

AkoTec



Your manufacturer for high end
FULL VACUUM COLLECTORS

Not to be beaten in Quality and Performance!



The logo for UCKERMARK, featuring a stylized green roofline above the word "UCKERMARK" in a bold, black, sans-serif font, all contained within a green rectangular border.

How it began...

The company AkoTec was founded in 2008 and is based in Angermünde in the north east of Germany.

The absence of good products in the global market, arose the idea to develop and produce high performance full vacuum tube collectors for generating thermal energy.

More than 30 Years of Experience

Reinhold Weiser, Engineer and General Manager of AkoTec, has incorporated 30 years of experience in solar thermal products and system concepts.

He played a significant role in the development of full vacuum tubes with the company NARVA in Germany.

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All products are researched and developed by AkoTec. All collectors are manufactured in Angermünde.

The systems and collectors are continuously developed in order to achieve increasing efficiency and cost reduction. Only then it is possible to further produce high end products for new and future applications, i.e. solar thermal local heating plants or industrial process heating.

The process of the collector elements using copper pipes, produces consistent high quality standards. The electric arc brazing process is used in the production of the connections.

This process is very precise and localized so it will not discolour the copper. This ensures high accuracy in measurements of all copper parts.

Through this technology, high quality products will be competitive in all areas of this market. We can offer solar thermal systems for single- and multi-family-houses but also for industrial applications like paint shops, hotels and laundry service.

All Collector Elements are 100% „Made in Germany“

This way we can ensure the best quality and contribute effectively to the protection of the climate and environment. Since the foundation of the company, we have saved 4700 t CO₂. Because the heating is done 100% CO₂ free.

Tested and Certified

AkoTec's full vacuum tube collectors are tested by TÜV institute for performance and resistance.

The collectors have successfully undergone the intensified impact-from-hail test. Many insurance companies require this test. During this endurance test 40 mm ice balls are shot with an impact speed of 100 km/h onto the collectors and particularly the tubes. Furthermore the collectors are certified with the Solar Keymark.

Awarded

In 2008 the tube was awarded with the Innovation Prize. In 2012 we were honored with the Future Award of Brandenburg. All of this guarantees high quality and performance of our products.



Advantages of our Collectors

- 4 times higher efficiency than photovoltaic
- more than 25 years of stable energy yield
- 20 years warranty
- AkoTec uses only full-vacuum tubes from Narva, absorber and heat transport tube are inside the vacuum, therefore there is no heat loss or deterioration of the material
- 100% Made in Germany - header, footer and full-vacuum tubes are produced in Germany
- extensive assembling possibilities, for instance flat or tiled roof, facade, balcony, canopy or elevation
- tubes are 360° rotatable, therefore the absorber can be angled optimally to the sun
- weatherproof Nano coating of the tubes, for especially for impact strength and almost no dirt adhesion
- permanent protection of the vacuum through patented glass-metal connection
- automatic shut down function of the heat pipe tube by 100°C, so no stagnation management is needed, parts don't wear, dangerous connection cavities are prevented
- collector sets can be connected together without any gaps, because the tube distance is allways the same
- collector head- and foot cases are available in 213 RAL colors for the perfect adaption to roof or facade
- easy one-man assembling because of plug-in system, collectors can be assembled on the roof without heavy tools



direct flow collectors

- self-supporting constructions - no need for an expensive rack
- easy assembling and exchange of the tubes through plug-in-connection
- collector are available with 5, 10, 20 and 30 tubes
- depending on the area of installation, the collector can be selected with standard or power tubes.
- peak performance of OEM Vario 3000 df: 3238 W_{peak}
- possibilities of assembly
 - flat roof
 - pitched roof
 - facade
 - balcony
 - rack



heat pipe collectors

- integrated automatic overheating protection at 100 ° C
- dry connection of the tubes with the manifold, the tubes can be exchanged without emptying the system
- collectors are available with 5, 10, 20 and 30 tubes
- depending on the area of the installation, the collector can be selected with standard or power tubes
- peak performance of OEM Vario 3000-30 hp: 3000 W_{Peak}
- possibilities of assembly
 - assembling angle 5° - 75°
 - roof
 - rack



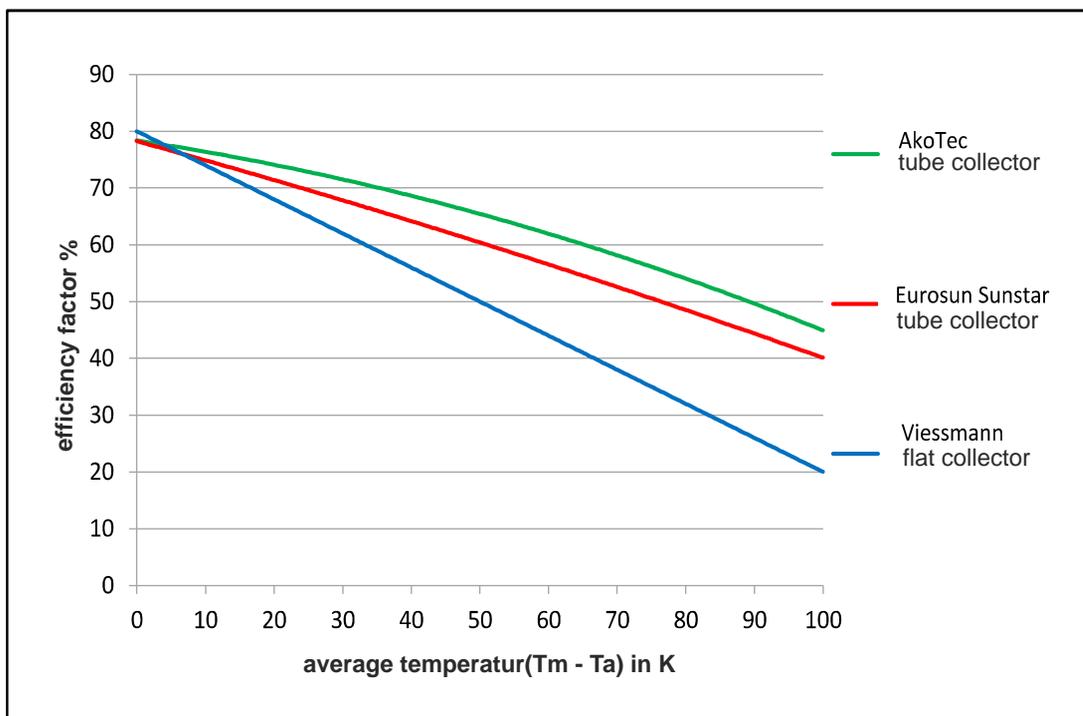
Comparison of the Efficiency Factor

between diverse collectors at different temperatures

In the current solar market, the efficiency factor at zero-point is always compared. For this reason, the majority of all collectors show satisfying results, even flat collectors with a forced air circulation. More importantly, is the heat efficiency factor during the Winter.

In the following diagram you can see the comparison of the AkoTec full vacuum tube collector with a very good flat collector. The collectors accomplished a solar irradiance of 1.000 W/msq (according to DIN EN 12975-2).

Diagram: comparison of the efficiency factor between diverse collectors at different temperatures



Efficiency factor:

The efficiency factor describes in the solar thermal branch of industry the quotient of the usable thermal energy and the absorbed solar energy. The efficiency is expressed in percentage.

Average temperature:

The average temperature describes the difference between the average temperature of the heat transfer medium (Tm) and the temperature of the ambient air (Ta). The average temperature is expressed in Kelvin.

Result:

Even in the Winter, the AkoTec full vacuum tube collectors had the best efficiency factor results.

Private

Heating and domestic water heating



place: single family house,
Kekava, Latvia
plant: ca. 6 KWp, 10 m²,
60 direct flow Power tubes
800 l storage

Heating and domestic water heating

for 3 residential units



place: multi family house +
holiday apartment,
Angermünde, Germany
plant: ca. 21 KWp, 34,5 m², 210
direct flow tubes, horizontal
mounting, 4.000l storage

Domestic water heating



place: single family house
Laichingen, Germany
plant: ca. 6 KWp, 9,6 m²,
4 x 15 direct flow tubes
horizontal mounting,
500 l storage

Commercial

Solar local heating network



place: Nechlin, Germany
plant: ca. 119 KWp,
1080 direct flow Power tubes,
179 m² roof installation

Solar cooling



place: Deutsche Telekom data center
Rottweil, Germany
plant: 300 KWp, 503,44 m²,
3100 direct flow tubes
20.000 l storage

Process heat



place: paint shop,
Meppen, Germany
plant: ca. 84 KWp, 137 m², 840
direct flow power tubes
2x 5.000 l storage

AkoTec



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