

Solargik Rooftop PV Tracker

Technical Data Sheet



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MARKET CHALLENGE

While many retailers, tech companies, and industrial factories seek to cut energy costs and minimize their carbon footprint, only a fraction of them use solar panels on their rooftops. Despite the potential to offset energy consumption, many companies are faced with the simple truth: solar installations do not generate a high enough IRR and require too long a breakeven period.

One reason that IRR isn't high enough is because most rooftop installations use fixed-tilt panels. While PV trackers are widespread in utility-scale installations, they have not penetrated the C&I rooftop segment. Though the tracker design offers potential performance increases, that benefit was previously outweighed by high CAPEX, low power density, and costly O&M.



OUR SOLUTION

Solargik's solution tackles these problems, producing 20-25% more energy than fixed-tilt panels for a similar cost. We can reduce overall installed capacity while maintaining high power-density. Our tracker helps reduce CAPEX by 10-20% while producing the same amount of energy as a comparable fixed-tilt installation. In fact, installing fixed-tilt panels instead of Solargik's tracker is equivalent to leaving 25% of a roof without PV coverage!

Solargik's short tracker table size of 8-24 panels, paired with our highly cost-effective motion unit, lets you install around obstacles and adapt to rooftop spaces that are inaccessible to longer trackers. This solution overcomes potential physical and financial limitations and "unlocks" rooftop projects usually not considered economically feasible for PV trackers.

Our tracker weighs only 25-30kg/kWp, with less steel than standard trackers, helping lower CAPEX. The lighter tracker also simplifies installation. Each component can be easily lifted and installed by two people, with no need for complex tools or machinery. Our trackers can be installed on nearly all types of rooftops, including light roofs, by using an A-frame to distribute weight across the roof. For rooftops that cannot be penetrated, our tracker can even be ballasted.

Solargik uses proprietary solar optimization algorithms explicitly designed to enhance our unique, lightweight, 2-landscape design. For example, we improve the industry standard smart backtracking algorithms by taking advantage of our shorter tracker and 2-landscape configuration to reduce shading losses, optimize bifacial gains, and use multiple tracking angles within each row.

Increase energy production on your rooftops and lower CAPEX with Solargik's tracker solution.

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GENERAL	
Tracking Range	120° (-60° to +60°)
Tracking System	Single axis
Panel Orientation	2-Landscape
2L Benefits	Higher bifacial gains, optimized shading, rotation around center of gravity
Tracker Size	Tracker length ranges between 8-24 modules
Ground Coverage Ratio	GCR 50-65%
Modules Supported	All available modules
Energy Gain vs. Fixed Tilt	Up to 30%, site specific
Tracker Output	Up to 14 kW DC
Slope Tolerance	N-S: up to 30% E-W: any slope
String Voltage	Compatible with any string size

TRACKER CONTROL / HARDWARE AND INSTRUMENTATION							
Drive Unit	Three gear cascade - planetary, worm, chain						
	Overall reduction ratio ~13,000:1						
	Drive system - stepper motor						
	Proprietary controller						
Tracker Control Unit (TCU)	<table border="1"> <tr> <td>Option 1: Self-powered tracker 20-50V, li-on 11.1V 40Wh battery Battery protection</td> <td>Option 2: Grid version, 20-30V</td> </tr> </table>	Option 1: Self-powered tracker 20-50V, li-on 11.1V 40Wh battery Battery protection	Option 2: Grid version, 20-30V				
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Tracker Power Consumption	<table border="1"> <tr> <td>Idle: 1.5W</td> <td>Standard motion: 5W</td> <td>Maximum: ~15W</td> </tr> <tr> <td colspan="3" style="text-align: center;">~13kWh/year/tracker</td> </tr> </table>	Idle: 1.5W	Standard motion: 5W	Maximum: ~15W	~13kWh/year/tracker		
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Control Electronics	One MCU (Master Control Unit) per cluster and one TCU (Tracker Control Unit) per tracker						
Drive Unit	Weight: 8 kg (17.6 lbs)						

TRACKER CONTROL / SOFTWARE AND ALGORITHMS	
Tracking and Algorithms	<ul style="list-style-type: none"> Backtracking Smart Backtracking Diffuse Optimization Intermittency Mitigation Dirt Minimization Algorithm
Tracking Accuracy	± 2°



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TRACKER CONTROL / SOFTWARE AND ALGORITHMS (Continued)

Stow	Nighttime stow: configurable, prevents dust accumulation Dynamic stowing based on weather conditions
Communication Architecture / SCADA	MODBUS over Ethernet or wired RS485 to third-party SCADA SolarGik proprietary SCADA solution - optional
Monitoring	Portal interface displaying tracker status and generation, performance, weather and irradiance data
Tracker Control Unit (TCU)	WiFi 2.4 GHz or WiFi Mesh 2.4 GHz

TRACKER CONTROL / SENSORS

Weather System	Irradiance: GHI (default) GTI, RH, BM, temperature (optional)
	Wind speed (default) Wind direction (optional)
	Snow sensor (site dependent)
Camera System	Fish-eye cloud camera (optional) HD & IR camera (optional)

STRUCTURAL

Total Length	Between 14.5-28.4 m (47.5-93.2 ft)
Tracker Weight	25-30 kg/kW
Axis Height	1.5 m (5 ft)
Tracker Body	Standard profile
	2 support beams per module
Tracker Mounting	A-frame
	5-13 poles per tracker 300-450 poles per MW (typical)
Materials	Galvanized steel
Ballasted	Ballasted installation capability

ENVIRONMENTAL

Design Wind Speed	ASCE 7-22 Standard operating wind load 145-185 kmh (90-115 mph) Special design up to 240 kmh (150 mph)
Temperature Range	Operation: -25°C to 50°C (-13°F to 122°F) Survival: -40°C to 60°C (-40°F to 140°)



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ENVIRONMENTAL (Continued)

Snow Load	Tailored to site requirement
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STANDARDS AND CERTIFICATIONS

Standards and Certifications	ANSI, NEMA, NFPA, IEC, UL, CE
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INSTALLATION, SERVICES, MAINTENANCE & WARRANTY

Maintenance	Zero maintenance design (regular maintenance not required)
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Installation Requirements	No fabrication required Light structure without the need to work at elevation
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Warranty	10-year Structural 5-year Drive Unit
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