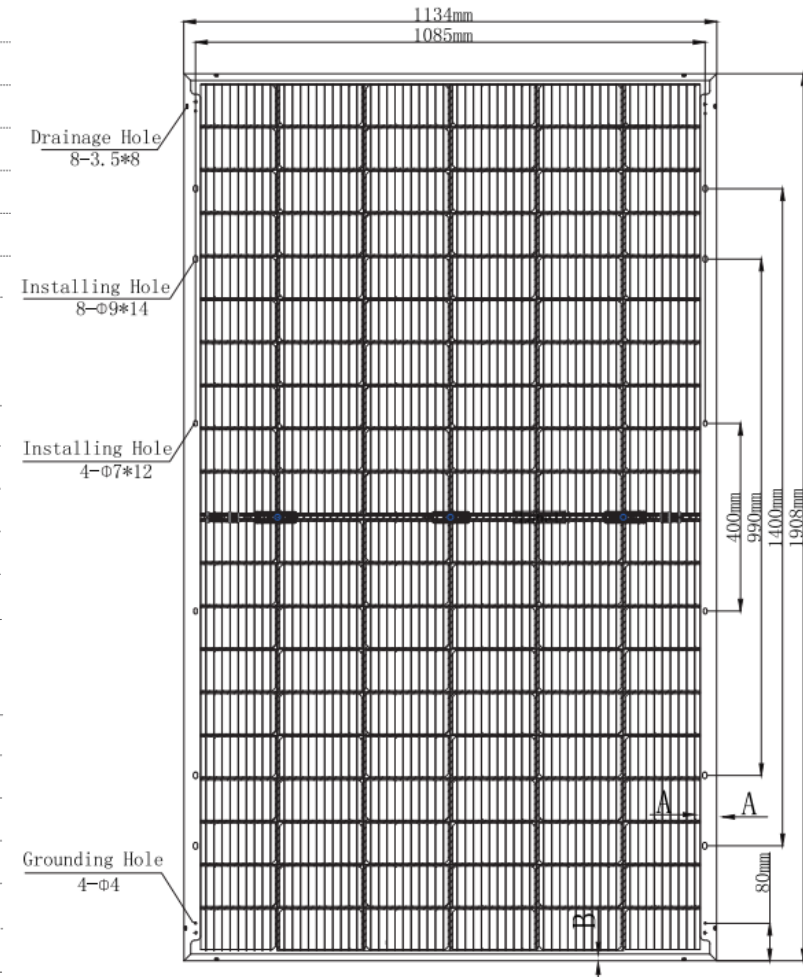
Electrical Specification (NMOT*)

Maximum Power	P _{max} (W)	327.3	331.1	334.8	338.6	342.3	346.1	349.9	353.6
Maximum Power Voltage	V _{mp} (V)	31.30	31.50	31.80	32.00	32.20	32.40	32.60	32.90
Maximum Power Current	I _{mp} (A)	10.47	10.51	10.54	10.59	10.64	10.68	10.72	10.75
Open Circuit Voltage	V _{oc} (V)	37.90	38.20	38.50	38.70	39.00	39.30	39.50	39.80
Short Circuit Current	I _{sc} (A)	10.95	10.99	11.03	11.07	11.11	11.15	11.19	11.23

* 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)	465.5	470.8	476.2	481.5	486.9	492.2	497.6	502.9
Maximum Power Voltage	V _{mp} (V)	33.36	33.61	33.87	34.12	34.37	34.61	34.86	35.10
Maximum Power Current	I _{mp} (A)	13.95	14.01	14.06	14.11	14.17	14.22	14.27	14.33
Open Circuit Voltage	V _{oc} (V)	39.69	39.97	40.25	40.53	40.81	41.09	41.37	41.65
Short Circuit Current	I _{sc} (A)	14.53	14.58	14.64	14.69	14.74	14.80	14.85	14.91
Irradiance ratio (rear/front)		10%							



Monocrystalline module - M10/60GDF

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)	27.3 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 Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.28%/°C
Temperature Coefficient of P _{MAX}	-0.35%/°C

Packaging Configuration

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

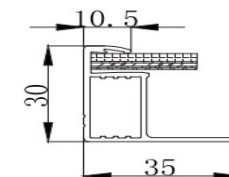
Maximum Ratings

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

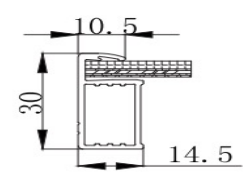
Optional

Connector:	☐ Original MC4
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Back View

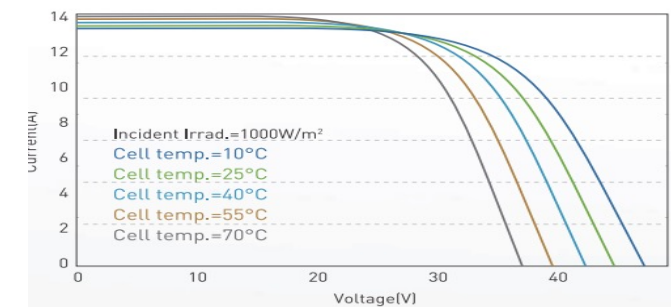


Long Frame
A-A

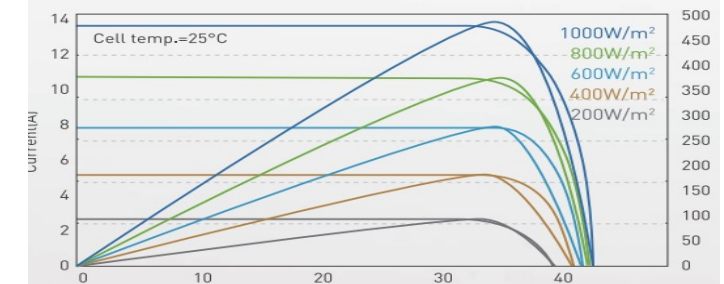


Short Frame
B-B

I-V Curve at Different Temperature (470W)



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



Monocrystalline module - M10/60H

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

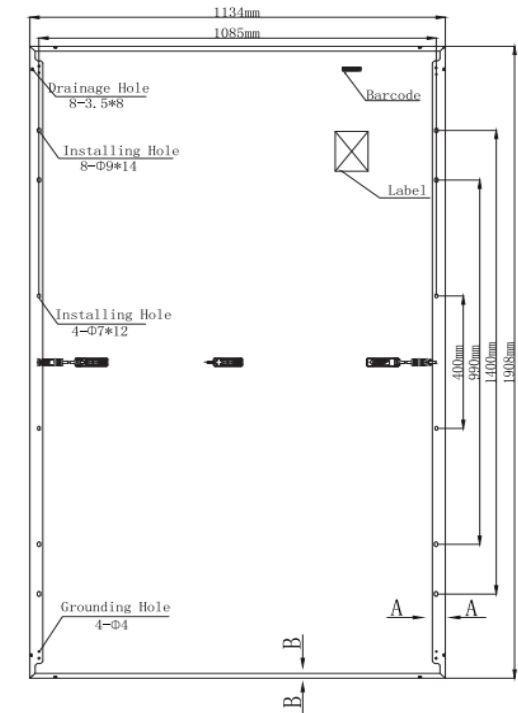
Electrical Specification (NMOT*)

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

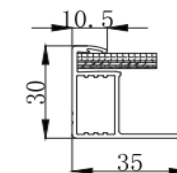
* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

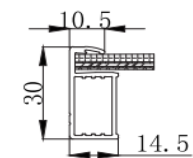
Number of Cells	120 Cells (6×20)
Dimensions of Module L*W*H (mm)	1908×1134×30mm (75.12×44.65×1.18 inches)
Weight (kg)	22.8 kg
Glass	High transparency solar glass 3.2mm (0.13 inches)
Backsheet	White
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm ² (0.006 inches ²), Portrait: 280/280mm (11.02inches)
Number of diodes	3
Wind/ Snow Load	2400Pa/ 5400Pa*
Connector	MC Compatible



Back View



Long Frame
A-A



Short Frame
B-B

Monocrystalline module - M10/60H

Temperature Ratings

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

Packaging Configuration

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

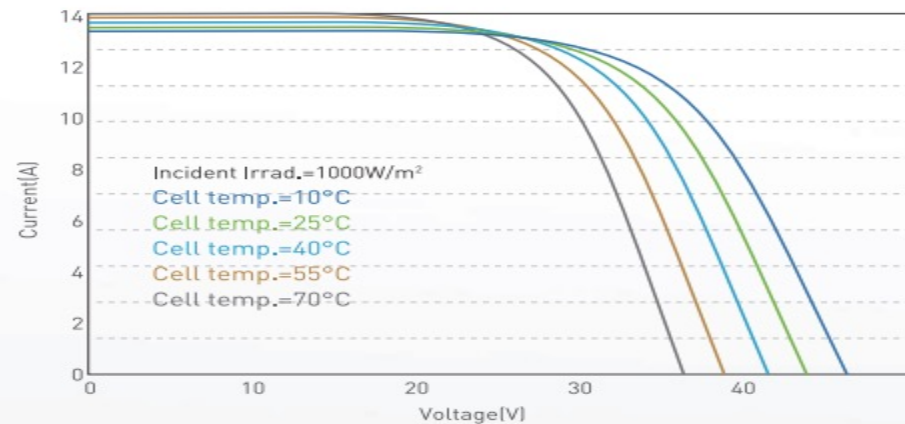
Maximum Ratings

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

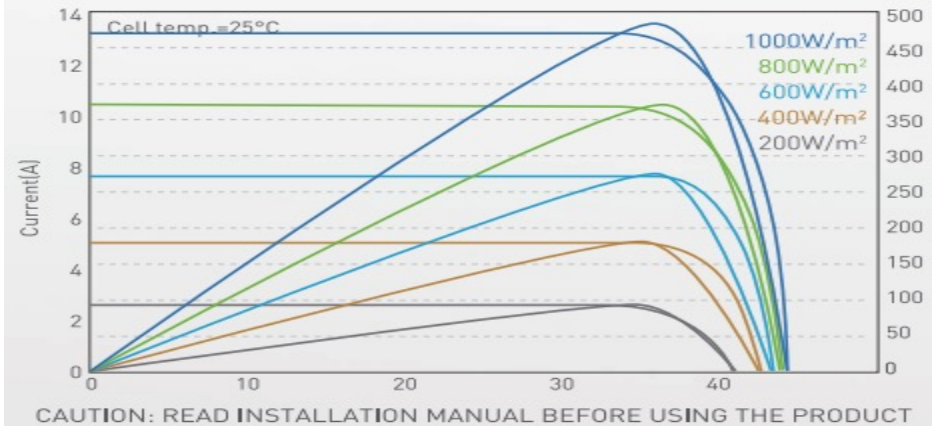
Optional

Connector: ☐ Original MC4

I-V Curve at Different Temperature (470W)



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



Monocrystalline module - M10/72GDF

Electrical Specification (STC*)

Maximum Power	P _{max} (W)	520	525	530	535	540	545	550	555
Maximum Power Voltage	V _{mp} (V)	40.50	40.73	40.96	41.22	41.45	41.70	41.93	42.18
Maximum Power Current	I _{mp} (A)	12.84	12.89	12.94	12.98	13.03	13.07	13.12	13.16
Open Circuit Voltage	V _{oc} (V)	48.45	48.49	48.68	48.96	49.24	49.52	49.80	50.08
Short Circuit Current	I _{sc} (A)	13.59	13.63	13.68	13.73	13.78	13.83	13.88	13.93
Module Efficiency	(%)	20.1	20.3	20.5	20.7	20.9	21.1	21.3	21.5
Power Output Tolerance	(W)	0~+5							

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

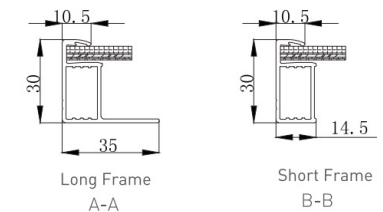
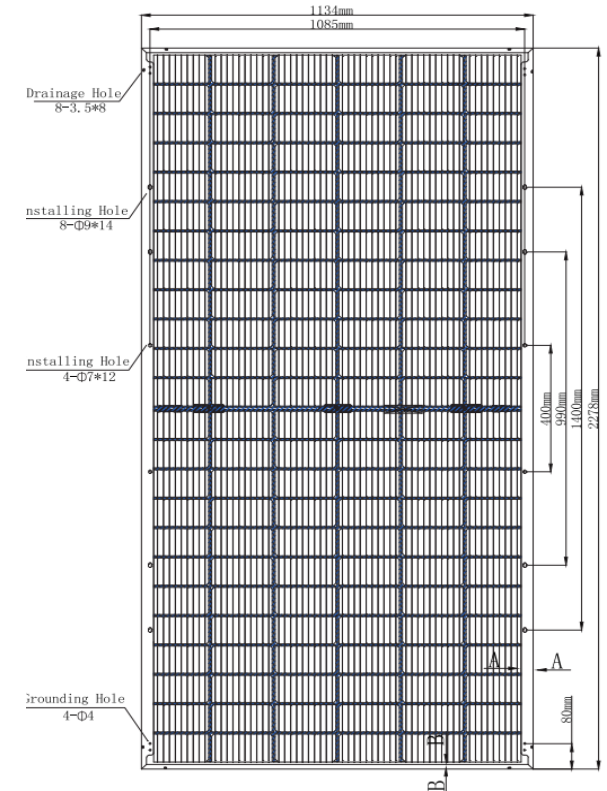
Electrical Specification (NMOT*)

Maximum Power	P _{max} (W)	393.5	397.3	401.1	404.8	408.6	412.4	416.2	420.0
Maximum Power Voltage	V _{mp} (V)	37.56	37.78	38.00	38.23	38.45	38.67	38.90	39.12
Maximum Power Current	I _{mp} (A)	10.47	10.51	10.54	10.58	10.62	10.66	10.70	10.74
Open Circuit Voltage	V _{oc} (V)	45.74	45.77	45.95	46.21	46.48	46.74	47.01	47.28
Short Circuit Current	I _{sc} (A)	10.88	10.92	10.96	11.00	11.04	11.08	11.12	11.16

* 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)	556.4	561.8	567.1	572.5	577.8	583.2	588.5	593.9
Maximum Power Voltage	V _{mp} (V)	40.50	40.73	40.96	41.22	41.45	41.70	41.93	42.18
Maximum Power Current	I _{mp} (A)	13.74	13.79	13.85	13.89	13.94	13.98	14.04	14.08
Open Circuit Voltage	V _{oc} (V)	48.45	48.49	48.68	48.96	49.24	49.52	49.80	50.08
Short Circuit Current	I _{sc} (A)	14.54	14.58	14.63	14.69	14.75	14.80	14.85	14.91
Irradiance ratio (rear/front)		10%							



Monocrystalline module - M10/72GDF

Mechanical Data

Number of Cells	144 Cells (6×24)
Dimensions of Module L*W*H (mm)	2278×1134×30 mm (89.69×44.65×1.18 inches)
Weight (kg)	32.7 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	36 pieces
Module per 40' container	720 pieces

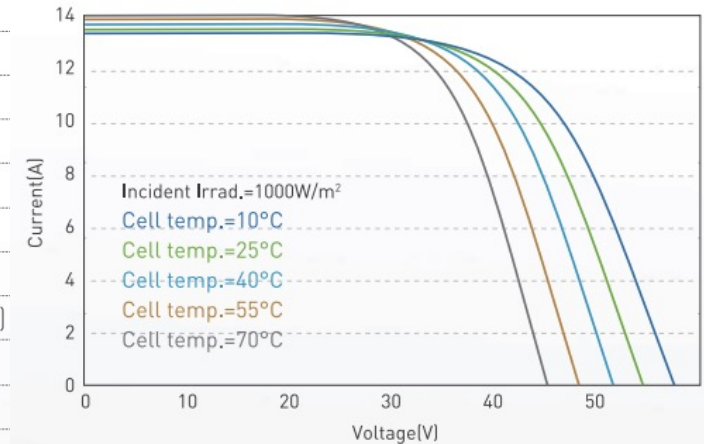
Maximum Ratings

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

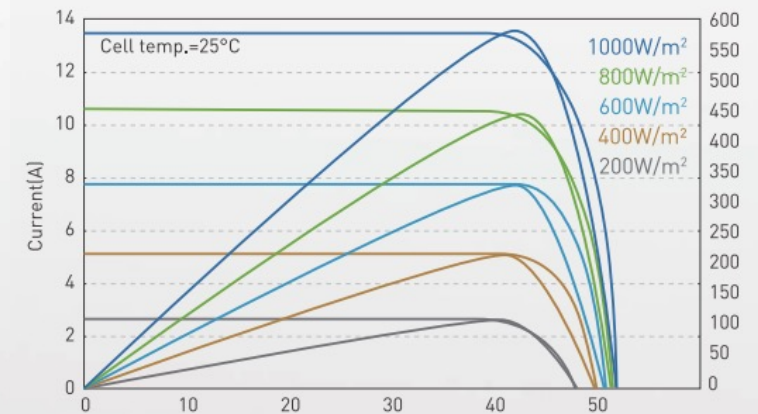
Optional

Connector: ☐ Original MC4

I-V Curve at Different Temperature (555W)



I-V/P-V Curve at Different Irradiation (555W)



Monocrystalline module - M10/72H

Electrical Specification (STC*)

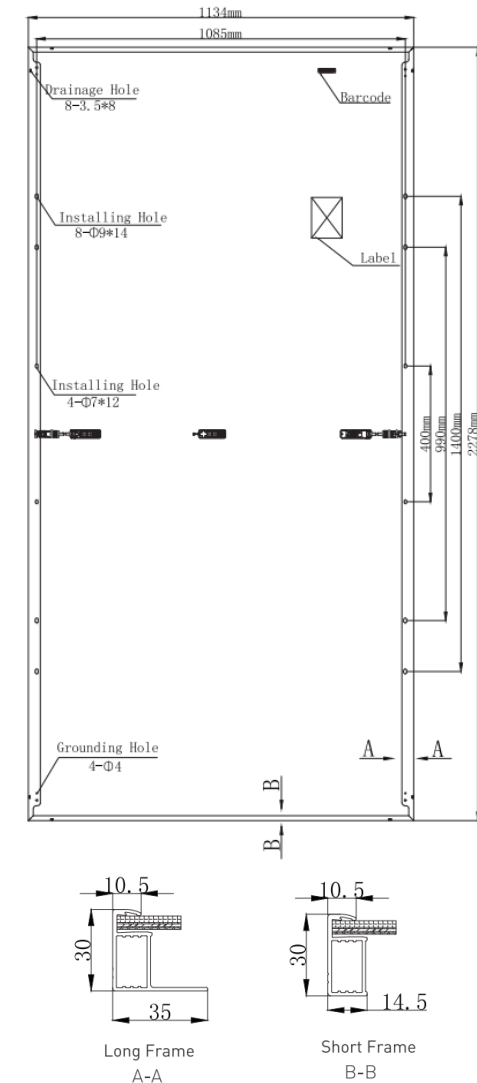
Maximum Power	P _{max} (W)	525	530	535	540	545	550	555	560
Maximum Power Voltage	V _{mp} (V)	41.21	41.48	41.77	42.06	42.35	42.64	42.93	43.22
Maximum Power Current	I _{mp} (A)	12.74	12.78	12.81	12.84	12.87	12.90	12.93	12.96
Open Circuit Voltage	V _{oc} (V)	49.05	49.28	49.51	49.75	49.98	50.22	50.45	50.68
Short Circuit Current	I _{sc} (A)	13.53	13.57	13.60	13.63	13.66	13.70	13.73	13.76
Module Efficiency	(%)	20.3	20.5	20.7	20.9	21.1	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)	397.2	401.1	404.8	408.6	412.4	416.2	420.0	423.8
Maximum Power Voltage	V _{mp} (V)	38.22	38.47	38.74	39.01	39.28	39.55	39.82	40.09
Maximum Power Current	I _{mp} (A)	10.39	10.43	10.45	10.47	10.50	10.52	10.55	10.57
Open Circuit Voltage	V _{oc} (V)	46.30	46.52	46.74	46.96	47.18	47.40	47.62	47.85
Short Circuit Current	I _{sc} (A)	10.84	10.86	10.89	10.92	10.94	10.97	10.99	11.02

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



Monocrystalline module - M10/72H

Mechanical Data

Number of Cells	144 Cells (6×24)
Dimensions of Module L*W*H (mm)	2278x1134x30 mm (89.69×44.65×1.18 inches)
Weight (kg)	26.8 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 Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.28%/°C
Temperature Coefficient of P _{MAX}	-0.36%/°C

Packaging Configuration

Module per box	36 pieces
Module per 40' container	720 pieces

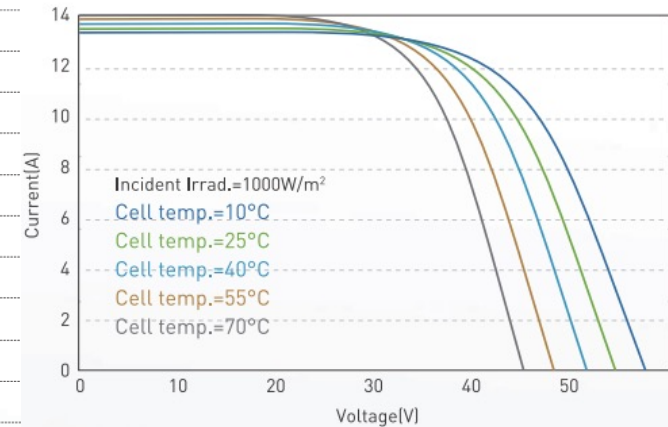
Maximum Ratings

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

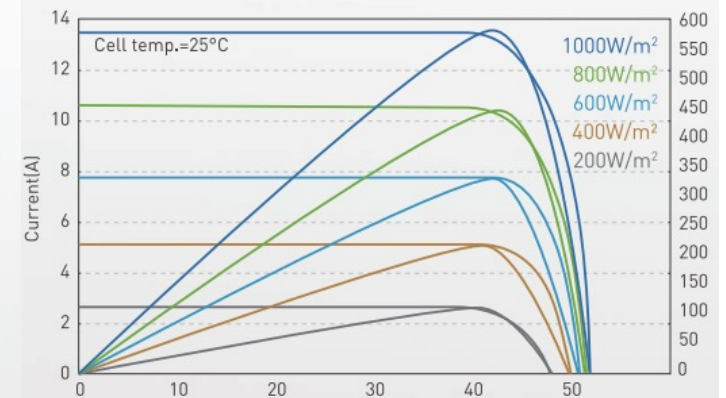
Optional

Connector:	☐ Original MC4
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I-V Curve at Different Temperature (560W)



I-V/P-V Curve at Different Irradiation (560W)



Monocrystalline module - M12/60GDF

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

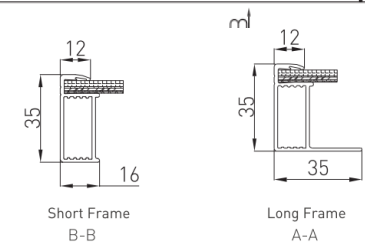
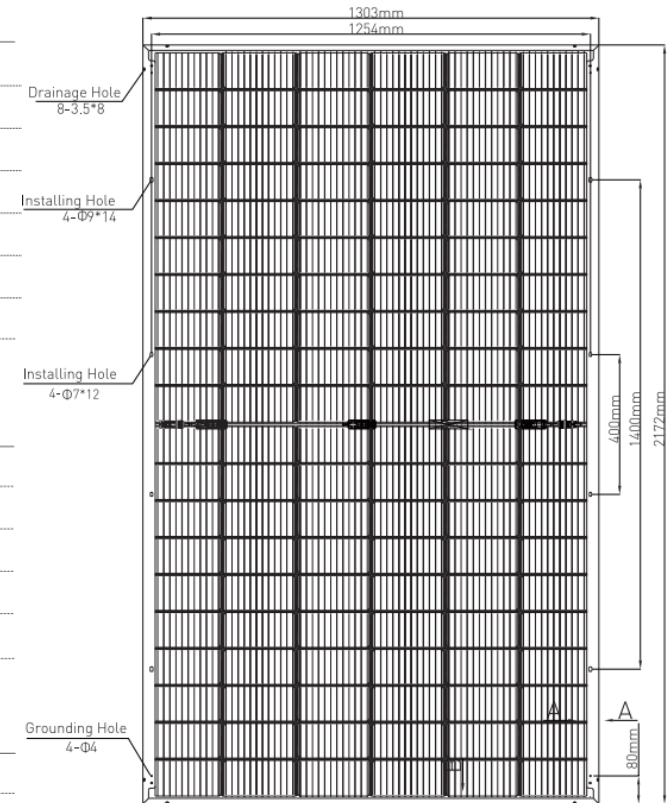
Electrical Specification (NMOT*)

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%							



Monocrystalline module - M12/60GDF

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 Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.28%/°C
Temperature Coefficient of P _{MAX}	-0.35%/°C

Packaging Configuration

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

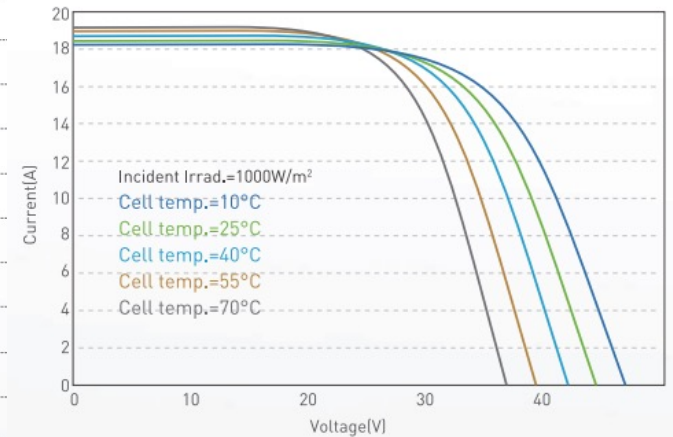
Maximum Ratings

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

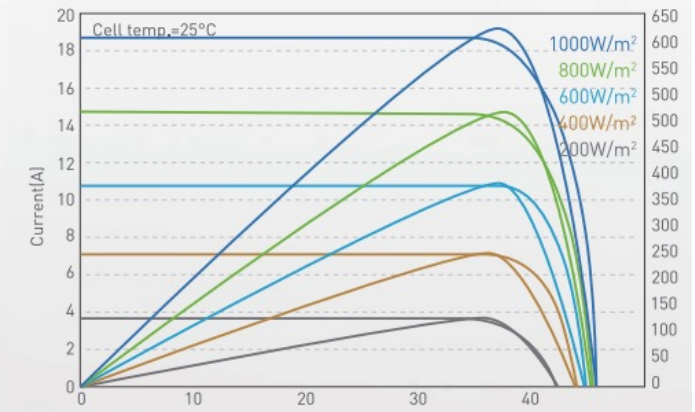
Optional

Connector:	☐ Original MC4
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I-V Curve at Different Temperature (610W)



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



Monocrystalline module - M12/60H

Electrical Specification (STC*)

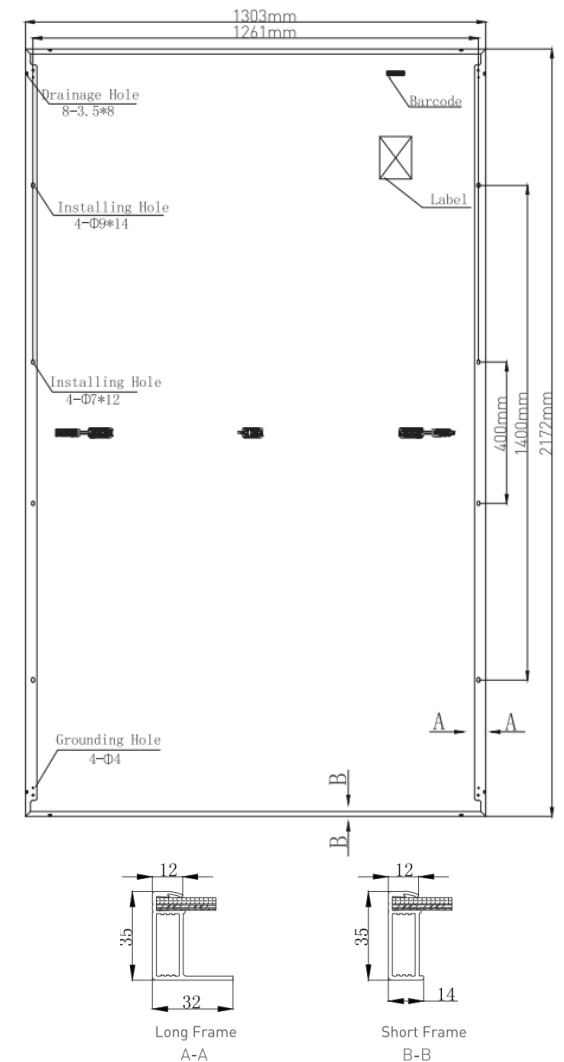
Maximum Power	P _{max} (W)	580	585	590	595	600	605	610	615
Maximum Power Voltage	V _{mp} (V)	33.56	33.76	33.96	34.16	34.36	34.56	34.76	34.96
Maximum Power Current	I _{mp} (A)	17.28	17.33	17.37	17.41	17.46	17.50	17.55	17.59
Open Circuit Voltage	V _{oc} (V)	40.65	40.85	41.05	41.25	41.45	41.65	41.85	42.05
Short Circuit Current	I _{sc} (A)	18.34	18.40	18.45	18.50	18.55	18.61	18.66	18.71
Module Efficiency	(%)	20.5	20.7	20.8	21.0	21.2	21.4	21.6	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)	438.1	442.6	446.4	450.2	454.0	457.7	461.5	465.3
Maximum Power Voltage	V _{mp} (V)	31.26	31.50	31.69	31.88	32.06	32.25	32.43	32.62
Maximum Power Current	I _{mp} (A)	14.02	14.05	14.09	14.12	14.16	14.19	14.23	14.27
Open Circuit Voltage	V _{oc} (V)	38.30	38.48	38.67	38.86	39.05	39.24	39.43	39.62
Short Circuit Current	I _{sc} (A)	14.79	14.83	14.87	14.92	14.96	15.00	15.04	15.09

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



Monocrystalline module - M12/60H

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)	31 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 Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.28%/°C
Temperature Coefficient of P _{MAX}	-0.36%/°C

Packaging Configuration

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

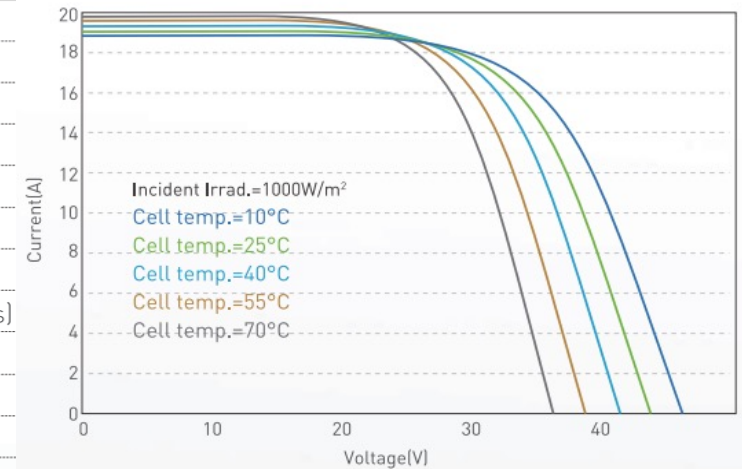
Maximum Ratings

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

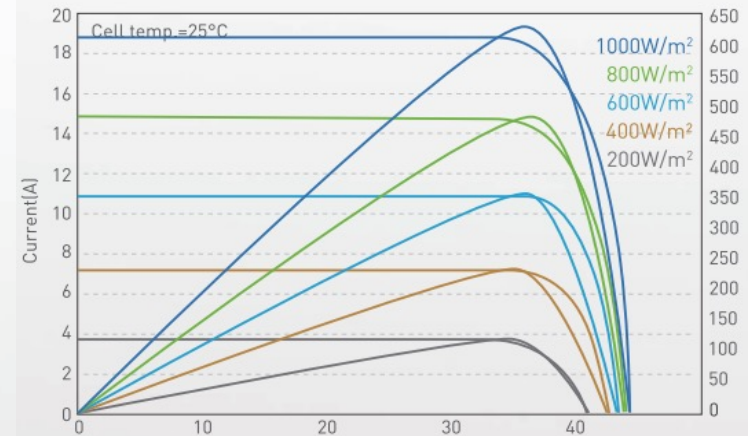
Optional

Connector:	☐ Original MC4
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I-V Curve at Different Temperature (615W)



I-V/P-V Curve at Different Irradiation (615W)



Monocrystalline module - M12/66GDF

Electrical Specification (STC*)

Maximum Power	Pmax[W]	635	640	645	650	655	660	665	670
Maximum Power Voltage	Vmp[V]	37.00	37.20	37.40	37.60	37.80	38.00	38.20	38.40
Maximum Power Current	Imp[A]	17.16	17.20	17.25	17.29	17.33	17.37	17.41	17.45
Open Circuit Voltage	Voc[V]	44.80	45.00	45.20	45.40	45.60	45.80	46.00	46.20
Short Circuit Current	Isc[A]	18.07	18.12	18.17	18.21	18.26	18.31	18.36	18.41
Module Efficiency	(%)	20.4	20.6	20.8	20.9	21.1	21.2	21.4	21.6
Power Output Tolerance	(W)	0~+5							

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

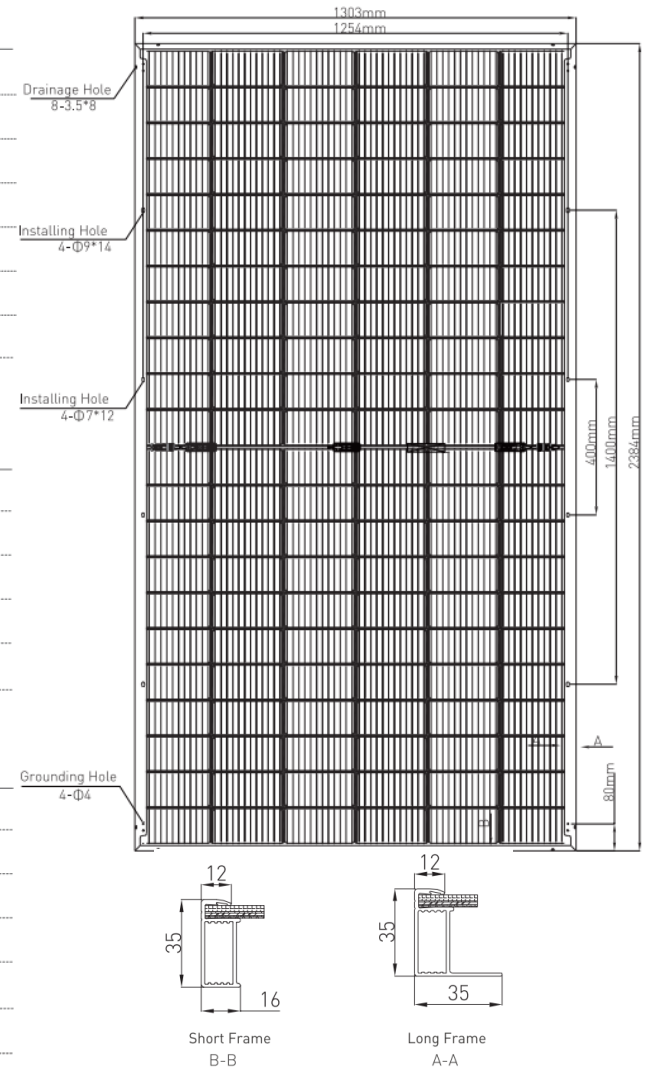
Electrical Specification (NMOT*)

Maximum Power	Pmax [W]	480.4	484.2	488.0	491.8	495.6	499.4	503.1	506.9
Maximum Power Voltage	Vmp [V]	34.52	34.70	34.89	35.08	35.26	35.45	35.64	35.82
Maximum Power Current	Imp [A]	13.92	13.95	13.99	14.02	14.05	14.09	14.12	14.15
Open Circuit Voltage	Voc[V]	42.20	42.39	42.58	42.77	42.96	43.14	43.33	43.52
Short Circuit Current	Isc [A]	14.57	14.61	14.65	14.68	14.72	14.76	14.80	14.84

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

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

Maximum Power	Pmax [W]	679.5	684.8	690.2	695.5	700.9	706.2	711.6	716.9
Maximum Power Voltage	Vmp [V]	37.00	37.20	37.40	37.60	37.80	38.00	38.20	38.40
Maximum Power Current	Imp [A]	18.36	18.41	18.45	18.50	18.54	18.58	18.63	18.67
Open Circuit Voltage	Voc[V]	44.80	45.00	45.20	45.40	45.60	45.80	46.00	46.20
Short Circuit Current	Isc [A]	19.33	19.38	19.44	19.48	19.54	19.59	19.65	19.70
Irradiance ratio (rear/front)		10%							



Monocrystalline module - M12/66GDF

Mechanical Data

Number of Cells	132 Cells (6×22)
Dimensions of Module L*W*H (mm)	2384×1303×35mm (93.86×51.30×1.38 inches)
Weight (kg)	38.7 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 Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.28%/°C
Temperature Coefficient of P _{MAX}	-0.35%/°C

Packaging Configuration

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

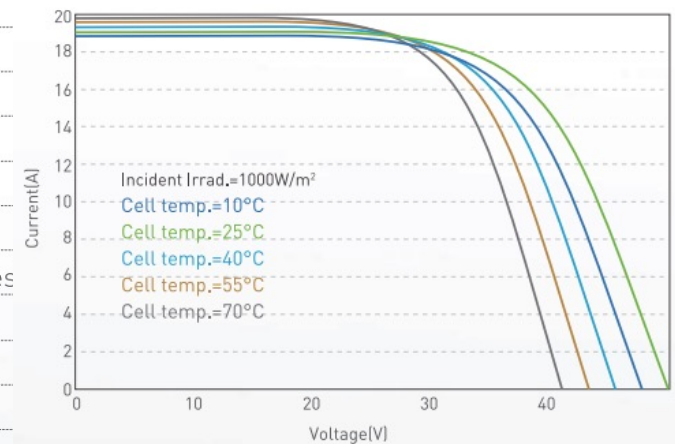
Maximum Ratings

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

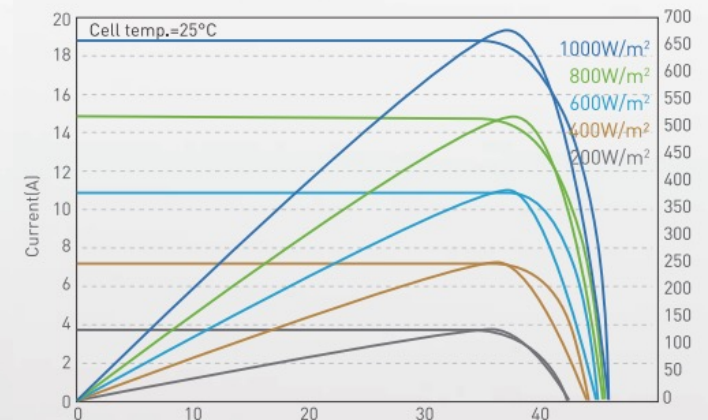
Optional

Connector: ☐ Original MC4

I-V Curve at Different Temperature (670W)



I-V/P-V Curve at Different Irradiation (670W)



Monocrystalline module - M12/66H

Electrical Specification (STC*)

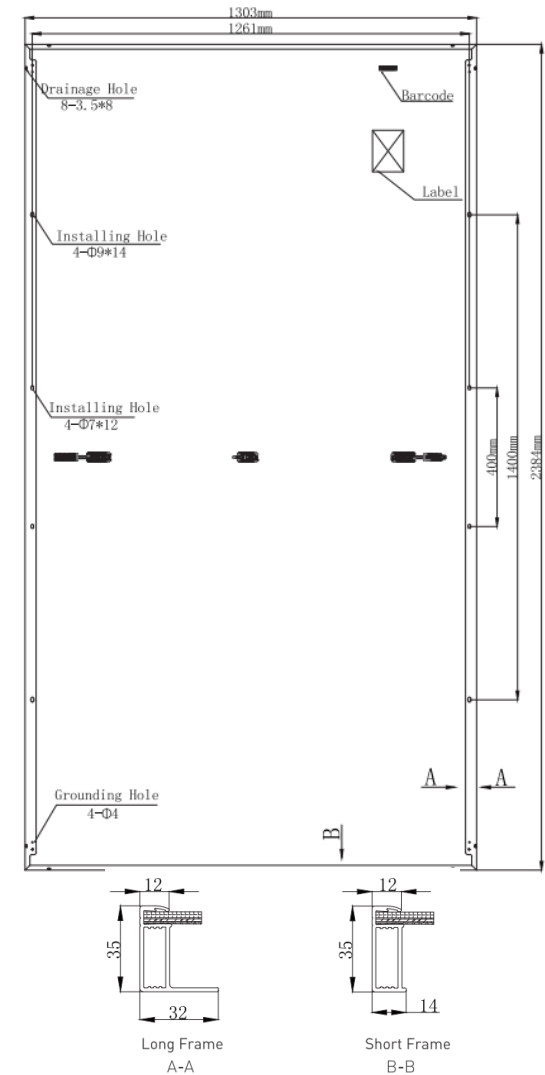
Maximum Power	P _{max} (W)	640	645	650	655	660	665	670	675
Maximum Power Voltage	V _{mp} (V)	37.00	37.20	37.40	37.60	37.80	38.00	38.20	38.40
Maximum Power Current	I _{mp} (A)	17.30	17.34	17.38	17.42	17.46	17.50	17.54	17.58
Open Circuit Voltage	V _{oc} (V)	44.80	45.00	45.20	45.40	45.60	45.80	46.00	46.20
Short Circuit Current	I _{sc} (A)	18.36	18.41	18.46	18.50	18.55	18.60	18.65	18.70
Module Efficiency	(%)	20.6	20.8	20.9	21.1	21.2	21.4	21.6	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)	483.4	488.0	491.8	495.6	499.4	503.1	506.9	510.7
Maximum Power Voltage	V _{mp} (V)	34.46	34.70	34.89	35.08	35.26	35.45	35.64	35.82
Maximum Power Current	I _{mp} (A)	14.03	14.06	14.09	14.13	14.16	14.19	14.22	14.26
Open Circuit Voltage	V _{oc} (V)	42.20	42.39	42.58	42.77	42.96	43.14	43.33	43.52
Short Circuit Current	I _{sc} (A)	14.80	14.84	14.88	14.92	14.96	15.00	15.04	15.08

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



Monocrystalline module - M12/66H

Mechanical Data

Number of Cells	132 Cells (6×22)
Dimensions of Module L*W*H (mm)	2384×1303×35mm [93.86×51.30×1.38 inches]
Weight (kg)	34.2 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

Packaging Configuration

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

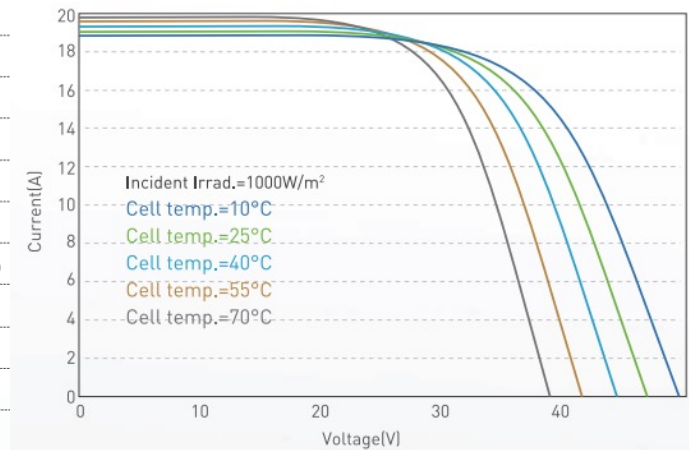
Maximum Ratings

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

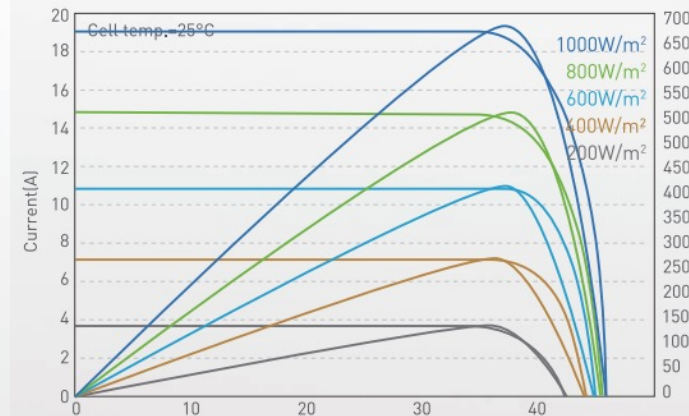
Optional

Connector:	☐ Original MC4
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I-V Curve at Different Temperature (675W)



I-V/P-V Curve at Different Irradiation (675W)



Monocrystalline module - M10/72GDF

Electrical Specification (STC*)

Maximum Power	P _{max} (W)	520	525	530	535	540	545	550	555
Maximum Power Voltage	V _{mp} (V)	40.50	40.73	40.96	41.22	41.45	41.70	41.93	42.18
Maximum Power Current	I _{mp} (A)	12.84	12.89	12.94	12.98	13.03	13.07	13.12	13.16
Open Circuit Voltage	V _{oc} (V)	48.45	48.49	48.68	48.96	49.24	49.52	49.80	50.08
Short Circuit Current	I _{sc} (A)	13.59	13.63	13.68	13.73	13.78	13.83	13.88	13.93
Module Efficiency	(%)	20.1	20.3	20.5	20.7	20.9	21.1	21.3	21.5
Power Output Tolerance	(W)	0~+5							

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

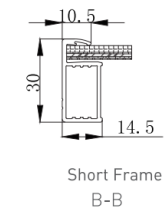
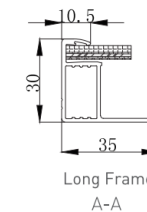
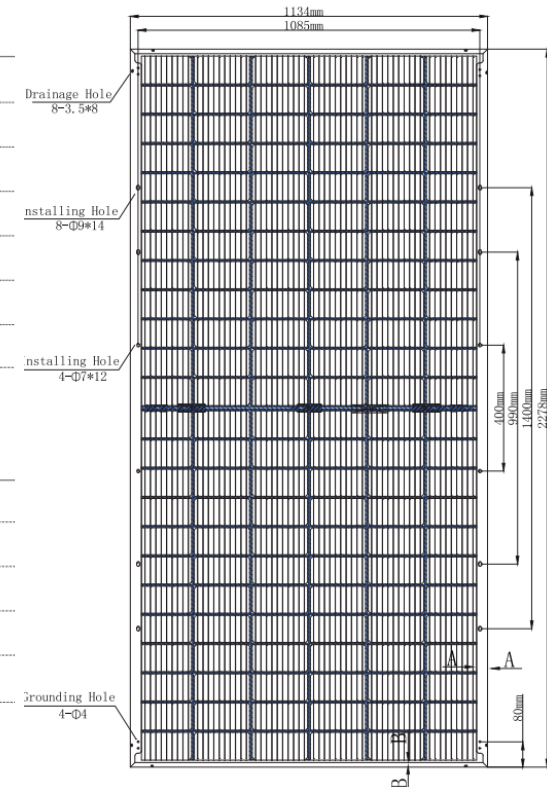
Electrical Specification (NMOT*)

Maximum Power	P _{max} (W)	393.5	397.3	401.1	404.8	408.6	412.4	416.2	420.0
Maximum Power Voltage	V _{mp} (V)	37.56	37.78	38.00	38.23	38.45	38.67	38.90	39.12
Maximum Power Current	I _{mp} (A)	10.47	10.51	10.54	10.58	10.62	10.66	10.70	10.74
Open Circuit Voltage	V _{oc} (V)	45.74	45.77	45.95	46.21	46.48	46.74	47.01	47.28
Short Circuit Current	I _{sc} (A)	10.88	10.92	10.96	11.00	11.04	11.08	11.12	11.16

* 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)	556.4	561.8	567.1	572.5	577.8	583.2	588.5	593.9
Maximum Power Voltage	V _{mp} (V)	40.50	40.73	40.96	41.22	41.45	41.70	41.93	42.18
Maximum Power Current	I _{mp} (A)	13.74	13.79	13.85	13.89	13.94	13.98	14.04	14.08
Open Circuit Voltage	V _{oc} (V)	48.45	48.49	48.68	48.96	49.24	49.52	49.80	50.08
Short Circuit Current	I _{sc} (A)	14.54	14.58	14.63	14.69	14.75	14.80	14.85	14.91



Monocrystalline module - M10/72GDF

Mechanical Data

Number of Cells	144 Cells (6×24)
Dimensions of Module L*W*H (mm)	2278×1134×30 mm (89.69×44.65×1.18 inches)
Weight (kg)	32.7 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 Isc	+0.05%/°C
Temperature Coefficient of Voc	-0.28%/°C
Temperature Coefficient of P _{MAX}	-0.35%/°C

Packaging Configuration

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

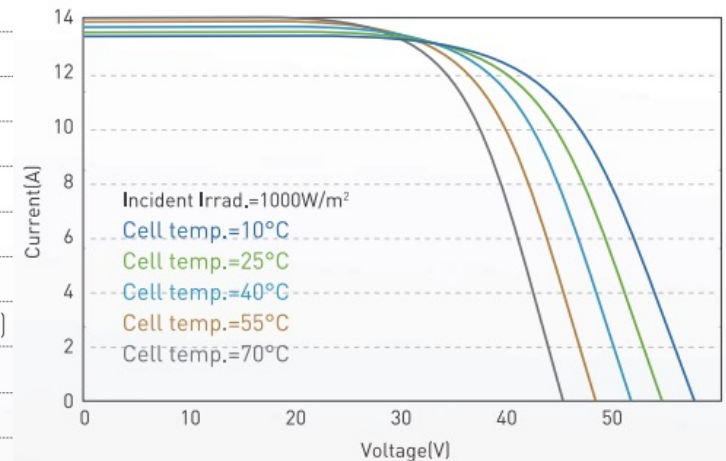
Maximum Ratings

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

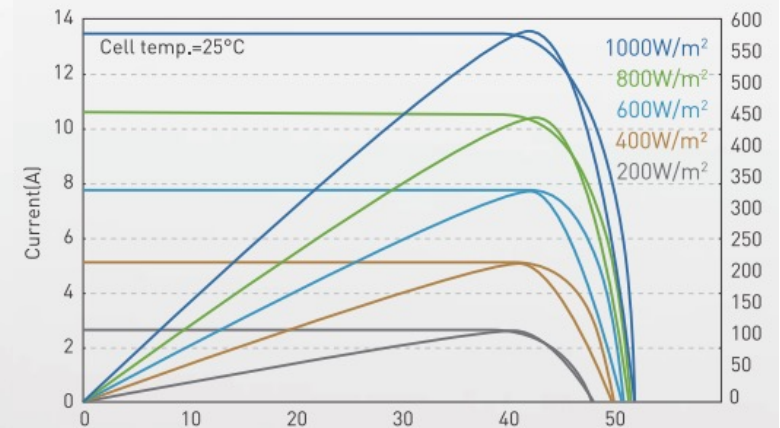
Optional

Connector:	☐ Original MC4
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I-V Curve at Different Temperature (555W)



I-V/P-V Curve at Different Irradiation (555W)



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