

PROGETTO PER LA REALIZZAZIONE DI UN IMPIANTO AGRIVOLTAICO DA 10.862,04 kW_p (POTENZA IN IMMISSIONE PARI A 9.600,00 kW_p) PER LA PRODUZIONE DI ENERGIA ELETTRICA E OPERE CONNESSE DENOMINATO "DAGALAFONDA_MAZARA"

Comune di Mazara del Vallo:

Foglio di mappa n° 132 - particelle n° 73-75-227-278-304-305-306-384-386-388

Foglio di mappa n° 109 - particelle n° 342-343-344

(impianto di produzione)

COMMITTENTE: **ECOSOUND 1 S.R.L.**
 via Alessandro Manzoni, 30
 20121 - Milano (MI)
 Codice fiscale: 10902370963
 Amministratore unico: Sig. Shapira Yoav

Codice di
 rintracciabilità
 e-Distribuzione
 n° T0737688



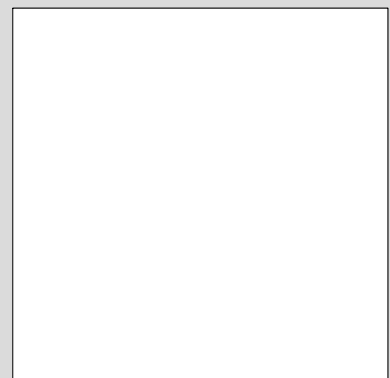
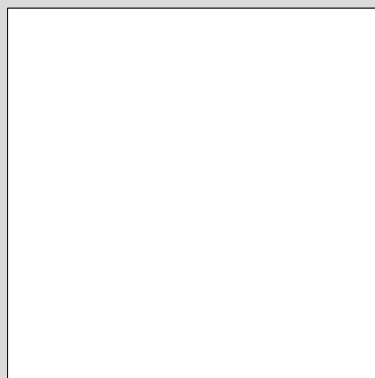
REV.	DATA	ESEGUITO	VERIFICATO	APPROVATO
00	22/07/2022	Lino/Massaro	Sarcone	Alferi
<p>Nome cartella</p> <p>PUA_2 "Elaborati di progetto"</p> <p>Classe Elaborato Allegato</p> <p>A 19</p>				

Datasheet componenti principali

- A. RELAZIONI E TABULATI**
- B. INQUADRAMENTO TERRITORIALE
- C. ELABORATI IMPIANTO DI RETE
- D. ELABORATI IMPIANTO UTENTE
- E. DOCUMENTAZIONE

Staff tecnico di progettazione:

- Arch. Claudio Sarcone
- Arch. Carlo Lino
- Geom. Ezio Massaro
- Dott. Agr. Federico Maniscalco
- Ing. Cosimo Padalino
- Ing. Antony Vasile





SkySmart II

Independent Row 2P Tracker Single Row, Double Performance, Triple Safety

FEATURES



Synchronous
multi-point drive



Advanced slewing
drive system



Best for
bifacial modules



Artificial-intelligence
algorithm



Strong adaptability
of terrain
up to 20% N-S slope



Optimized cost



LoRa-wireless
communication
Long range, low power



9 posts per system
with 4 × 1,500V-strings
of solar modules



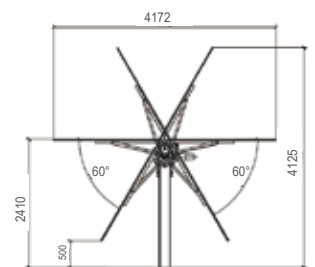
570MW | Hebei, China
SkySmart II Tracking System

SKYSMART II TRACKER SPECIFICATIONS

Tracking Type	Independent horizontal single-axis tracker
Tracking Range	$\pm 60^\circ$
Driving System	Slewing drive, synchronous multi-point design
Tracker N-S Length Limitation	$\leq 95\text{m}$
System Voltage	1,000 V or 1,500 V
Ground Coverage Ratio	Typical $\geq 32\%$
Foundation Options	Ramming/Pre-drilling/Concrete Piles
Terrain Adaption	Up to 20% N-S Slope
Structure Material	Hot dipped galvanized/Pre-galvanized/Mg-Al-Zn steel
Power Supply	Powered by PV strings, back-up Li-ion battery
Power Consumption	Typical 0.04kWh/day
Standard Design Wind Speed	156mph (70m/s) per ASCE7-10, higher wind load available
Module Supported	All commercially available modules
Operation Temperature	-20°C to 60°C (-30°C to 60°C Optional)

ELECTRONIC CONTROLLER SPECIFICATIONS

Control System	1 controller per tracker
Control Algorithm	Astronomical algorithms + Tilt sensor close loop + AI algorithms
Tracking Accuracy	$\leq 2^\circ$
String-Powered	Yes
Backtracking	Yes
Communication Options	LoRa wireless/RS 485 cable
Night Position	Yes
Flood Mode	Optional
Snow Mode	Optional
Wind Protection Mode	Yes



SkySmart II Side View

 sales@arctechsolar.com

 www.arctechsolar.com

Contents subject to change without prior notice.

Trina Solar

INTRODUCTION OF **670W** VERTEX MODULE

Vertex

High Power

670W

High Efficiency

21.6%

Mechanical data

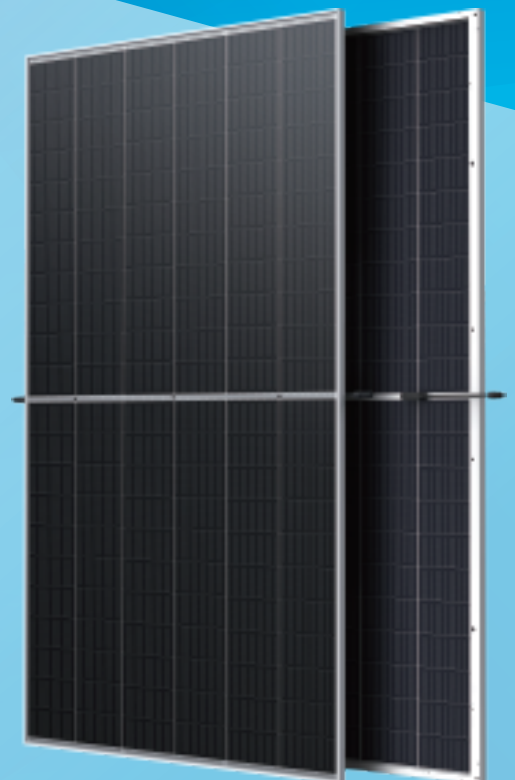
Size: 2384*1303mm

Weight: 33.9kg

Electrical Data

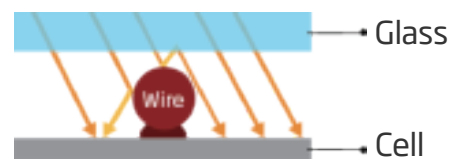
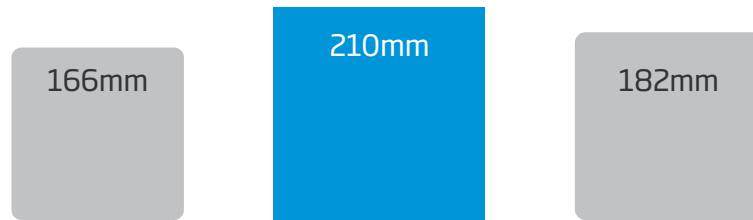
Low voltage concept design

Voc: 45.7V Isc: 18.5A

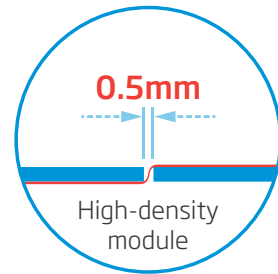
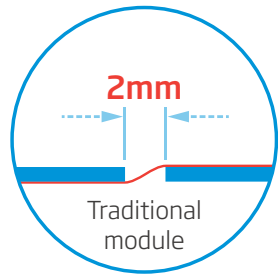


210, The Future from Now On!

Vertex module with 670W+ power and 21.6%+ efficiency

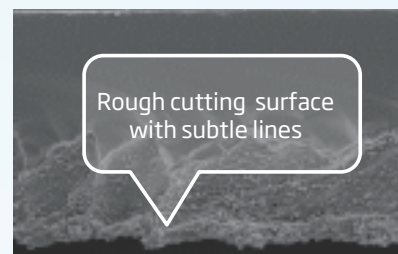


Multi-busbar technology, improving optical utilization rate with higher electricity performance, Module power increase **2~3%**, efficiency increase **0.4~0.6%**

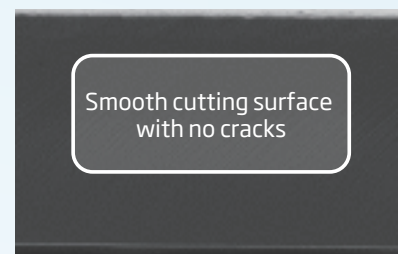


High density encapsulation technology, optimizing power output with good balance between reliability and efficiency, module efficiency increase **0.2~0.3%**

Non-destructive Cutting(NDC) Technology



Cross-section from conventional cutting



Cross-section from NDC

Achieving better cell strength, lower micro-cracks risk for better product reliability

LOWER VOLTAGE BRINGS HIGHER STRING POWER **34%**

Module Type	String Module Number	Module Pmax	String Power	Higher Power
210	28	670W	18,760	34%
182	26	540W	14,040	-

670W

String Power **18,760W**

28 pcs/string
53.3 Strings/MW

Rack Steel **33.76 ton/MW**

VS

540W

String Power **14,040W**

26 pcs/string
71.4 Strings/MW

Rack Steel **37.15 ton/MW**

HIGHER STRING POWER BRINGS LOWER COST

CUSTOMER VALUE OF 670W VERTEX MODULES



Case study

Location: Minnesota
 Project Capacity: 100MW
 Inverter: String Inverter
 Capacity ratio: 1.2
 Fixed Tilt



-15%
Racks



-17%
Foundation



-11%
Cable

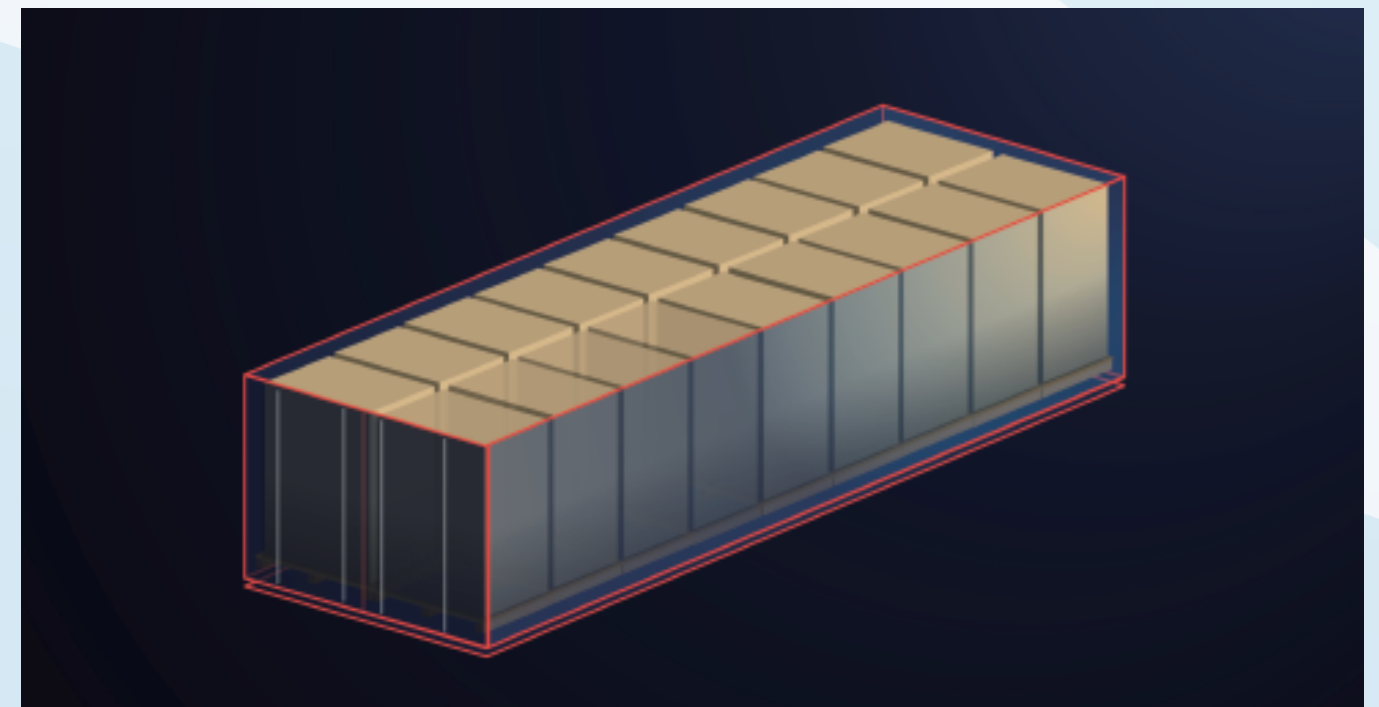
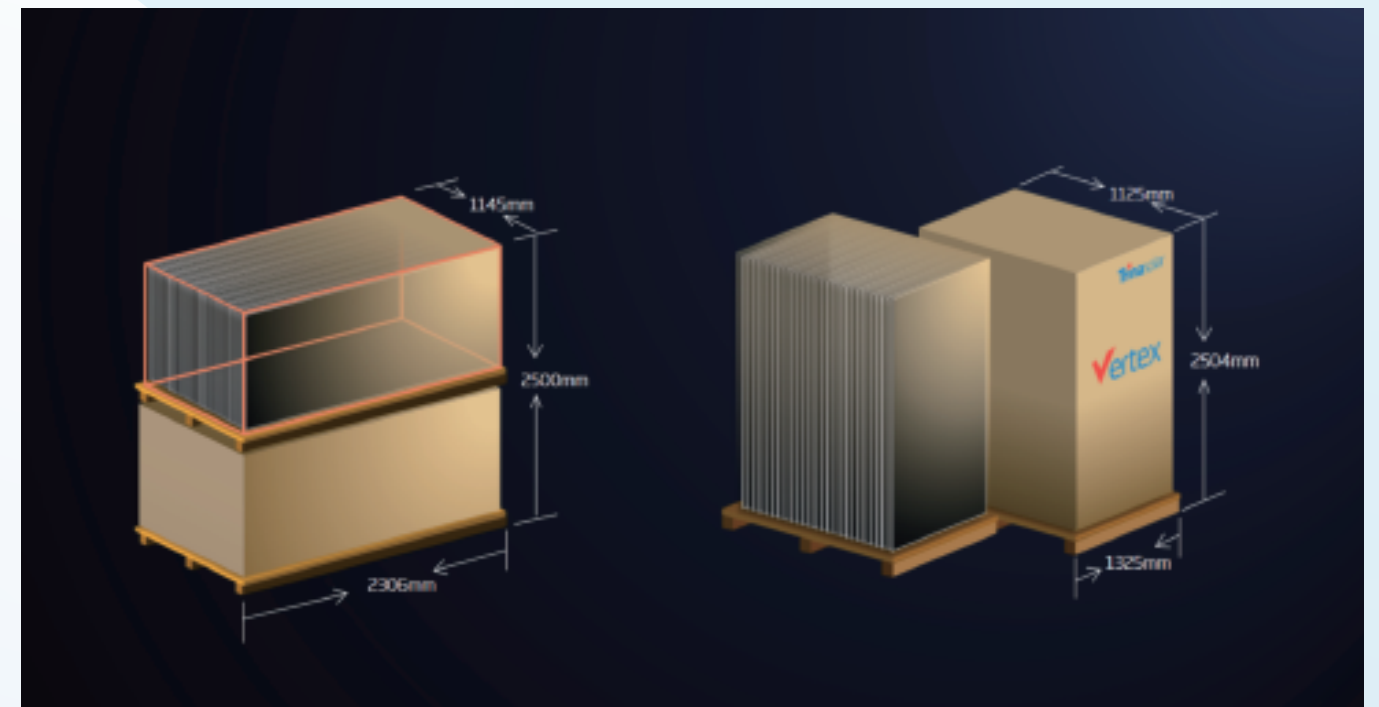


-7%
installation

	Module Type Power	Reference module 540W	Vertex 670W
BOS(\$/W)	Racks	BL	-0.0035
	Foundation	BL	-0.0015
	Cable	BL	-0.0027
	installation	BL	-0.0053
	Sum	BL	-0.013
LCOE			~ -1.2%

*Source: Authority expert.

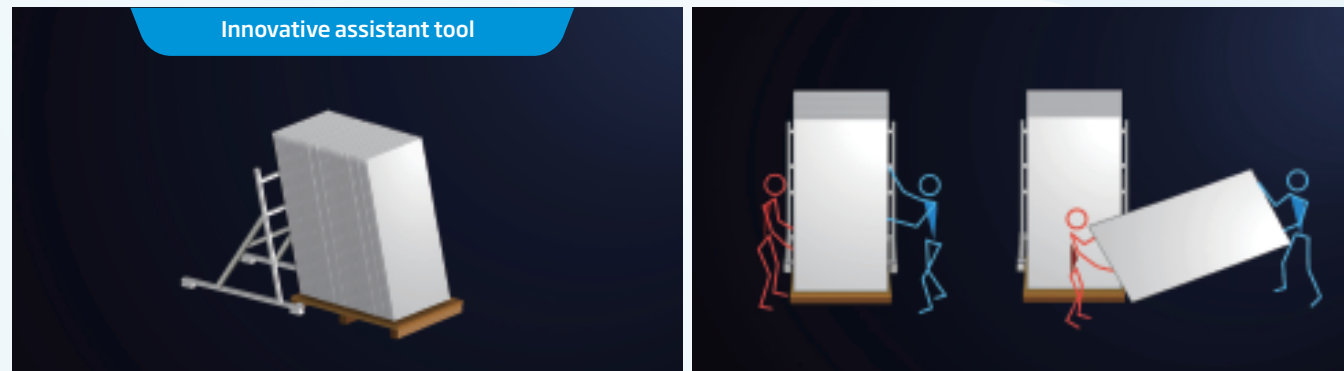
Logistic cost reduce **12%** per container



Category	Module Power	Piece per Pallet	Pallet NO. per Container	Power per Container
Other Module	540W	31	20	334,800W
Vertex Module	670W	31	18	373,860W

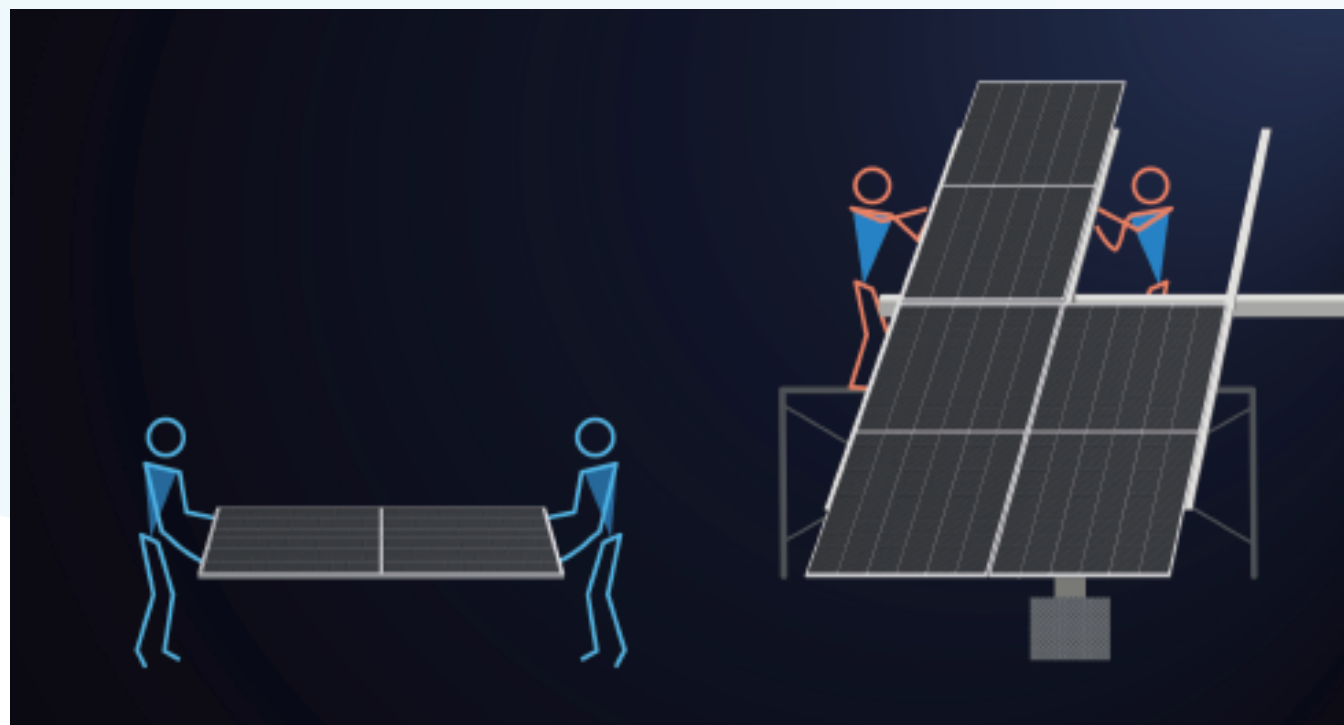
+390,60W (+12%)

Easy for unpacking and prevent module from falling down



Manual handling

4 crews/group, same staffing as traditional installation



-24%

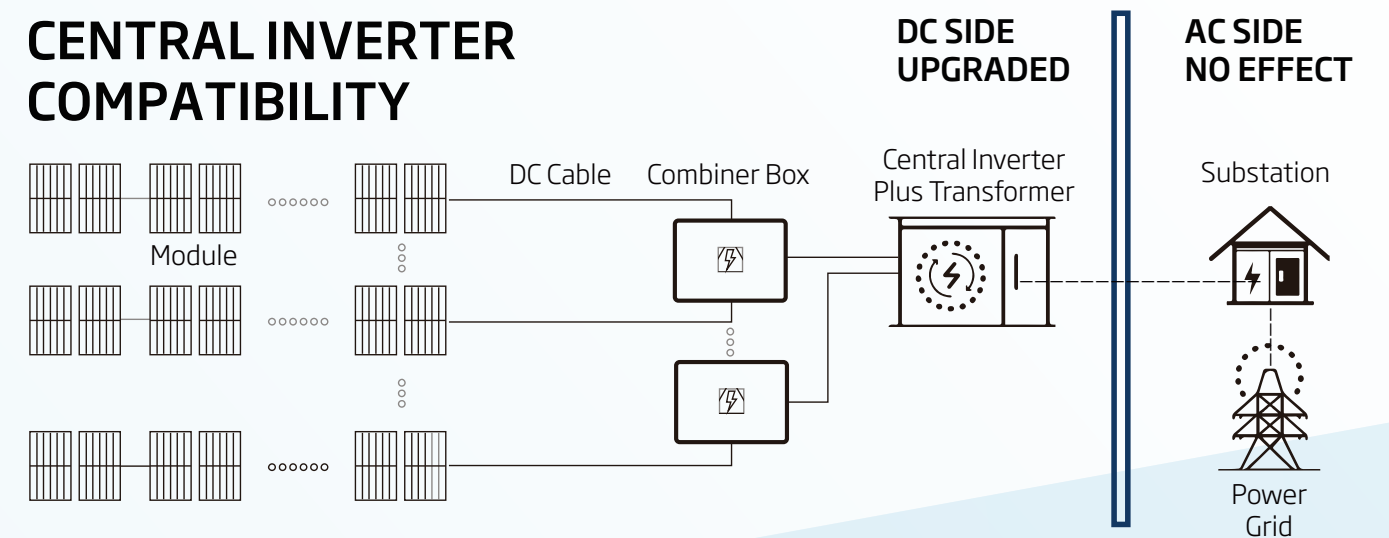
Module installation Quantity

Installation cost reduction 5-7%

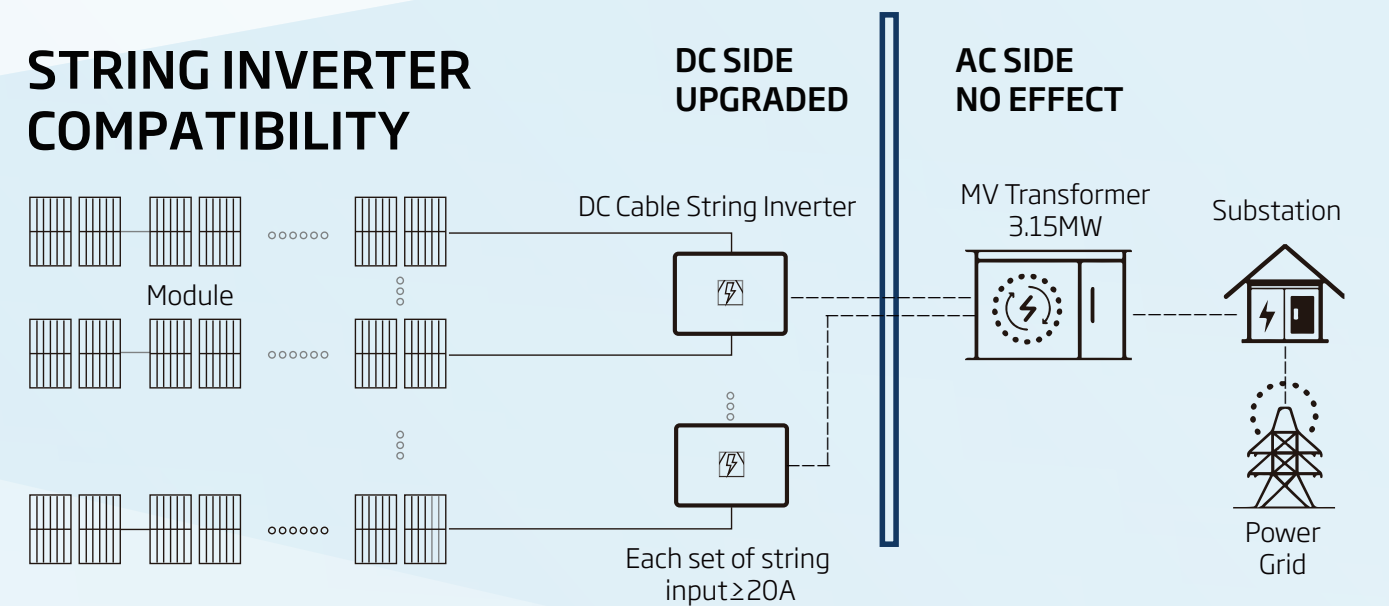
ECOSYSTEM IS COMPLETELY IN PLACE

TYPE	BRAND	MODEL	
INVERTER	Central	SUNGROW	1600/2500/3125KW
	String	SUNGROW	SG225HX/SG250HX
		HUAWEI	SUN2000-196KTL-H0/SUN2000-196KTL-H3
		SMA	Sunny Tripower 150-20
		SINENG	SP-225-H/SP-250K-H
COMBINER BOX	LongMax, Bentek, ConnectPV Shoals, SolarBOS	1500V High Current	
CABLE	4MM ² /6MM ²		

CENTRAL INVERTER COMPATIBILITY



STRING INVERTER COMPATIBILITY



MECHANICAL LOADING

Compatible with Fixed-tilt and Tracker

Frame design optimization

Conventional Module frame *670W Vertex Module frame*

Optimal Design:
 Optimized frame profile design;
 Strengthened material;
 Reinforced supporting bar for backsheet module;
 Excellent loading performance suits diversified scenarios.

TÜVRheinland® IEC 61215, IEC 61730
 Precisely Right. Received certification in Jan 2021.

Fix-tilt **Tracker**

Static loading +5400Pa/-2400Pa *Static loading +3600Pa/-2400Pa* *Static loading +2400Pa/-2400Pa*

Company Name	Brand/Product Type	210 Modules
Arcotech Solar Holdings Co., Ltd.	Skyline/Skysmart II	✓
Array Technologies Inc	DuraTrack HZ v3	✓
GameChange Solar LP	GENIUS TRACKER™ 1P/ GENIUS TRACKER™ 2P	✓
IDEEMATEC Deutschland GmbH	H4PLUS™	✓
Nexttracker Inc.	Nexttracker products	✓
PV HARDWARE SOLUTIONS, S.L.U	Independent row: Monoline™ (all its versions 1V, 3H and 2V); Multi-row: Axone™, Axone Duo™	✓
SOLTEC ENERGIAS RENOVABLES S.L.	SF7 & SF8	✓
Trina Solar Co., Ltd	TrinaTracker (Vanguard™/Agile™)	✓
FTC Solar	Voyager/Voyager+	✓
Soltigua	Soltigua products	✓

Vertex Module Capacity in 2021 **50+ GW**





Power Beyond Solar

Uif!Xpsme!Mfbejoh!QW!boe!Joufhsbufe!Tnbsu!Fofshz!Tpmvujpo!Qspwjefs



Trina Solar
Official Website



Vertex Product
information

For more information regarding Vertex module,
please follow our social media accounts or
scan the QR codes to visit us at our website.

SUN2000-215KTL-H3

Smart String Inverter



100A
Per MPPT



99.0%
Max. Efficiency



String-Smart
Switch



Smart I-V Curve
Diagnosis Supported



MBUS
Supported



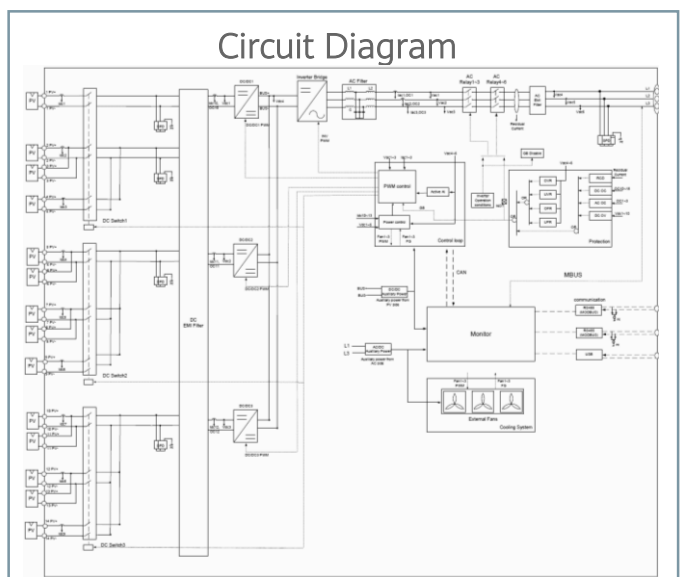
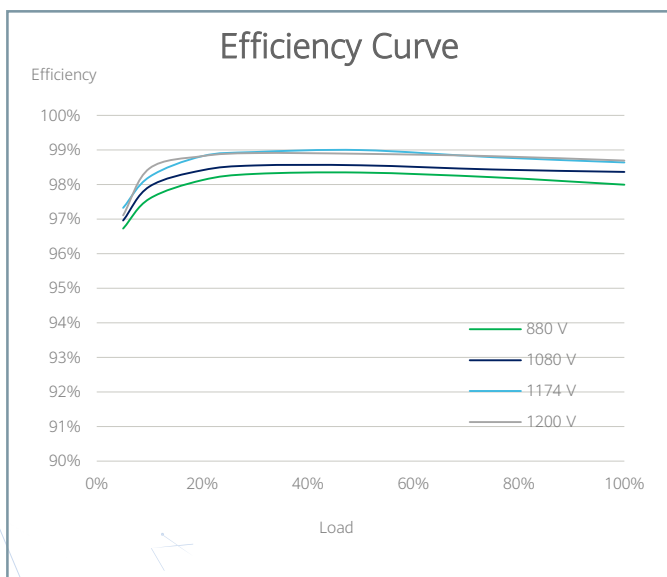
Fuse Free
Design



Surge Arresters for
DC & AC



IP66
Protection



Technical Specifications

Efficiency	
Max. Efficiency	≥99.0%
European Efficiency	≥98.6%
Input	
Max. Input Voltage	1,500 V
Number of MPP Trackers	3
Max. Current per MPPT	100A/100A/100A
Max. PV Inputs per MPPT	4/5/5
Start Voltage	550 V
MPPT Operating Voltage Range	500 V ~ 1,500 V
Nominal Input Voltage	1,080 V
Output	
Nominal AC Active Power	200,000 W
Nominal Output Voltage	800 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	144.4 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 1%
Protection	
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
Communication	
Display	LED Indicators, WLAN + APP
USB	Yes
MBUS	Yes
RS485	Yes
General	
Dimensions (W x H x D)	1,035 x 700 x 365 mm (40.7 x 27.6 x 14.4 inch)
Weight (with mounting plate)	≤86 kg (191.8 lb.)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Smart Air Cooling
Max. Operating Altitude without Derating	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Staubli MC4 EVO2
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless