PHOTOVOLTAICS

SOLARTRACKER ILB Helios Track 55

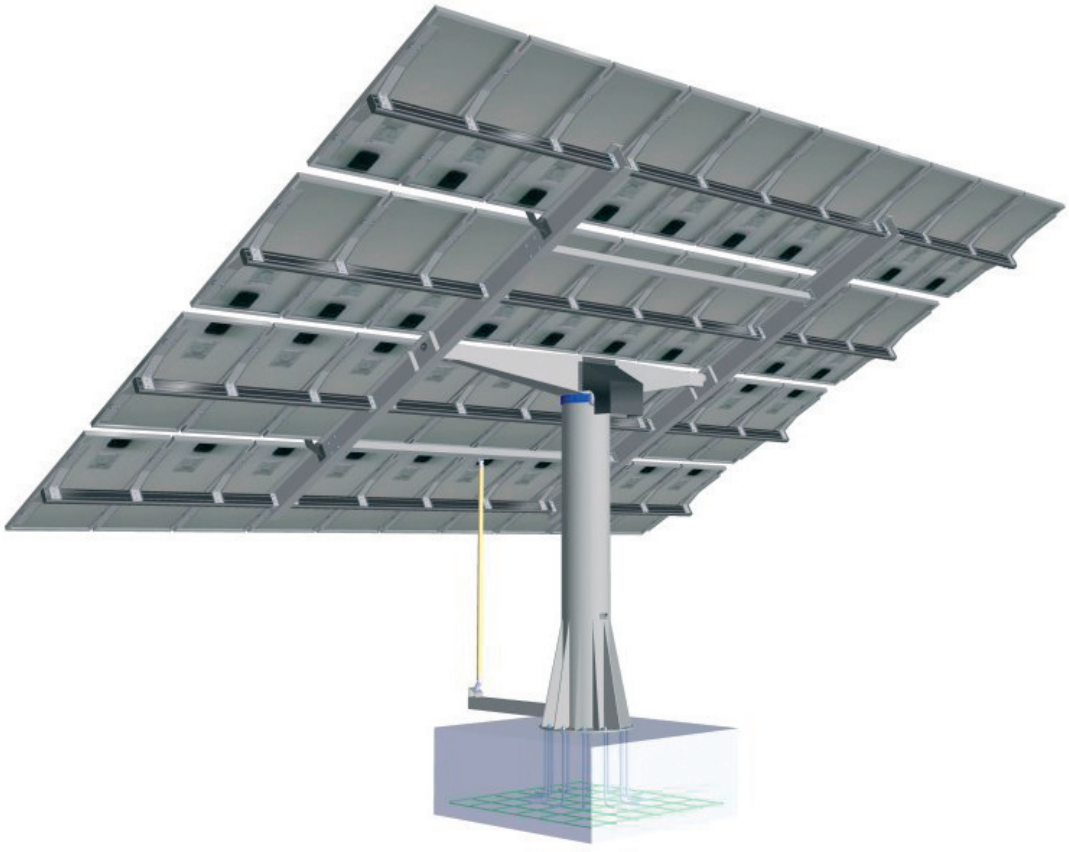
The new solar tracker system ILB Helios Track 55, introduces a revolutionary and an innovative technical advance: it follows the solar movement based on a mechanical link of the zenithal angle with the azimuthal position. The conception of the Track 55 has been simplified by subtracting one of the actuators with no productivity lost.

The ILB Helios solar tracker is the first of a new range of products related to renewable energies. A great effort has been made regarding engineer, projects development and the transference of technology from the automotive sector towards an expansive and fundamental sector of the present industrial scenario.

Theoretical basis

The tracker ILB Helios Track 55 has a revolutionary innovation that makes it unique in the market:

- First solar tracker in two axis with just one actuator.
- Final productivity similar to a double-axis tracker.
- Purchase and maintenance costs similar to single-axis trackers.



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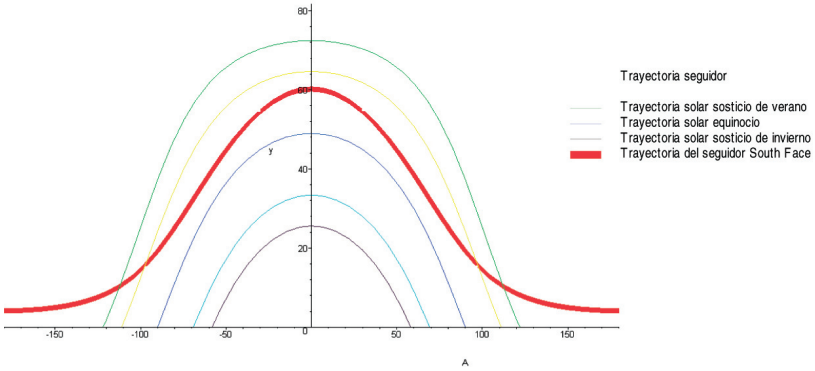
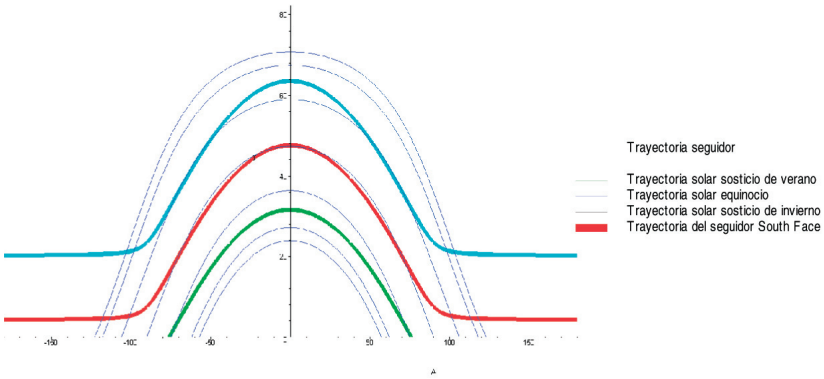


This figure shows the path of the tracker in front of the Sun trajectory along the year. In the adjustable version, the tracker path can be modified several times a year getting the maximum accuracy, however, regarding the productivity lost compared to the non adjustable version is not remarkable (less than 4%). The following figure shows the three different paths seasonally adjusted for the tracker trajectory so, the solar trajectory is approximated more accurately.



Results presented in the article "Estimación de la energía generada II" published by the specialized magazine "Era Solar" edition 132 (May/ June 2006) by M.A. Abella and F. Chenlo shows an exhaustive study about the electrical production for several support systems. As conclusion, the compared productivity of the installations with different technologies of solar trackers are given for different locations in Spain. According to this article and to our own studies, we can claim that the productivity of the ILB Helios tracker is slightly over the polar axis, and a little bit under a perfect double axis tracker.

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Technical Specifications

The mechanical link system between the two axis has been filed for patent protection and it's the main differential aspect from the competence, but not the only one. The module attachment system has been designed to allow the free movement of every row so it can minimize efforts and vibrations transmitted to the main structure in order to make the unit so much lighter. The total weigh for the 55m2 tracker is below 1300 Kg (2850 pounds), which makes it one of the lighter trackers of the market and it's still supporting winds up to 140 Km/h on the worst case scenario.

The design is fully scalable. In the following months new trackers will be set up from the small version of 10 m2 to very big ones of over 100m2.

- Maximum utile: 55 m2
- Maximum peak power: Up to 9.2 KWp (depending on the PH module characteristics)
- Straps maximum length: 9.5 m
- Maximum height: 6.8 m (daylight/ nightfall); 5.7 m (midday)
- Galvanized steel principal framework.
- Over straps panels anchorage system.
- Structural aluminum straps..
- Type of drive: Azimuthal rotative axis driven by an encapsulated slew drive.
- Foundation: concrete baffle in-situ. (4 m3 concrete + framework and anchored drill pipe).
- Motor: C.A. Three-phase. Power > 0.25 KW
- Azimuthal drill field: 240°
- Zenithal drill field: 8°-60° (vertical angle)
- Able to withstand wind speed up to140 Km/h (according to European regulations)
- Adverse weather position: it moves to midday position on high wind.
- Weight: 1300 Kg (no foundation or panels included)

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