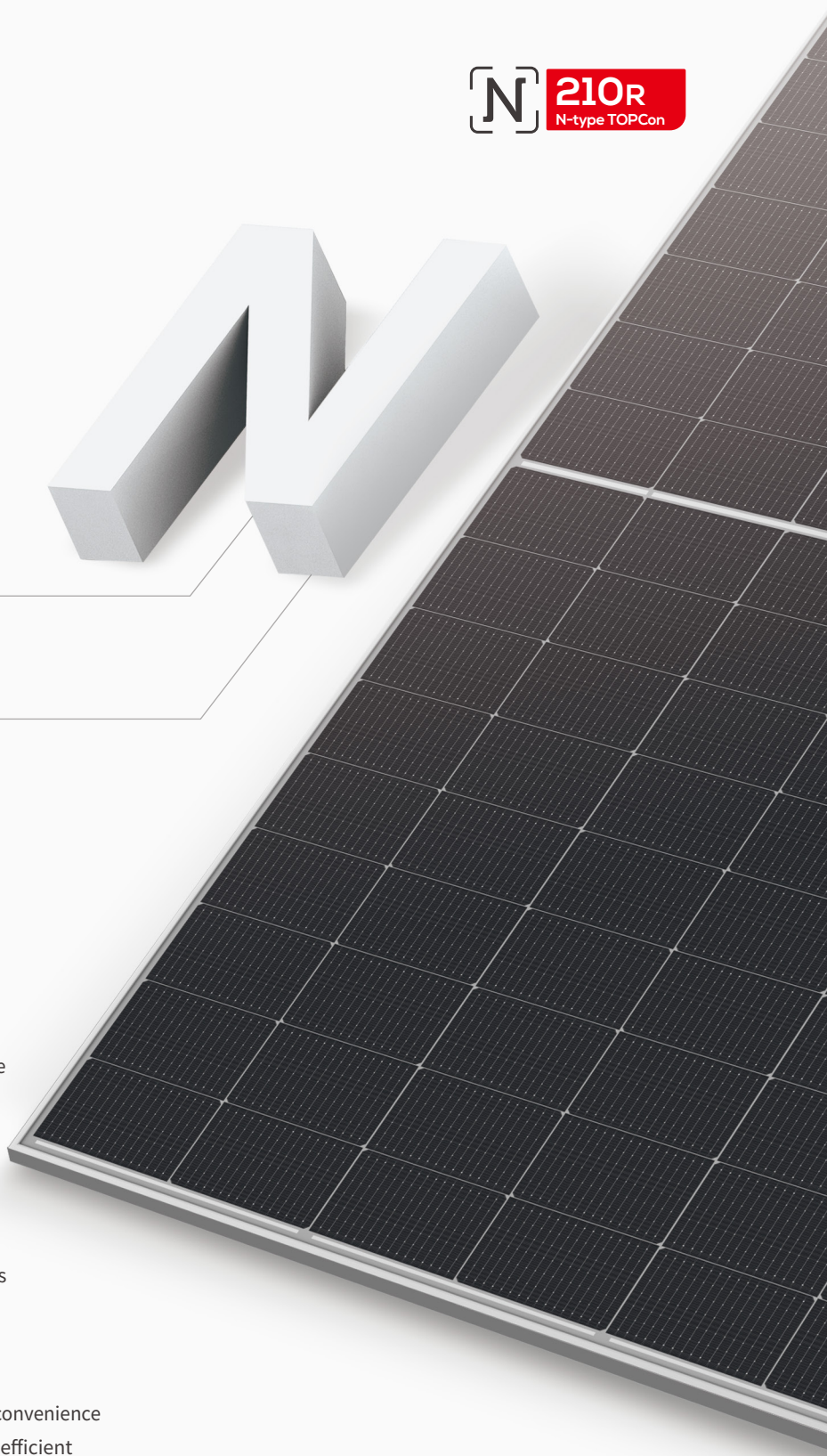
TCL

N 210R N-type TOPCon

G12R-54P

N-type Bifacial Double Glass Module

HSM-ND54-GR490~515



515W
Maximum Power Output

23.2%
Maximum Efficiency

TIER 1 BloombergNEF

Aesthetic Experience

- For DG scenarios, delivering aesthetic experience

Reliable and convenient to install

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

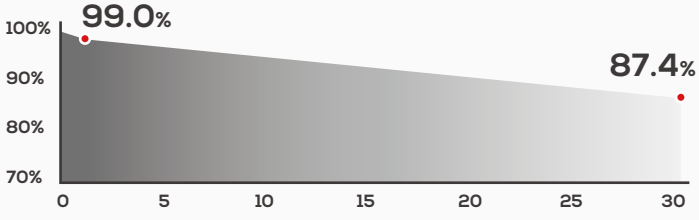
High Energy Yield

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

Linear Performance Warranty

15 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

Version No.:HC-N-HSM2025-0101-EN

* Please refer to product warranty for details

HSM-ND54-GR490~515 | TOPCon

515W Maximum Power | **23.2%** Maximum Efficiency | **0~+5W** Power Tolerance

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	Pmax (W)	490	539	495	545	500	550	505	556	510	561	515	567
Open Circuit Voltage	Voc (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	Isc (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	Vmp (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	Imp (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	Pmax (W)	515	539	520	545	525	550	530	556	536	561	541	567
Open Circuit Voltage	Voc (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	Isc (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	Vmp (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	Imp (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 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	1500V DC
Maximum Series Fuse Rating	30A
Power Bifaciality	80±5%

Mechanical Data

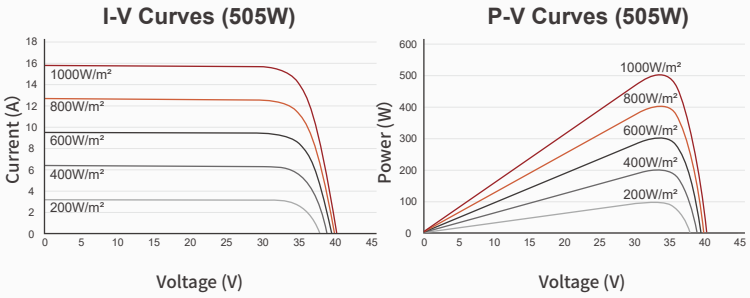
* Please refer to installation manual for details

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	4.0mm², +1200mm, -1200mm (can be customized)
Maximum Static Load	Front: 5400Pa/Back: 2400Pa*
Fire Rating	IEC Class C

Packaging Configuration

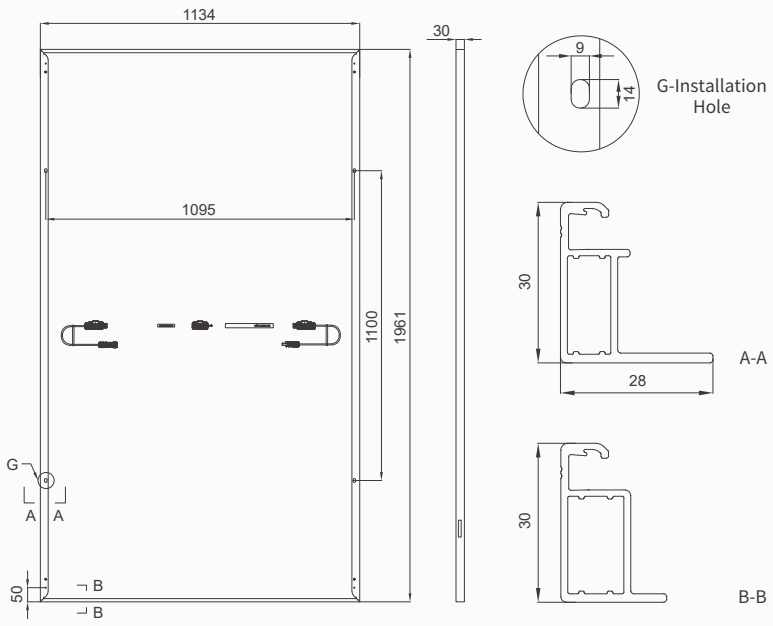
Modules per Pallet	36pcs
Modules per 40'HQ Container	864pcs
Pallets per 40'HQ Container	24pcs

Curve Graph



Engineering Drawing

[Unit: mm]



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Datasheets