

TCL Solar Half Cut

N-type Bifacial Double Glass Module

HSM-ND54-GR490~515
G12R-54P

515W

Maximum Power Output

23.2%

Maximum Efficiency



Aesthetic Experience

- For DG scenarios, delivering aesthetic experience



Reliable and convenient to install

- Rigorous material selection
- High-strength frame and heat strengthened glass



High Energy Yield

- Higher power output, balancing system cost and convenience
- Excellent thermal resistance and temperature coefficient
- Outstanding power generation performance

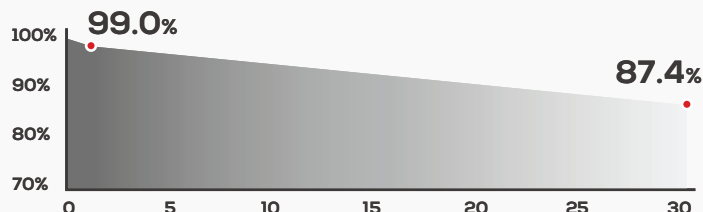
Linear Performance Warranty



25 Years
Product Warranty



30 Years Linear
Performance Warranty



Comprehensive Products and System Certificates



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

Measurement Tolerance: P_{max} (W) ±3%; V_{oc} (V) ±3%; I_{sc} (A) ±4%* STC: Irradiance 1000W/m², Cell Temperature 25°C, AM1.5* BNPI: Back Irradiance 135W/m², Cell temperature 25°C, Atmospheric quality AM 1.5, Wind speed 1m/s

Electrical Parameters (STC* & BNPI*)

Testing Condition		STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI
Maximum Power	P _{max} (W)	490	539	495	545	500	550	505	556	510	561	515	567
Open Circuit Voltage	V _{oc} (V)	39.50	39.49	39.70	39.70	39.92	39.90	40.14	40.15	40.36	40.35	40.58	40.57
Short Circuit Current	I _{sc} (A)	15.67	17.24	15.74	17.33	15.81	17.40	15.88	17.48	15.95	17.55	16.02	17.63
Maximum Power Voltage	V _{mp} (V)	33.30	33.15	33.50	33.38	33.70	33.56	33.90	33.78	34.10	33.96	34.30	34.16
Maximum Power Current	I _{mp} (A)	14.72	16.26	14.78	16.33	14.84	16.39	14.90	16.46	14.96	16.52	15.03	16.60
Module Efficiency	(%)	22.0		22.3		22.5		22.7		22.9		23.2	

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)	515	539	520	545	525	550	530	556	536	561	541	567
Open Circuit Voltage	V _{oc} (V)	39.50	39.50	39.70	39.70	39.92	39.92	40.14	40.14	40.36	40.36	40.58	40.58
Short Circuit Current	I _{sc} (A)	16.45	17.24	16.53	17.31	16.60	17.39	16.67	17.47	16.75	17.55	16.82	17.62
Maximum Power Voltage	V _{mp} (V)	33.30	33.30	33.50	33.50	33.70	33.70	33.90	33.90	34.10	34.10	34.30	34.30
Maximum Power Current	I _{mp} (A)	15.46	16.19	15.52	16.26	15.58	16.32	15.65	16.39	15.71	16.46	15.78	16.53

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 (T ₉₈ max)	-40~+70°C
Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	30A

Mechanical Data

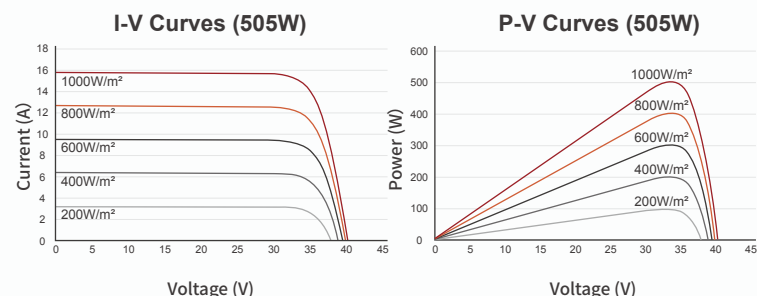
* Please refer to installation manual for details

No. of Cells	108pcs (6×18)
Dimension	1961×1134×30 mm
Weight	27kg±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
Connectors:	Staubli Electrical Connectors AG, PV-KST4-EVO 2/xy_UR; PV-KBT4-EVO 2/xy_UR
Bifaciality (φP _{max} /φI _{sc})	80%±10%
Bifaciality (φV _{oc})	98%±2%

Packaging Configuration

Modules per Pallet	36pcs
Modules per 40'HQ Container	864pcs
Pallets per 40'HQ Container	24pcs

Curve Graph



Engineering Drawing

[Unit: mm]

