HISEM 硕响新能源

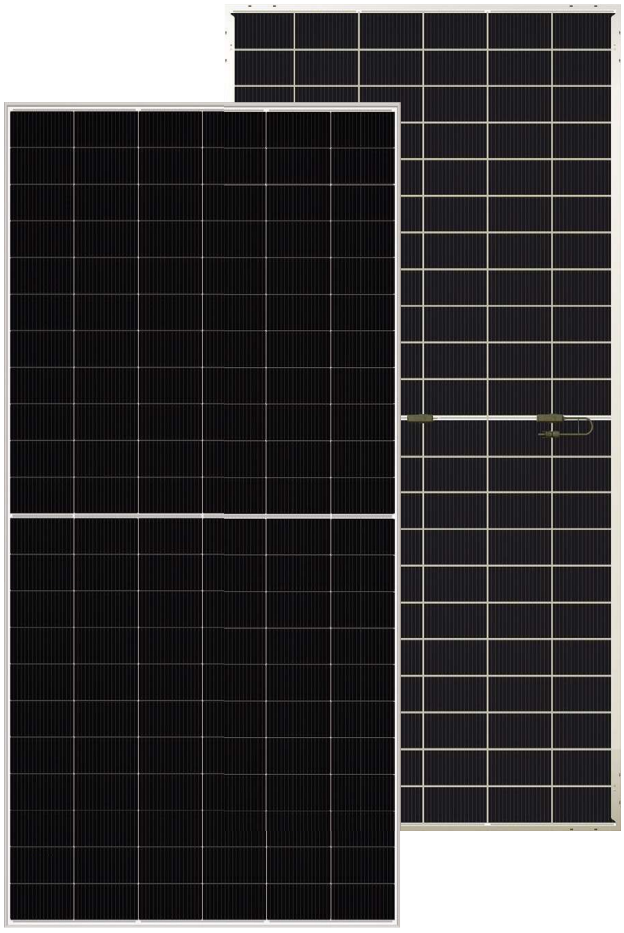
N-Type Solar Panel Manufacturer

High Efficiency TOPCon Solar Panel

620W ~ 650W | Max. Eff. 24.1%

650W Pmax

Max.Eff. **24.1%**



Core technological advantages

TOPCon Advanced Battery Technology

Based on the N-type TOPCon tunneling oxide passivation contact process, it enhances resistance to PID/LeTID degradation, resulting in better low-irradiance and low-light power generation performance and higher ultimate conversion efficiency, bringing long-term high-stability power generation gains.

SMBB multi-gate technology

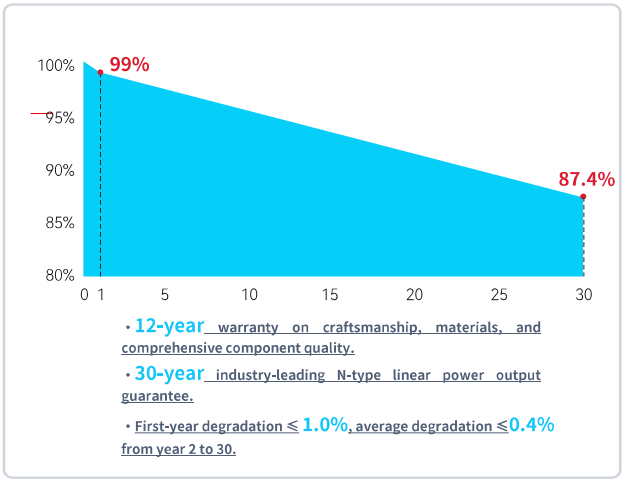
The design employs multiple main busbars and finer, denser circular solder strips to reduce internal shading and resistance loss, optimize light absorption and current convergence, and improve module power output, resistance to hot spots, resistance to microcracks, and long-term reliability.

Extreme environmental tolerance

Certified through rigorous testing—including 5,400 Pa front-side snow load, 2,400 Pa rear-side wind load, salt mist, ammonia, and sand/dust exposure—ensuring resilience against harsh environmental conditions.

Bifacial power generation gain (bifacial type only)

With a bifaciality of up to 80%±5% and excellent wide-spectrum response, it can still efficiently capture back-reflected light in low-light environments such as early morning, evening, and rainy days, significantly improving the total life cycle power generation, enhancing the system's all-weather power generation capability, effectively reducing the levelized cost of electricity (LCOE), and achieving higher investment returns.



- 12-year warranty on craftsmanship, materials, and comprehensive component quality.
- 30-year industry-leading N-type linear power output guarantee.
- First-year degradation ≤ 1.0%, average degradation ≤0.4% from year 2 to 30.

Comprehensive Quality Management System and Product Certification

UL 61215/61730
IEC 61215/61730
EN IEC 61215/61730
CAN/CSA-IEC 61215
CSA C22.2 No. 61730

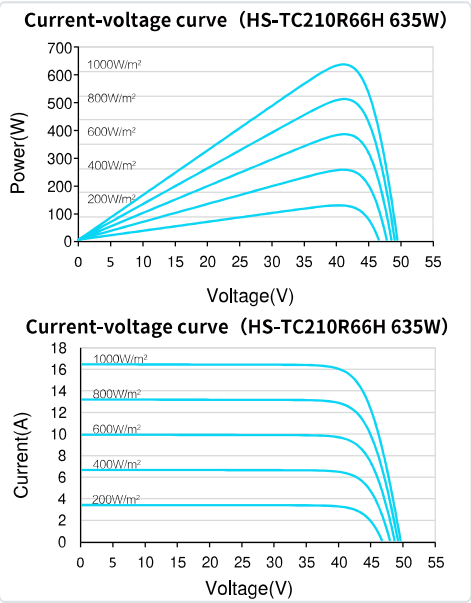
Salt spray IEC 61701
Ammonia resistance IEC 62716
Dust and sand IEC 60068
ISO 9001/14001

Electrical performance parameters Standard test conditions (STC)

Product Model (Electrical parameters)	HS-TC210R66H 620W	HS-TC210R66H 625W	HS-TC210R66H 630W	HS-TC210R66H 635W	HS-TC210R66H 640W	HS-TC210R66H 645W	HS-TC210R66H 650W
Rated Max-Power - P_{mpp} (Wp)	620	625	630	635	640	645	650
Voltage at Max-Power - V_{mpp} (V)	40.74	40.88	41.02	41.16	41.30	41.44	41.58
Current at Max-Power - I_{mpp} (A)	15.22	15.29	15.36	15.43	15.50	15.57	15.64
Open Circuit Voltage - V_{oc} (V)	49.08	49.28	49.48	49.68	49.88	50.08	50.28
Short-Circuit Current - I_{sc} (A)	16.08	16.14	16.20	16.26	16.32	16.38	16.44
Module Eff. (%)	22.95	23.14	23.32	23.51	23.69	23.88	24.06

* STC standard test conditions: Illumination intensity 1000W/m², battery temperature 25°C, atmospheric quality AM1.5. Power measurement error range: 0 ~ ±3%.

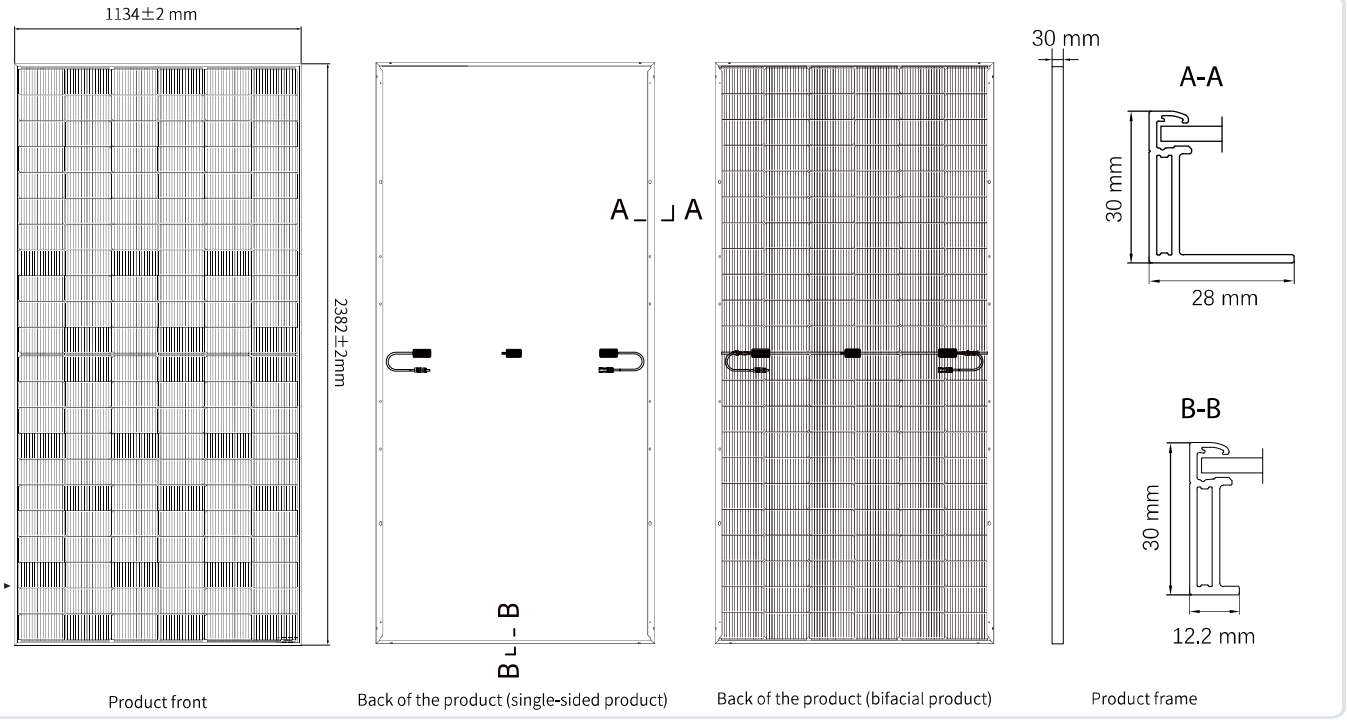
Characteristic curves



Mechanical structure

Cell type	Mono N-type TOPCon cell
Number of half-cell	132（6*22）
Panel size	2382×1134×30 mm
Panel weight	27.9kg
Front cover glass	3.2mm anti-reflective coated tempered glass
Back panel	White/Transparent/All Black
Frame	Anodized aluminum alloy /Other materials
Junction Box	IP68, 3 bypass diodes
Connector	MC4 QC4.10-35(1500V)
Output wires	4mm (IEC),12AWG(UL) 300mm (+) / 300mm (-)

Engineering shape and pattern



Extreme operating safety indicators and global one-stop storage and transportation specifications

Operating environment limit parameters and coefficients	
System operating temperature range	-40° C ~ +85° C
System maximum safe voltage	1500 V DC (IEC Standard)
Maximum series fuse rated current	30 A
Temperature coefficient of rated power	-0.29% / ° C
Open-circuit voltage temperature coefficient	-0.25% / ° C
Short-circuit current temperature coefficient	+0.045% / ° C

International standardized packaging and consolidation specifications (*Marked as domestic specifications)	
Unit standardized packaging quantity	36(*38)pieces/pallet
Pallet total package dimensions	2396 × 1120 （*1200） × 1251 mm
Pallet total gross weight	1060 （*1110） kg
17.5-meter trailer domestic loading capacity	1064 pieces/cart (Total 28 large pallets)
40HQ container shipping volume	720 pieces/cabinet (Total 20 large pallets)
Container interior space utilization	A maximum load ratio of 98.5%

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