



## NEW ULTRA HIGH POWER MODULES GENERATION: 550/600W+

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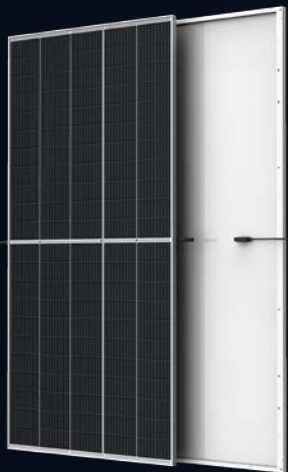


TrinaSolarMEA

## 550W+

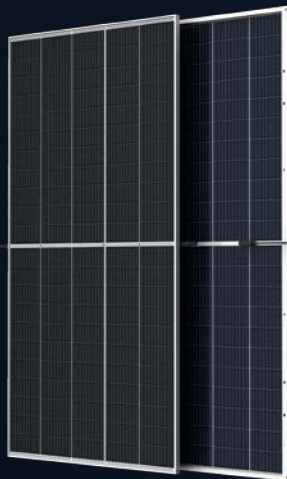
Mono-facial

DE19



Bi-facial

DEG19C.20

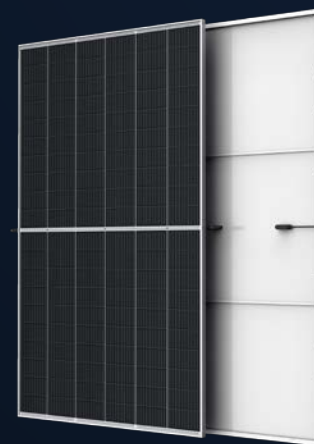


## 600W

+

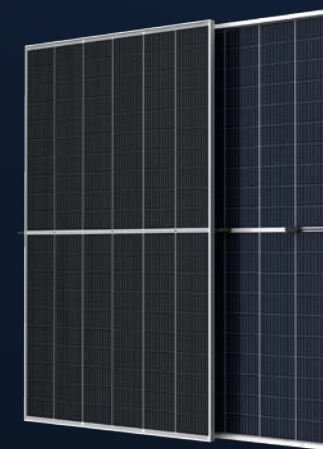
Mono-facial

DE20



Bi-facial

DEG20C.20



## Capacity Plan of VERTEX

550W mass production in Q4, 2020

600W mass production in Q1, 2021





Vertex

# Module Construction



Max. Power

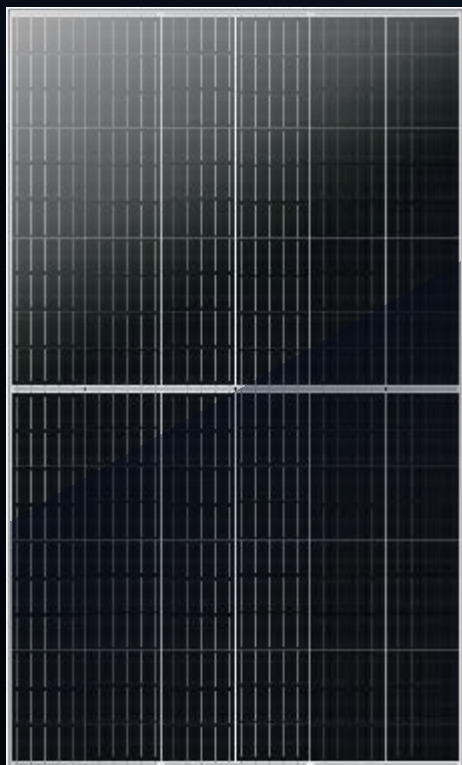
550W+

- 210mm cell
- Multi-busbar
- Non-destructive cutting
- High-density interconnection
- 5\*11 layout
- Half-cut cell
- Warranty: 30 years

Max. Eff.

21%+

- Size: 2384mm\*1096mm
- Weight: 32.6kg dual glass
- Isc: 18.39A
- Voc: 38.1V
- Temp coeff: -0.35%/°C
- 1st year degradation: 2%
- Annual degradation: 0.45%



Max. Power

600W+

- 210mm cell
- Multi-busbar
- Non-destructive cutting
- High-density interconnection
- 6\*10 layout
- Half-cut cell
- Warranty: 30 years

Max. Eff.

21.2%+

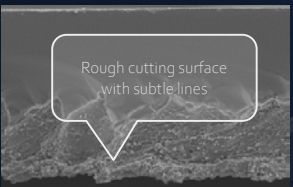
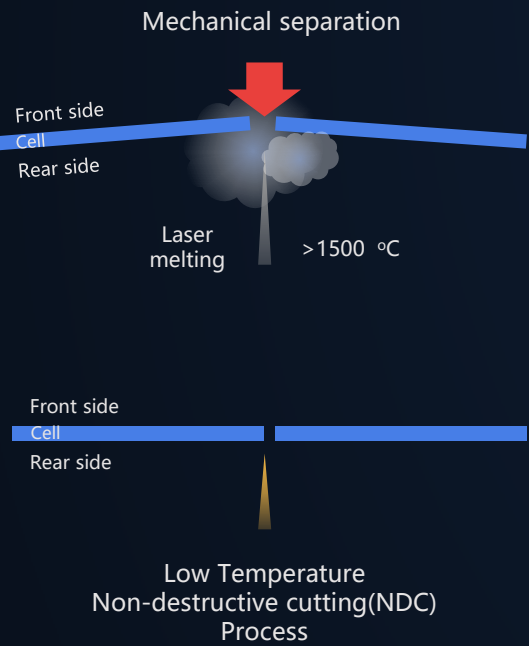
- Size: 2172mm\*1303mm
- Weight: 35.3kg dual glass
- Isc: 18.42A
- Voc: 41.7V
- Temp coeff: -0.35%/°C
- 1st year degradation: 2%
- Annual degradation: 0.45%

# NDC

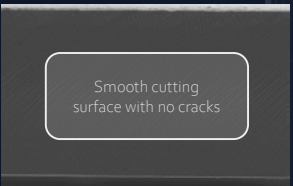
## Technical characteristics

## Non-destructive cutting(NDC)

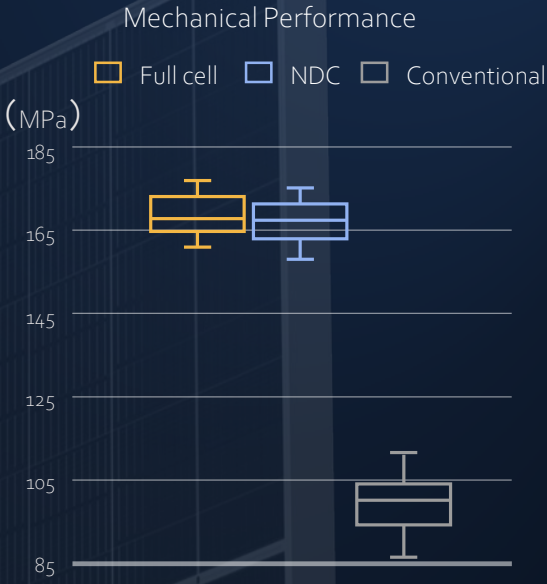
## Outstanding strength of cutting cells



Section after traditional cutting



Section after Non-destructive cutting





# MBB

## Technical characteristics

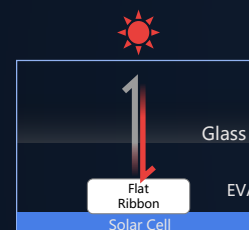
### Multi-busbar

### Module efficiency improvement

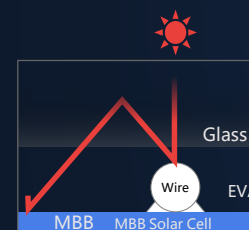
0.4%~0.6%

Optical performance  
Power improvement  
1%~1.5%

Electrical performance  
Power improvement  
1%~1.5%

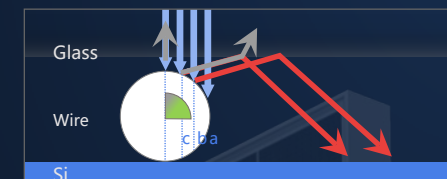


5BB Module

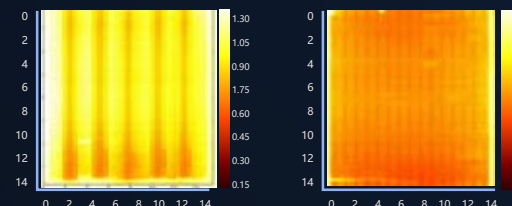


MBB Module

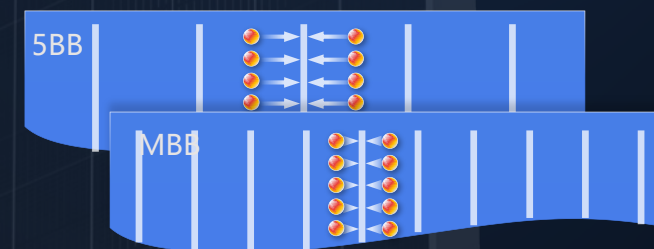
Shading reduction



Light trapping effect



Distribution of resistance on PI  
(photoluminescence) test



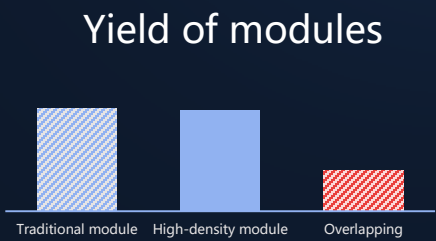
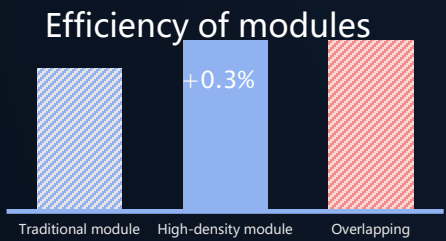
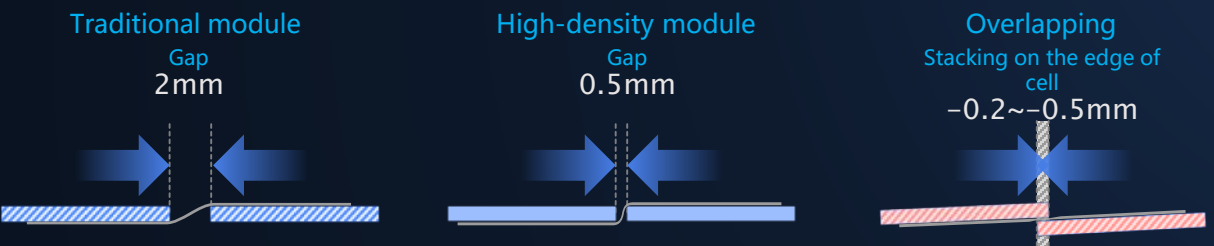
Shorten current path 50% Comparing  
to 5BB



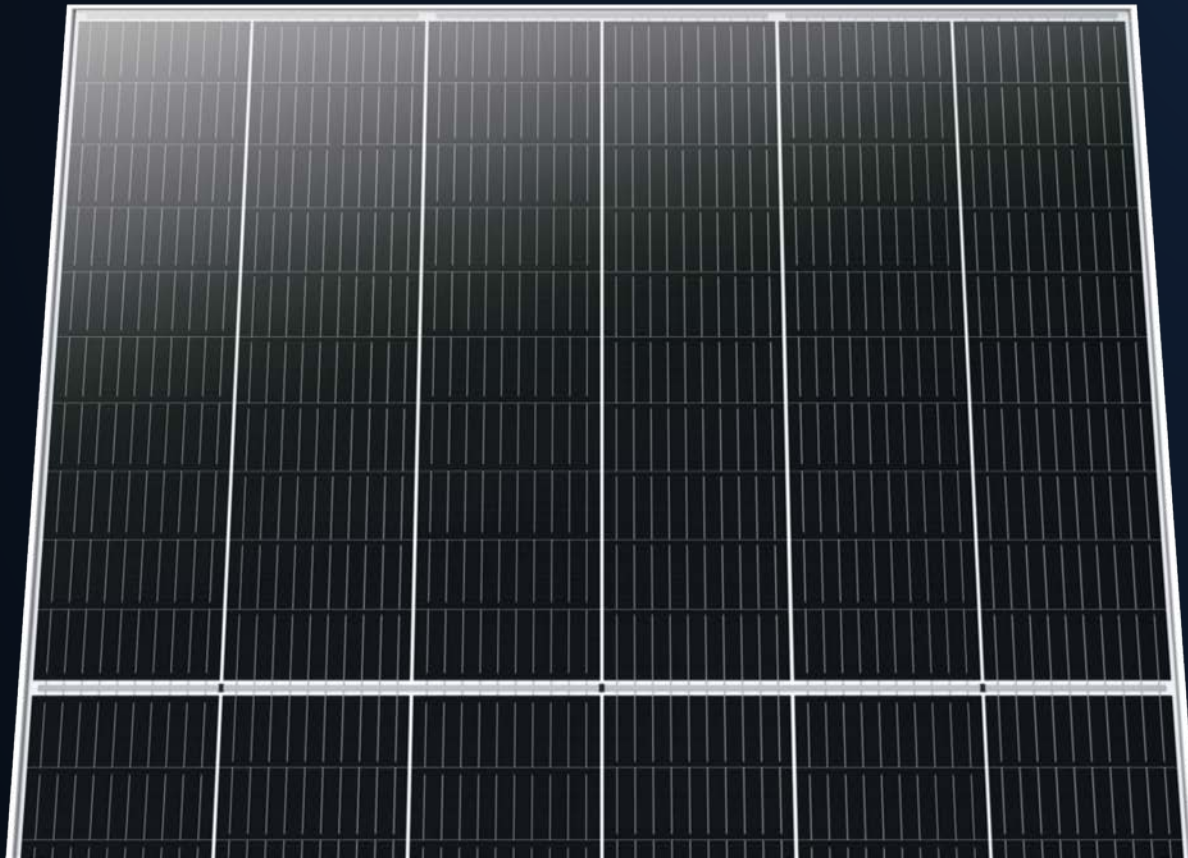
# HD Interconnection

## Technical characteristics

## High-density interconnection technology

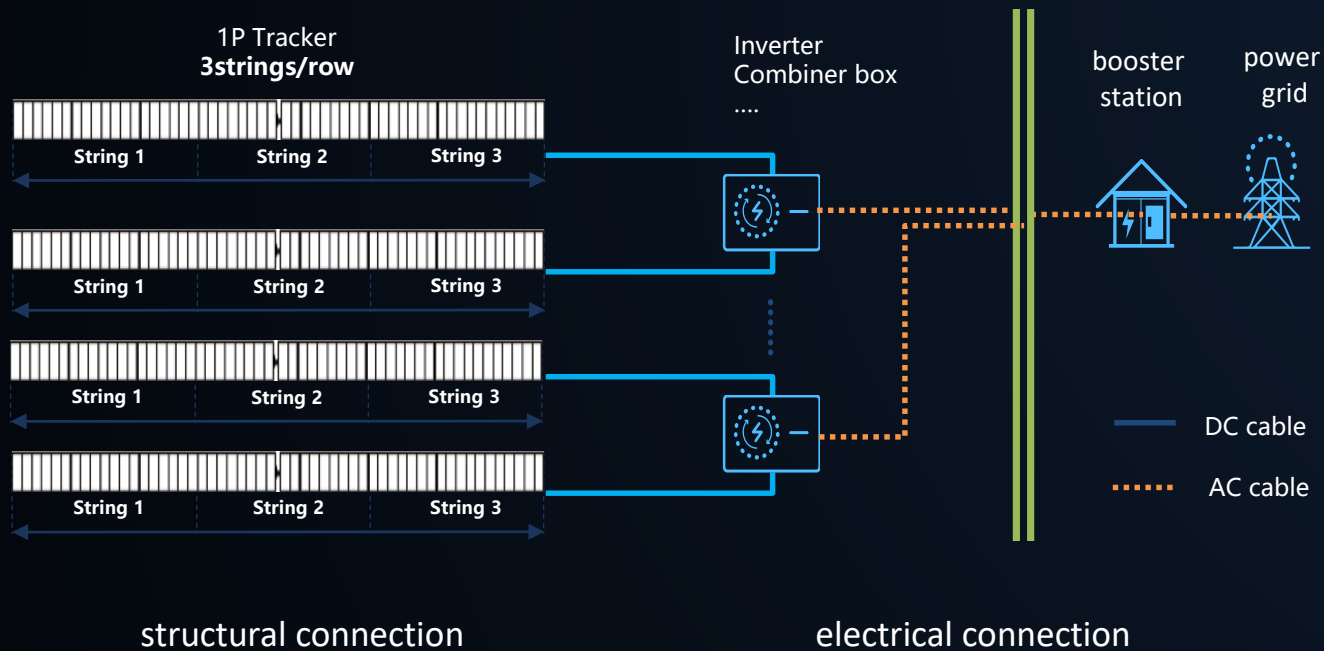


# Low Voltage, High String Power



# String power

String is the basic subunit of PV plant



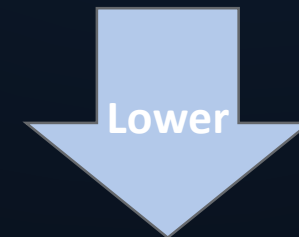
Single string power is the core factor that determines the cost of BOS system.

$$P_S = P_M * N = P_M * \frac{1500}{V_{OC}[1+(t-25)*K_V]}$$

$P_S$ : String power  
 $P_M$ : Module power  
 $N$ : Module pcs per string  
 $V_{OC}$ : Open circuit voltage  
 $K_V$ : Voc temperature coefficient



- Module power
- System voltage



- Module Voc
- Module Kv

# High String Power

Vertex  
550W series

35.8%

Higher string power  
compared to  
reference module

Module characteristics comparison

Module Type	182cell 72pcs backsheet	VERTEX 550 series
Power (W)	540	550
Length (mm)	2256	2384
Width (mm)	1133	1096
Weight (kg/pcs)	27.2	28
Isc (A)	13.85	18.52
Voc (V)	49.5	37.9
Module eff.	21 %	21 %

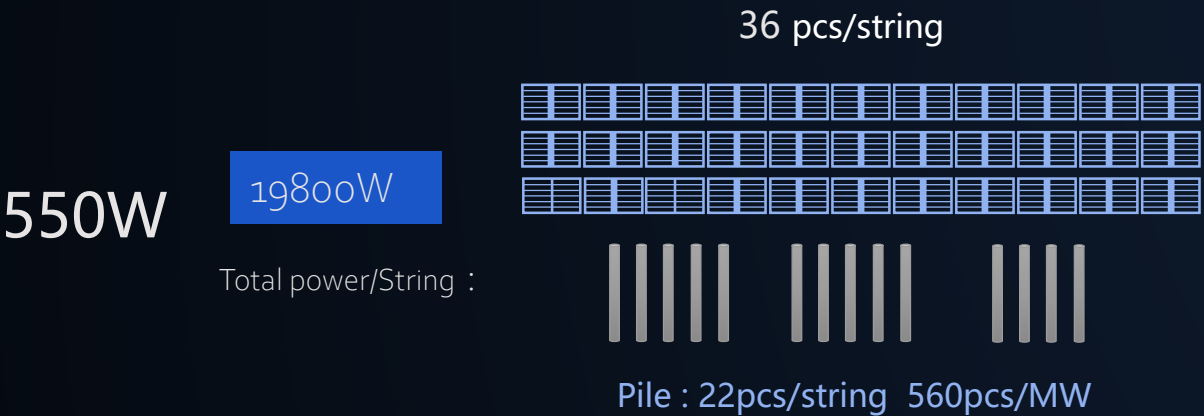
Comparison Module Quantity per String& Power

Module	Module Quantity/String	Per Module Power	Total Power per String
Trina Solar VERTEX 550W series	36	550W	19800W
Reference Module	27	540W	14580W

10 degrees below zero , 1500 V system

# PV Module Array Arrangement

Project site : Jiangsu, China  
Project size : 100MW  
Adopting 1500V centralized inverter, capacity ratio 1.3, fix tilt,  
Bifacial module, 3-row transverse installation mode.

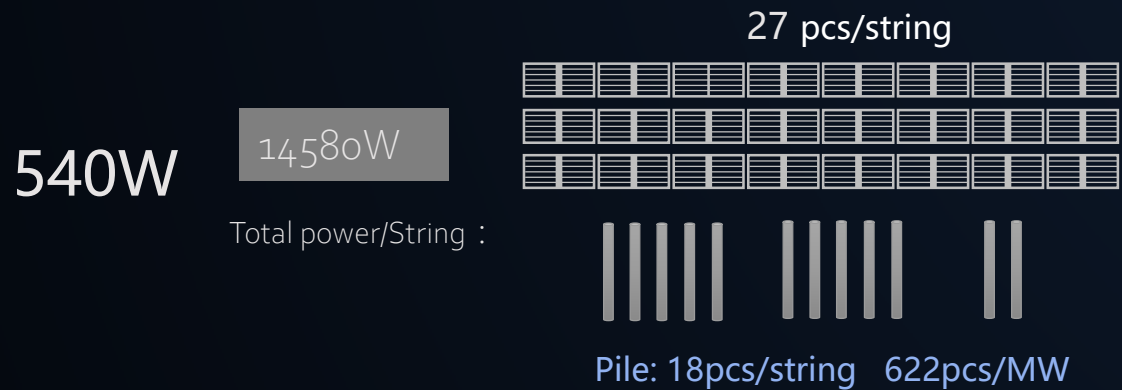


3312  
Total Racking



Racking Steel  
33.68 ton/MW

Cable Length  
2.5km/MW



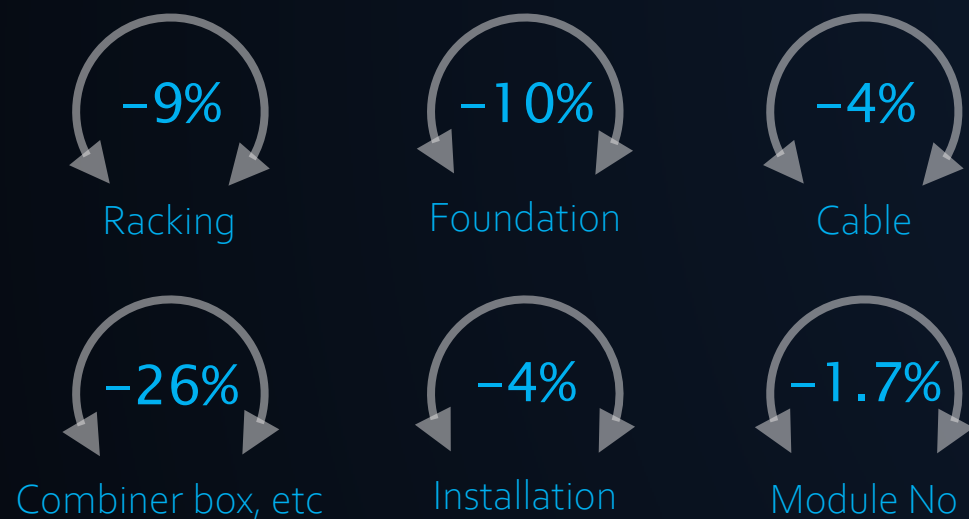
4496  
Total Racking



Racking Steel  
37.19 ton/MW

Cable Length  
3.5 km/MW

## BOS analysis of 550W Vertex PV system



	Module type	Reference Module	Trina Solar VERTEX	Diff.
	Power ( W )	540	550	
BOS ( ¥ /W )	Racking	0.279	0.253	-0.026
	Foundation	0.123	0.111	-0.012
	Cable	0.046	0.044	-0.002
	Combiner box, etc	0.015	0.011	-0.004
	Installation	0.137	0.131	-0.006
	Sum	0.8248	0.7741	-0.05
LCOE ( ¥ /W )				-2 %

# 3rd party assessment



Project site : Texas, US   Latitude: 34.36°   Longitude: -99.89°

Annual GHI: 1,865 kWh/m2   Average temperature: 17.5°C

Project size : 100MW

String inverter, 1P tracker design

Module price is assumed to be the same for comparison.

Bi-facial	535	545
String	26pcs/String	35pcs/String
BOS \$/kwh	0.6015	0.5625
BOS	Base case	-6.49%
LCOE \$/kwh	0.0434	0.0418
LCOE	Base case	-3.78%

\*The result is highly dependent on the input assumptions, and should not be taken as a guidance for specific projects.



Thanks for watching!

The Vertex logo, consisting of a red stylized 'V' followed by the word "vertex" in blue. To its right, the text "Trina Solar 550/600W+" is displayed in white.



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