



# COMUNE DI MELPIGNANO

PROVINCIA DI LECCE



REGIONE PUGLIA



## REALIZZAZIONE IN ZONA INDUSTRIALE DI UN IMPIANTO FOTOVOLTAICO CONNESSO ALLA RETE DELLA POTENZA DI PICCO PARI A 19.593,60 kW E POTENZA IN IMMISSIONE PARI A 18.000,00 kW

Denominazione Impianto:

IMPIANTO MELPIGNANO Z.I.

Ubicazione:

Comune di Melpignano (LE)  
Strada Provinciale 361 km 3

ELABORATO  
**020400\_IMP**

COMPONENTI PRINCIPALI – DATA SHEET

Cod. Doc.: MEL20\_020400\_IMP\_R

**COMET ENERGY  
POWER**

**Project - Commissioning – Consulting**

Municipiul Bucuresti Sector 1  
Str. HRISOVULUI Nr. 2-4, Parter, Camera 1, Bl. 2, Ap. 88  
RO41889165

Scala: --

Data:  
**15/01/2022**

**PROGETTO**

PRELIMINARE  
☐

DEFINITIVO  
☒

AS BUILT  
☐

Richiedente:

**CCEN MELPIGNANO Srl**  
Piazza Walther Von Vogelweide, 8  
39100 Bolzano  
Provincia di Bolzano  
P.IVA 03080570215  
ITALY

Tecnici e Professionisti:

*Ing. Luca Ferracuti Pompa:*  
*Iscritto al n.A344 dell'Albo degli Ingegneri*  
*della Provincia di Fermo*

| Revisione | Data       | Descrizione         | Redatto | Approvato | Autorizzato |
|-----------|------------|---------------------|---------|-----------|-------------|
| 01        | 02/01/2021 | Progetto Definitivo | F.P.L.  | F.P.L.    | F.P.L.      |
| 02        | 15/01/2022 | Revisione           | F.P.L.  | F.P.L.    | F.P.L.      |
| 03        |            |                     |         |           |             |
| 04        |            |                     |         |           |             |

Il Tecnico:  
Dott. Ing. Luca Ferracuti Pompa



Il Richiedente:  
**CCEN MELPIGNANO S.r.l.**

|                               |                                                                                                                                                                                                                      |                     |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| ELABORATO<br>020400_IMP       | <b>COMUNE di MELPIGNANO</b><br>PROVINCIA di LECCE                                                                                                                                                                    | Rev.: 02/22         |
| <b>COMET ENERGY<br/>POWER</b> | <i>PROGETTO DEFINITIVO</i><br><b>REALIZZAZIONE IN ZONA INDUSTRIALE DI UN IMPIANTO FOTOVOLTAICO<br/>CONNESSO ALLA RETE DELLA POTENZA DI PICCO PARI A 19.593,60 kW E<br/>POTENZA IN IMMISSIONE PARI A 18.000,00 kW</b> | Data:<br>15/01/2022 |
|                               | <b>COMPONENTI PRINCIPALI – DATA SHEET</b>                                                                                                                                                                            | Pagina 2 di 2       |

## 1. OGGETTO

Il presente documento è redatto quale allegato alla documentazione relativa all'istanza per il procedimento di Valutazione di Impatto Ambientale ministeriale, ai sensi dell'Art. 23 del D. Lgs. 152/06, per la realizzazione in conformità alle vigenti disposizioni di legge di un impianto solare fotovoltaico per la produzione di energia elettrica, di potenza di picco pari a 19.593,60 kW e potenza massima in immissione pari a 18.000,00 kW, su area industriale sita nel Comune di Melpignano (LE), Strada Provinciale n. 361 km 3.

L'impianto sarà del tipo grid connected e l'energia elettrica prodotta sarà riversata completamente in rete, con allaccio in Media Tensione alla Rete di E-Distribuzione attraverso la realizzazione di una nuova cabina primaria.

Il produttore e soggetto responsabile è la Società CCEN MELPIGNANO s.r.l., la quale dispone dell'autorizzazione all'utilizzo dell'area su cui sorgerà l'impianto in oggetto. La denominazione dell'opera è "Impianto fotovoltaico MELPIGNANO Z.I.".

Allegati:

- COMPONENTI PRINCIPALI – DATA SHEET

Bolzano, lì 15/01/2022

In Fede  
Il Tecnico  
(Dott. Ing. Luca Ferracuti Pompa)  


# THE Vertex

## BACKSHEET MONOCRYSTALLINE MODULE

# 605W

MAXIMUM POWER OUTPUT

# 21.4%

MAXIMUM EFFICIENCY

# 0~+5W

POSITIVE POWER TOLERANCE

Founded in 1997, Trina Solar is the world's leading total solution provider for solar energy. With local presence around the globe, Trina Solar is able to provide exceptional service to each customer in each market and deliver our innovative, reliable products with the backing of Trina as a strong, bankable brand. Trina Solar now distributes its PV products to over 100 countries all over the world. We are committed to building strategic, mutually beneficial collaborations with installers, developers, distributors and other partners in driving smart energy together.

### Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716

ISO 9001: Quality Management System

ISO 14001: Environmental Management System

ISO14064: Greenhouse Gases Emissions Verification

ISO45001: Occupational Health and Safety Management System

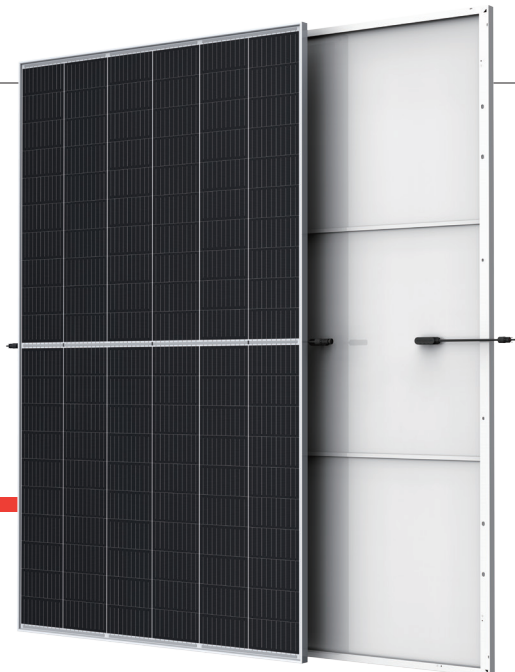


#### PRODUCTS

TSM-DE20

#### POWER RANGE

585-605W



### High customer value

- Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance of System) cost, shorter payback time
- Lowest guaranteed first year and annual degradation;
- Designed for compatibility with existing mainstream system components
- Higher return on Investment



### High power up to 605W

- Up to 21.4% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



### High reliability

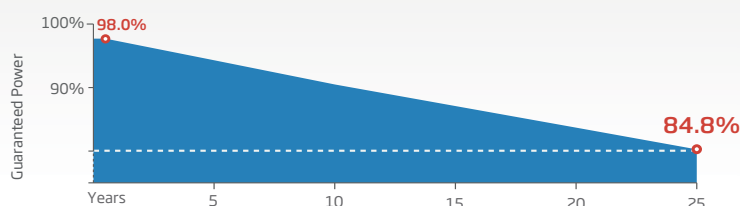
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load

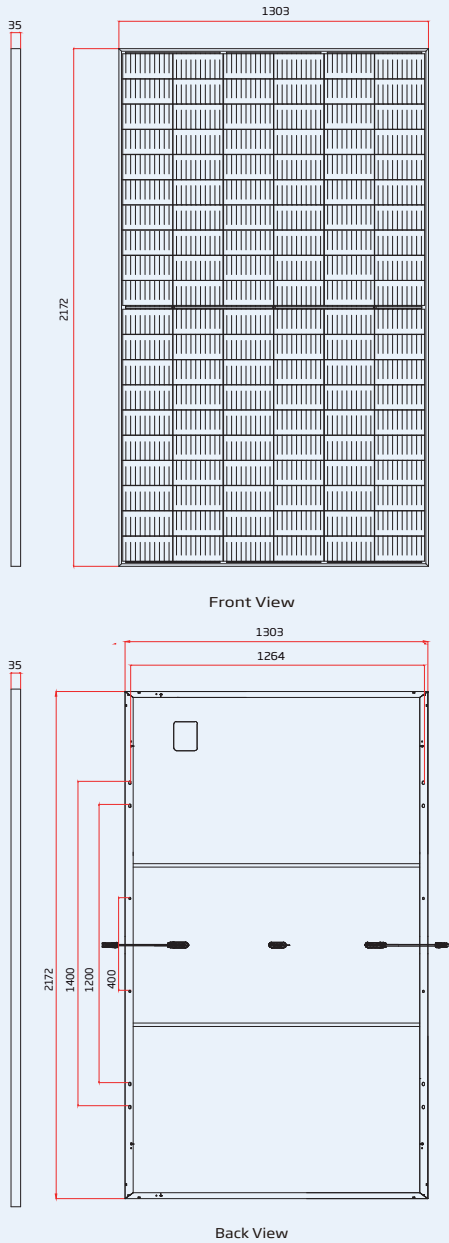
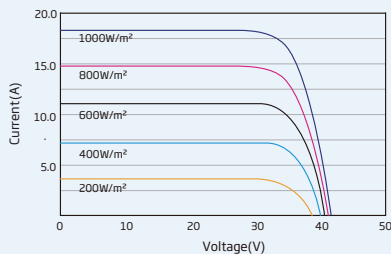
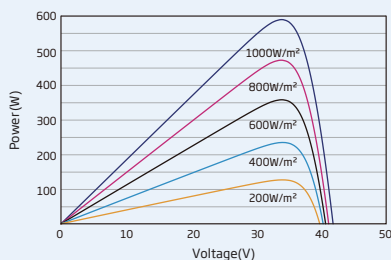


### High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.34%) and operating temperature

### Trina Solar's Vertex Backsheet Performance Warranty



**DIMENSIONS OF PV MODULE(mm)**

**I-V CURVES OF PV MODULE(595W)**

**P-V CURVES OF PV MODULE(595W)**

**ELECTRICAL DATA (STC)**

|                                      |        |       |       |       |       |
|--------------------------------------|--------|-------|-------|-------|-------|
| Peak Power Watts- $P_{MAX}$ (Wp)*    | 585    | 590   | 595   | 600   | 605   |
| Power Tolerance- $P_{MAX}$ (W)       | 0 ~ +5 |       |       |       |       |
| Maximum Power Voltage- $V_{MPP}$ (V) | 33.8   | 34.0  | 34.2  | 34.4  | 34.6  |
| Maximum Power Current- $I_{MPP}$ (A) | 17.31  | 17.35 | 17.40 | 17.44 | 17.49 |
| Open Circuit Voltage- $V_{OC}$ (V)   | 40.9   | 41.1  | 41.3  | 41.5  | 41.7  |
| Short Circuit Current- $I_{SC}$ (A)  | 18.37  | 18.42 | 18.47 | 18.52 | 18.57 |
| Module Efficiency $\eta_m$ (%)       | 20.7   | 20.8  | 21.0  | 21.2  | 21.4  |

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5.  
\*Measuring tolerance:  $\pm 3\%$ .

**ELECTRICAL DATA (NOCT)**

|                                      |       |       |       |       |       |
|--------------------------------------|-------|-------|-------|-------|-------|
| Maximum Power- $P_{MAX}$ (Wp)        | 443   | 447   | 451   | 454   | 458   |
| Maximum Power Voltage- $V_{MPP}$ (V) | 31.5  | 31.7  | 31.9  | 32.0  | 32.2  |
| Maximum Power Current- $I_{MPP}$ (A) | 14.05 | 14.09 | 14.13 | 14.18 | 14.22 |
| Open Circuit Voltage- $V_{OC}$ (V)   | 38.5  | 38.7  | 38.9  | 39.1  | 39.3  |
| Short Circuit Current- $I_{SC}$ (A)  | 14.81 | 14.85 | 14.88 | 14.92 | 14.96 |

NOCT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s.

**MECHANICAL DATA**

|                      |                                                                                                                                                                           |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Solar Cells          | Monocrystalline                                                                                                                                                           |
| No. of cells         | 120 cells                                                                                                                                                                 |
| Module Dimensions    | 2172×1303×35 mm (85.51×51.30×1.38 inches)                                                                                                                                 |
| Weight               | 30.9 kg (68.1 lb)                                                                                                                                                         |
| Glass                | 3.2 mm (0.13 inches), High Transmission, AR Coated Heat Strengthened Glass                                                                                                |
| Encapsulant material | EVA                                                                                                                                                                       |
| Backsheet            | White                                                                                                                                                                     |
| Frame                | 35mm(1.38 inches) Anodized Aluminium Alloy                                                                                                                                |
| J-Box                | IP 68 rated                                                                                                                                                               |
| Cables               | Photovoltaic Technology Cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ),<br>Portrait: 280/280 mm(11.02/11.02 inches)<br>Landscape: 1400/1400 mm(55.12/55.12 inches) |
| Connector            | MC4 EV02 / TS4*                                                                                                                                                           |

\*Please refer to regional datasheet for specified connector.

**TEMPERATURE RATINGS**

|                                          |                                |
|------------------------------------------|--------------------------------|
| NOCT(Nominal Operating Cell Temperature) | 43°C ( $\pm 2^\circ\text{C}$ ) |
| Temperature Coefficient of $P_{MAX}$     | - 0.34%/°C                     |
| Temperature Coefficient of $V_{OC}$      | - 0.25%/°C                     |
| Temperature Coefficient of $I_{SC}$      | 0.04%/°C                       |

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

**MAXIMUM RATINGS**

|                         |                |
|-------------------------|----------------|
| Operational Temperature | -40~+85°C      |
| Maximum System Voltage  | 1500V DC (IEC) |
| Max Series Fuse Rating  | 30A            |

**WARRANTY**

|                                      |
|--------------------------------------|
| 12 year Product Workmanship Warranty |
| 25 year Power Warranty               |
| 2% first year degradation            |
| 0.55% Annual Power Attenuation       |

(Please refer to product warranty for details)

**PACKAGING CONFIGURATION**

|                                      |
|--------------------------------------|
| Modules per 40' container: 512pieces |
|--------------------------------------|

# SUN2000-185KTL-H1

## Smart String Inverter



9  
MPP Trackers



>99.0%  
Max. Efficiency



String-level  
Management



Smart I-V Curve  
Diagnosis Supported



MBUS  
Supported



Fuse Free  
Design

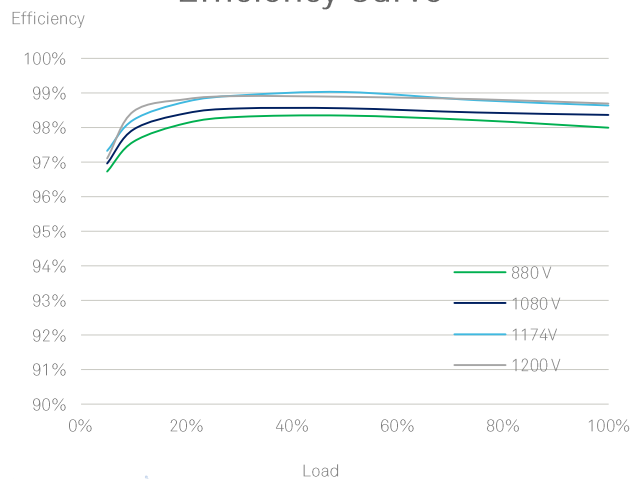


Surge Arresters for  
DC & AC

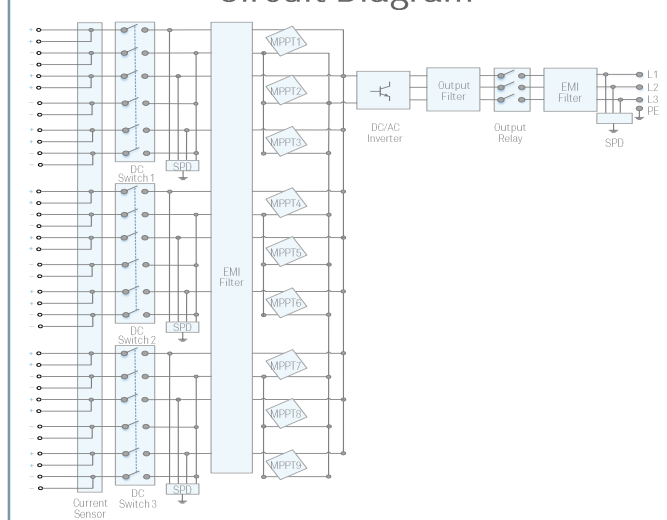


IP66  
Protection

### Efficiency Curve



### Circuit Diagram



# Technical Specifications

| Efficiency                                        |                                                                                           |
|---------------------------------------------------|-------------------------------------------------------------------------------------------|
| Max. Efficiency                                   | 99.03%                                                                                    |
| European Efficiency                               | 98.69%                                                                                    |
| Input                                             |                                                                                           |
| Max. Input Voltage                                | 1,500 V                                                                                   |
| Max. Current per MPPT                             | 26 A                                                                                      |
| Max. Short Circuit Current per MPPT               | 40 A                                                                                      |
| Start Voltage                                     | 550 V                                                                                     |
| MPPT Operating Voltage Range                      | 500 V ~ 1,500 V                                                                           |
| Nominal Input Voltage                             | 1,080 V                                                                                   |
| Number of Inputs                                  | 18                                                                                        |
| Number of MPP Trackers                            | 9                                                                                         |
| Output                                            |                                                                                           |
| Nominal AC Active Power                           | 175,000 W @40°C, 168,000 W @45°C, 150,000 W @50°C                                         |
| Max. AC Apparent Power                            | 185,000 VA                                                                                |
| Max. AC Active Power (cosφ=1)                     | 185,000 W                                                                                 |
| Nominal Output Voltage                            | 800 V, 3W + PE                                                                            |
| Rated AC Grid Frequency                           | 50 Hz / 60 Hz                                                                             |
| Nominal Output Current                            | 126.3 A @40°C, 121.3 A @45°C, 108.3 A @50°C                                               |
| Max. Output Current                               | 134.9 A                                                                                   |
| Adjustable Power Factor Range                     | 0.8 LG ... 0.8 LD                                                                         |
| Max. Total Harmonic Distortion                    | < 3%                                                                                      |
| 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, Bluetooth/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)                      | 84 kg (185.2 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                                                                           |
| Standard Compliance (more available upon request) |                                                                                           |
| Certificate                                       | EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683                  |
| Grid Code                                         | IEC 61727, P.O. 12.3, RD 1699, RD 661, RD 413, RD 1565, RD 1663, UNE 206007-1, UNE 206006 |





# SkySmart

Single Row Double Performance

## SkySmart Product Features

1

The industrial  
N-S slope  
record **20%**



2

Only **200**  
foundations/MW



3

Apply to  
✓ bifacial module  
✓ regular module



4

Self-powered system  
with Li-ion battery  
as a backup



5

1st tracker supplier  
to apply LoRa-wireless  
communication  
technology



6

Double pitch risk-free  
drive-through  
module cleaning



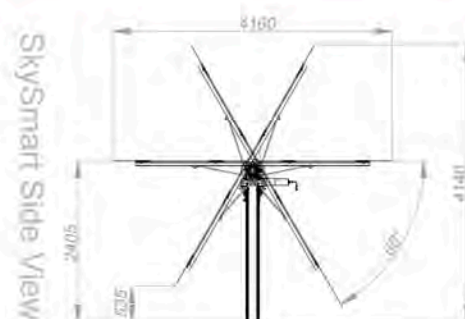


## SKYSMART TRACKER SPECIFICATIONS

|                          |                                                        |
|--------------------------|--------------------------------------------------------|
| Tracking Type            | Independent Horizontal Single Axis Tracker             |
| Tracking Range           | Up to 120°(±60°)                                       |
| Driving System           | One Slewing Gear, 24VDC Motor                          |
| Modules per Tracker      | Up to 90 modules per tracker                           |
| System Voltage           | 1,000 Volt or 1,500 Volt                               |
| Ground Coverage Ratio    | Fully configurable by customer, typical range 33%-55%  |
| Foundation Options       | Ramming/Pre-drilling/Concrete Piles/Screw Pile         |
| Terrain Adaption         | Up to 20% N-S Slope                                    |
| Structure Material       | Hot Dipped Galvanized/Pre-Galvanized Steel             |
| Power Supply             | Self-powered PV series                                 |
| Daily Energy Consumption | Typical 0.08kWh                                        |
| Standard Wind Design     | 105mph(47m/s) per ASCE7-10, higher wind load available |
| Wind Protection          | Stow when wind speed > 18m/s                           |
| Module Supported         | Most commercially available                            |
| Operation Temperature    | -30°C to 60°C                                          |

## ELECTRONIC CONTROLLER SPECIFICATIONS

|                   |                                                     |
|-------------------|-----------------------------------------------------|
| Control System    | 1 Controller per 3 Trackers                         |
| Control Algorithm | Astronomical Algorithms + Tilt Sensor<br>Close Loop |
| Tracking Accuracy | $\leq \pm 2^\circ$                                  |
| Backtracking      | Yes                                                 |
| Communication     | RS 485 cable/ LoRa wireless                         |
| Night Position    | Yes                                                 |



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