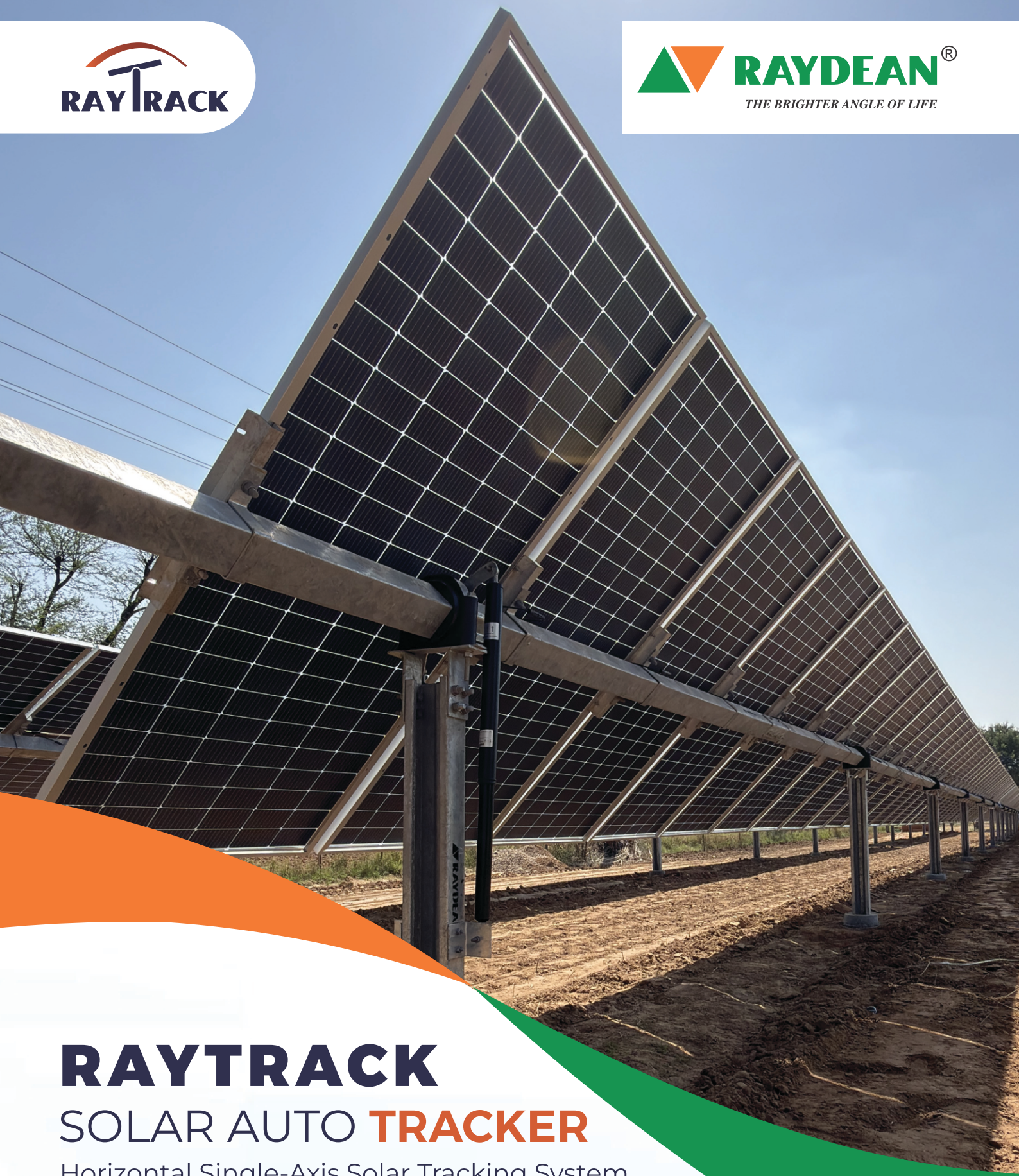
RAYTRACK

RAYDEAN®

THE BRIGHTER ANGLE OF LIFE



RAYTRACK

SOLAR AUTO TRACKER

Horizontal Single-Axis Solar Tracking System

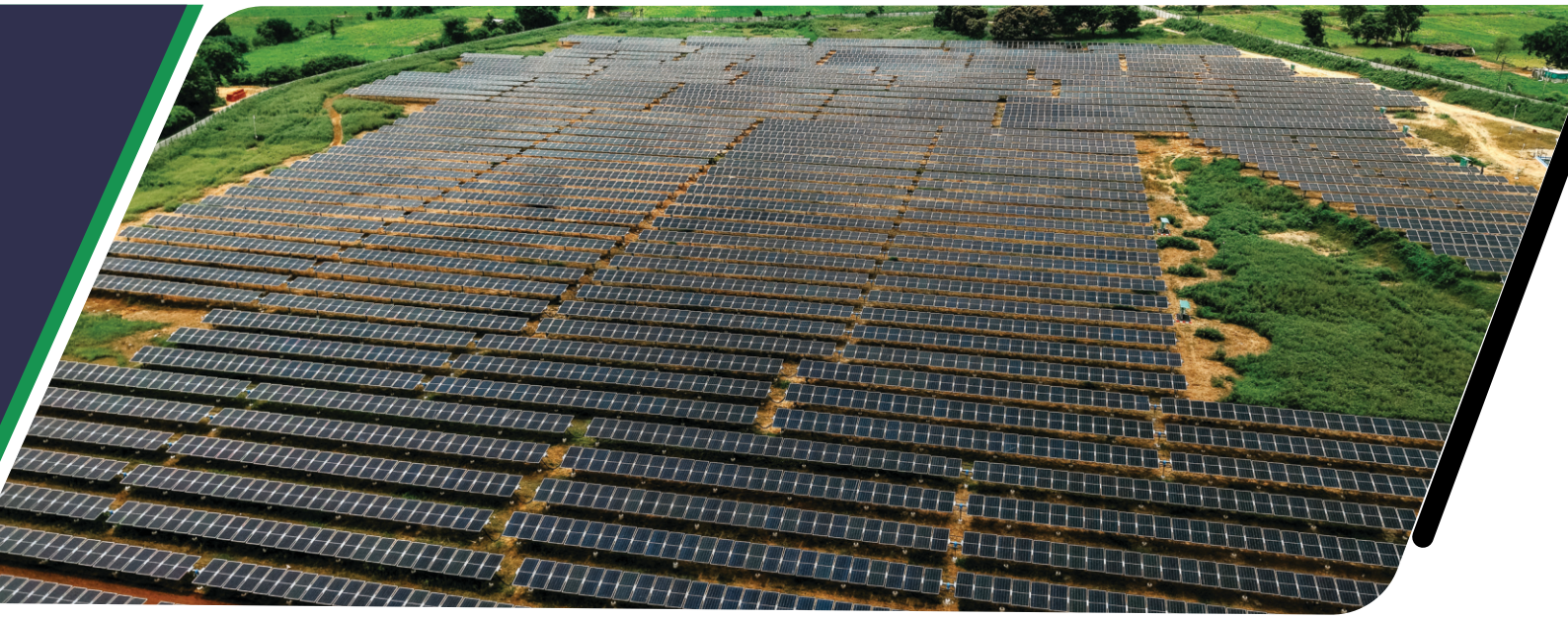
Designed for Utility-Scale & Large Ground-Mounted Solar Projects

SOLAR AUTO TRACKER

East-to-West Horizontal Single-Axis Solar Tracking System

At Raydean, we design, engineer, and manufacture Raytrack Solar Auto Tracking Systems for utility-scale and large ground-mounted solar power projects. Designed to follow the sun's movement from east to west, Raytrack adjusts the orientation of solar modules throughout the day to optimize sunlight capture and enhance energy generation.

Powered by a 24V DC motor-driven tracking mechanism, Raytrack combines precise movement with robust structural engineering. Its RCC pile foundation system provides a stable base, with designs customized to site conditions, terrain profiles, loading requirements, and project layouts.



KEY HIGHLIGHTS

- East-to-West Single-Axis Tracking Technology
- Multiple Corrosion Protection Options
- 24V DC Motor-Driven Operation
- Precision Engineering and Manufacturing
- Customized Structural Design

10 MWp+ of Solar Auto Tracker Structures Successfully Installed

Raytrack by Raydean combines engineering excellence, structural reliability, and advanced tracking technology to support large-scale renewable energy projects.

RAYTRACK PRODUCT OVERVIEW

At Raydean, we design, engineer, and manufacture **Raytrack -** an East-to-West Horizontal Single-Axis Solar Tracking System for utility-scale and large-scale solar power projects.

Raytrack follows the sun's movement from east to west, enabling solar modules to maintain a favorable orientation for capturing solar radiation. This approach is designed to improve the utilization of available sunlight and support enhanced energy-generation potential compared with conventional fixed-tilt installations, subject to project conditions and system design.

The system combines advanced tracking technology with robust structural engineering. A DC motor-driven tracking mechanism provides controlled tracker movement, while the mechanical and structural components are engineered for smooth operation, accurate module positioning, and dependable performance.

ENGINEERING & STRUCTURAL DESIGN

Raytrack is engineered as an integrated solar mounting and tracking solution, with the structural framework designed to securely support solar modules while maintaining stability during continuous tracking operation.

- RCC pile foundations adaptable to site specific soil conditions, terrain characteristics, loading requirements, and project layouts.
- Flexible configurations for different module arrangements and plant capacities.
- Precision-fabricated mechanical and structural components for reliable movement and stability.
- Project-specific engineering based on site conditions, module specifications, tracker configuration, foundation requirements, and project parameters.

CORROSION PROTECTION & DURABILITY

Depending on project requirements and environmental conditions, **Raytrack** structures can be supplied with hot-dip galvanized (HDG), pre-galvanized, or ZAM-coated steel finishes. These protective finishes are designed to enhance corrosion resistance and support long-term structural performance in outdoor environments.

INTEGRATED RAYDEAN SOLUTION

Raydean's approach extends beyond the supply of structures and components. The solution covers engineering, structural design, detailing, precision manufacturing, fabrication, corrosion protection, and project-specific customization.

- Engineering and structural design
- Detailed project-specific configuration
- Precision manufacturing and fabrication
- Corrosion-protection solutions
- Installation and commissioning support
- Project-specific customization

With 10 MWp+ of Solar Auto Tracker Structures successfully installed, Raydean brings practical project experience and manufacturing expertise to the solar tracking segment.

10 MWp+
Solar Auto Tracker Structures installed

APPLICATIONS & PROJECT SUITABILITY

Raytrack is suitable for utility-scale solar power plants and large ground-mounted solar installations where efficient land utilization, optimized solar exposure, structural reliability, high energy yield, and long-term performance are important considerations.

- Utility-scale solar power plants
- Large ground-mounted solar installations
- Projects requiring adaptable tracker layouts and site configurations
- PM-KUSUM projects
- Projects where land utilization and solar exposure are important considerations

RAYTRACK
DESIGN SPECIFICATION

Specially configured for PM-KUSUM projects, **Raytrack** combines robust structural engineering, automated tracking, corrosion protection, and flexible site adaptability for reliable long-term performance.

PARAMETER AND SPECIFICATION

TRACKING TYPE
East-to-West Horizontal Single-Axis Tracker

MODULE ORIENTATION
1P configuration for easy cleaning and maintenance

DRIVE TYPE
Independent Row Slew Drive

DC MOTOR TYPE
24V DC Motor

STRING VOLTAGE
1000V / 1500V DC

TRACKER LENGTH
Up to 90 m

MODULE CAPACITY
Up to 84 modules (depending on module dimensions)

GROUND COVERAGE RATIO (GCR)
25% to 45%

MODULE COMPATIBILITY
Commercial modules in the range of 540-720 Wp

STOW POSITION
0°; configurable based on project location and site conditions

TRACKER ROTATION RANGE
Up to ±60°

OPERATING TEMPERATURE
-10°C to +60°C

FOUNDATION TYPE
RCC Pile Foundation

ANTI-CORROSION PROTECTION
HDG and Pre-Galvanized / ZAM-Coated Steel

ALLOWABLE WIND SPEED
Up to 50 m/s (windward strategy)

SLOPE TOLERANCE
North–South slope up to 20%; ±10° adjustment capability

KEY DESIGN
FEATURES

OPTIMIZED SOLAR TRACKING
Horizontal single-axis tracking follows the sun's movement throughout the day.

FLEXIBLE SITE ADAPTABILITY
Configurable stow position, windward application, up to ±60° tracker rotation, and defined slope tolerance.

ROBUST & DURABLE CONSTRUCTION
HDG and Pre-Galvanized/ZAM-coated steel options for corrosion resistance and long-term durability.

EFFICIENT & SCALABLE CONFIGURATION
Tracker lengths of up to 180 m, supporting up to 150 modules per configuration.

PM-KUSUM READY
Specially configured for the structural and operational requirements of PM-KUSUM solar projects.

ELECTRONICS & CONTROLS

Raytrack incorporates an electronic control and tracking system designed for precise solar tracking, intelligent movement, reliable communication, and efficient system operation. The control architecture enables independent table-level control, automated backtracking, night-time stow, and tracking based on site-specific solar conditions.

PARAMETER AND SPECIFICATION

TRACKING ACCURACY
±2°

CONTROL SYSTEM
Independent Control System per Table

COMMUNICATION
Zigbee Wireless Mesh Network / Ethernet / RS485 Cable

POWER SUPPLY
300-1500V DC String Powered / 90-264V AC Powered / Lithium Battery Backup

NIGHT-TIME STOW
0° Stow Position

BACKTRACKING
Intelligent Shadow mitigation during early morning & late evening

SOLAR TRACKING ALGORITHM
Astronomical + intelligent location-based algorithms

CONTROLLER ENERGY CONSUMPTION
Approximately 0.05 kWh/day

SCADA INTEGRATION
On requirement basis

FOTA (UPGRADATION)
1-3 years

INTELLIGENT CONTROL & TRACKING

PRECISION TRACKING
Tracking accuracy of up to ±2° for precise module positioning.

INTELLIGENT BACKTRACKING
Shadow mitigation during early morning and late evening to support improved energy yield.

AUTOMATED NIGHT-TIME STOW
Automatic return to the 0° stow position during non-operational hours.

ADVANCED COMMUNICATION
Zigbee Wireless Mesh, Ethernet, and RS485 communication options.

INTELLIGENT SOLAR TRACKING
Astronomical and location-based algorithms for automated tracker movement.

ADVERSE CONDITION READINESS

Raytrack has provision for additional sensors and in-built strategies intended to support operation under adverse conditions including strong wind, snow, flood, and rain situations.

WARRANTY & RELIABILITY

COMPONENT	WARRANTY
Structural Components	15 Years
Drive Components	10 Years
Electronics & Batteries	5 Years*

* Additional 5-year paid warranty options may be available, subject to applicable terms and conditions.

KEY HIGHLIGHTS

- East-to-West Horizontal Single-Axis Tracking
- ±2° Tracking Accuracy
- Independent Table-Level Control
- Intelligent Shadow Mitigation / Backtracking
- Multiple Communication Interfaces
- Astronomical & Location-Based Tracking
- Low Controller Energy Consumption
- Up to ±60° Tracker Rotation
- Up to 90 m Tracker Length
- HDG / Pre-Galvanized / ZAM-Coated Steel Options

RAYTRACK VALUE HIGHLIGHTS

Raytrack brings together automated solar tracking, robust structural engineering, adaptable site configuration, corrosion protection, intelligent controls, and project-specific engineering to provide a scalable solar tracking solution for large-scale renewable energy projects.

RAYTRACK

RAYDEAN®

THE BRIGHTER ANGLE OF LIFE



From India's **Most Trusted Module Mounting Structure Manufacturer**

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