



Press Release

ebm-papst provides highly effective solutions for noise reduction

As a leading fan manufacturer, we understand the importance of working with customers to develop solutions to meet the challenging demands of reduced noise, whilst at the same time delivering increased performance and energy efficiency. Our fan solutions are aerodynamically optimised to provide increased airflow efficiency, which in turn reduces air turbulence, thereby reducing or eliminating the problem of noise related to air movement.

Low noise innovations can be found across our product ranges, from the smallest compact fans used in electronics cooling applications to the larger axial and centrifugal fans for industrial cooling and ventilation applications. We have a wealth of noise reducing technology including aerodynamically optimised impeller designs adopted in the HyBlade axial, S Panther compact fan and the RadiPac centrifugal fan ranges, and innovative products such as the AxiTop diffuser and FlowGrid inlet grille.

Electronics cooling is crucial in sectors such as IT and telecommunications, with smaller and smaller devices being designed to deliver higher performances, fans are required to dissipate large amounts of heat in a limited space, this can also often result in increased noise levels. The S Panther is a new generation of compact axial fan that provides improved cooling efficiency, whilst keeping the noise level to a minimum. It achieves this through improved impeller design with winglets, turbulators (trailing edges to the impeller), and a new strut design configured to match the blade geometry. The fan can produce the same air performance at reduced speeds, resulting in lower noise emissions. Noise reductions of up to 5 dB(A) can be achieved, and the tonal noise resulting from the blade passing frequency is also considerably reduced.

For commercial ventilation and air conditioning applications, the latest RadiPac centrifugal fan range incorporates a redesigned inlet ring, and a new aerofoil impeller design. The aerofoil impellers reduced weight and unique geometry results in increased

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efficiency and stability, delivering a higher airflow, improved energy efficiency and noise reductions in excess of 3dB(A).

One customer taking advantage of these savings is a leading telecoms provider who achieved both increased performance and reduced noise in the air conditioning equipment fitted in its telephone exchanges and data halls, by including our RadiPac in conjunction with the FlowGrid inlet grille.

A large proportion of fan noise results from the air flow into the fan; in particular, the tonal noise or blade passing frequency. Whether the application is a commercial ventilation system, an industrial filtration system, or a supermarket condenser, the tonal noise can be very disturbing. Therefore, we have developed a unique air inlet grille which significantly reduces this component of noise for both axial and centrifugal fans.

The noise reduction is achieved by the turbulent air or vortex strings splitting and weakening as they hit the grille and flow through it. The result is a reduction in sound pressure level in the entire frequency range of up to 3dB(A), but more significantly a drastic reduction in the disturbing low frequency tonal range of up to 12db.

Airflow losses on the outlet of an axial fan can be significant; therefore we developed a diffuser which minimises exit losses. This allows fan performances to be increased or alternatively fan speeds to be reduced whilst maintaining airflow, leading to significantly lower noise and power consumption.

The AxiTop diffuser works by decelerating the airflow, which allows a large proportion of the dynamic kinetic energy to be converted into static pressure, thus boosting the pressure increase of the impeller.

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One recent project saw the upgrade of condenser units at 152 Marks & Spencer stores, where 1,400 inefficient fans were replaced by high efficiency EC fans and Ax-iTop diffuser, this upgrade provided energy savings of 22% giving a financial savings of over £500,000/year, but also provided a noise reduction per store of up to 7dB(A).

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