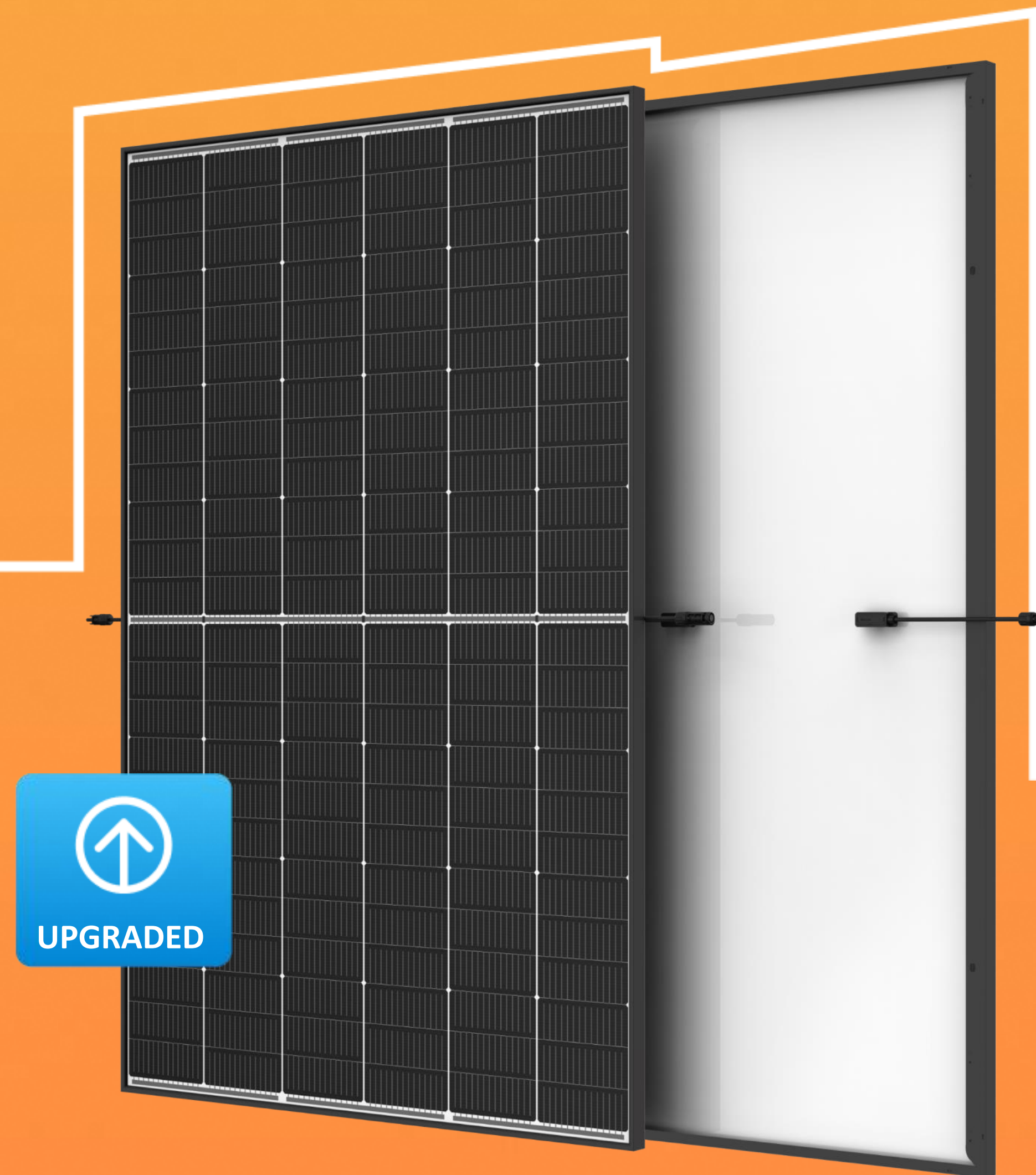


Vertex S⁺

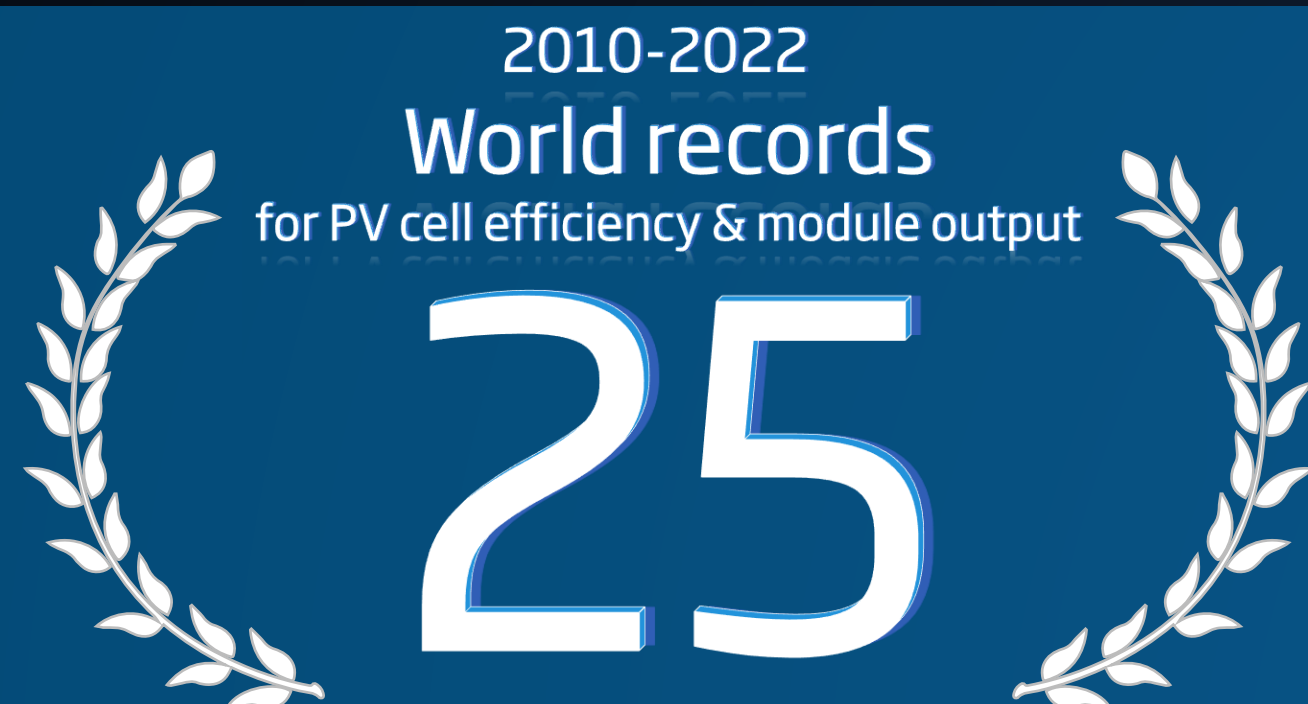
Solar power for the next generation.

June 2023



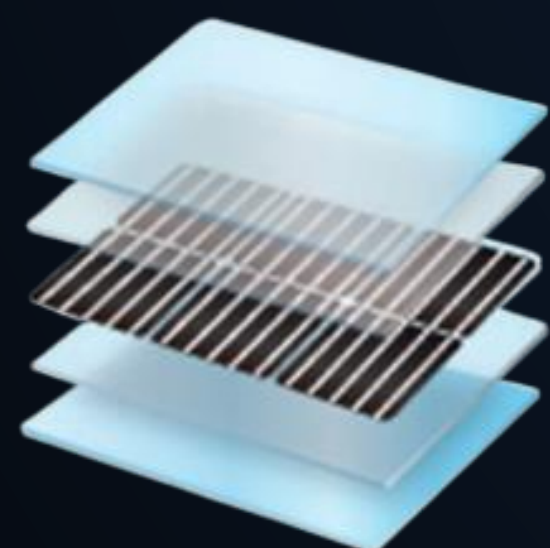


25 years of dedication to continuous industrial innovation & technology



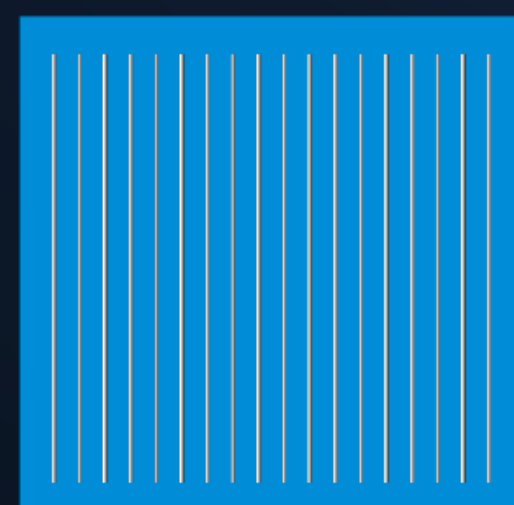
Dual-glass design

The first to apply dual-glass technology to mass production, widely recognized across the world.



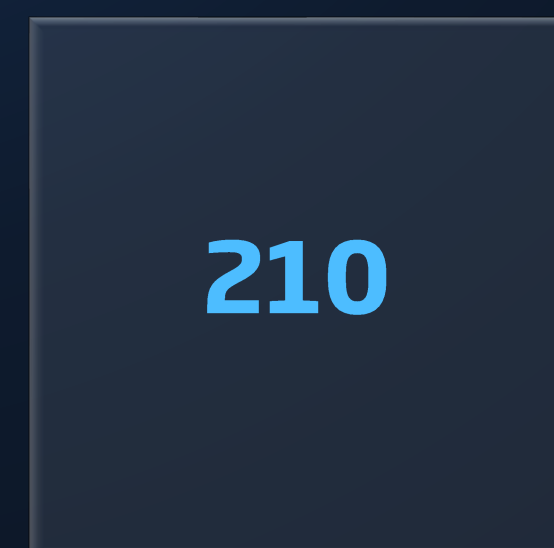
MBB (Multi-Busbar)

Leading the innovation from 4BB to 5BB and MBB, contributing to the industrial efficiency breakthrough.



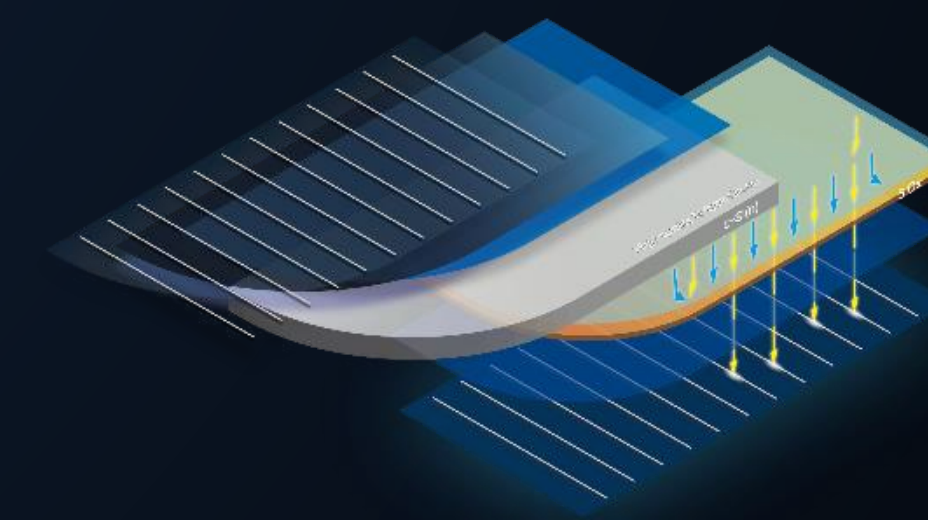
Advanced 210 technology platform

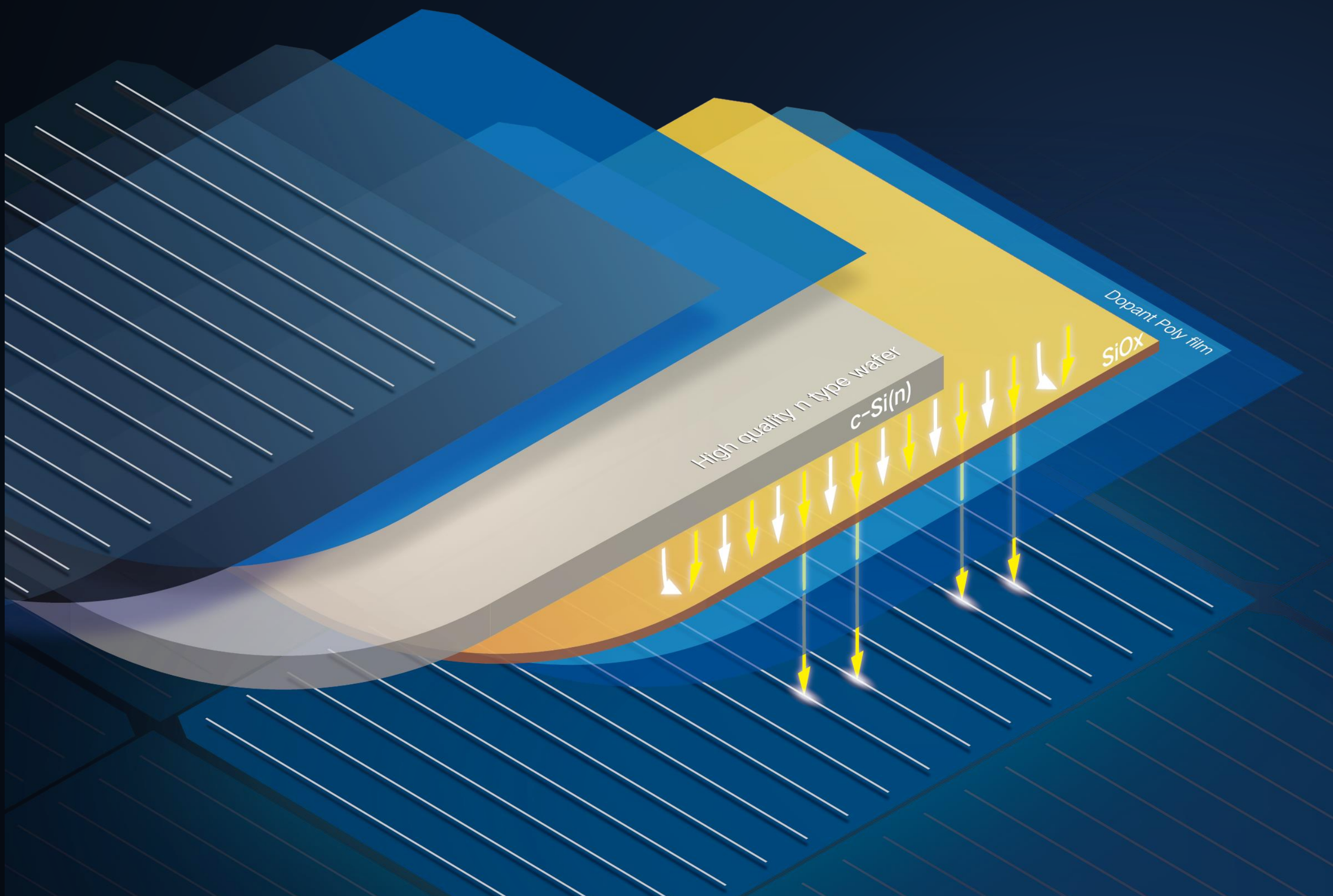
Opening the 600W+ era with 210mm large size wafer, the incontrovertible leader to ship 40GW+ shipment * by 2022 Q3



i-TOPCon technology

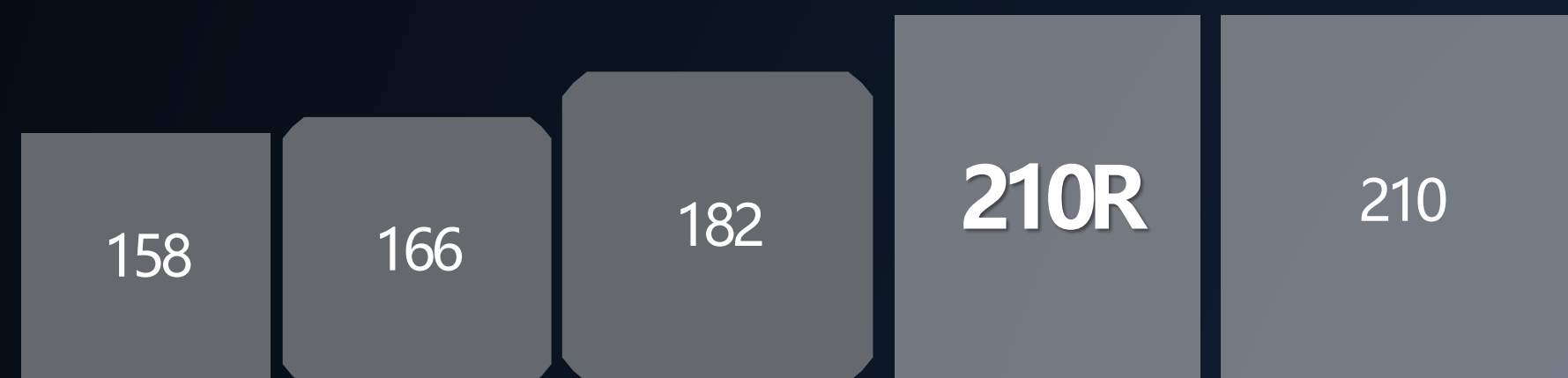
The initial mass production of i-TOPCon modules since 2018 - further power & efficiency breakthrough based on the 210 technology platform.



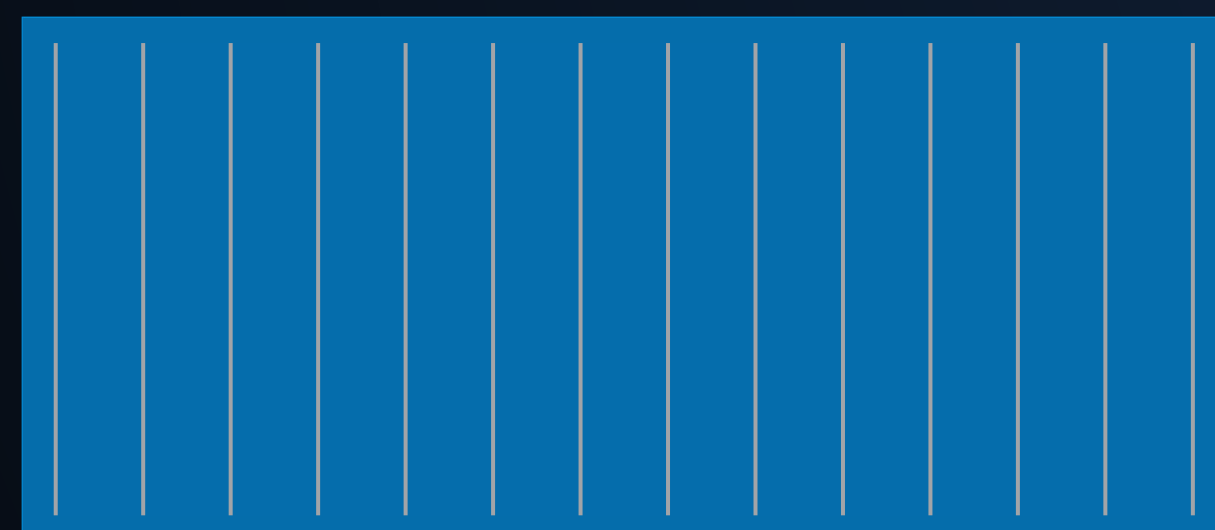


- ◆ Advanced high cell efficiency based on:
 - ❑ **PECVD Poly technology** - thinner poly layer to reduce the optical loss on the back side
 - ❑ **SE (selective emitter) technology** - lower contact resistance, higher V_{oc} and FF; the optimized process to reduce the laser damage on solar cell conversion efficiency
 - ❑ **High efficiency hydrogen passivation technology** - fewer defects & longer minority carrier life



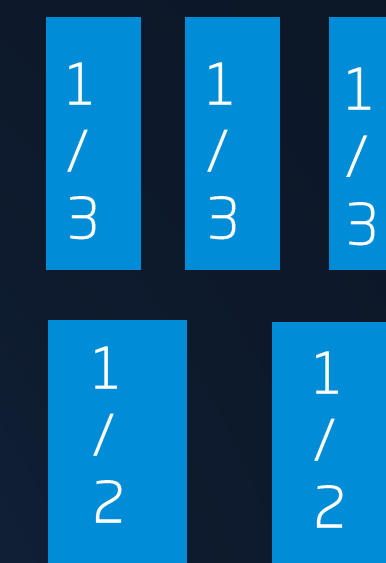
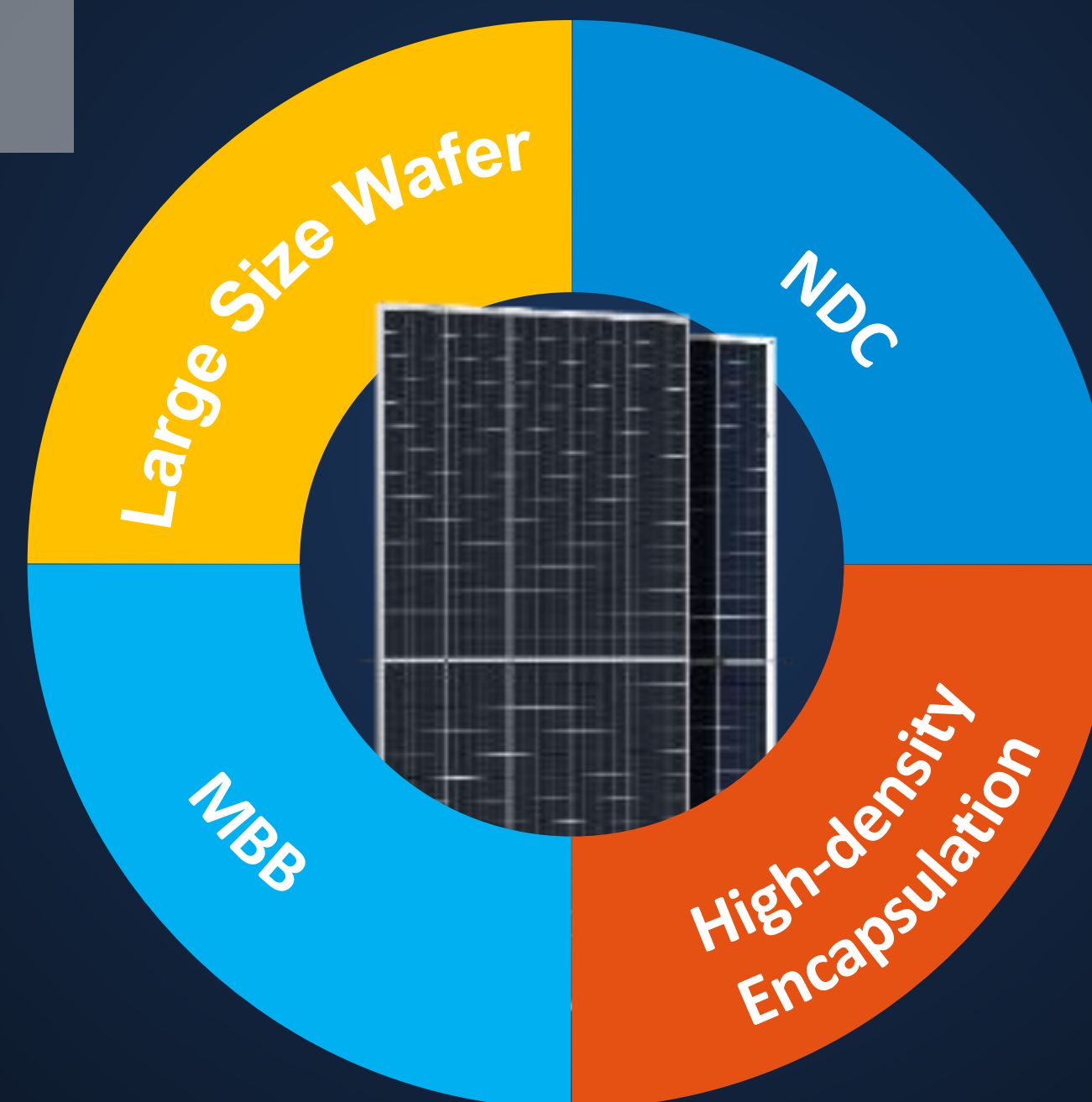


210R Innovative Rectangular Design
Advanced technical platform of 210/210R



MBB(Multi-Bus bar):

Perfect fusion of MBB and large size wafer



Traditional Laser Cutting

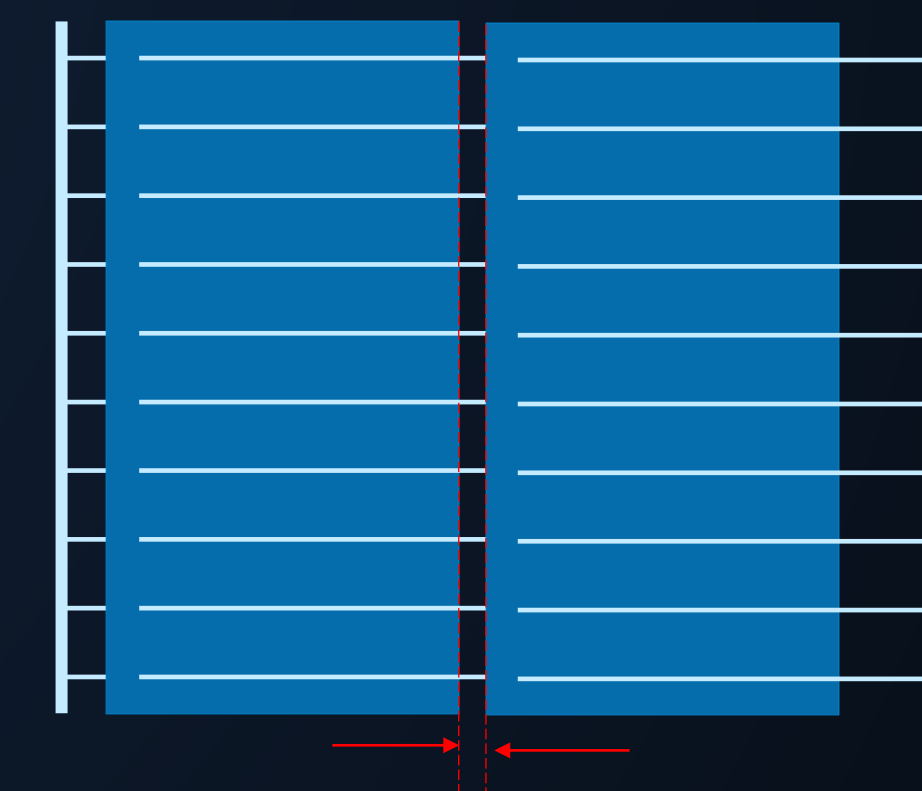


Non-destructive Cutting



Non-destructive Cutting Technology

Excellent mechanical performance, lower micro-crack risk

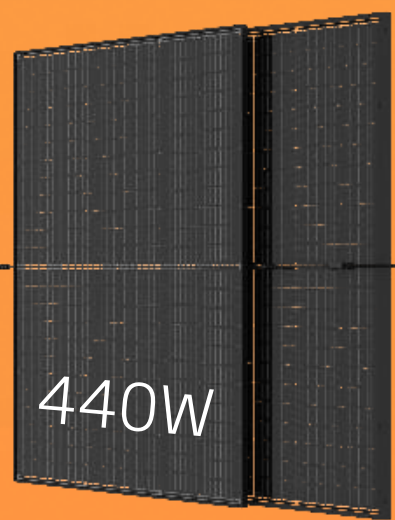


High-density Encapsulation

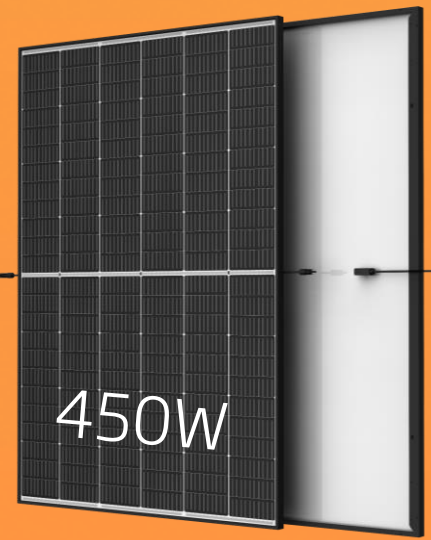
Improving module efficiency by 0.2-0.3% with the narrow cell gap

Product portfolio

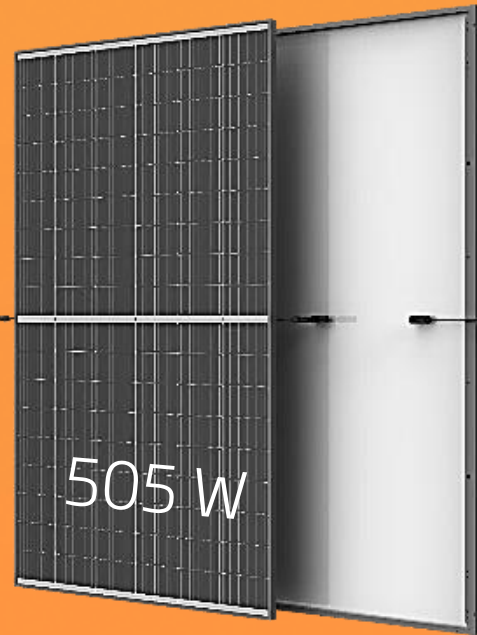
N-type
i-TOPCon



NEG9RC.27



NEG9R.28



NEG18R.28



NEG19RC.20



NEG21C.20

Vertex S⁺

Vertex N

Vertex S⁺

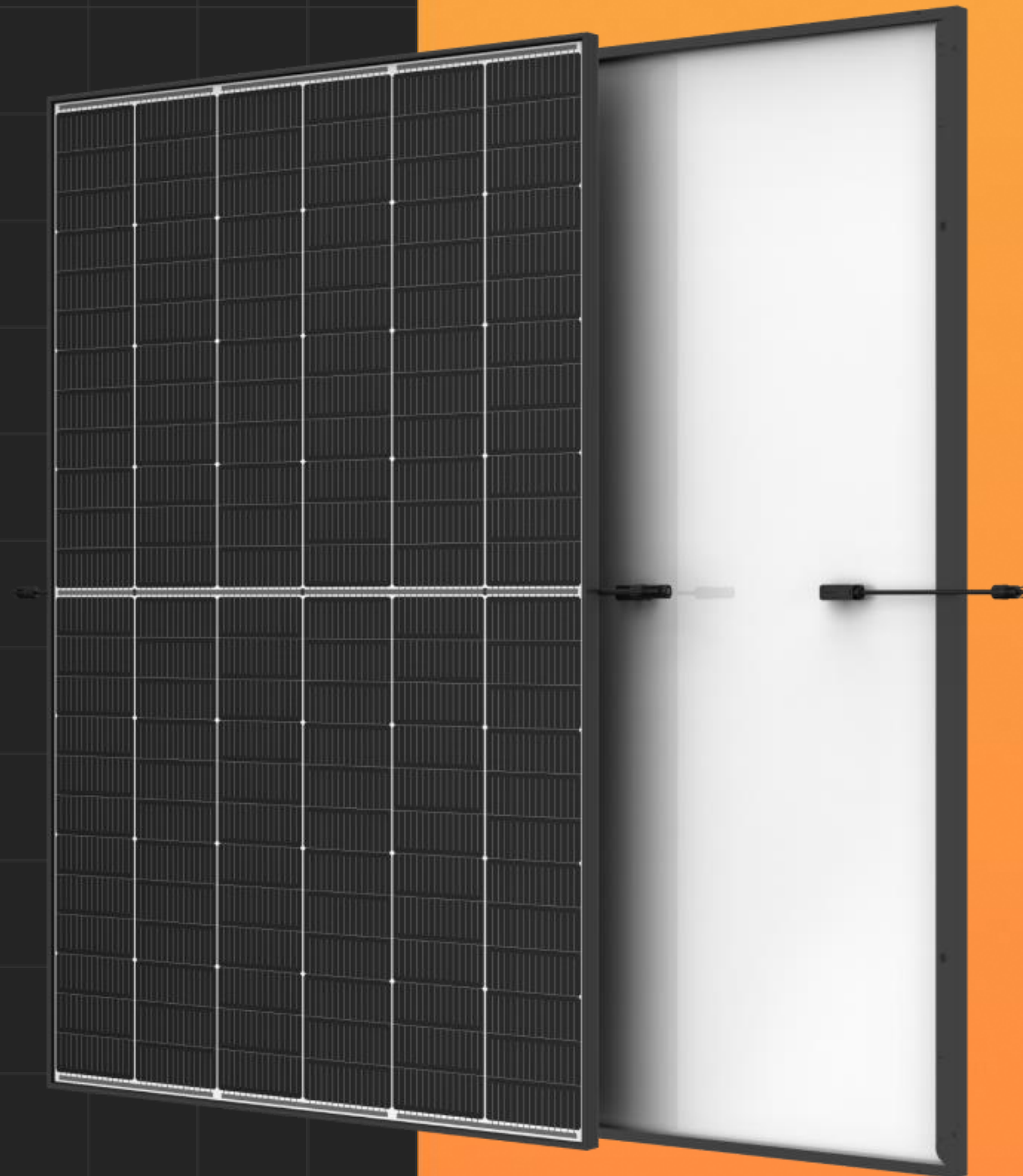
450W Module:
NEG9R.28

Maximum Power Output

Up to **450 W**

Maximum Efficiency

Up to **22.5 %**



Electrical Parameters

- Open Circuit Voltage: 52.9V
- Short Circuit Current: 10.74A

Mechanical Parameters

- Dimensions: 1762*1134*30mm
- Weight: 21.0kg

Vertex S⁺

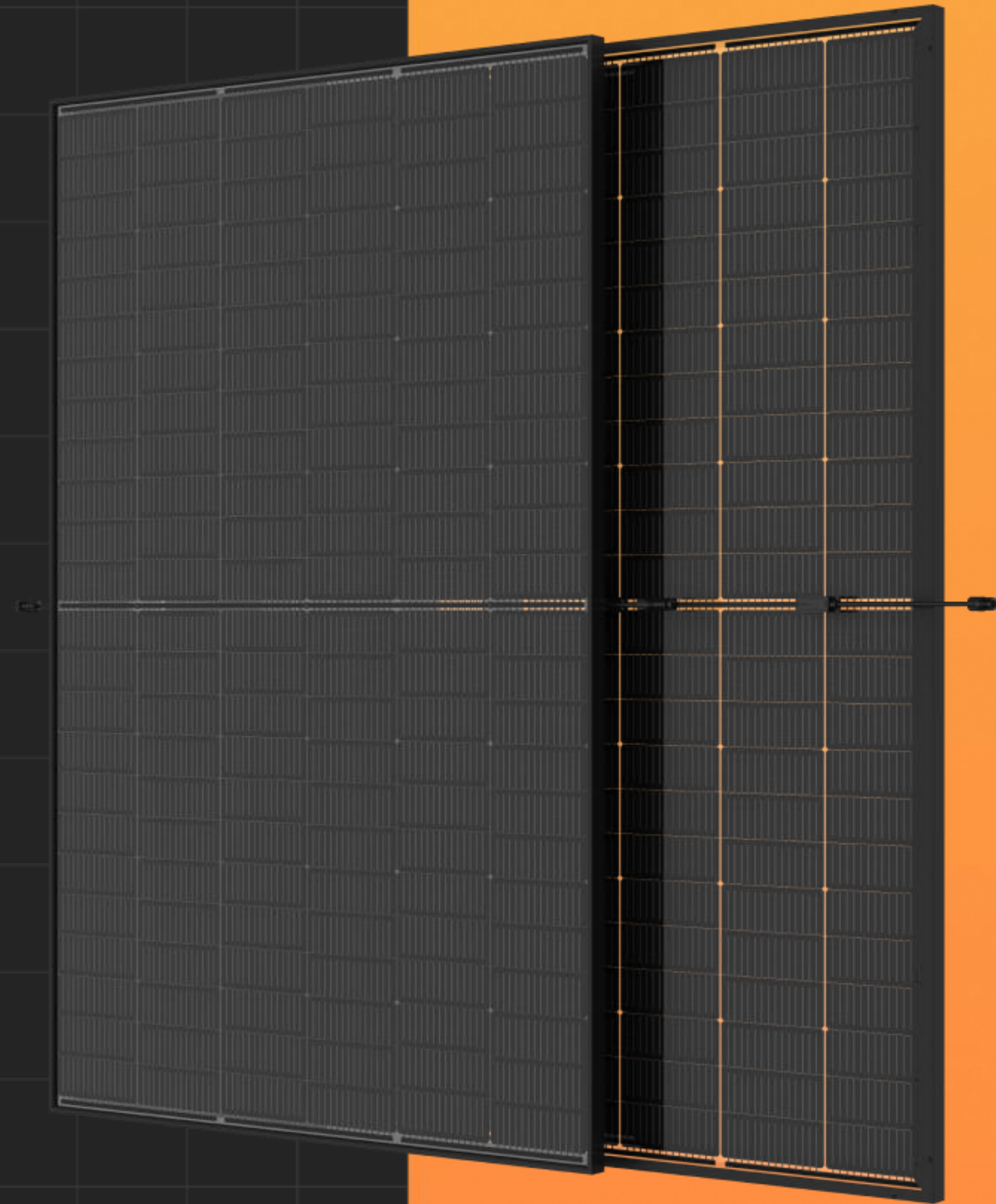
440W Module:
NEG9RC.27

Maximum Power Output

Up to **440 W**

Maximum Efficiency

Up to **22.0 %**



Electrical Parameters

- Open Circuit Voltage: 52.2V
- Short Circuit Current: 10.67A

Mechanical Parameters

- Dimensions: 1762*1134*30mm
- Weight: 21.0kg

Vertex S⁺

500W+ Module:
NEG18R.28

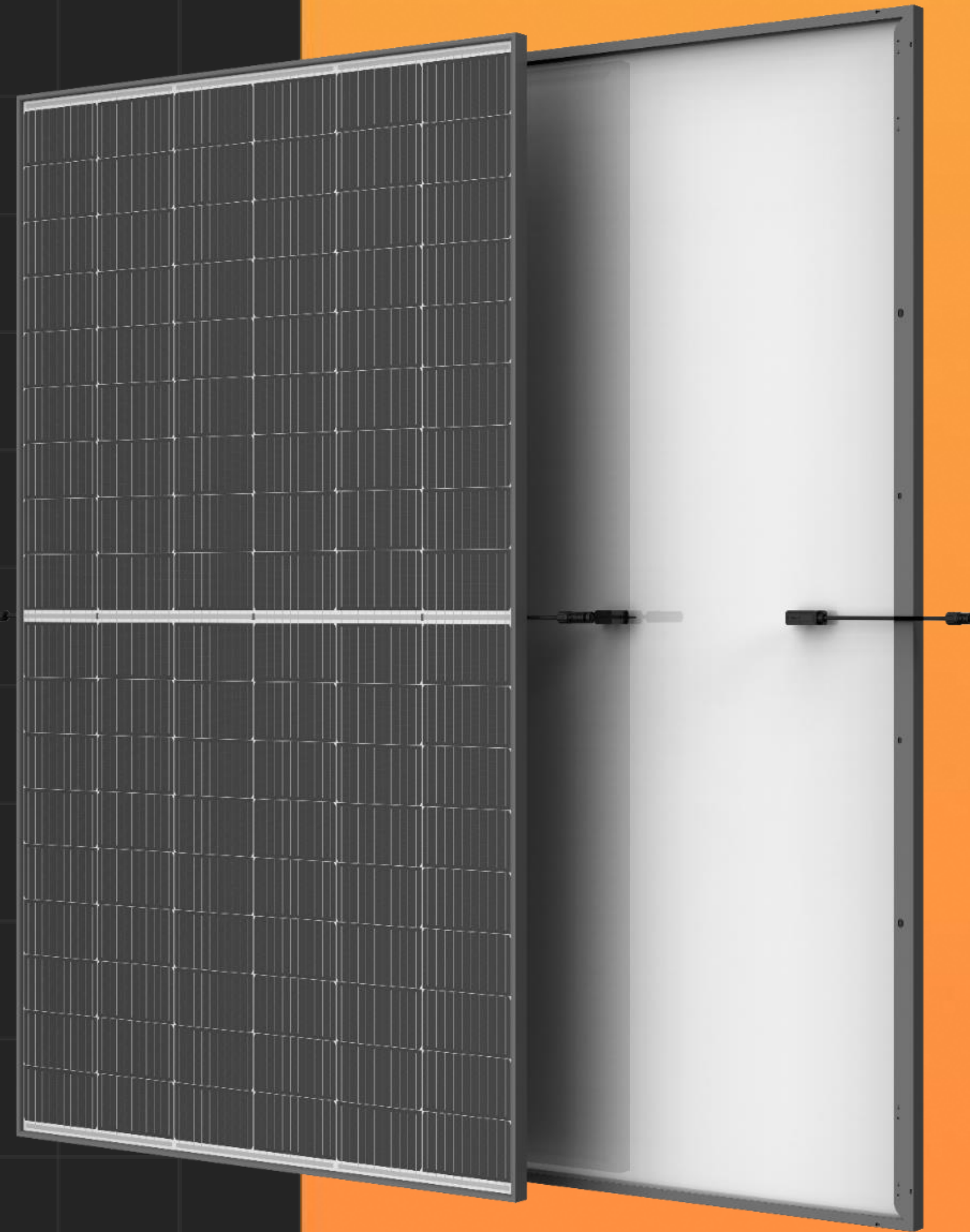
Maximum Power Output

Up to **505 W**

Maximum Efficiency

Up to **22.7 %**

- 25 years product warranty
- 30 years power warranty



Solution for C&I and Residential

Electrical Parameter

- Open Circuit Voltage: 40.0V
- Imp Current: 15.0A

Mechanical Parameter

- Dimensions: 1961*1134*30mm
- Weight: 23.5kg



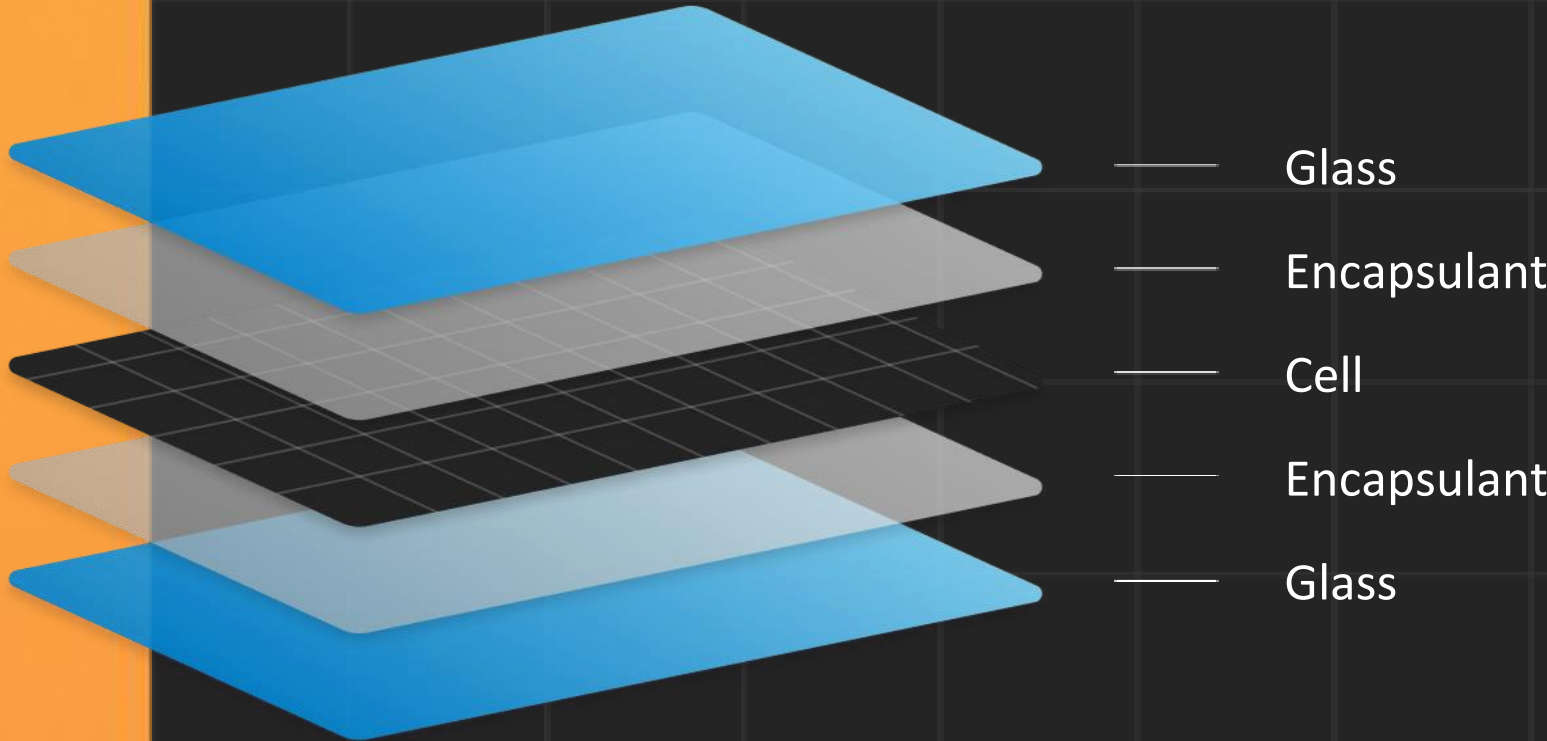
- $I_{mpp} < 15A$, compatible with C&I inverters

- Small size module, easy installation

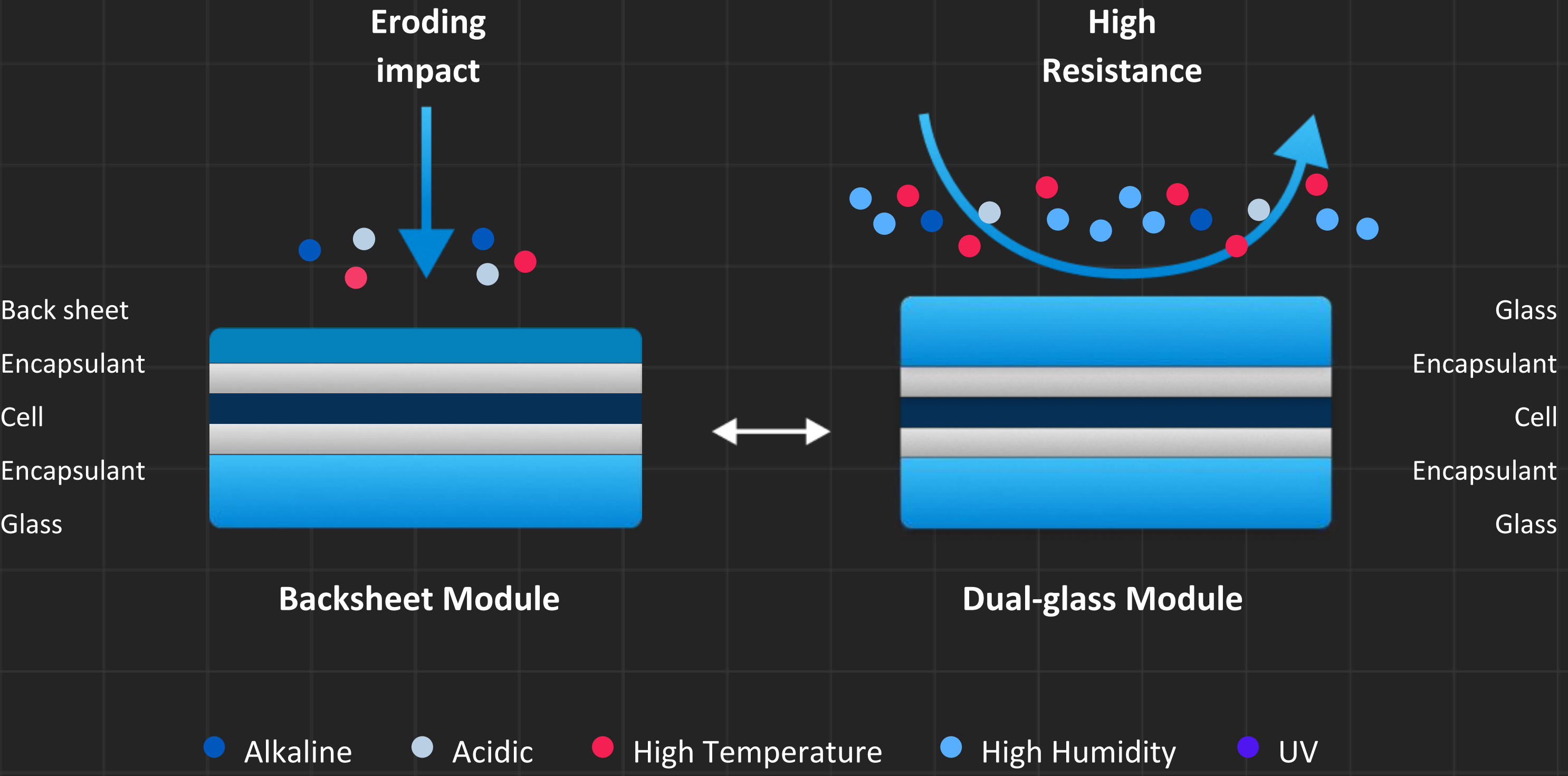


- 1134mm width, flexible array arrangement

Vertex S⁺
Longer Warranty

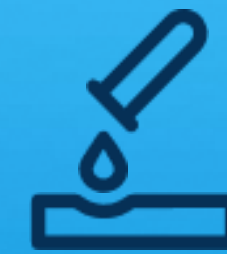
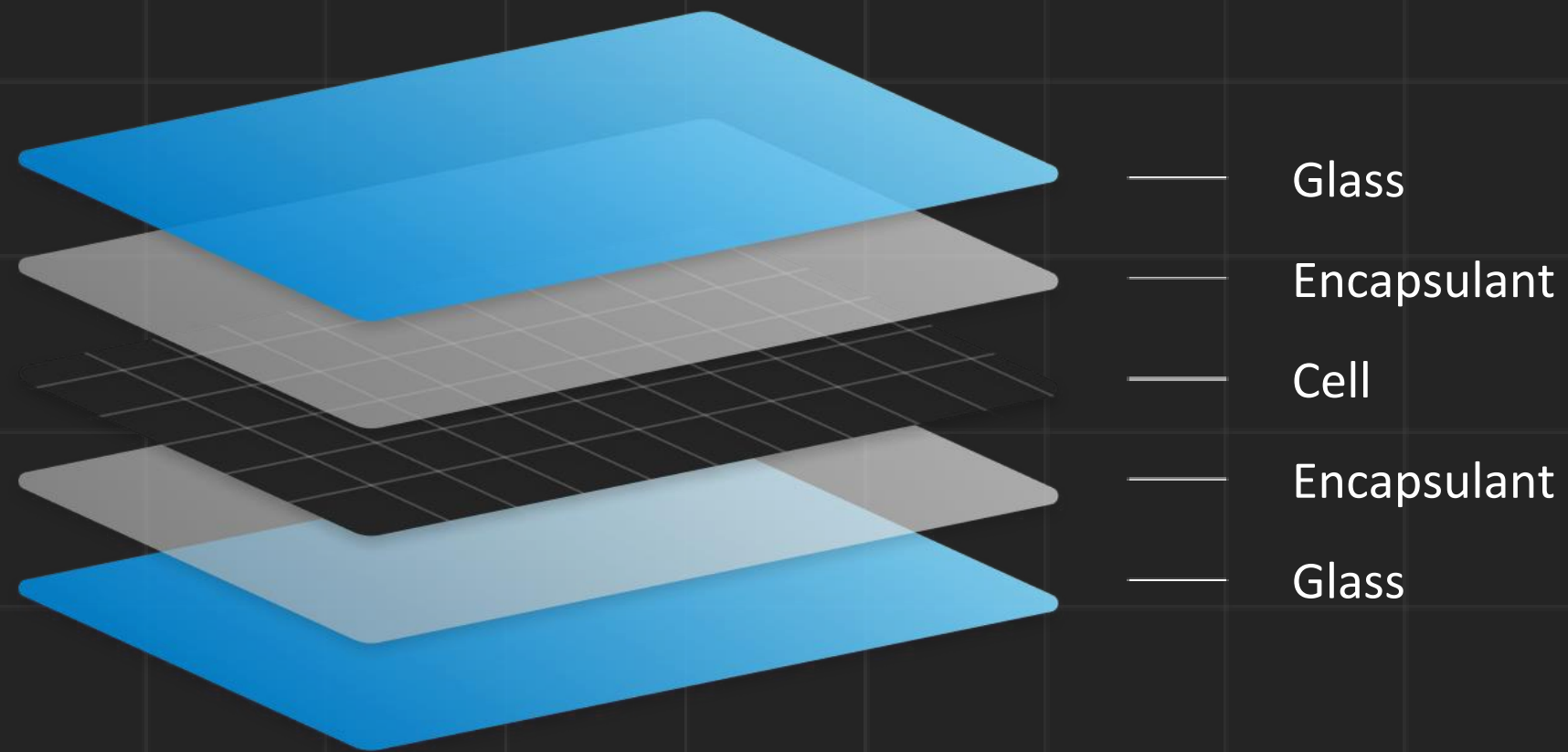


Aging Factors In Nature



Vertex S⁺

Dual Glass improves Reliability



Resistance to
salt spray, acids
and alkalis



Zero moisture
penetration



Resistance to shock
& vibration. Safer
for transport &
installation



Better
mechanical
load ability

Vertex S+

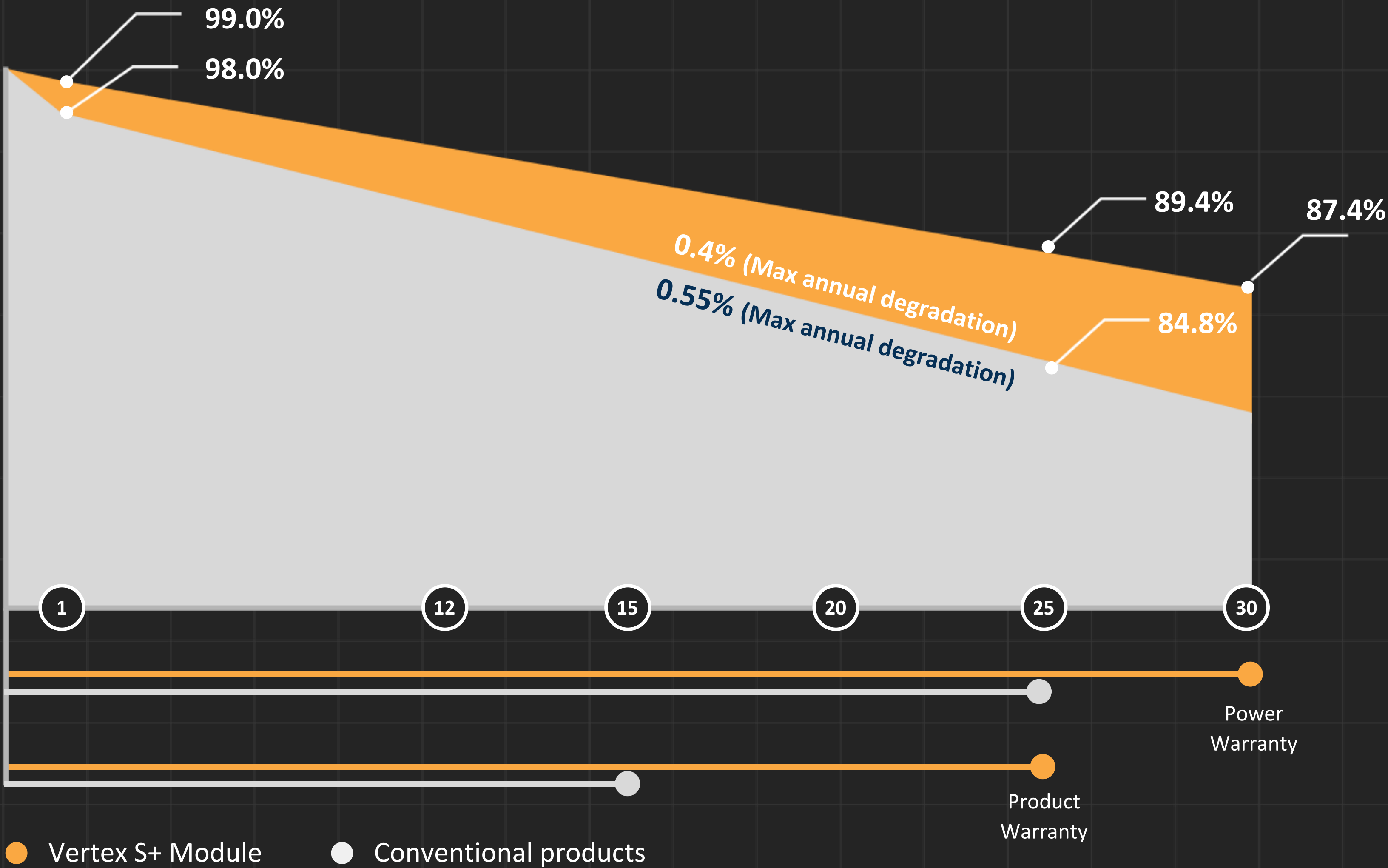
Extended Warranty

25 Years Product Workmanship Warranty

30 Years Power Warranty

1% 1st year max degradation

0.4% Max annual degradation from year 2 to 30



Vertex S⁺

Trina solar 25TH

NEG9RC.27 Aesthetics



Excellent Roof Appearance



Good Industry Design



Cutting-edge Technology



Vertex S+

Lower Temperatur- koeffizient

Module Operating Temperature

Vertex S+
Power Output

-0.29% /°C
Temp Coefficient

Mainstream
Power Output

-0.34% /°C
Temp Coefficient

369	85°C	342
383	75°C	357
396	65°C	372
410	55°C	386
423	45°C	401
437	35°C	415
450	25°C	430

Vertex S⁺

Highly Compatible with Inverters and Optimizers

P_{max}

450_w

V_{oc}

52.9_v

I_{sc}

10.74_A



solar**edge**

SUNGROW
Clean power for all

GOODWE

Fronius

GROWATT

HUAWEI

SMA

and more

Vertex S+



Universal Solution for Residential and C&I Roofs

Diverse Installation Solutions. Flexible for System Deployment



Positive load tested up to

+5400 Pa



Negative load tested up to

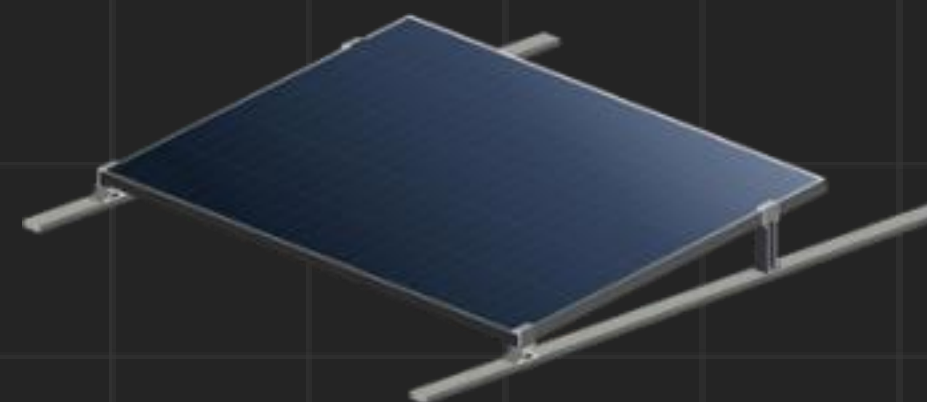
-4000 Pa



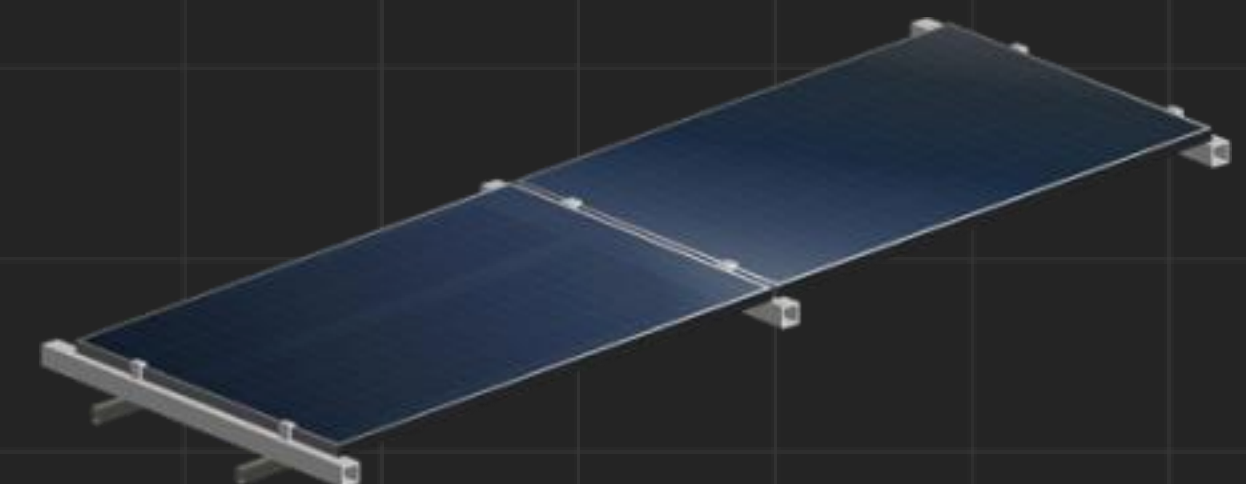
Light Weight

21.1kg

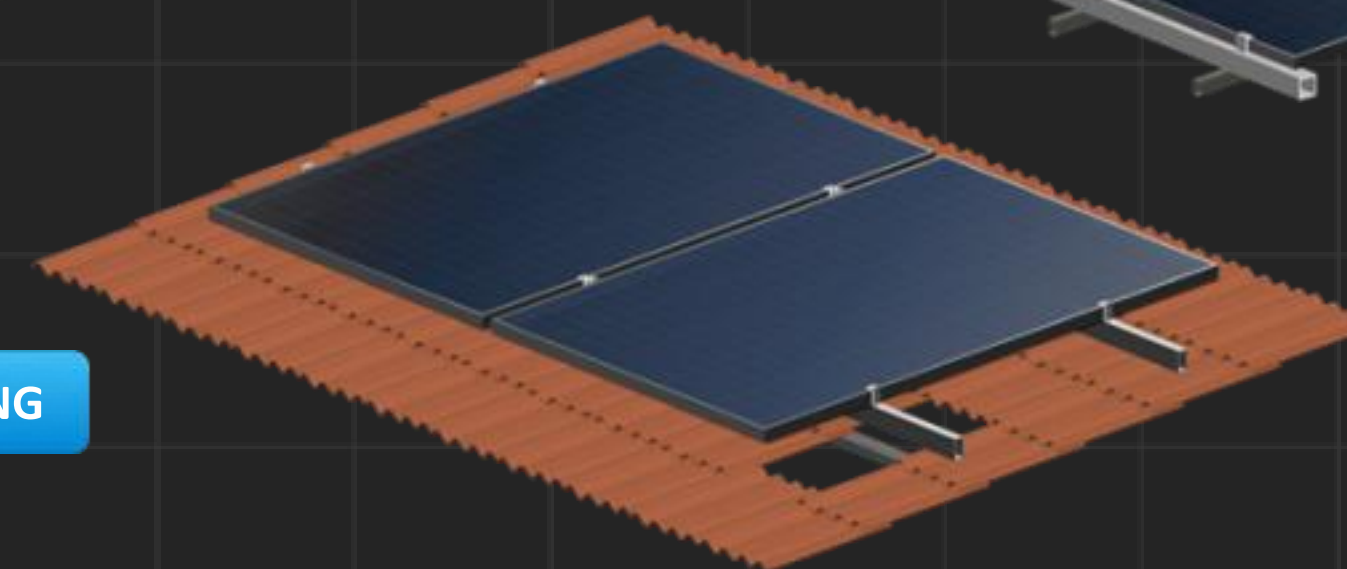
4 POINTS SHORT SIDE MOUNTING



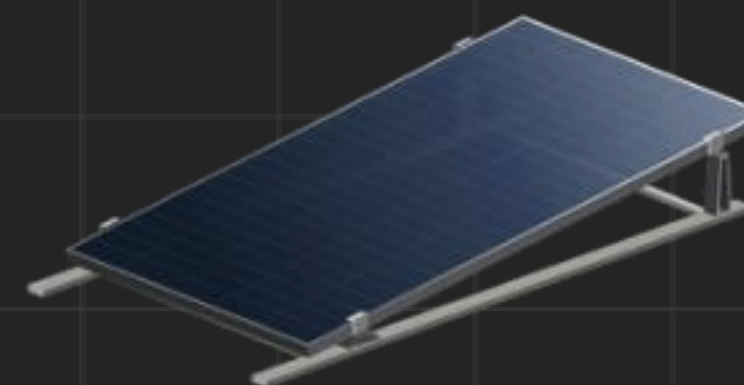
SHARED RAIL



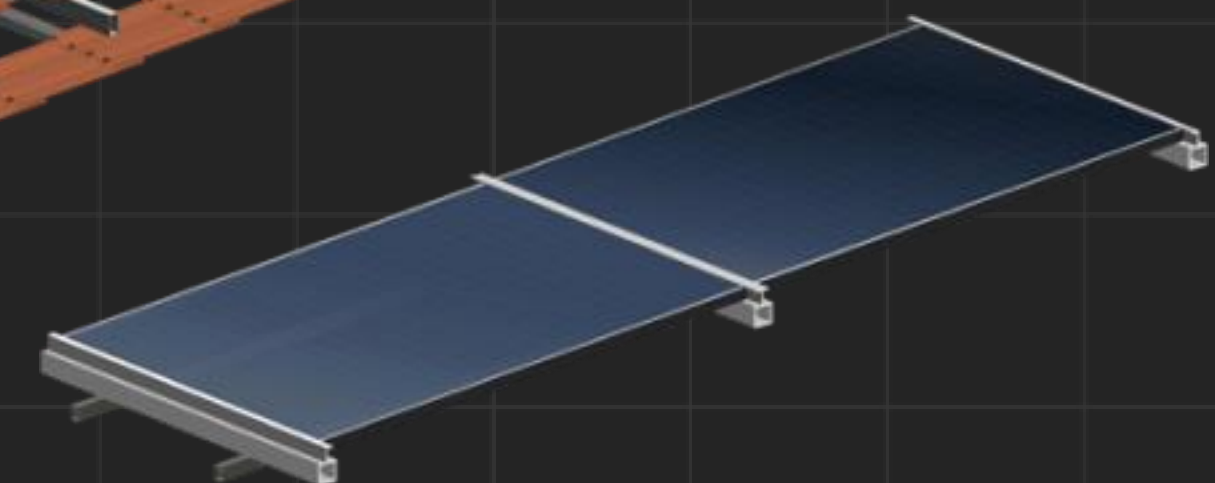
CROSSED BEAM



4 POINTS LONG SIDE MOUNTING



SLIDE-IN MOUNTING



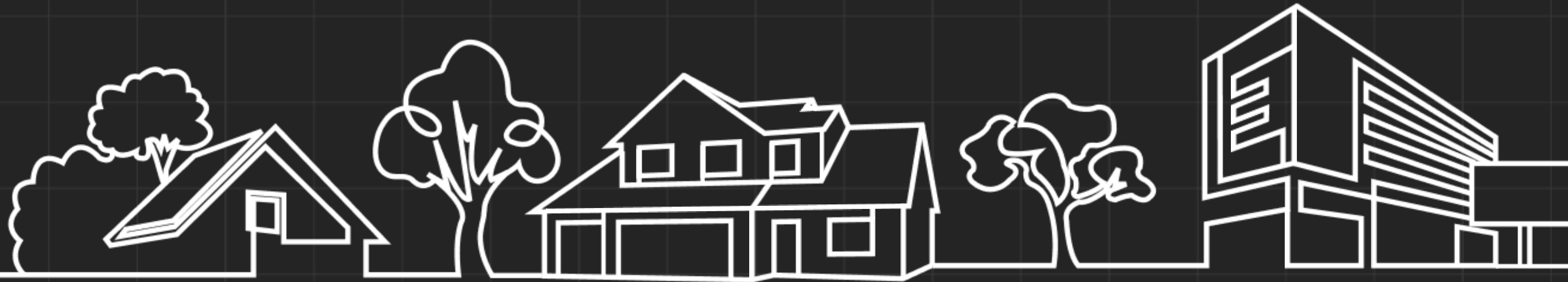
System planning tools ready for Vertex S+

Vertex S⁺

Trina solar 25TH



UPGRADED



Longer
Warranty

25 Years
Product
Warranty

30 Years
Power
Warranty

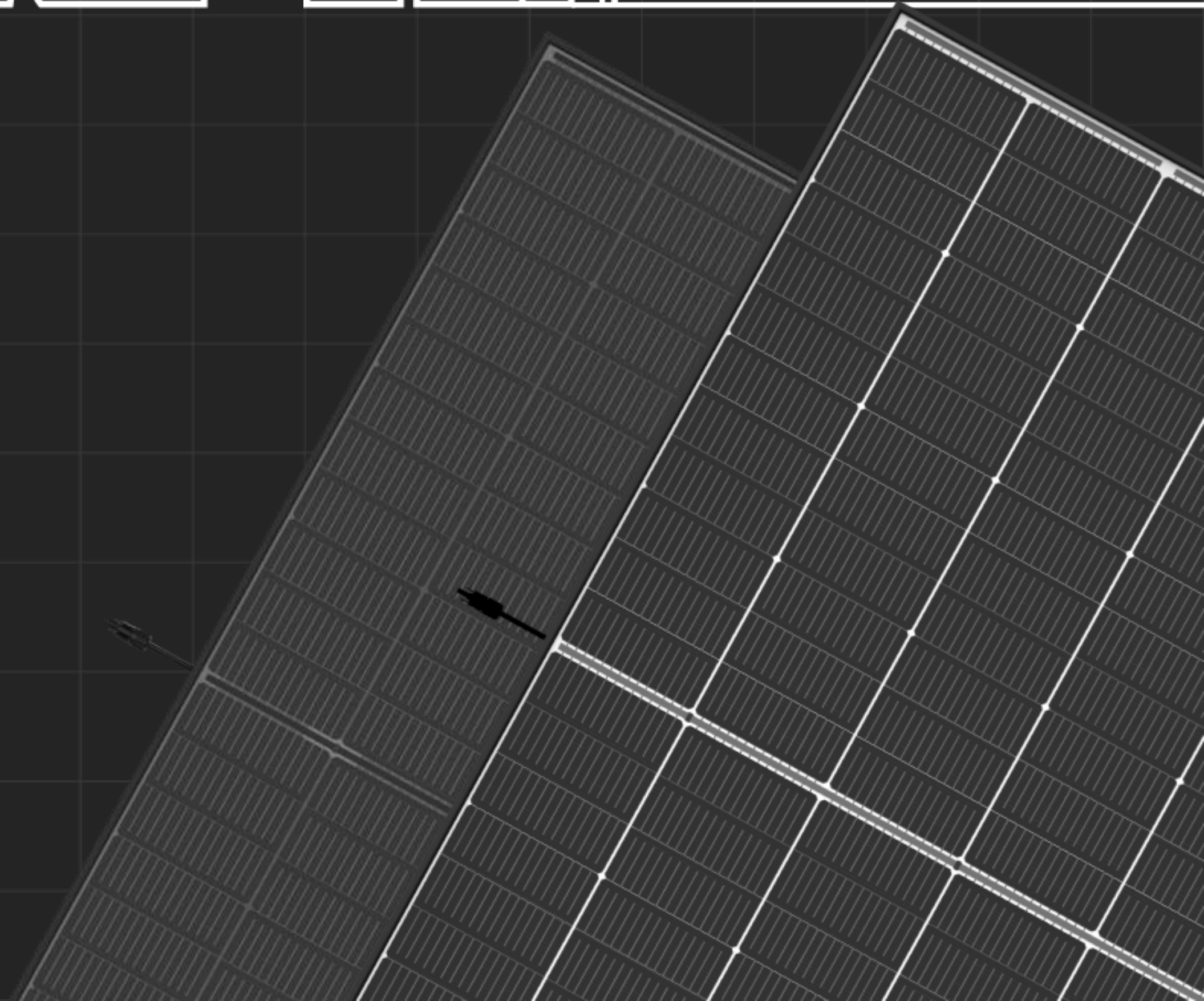
Higher
Power

Up to
450W

More
Reliable

Dual-
glass

improves reliability



— Thank you —

