

TCL



G12R-48P

N-type Bifacial Double Glass Module

HSM-ND48-DR430~455

455W

Maximum Power Output

22.8%

Maximum Efficiency



Aesthetic Experience

- For residential scenarios, delivering aesthetic experience
- Full black module for uniform rooftop integration



Reliable and convenient to install

- Rigorous material selection
- High-strength frame and heat strengthened glass
- Easier handling and installation



High Energy Yield

- Excellent thermal resistance and temperature coefficient
- Outstanding power generation performance

Comprehensive Products and System Certificates



IEC 61215 / IEC 61730 ISO 9001:2015 ISO 45001:2018 ISO 14001:2015

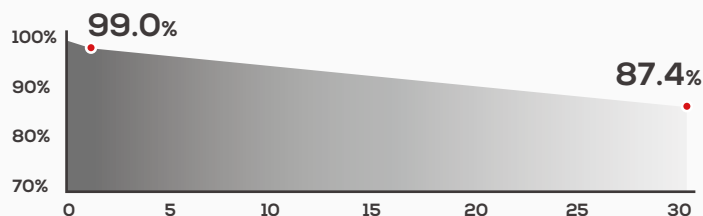
Linear Performance Warranty



15 Years
Product Warranty



30 Years Linear
Performance Warranty



* Please refer to product warranty for details

Electrical Parameters (STC* & BNPI*)

* STC: Irradiance 1000W/m², Cell Temperature 25°C, AM1.5, Measuring Tolerance: ±2%* BNPI: Back Irradiance 135W/m², Cell temperature 25°C, Atmospheric quality AM 1.5G, Wind speed 1m/s

Testing Condition		STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI
Maximum Power	P _{max} (W)	430	471	435	477	440	482	445	488	450	493	455	497
Open Circuit Voltage	V _{oc} (V)	34.76	34.98	34.96	35.21	35.16	35.39	35.36	35.61	35.56	35.80	35.76	36.00
Short Circuit Current	I _{sc} (A)	15.78	17.18	15.85	17.26	15.92	17.33	15.99	17.42	16.06	17.48	16.13	17.53
Maximum Power Voltage	V _{mp} (V)	29.34	29.43	29.54	29.66	29.74	29.84	29.93	30.06	30.13	30.24	30.33	30.44
Maximum Power Current	I _{mp} (A)	14.66	16.01	14.73	16.09	14.80	16.16	14.87	16.24	14.94	16.31	15.01	16.37
Module Efficiency	(%)	21.5		21.8		22.0		22.3		22.5		22.8	

Electrical Characteristics with Different Bifacial Gain*

* The additional gain from the back side depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

Bifacial Gain		5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Maximum Power	P _{max} (W)	452	473	457	479	462	484	467	490	473	495	478	501
Open Circuit Voltage	V _{oc} (V)	34.76	34.76	34.96	34.96	35.16	35.16	35.36	35.36	35.56	35.56	35.76	35.76
Short Circuit Current	I _{sc} (A)	16.57	17.36	16.64	17.44	16.72	17.51	16.79	17.59	16.86	17.67	16.94	17.74
Maximum Power Voltage	V _{mp} (V)	29.34	29.34	29.54	29.54	29.74	29.74	29.93	29.93	30.13	30.13	30.33	30.33
Maximum Power Current	I _{mp} (A)	15.39	16.13	15.47	16.20	15.54	16.28	15.61	16.36	15.69	16.43	15.76	16.51

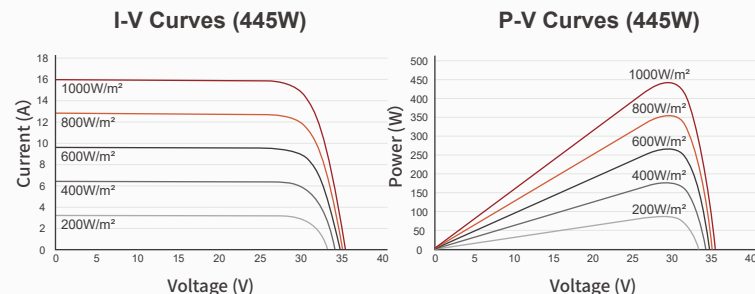
Temperature Coefficient

Nominal Module Operating Temperature*	43±2°C
Temperature Coefficient of I _{sc}	+0.045%/°C
Temperature Coefficient of V _{oc}	-0.25%/°C
Temperature Coefficient of P _{max}	-0.29%/°C

Operating Parameters

Operating Temperature	-40~+85°C
Maximum System Voltage	1000V / 1500V DC
Maximum Series Fuse Rating	30A
Power Bifaciality	80±5%

Curve Graph



Engineering Drawing

[Unit: mm]

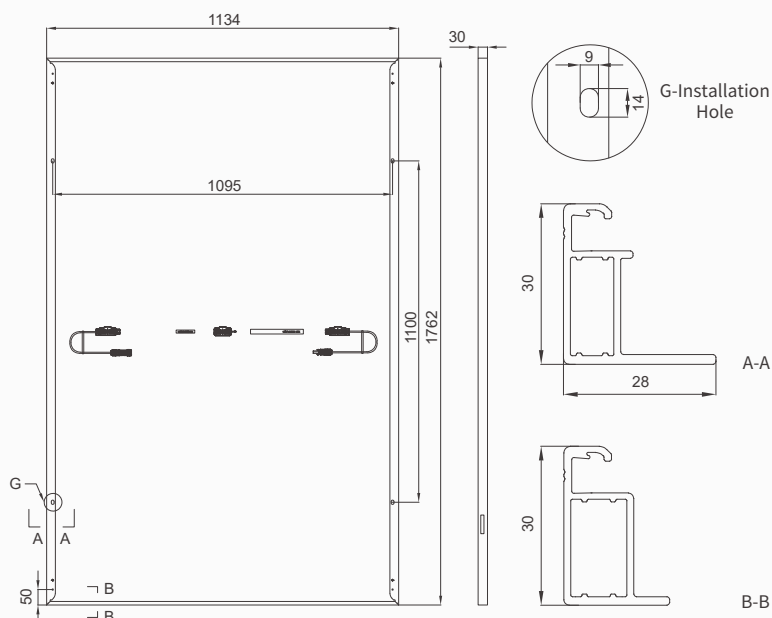
Mechanical Data

* Please refer to installation manual for details

No. of Cells	96pcs (6×16)
Dimension	1762×1134×30 mm
Weight	24.5kg±3%
Front Glass	2.0mm, Heat Strengthened, AR coating Glass
Back Glass	2.0mm, Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
J-Box	IP68, three diodes
Cables	4.0mm ² , +1200mm, -1200mm (can be customized)
Maximum Static Load	Front: 5400Pa/Back: 2400Pa*
Fire Rating	IEC Class C

Packaging Configuration

Modules per Pallet	36pcs
Modules per 40'HQ Container	936pcs
Pallets per 40'HQ Container	26pcs



G12R-66P

N-type Bifacial Double Glass Module

HSM-ND66-GR605~630

630W

Maximum Power Output

23.3%

Maximum Efficiency



Superior Customer Value

- Container space utilization saves shipping costs
- Low-voltage design optimizes BOS cost
- Optimized for diverse installation needs



High Energy Yield

- Consistent high yield in varying conditions
- Enhanced thermal resistance and bifacial power generation



Long-term Reliability

- Advanced weather-resistant encapsulation
- Aluminium alloy frame and heat strengthened glass
- Resistant to harsh environmental conditions

Comprehensive Products and System Certificates



IEC 61215 / IEC 61730 ISO 9001:2015 ISO 45001:2018 ISO 14001:2015

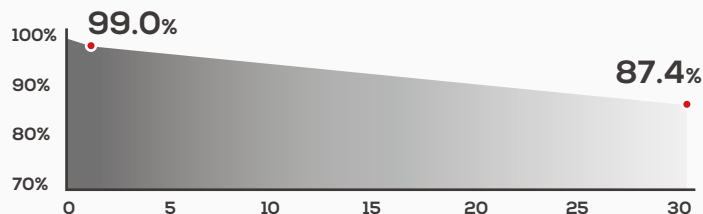
Linear Performance Warranty



15 Years
Product Warranty



30 Years Linear
Performance Warranty



* Please refer to product warranty for details

Electrical Parameters (STC* & BNPI*)

* STC: Irradiance 1000W/m², Cell Temperature 25°C, AM1.5, Measuring Tolerance: ±2%* BNPI: Back Irradiance 135W/m², Cell temperature 25°C, Atmospheric quality AM 1.5G, Wind speed 1m/s

Testing Condition		STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI
Maximum Power	P _{max} (W)	605	668	610	674	615	679	620	685	625	690	630	696
Open Circuit Voltage	V _{oc} (V)	48.28	48.43	48.50	48.66	48.72	48.86	48.94	49.11	49.16	49.30	49.38	49.50
Short Circuit Current	I _{sc} (A)	15.90	17.55	15.95	17.61	16.00	17.66	16.05	17.73	16.10	17.77	16.15	17.81
Maximum Power Voltage	V _{mp} (V)	40.39	40.39	40.59	40.61	40.79	40.79	40.98	41.00	41.18	41.20	41.37	41.40
Maximum Power Current	I _{mp} (A)	14.98	16.54	15.03	16.60	15.08	16.65	15.13	16.71	15.18	16.75	15.23	16.81
Module Efficiency	(%)	22.4		22.6		22.8		23.0		23.1		23.3	

Electrical Characteristics with Different Bifacial Gain*

* The additional gain from the back side depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

Bifacial Gain		5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Maximum Power	P _{max} (W)	635	666	641	671	646	677	651	682	656	688	662	693
Open Circuit Voltage	V _{oc} (V)	48.28	48.28	48.50	48.50	48.72	48.72	48.94	48.94	49.16	49.16	49.38	49.38
Short Circuit Current	I _{sc} (A)	16.70	17.49	16.75	17.55	16.80	17.60	16.85	17.66	16.91	17.71	16.96	17.77
Maximum Power Voltage	V _{mp} (V)	40.39	40.39	40.59	40.59	40.79	40.79	40.98	40.98	41.18	41.18	41.37	41.37
Maximum Power Current	I _{mp} (A)	15.73	16.48	15.78	16.53	15.83	16.59	15.89	16.64	15.94	16.70	15.99	16.75

Temperature Coefficient

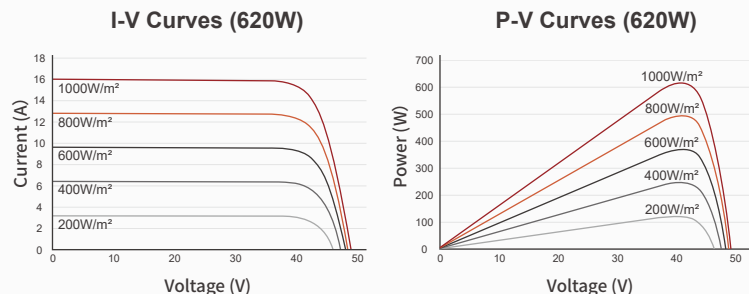
* NMOT: Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Nominal Module Operating Temperature*	43±2°C
Temperature Coefficient of I _{sc}	+0.045%/°C
Temperature Coefficient of V _{oc}	-0.24%/°C
Temperature Coefficient of P _{max}	-0.28%/°C

Operating Parameters

Operating Temperature	-40~+85°C
Maximum System Voltage	1000V / 1500V DC
Maximum Series Fuse Rating	30A
Power Bifaciality	80±5%

Curve Graph



Engineering Drawing

[Unit: mm]

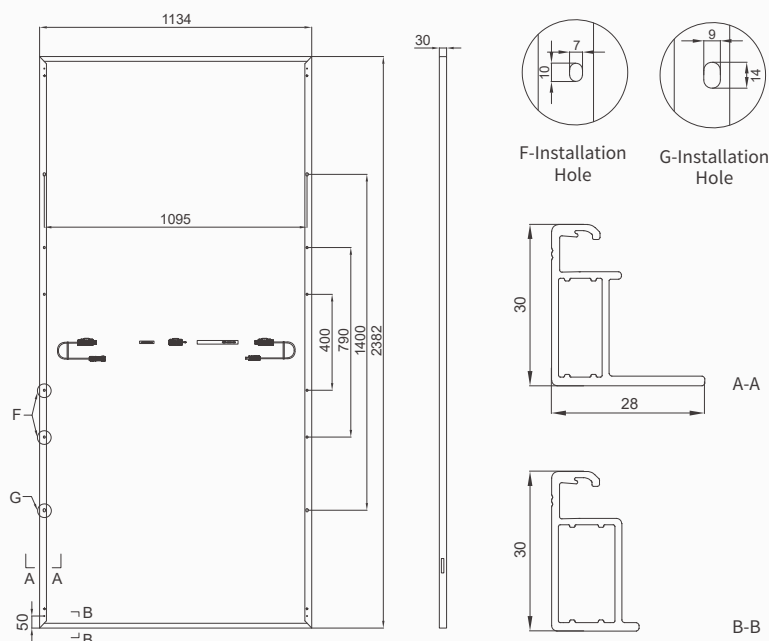
Mechanical Data

* Please refer to installation manual for details

No. of Cells	132pcs (6×22)
Dimension	2382×1134×30mm
Weight	32.6kg±3%
Front Glass	2.0mm, Heat Strengthened, AR coating Glass
Back Glass	2.0mm, Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
J-Box	IP68, three diodes
Cables	4.0mm ² , +300mm, -200mm (can be customized)
Maximum Static Load	Front: 5400Pa/Back: 2400Pa*
Fire Rating	IEC Class C

Packaging Configuration

Modules per Pallet	36pcs
Modules per 40'HQ Container	720pcs
Pallets per 40'HQ Container	20pcs





TCL GS-G1 Series

Single phase inverters 3 to 6 kW

TCL-GS3K-G1

TCL-GS3.6K-G1

TCL-GS4K-G1

TCL-GS5K-G1

TCL-GS6K-G1



Easy-to-install

- Quick & easy-to-install with basic tools
- Commissioning with App
- Compact wall mount design
- Remote or onsite upgrade supported



Safe & reliable

- International quality standards
- Integrated DC switch
- IP66 rated design for outdoor use
- Type II SPD on AC & DC sides
- AFCI protection Optional



User-friendly

- 16 A input current, compatible with bifacial and large area PV modules
- Support export power limit function
- Support Shadow Scan function
- 2 MPPTs for flexible PV string design

 *For Thailand Market, only TCL-GS5K-G1* is available.

Input (DC)

Max. PV array power	4500 Wp STC	5520 Wp STC	6000 Wp STC	7500 Wp STC	9000 Wp STC
Max. input voltage	600V				
MPP voltage range / rated input voltage	60V-560V / 360V				
Start-up voltage	100 V				
Max. operating input current	16A				
Max. short circuit current	24A				
No. of independent MPPT inputs	2	2	2	2	2
Strings per MPPT input	1	1	1	1	1

Output (AC)

Rated active power	3000 W	3680 W	4000 W	5000 W	6000 W
Rated apparent power	3000 VA	3680 VA	4000 VA	5000 VA	6000 VA
Max. apparent power	3300 VA	3680 VA	4400 VA	5500 VA	6600 VA
AC nominal voltage	220 V / 230 V / 240 V ; L / N / PE				
AC voltage range	180 V to 295 V				
AC grid frequency / range	50 Hz / 45 Hz to 55 Hz ; 60 Hz / 55 Hz to 65 Hz				
Max. output current	15A	16A	20A	25A	30A
Adjustable power factor range	1 / 0.8 leading ... 0.8 lagging				
Harmonic distortion (THD) at rated output	< 3 %				

Efficiency & Protection

Max. efficiency	98.2%
European efficiency	97.5%
DC switch	Support
Ground fault monitoring / grid monitoring	Support
DC reverse polarity protection / AC short circuit Protection	Support
All-pole-sensitive residual-current monitoring unit	Support
DC surge protection	Type II
AC surge protection	Type II
Arc fault circuit interrupter (AFCI)	Optional
Anti-Islanding protection	Support

General data

Dimensions (W / H / D)	368 mm / 325 mm / 145 mm
Weight	9.5 kg
Operating temperature range	-25°C - +60°C
Self-consumption (at night)	< 1 W
Topology	Non-isolated
Cooling concept	Natural Cooling
Degree of protection	IP66
Relative humidity	0% - 100%
Max. operating altitude	4000 m

Features

DC connection	MC4 (4mm ² - 6mm ²)
AC connection	Plug-in connector
Mounting type	Wall-mount bracket
LED Indicators (Status / Fault / Communication)	Support
24/7 monitoring	Support
Communication interface ¹	Support (RS485 /Wi-Fi/ LAN)
Country of manufacture	China
Certificates and approvals	IEC 62109, IEC 62116, IEC 61727, IEC 60068, IEC 61683, PDC, MEA, PEA



TCL GT-G1 Series

Three phase inverters 12 to 20 kW

TCL-GT12K-G1

TCL-GT15K-G1

TCL-GT17K-G1

TCL-GT20K-G1



Easy-to-install

- Quick & easy-to-install with basic tools
- Quick setup and commissioning with App
- Compact wall mount design
- Remote or onsite upgrade supported



Safe & reliable

- International quality standards
- 150 % PV array oversizing for higher yields
- IP66 rated design for outdoor use
- Type II SPD on AC & DC sides
- AFCI protection Optional



User-friendly

- User friendly app interface
- 20 A input current, ideal for bifacial and large area PV modules
- Wide MPP voltage range 150V-1000V
- Support Shadow Scan function
- Support Export power limit function

 *For Thailand Market, only TCL-GT12K-G1* is available.

Input (DC)

Max. PV array power	18000 Wp STC	22500 Wp STC	25500 Wp STC	30000 Wp STC
Max. input voltage	1100 V			
MPP voltage range / rated input voltage	150 V to 1000 V / 630 V			
Start-up voltage	180 V			
Max. operating input current	32 A / 20 A	32 A / 20 A	32 A / 32 A	32 A / 32 A
Max. short circuit current	48 A / 30 A	48 A / 30 A	48 A / 48 A	48 A / 48 A
No. of independent MPPT inputs	2	2	2	2
Strings per MPPT input	2 / 1	2 / 1	2 / 2	2 / 2

Output (AC)

Rated active power	12000 W	15000 W	17000 W	20000 W
Rated apparent power	12000 VA	15000 VA	17000 VA	20000 VA
Max. apparent power	13200 VA	16500 VA	18700 VA	22000 VA
AC nominal voltage	220 V / 380 V ; 230 V / 400 V ; 240 V / 415 V ; 3L / N / PE			
AC voltage range	160 V to 300 V			
AC grid frequency / range	50 Hz / 45 Hz to 55 Hz ; 60 Hz / 55 Hz to 65 Hz			
Max. output current	19.1 A	24 A	27.1 A	31.9 A
Adjustable power factor range	0.8 leading to 0.8 lagging			
Harmonic distortion (THD) at rated output	< 3 %			

Efficiency & Protection

Max. efficiency	98.6%
European efficiency	98.2%
DC Switch	Support
Ground fault monitoring / grid monitoring	Support
DC reverse polarity protection / AC short circuit protection	Support
All-pole-sensitive residual-current monitoring unit	Support
Arc fault circuit interrupter (AFCI)	Optional
Anti-Islanding protection	Support
DC surge protection	Type II
AC surge protection	Type II

General data

Dimensions (W / H / D)	503mm / 435mm / 183 mm
Weight	17 kg
Operating temperature range	-25°C - +60°C
Self-consumption (at night)	< 1 W
Topology	Non-isolated
Cooling concept	Smart Fan Cooling
Degree of protection	IP66
Relative humidity	0% - 100%
Max. operating altitude	3000 m

Features

DC connection	MC4 (4mm ² - 6mm ²)
AC connection	Plug-in connector
Mounting type	Wall-mount bracket
LED indicators (Status / Fault / Communication)	Support
24/7 monitoring	Support
Communication interface ¹	Support (RS485 / Wi-Fi / LAN)
Country of manufacture	China
Certificates and approvals	IEC 62109, IEC 62116, IEC 61727, IEC 60068, IEC 61683, PDC, MEA, PEA

TCL BS40-G1

Single phase switchbox 230V-40A



Plug-and-Play
installation



Worry-free
maintenance



IP54
protection grade



Built-in
RCD & SPD

Technical Datasheet

Model

Rated voltage	AC230V
Rated current	40A
Dimensions(mm)	280×380×140mm
Weight	≈12kg

Working Environments

Operation Temp.	-10°C~+50°C
Storage Temp.	-25°C~+60°C
Altitudes	≤2000 m
IP Degree	IP54
Installation Methods	Indoor, Hanging

Features

Certifications	CE
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TCL BT50-G1

Three phase switchbox 400V-50A



Plug-and-Play
installation



Worry-free
maintenance



IP54
protection grade



Built-in
RCD & SPD

Technical Datasheet

Model

Rated voltage	AC400V
Rated current	50A
Dimensions(mm)	360×420×140mm
Weight	15kg

Working Environments

Operation Temp.	-10°C~+50°C
Storage Temp.	-25°C~+60°C
Altitudes	≤2000 m
IP Degree	IP54
Installation Methods	Indoor, Hanging

Features

Certifications	CE
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