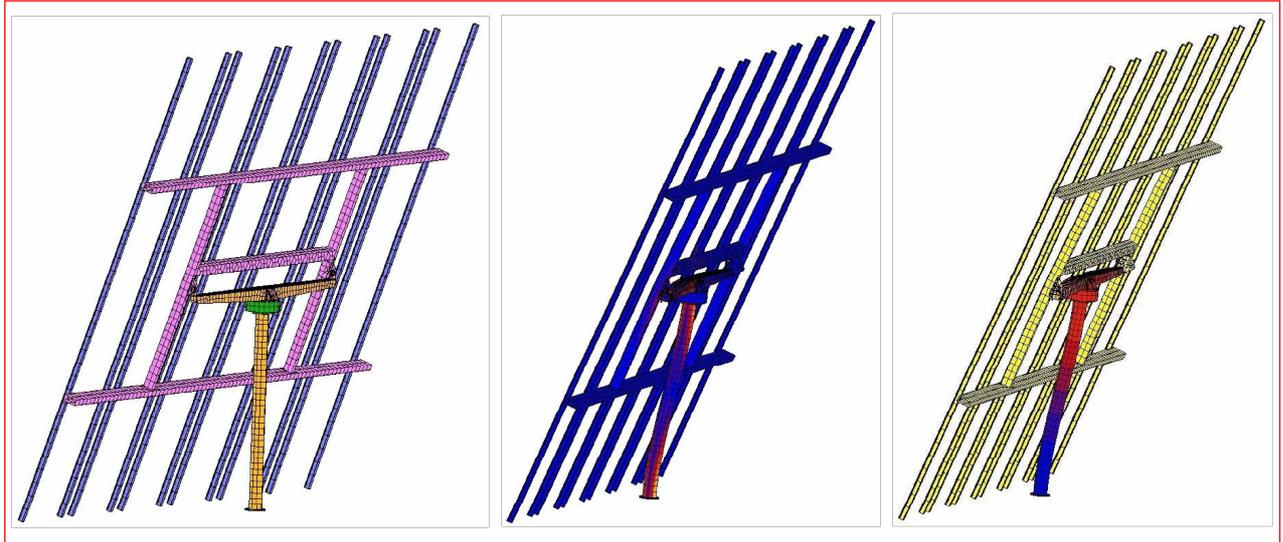


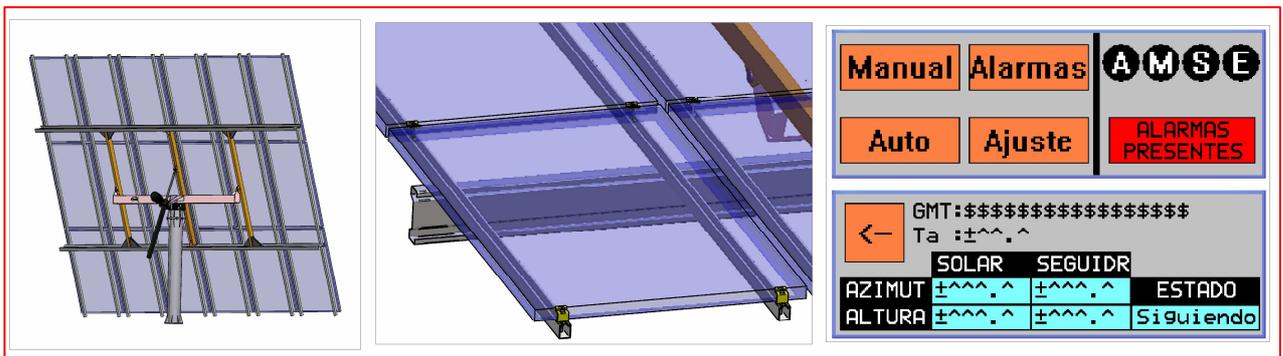
CLAVIJO GROUP SOLAR TRACKERS

- Designed and analysed by finite elements with the loads and coefficients specified in the Eurocode.
- High performance: up to 35% more production on the photovoltaic modules compared to a fixed installation.



INNOVATIVE AND DIFFERENT FEATURES

- Sturdiness
- Flexibility to install the photovoltaic modules, vertical or horizontal assembly (makes the most of the surface available)
- Very easy to assemble: fast and simple assembly
- Friction cases on the joints
- Basic functions integrated in the electrical panel: emergency push button, movement for inspection and maintenance work, basic movements (azimuth and vertical).
- Direct anemometer connection or by a digital display with a test function (makes overhaul easier)



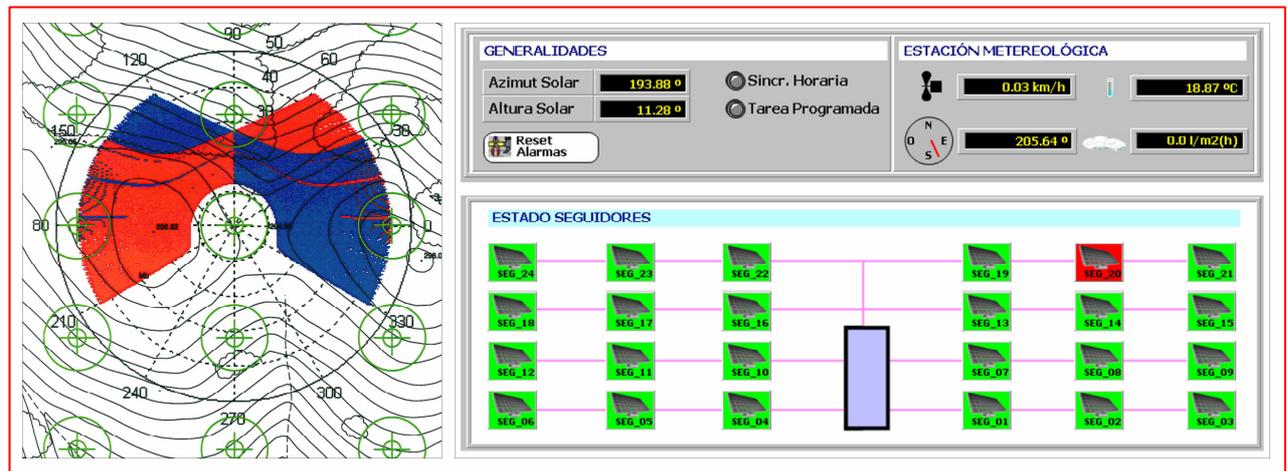
Manual	Alarmas	A	M	S	E
Auto	Ajuste	ALARMAS PRESENTES			
←	GMT:\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$				
	Ta :±^^.^				
	SOLAR		SEGUIDR		
AZIMUT	±^^.^	±^^.^	ESTADO		
ALTURA	±^^.^	±^^.^	Siguiendo		

CONFIGURATION OF THE TRACKERS

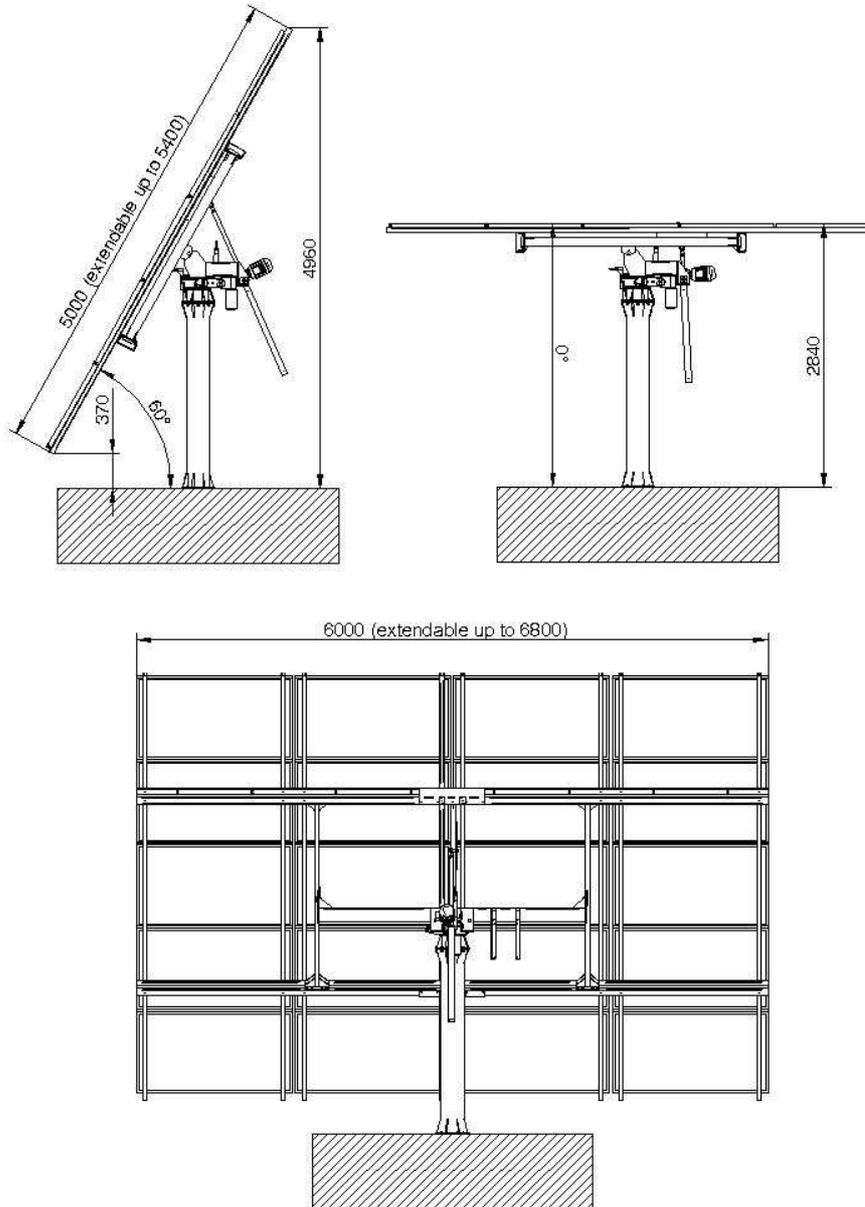
They can be modified globally if the site or installation is monitored or if they can be handled individually by the buttons in the electrical panel or by a portable terminal that enables the configuration of the tracker automatically or manually. It also enables other options such as visualisation and reset of alarms, or changing the configuration parameters (time, tracker location, rest criterion, minimum tracker operating angle, maximum azimuth and vertical turning angle...).

ADDITIONAL SERVICES

- Study of shadows
- Installation of trackers on site
- Studies of level curves on topographic plans
- Assembly of anemometers and data registers, communication and monitoring of the site
- Start-up
- Preventive maintenance
- Use of anemometers, digital displays to view the speed of the wind, weather vanes or data registers to store information (up to 3 different ways at the same time: internal memory, USB pen drive or via FTP).



TECHNICAL CHARACTERISTICS



Tracker axes		Tracker axes	
Grid configuration		4 lines x 6 metres	Extendable up to 4 lines x 6.8 metres
Module surface		30 m ²	Maximum surface = 36.7 m ²
Module distribution	Type	Single-crystal module with nominal power of 250 Wp. External measurements module = 1,604 x 1,054 x 50 mm	
	Amount / Power	4 lines x 4 panels	16 modules x 250 Wp = 4 kwp
	Amount / max. power	5 lines x 4 panels	20 modules x 250 Wp = 5 kwp

The final power and amount of the installed modules is by way of guidance, because it will depend on the needs of the investor and the module model that is chosen. Possibility of assembling the panels horizontally or vertically (maximum surface use).

Structure material		Hot-dip galvanised steel (in accordance with standard ISO 1461)			
Azimuth	Turn range	270 degrees (from -135 degrees to +135 degrees)			
	Action type	Turn module (orientation crown + spindle)			
	Gear motor characteristics	Motor 0.25 Kw / 1,500 rpm			
	Movement control	Inductive sensor			
	Safety 1	Control and tracking movement by automatic machine			
	Safety 2	Physical stop with 2 limit switches with a wheel.			
Vertical	Turn range	From 0 degrees to 60 degrees			
	Action type	Motorised electrical spindle			
	Central characteristics	Motor 0.25 Kw / 1,500 rpm			
	Movement control	Inductive sensor			
	Safety 1	Anemometer signal – Safety position (horizontal)			
	Safety 2	Control and tracking movement by automatic machine and physical stop with limit switch and wheel			
Electrical panel	Power supply	230 Vac – 50 Hz, single-phase or 380 Vac – 50 Hz three-phase			
	Electrical characteristics	Metallic, IP55, all the elements connected by terminals inside the cabinet. Includes PLC, general automatic protection and thermal relay to protect the motors.			
	Tracking	Tracking programme by astronomic calculation on the PLC. Protection against wind.			
	Operation and maintenance	Includes anti-fraud emergency push button, multi-function push button for reset, maintenance position and basic movements (azimuth and vertical), and alarm management.			
	Connectivity (optional)	<input type="checkbox"/> Touch-terminal for configuration and manual movements. <input type="checkbox"/> Serial port for configuration terminal accessible by external industrial connector <input type="checkbox"/> RS422 port <input type="checkbox"/> Optional Ethernet port <input type="checkbox"/> Access by GSM/GPRS modem and SMS service			
Wind speed		Up to 50 km/h in working mode. Up to 120 km/h in resting and safety mode.			
Anemometer (OPTIONAL)		<ul style="list-style-type: none"> - Polyamide anemometer (direct connection) - Polyamide anemometer + digital display for wind speed (optional) + tracker signal output relay 			
		Polyamide weather vane to control the direction of the wind			
		Data register up to 3 types at the same time: internal memory, USB pen drives and remote FTP (local or via internet). Real-time viewing on touchscreen of the signal from several anemometers.			
Electrical consumption		0.2 kw a day			
Approx. module structure without modules		650 kg			
Approx. module weight		500 kg			
Foundation		Specifications included in the corresponding foundation plan			
Warranty		10 years for the metal structure			
Distance between trackers		N – S	15 metres	E – W	20 metres
The distances are by way of guidance, because they depend on the final dimensions of the grid and the location of the installation (longitude, latitude and altitude).					