

Optimus Dual-Axis Tracker – Technical Dossier

(All figures metric. Unless noted, tolerances per IS / IEC standards.)

Project Samruddhi Expressway Solar Corridor (MSRDC) and other ground/roof top projects

Prepared by Optimus Mechatronics, Nashik, Maharashtra

1. Company & Manufacturing Capability

- Annual capacity: 100 MW of tracker structures (expandable)
- 95 % indigenous supply chain

2. Product Family Overview

Model code	Modules / tracker	Nominal kWp*	E-W swing	N-S swing	Controller slots / tracker
ODX-28	28	16.2	± 60 °	± 30 °	1
ODX-32	32	18.5	± 60 °	± 30 °	1
ODX-36	36	20.8	± 60 °	± 30 °	1

3. Ground-Coverage Ratio (GCR) Calculation

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Ground-Coverage Ratio (GCR) Calculation(generally around Samruddhi)

- $L_{site} = 98.2 \text{ m}$ | $W_{site} = 18.5 \text{ m}$
- $N_{panels} = 300$ | $L_{panel} = 2.38 \text{ m}$ | $W_{panel} = 1.10 \text{ m}$

Ground-Coverage Ratio (GCR) — standard definition and formula

Formal definition

$GCR = (\text{total area of all PV modules}) \div (\text{total ground area occupied by the array})$ PVsystolar-sourcing.com

Most-general formula

$$GCR = \frac{N_{panels} \times L_{panel} \times W_{panel}}{L_{site} \times W_{site}}$$

where

Symbol	Meaning
N_{panels}	number of modules in the layout
L_{panel}, W_{panel}	module length and width (m)
L_{site}, W_{site}	east-west and north-south envelope of the ground area used (m)

Therefore, we can fit:

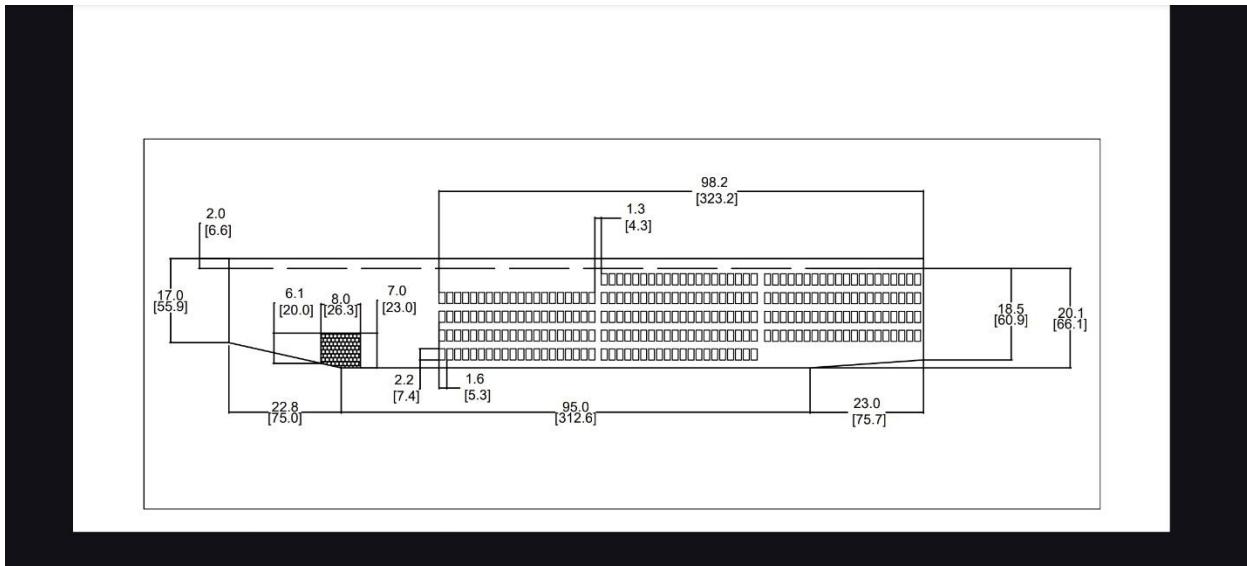
- 300 panels (580 W)
- Module size $\approx 2.38 \text{ m} \times 1.13 \text{ m} \rightarrow 2.62 \text{ m}^2$
- Ground envelope $98.2 \text{ m} \times 18.5 \text{ m} \rightarrow 1816.7 \text{ m}^2$

Hence, $\text{GCR} = (300 * 2.38 * 1.13) / (98.2 * 18.5) = 0.44$

4. Key Technical Specifications – Optimus ODX trackers

Parameter	Value
Modules / tracker	28,32,36
East–West tracking range	total 60 °
North–South tracking range	total 30 °
Tracker clearance (stow)	1.5 m
Max tracker height (tilted)	1.6 m
Row pitch (0 % winter shading)	4.1 m
Verified GCR	0.44 (44 %)
Survival wind speed	35.6 m s^{-1}
Drive type	Linear rail – no bearings, no lubrication
Electronics warranty	7 yr
Structure warranty	Depends on AMC contract. 10 years default
Motor	IP67 Rates

Example:



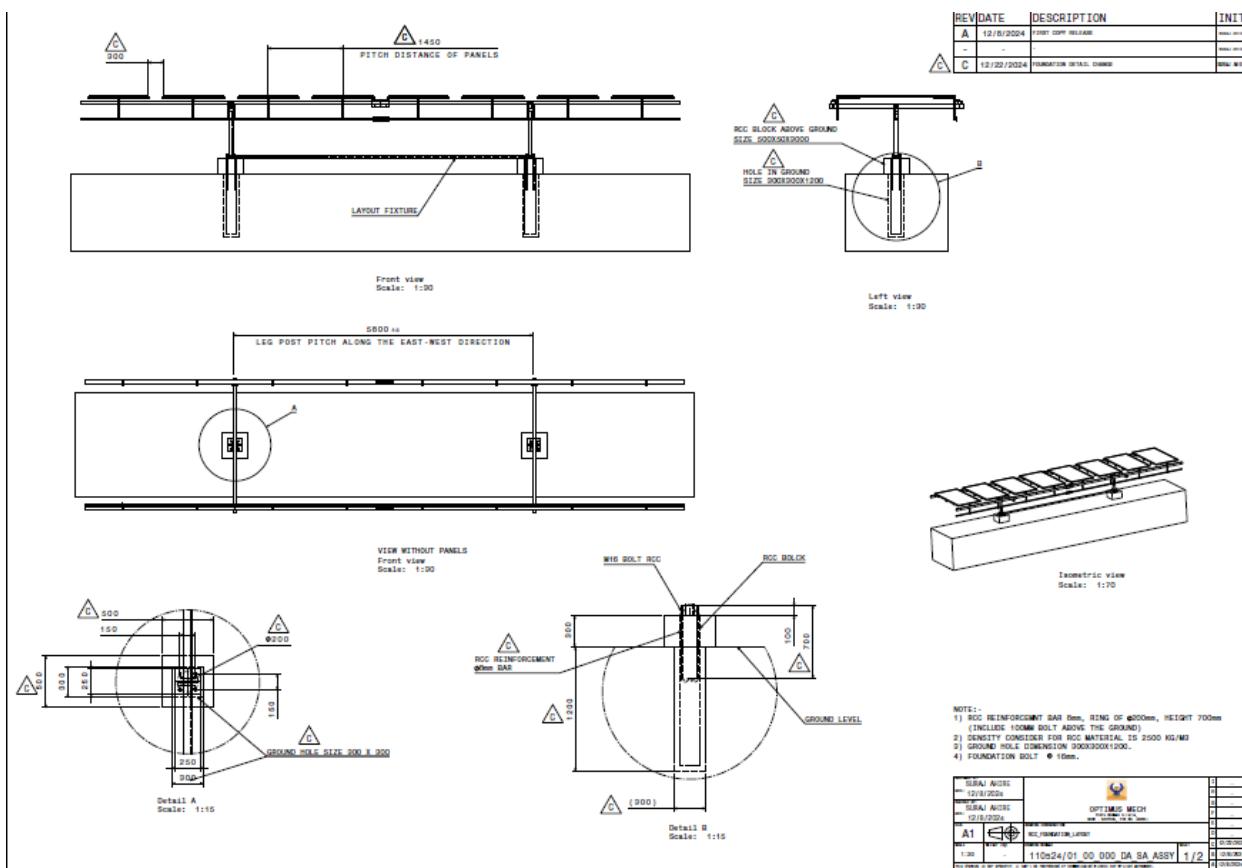
5. Energy Yield & Performance

- Dual-axis tracking adds **25-36 % annual energy** vs fixed-tilt (PV*SOL 2024 run, Nashik NASA-SSE TMY)

6. Control, Monitoring & Safety

- Patented astronomical algorithm – sensor-less; $\pm 1^\circ$ RMS tracking
- Redundant GPS & NTP time-sync; OTA firmware via MQTT-TLS
- Remote forecast-based mass stow

7 GA Drawing:



Force Majeure

Force Majeure. The Supplier shall not be liable for any delay or failure to perform its obligations under this Agreement to the extent such delay or failure is caused by an event beyond the reasonable control of the Supplier, including but not limited to acts of God, flood, fire, earthquake, explosion, epidemic, war, terrorism, civil unrest, strikes or other labour disputes, embargoes, government action, or power/grid failures ("Force Majeure Event"). The affected Party shall promptly notify the other Party in writing of the occurrence of any Force Majeure Event and use reasonable efforts to mitigate its effects. The time for performance shall be extended for a period equal to the duration of the Force Majeure Event.

Service-Level Matrix (standard response times)

Event type	Acknowledgement	Remote diagnosis	On-site dispatch (Maharashtra)	On-site dispatch (other states)
Critical tracker outage (> 5 % capacity)	4 h	8 h	24 h	48 h
Non-critical fault	8 h	24 h	72 h	5 days
Preventive maintenance	—	—	As per annual schedule	As per annual schedule

Limitation of Liability

Supplier's aggregate liability arising out of or in connection with the Product, whether in contract, tort (including negligence) or otherwise, shall not exceed the Contract Value paid for the specific tracker giving rise to the claim. In no event shall Supplier be liable for any indirect, incidental or consequential damages, including loss of revenue, loss of production or loss of profits.