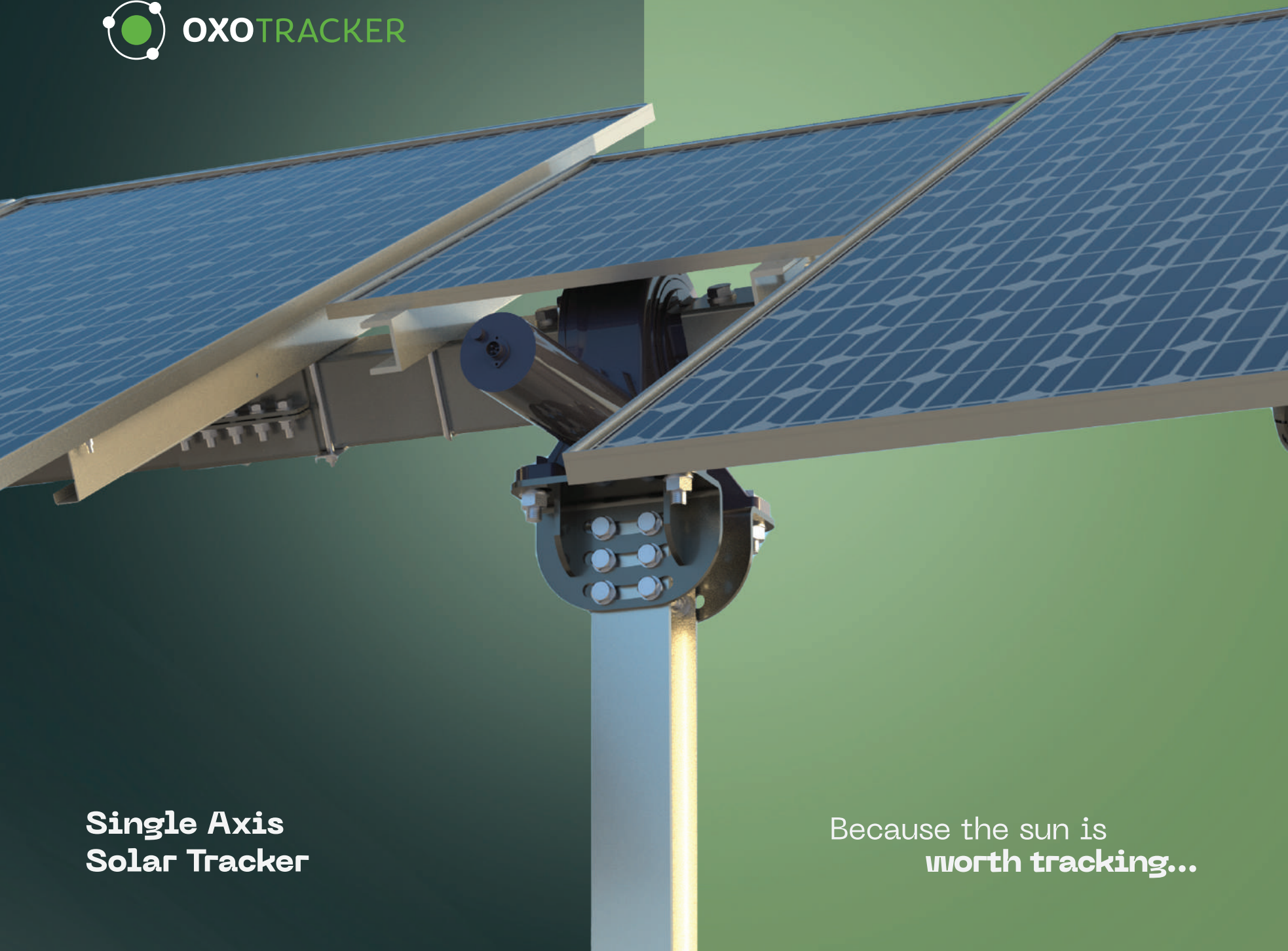
OXOTRACKER

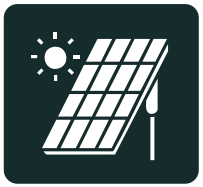


Single Axis Solar Tracker

Because the sun is **worth tracking...**

WHY TRACKER

Why should I choose a solar tracking system instead of a fixed system for my investment?



You increase your energy production by 15% to 25%

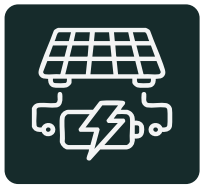
Single-axis tracking systems follow the sunlight throughout the day, keeping the panels at the optimum angle for longer period. This means more energy production compared to fixed systems.

You will have a more balanced production profile

The energy distribution is more balanced as it also provides higher production in the morning and evening hours during the day. In other words, energy generation has a more **stable curve instead of a sharp peak and fall at noon.** All around the world, electricity market regulators are increasingly focusing on the balancing/imbalance issue. Measures can be taken against the inflated generation curve, especially at midday. In this context, a balanced generation profile provides a more protected position for your investment.

Faster return on investment (ROI) becomes possible

Solar tracking systems provide a faster return on investment (ROI) for your investment. Compared to the fixed system, the solar tracking system both shortens the return-on-investment period and provides more profit every year. In other words, the increase in the initial investment cost turns into a long-term and sustainable advantage, making the investor happy. It is no coincidence that solar tracking systems are used in the majority of large-scale SPP projects in the global market.



With a solar power plant with storage (SPP + Storage), tracker solution perfectly suits your investment.

Combining a single-axis solar tracking system **with a solar energy storage system** provides many advantages by optimizing energy production and utilization. Solar tracking systems generate more electricity in the morning and evening hours. While with stationary systems the production curve peaks at noon, with solar tracking systems the production is better spread over the morning and evening hours.

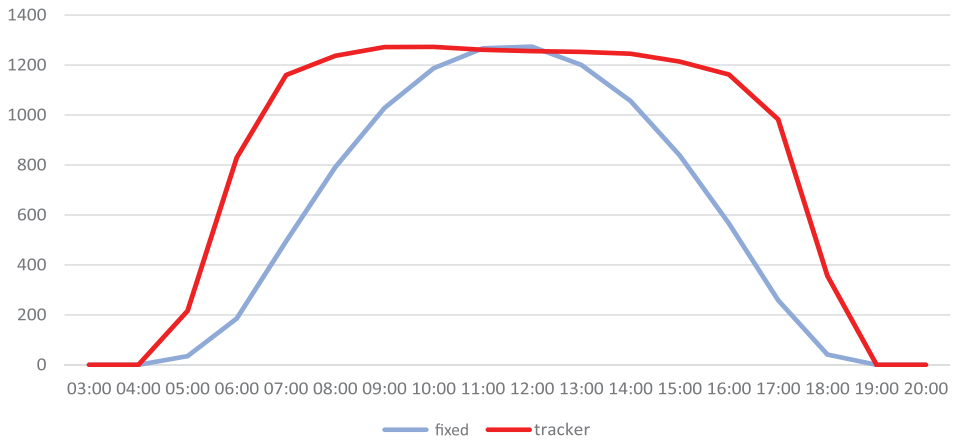
SAMPLE FIELD STUDY

The tracker system begins generating power earlier in the morning (06:00) and continues afternoon (until 19:00), thanks to its ability to follow the sun throughout the day.

FIXED SYSTEM AND TRACKER COMPARISON

Longer Production Window

In the graph, the **tracker system** (shown in red) clearly demonstrates superior performance over the **fixed system** (shown in blue).



Longer Production Window
(06:00–09:00 | 16:00–19:00)

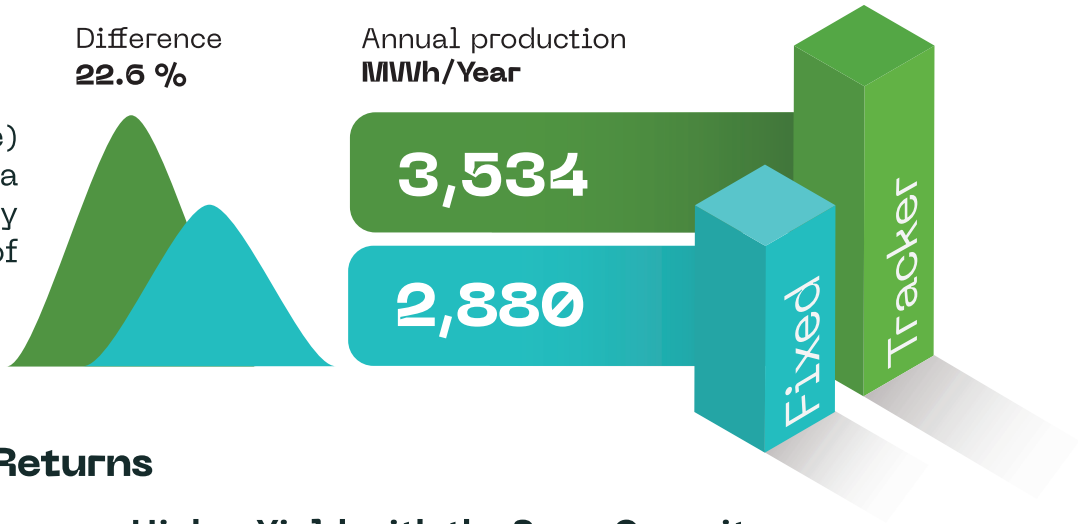
The tracker system begins **generating power earlier** in the morning (06:00) and **continues afternoon** (until 19:00), thanks to its ability to follow the sun throughout the day.

Higher & More Stable Output
(10:00–14:00)

While the fixed system peaks around noon (10:00–14:00), the tracker maintains a **longer, flatter power plateau,** resulting in more consistent energy output during peak sun hours.

Annual Production Advantage

A case study from a 1,516 kWp (1,200 kWe) solar power plant in **Van, Türkiye** revealed a remarkable 22.6% increase in annual energy output when using tracker system instead of fixed one.



Optimized Investment, Maximized Returns

Lower Upfront Costs

Thanks to higher efficiency, tracker systems can deliver the same energy output as fixed systems **using fewer PV panels.** This translates into significant savings on **materials, mounting structures, and labor** during installation.

Higher Yield with the Same Capacity

Alternatively, a tracker system with the same installed capacity as a fixed one can generate **15% to 25% more energy annually** — directly increasing revenue and shortening the **return on investment (ROI) period.**

WHY OXOTRACKER

- **Safe Against Harsh Weather Conditions**
- **Low Maintenance Cost, High Durability**
- **Compatible with Agro PV Systems**
- **Conformite European**
- **Remote Monitoring and Smart Control**
- **Flexible Solutions for Diverse Needs**
- **IEC 62817 Certified**
- **Easy Installation and Modular Structure**
- **Torque-Retaining Lock Bolt Panel Connection**
- **Tübitak Supported**

Why IEC 62817 Certification Matters

IEC 62817 is the globally recognized benchmark for solar tracking systems and it's much more than just a certificate. It's a guarantee.

This certification confirms that a system meets international standards for mechanical durability, tracking accuracy, and resistance to environmental conditions.

Systems are subjected to rigorous, pass/fail testing procedures designed to filter out unreliable designs and highlight those built to last.

Torque-Loss-Free Panel Mounting System

The first part of the solar tracking system to encounter wind in the field is the solar panels. The way the panels are mounted is crucial to the system's overall integrity. OxoTracker utilizes special lockbolt fasteners for panel mounting, which eliminate the need for lifetime torque control. A lockbolt is a two-piece fastener engineered to deliver high strength and superior vibration resistance. It consists of a hardened metal pin and a metal collar that fits tightly over the pin. During installation, with the help of a special tool, the collar is compressed (swaged) into the grooves of the pin, creating a metal-to-metal contact. This design ensures that the connection remains secure, even in environments with intense vibration.

Advantages of the OxoTracker Panel Connection System

High Vibration Resistance

Thanks to the metal-to-metal contact, the fastener is resistant to loosening caused by vibration.

High Shear and Tensile Strength

The design of the pin and the tight fit of the collar enable the connection to withstand high shear and tensile forces.

Fast Installation

Using specialized tools, LockBolts can usually be installed in less than 2 seconds, significantly reducing installation time.

High Level Security Against Theft

It is not possible to remove the panels without special cutting apparatus or industrial strength cutters. In this way, your investment is effectively protected.

Set It Once, Trust It Forever

Swaged Lockbolt technology guarantees a rock-solid, vibration-proof connection in any environment.

Ready for the Storm? Protect Your Investment with Confidence.

At high wind speeds, your system's stability is everything. That's why OxoTracker integrates advanced CFD (Computational Fluid Dynamics) and structural analysis into every design. CFD optimizes aerodynamics to minimize wind drag, while structural analysis guarantees unmatched strength and durability. The result? Lower maintenance, higher energy yield, and a solar tracking system that stands the test of time. Invest smart. Stay safe. Perform better.

Solar tracking systems have to be designed to withstand different variables such as snow, hail and storms. The most critical of these is wind loads?

Sudden Wind Impacts (Gust Load)

Rapid changes in direction and sudden winds can destabilize the tracking system.

High-frequency vibrations (flutter, vortex shedding) can occur and this can cause fatigue in mechanical components.

Snow and Hail

In case of snow and hail, the system provides protection by switching to the safe (stow) position to prevent damage to the panels.

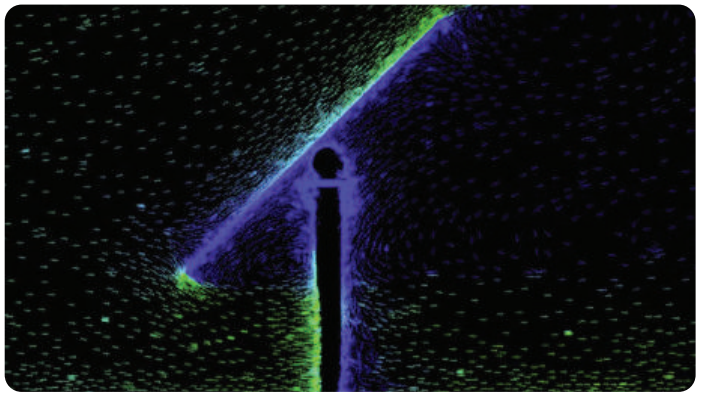
Strong Wind (Storm & Hurricane)

Winds over 60-100 km/h can place significant loads on the tracker structure.

Panels may be damaged if the stow positions are not set correctly.

Strong in All Conditions!

Storms, snow, hail, extreme heat or cold... OxoTracker meets every challenge and delivers maximum efficiency!



During the development process of the OxoTracker system, long-term and detailed CFD + structural analyses were carried out. Thanks to this rigorous approach, OxoTracker is a safer, more efficient and long-lasting solar tracking system.

Based on detailed analysis, dozens of different combinations were tried. In this way, an optimum balance between safety and cost was achieved.

Driven by Innovation, Built for Performance

OxoTracker: Where Engineering Meets Efficiency

OxoTracker is more than a solar tracking system — it's the outcome of high-level R&D, smart engineering, and rigorous field testing. Developed with the support of TÜBİTAK (The Scientific and Technological Research Council of Türkiye) and in collaboration with leading research institutions, OxoTracker is built to deliver top performance in real-world conditions.

Proven in the Field Agri-PV Excellence

OxoTracker has been selected for Türkiye's most prominent agrivoltaic (Agri-PV) projects, including installations under the leadership of ODTÜ-GÜNAM (Center for Solar Energy Research and Applications at Middle East Technical University) a highly respected institution both nationally and internationally.

From open-field agricultural land in Ayaş to apricot orchards in Kayseri, our tracking systems support solar energy production alongside crop cultivation helping shape a more sustainable future for agriculture.

Why OxoTracker in Agri-PV?

- TÜBİTAK backed innovation and reliability
- Validated by top-tier research institutions like ODTÜ-GÜNAM
- Proven success in real agrivoltaic scenarios
- Low maintenance, high performance, flexible design

When agriculture and solar power grow together, OxoTracker leads the way with science, strength, and sun-tracking precision.

www.oxotracker.com

OXOTRACKER

ODTÜ GÜNAM
CENTER FOR SOLAR ENERGY RESEARCH AND APPLICATIONS

ERCİYES ÜNİVERSİTESİ
1978

www.oxotracker.com

OXOTRACKER

OxoTracker — Flexible Power Options for Every Scenario

Whether you're operating in remote locations or structured environments, OxoTracker adapts to your needs with flexible, high-performance power solutions — self or AC powered.

Self-Powered, Self-Sufficient. Smart.

- Innovative power unit fully powered by solar energy — no external source required.
- Purpose-built electronic components designed specifically for solar tracking applications.
- Compact and integrated directly with the solar panel structure
- Engineered to perform in extreme temperatures — from scorching heat to freezing cold
- AI-powered predictive maintenance and real-time monitoring via an integrated online platform

Need an Alternative?

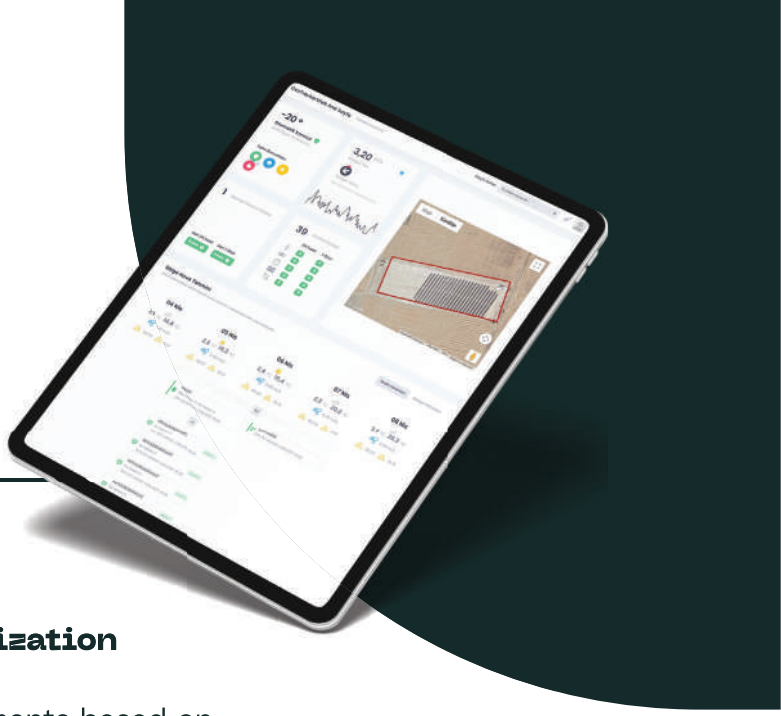
Choose Uninterrupted Performance with AC

In cases where self-powered systems aren't ideal, OxoTracker offers a highly efficient AC-powered unit to ensure smooth and consistent operation.

- Advanced energy management capabilities
- Uninterrupted, dependable performance
- Redundant power configuration for maximum uptime and reliability

OxoTracker is Just a Click Away

Take full command of your solar tracking system — anytime, anywhere. **OxoTracker's web-based platform** offers real-time control, intelligent monitoring, and automated optimization to help you **maximize efficiency** and **minimize downtime.**



Real-Time Monitoring & Live Tracking

- 24/7 access to all components in the field from anywhere in the world
- Secure, role-based user access ensures controlled and authorized system management

Remote Control & Automated Optimization

- Dynamic tracking adjustments based on weather conditions and real-time system data
- Full control whether managing the entire site or a single tracker, all from a single interface

Preventive Maintenance & Failure Prediction

- Data Logging & Analysis: Continuous monitoring of critical components like the slew drive, motor, and battery.
- Historical performance trends analyzed to detect signs of wear or irregularities

Early Failure Detection

- Predictive algorithms identify abnormal patterns before failures occur. Proactive maintenance alerts reduce costs, prevent breakdowns, and extend system lifespan
- Stay ahead of problems with smart analytics and early warnings

Mobile & Web Integration

- iOS & Android app access for on-the-go system management
- Seamless API connectivity for integration with your existing platforms

Product Specifications

Basic Features

FEATURE	DESCRIPTION
POLE INSTALLATION	Ramming, drilled, or concrete base
PV MODULE COMPATIBILITY	All commercial PV modules
TERRAIN SLOPE	South–North Max 14°, East–West unlimited
GROUND COVERAGE RATIO (GCR)	Recommended: 35%, Allowed: 75%
PROTECTION MODE	Storm, snow, and hail protection mode
COMMUNICATION	Wireless ZigBee
POWER SUPPLY	Oxo Battery or AC Supply
SHADING AVOIDANCE	Oxo Backtracking Algorithm
CONTROL ALGORITHM	Astronomical
TRACKING METHOD	Single-axis (east–west)
TRACKING RANGE	±60° – ±80° (for agricultural applications)
PANEL LAYOUT	Vertical, single row
OPERATING TEMPERATURE	–40°C to +85°C
PROTECTION CLASS	IP65
POWER CONSUMPTION	< 0.2 kW
DRIVE SYSTEM	Slew Drive
ROW LENGTH	Project-specific design (Max. 78 m)
MONITORING AND CONTROL	Web and Mobile Application Based

Warranty

COMPONENT	DURATION
STRUCTURAL COMPONENTS	10 Years
ELECTRONIC COMPONENTS	5 Years
SLEW DRIVE	5 Years

Quality

FEATURE	DESCRIPTION
CERTIFICATIONS	IEC 62817, CE, ISO
TERRAIN SLOPE	South–North Max 14°, East–West unlimited
GROUND COVERAGE RATIO (GCR)	Recommended: 35%, Allowed: 75%
PROTECTION MODE	Storm, snow, and hail protection mode


Aka SPP
Isparta
1.2 MWp


Tunteks SPP
Karaman
1 MWp


Kolunsağ GES
Kastamonu
1.2 MWp

Sendreni SPP
Romania

5.2 MWp

Independenta SPP
Romania

2.7 MWp

www.oxotracker.com

OXOTRACKER

Because the sun is **worth tracking...**

Smart and Online System

Flexible and Adaptable

Easy Installation

Because the sun is
worth tracking...

www.oxotracker.com

+90 312 235 55 23 info@oxotracker.com

Alcı OSB 2007. Cd. No:2 06909
Sincan/Ankara/Türkiye