Bifacial Module	485W	490W	495W	500W	505W
V_{OC} (V)	50.9	51.1	51.3	51.5	51.7
I_{SC} (A)	12.01	12.05	12.09	12.13	12.17
V_{MPP} (V)	42.5	42.8	43.1	43.4	43.7
I_{MPP} (A)	11.42	11.45	11.49	11.53	11.56
Module dimension	2187 × 1102 × 30 mm				

Back Sheet Module	485W	490W	495W	500W	505W
V_{OC} (V)	51.1	51.3	51.5	51.7	51.9
I_{SC} (A)	12.01	12.05	12.09	12.13	12.17
V_{MPP} (V)	42.2	42.4	42.6	42.8	43.0
I_{MPP} (A)	11.49	11.56	11.63	11.69	11.75
Module dimension	2176 × 1098 × 35 mm				

Trinasolar

https://www.trinasolar.com/

Trinasolar

Vertex

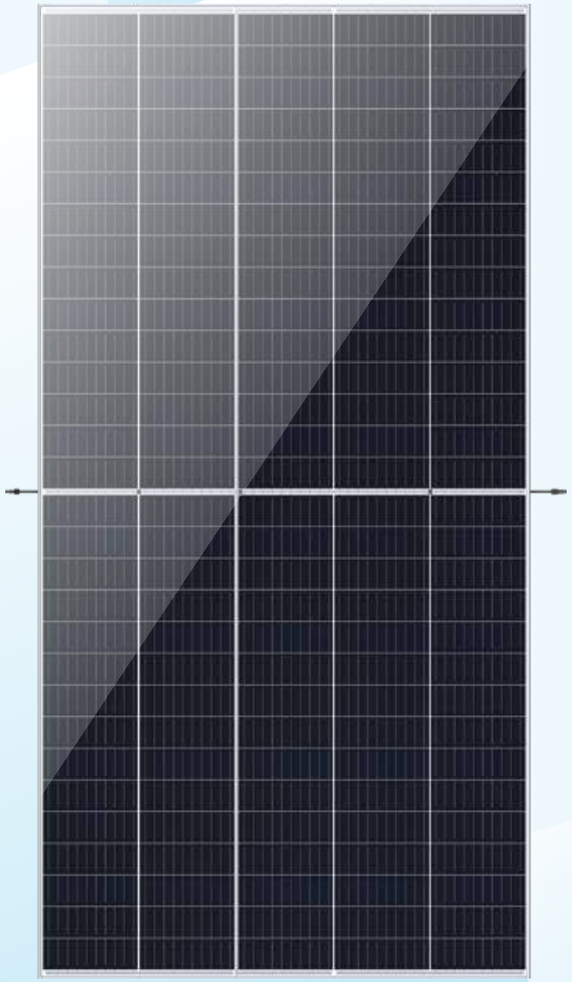
500W+ Ultra-High Power with 21% High Efficiency

Vertex Multi-busbar Module

Vertex

OPENING THE NEW ERA OF 500W+ OUTPUT

The 500W+ Vertex series modules, with a module conversion efficiency reaching 21%, boast a power output over 500W. Incorporating 210mm cells, the 500W+ Vextex series modules come in two versions - the bifacial double-glass modules and back sheet modules, delivering high customer value.



Utility C&I — Designed for utility and C&I projects

500W+ 21% — 500W+ ultra-high power with 21% high efficiency

1/3 cut — Best system compatibility from 1/3-cut cells and innovative 5*30 string cell layout

12 YEAR 30 — 12-year product warranty, 30-year power warranty

-0.35% temperature coefficient — Better temperature coefficient (-0.35%), lower working temperature result in more generated power

options — Monofacial and bifacial options

+30% — Up to 30% additional power gain from rear side in different installation environments

IAM — Excellent IAM (Incident Angle Modifier) and low light performance, validated by 3rd party certifications

5400Pa 2400Pa — Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load

TECHNOLOGY

CUTTING-EDGE TECHNOLOGIES BRING HIGHER POWER AND EFFICIENCY

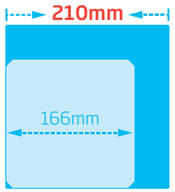
Trina Solar has initiated the development of modules based on 210mm-size cells and has started the mass production of the 500W+ Vertex modules as of March, 2020.

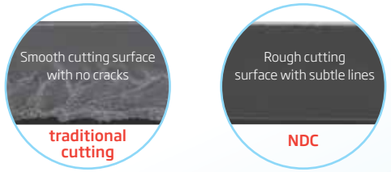
Based on Trina Solar's superior multi-busbar technology, the 500W+ Vertex modules incorporate an innovative design that integrates advanced three-piece, non-destructive cutting and high-density encapsulation technologies, eliminating the potential risks associated with ultra-high power modules: voltage, current and thermal overload as well as micro cracks.

The 500W+ Vertex modules are designed to be compatible with virtually any mainstream solar system design.

210mm silicon wafer

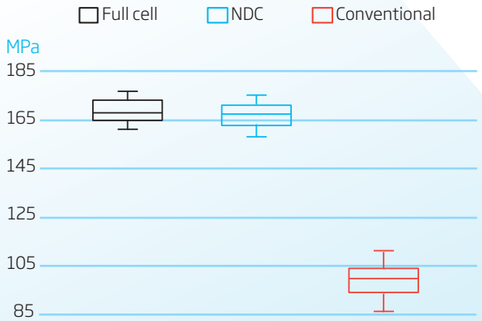
The 500W+ Vertex module employs cells based on 210mm silicon wafers, which is the largest possible wafer size provided by the semiconductor industry and brings the highest power output.

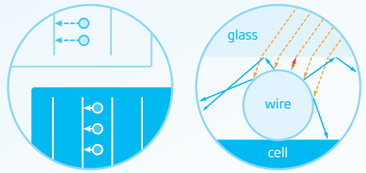




Non-destructive cutting technology

Non-destructive cutting technology is adopted to achieve the best cell bending strength and section appearance, resulting in the best performance for the minimum cell unit.





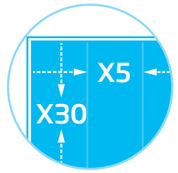
Multi-busbar technology

Multi-busbar, with the capability to increase light absorption, perfectly matches the large-area cell. Technology integration enables the 500W+ Vertex modules to achieve higher power and power generation capacity per watt.

Parameter	Full cell	Half cell	1/3 cell
P_{max}	473W	495W	**500W**
mono-facial I_{sc}	18.2A	18.2A	**12.1A**
V_{oc}	34.3V	34.3V	**51.5V**
Process risk	Low	Low	**Normal**

1/3-cut technology

1/3-cut replaces the traditional half-cut technology and solves the issues resulting from high system current while reducing power loss. And 1/3-cut plus multi-busbar will outperform all other module solutions for 210mm modules, which will help to achieve higher power while minimizing manufacturing and hotspot issues, maximizing junction box safety, and eliminating power loss associated with inverter current limitation.



5*30 layout design

The 500W+ Vertex modules feature the innovative 5*30 layout, which enable module dimensions that make installation easy and avoid increasing logistics cost.

High density encapsulation technology

By flattening cell connection areas of welding tape, the cell spacing is reduced to 0.5mm to optimize power output and efficiency, which will leave certain gap to reduce yield risk, micro-cracks and damage to the modules.

BOS SAVINGS

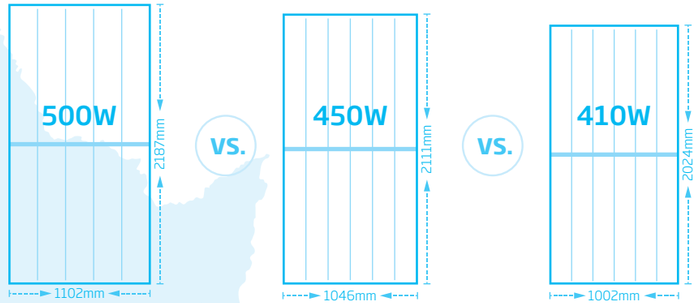
500W+VERTEX MODULES BRING MORE BOS SAVINGS

100MW
410W VS. 450W VS. 500W

Source:
Trina State Key Lab

Project location:
Heilongjiang Qiqihar, China

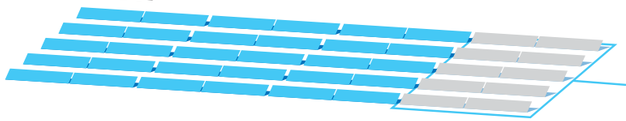
Project volume:
100MW



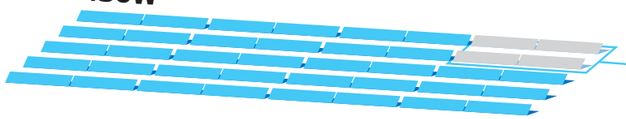
BOS -6~8%
LCOE -3~4%

-18% Modules
-8.4% Land
-15.6% Foundation
-13.0% Cable
-15.6% Combiner box

500W



450W



BOS -2~3%
LCOE -1~2%

-8.9% Modules
-4.4% Land
-8% Foundation
-5.8% Cable
-8% Combiner box

410W

TRINAPRO 2.0 SOLUTION

CUSTOMIZED SOLUTION FOR 500W+ VERTEX MODULES INCREASE YOUR RETURNS

Before starting the design process, the Trina Solar R&D team fully studied the impact of changes in module dimension, weight and technical specifications. The 500W+ Vertex modules are verified and confirmed to be compatible with mainstream inverters and tracking systems.

The TrinaPro 2.0 solution integrates 500W+ vertex modules and customized Nclave trackers with especially designed driver unit, which will give full play to the Vertex modules and ensure the safety and reliability of the system.

And the tracking algorithm that TrinaPro R&D team developed will also be adaptive to the Vertex modules, which will bring an extra performance gain of 1-2%.

TrinaPro 2.0

Vertex ∞ NCLAVE