

TCL

TCL RESIDENTIAL PV SYSTEM

TURN SUNLIGHT INTO SAVINGS

One-Stop

Sun-to-Socket

TCL



CONTENTS



01

TCL PHOTOVOLTAIC
TECHNOLOGY

02

TCL RESIDENTIAL
PV SYSTEM

- HIGHLIGHT
- SINGLE PHASE SYSTEM
- THREE PHASE SYSTEM
- TCL PANEL
- TCL INVERTER
- TCL SWITCHBOX
- TCL HOME

01

TCL PHOTOVOLTAIC TECHNOLOGY



TCL



Founded in 1981, TCL is committed to “Building a Sustainable and Connected Future with Advanced Technology,” dedicated to empowering smart, healthy lifestyles through next-generation intelligent experiences. After more than 40 years of transformation, innovation, and advancement, TCL has evolved into two main branches: TCL Industries and TCL Technology. These entities focus on three core industries: smart terminals, display technology, and clean energy. With 46 R&D centers and 32 manufacturing bases globally, TCL operates in over 160 countries and regions, cementing its position as a globally competitive smart technology industry group.

At TCL, we are dedicated to enhancing lives and experiences through innovative technology. Our products and services aim to solve problems, bring joy to families and friends, and create a safer, healthier world. We strive to inspire and empower people to pursue greatness in their lives.

TCL Photovoltaic Technology (TCL PV Tech) is a leading provider of one-stop solar energy solutions and services for both residential and commercial sectors under TCL Industries. Leveraging TCL’s 40+ years of expertise in electronics and photovoltaic technology, the company ensures clean, efficient, and reliable solar solutions, aiming to optimize benefits and enhance energy independence for our customers over the lifetime of their systems.

With a strong presence in silicon materials, TCL has developed vertical integration of the entire industrial chain. Leveraging upstream advantages and brand value, TCL PV Tech expands capabilities in channel distribution, plant development, energy management, and financial solutions.

In the future, TCL PV Tech will emphasize prioritizing the core interests of users, providing them with secure, reliable, and high-quality products and services. By collaborating with partners, the company aims to achieve mutual growth and foster a spirit of cooperation and prosperity for all parties involved.

One-Stop TCL Residential PV System

TCL residential PV system integrates solar panels, inverter, Switchbox, and TCL Home with smart energy control strategy to energize modern homes.

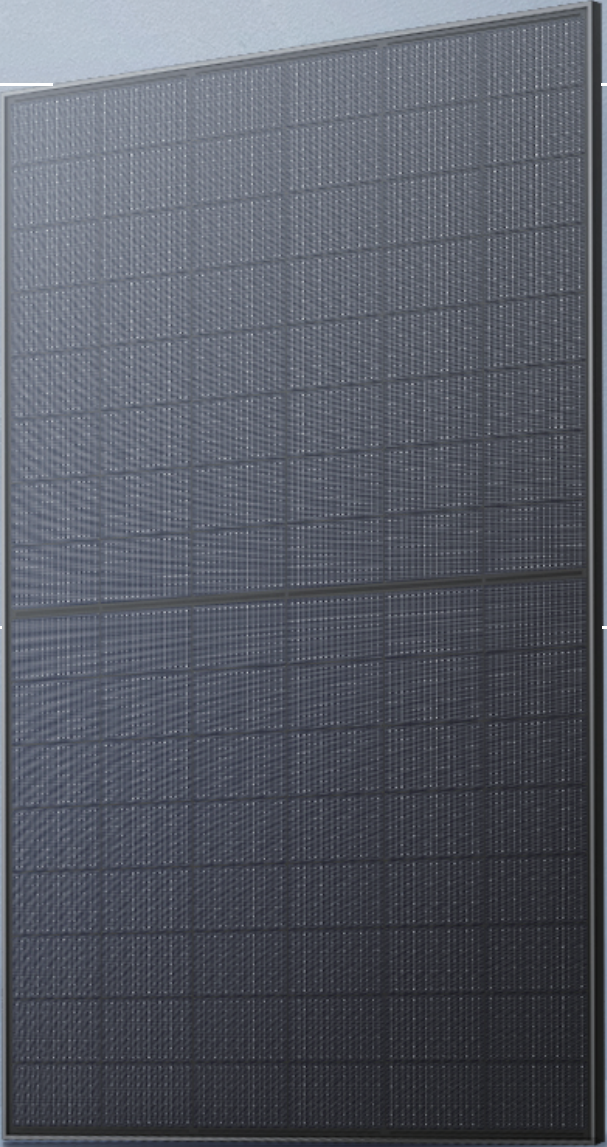
This system transforms sunlight into reliable electricity while actively neutralizing household carbon emissions.

Inverter

Panel

SwitchBox

TCL HOME



SYSTEM HIGHLIGHT



Cost Reduction Energy Efficiency



- Enhanced Power Generation, Self-consumption Upgrade.
- 3-Year Energy Payback, Fast in PV Industry.



Worry-Free Assurance Reliable Support



- 30-year Performance Guarantee PV Panels.
- One-stop Localized Support, Post-sale Service System.



Intuitive Control Effortless Operation



- Whole-house Smart Control.
- Smart Energy Management, Generation Optimization Strategies.



Sleek Aesthetics Minimalist Elegance



- TCL-inspired Elegance.



Multiple Protections Full Safeguarding



- Multi-layered Reassurance Safeguarding Electrical Safety.

SINGLE PHASE SYSTEM

1	System Configuration	3kW System	3.6kW System	4kW System	5kW System	6kW System
2	PV Module(Wp)	615	615	615	615	615
3	No.PV Modules (pcs)	6/7	8	9	10/11/12	13/14
4	Effective Roof Area Approx.(m2)	22	25	29	38	44
5	Inverter(CT&Smart meter)	3kW 1set	3.6kW 1set	4kW 1set	5kW 1set	6kW 1set
6	Cable Set	1set	1set	1set	1set	1set
7	Mounting Structure	1set	1set	1set	1set	1set
8	Cloud & APP	1set	1set	1set	1set	1set
9	Switch Box	1set	1set	1set	1set	1set

*Optional 430-455Wp PV Module Available

THREE PHASE SYSTEM

1	System Configuration	12kW System	15kW System	17kW System	20kW System
2	PV Module(Wp)	615	615	615	615
3	No.PV Modules (pcs)	24/26/28	30/32/36	38/40	42/44/46/48
4	Effective Roof Area Approx. (m2)	90	115	128	155
5	Inverter(CT&Smart meter)	12kW 1set	15kW 1set	17kW 1set	20kW 1set
6	Cable Set	1set	1set	1set	1set
7	Mounting Structure Set	1set	1set	1set	1set
8	Cloud & APP	1set	1set	1set	1set
9	Switch Box	1set	1set	1set	1set

*Optional 430-455Wp PV Module Available

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

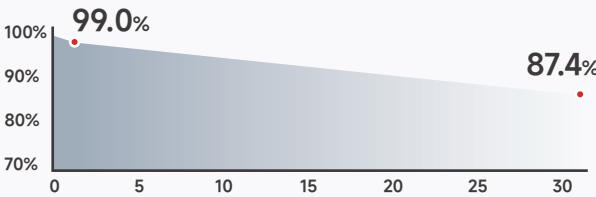
Linear Performance Warranty



15 Years
Product Warranty



30 Years Linear
Performance Warranty



* Please refer to product warranty for details

Comprehensive Products and System Certificates



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



HSM-ND48-DR430~455

TOPCon

455W
Maximum Power

22.8%
Maximum Efficiency

0~+5W
Power Tolerance

Electrical Parameters (STC* & BNPI*)

Testing Condition		STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI
Maximum Power	Pmax (W)	430	471	435	477	440	482	445	488	450	493	455	497
Open Circuit Voltage	Voc (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	Isc (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	Vmp (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	Imp (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	

* 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

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	Pmax (W)	452	473	457	479	462	484	467	490	473	495	478	501
Open Circuit Voltage	Voc (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	Isc (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	Vmp (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	Imp (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 Isc	+0.045%/°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Pmax	-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%

Mechanical Data

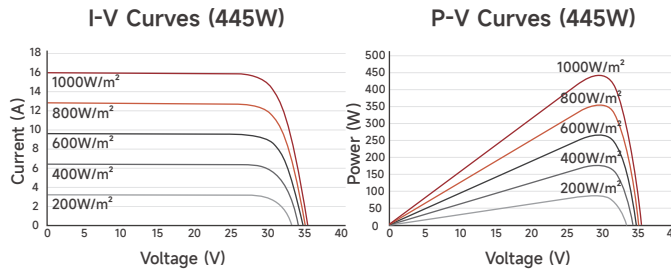
* Please refer to installation manual for details

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

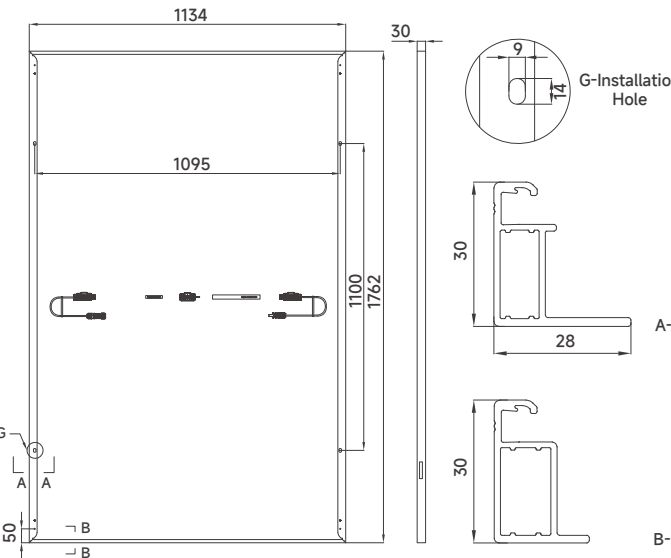
Modules per Pallet	36pcs
Modules per 40'HQ Container	936pcs
Pallets per 40'HQ Container	26pcs

Curve Graph



Engineering Drawing

[Unit: mm]



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

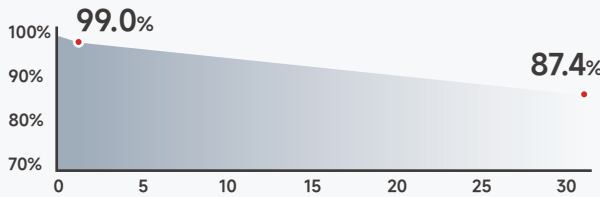
Comprehensive Products and System Certificates



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

N 210R
N-type TOPCon

HSM-ND66-GR605~630

TOPCon

630W
Maximum Power

23.3%
Maximum Efficiency

0~+5W
Power Tolerance

Electrical Parameters (STC* & BNPI*)

Testing Condition		STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI
Maximum Power	Pmax (W)	605	668	610	674	615	679	620	685	625	690	630	696
Open Circuit Voltage	Voc (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	Isc (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	Vmp (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	Imp (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	

* 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

Electrical Characteristics with Different Bifacial Gain*

Bifacial Gain		5%	10%	5%	10%	5%	10%	5%	10%	5%	10%	5%	10%
Maximum Power	Pmax (W)	635	666	641	671	646	677	651	682	656	688	662	693
Open Circuit Voltage	Voc (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	Isc (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	Vmp (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	Imp (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 Isc	+0.045%/°C
Temperature Coefficient of Voc	-0.24%/°C
Temperature Coefficient of Pmax	-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%

Mechanical Data

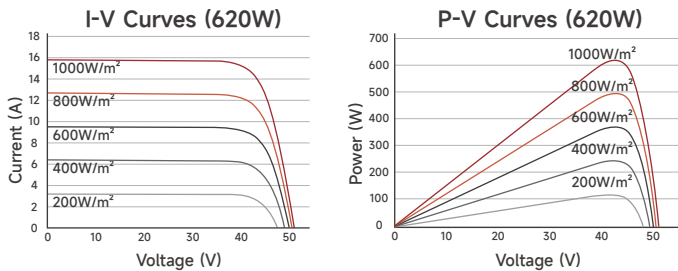
* Please refer to installation manual for details

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	4.0mm², +300mm, -200mm (can be customized)
Maximum Static Load	Front: 5400Pa/Back: 2400Pa*
Fire Rating	IEC Class C

Packaging Configuration

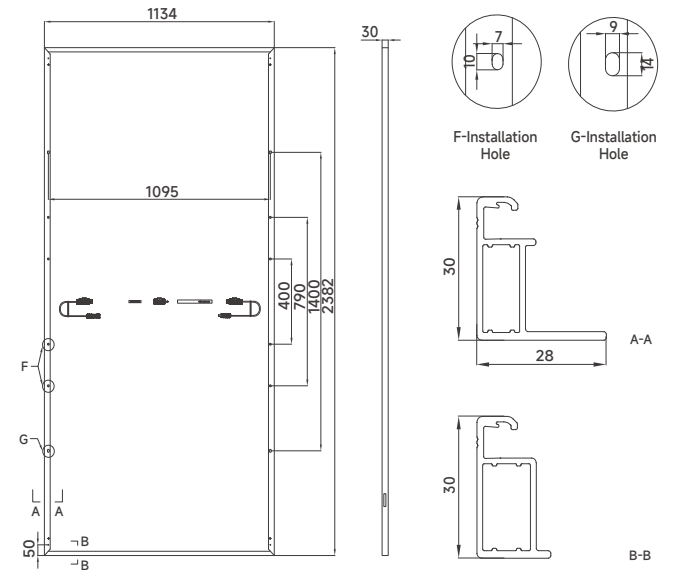
Modules per Pallet	36pcs
Modules per 40'HQ Container	720pcs
Pallets per 40'HQ Container	20pcs

Curve Graph



Engineering Drawing

[Unit: mm]



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.

Technical Datasheet

TCL-GS3K-G1

TCL-GS3.6K-G1

TCL-GS4K-G1

TCL-GS5K-G1*

TCL-GS6K-G1

Input (DC)

Max. PV array power	4500 Wp STC	5520 Wp STC	6000 Wp STC	7500 Wp STC	9000 Wp STC
Max. input voltage	600 V				
MPP voltage range / rated input voltage	60V-560V / 360V				
Start-up voltage	100 V				
Max. operating input current	16 A				
Max. short circuit current	24 A				
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	15 A	16 A	20 A	25 A	30 A
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 interface1	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.

Technical Datasheet

TCL-GT12K-G1*

TCL-GT15K-G1

TCL-GT17K-G1

TCL-GT20K-G1

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 interface1	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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TCL HOME

TCL Home-An intelligent hub that monitors and optimizes household energy flows, automatically coordinating solar generation and grid power to maximize efficiency and minimize costs through AI-driven load scheduling.



Unified Energy
Ecosystem Management



Smart Energy Optimization
Cost Efficiency Redefined



AI-Powered
Fault Detection



Visual Energy
Consumption Tracking

