

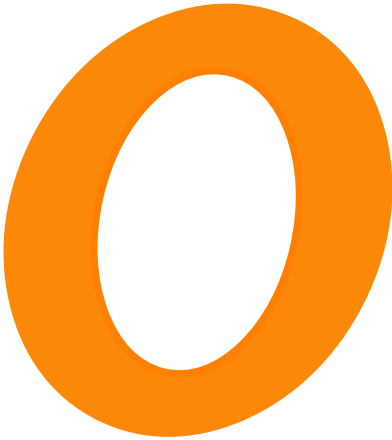
novatrack

Sun Tracking Solutions



NovaTrack® HZ 2V_1V

TRACKING THE SUN & POWER



MOST FLEXIBLE SUN TRACKER ON THE GROUND

HIGH POWER DENSITY

Higher density means more power and more profit. NovaTrack HZ 1V_2V offers the unique flexibility to cover each part of the installation land. Maximizing the power density of each site, more power density compared to any other tracker manufacturer.

FLEXIBILITY ON ALL TERRAIN UP TO %25 SLOPE

Our (NovaFlex) axis link architecture, with fixed articulated driveline joints allows tolerances, and creates the most natural terrain adaptability. NovaBall patented bearing technology allows sloped area up to %25 north-south inclination, with long lasting and maintenance free operation.

ULTRASONIC WIND SPEED & DIRECTION, SNOW, TEMPERATURE SENSORS

NovaTrack with wind speed and direction sensor allows wind stowing, with keeping the system slightly inclined upwind position, minimizes the fluttering effect and potential failure points. Wind direction and piezo vibration sensor also prevents system against hail damages, via by keeping the module surface in parallel position with wind direction. Snow unloading mode comes integrated with NovaTrack.

PRECISE POWER TRACK *

NovaTrack algorithm using string power output achieves possible best energy yield, rather than sun radiation sensor. In case of inverter communication failure, NovaTrack keeps sun tracking over sun radiation sensors.

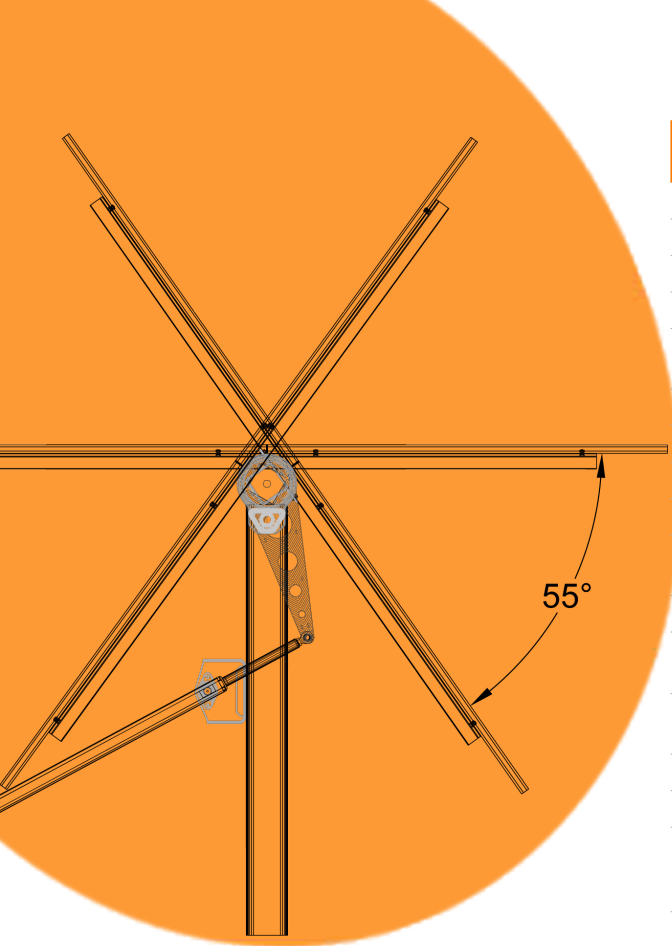
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PROFIT VERSUS COST

NovaTrack ensures the most possible performance gain with the lowest cost increase of solar plant.

Site adaptability tolerances and robust design construction can work efficiently. It means protecting your investment with a wind management system. It also includes increasing power density. But most of all, value is measured in operational uptime, or reliability.

ROBUST AND FLEXIBLE DESIGN

NovaTrack has innovative design of flexibility. Fewer moving parts, decentralized control units, gives more availability on site. Wear resistant spherical design with strong components provides tracker system long lasting life and keeps safe against extreme conditions.

MECHANICAL FEATURES & SPECIFICATIONS

Tracking Type	Horizontal single axis
kW per Actuator Drive	Up to 45 kW DC using 590Wp half cut 60Cell
String Voltage	Up to 1,500V DC
Maximum Axis Length	50 meter(2V), 90meter(1V)
Maximum Row Size	96 modules crystalline, glass-on-glass, and bifacial; 220 modules First Solar 4; 68 modules First Solar 6
Drive Type	Linear Actuator, Torque Arm
Actuator Type	2.2mm/sec, 12000N, 24V DC, 6A Max.
Actuators per 1 MW DC	30 - 40
East-West / North-South Dimensions	Depends on site / module specs
Array Height	1.75m standard, adjustable
Ground Coverage Ratio (GCR)	Flexible, 30-50% typical, others ranges on request
Terrain Flexibility	N-S tolerance: 0° - 15° standard Decentralized actuator drive
Modules Supported	Most commercially available, M0 to M12 wafers, including cellframeless crystalline, thin film, and bifacial
Tracking Range of Motion	± 55° standard
Operating Temperature Range	(-35°C to 65°C)
Module Configuration	Vertical (1V), (2V) portrait, including bifacial. (2H), (3H) landscape (framed or frameless) available.
Module Attachment	4 fastener with prevailing torque.
Hail & Snow Protection	Vibration + wind direction sensor detects course of hail shots. Keeping modules flat against to shots minimizes possible defects.
Materials	HDG steel and aluminum structural members
Allowable Wind Load (IBC 2012)	150 kmh, 3-second gust exposure
Wind Protection	Safe position slightly inclined upwind direction

ELECTRONIC CONTROLLER FEATURES/SPECIFICATIONS

Solar Tracking Method	GPS, Radiation sensor, String power PowerTrack®.
Control Electronics	MCU plus Central Controller
Data Feed	MODBUS over Ethernet
Night-time Stow	Yes
Tracking Accuracy	± 2° standard, field adjustable
Backtracking	Yes, terrain adaptable back tracking

INSTALLATION, OPERATION & MAINTENANCE

PE Stamped Structural Calculations & Drawings	Yes
On-site Training & System Commissioning	Yes
Connection Type	Fully bolted connections, no welding
In-field Fabrication Required	No
Dry Slide Bearings & Articulating Driveline Connections	No lubrication required
Scheduled Maintenance	None required
Module Cleaning Compatibility	Robotic, Tractor, Manual

GENERAL

Annual Power Consumption (kWh per 1 MW)	1000 kWh per MW per year, estimated
Land Area Required per 1 MW	Approx. 15 decares MW @ 33% GCR (site and design specific)
Energy Gain vs. Fixed-Tilt	18%+ up to % 30 , site specific
Warranty	15 year structural, 5 year electronic components

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Energy Yield by NovaTrack powertrack technology ensures maximum energy production from your PV plant.

Powertrack hardware tool will allow all kind of PV Array installation to achieve maximum power soon, upon after sensor technology.

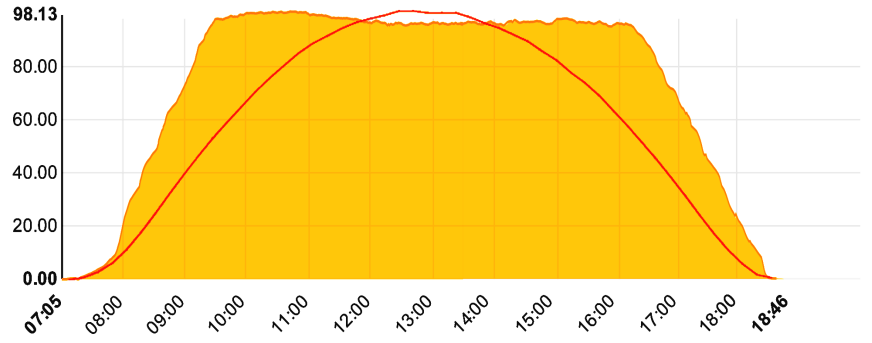
It is integrated with String Input Power Supply.

PAC %

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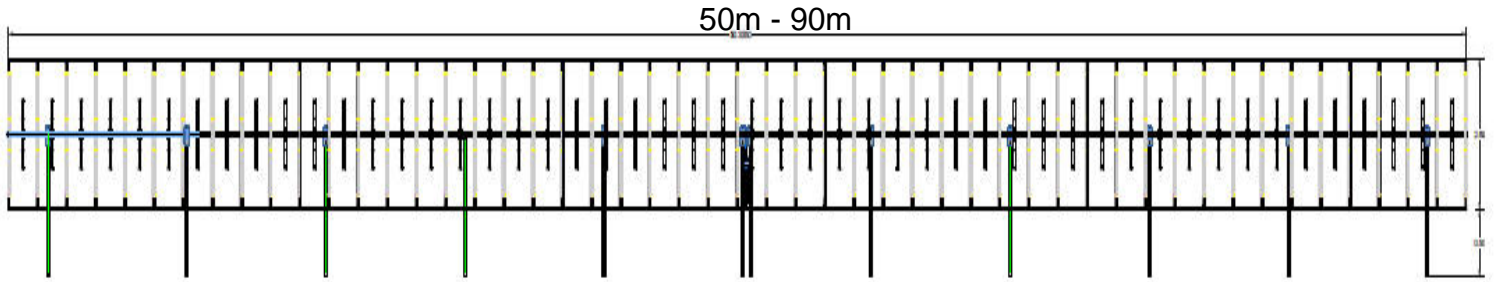
24h

30d



Rating Chart Using Sunny Day in October

NovaTrack & Fixed Tilt References Are Nearby Places



NovaTrack HZ2V-1V with post driven foundation, Rotation @ 55°



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NOVATRACK DESIGN WITH FLEXIBLE ARCHITECTURE

Unique decentralized design with independent linear actuator axis drives gives chance of serial axis length up to 90m.

Synchronized axis drive outputs with load detection allows extended row length x2.

Load balance dampers will keep axis driver strained at light load during daily operation.

This feature gets the only wear part of the tracker system having long operation time over years.

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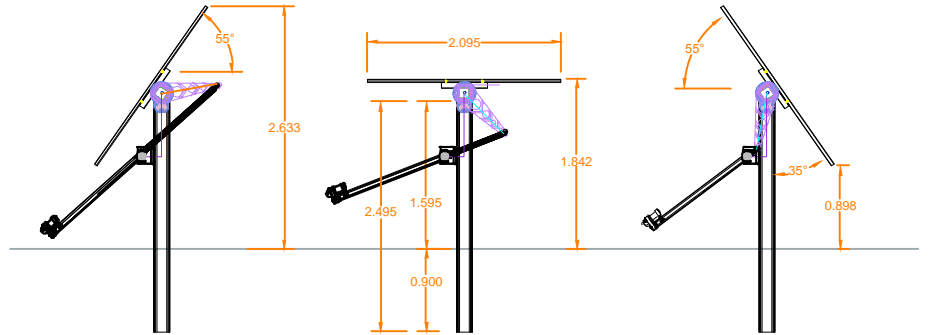
NovaTrack, with flexible axis length and separate control structure adapts the existing land terrain by following natural contours and creates power generation from any point of site.

No need for rectangular land placement configuration.

Extensible axis length up to 90m.

Nova Mass Damper integrated with shock absorber pads reduces both oscillations of tracker and load on the actuator.

Self frictioned bearing balls also supports stability against wind loads.



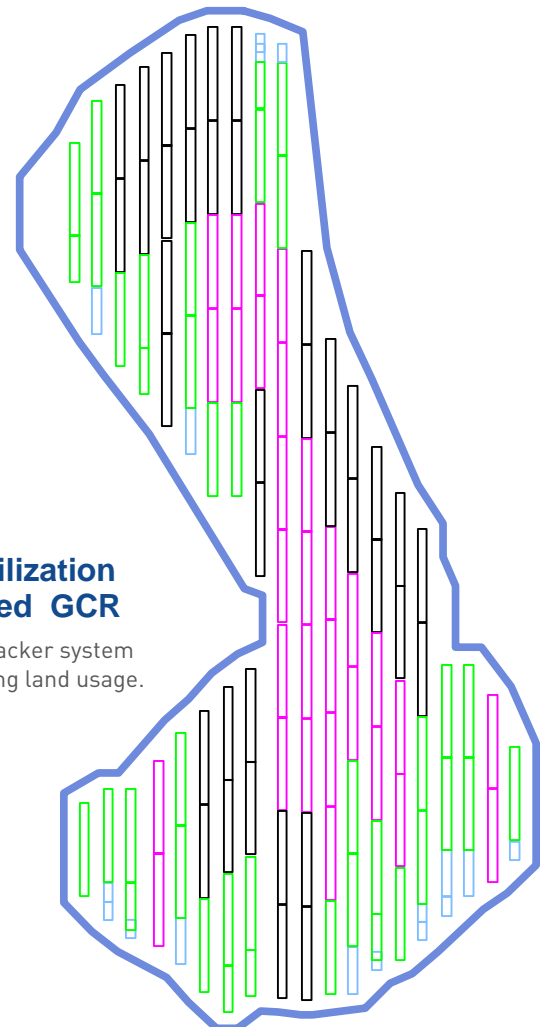
Pile Foundation Rotation Angle - Side View

NovaTrack Mass Damper



Land Utilization Optimized GCR

Decentralized tracker system allows maximizing land usage.



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