



TALESUN INTRODUCTION

Product Performance

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Product Performance

About Talesun



To be the world's leading PV module manufacturer and smart energy solutions provider.

20GW+

Accumulative Shipment

TOP 10

Module Shipment Worldwide in 2019

4

Global Production Base

350+

R&D Team Members

340+

Patents Applied

TOP 50

Global New Energy Enterprise

TOP 5

PV + Agriculture Project Provider in China

TOP10

Production Capacity Globally

TOP 10

PV Project Development & EPC Company in China

\$300M

R&D Investment

TIER 1

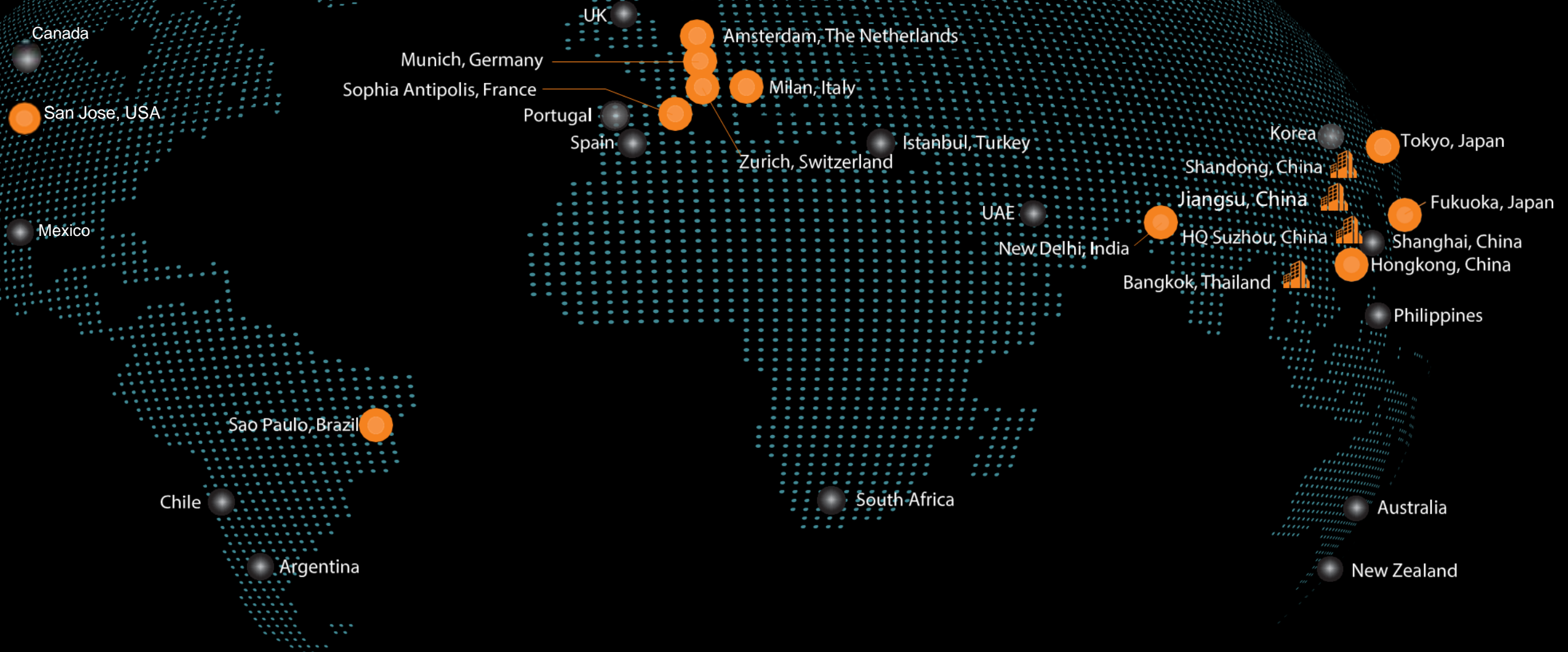
Module Supplier in Bloomberg Ranking

50+

Shipped Countries

Global Footprint and globalized operation

-  Production Base
-  Branch
-  Sales Office

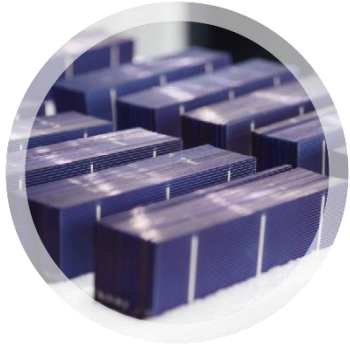




Capacity and Roadmap

Capacity and Roadmap

China Manufacturing Facilities



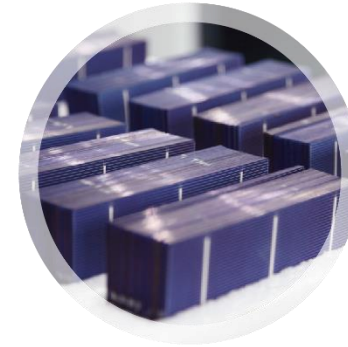
**10.7 GW
PV Cells**

Annual Production
Capacities of PV CELLS in
China



**11 GW
PV Modules**

Annual Production
Capacities of PV MODULES
in China



**1.3 GW
PV Cells**

Annual Production
Capacities of PV CELLS in
Thailand

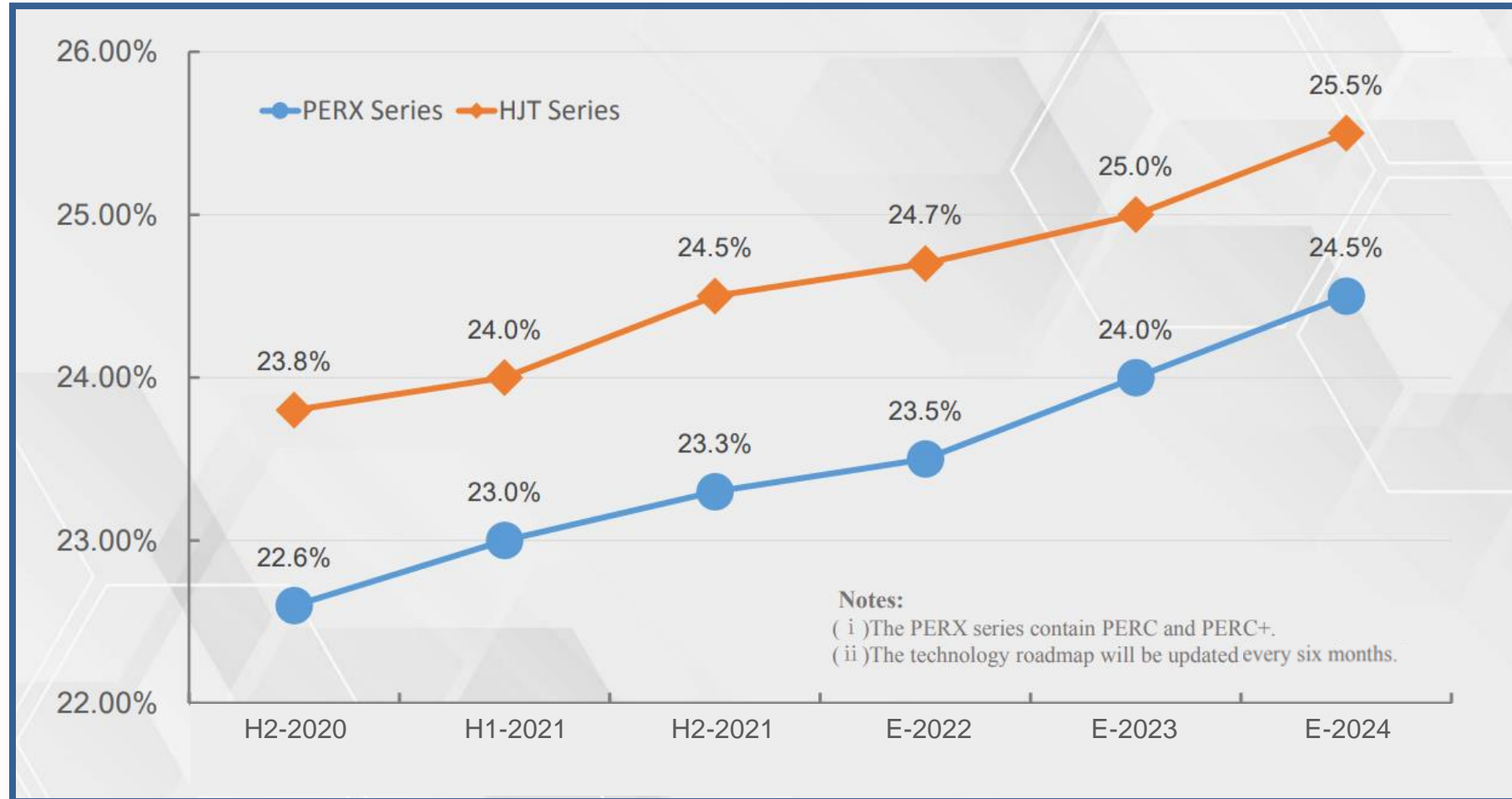


**2 GW
PV Modules**

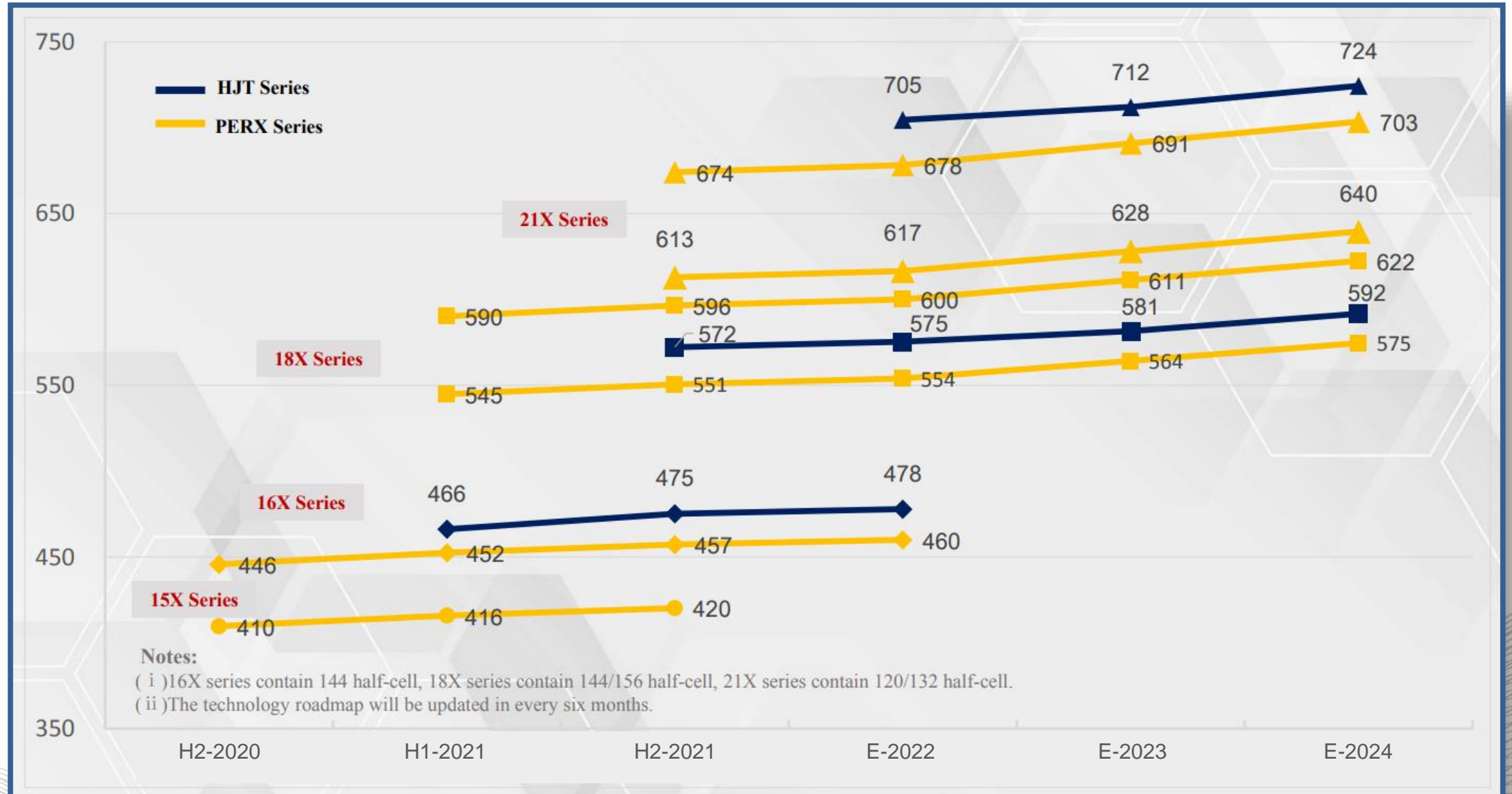
Annual Production
Capacities of PV MODULES
in Thailand

Thailand Manufacturing Facilities

Cell Technology Roadmap



Module Technology Roadmap



Product Series

585~660W

210

12MBB HC "210"
Mono PERC
Glass-glass

210

12MBB HC "210"
Mono PERC

530~590W

182

10MBB HC "182"
Mono PERC
Glass-glass

182

10MBB HC "182"
Mono PERC

430~450W

166

9BB HC "166"
Mono PERC
Glass-glass

166

9BB HC "166"
Mono PERC

400~415W

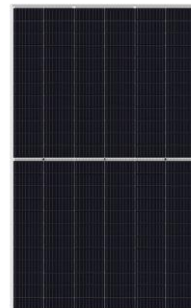
158.75

9BB HC "158.75"
Mono PERC
Transparent & Glass-glass

158.75

9BB HC "158.75"
Mono PERC

Different
series



BIPRO

Bifacial



BISTAR

Monofacial

BISTAR Monofacial Product Series



BIPRO Bifacial Product Series

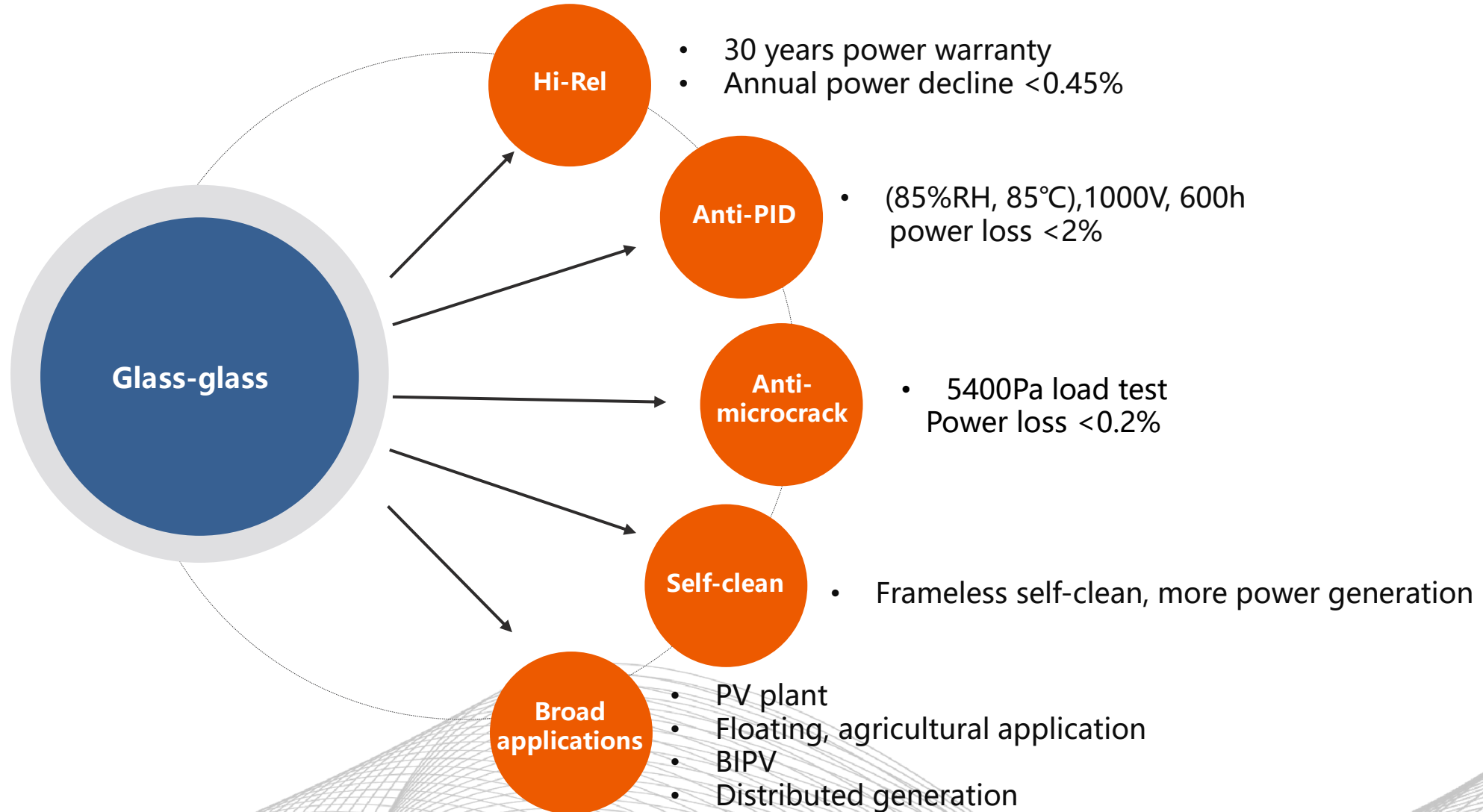


Series Features

Technical Specifications

Wafer [mm]	166		182		210		166		182		210	
Code	TP6L60M(H)	TP6L72M(H)	TP7F72M(H)	TP7F78M(H)	TP8F60M(H)	TP8F66M(H)	TD6I60M	TD6I72M	TD7G72M	TD7G78M	TD8G60M	TD8G66M
Type	Monofacial						Bifacial					
Cell quantity	60	72	72	78	60	66	60	72	72	78	60	66
Maximum Power [Wp]	375	450	550	590	605	660	375	450	550	590	605	660
Module size	1755*1038*35	2094*1038*35	2279*1134*35	2465*1134*35	2172*1303*35	2384*1303*35	1755*1038*30	2094*1038*30	2285*1134*35	2471*1134*35	2172*1303*35	2384*1303*35
Efficiency	20.5%	20.7%	21.3%	21.1%	21.4%	21.3%	20.5%	20.7%	21.2%	21.0%	21.4%	21.3%
Voc [V]	41.3	49.6	49.8	53.9	41.7	45.7	41.3	50.4	49.8	53.9	41.7	45.7
Isc [A]	11.31	11.54	13.99	13.70	18.53	18.47	11.31	11.36	13.99	13.70	18.53	18.47
Weight [kg]	21.0	25.5	29.0	31.5	31.5	34.5	23.5	28.0	32.2	35.0	35	38.5
Container number	806pcs/40HQ	682pcs/40HQ	620pcs/40HQ	558pcs/40HQ	527pcs/40HQ	527pcs/40HQ	910pcs/40HQ	770pcs/40HQ	620pcs/40HQ	558pcs/40HQ	527pcs/40HQ	527pcs/40HQ

Glass-glass Product Advantages





Product Performance

Product Reliability



Strict quality control and high reliability
Internal testing far exceeds industry certification standards



Lower temperature coefficients
Higher power generation



Excellent anti-PID performance
Passed the TUV test (85°C / 85% RH, 192 hours)
with standards twice the industry average



Low attenuation of LID and LeTID
New Gallium doped cell generation



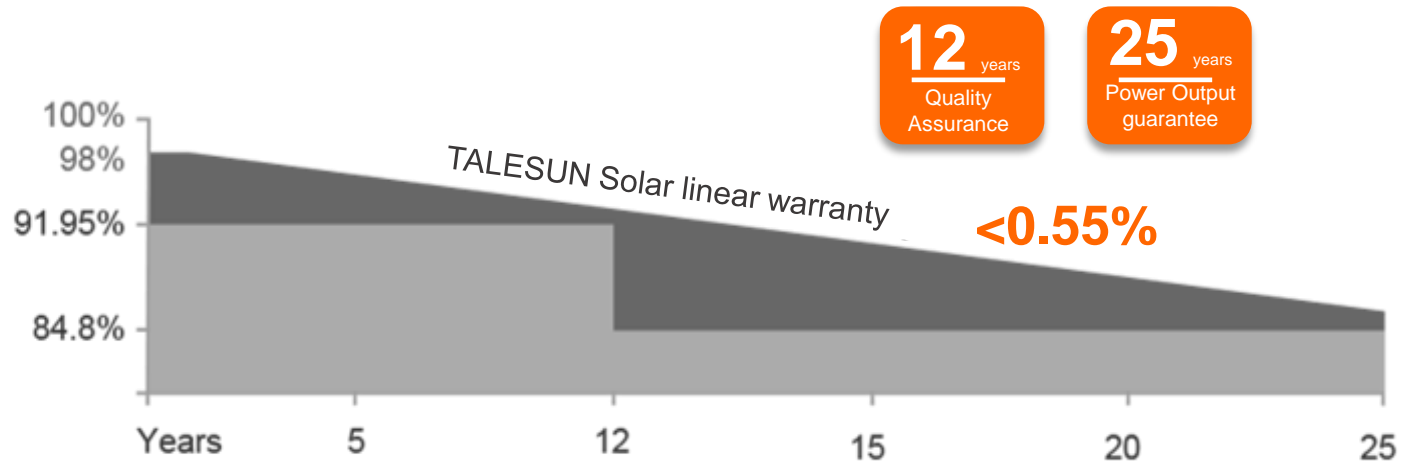
Products comply with relevant certification



Customer Perspective

BISTAR

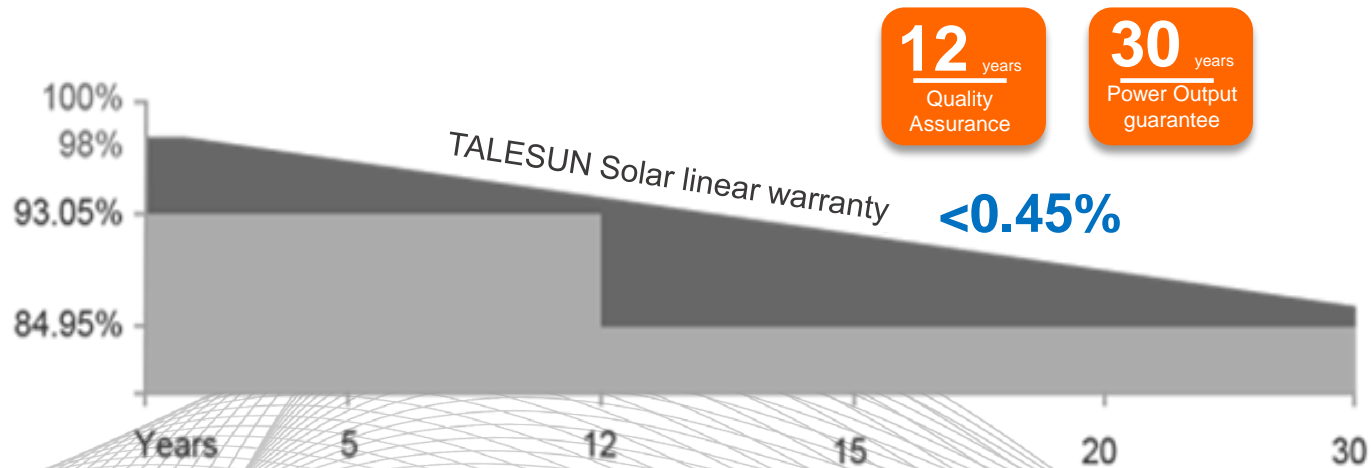
Monofacial



PICC

BIPRO

Bifacial



Munich RE

(3.4.2 Maximum power determination after LID test)							P
Test Date [MM/DD/YYYY]			2021-02-05				—
Module temperature [°C]			25				—
Irradiance [W/m²)			1000				—
Sample #	Voc [V]	Isc [A]	Vmp [V]	Imp [A]	Pmp [W]	FF [%]	
HA2021TL-076-008X(front)	49.553	13.560	41.652	12.838	534.733	79.58	
HA2021TL-076-008X(rear)	46.817	10.445	41.660	9.382	390.858	79.93	
Pmp degradation after this test [%] ≤ 2.0%:							
HA2021TL-076-008X (front)			-0.333%				P
HA2021TL-076-008X(rear)			-0.524%				P
Supplementary information:N/A							

Technical Advantages

LeTID Performance

Tests conducted according to IEC 61215-2016

TABLE 02: MQT 02 - Maximum power determination after LETID							P
Test Date [YYYY-MM-DD]..... :		2021-01-14					—
Module temperature [°C].....		25					—
Irradiance [W/m ²]		1000					—
Test method..... :		<input checked="" type="checkbox"/> Simulator <input type="checkbox"/> Natural sunlight					—
Sample #	Isc [A]	Voc [V]	Imp [A]	Vmp [V]	Pmax [W]	FF [%]	Degradation [%]
1	13.695	53.723	13.038	44.956	586.128	79.67	-0.43
2	13.712	53.705	13.070	44.956	587.562	79.79	-0.34

Supplementary information: N/A

TP7F78M - 590W

TD7G78M - 585W



TABLE 02: MQT 02 - Maximum power determination after LETID							P
Test Date [YYYY-MM-DD]..... :		2021-01-14					—
Module temperature [°C].....		25					—
Irradiance [W/m ²]		1000					—
Test method..... :		<input checked="" type="checkbox"/> Simulator <input type="checkbox"/> Natural sunlight					—
Sample #	Isc [A]	Voc [V]	Imp [A]	Vmp [V]	Pmax [W]	FF [%]	Degradation [%]
1	13.495	53.573	12.900	44.940	579.722	80.19	-0.80
2	13.492	53.579	12.873	44.951	578.669	80.05	-0.67

Supplementary information: N/A

Technical Advantages

Optimized Panfiles Improved IAM (IEC 61853-2:2016) – TUV SUD

The incidence effect (the designated term is IAM, for "Incidence Angle Modifier") corresponds to the decrease of the irradiance really reaching the PV cells's surface, with respect to irradiance under normal incidence.

This decrease is mainly due to reflexions on the glass cover, which increases with the incidence angle.

Recommended values for a user-defined IAM profile	
incidence angle AOI °	IAM value according to IEC61853-2
0	1.00
10	1.00
20	1.00
30	1.00
40	1.00
50	1.00
60	1.00
65	0.99
70	0.98
75	0.94
80	0.88
85	0.80

Customer Perspective

Product	158.75φ72	166φ72	182φ72	182φ78
Power	405	440	540	590
BOS	BL	-3.81%	-9.63%	-10.89%
LCOE	BL	-0.95%	-2.07%	-2.43%

Project:

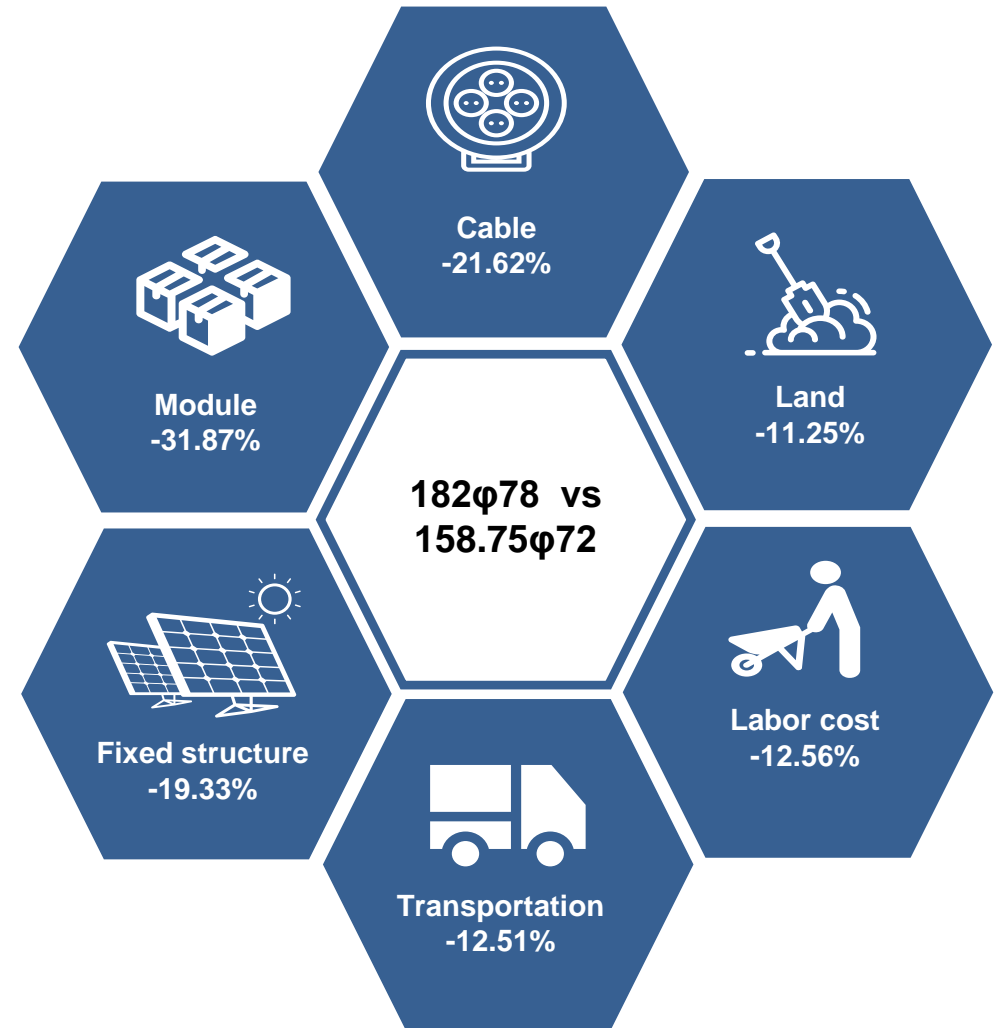
(i) China, Suzhou, 36.2°N;

(ii) Capacity: 100MW;

(iii) Inverter: 196KW;

(iv) Capacity ratio, 1:1.3

BOS/LCOE has lower cost and greater customer value.



Key points



Global Network

- Talesun provides customers with localized service & support
- 50+ countries/regions for product shipment, 45+ branches



Leading Manufacturer

- Top 10 global PV manufacturer
- China's tier-1 PV manufacturer



Solid Financial Strength

- Long-term cooperation with world's major banks and other financial institutions
- Considerable bank credit scale around the globe



Smart Solar Energy Solutions

- Smart solar solutions covers the full lifecycle of the plant
- With customized solutions, Talesun provides customers with safe, reliable and cost-effective green energy



Excellent Engineering Design Capabilities

- Consistently high R&D expenditure to support innovation and technological development



Thanks!