World Premiere // SunCarrier 160

SunCarrier 160 – a+f GmbH presents new model from the SunCarrier series

A highlight at Intersolar 2009 in Munich is the first presentation by a+f GmbH of the SunCarrier 160 to the public.

Similar to its predecessor from the SunCarrier range, the SunCarrier 160 is a single-axis tracking system that permanently aligns the module surface to the current position of the sun by means of the vertical axis. This guarantees an ideal angle for capturing sunlight and achieves an increased yield of up to 35% in comparison to fixed installed market solutions. On the module surface of around 163 square meters a power output of up to 30 kWp can be installed, depending on the module type.

The product features of the SunCarrier 160 supplement the portfolio of the SunCarrier range. Thanks to its small installation height of 4 meters, the system can be easily used in countries with construction height restrictions. The height reduction also means lower wind loads, so that during development it was possible to increase the use of lightweight construction techniques and therefore significantly reduce the weight of the steel girder construction. As with all products from the SunCarrier range, the module surface can be installed with solar modules from a wide number of manufacturers. Due to its innovative geometry, the solar modules on the SunCarrier 160 can be fixed at an angle of 40° to the horizontal and always be precisely aligned towards the sun. The angle of 40° is a further advantage because it offers an additional annual energy yield of up to 5% in comparison to the standard angle of inclination of 30°. The system is particularly suitable for installations between the 25th and 55th degree of latitude north and south of the equator and can be used as a single installation or in large solar power plants.

The drive used for tracking takes the form of a planetary gear (motor power 0.37 kW, with brake, transmission ratio 1:1.595, form-fitting chain wheel on a chain cable). The power consumption is 0.40 kWh/day, corresponding approximately to an electricity requirement for half a washing machine load.

Similarly to the other SunCarrier models, the SunCarrier 160 doesn't use sensitive sensors for tracking. Instead of this a maintenance-free PLC (programmable logic controller) is used, in which astronomical data are stored. The signals are received by the PLC from an electronic clock, an incremental encoder between the gears and drive motor, as well as mechanical sensing devices. In this manner the system guarantees precise alignment to the current position of the sun.

Function monitoring and protocolling of the system is possible at all times via the Internet. The necessary administration can therefore be reduced to a minimum and monitoring of the system considerably simplified as a result.

As with all models produced by a+f GmbH, the SunCarrier 160 is extremely stable and can withstand wind speeds referred to in UNI EN1991-1-4:2005. When other systems have to return to the safety position, the SunCarrier 160 is still ready for operation.

Key Facts of the SunCarrier 160:

_PLC-controlled tracking for up to 35% more power in comparison to permanently installed market solutions

_Module surface of up to 163 m²

_Maximum angle of rotation 220° (June 21) in the summer and minimum angle 110° (December 21) in the winter

_Installation height approximately 4 m above the open ground

_Extremely stable steel construction

_The perfect area of operation is located between the 25th and 55th degree of latitude north or south of the equator

_Use with all standard types of module possible

_Can be used as a single SunCarrier or in large solar power plants

_Due to its solid foundation the system is always ideally positioned to provide maximum yield even in strong winds

_Wind load according to IFI expert reports on wind and UNI EN1991-1-4: 2005, 2, terrain category$_{wind}$ = 28 m/s or gust speed pressure 1.0 kN/m²

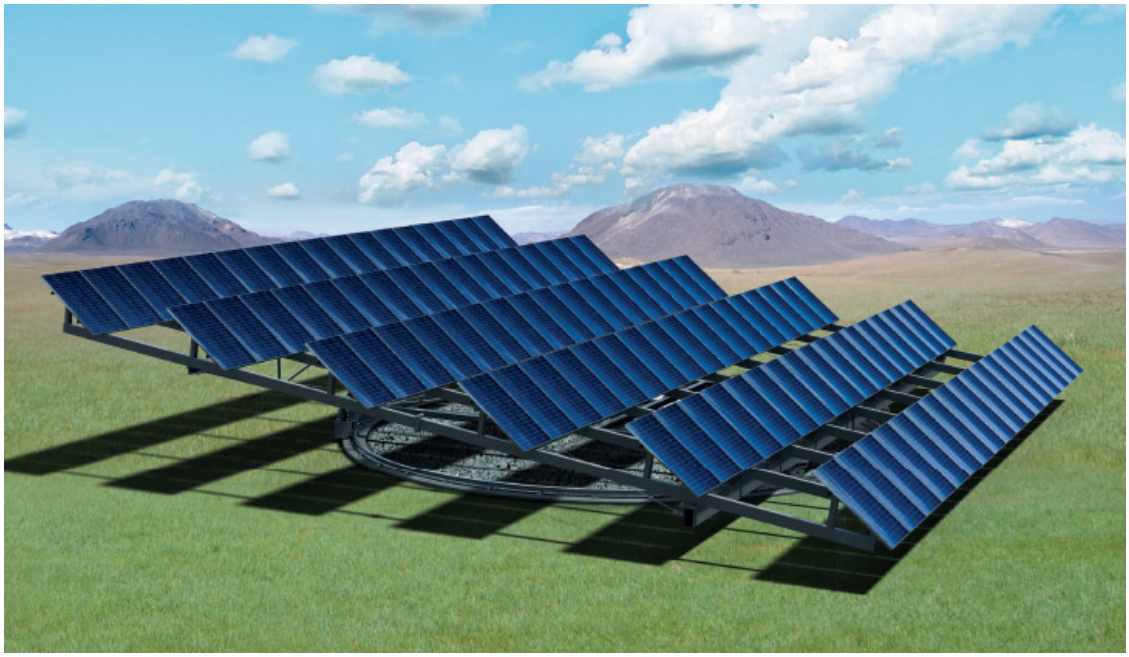
_Snow load according to Eurocode 1-EN1991-1-3:2003, Italy, Sk = 0.9 kN/m²

_Building authorisation by static check of the LGA (Bavarian State Trade Agency) with a calculated safety factor of at least 1.6

_Tested in the wind tunnel

_Significant advantages compared to 2-axis systems with respect to reliability and safety

_Long service life with minimal servicing requirements



The SunCarrier 160 stands out in particular due to its small installation height and the angle of inclination of the module surface of 40°.
