



Fig. 1: New three-blade EC axial fan AxiTone for noise-sensitive applications.

One of the winners of the 2023 Design Plus Award powered by ISH.

Tags EC technology, axial fan, AxiTone, serrations, blade geometry

## Optimised blade geometry

### New axial fan for noise-sensitive applications

Fans in ventilation, air conditioning, and refrigeration technology have to meet strict requirements. You can't always see them, but you can often hear them. For this reason, noise characteristics (in addition to efficiency) play an important role in fan design, as many applications are often installed in the immediate vicinity of people.

The AxiTone is a new type of fan developed by ebm-papst. It is a three-blade EC axial fan and is particularly suitable for noise-sensitive applications. The new AxiTone is ideal for air-water heat pumps that require quiet fans and where counter-pressure is more of an exception due to design aspects. The fan will initially be available in size 450 mm and later in sizes 500 and 630 mm, as well. Condensers installed in residential areas and which have to adhere to particularly low noise emission levels would also benefit from this quiet axial fan. The AxiTone is also suitable for applications that use flammable refrigerants.

#### New blade geometry reduces noise

Its characteristic curve is flat, it supplies large volumes of air, and, as the name suggests, it makes very little noise during operation. The blade geometry plays a key role in this respect, as it has been optimized to aerodynamic criteria. The large area and steep inclination ensure high air flow, and the sickle-like shape reduces turbulence and thus the irritating blade passing noise. Other new features include the serrations at the front edge of the blade. They also have a positive effect on the noise characteristics, as they minimize the tonal components of noise.

#### Efficient thanks to EC technology

These fans are driven by efficient EC motors. In comparison to AC motors, EC motors function with considerably higher efficiency. They also generate less waste heat, an important advantage for chilling applications. It is also possible to control and monitor the fans based on the requirements using a 0-10 V signal or MODBUS. These features help the EC fans to work very efficiently, particularly in the partial-load range, and significantly reduce energy consumption. The AxiTone is available as a ready-to-install motor-impeller combination in both airflow directions, i.e., intake or blowing, and optionally with a guard grill or support ring.

#### The jury takes a "fan-cy"

The Design Plus Award powered by ISH 2023 is an international competition for ISH exhibitors, organised by the German Design Council for Messe Frankfurt. The AxiTone has already won over the jury and is one of the 2023 winners. Innovation, future viability, sustainability, and energy efficiency play a key role in the rating.