20th 2026 2006

JinKO

2006 All In Solar 2026 Solar For All

Tiger Neo 3.0

In-depth Analysis of Technical Advantages



The world's No.1 in Global Shipment for 6 consecutive years

370GW
Delivered

15.5%
Market Share

industry's market share leader by module shipments (top-ranked in 2024-2025)

ranked "Top Performance" by PVEL/DNV GL PV Module Reliability Scorecard for 10 consecutive years

awarded "Top PV Performance" by EUPD Research in Europe, Australia, South Africa and Middle East and North Africa" by EUPD Research

AAA
rating

100%
bankability

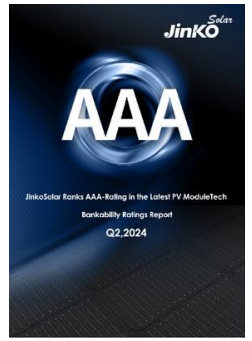
awarded the highest rating of 3A by PV ModuleTech for bankability

awarded "Top PV Performance" by EUPD Research in Europe, Australia, South Africa and Middle East and North Africa" by EUPD Research

awarded the AAA Customer Satisfaction Benchmark Grade and National Quality Benchmark by National Market Credit Quality

awarded the TÜV "Quality China" award for five consecutive years for monocrystalline modules with superior power generation simulation













*Data as of Q2,2025

Source: Wood Mackenzie, PV tech, Solarbe, PV magazine...

Vertical Integration



Wafers
120GW



Cells
95GW



Modules
130GW

Stable supply chain for large orders

Cost control creates profitability advantage

Overseas integrated supply chain

No.1 in Global Shipment for 6 Consecutive Years



JinKO Solar

Global Strategic Customers

adani Renewables
EDF
enel Green Power
NEXTera ENERGY
aes
TotalEnergies
DMM Group
Marubeni
RWE
aldo
ACWA Power INTERNATIONAL
BayWa
Shell
edp
bp
陕建五建集团 SCEGC NO.5 GROUP
UGL
POWERCHINA
SEPCO
国家电投 SPIC
中国南方电网 CHINA SOUTHERN POWER GRID
中国华能集团公司 CHINA HUANENG GROUP
中国华电集团有限公司 CHINA HUADIAN CORPORATION LTD.
CEEC 中国能建
中国电力建设集团有限公司 POWER CONSTRUCTION CORPORATION OF CHINA 中国电力建设股份有限公司 POWERCHINA LIMITED

Leading-edge Technology

30 times break the world record
achieving a conversion efficiency of **27.02%**
with its high-efficiency N-type Monco Cell



- **R&D Concepts**

Exploration of a new generation
R&D of a new generation
Mass Production of a new generation

4400+
Total Patent application

3000
Total Granted Patents

467
TOPCon Licensed Patents

2000
R&D Team

4.4Billion RMB+
R&D Investment in 2024

- **Core Technology**

Low Oxygen and Low Concentric Circles Rate N-type Monocrystalline Technology
N-type Silicon Wafer Thinning Technology
N-type HOT 2.0 Cell Technology
N-type IBC Cell Technology
Tiger Neo Module Technology
BIPV technology, etc.
Energy storage applications and electric power systems regulation technologies
Efficient and stable large-area Perovskite/TOPCon tandem cell technology

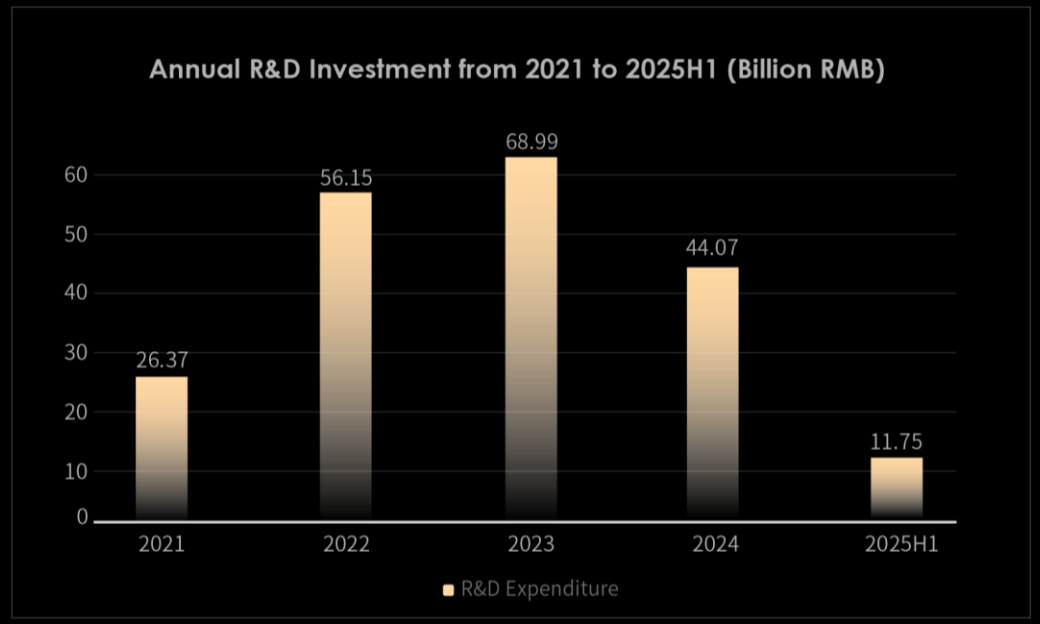
Leader of TOPCon

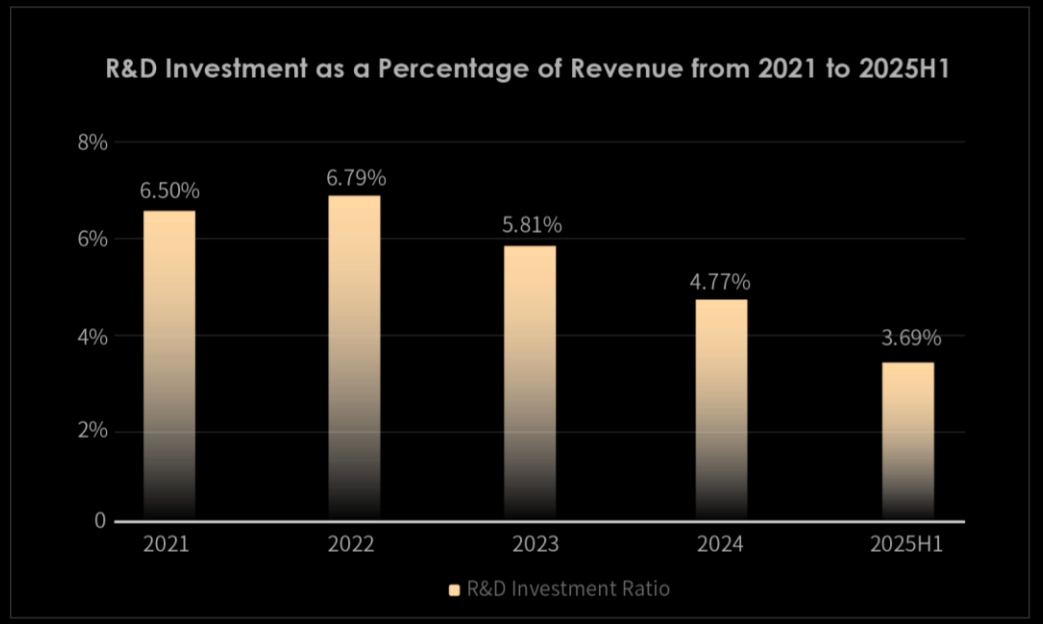




Leading R&D Investment

JinkoSolar's R&D investment over **5%** . From 2021 to 2024, the company invested **RMB 19.6 billion** in R&D, maintaining a leading position in the photovoltaic industry.



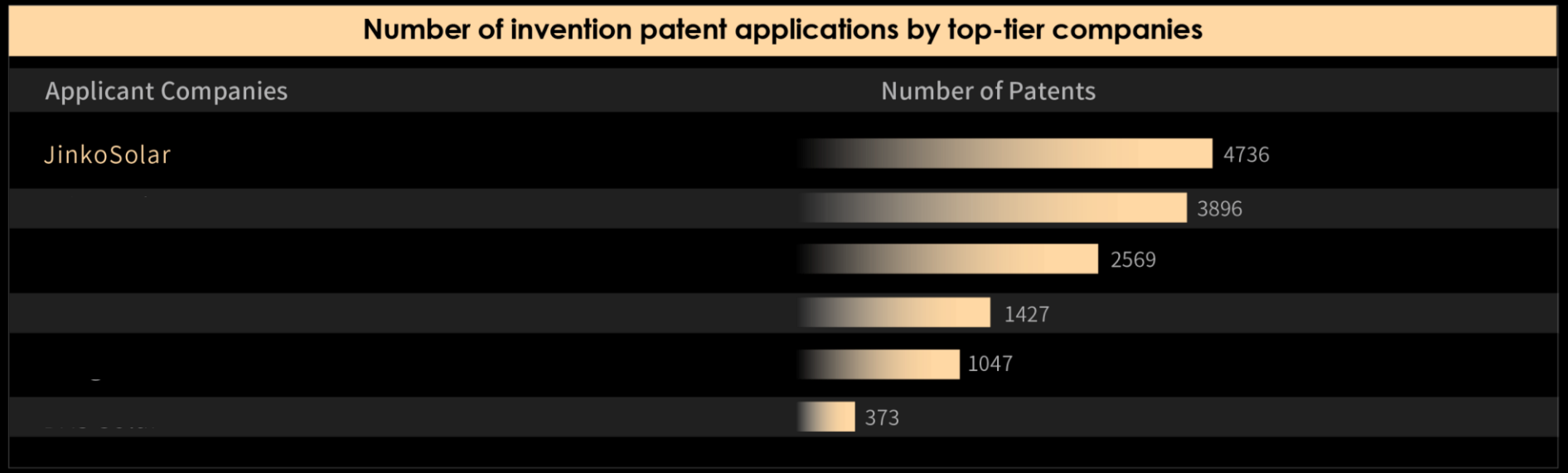


Industry's Largest Patent Holders

Continuous investment in innovation has made JinkoSolar one of the largest holders of photovoltaic technology patents worldwide.

JinkoSolar has filed over **5,500** patents globally and holds more than **3,100** active patents.

Authorized patents account for **56.76%** of the total applications, with invention patents making up **75%** of the total.

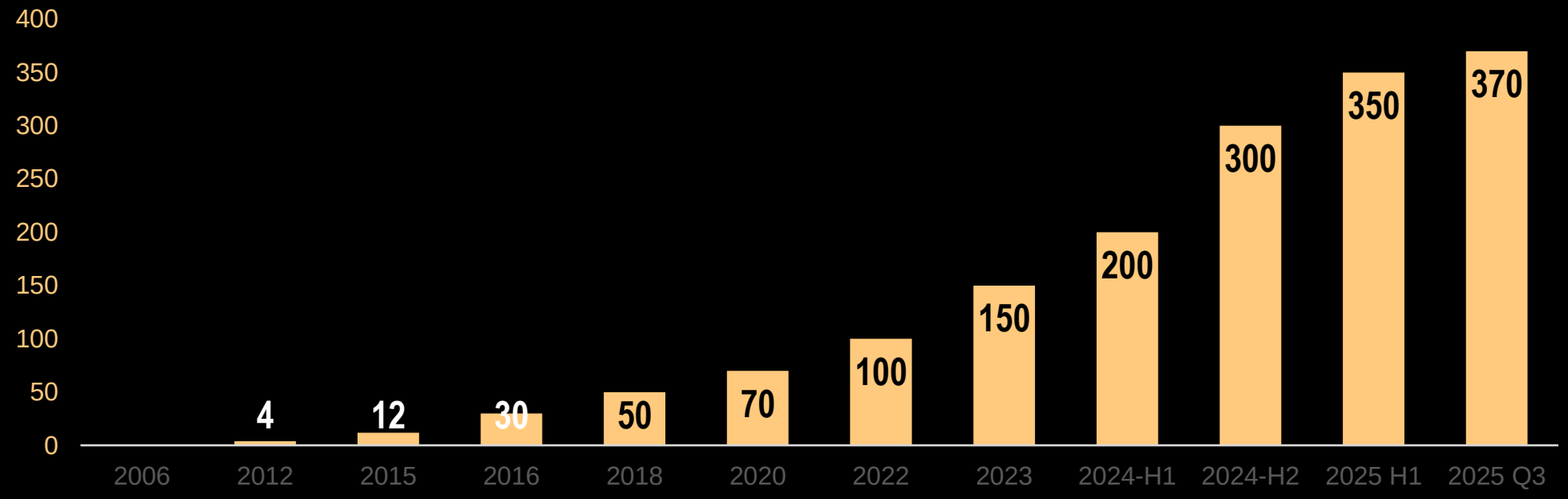


*Data source: Wisdom Sprout Patent Database, retrieval date: June 30, 2025

The N-Type Era Begins

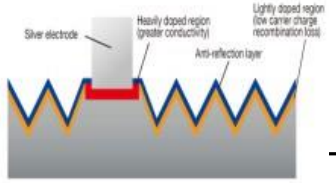
Since 2022, cumulative PV module shipments have risen rapidly, driven by Jinko’s leadership in N-type TOPCon technology

Cumulative PV Module Shipment, GW

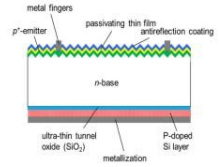


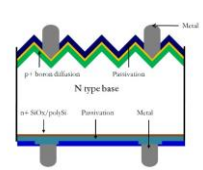
Pioneering N-TOPCon Technology

TOPCon+ Selective Emitter Technology

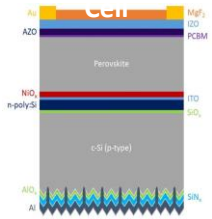


TOPCon Total Passivation Contact Cells 1.0 & 2.0

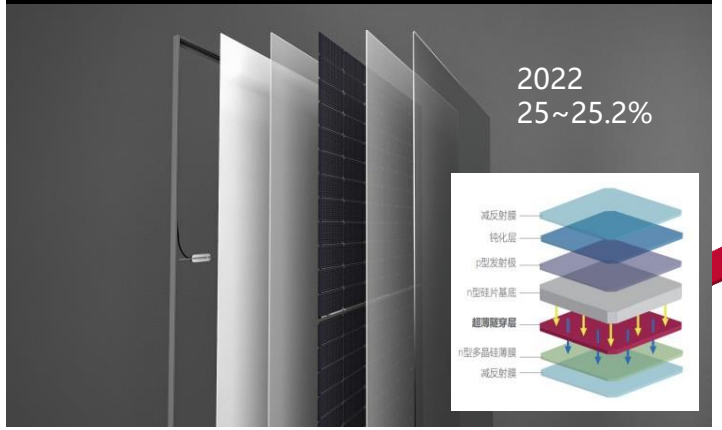




TOPCon Laminated



TOPCon N-Type/Passivated Contact Cells



2022
25~25.2%

2023
25.5~25.8

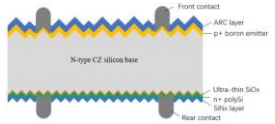
2024 Forecast
26.2-26.5%

2025 Forecast
26.8~27.0%

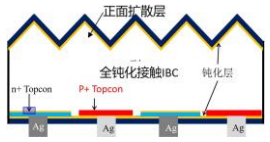
2027 forecast Maximum efficiency >**32.0%**

Cell Technology Forecast Maturity Time

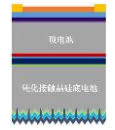
Matured
TOPCon Passivated Contact Battery
Expected maximum efficiency >26%



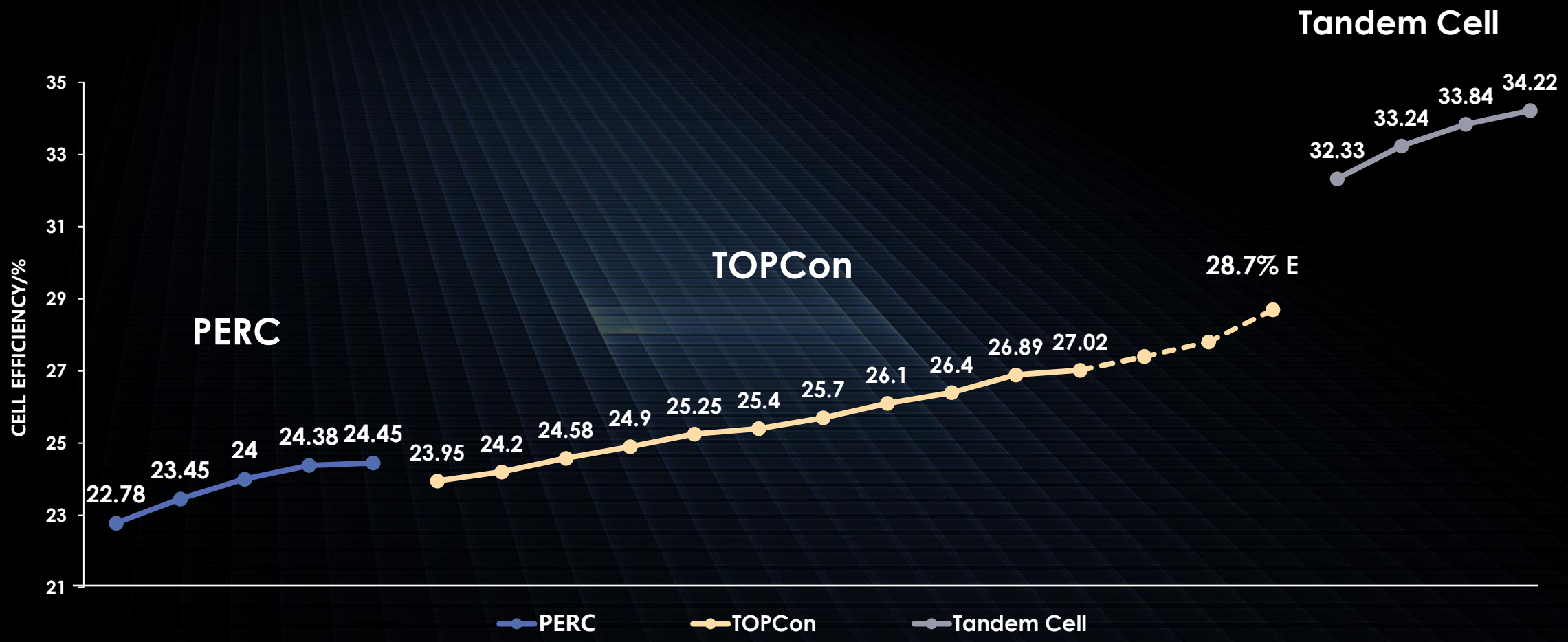
Maturity time: 3 years later
Total Passivated Contact IBC Cells
Expected maximum efficiency >26.5%



Maturity time: 5 years later
Double junction laminated cells
Expected maximum efficiency >32%



JinkoSolar's World Record



TIGER Neo III

JinKO Solar

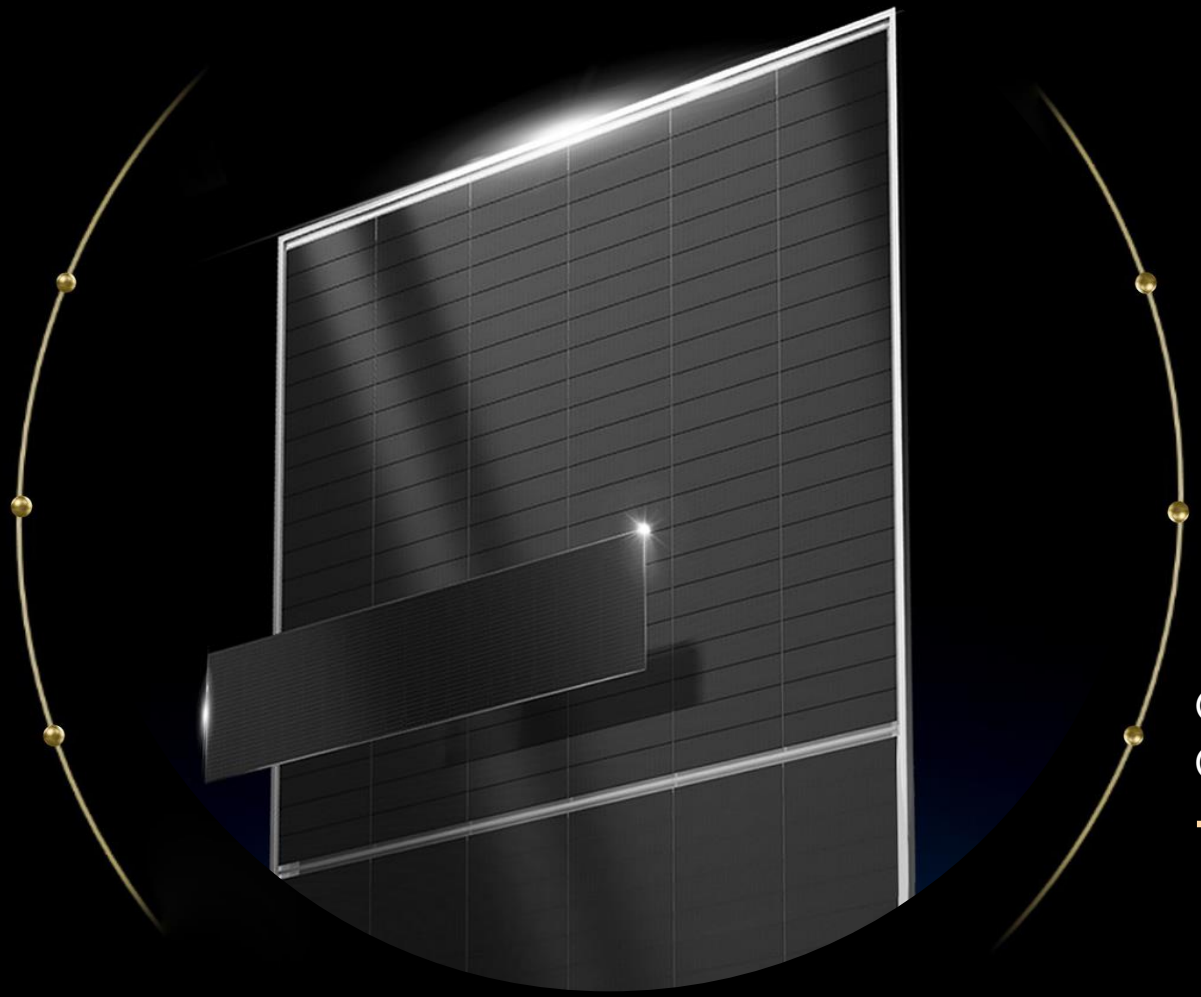


Six Advantages of the Product

Power
650-670W

Better Bifacial Factor
85±5%

Optimized Power Temp Coeff.
-0.26%/℃



Better Annual Degradation:
-0.35%

Better Lower Irradiation Performance
95~98%
*200W/m²

Gain Per Watt Compared to BC
+3-3.5%

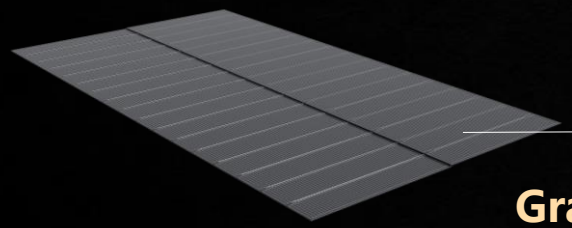
Four Breakthroughs in Solar Cell Technology

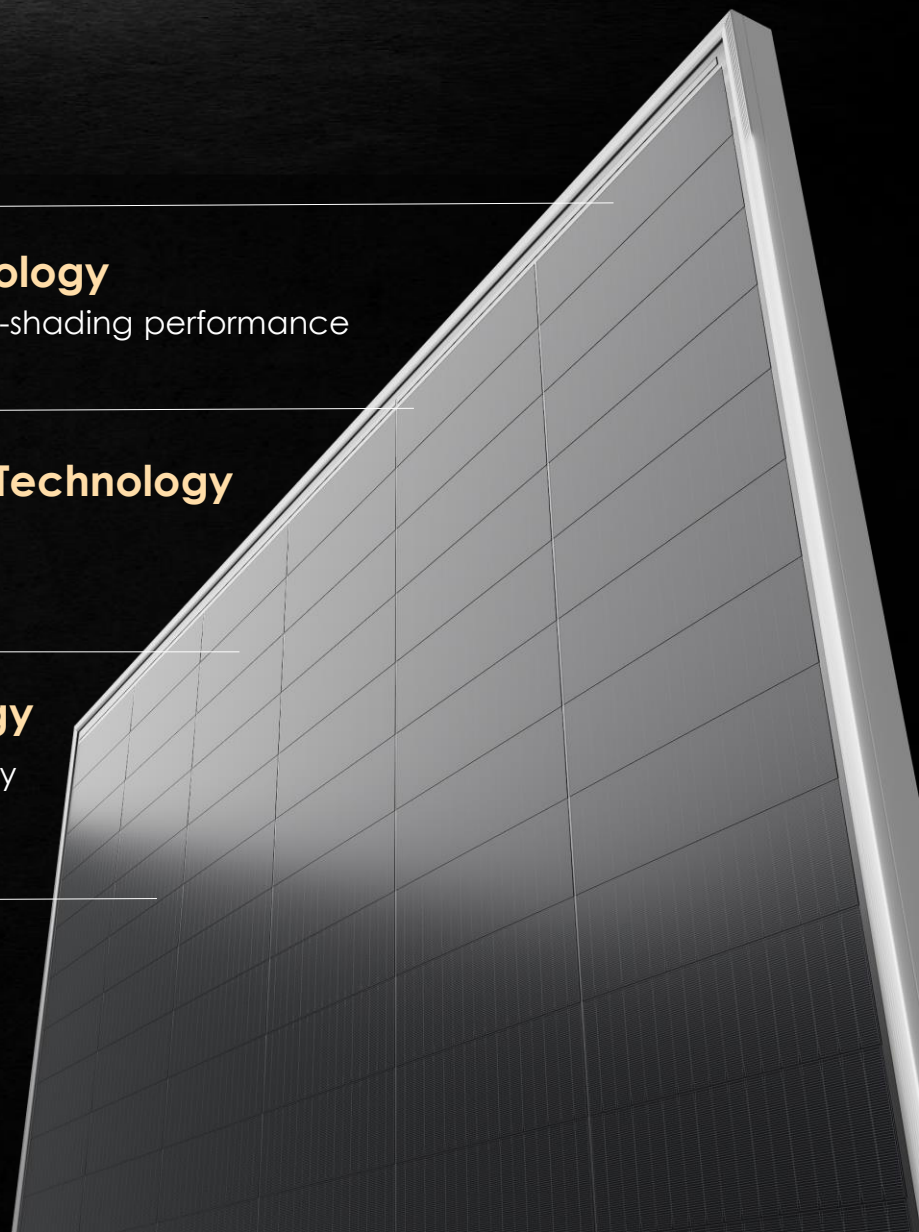
Multi-cells (FP) Technology
Strengthen the power and anti-shading performance

Multi Cut Passivation (MCP) Technology
Improve cell efficiency **0.5%**

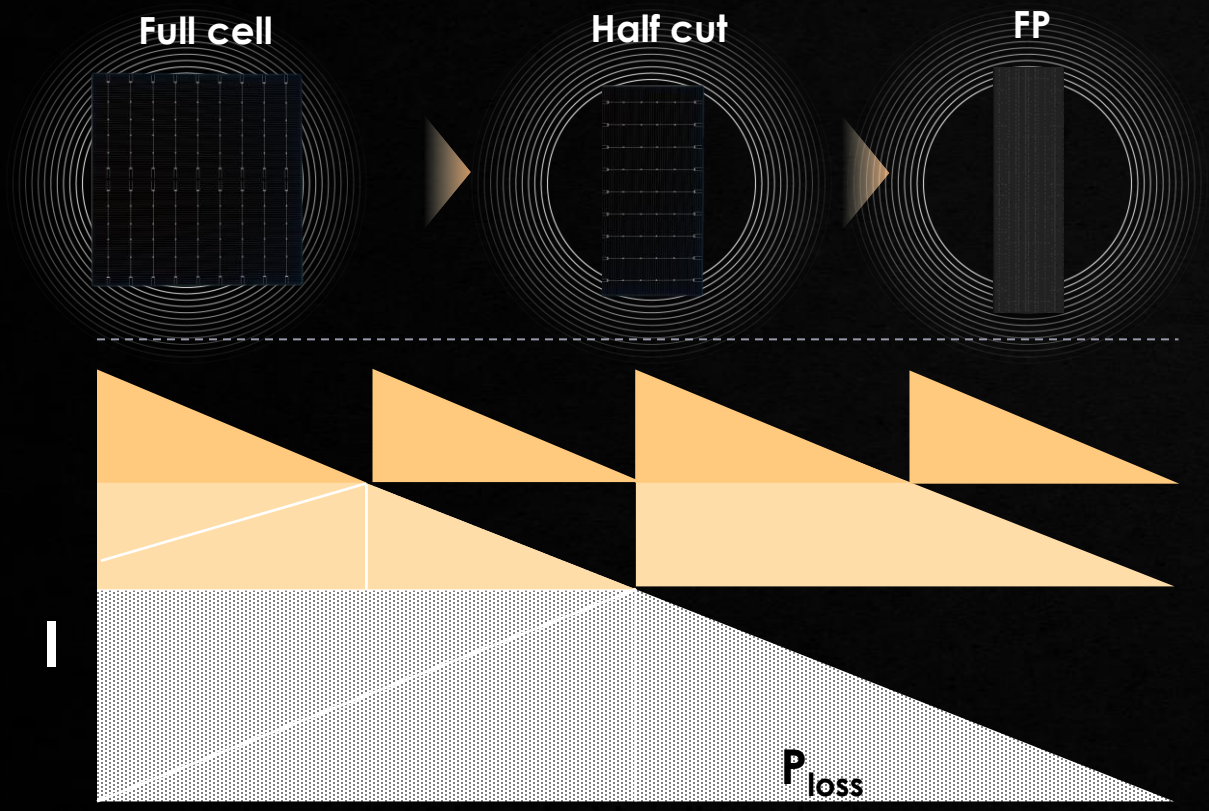
Metallization Enhancement (ME) Technology
Further improvement on the current conduction efficiency

Graphical Enhancement (MAX) Technology
Increase bifacial factor 5%+





FP Tech —— Multi-cells



1. Higher Power

Better current distribution

Better efficiency—Reduce internal power loss of the module (less I^2R losses)

Increasing module power by 10W.

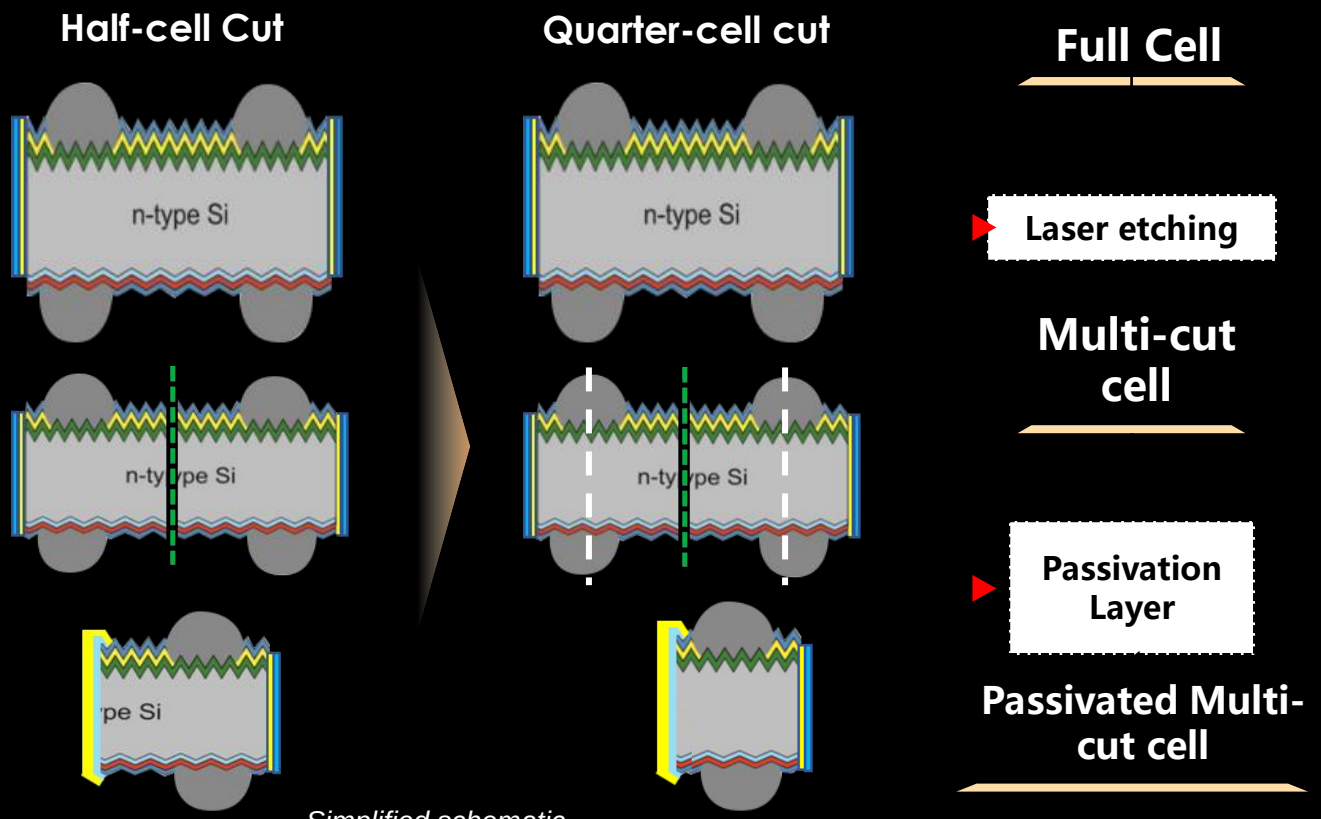
2. Lower Shading Loss

Mitigates the impact of partial shading on overall generation.

3. Enhance Performance

Lower heat generation improves cooling, power performance and mechanical load performance

Multi Cut Passivation (MCP) Tech



Simplified schematic

1. Enhanced Power

Prevent edge recombination of minority carriers

Module power increased by 5W+, cell efficiency increased by 0.5%

2. Deep Passivation

Effective repair of cutting surfaces and defects

3. Enhanced Stability

Effective improvement of cell's electrical performance

Metallization Enhancement (ME) Technology

1. Cell Efficiency Improvement

- Lower contact resistance
- **Up to 0.5% increase in cell eff.**

2. Enhanced Cell Corrosion Resistance

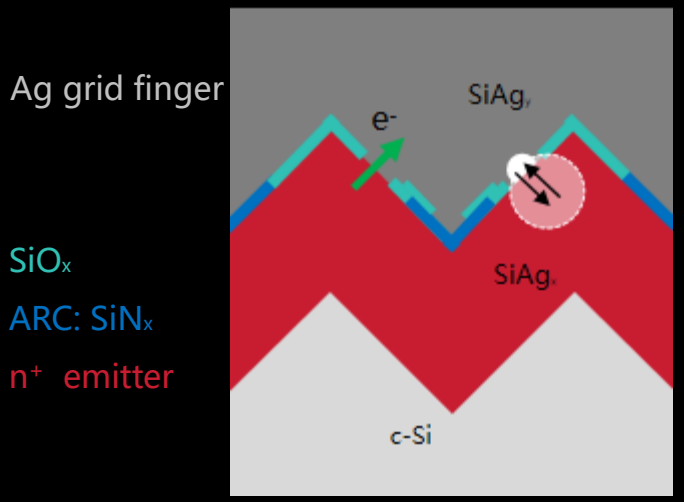
New silver paste formula with reduced aluminum content significantly improves cell corrosion resistance.

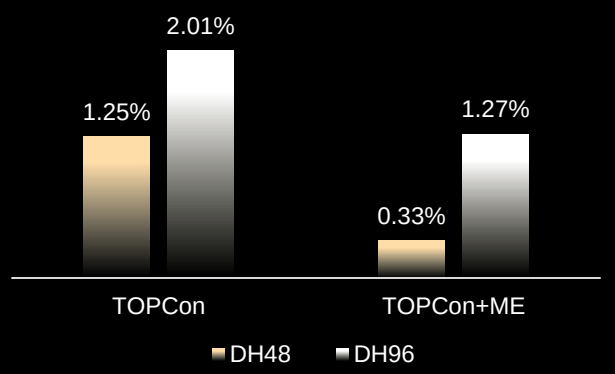
3. Excellent Module Reliability

Passed the 3x IEC Reliability Test (TUV SUD) TC600、DH3000、UV90

4. Proven Outdoor Energy Generation

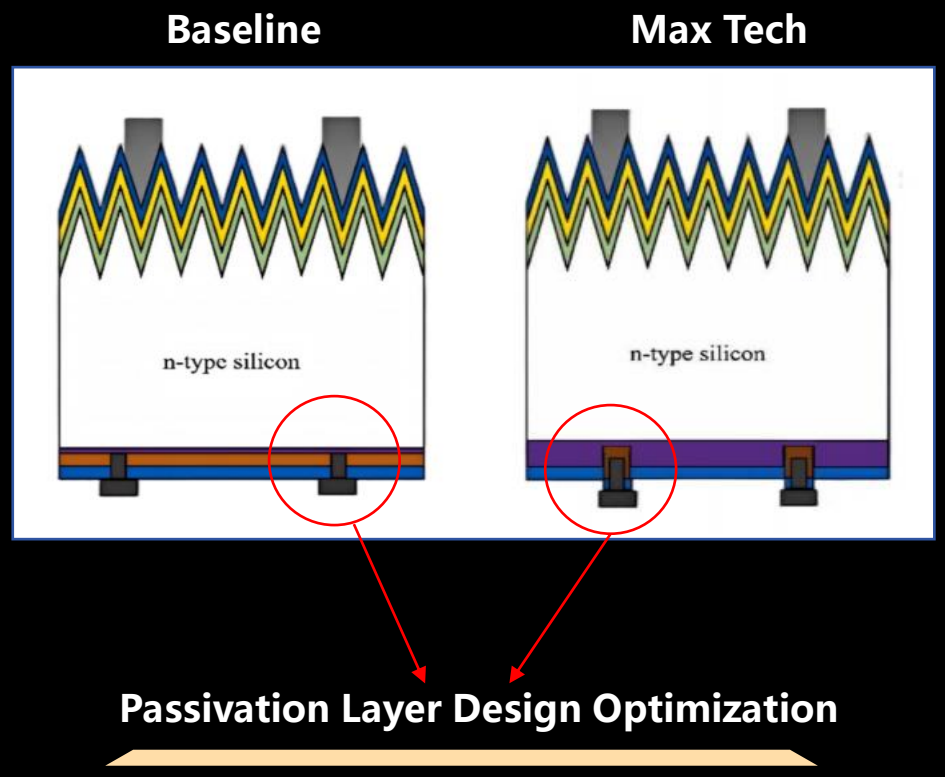
ME technology delivers significantly higher module power and superior reliability





*120°C, 100% RH, and 2 atm pressure.

MAX Tech —— Graphical Enhancement



1. Higher Power

Lower contact resistance and parasitic absorption, boosting short - circuit current and cell efficiency.

Increasing module power by 4 - 5W.

2. Enhance Reliability

Optimize film layer thickness, reduce environmental impact.

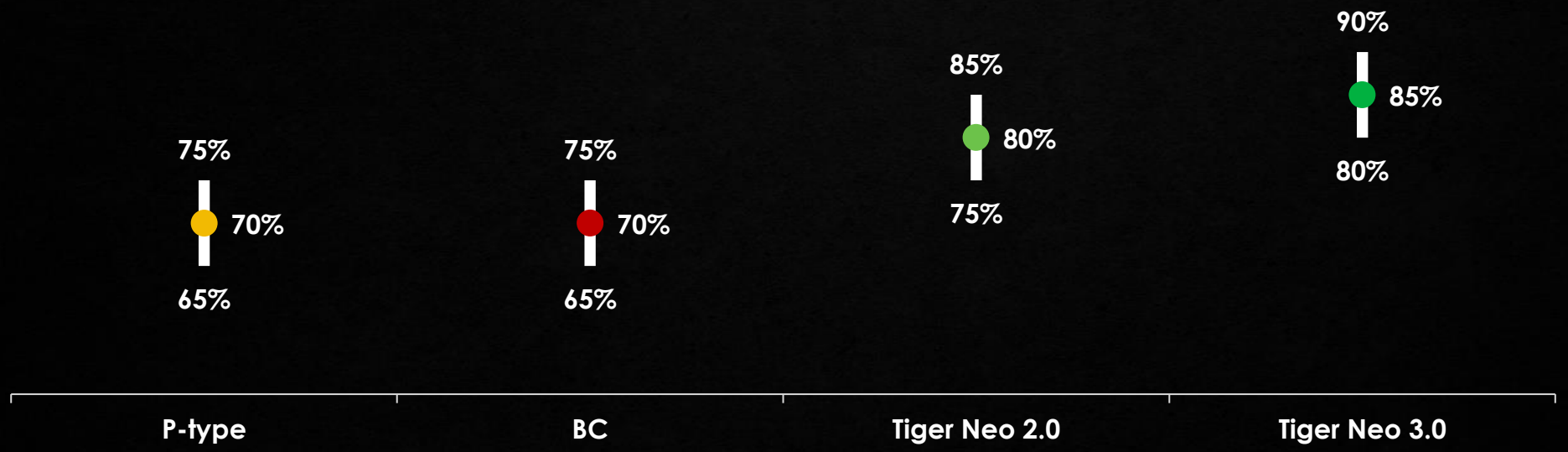
3. Better Bifaciallity

Optimized rear design, reduces irradiation loss, improves bifaciality rate, further increasing module power generation.

Better Bifacial Factor 85±5%

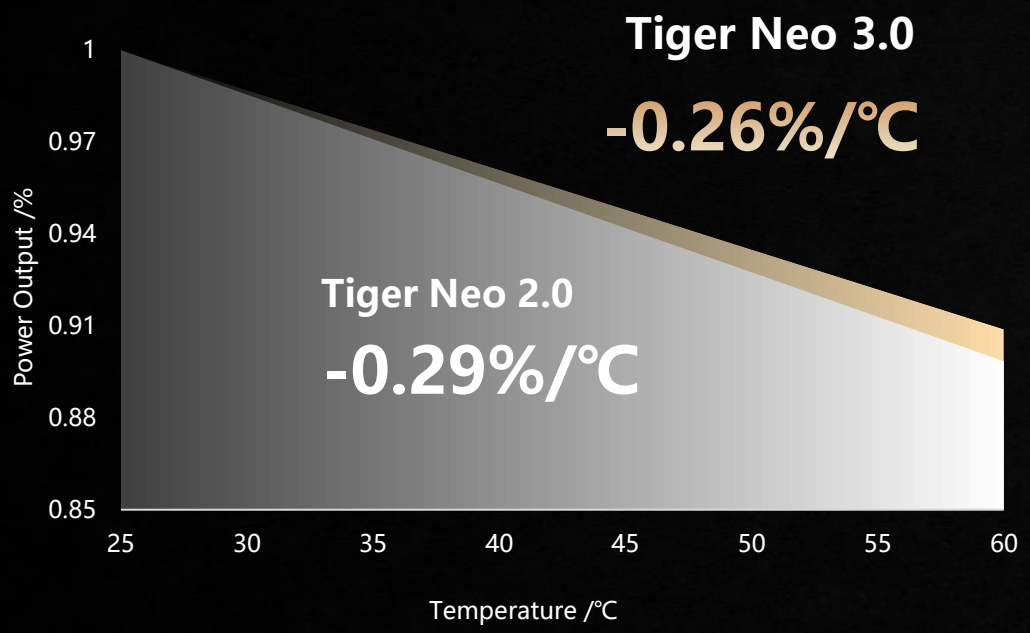
While legacy P-type modules and BC modules have hit a plateau, Jinko's TOPCon technology continues to push bifacial performance further.

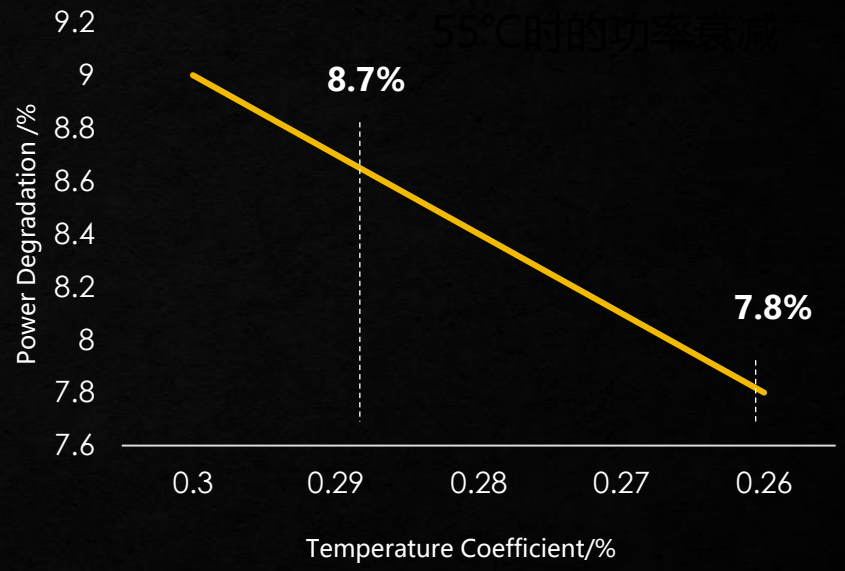
Each 5% bifaciality increase can achieve more than **0.6%** generation gain for the ground station project



Optimized Temperature Coefficient

STC Cell Temperature is 25 ℃
△T： Cell temperature variation (actual – STC)
*TC： Temperature Coefficient





Power decreases with increasing temperature

Actual Power = Nominal Power x (1– △T x TC)

Power Degradation(55℃):

Tiger Neo 2.0 : (55-25) x 0.29%＝**8.7%**

Tiger Neo 3.0 : (55-25) x 0.26%＝**7.8%**

↑ 0.9%

Advanced Warranty

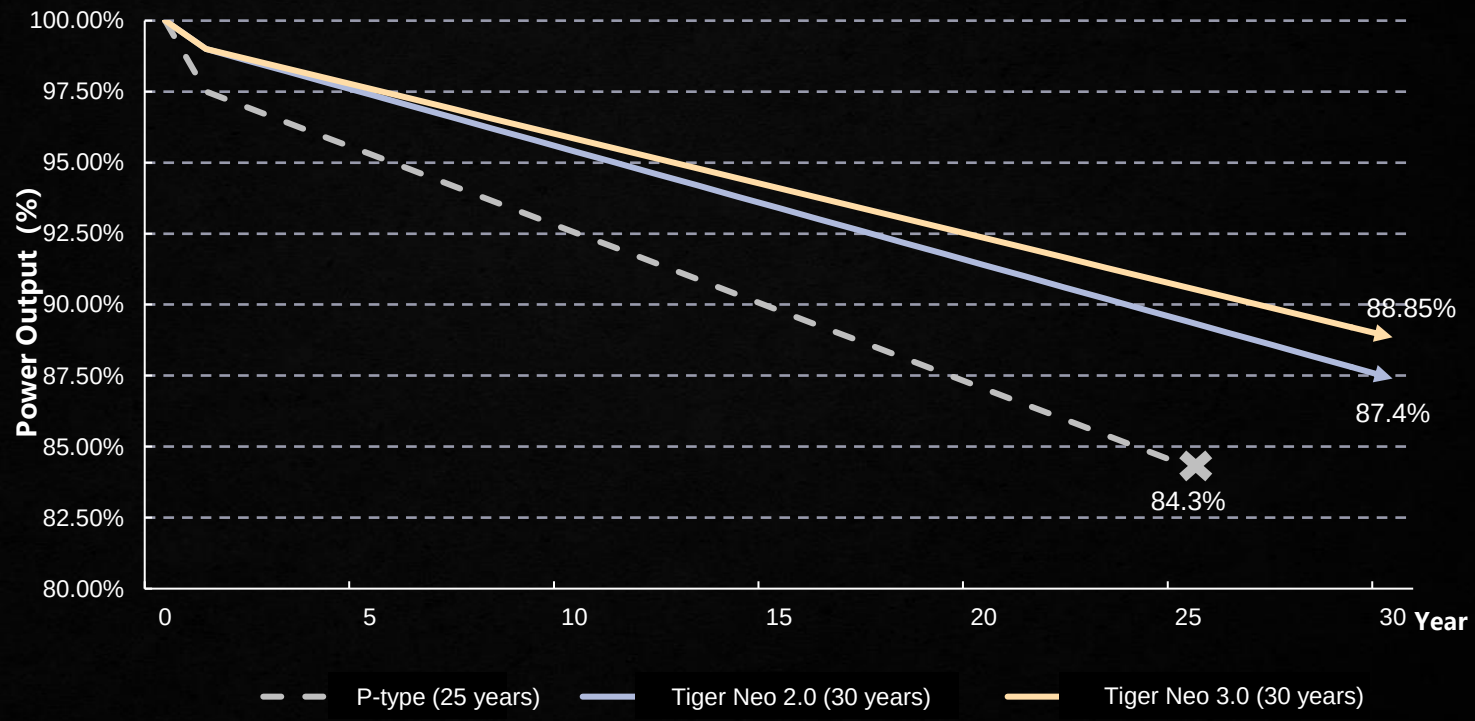
30 Year Power Warranty

≤ 1%

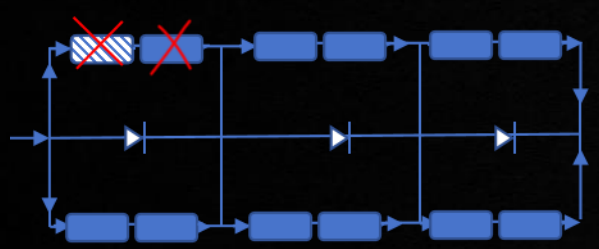
First year degradation

≤-0.35%

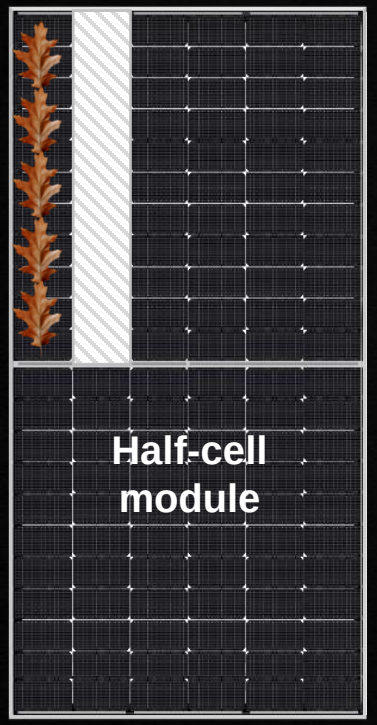
Annual degradation

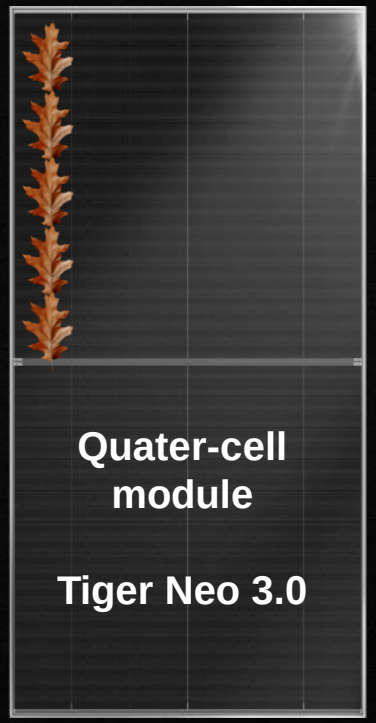


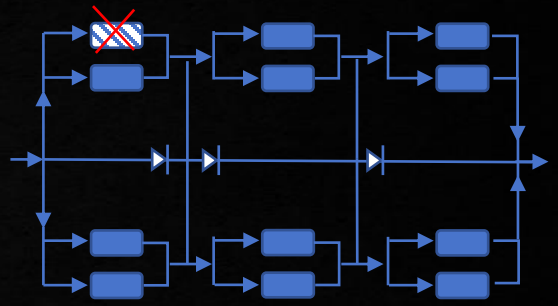
Improved Anti-Shading Behavior



Shading: ~63% Pnom







Shading: ~84% Pnom

Affected cells

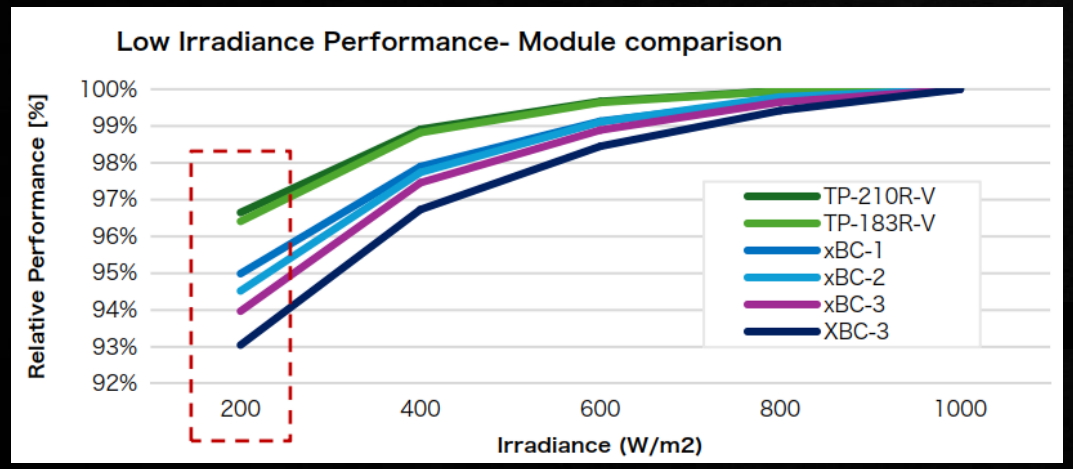
Circuit redesign delivers 20% greater power when shaded.

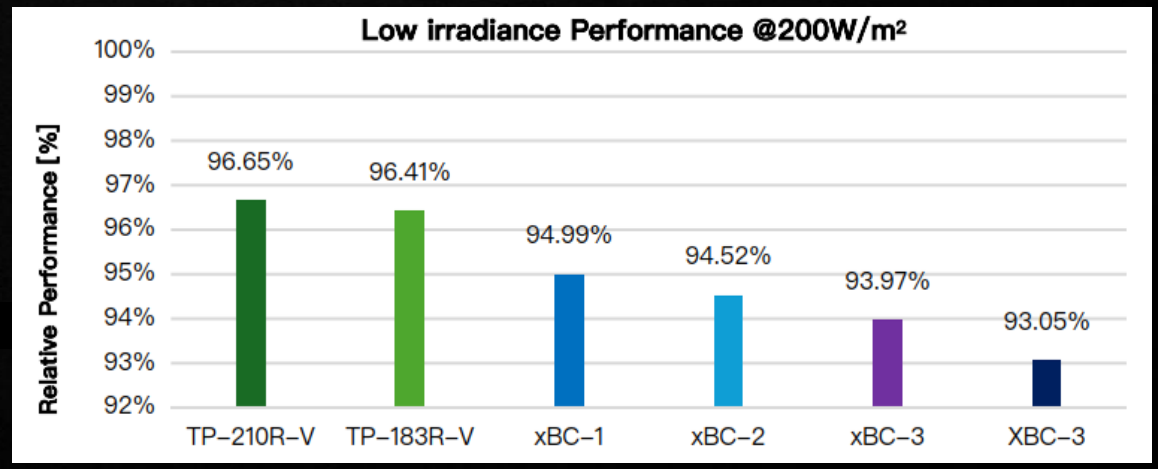
Better Low Irradiance Performance

- Laboratory low-irradiance tests show that Jinko TOPCon modules outperform xBC products

Irradiance	TP-210R-V	TP-183R-V	xBC-1	xBC-2	xBC-3	xBC-4
1000	100%	100%	100%	100%	100%	100%
800	99.96%	99.95%	99.72%	99.79%	99.65%	99.42%
600	99.67%	99.64%	99.13%	99.11%	98.89%	98.45%
400	98.91%	98.82%	97.90%	97.74%	97.46%	96.73%
200	96.65%	96.41%	94.99%	94.52%	93.97%	93.05%
Avg	**98.80%**	**98.70%**	97.94%	97.79%	97.49%	96.91%

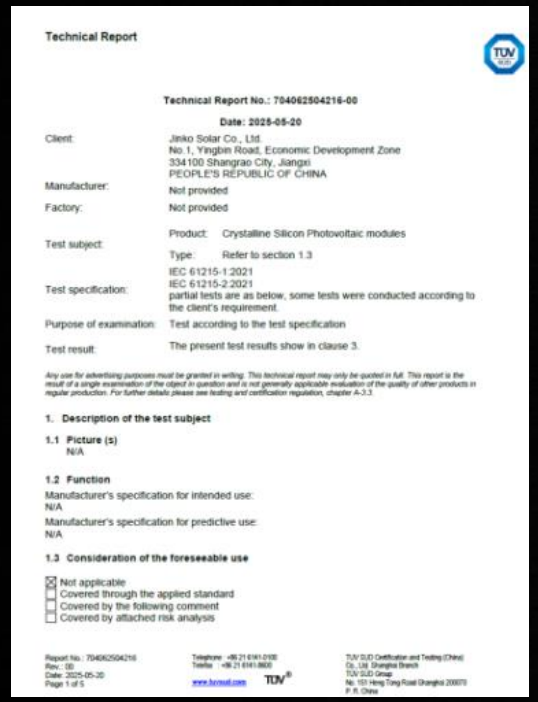
- **Relative performance advantage of ~1.8% to 3.6%** under low-irradiance conditions (@200W/m²)





Better Low Irradiance Performance

Relative performance advantage of ~ 3% under low-irradiance conditions (<@400W/m2)



Technical Report

Technical Report No.: 704062504216-00

Date: 2025-05-20

Client:	Jinko Solar Co., Ltd. No.1, Yingbin Road, Economic Development Zone 334100 Shangrao City, Jiangxi PEOPLE'S REPUBLIC OF CHINA
Manufacturer:	Not provided
Factory:	Not provided
Test subject:	Product: Crystalline Silicon Photovoltaic modules Type: Refer to section 1.3
Test specification:	IEC 61215-1:2021 IEC 61215-2:2021 partial tests are as below, some tests were conducted according to the client's requirement.
Purpose of examination:	Test according to the test specification
Test result:	The present test results show in clause 3.

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details please see testing and certification regulation, chapter A-3.3.

1. Description of the test subject

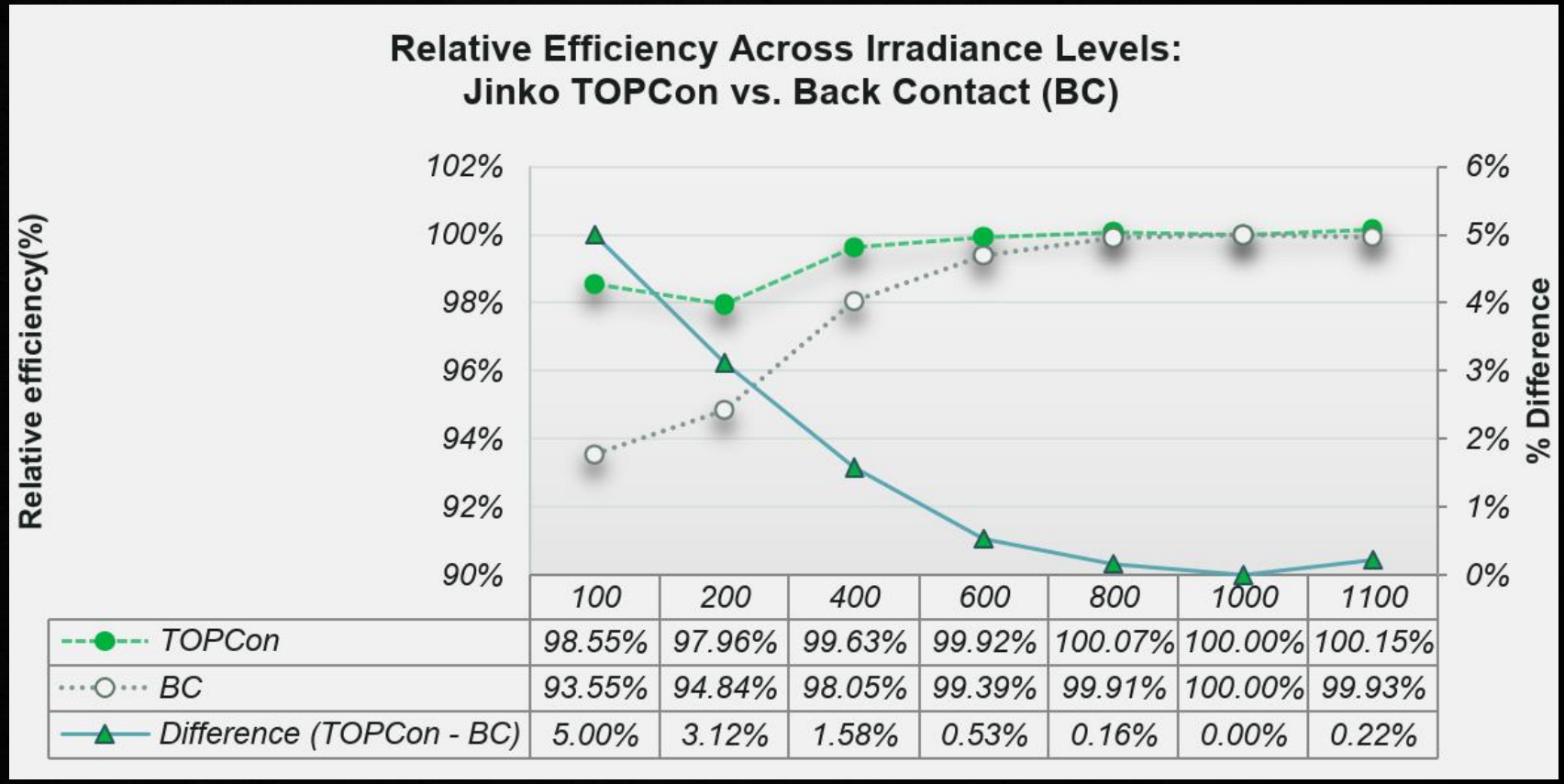
1.1 Picture (s)
N/A

1.2 Function
Manufacturer's specification for intended use:
N/A
Manufacturer's specification for predictive use:
N/A

1.3 Consideration of the foreseeable use

☒ Not applicable
☐ Covered through the applied standard
☐ Covered by the following comment
☐ Covered by attached risk analysis

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TÜV SÜD Group
No. 151 Heng Tong Road Shanghai 200070
P. R. China



	100	200	400	600	800	1000	1100
TOPCon	98.55%	97.96%	99.63%	99.92%	100.07%	100.00%	100.15%
BC	93.55%	94.84%	98.05%	99.39%	99.91%	100.00%	99.93%
Difference (TOPCon - BC)	5.00%	3.12%	1.58%	0.53%	0.16%	0.00%	0.22%



Kuala Lumpur

03.14421°, 101.705562°
Jalan Pudu, Kuala Lumpur, Malaysia
Time zone: UTC+08, Asia/Kuala_Lumpur [MYT]

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SITE INFO

Map data

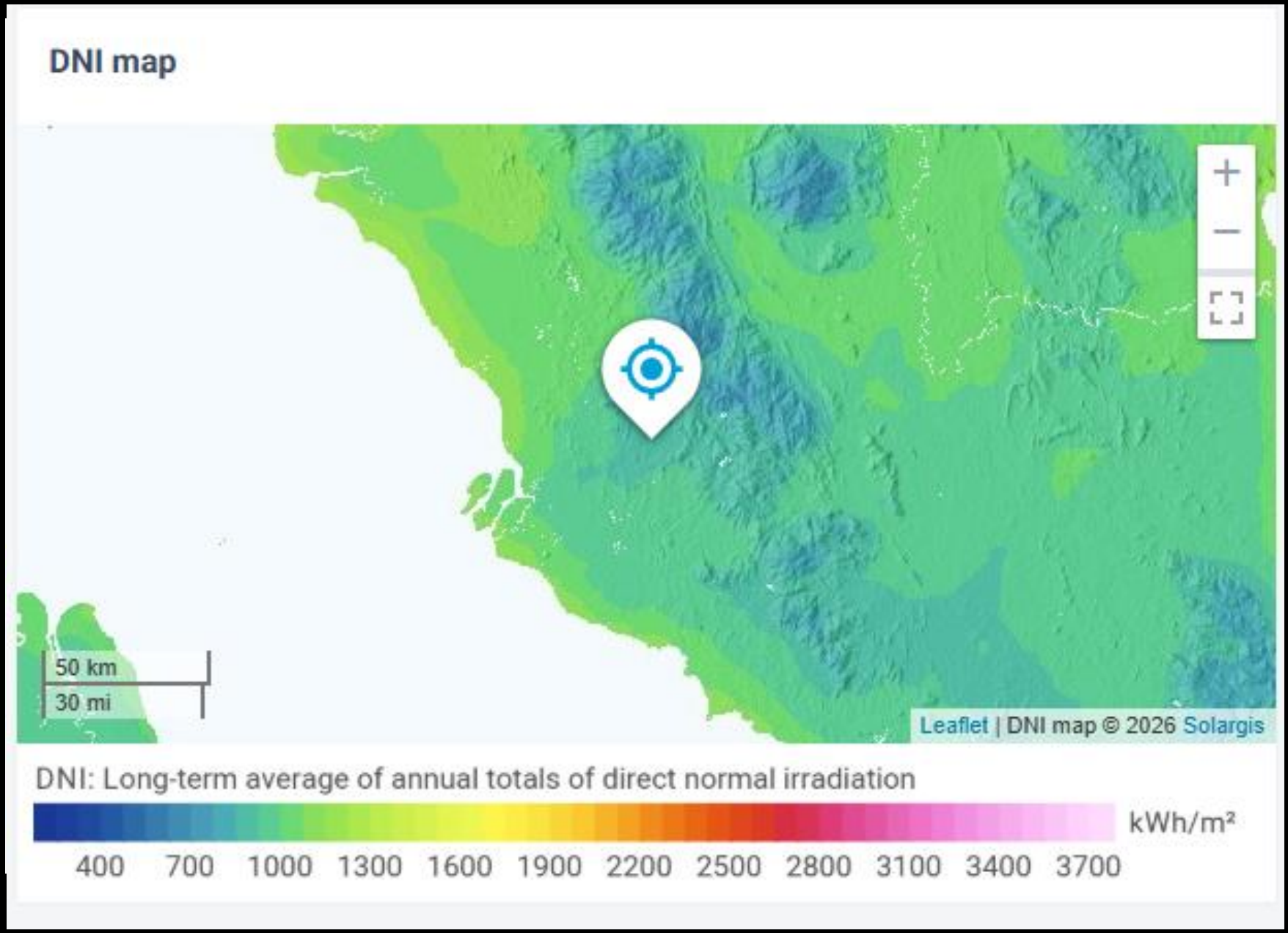
Per day

Specific photovoltaic power output	PVOUT specific	3.618	kWh/kWp per day
Direct normal irradiation	DNI	2.495	kWh/m² per day
Global horizontal irradiation	GHI	4.553	kWh/m² per day
Diffuse horizontal irradiation	DIF	2.623	kWh/m² per day
Global tilted irradiation at optimum angle	GTI opta	4.560	kWh/m² per day
Optimum tilt of PV modules	OPTA	4 / 180	°
Air temperature	TEMP	25.9	°C
Terrain elevation	ELE	51	m

Map

Swich to map




DNI map
50 km
30 mi
Leaflet | DNI map © 2026 Solargis
DNI: Long-term average of annual totals of direct normal irradiation
kWh/m²
400 700 1000 1300 1600 1900 2200 2500 2800 3100 3400 3700

- **Peak DNI is concentrated around 10:00–13:00**, while most early morning and late afternoon hours remain at significantly lower direct irradiance levels.
- Morning (7–9 AM) and afternoon (15–17 PM) periods consistently show weaker DNI, **reinforcing the importance of PV modules with strong performance under diffuse and low-light conditions.**
- **Seasonal variation is evident:** DNI is strongest during March–May, while reduced direct irradiance is observed during the monsoon and year-end periods due to frequent cloud cover.

Average hourly profiles

Direct normal irradiation [Wh/m^2]

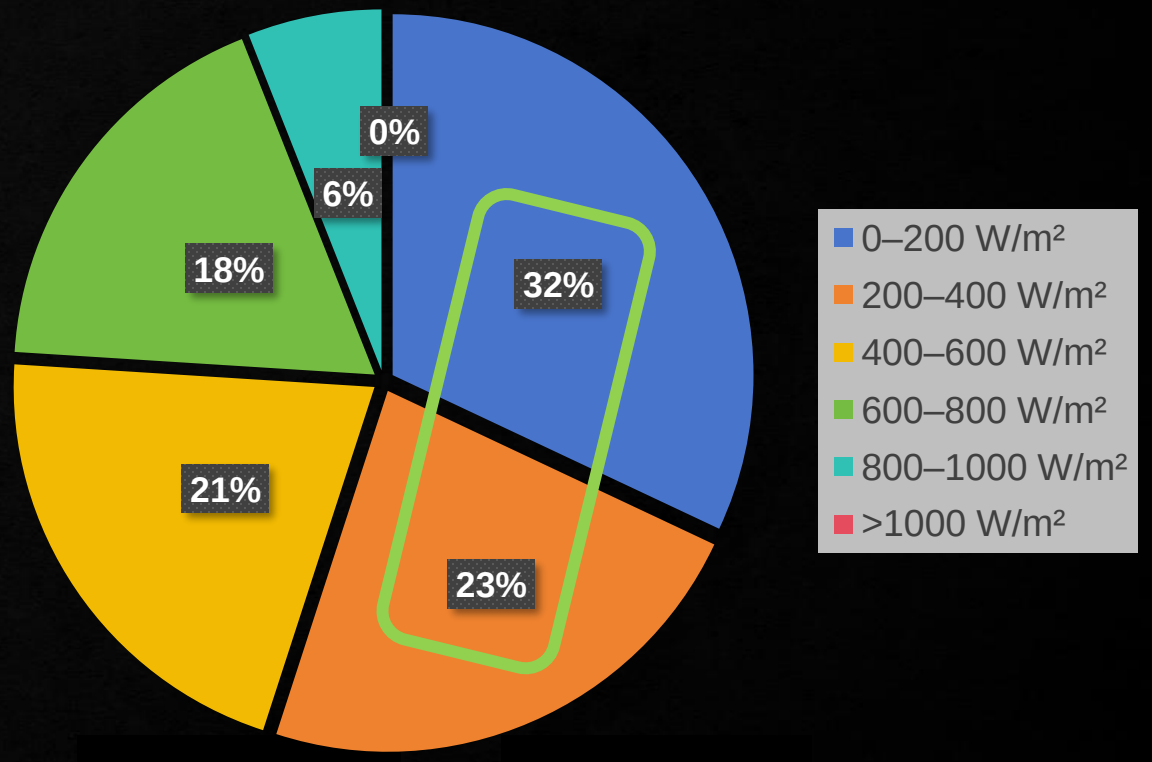
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0 - 1												
1 - 2												
2 - 3												
3 - 4												
4 - 5												
5 - 6												
6 - 7												
7 - 8	9	4	10	19	31	18	20	17	18	32	36	12
8 - 9	140	155	158	160	160	142	123	119	122	148	167	134
9 - 10	253	303	320	293	262	237	204	211	247	233	255	226
10 - 11	348	406	428	377	349	311	280	284	314	305	329	297
11 - 12	392	463	441	404	389	347	309	321	325	353	348	336
12 - 13	369	439	430	403	389	355	316	322	321	347	329	299
13 - 14	316	377	372	351	354	332	293	286	285	299	275	256
14 - 15	235	300	310	282	282	269	252	237	236	230	203	199
15 - 16	181	230	240	204	213	203	217	193	210	194	149	155
16 - 17	128	161	216	144	152	147	174	151	191	153	103	115
17 - 18	94	114	116	88	99	95	124	102	92	84	67	84
18 - 19	47	64	54	40	46	46	64	48	27	21	21	29
19 - 20		2	1			1	2					
20 - 21												
21 - 22												
22 - 23												
23 - 24												
Sum	2,512	3,018	3,097	2,767	2,726	2,504	2,378	2,293	2,388	2,399	2,283	2,143

Data source:
Source: Global Solar Atlas — PV electricity and solar radiation – Kuala Lumpur

Why Low Irradiance Matters?

- PV modules in Kuala Lumpur operate under low to moderate irradiance for a large portion of the day, **driven by high humidity, frequent cloud cover, and equatorial weather conditions.**
- More than half (~55%) of daytime irradiance is below 400 W/m², while only ~6% of operating hours exceed 800 W/m², despite Malaysia's high-sun, near-equatorial location.
- **Strong low-light efficiency is therefore critical to maximize annual energy yield,** particularly during mornings, late afternoons, and frequent overcast conditions.

Kuala Lumpur, Malaysia



Data source: PVGIS ERA5 (2021–2023), European Commission JRC — https://re.jrc.ec.europa.eu/pvg_tools/en/"

Low-Light Performance Field Test in Danyang



Tiger Neo 3.0 vs BC Parameter Comparison

	Tiger Neo 3.0	BC
Power	670W	670W
Bifaciality	85±5%	70±5%
Module Effi.	24.8%	24.8%
Low Irradiance Performance (@200W/m²)	95%~98%	93%~95%
Temp. Coeff. for Power	-0.26%/℃	-0.26%/℃
Annual Degradation	-0.35%/℃	-0.35%/℃


晶科TOPCon

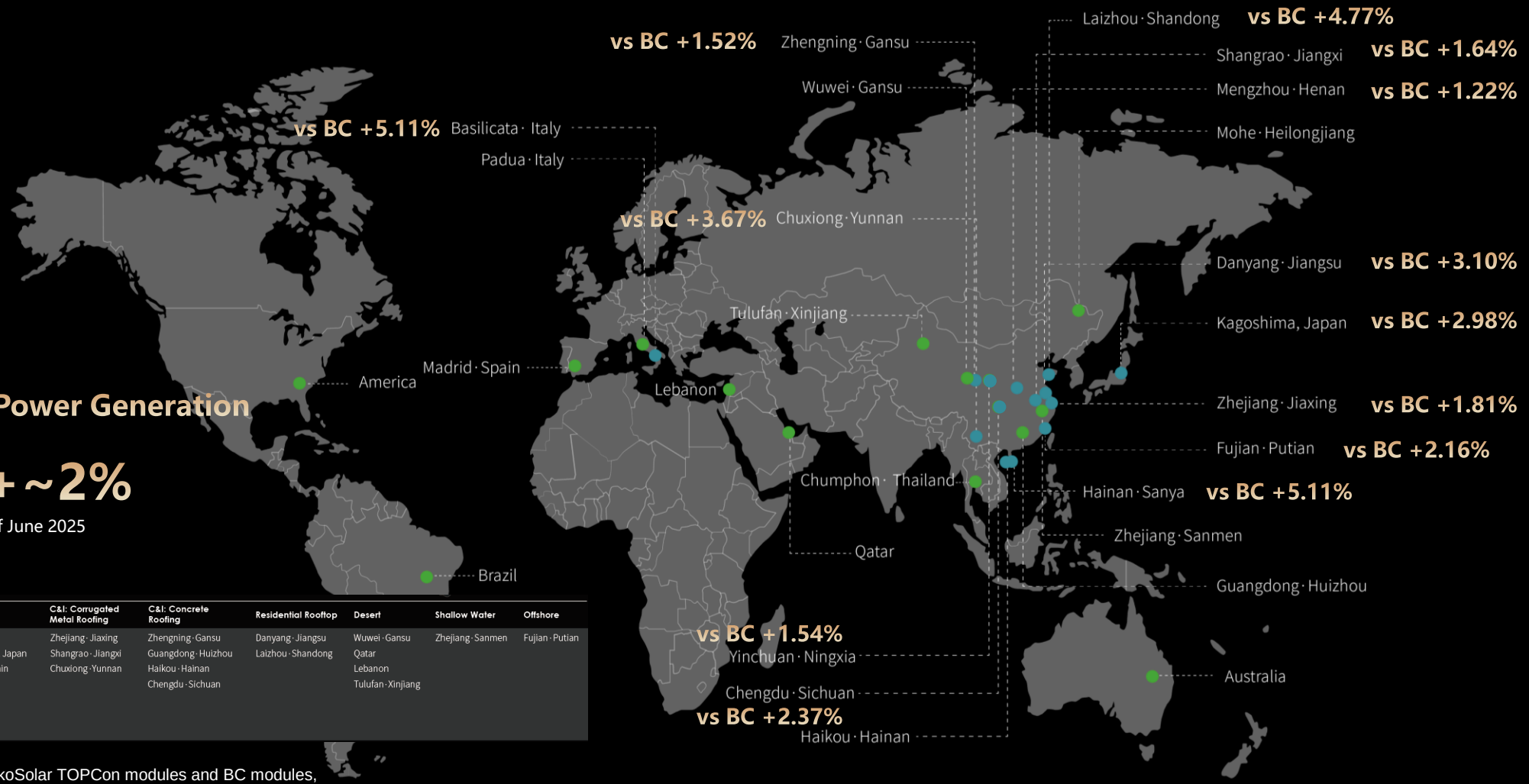
Tiger Neo Global Field Test Sites

- **13** In Operation
- **14** Planning

Tiger Neo vs BC Power Generation

Gain Per Watt: +~2%

*Source: Internal statistics, as of June 2025



Ground: Grassland	Ground: Barren land	Ground: Concrete	C&I: Corrugated Metal Roofing	C&I: Concrete Roofing	Residential Rooftop	Desert	Shallow Water	Offshore
Brazil Hainan·Sanya Basilicata· Italy	Australia Yinchuan·Ningxia Mengzhou·Henan Mohe·Heilongjiang Chumphon· Thailand Padua·Italy	America Kagoshima, Japan Madrid·Spain	Zhejiang·Jiaxing Shangrao·Jiangxi Chuxiong·Yunnan	Zhengning·Gansu Guangdong·Huizhou Haikou·Hainan Chengdu·Sichuan	Danyang·Jiangsu Laizhou·Shandong	Wuwei·Gansu Qatar Lebanon Tulufan·Xinjiang	Zhejiang·Sanmen	Fujian·Putian

*The field tests above involve JinkoSolar TOPCon modules and BC modules, covering third-party testing sites and client field test sites

Empirical Performance in Low-light Condition

Kagoshima

VS N-BC per watt gain:

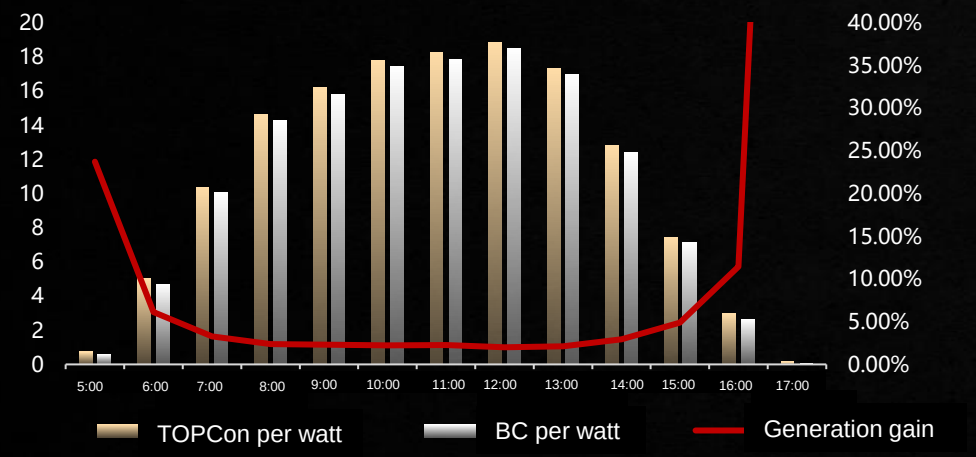
2.98%

Main features: Subtropical marine climate, warm and humid, four distinct seasons

Module type: Tiger Neo 72 dual glass

BC module: dual glass

Installation method: Fixed bracket (35°)



During the low-light periods, 5-6 AM and 4-5 PM, Tiger Neo outperforms BC with **10.4%** per watt gain

Chengdu

VS N-BC per watt gain:

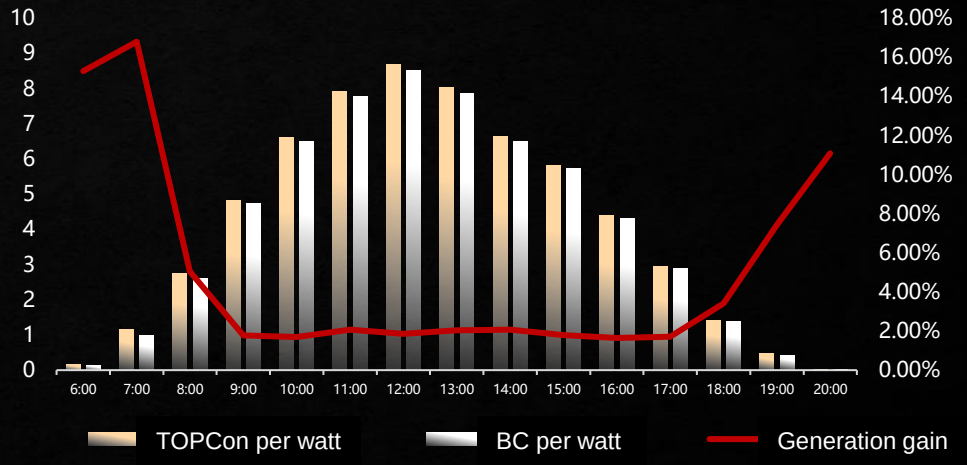
2.14%

Main features: Subtropical humid climate with distinct four seasons, hot and rainy in summer, warm and less rainy in winter, and frequent clouds and fog

Module type: Tiger Neo 66 dual glass

BC module: dual glass

Installation method: fixed bracket (0°)



During the low-light periods, 6-8 AM and 6-8 PM, Tiger Neo outperforms BC with **7.18%** per watt gain

Empirical Performance in Low-light Condition

Hainan

VS N-BC per watt gain:

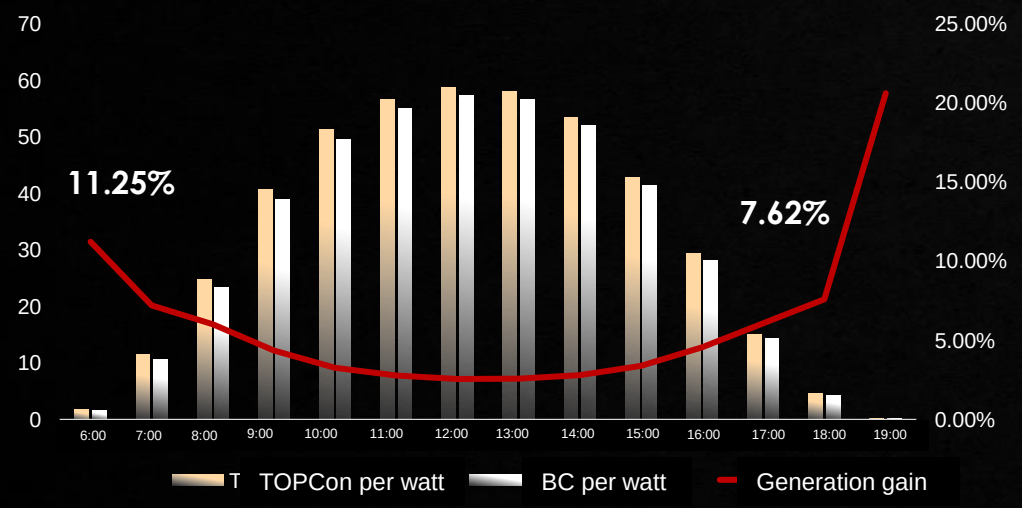
3.6%

Main features: high humidity, high temperature (tropical monsoon climate)

Module type: Tiger Neo 66 dual glass

BC module: dual glass

Installation method: fixed bracket (12°)



During the low-light periods, 6-7 AM and 6-7 PM, Tiger Neo outperforms BC with **8.92%** per watt gain

Ningxia

VS N-BC per watt gain:

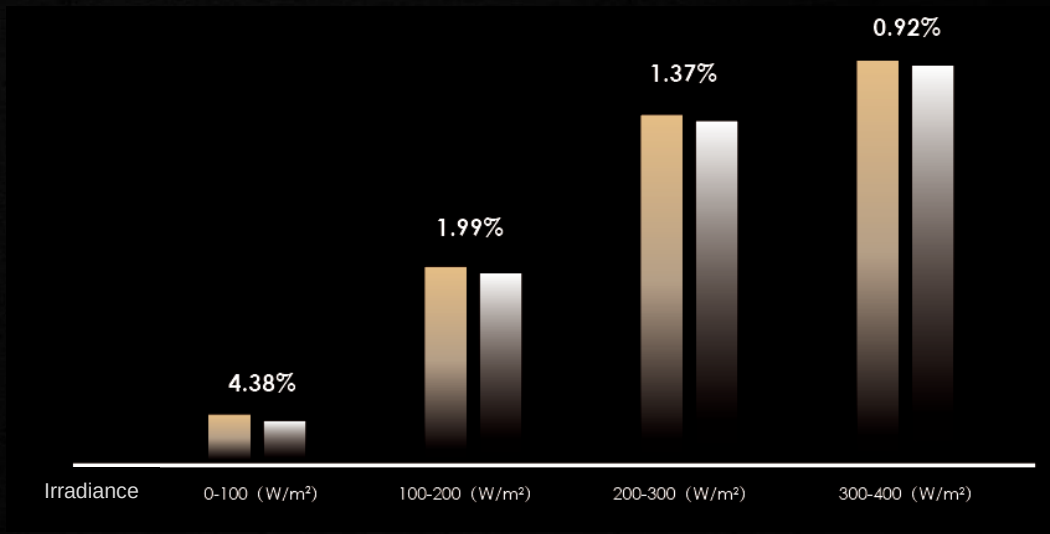
1.23%

Main features: Temperate continental climate, arid with little rain, large temperature difference between day and night, distinct four seasons

Module type: Tiger Neo 66 dual glass

BC module: dual glass

Installation method: fixed bracket (40°)



Tiger Neo outperforms BC with **4.38%** per watt gain (0-100W/m²)

TIGER Neo

JinKO Solar

Níngxià

VS N-Type-BC

0.99%

Yield Gain

Main features: Strong winds in desert climate

Testing period: May 2025 to June 2025

Module type:
Tiger Neo 72 Bifacial with dual glass
Others' N-type BC Bifacial with dual glass

Installation method: Fixed bracket

Tilt angle: 40 °

Installation height: 1m

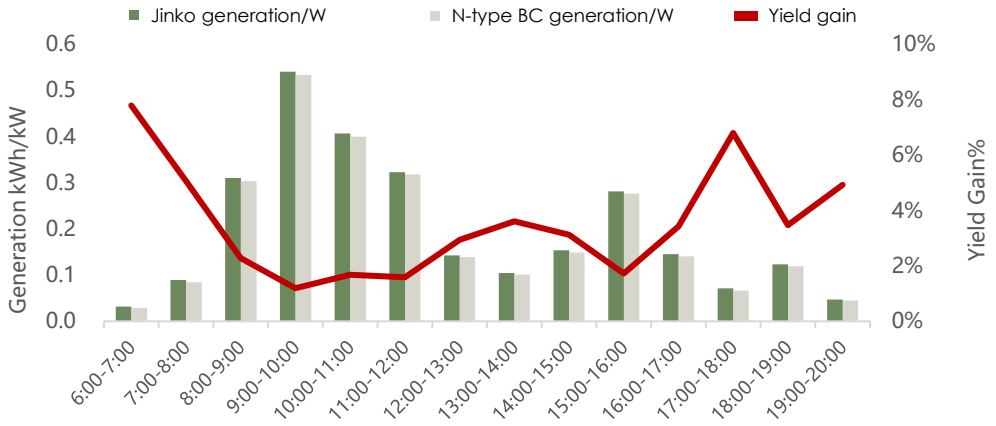


3rd party authority: CPVT

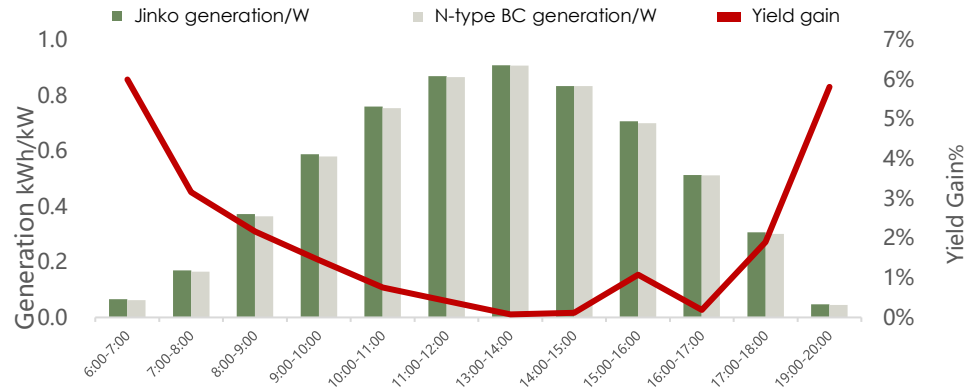
Field test analysis - Ningxia

Lowlight by time

Overcast Day- Significant Benefits

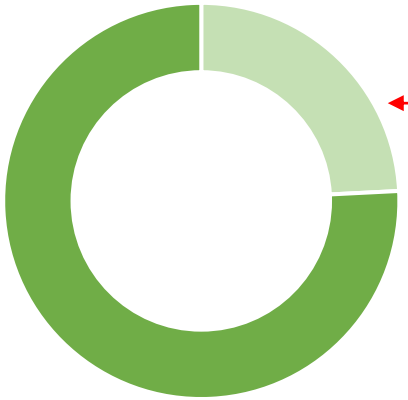


Sunny Day- Advantages even



Lowlight by irradiation

Irradiation (W/m2)	Jinko TOPcon (Wh/W)	N-Type BC (Wh/W)	Jinko Yield Gain
0-100	4.044094143	3.874520349	4.38%
100-200	7.401870447	7.257179848	1.99%
200-300	10.90503322	10.75731289	1.37%
300-400	12.1287118	12.01851403	0.92%



24.2%
Generated in lowlight environment

2.17% ▲
average yield gain

4.38% ▲
maximum yield gain

*Source: Internal statistic in June 2025

Tiger Neo 3.0
Power Generation Gain

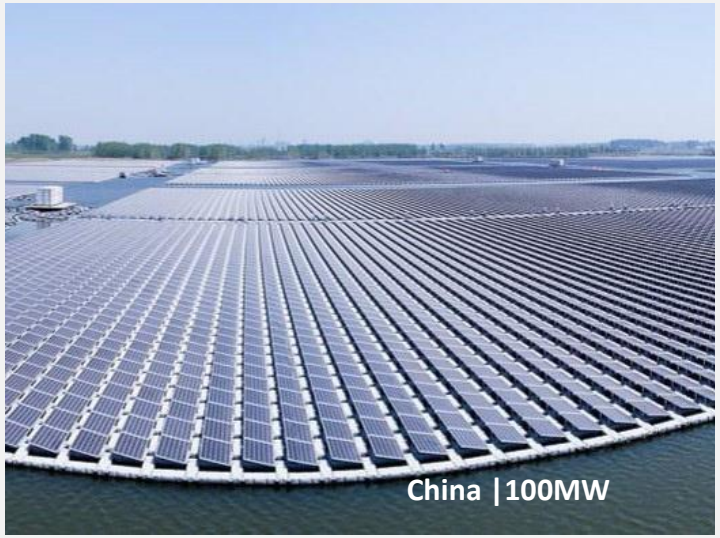
	Temperature Coefficient	Bifacial Factor	Low Irradiance Performance	Annual Degradation	Higher Generation Gain
Tiger Neo 3.0 VS. Normal TOPCon	+0.9% * Power increase at 55°C cell temperature	≈0.68% * Increase in overall power output under BNPI conditions	Same	+0.6%	2-2.5% * Based on Jinko's proprietary model calculations
Tiger Neo 3.0 VS. BC	Same	≈1.35% * Increase in overall power output under BNPI conditions	≈2-3% * Superior low-light performance at 200W/m²	Same	3-3.5% *Based on Jinko's proprietary model calculations; empirical comparisons between Tiger Neo 2.0 and BC technologies; and PVsyst simulation data.


20th
2026
2006
JinKO
2006 All In Solar 2026 Solar For All
270GW of Tiger Neo.
Trusted by the World's Most
Ambitious Projects.

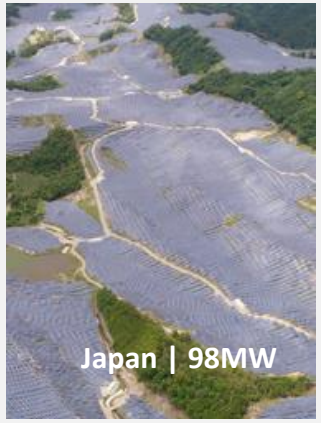
Project References













No.1 in Global Shipment for Six Consecutive Years













UAE

2.1 GW
N-type Module
Utility Project









China

4 GW
XINHUA HYDROPOWER Co., Ltd.
Utility Project







Viet Nam

127.6 MW
N-type 78 Cells Bifacial Module
Utility Project


Viet Nam
541 MW
N-type 72 Cells Bifacial Module
Utility Project

Jinko Offshore PV Module Project





Photo: Solarbe

JinkoSolar supplied 1.32GW of its N-type TOPCon Tiger Neo bifacial modules for the offshore solar project in HG14 waters off Shandong


20th
2026
2006
JinKO
2006 All In Solar 2026 Solar For All
THANKS