

Comune di : ROTELLO
Provincia di : CAMPOBASSO
Regione : MOLISE



PROPONENTE

PODINI S.P.A.

Via Lattuada, 30 - 20135 MILANO (MI)
C.F. e P. IVA IT02246400218

OPERA

PROGETTO DEFINITIVO

IMPIANTO DI PRODUZIONE DI ENERGIA ELETTRICA DA FONTE
RINNOVABILE AGRIVOLTAICA DI POTENZA NOMINALE PARI A
43.298,50 kWp CON SISTEMA DI ACCUMULO INTEGRATO E RELATIVE
OPERE DI CONNESSIONE ALLA RETE RTN

"SOLARE ROTELLO - PIANO DELLA FONTANA"

OGGETTO

TITOLO ELABORATO :

SCHEMA TECNICA TRACKER

DATA : 22 febbraio 2024

N°/CODICE ELABORATO :

SCALA : -----

Tipologia : EL (ELABORATI)

EL 015

I TECNICI

PROGETTISTI:



EDILSAP s.r.l.
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Ing. Fernando Sonnino
Project Manager

TIMBRI E FIRME:



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202202141

Emissione per Istanza VIA E A.U.

EDILSAP srl

Ing. Fernando Sonnino

Ing. Fernando Sonnino

N° REVISIONE

Cod. STMG

OGGETTO DELLA REVISIONE

ELABORAZIONE

VERIFICA

APPROVAZIONE



iTracker-WL: catching all the sun

iTracker WL – the intelligent tracker – maximizes the output of your PV power plant, thanks to its all-around performance and Soltigua's customer-tailored solutions



soltiguaTM
solar tracking since 2007

Track and field: iTracker-WL's decathlon

"The decathlon includes ten separate events and they all matter. You can't work on just one of them."

Dan O'Brien - Olympic gold medal



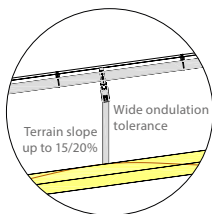
Track Horizontal single-axis trackers increase the performance of PV power plants by up to 30% with a limited increase of the investment. By following the sun throughout the day PV trackers maximise power generation. They also better match the grid demand profile, which peaks in the afternoon, and contribute to a smarter and more sustainable energy system.

Field To maximize the actual PV output in the field, trackers must deliver on several dimensions during all phases of the PV project life: design, installation, operation and maintenance. Challenges range from field configuration to need for local content, from local labour skills to weather conditions, from budgetary constraints all the way down to asset management for a long lifespan.

iTracker's decathlon Effective tracker performance requires all-around achievements and attention to detail, like a decathlete, who prepares for multiple challenges at the same time. This is iTracker's intelligence: delivering everywhere it matters!

01 Site Adaptability

The most flexible tracker on the market



- North South slopes up to 15/20%; wide terrain undulation tolerance
- Independent row tracking enables more flexible layouts
- Alignment is possible in any direction to adapt to site constraints
- Project-optimized tracker design

02 Wind Management

Holistic approach to wind loads



- Wind tunnel tested, including dynamic analysis
- Intelligent stowing position along the array avoids wind galloping
- Soltigua's patented bearing concept includes a torsional limiter
- An embedded damping factor avoids the addition of external dampers



03 Outdoor Resistance Ready for the harshest environment



- Patented rolling bearing outperforms the sliding one against dust
- IP 65 slew drive and IP66 tracker panel against moisture, dust and molten salt
- Broad range of working temperatures from -20°C to +50°C
- HDG metal structure and components with advanced coatings (Zn-Al-Mg)

04 Wireless Operation Sub GHz radio architecture for optimal results



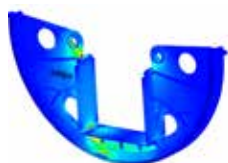
- Long range communication (250m)
- Low power consumption and long life batteries (up to 5+ days of autonomy)
- Dedicated PV module for battery charge
- Broadcast messages for rapid communication to trackers

05 Endurance & Reliability Designed and field tested for 50-year service



- Patented balanced design reduces mechanical stress on structure and motor
- Proprietary rugged printed control board can resist temperatures from -20° to +80°C
- Drive and bearing components tested on the field for an equivalent 50-year service
- Optional wide charging-range rugged Li-FeO4 batteries

06 Advanced Design Integrated mechanical engineering



- Tracking precision, balanced design and broad rotation range increase yield by up to 1,5%
- Engineering platform leverages Soltigua's experience in complex CSP collectors
- 3D CAD modelling enables rapid virtual prototyping and in depth analysis
- FEM (Finite Elements) analysis performed for various load cases on critical components



07 Intelligent Monitoring **Monitoring tailored to specific customer needs**



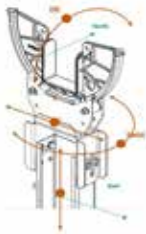
- Individual monitoring and control of each tracker
- Soltigua's cloud-based SCADA shows solar array status at a glance, in an intuitive manner
- Single tracker status can also be detected, including warnings and alerts
- Real time and historical data available

08 Minimized O&M **Minimized operating cost for the pv array**



- Proprietary NFC app to support fast commissioning and seamless O&M
- Maintenance position can be set tracker by tracker
- Simplified cleaning and vegetation management: no obstacles between rows
- Continuous table is already optimized for autonomous robot cleaning

09 Ease of installation **Fast, simple and user friendly installation**



- Highest installation tolerances on the market avoid repair work at construction site
- No specialized tool is required during installation: no welding, no drilling
- Installation manual available to partners and clients
- Installation courses in Soltigua's headquarters and on project sites
- Few bolt types to simplify installation

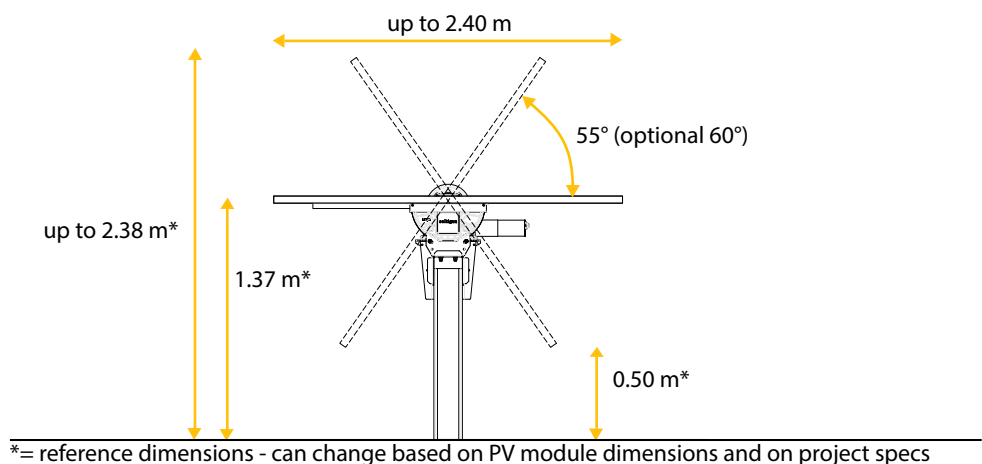
10 Certified Quality **100% compliant to state-of-the-art standards**



- CE marked according to the Machinery Directive 2006/42/UE
- Structural design compliant with Eurocodes EN 1991-1-1, EN 1991-1-3, EN 1991-1-4
- Electrical design as per EU Directives 2014/35/UE (LV) and 2014/30/UE (EMC)
- Certified by TUV Sud according to ISO 9001:2015 and 14001:2015
- IEC 62817:2014 certified

Technical features

Tracking type	Independent single axis horizontal tracker; Any tracker alignment possible (ideally along North-South direction);
Tracking algorithm	Accurate astronomical formulas; tracking precision = 1.0°. Individually customized 3D backtracking to follow terrain undulations
Rotation range	Standard: $\pm 55^\circ$; optional $\pm 60^\circ$ also available
Ground cover ratio	Freely configurable by customer (between 34% and 50%)
PV Module compatibility	Framed modules; all major brands
Module mount	1 module portrait; 2 modules landscape
Drive system	1 Independent slew drive per tracker
Peak power per tracker	Up to 45 kWp per tracker (with 500Wp modules)
N° of Module per tracker	Up to 90 72-cell modules (1500 V)
PV array voltage	1000 V or 1500 V
Power supply	Self powered with dedicated small PV module and Li-FePO ₄ battery
Communication	Soltigua wireless radio network or dedicated RS485 serial communication
Monitoring	Local control via SCADA; remote control available
Foundation type	Standard: driven piles; compatible also with: shallow foundation (concrete blocks); ground screws
Wind resistance (Eurocodes)	In operation: up to 80 km/h in any position; Stow position: up to 200+ km/h in stow position
Snow resistance	Up to 1'500 N/m ² ; depending on tracker version
Tracker stowing time	≤ 6 min; 3.5 min on average
Installation tolerances	North South: ± 50 mm; East-West: ± 40 mm standard pile; ± 28 mm drive pile; Height tolerance: ± 45 mm; Pile tilt: $\pm 1^\circ$; Twist: 15°
Ground slope	Max 15% slope in longitudinal direction (North- South); optional max 20% also available Any slope in transversal direction (East-West) [max 70% local slope for rotation clearance] Local deviation from theoretical ground profile is ± 150 mm
Installation method	Engineered for fast and easy assembly; no welding nor drilling required on site
Materials	HDG and ZM construction steel; maintenance free bearings; triennial maintenance for slew drive
Certifications/Compliance	CE 2006/42/UE; Eurocodes EN1991-1-1/3/4; LV 2014/35/UE; EMC 2014/30/UE ; ISO 9001-2015 and ISO 14001-2015; IEC 62817:2017
Warranty	Structure: 10 years; Drive, batteries and electronics: 5 years; Corrosion: 30 years in C2 atmospheric environment; Warranty extension available
Earthing	The rotating structure is connected to the ground through its drive pile



Dedicated global service



Project engineering - Tailored to the needs of each individual plant

- Choice of optimal trackers based on project features (PV modules, land, wind etc.)
- Detailed layout development already during proposal
- Optimization during basic engineering



Scope of supply - Flexible battery limits for goods and services

- On-site presence adapted to customer preference: from simple supervision to full turn-key
- If wished, selected structural components can be sourced locally by the client



Project management - Reliable network across 4 continents

- 100+ year of cumulative experience in project management
- Extensive network of local partners for seamless client service
- Projects successfully delivered and commissioned across 4 continents



Post sale assistance - Guaranteed support - online and onsite

- 99% availability guarantee included as sales contract standard
- Suitable stock of spare parts supplied and maintained available on site
- Remote monitoring service available upon request



Training - Supporting continuous learning during the entire life of the plant

- Dedicated courses at Soltigua's headquarters for construction partners
- On-site sessions during erection and commissioning phase
- Comprehensive manuals for detailed reference during O&M

A unique product portfolio



Soltigua is the only PV tracker supplier with a 10-year experience in engineering and manufacturing concentrating collectors for solar heat up to 320°C. By manufacturing both parabolic troughs and Fresnel collectors, Soltigua can offer the most suitable solution to any solar thermal installation.

For more information and quotes write to sales@soltigua.com



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