

TECHNICAL DATASHEET

# GENIUS TRACKER™ 2P

WORLD'S HIGHEST POWER PRODUCING  
& FASTEST INSTALLING 2P SOLAR TRACKER



**ACTUATOR**

Rugged design for 40-year field life  
in harsh environmental climate:  
IP66 rated

PRE-ASSEMBLED DRIVE SYSTEM



**50% FASTER**

than typical competitor drive systems.  
No machines or driveline for industry's  
fastest install.

**SADDLE BRACKET**

Allows efficient alignment  
with row tube

**CONTROLLER**

24V battery charged by small solar module drives  
24V actuator motor, ZigBee wireless communication

**DRIVE POST**

Wide Flange

**SELF-LUBRICATING DRIVE BEARING**

Self lubricating open form polymer bearing  
that improves damping

## OWNER BENEFITS

UP TO **1.25% MORE POWER PRODUCTION**  
RESULTS IN **HIGHER KWH OUTPUT AND HIGHER ROE**  
based on project specifics

## INSTALLER BENEFITS

- **FEWER POST COUNT PER MW** UP TO **55% LESS POSTS** THAN SOME 1P COMPETITORS
- **SHORTER 200 FT [61 M] TRACKERS** **INSTALL EASILY** ON UNDULATING SITES TO REDUCE GRADING
- **FASTEST INSTALLING DRIVE SYSTEM** UTILIZING PRE-ASSEMBLED COMPONENTS

## OWNER BENEFITS

**UP TO 1.25% MORE POWER PRODUCTION AND HIGHER ROE**  
Combine to increase owner cash flow

**WEATHERSMART™**  
Proprietary algorithm optimizes tilt angle based on weather data to maximize power production, adds up to 1.25% additional power production

**LOWEST O&M COST**  
Lowest grass cutting & module washing cost

Zero maintenance drive system

## INSTALLER BENEFITS

**FASTEST INSTALLING SYSTEM**  
Advanced design innovations & pre-assembled components

**PRE-ASSEMBLED DRIVE ARM**  
Can be lifted by one worker, no machine required. 50% faster than typical competitors

**PE STAMPED DRAWINGS**  
Design loads according to local building codes: ASCE 7, NBC, Eurocode, AS1170, GB 50009

**PROPRIETARY INTEGRATED HARDWARE™**  
For faster structure assembly, module mounting and reduced O&M cost. Oversized Serrated Flange Nyloc Nut and Oversized Flange Star Bolt with integrated star washer eliminates the need for washers and star washers

### GameChange Solar

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<b>Modules</b>	<b>Modules Supported</b>	Most commercially available modules, including frameless crystalline and thin film
<b>Civil</b>	<b>Slope Tolerance (N-S)</b>	7% standard, can go to 10% special order
	<b>Slope Tolerance (E-W)</b>	15%
	<b>Tracker follows slope (Y/N)</b>	Yes
<b>Structural</b>	<b>Drive Type</b>	Robust linear actuator stainless steel & aluminum
	<b>Posts per MW</b>	170/MW for normal wind conditions
	<b>Design Wind Load</b>	105 mph [46.9 m/s](Std) / 115 mph [51.4 m/s](Premium 1) / 130 mph [58.12 m/s](Premium 2)
	<b>Snow Load</b>	5 psf [24 kPa](Std) / 20 psf [96 kPa](Premium 1) / 40 psf [1.92 kPa](Premium 2) / 60 psf [2.87 kPa](Premium 3)
	<b>Tracking Range (Std)</b>	45° - 52°
	<b>Tracking Range (Premium)</b>	60°
	<b>Post Sections</b>	HDG wide flange steel
	<b>Post Size (Interior) &amp; (Exterior)</b>	W6 or W8 Wide Flange
	<b>Motor Foundation</b>	W6 or W8 Wide Flange
	<b>Standard Embedment</b>	5 - 9 ft. [1.52 - 2.75 m]
<b>Flood Plain Allowance</b>	Up to 6 ft. [1.83 m]	
<b>Design</b>	<b>Module Configuration</b>	2 up in portrait for crystalline & First Solar Series 6™, 2 up in portrait for Bifacial, 6 to 8 up landscape for First Solar Series 4™
	<b>Length per Table</b>	Up to 205 ft. [62.48 m] (for example 120 crystalline modules)
	<b>Module Attachment</b>	Bottom mount for framed modules or clamps for glass on glass modules
	<b>Ground Coverage Ratio</b>	0.3 to 0.65
	<b>Rows per Drive</b>	1 drive per tracker(table), distributed drive system
	<b>Powering System</b>	Onboard solar module with battery
	<b>Ground Clearance To Module</b>	18 - 48 in. [45.7 - 121.9 cm] typical
	<b>Min / Max Ground to Top of Post</b>	70 in. [1.78 m] typical + 9 in. [22.86 cm] min. adjustment range
	<b>Backtracking / Anti-shading</b>	Yes, although can be turned off as requested (i.e. for FSLR modules)
	<b>Temperature Range</b>	-20° C (-40° C also available) + 48° C
<b>Electromagnetic Interference</b>	Compliant with FCC guidelines/ Applicable sections EN 61000	
<b>Install</b>	<b>Specialty Tools Required</b>	No
	<b>Max Offload for Deliveries</b>	As per customer requirement
<b>Electrical</b>	<b>Tracking Method</b>	Time and location based algorithm
	<b>String Design</b>	Compatible with any string size
	<b>Cable Supports</b>	Hole punching as per customer requirement for nominal cost
	<b>Linear Actuator Motor</b>	24V DC UL Listed
	<b>Parasitic Loss</b>	0 amps
	<b>Controller Box</b>	ZigBee® wireless communications, 24V solar module and battery
	<b>Control System</b>	Master to Node: ZigBee® wireless communications Master to SCADA/DAS: Modbus TCP communications
	<b># of Motors</b>	25/MW for typical conditions, depending on module wattage and loading
	<b>1000V System or 1500V System</b>	Both
	<b>Grounding Method</b>	Tracker structure is part of grounding path per UL 2703
	<b>UL Compliance</b>	UL 2703 / UL 3703
	<b>Ingress Protection</b>	IP66 (NEMA 4/4x equivalent)
	<b># Weather Station</b>	1 per 6 MW - 10 MW typical
	<b>Monitoring System</b>	Web portal interface available Compatible with all standard third party monitoring vendors
	<b>Snow &amp; Flood Sensors</b>	Move modules to optimum location for weather events
<b>Backup Power</b>	Solar module and battery providing integrated backup - 3 days	
<b>O&amp;M</b>	<b>Warranty</b>	5 year drive & control, 10 year structural standard, 10 /20 also available
	<b>Shipping</b>	<b>Max load</b> International - 18.5 to 22.5 metric tons per container USA - 45,000 lbs. [20,411 kg] per truckload, 5,000 lbs. [2,267 kg] maximum bundle size, 2,900 lbs. [1315.4 kg] or other maximum as requested by customers
<b>Commissioning</b>	<b>Shipping Containers or Flatbeds</b>	Flat beds for structure, dry vans for hardware
	<b># Trucks or Containers per MWdc</b>	4 typical for trucks, 5 typical for containers
<b>Commissioning</b>	<b>Backfeed required?</b>	No, Generator for power as alternative