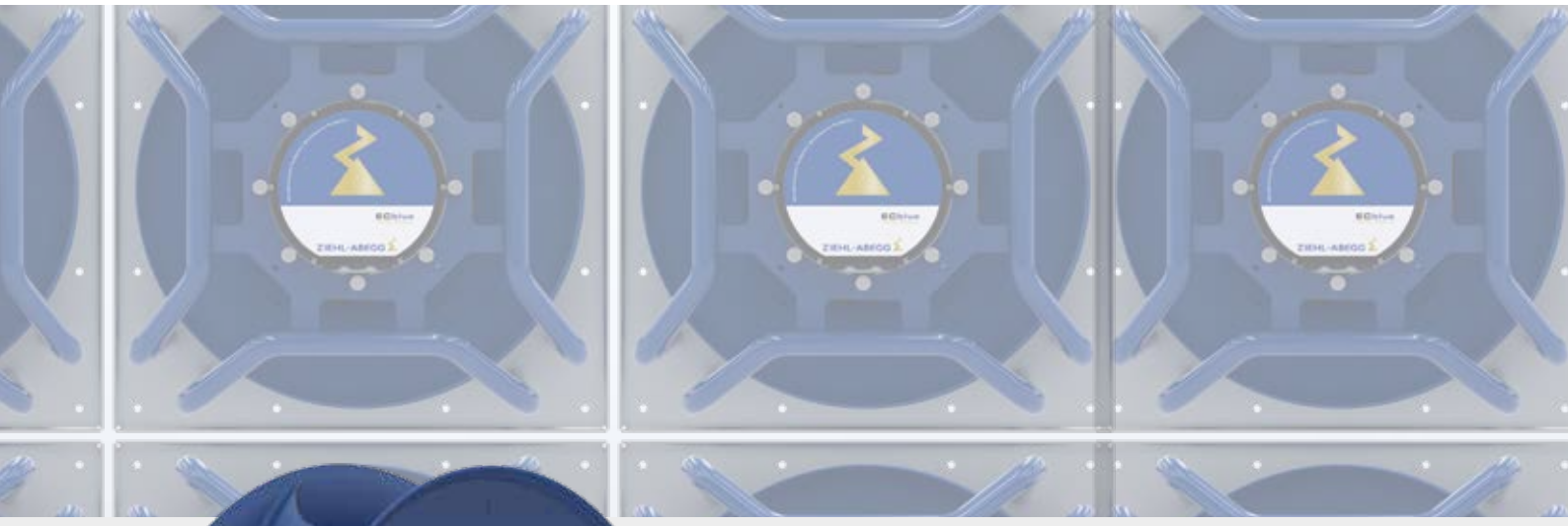
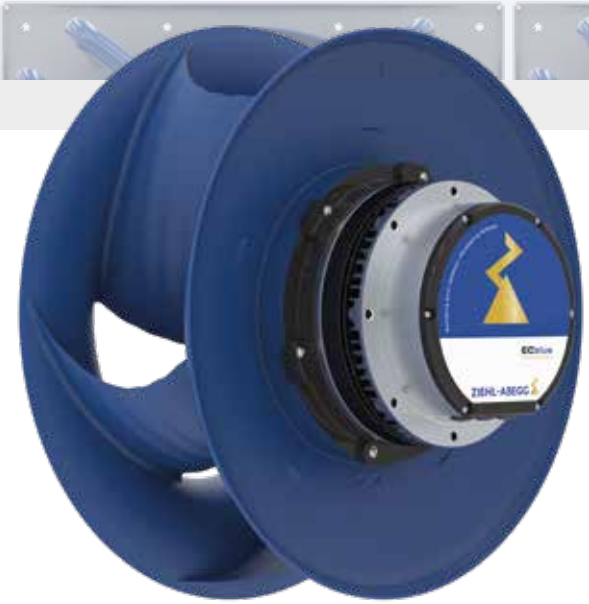
Movement by Perfection



The Royal League in **ventilation**, control and drive technology



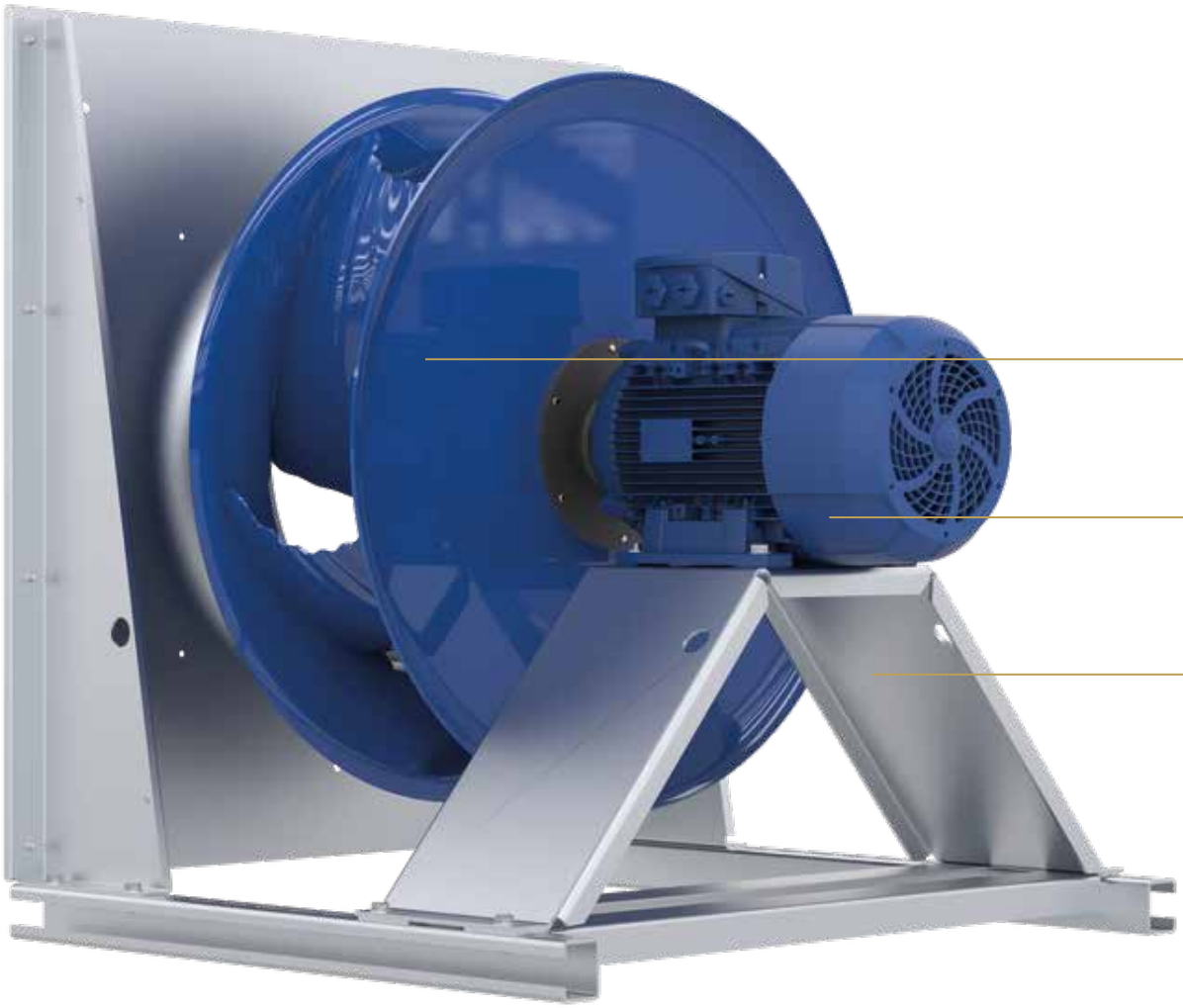
System solutions

Centrifugal fans for air conditioning

ZIEHL-ABEGG

Centrifugal fan systems

ZIEHL-ABEGG offers the largest range of fans featuring different materials, motor and control technology – perfectly tailored to customer requirements.

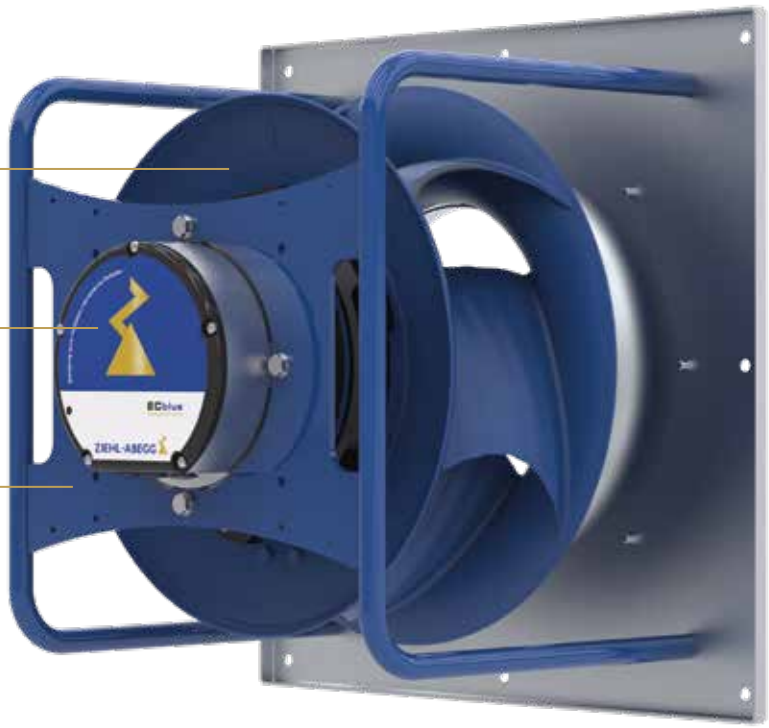


ZAbluefin-PMblue ER module

The right solution for every application - our components at a glance

Everything is just right: Innovative centrifugal fans - also available as a modular system solution connected in parallel - with state-of-the-art motor technology in AC and EC versions. Intelligent control technology, flexible and application-specific. One-stop expertise.

We present an overview of our system components on the following pages:



ZAbluefin-ECblue GR ventilation unit

Assemble the system components to suit your requirements. Our certified FANselect software helps you to make the right decision. It suggests the optimum components to match the specifications of your system.

Diversity for every application

Centrifugal impellers made of different materials

ZAvblue

High performance composite material
Ø 180 - 630 mm

ZAbluefin

ZA*mid*® technology
Ø 250 - 560 mm
Steel, powder coated
Ø 250 - 1120 mm

Cpro + C-Stahl + C3000

ZA*mid*® technology
Ø 250 - 630 mm
Steel, powder coated
Ø 225 - 1120 mm

Advantages of impeller diversity:

- Impellers with highest efficiencies – combined with quietest acoustics
- Operating temperatures up to 600 °C in process air
- Suitable for strict hygiene requirements, e.g. clean rooms, hospitals
- Resistance to a wide range of substances (oils, greases, chemicals)
- All sizes can be combined with high efficiency motor technology

Benefit from our ZA*mid*® technology

- Significant increase in static impeller efficiency to 79%, resulting in up to 18% energy saving in operation
- Reduced running noise due to tonal noise reduction by up to 5 dB
- Significant weight reduction, protecting the motor bearings and increasing the system service life
- Suitable for a temperature range from -35°C to +80°C - like a comparable steel impeller
- Fade resistant, no toxic gas emission
- Microbiologically inert for strict hygienic requirements

C-Alu

Aluminium
Ø 225 - 800 mm

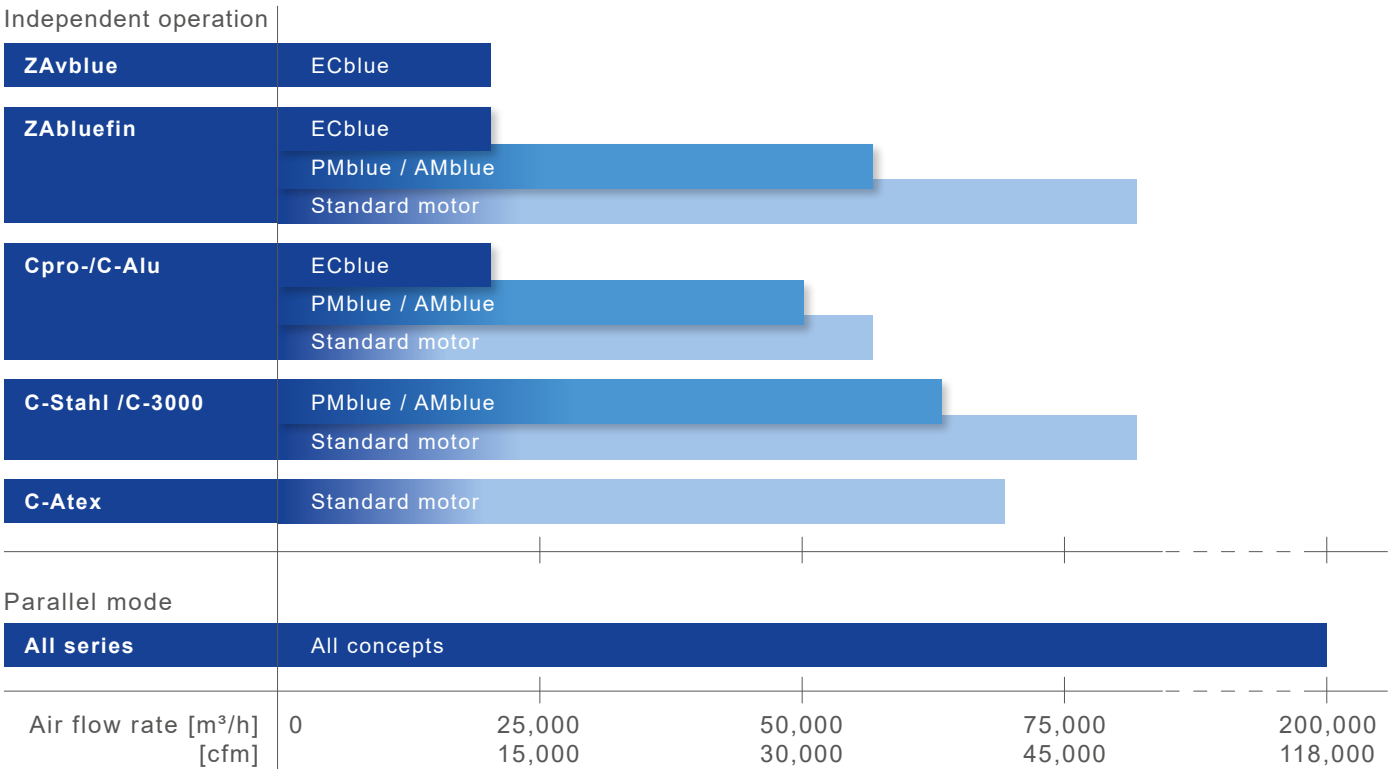
C-ATEX

Steel, powder coated
(zone 2G + 3G, also electrically conductive)
Ø 225 - 1000 mm

PR

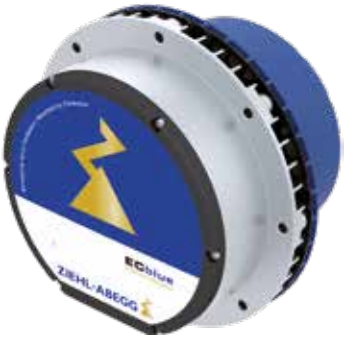
High alloy stainless steel
Process air - from 1.4301 (Ansi 304) to 1.4878 (duplex stainless steels)
Ø 250 - 2000 mm

Power range for possible impeller/motor combinations:



Highly efficient drives

EC technology



ECblue

- Compact external rotor motor
- Optimised EC controller integrated
- Efficiency class IE5, up to 800W IE4 or IE5 in 2nd generation
- Efficient operation even at low speeds

PM technology

PM motor with PMIcontrol

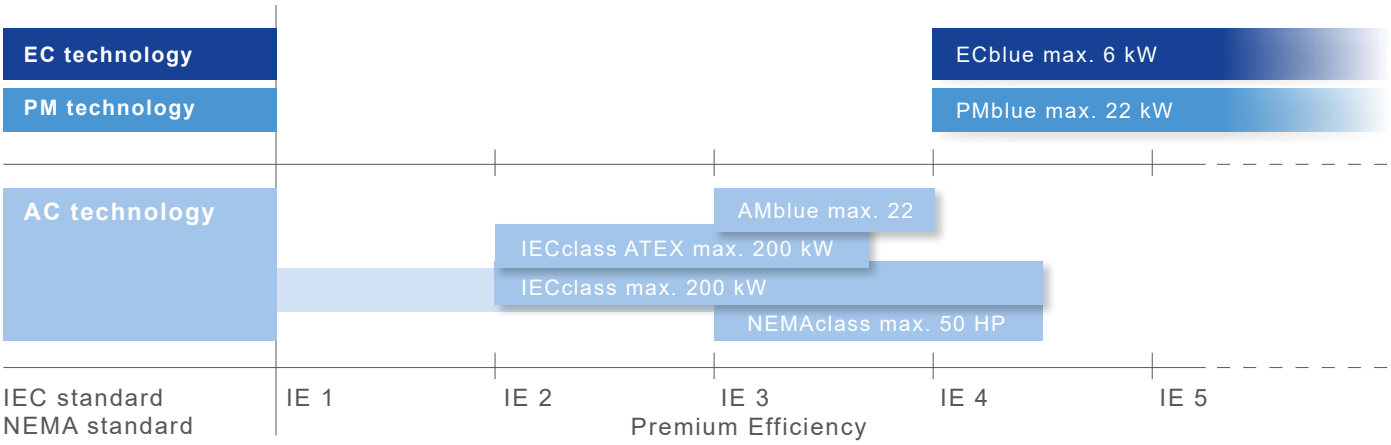
- Permanent magnet excited internal rotor motor with low noise and vibration-free running
- Suitable for very high speeds
- Highest efficiencies, even at low speeds and in partial load range
- Efficiency class IE4/IE5
- With and without attached PMIcontrol controller

AC technology

Standard motor

- IEC or NEMA standard motors from major series manufacturers (IEC or NEMA standard)
- Standard motors are tested by ZIEHL-ABEGG
- Available in various efficiency classes (IE2-IE4 or NEMA Premium Efficiency)

Efficiency classes of different motor technologies:



Exact fit designs

For the most demanding requirements - free running centrifugal fans with direct drive

Comparison of standard motor and ECblue version

Design	RH	GR	ER	PR
Installation position	Horizontal Vertical	Horizontal Vertical	Horizontal	Horizontal Vertical
Standard motor for high pressure and high air flow rates				
Impeller sizes	Ø 225 - 1120 mm		Ø 225 - 1120 mm	Ø 225 - 2000 mm
ECblue motor for compact installation situations				
Impeller sizes	Ø 190 - 800 mm	Ø 250 - 630 mm	Ø 250 - 800 mm	

Advantages of free running centrifugal fans with direct drive over belt-driven fans:

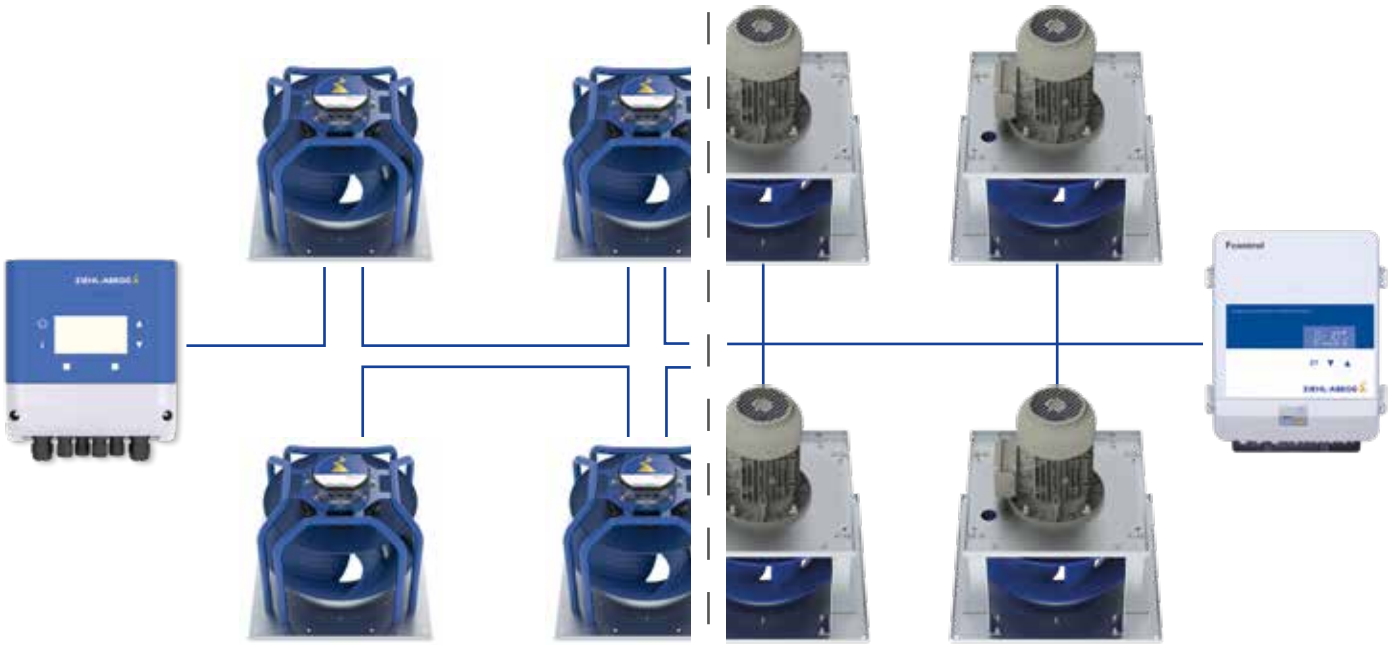
- No transmission losses, therefore higher system efficiency
- Significantly lower maintenance costs due to lack of belt drive
- Hygienically flawless design, easy to clean
- More compact design
- Reduced installation area
- Optimum flow conditions, even load on filters (no belt blockage)

A sturdy, standard design galvanised steel sheet construction supports the GR, ER, PR designs. It is also available with plastic coating and in stainless steel (process air) on request.

Thanks to a wide range of installation positions, the fans can be used in a variety of applications.

Perfect interaction

Intelligent control technology with perfectly coordinated fans for optimum performance and energy-saving control



ECblue motors with UNIcon control, Fan control via a bus system e.g. MODBUS possible

AC technology with Fcontrol frequency converter, problem-free parallel mode thanks to integrated sine filter in frequency converter

UNIcon-MODBUS control module

Icontrol and Fcontrol frequency converters with integrated sine filter

Hand held terminal

Auxiliary module AM-MODBUS for extended functions

ZAset APP Bluetooth stick

Frequency converters for every application

Fcontrol with integrated, all-pole sine filter
Preferred for:
- Fans with external rotor motors
- Parallel operation of fans
- Long cable lengths and unshielded motor cables
- Motors that are not suitable for frequency converter operation
- Ideal for retrofitting a speed control
- Quiet fan operation without typical frequency converter whistling

Icontrol - established frequency converter technology
Suitable for:
- IEC standard motors (internal rotor motors)
- Independent operation of fan in central air handling unit
- Motors/fans generally suitable for frequency converters

For both Fcontrol and Icontrol product families:
- Available in multifunction design and as basic versions
- With IP54 housing for installation without control cabinet, including outdoors

ZIEHL-ABEGG offers a comprehensive portfolio of control technology and system components from a single source.

- Products are optimally coordinated in terms of their system technology
- Cross platform control solutions, regardless of whether ECblue, PMblue or IEC motors are used
- Add-on modules for extended functionality for ECblue, Fcontrol and Icontrol Basic components
- Master control with UNIcon via MODBUS, ideal for parallel connection of fans
- State of the art wireless configuration of multiple devices possible

Unbeatable as a team

Modular system solution for maximum air handling capacity

Advantages:

- Less space required: Several small fans take up a smaller installation area
- Reduction in sound power level in low frequency range
- Improved operational reliability thanks to redundancy: Failure of one fan does not result in complete system failure
- Energy savings thanks to optimum selection of fans with maximum efficiency
- Increased flexibility: The optimum number and size of fans can be selected depending on the installation conditions
- Improved flow distribution: Result: Improved heat transmission and filter use in central air handling units

Quality in the Royal League

From development to individual application

FANselect

The quality of system solutions from ZIEHL-ABEGG is more than the sum of the individual product components. Consistent focus on customer requirements is supplemented by individual and uncomplicated support with correct selection of products and configuration of the system solution. FANselect is the new web-based selection software from ZIEHL-ABEGG. FANselect allows you to find exactly the right fan for your requirements. Enter an operating point and FANselect shows you the appropriate fans. You can select system components and calculate the life-cycle costs. View the SFP (specific fan power) classification and a comparison of up to three fans in terms of the required air handling capacity and life-cycle costs.

Advantages

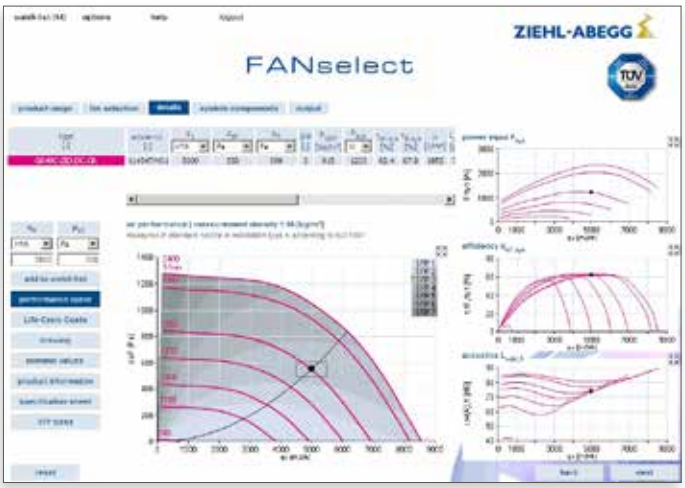
- Comprehensive product selection software, available online worldwide
- TÜV-certified calculation algorithms
- Available as web version, standalone version and calculation DLL for integration into customer software
- Enables fan dimensioning in installed condition, including for modular system solutions
- As well as centrifugal fans, also includes comprehensive axial fan product portfolio
- All data based on measurements

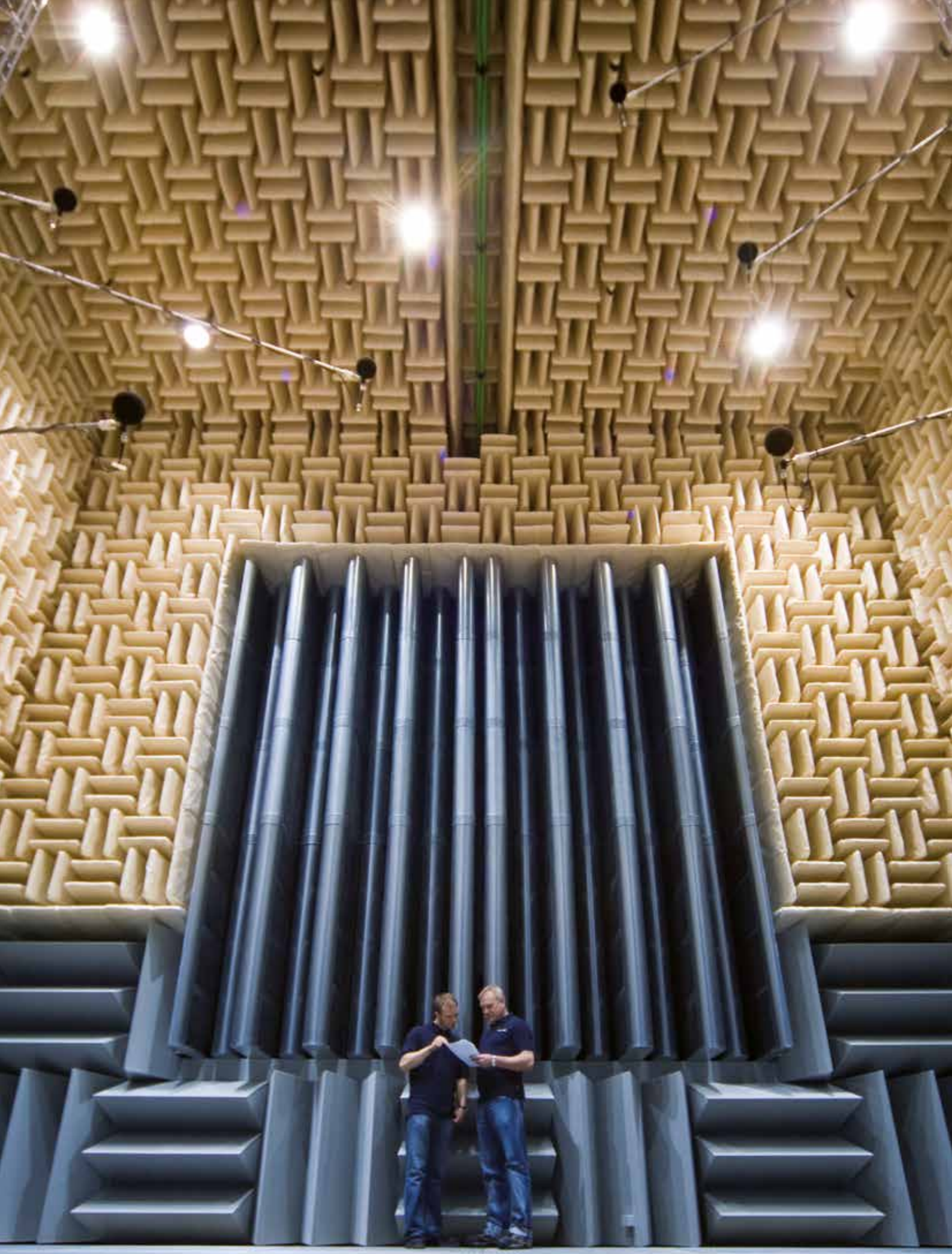
www.fanselect.net

High quality standards complying with ISO 9001, UL and AMCA

At our innovative centre for research and development, the InVent Technology Centre, product tests are conducted on our own test rigs and in the measurement laboratory under the most stringent conditions. Certification of our production processes and products to international standards confirms that we offer quality in the Royal League.

The world's largest and most modern fan air and acoustic test rig is where fan units are tested and all possible combinations measured. Incredible air flows up to 100,000 m^3/h and pressures over 3,000 Pa can be measured in huge air ducts. Only products those who pass the tests here are the correct components for ZIEHL-ABEGG system solutions.





InVent - the world's largest air and acoustic test rig

The Royal League

ZIEHL-ABEGG

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