

DC axial fans cool telescope primary mirror

Probing the depths of space

So fascinating, so far away: About 1,500 light-years from Earth, the Orion Nebula with its huge clouds of hydrogen is an ideal place for new stars to form. Tubeaxial fans from ebm-papst provide cooling for the primary mirror of the telescope at the Weikersheim observatory, helping to probe the depths of space.

At the observatory in Weikersheim, a Ritchey-Chrétien telescope from Alluna Optics makes it possible to see this unique spectacle from the Earth.

Compact fans for a better view

Three tubeaxial fans from ebm-papst play an important part in ensuring a clear view of the night sky. They are fitted directly behind the primary mirror of the telescope, from where they cool the mirror to ambient temperature before the telescope is used. By providing a continuous air flow during operation, they also stop a heat haze forming over the mirror.

Reliable and robust

Quality and a long service life were the main reasons for Wolfram Felber, Managing Director of Alluna Optics, deciding on ebm-papst fans. "We supply our telescopes to locations throughout the world, including Tibet, Kazakhstan and the Australian Outback, for example. Reliability is extremely important in such places, because customers don't want to have to wait two weeks for a replacement fan." Alongside a robust design, ebm-papst products offer the advantage of high performance combined with compact dimensions. As Felber says: "There isn't much room in a telescope on account of the other components it also has to accommodate. But the compact fans still manage to cool the mirror down quickly even on hot days."

Durable and extremely shallow

The DC axial fans used are 92 x 92 x 25 mm in size and made of glass-fiber reinforced plastic. Such tubeaxial fans only weigh 100 g and are both extremely quiet-running and energy-efficient. With a calculated life expectancy of 135,000 hours of operation they also offer a particularly long service life. Axial fans are suitable for high air performance with medium pressure increase. The air flows through the fan blades in parallel with the axis of rotation. ebm-papst can supply a wide range of tubeaxial fans: from 25 to 280 mm with an extremely shallow design thanks to space-saving integration of the motor.

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Picture 1: The Orion Nebula is around 1,500 light-years away from the Earth. The photograph was taken at the Weikersheim observatory.



Picture 2: The telescope at the Weikersheim observatory.

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Picture 3: DC axial fans from ebm-papst cool the primary mirror of the telescope at the Weikersheim observatory.

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Picture 1 Jens Hackmann
Picture 2 Philipp Reinhardt for ebm-papst
Picture 3 ebm-papst
Characters approx. 2,300, including headings and sub-headings
Tags Observatory, Weikersheim, Telescope, Axial fan, Robust
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About ebm-papst

The ebm-papst Group is the world's leading manufacturer of fans and motors. Since it was founded, the technology company has continuously set global industry standards: from the digital interconnection of electronically controlled EC fans to aerodynamic improvements for fan blades to the use of eco-friendly materials.

In fiscal year 2017/18, the company achieved sales of over € 2 billion. ebm-papst employs over 15,000 people at 27 production sites (e.g. in Germany, China and the US) and in 48 sales offices worldwide. Fans and motors from the world market leader are used in many industries, including ventilation, air conditioning and refrigeration, household appliances, heating, automotive and drive engineering.