Movement by Perfection



The Royal League in ventilation, control and drive technology



Using Air Intelligently

Air is always there but is hardly perceived consciously. Directing air in a specific form of movement is the competence of ZIEHL-ABEGG. As the world's leading provider of fans with adapted control technology, ZIEHL-ABEGG relies on the efficiency and reliability of the products. With the trailblazing solutions from ZIEHL-ABEGG, customers use air and energy optimally for their individual requirements.

FANselect The Fan Selection Program

FANselect, the web based selection software for fans from ZIEHL-ABEGG, allows you to quickly and conveniently identify the right axial or centrifugal fan for your requirements. Each product in FANselect is based on performance data from the ZIEHL-ABEGG InVent Technology Centre, known to be the most accurate measurement data in the ventilation system sector.

The most accurate measurement data combined with a specially developed calculation algorithm allows for precise fan selection. After entering your requirements, a few mouse clicks take you to a selection of products that are ideally suited to use in your application.

There is also the option of comparing products on the basis of technical performance and cost. Moreover, FANselect is the only selection software for fans in the world that has been certified by TÜV. The TÜV certificate for FANselect extends to most of the product portfolio available in FANselect. Furthermore, in FANselect it is not just the impeller data that is TÜV-certified, as with some other companies in the market, but the entire device.





www.fanselect.info

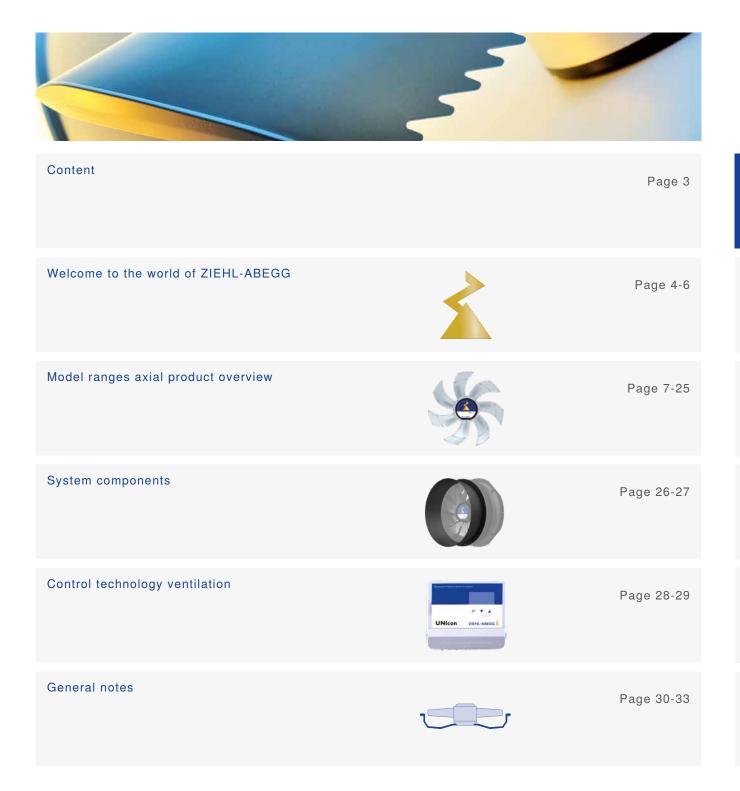
Further Information

On our website in the product range area you can find out all about ZIEHL-ABEGG fans, motors and the perfectly adapted control technology.

www.ziehl-abegg.com/en/product-range/ventilation-systems



Contents





Welcome to the World of ZIEHL-ABEGG

Top technology "Made by ZIEHL-ABEGG"

A pioneering spirit and the courage of innovation were the driving forces behind Emil Ziehl's development of his first external rotor motor over a hundred years ago. With this he laid the corner stone for the success story of ZIEHL-ABEGG in 1910. Today, the family company ZIEHL-ABEGG, with its headquarters in Künzelsau, develops, produces and sells high quality, high-tech components: Fans, special electric motors and their perfectly adapted, state-of-the-art control technology. Still today, Emil Ziehl's pioneering spirit is the motivator for making good even better and finding new, revolutionary solutions. ZIEHL-ABEGG is based in Southern Germany but is at home all over the world. At the world-wide production and sales sites, thousands of employees develop, produce and sell technical, economical and ecological progress.

Welcome to the world of ventilation, control and drive technology.

Your contact into the world of ZIEHL-ABEGG

Would you like to learn more about the company ZIEHL-ABEGG, its products and applications? Your current direct contact partners can always be found at www.ziehl-abegg.com



One-Stop Expertise

Fan, motor and control technology

Whether air conditioning, drying, cooling or ventilating, the efficient fans with adapted drive and control technology from ZIEHL-ABEGG cope with these tasks safely and reliably. Individual and also complex customer requirements are welcome challenges.

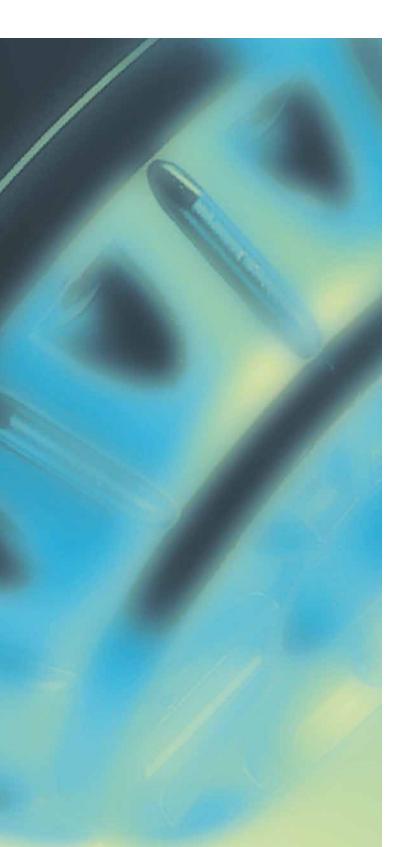
At ZIEHL-ABEGG headquarters in Künzelsau, more than 400 engineers and technicians concentrate daily on finding the best solution. In the InVent, one of the most modern technology centres of its kind, they work on the innovations of the future. Their ideas are put into practice by excellently trained specialists on state-of-the-art plants. The production as well as all processes are accompanied by prudent quality management. ZIEHL-ABEGG products are subjected to rigorous testing before being put into operation at the customer's. On the world's biggest air and noise test bench, vibrations and external noises are eliminated and thus ensure top class fan measurements in accordance with ISO and DIN. The result is top class products and services which are marked by the seals "Premium Quality" and "Premium Efficiency".



Most modern production lines for fans with the highest demands in the world (left)

The world's most modern and largest test-bench for fans at the main location in Künzelsau (right)





AC Fans of the Royal League

Strong, robust, extraordinary

In all applications in which the material is exposed to immense stress, the AC fans from ZIEHL-ABEGG demonstrate their quality and ability. Their solid components and robust design and technology are able to withstand even the greatest stresses. The fans are therefore used in many different areas of industry or agriculture - wherever absolute insensitivity and stability is important.

The high quality motor technology is the result of decades of experience at ZIEHL-ABEGG. Intelligently used components such as the Fcontrol frequency inverter make them environmentally friendly and efficient key players. Maintenance-free and extraordinarily performant, AC fans from ZIEHL-ABEGG are a safe and rewarding investment.

EC Fans of the Royal League

Quiet, efficient, environmentally friendly

EC fans from ZIEHL-ABEGG unite state-of-the-art motor technology with innovative aerodynamics. This symbiosis scores high marks by merging revolutionary ECblue Technology with premium fans. The result is efficiency and absolutely economical operation. The new generation of axial fans heads the ECblue Technology: The FE3owlet has bionically designed rotor blades for almost noiseless conveyance of air. Moreover, the FE2owletbio is made from 100% recyclable bio-polyamides. Further highlights of material development at ZIEHL-ABEGG are shown in the ZAbluefin centrifugal fan with the new ZAmid® technology. The new high performance composite material is as hard as steel but only half the weight. This is kind on the bearings and saves energy. Greater efficiency also comes from the newly developed blade geometry in the centrifugal impellers which has only become possible thanks to the innovative composite material. In standard application, EC-fans achieve maximum air flows with extraordinary efficiency despite their low noise. Together with the ECblue motors, ZIEHL-ABEGG fans achieve a dynamic response which makes them absolute leaders in environmental friendliness and efficiency.

Product Overview

Select your best option



ZAplus



Product specification

The ZAplus housing allows an optimal air flow, which was developed using CFD (state-of-the-art flow simulations). The popular FE2owlet, FE3owlet or FFowlet blade design and ZAplus nozzle interact in perfect harmony. With integrated guide vanes and a short diffuser on the pressure side, ZAplus noticeably optimises its performance data and acoustics.

Directly online to the model range

> Model selection



Technical data	
Maximum air flow	up to 41.000 m ³ /h
Maximum pressure increase	to 450 Pa
Permitted medium temperature	-60°C to +80°C
Sizes	8 sizes available from 450 mm to 1000 mm

Motor concepts



AC technology

AC085 / AC106 / AC137 / AC165

Power range 0.14 - 4.40 kW



ECblue technology

EC072 / EC090 / EC116 / EC152

Power range 0.12 - 4.50 kW

- High efficiency fan system
- Durability due to the corrosion-free nozzle made of high-performance composite material
- Can be used in the long term as it's ErP compliant
- Reduction of operating costs possible because 100% speed adjustable
- Can be used worldwide thanks to numerous certifications (incl. VDE, UL, CCC, UKCA, CE)

Typical applications



Chiller



Cold Chain



Process and Industrial Refrigeration



Ventilations



Transformers



Cooling Tower



Fruits, Vegetables and Flowers



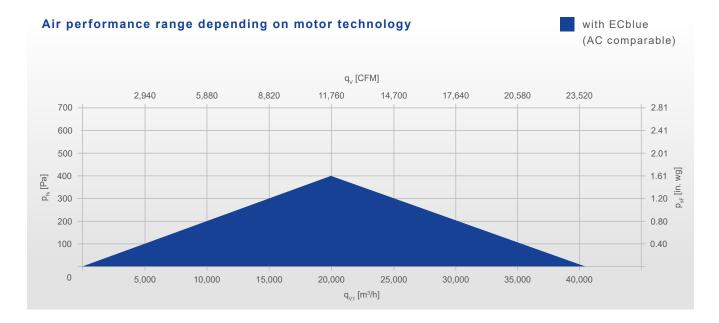
Animal, Fish and Seafood



Wind Energy



Data Centers



FE3owlet



Product specification

Our FE3owlet is a globally unique, biomimetic blade design for unrivaled high performance. The successful adaptation of the barn owl's wing shape into the development of the profiled, sickle-shaped blade profile with serrated trailing edge and unique rippled leading edge provides a blade design that is unique worldwide. Factory adjustable blade angle for optimal customer design. The result is an incredibly efficient flow behavior, greater air volumes and drastically reduced noise levels than with comparable

Directly online to the model range

> Model selection



Technical data	
Maximum air flow	up to 24,000 m ³ /h
Maximum pressure increase	to 280 Pa
Permitted medium temperature	-60°C to +80°C
Sizes	12 sizes available from 350 mm to 1000 mm

Motor concepts



AC technology AC085 / AC101 / AC137

Power range 0.20 - 3.00 kW



ECblue technology

EC072

Power range Bis zu 0.17 kW

- Individual customer requests possible
- Flexible design
- Thanks to fans that can be used in the long term AC compliant motors
- Durable through very quiet running
- Can be used worldwide thanks to numerous certifications (incl. VDE, UL, CCC, UKCA, CE)

Typical applications



Chiller



Cold Chain



Process and Industrial Refrigeration



Ventilations



Transformers



Telecommunication

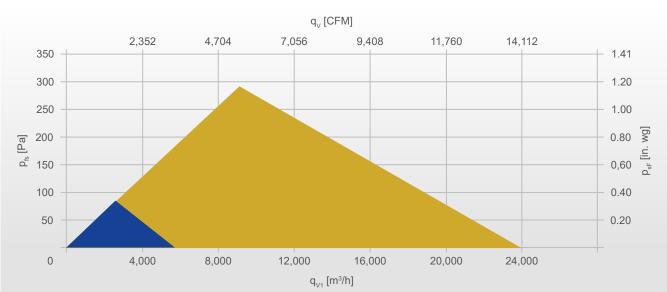


Fruits, Vegetables and Flowers



Railway Technology





FE2owlet



Product specification

The FE2owlet can be universally applied as a biomimetic, low-noise blade. The unique blade design inspired by the owl's wings provides the axial fan with one-of-a-kind performance and impressive properties. Using high-quality materials such as aluminium or high-performance composite materials protects the FE2owlet from corrosion and makes it extremely durable and operationally secure.

Directly online to the model range

> Model selection



Technical data	
Maximum air flow	up to 52,000 m ³ /h
Maximum pressure increase	to 418 Pa
Permitted medium temperature	-60°C to +80°C
Sizes	12 sizes available from 350 mm to 1000 mm

Motor concepts



AC technology

AC068 / AC074 / AC085 / AC092 / AC106 / AC137 / AC165

Power range 0.03 - 4.40 kW



ECblue technology

EC055 / EC072 / EC090 / EC116 / EC152

Power range 0.02 - 4.70 kW

- Universally applicable
- Compact dimensions for every installation situation
- Durable through very quiet running

- Reduction in operating costs possible because 100% speed adjustable
- Can be used worldwide thanks to numerous certifications (incl. VDE, UL, CCC, UKCA, CE)

Typical applications



Chiller



Cold Chain



Process and Industrial Refrigeration



Ventilations



Transformers



Telecommunication

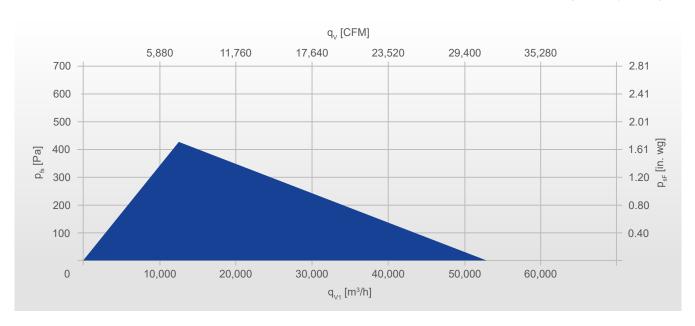


Fruits, Vegetables and Flowers



Railway Technology





FE2owlet-ECQ



Product specification

To ensure that your fresh goods are of the highest quality, the cold chain must be maintained consistently and at all times. ZIEHL-ABEGG has the perfect solution: the low-noise FE2owlet fans combined with the latest ECQ motor technology. This combination of the bionically designed FE2owlet and state-of-the-art ECQ motor technology stands out from the crowd with its quality and reliability.

The FE2owlet ECQ is also available in an explosion protected version with ATEX certification!

Directly online to the model range

> Model selection



Technical data	
Maximum air flow	up to 1,100 m ³ /h
Maximum pressure increase	to 100 Pa
Permitted medium temperature	-30°C to +50°C (different on request)
Sizes	5 sizes available from 172 mm to 300 mm

Motor concepts



EC technologie

ECQ060

Power range Up to 30 W



Explosion protected certified motors on request

- Reduction of operating costs
 - high fan efficiency
 - freely programmable speed

Durable thanks to the use of high-quality performance composite materials

Typical applications

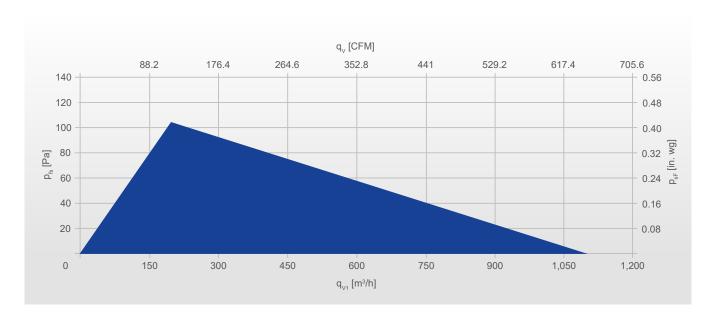




Beverages

Cooling Furniture





FPowlet



Product specification

The FPowlet fan is optimised and designed for use in heat pumps. The FPowlet makes heat pumps almost completely silent thanks to its uncompromising enhancements to achieve the lowest acoustic values. Its bionic blade concept with a serrated trailing edge and unique rippled leading edge gives it the only blade design of its kind in the world.

Directly online to the model range

> Model selection



Technical data	
Maximum air flow	up to 9,600 m ³ /h
Maximum pressure increase	to 80 Pa
Permitted medium temperature	-30°C to +60°C (different on request)
Sizes	3 sizes available in 450, 500 and 630 mm

Motor concepts



ECblue technology

EC072 / EC090

Power range Up to 160 W

- High efficiency in heat pumps
- Lowest acoustics with low tonality
- Designed for short nozzle use

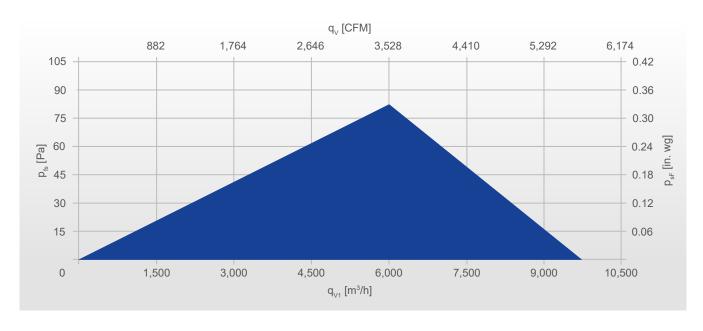
- Can be used with A3 refrigerants
- Can be used worldwide thanks to numerous certifications (incl. VDE, UL, CCC, UKCA, CE)

Typical applications



Heat Pumps





FFowlet



Product specification

The FFowlet axial fan with ultra-low-noise biomimetic blades is specially designed for applications with low pressure losses, such as in agriculture, refrigeration- and air conditioning technology, and ventilation. With protection class IP55 and coated blades, the axial fan is perfect for use in extreme conditions. It is available with proven AC Technology as well as with ECblue Technology and an integrated controller tailored to the fan.

Directly online to the model range

> Model selection



Technical data	
Maximum air flow	up to 24,500 m ³ /h
Maximum pressure increase	to 150 Pa
Permitted medium temperature	-60°C to +80°C
Sizes	7 sizes available from 500 mm to 910 mm

Motor concepts



AC technology AC106 / AC137

Power range 0.25 - 1.45 kW



ECblue technology

EC116

Power range 0.29 - 1.20 kW

- Optimized for agriculture applications
- Durable through
 - very quiet running
 - special protective measures
- Reduction of operating costs as optimized for low pressure losses
- Withstands extreme loads
- Can be used worldwide thanks to numerous certifications (incl. VDE, UL, CCC, UKCA, CE)

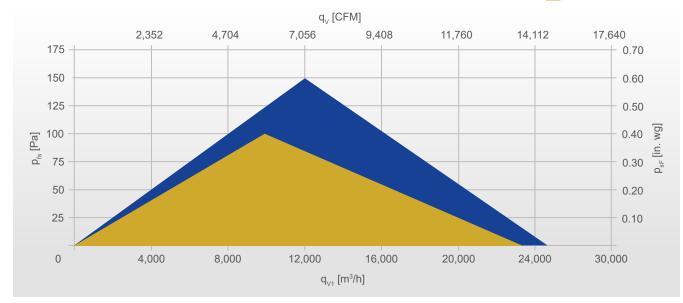
Typical applications



Animal, Fish and Seafood







MAXventowlet



Product specification

The model series impresses with its low noise emissions, boasting an improvement of up to 12 dBA compared to the previous models. Thanks to the unique ZAmid® high performance composite material, these light blades are corrosion-free and perfectly suited for medium pressure ranges. The modular system offers a high level of adaptability with different blade materials, housing lengths, or number of blades. This bionic axial fan is available with both AC and EC technology (ECblue). The MAXventowlet model series complies with the current ErP Directive and ATEX category 2 and 3.

Directly online to the model range

> Model selection



Technical data	
roommour data	
Maximum air flow	up to 144,500 m ³ /h
Maximum pressure increase	up to 2,200 Pa
Permitted medium temperature	-60°C to +120°C
Sizes	14 sizes available from 315 mm to 1400 mm

Motor concepts



ECblue technology

EC116 / EC152

Power range Up to 5,40 kW



Internal rotor motor IEC
Up to 45 kW (different on request)



Explosion protected certified motors on request

- Versatile applicable through
 - high modularity
 - wide temperature range
 - wide range of motors (also in EX)
- Reduction of operating costs through biomimetic aerodynamics
- Lower acoustics
- Explosion-proof design possible
- Can be used worldwide thanks to numerous certifications (incl. VDE, UL, CCC, UKCA, CE)

Typical applications



Power Plants



Wind Energy



Process and Industrial Refrigeration



Petrochemical Technology



Drying Technology



Cooling Tower



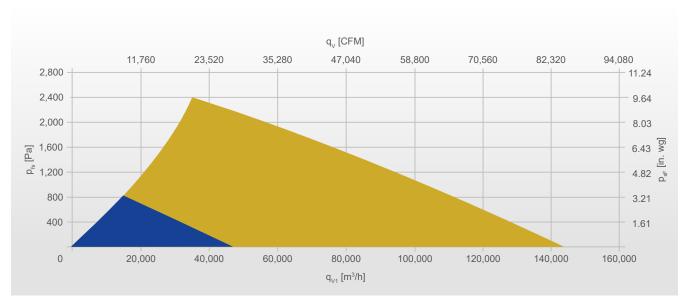
Noodles, Pasta, Coffee, Tea, Spices and Tobacco



Marine Applications







FB



Product specification

Optimized for short nozzle use, the tried and tested FB series is a constant on the market. The axial fans in our FB model range are most often used in short nozzles, for example, in refrigeration and heating technology.

We also offer our FB model range in an explosion protected version with ATEX and IECEx certification!

Directly online to the model range

> Model selection



Technical data	
Maximum air flow	up to 12,400 m ³ /h
Maximum pressure increase	to 150 Pa
Permitted medium temperature	-60°C to +80°C
Sizes	10 sizes available from 200 mm to 630 mm

Motor concepts



AC technology

AC068 / AC085 / AC106

Power range 0.03 - 1.25 kW



Explosion-proof certified motors on request

- Durable as it has been in use for decades
- Ideal for difficult installation conditions
- Explosion-proof design possible

 Can be used worldwide thanks to numerous certifications (inc. VDE, UL, CCC, UKCA, CE)

Typical applications





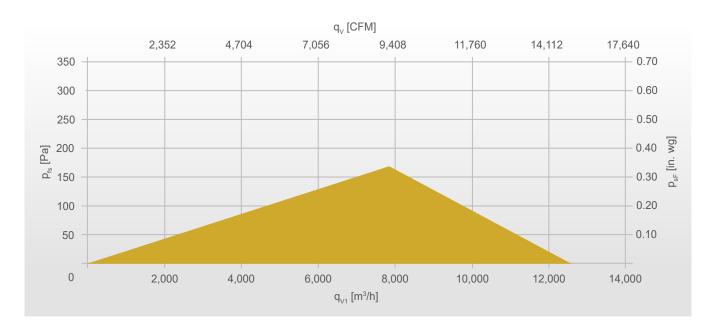


Chiller

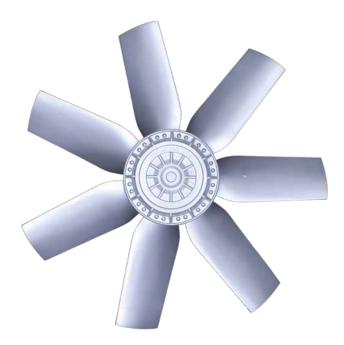
Cold Chain

Process and Industrial Refrigeration





FC



Product Specification

The axial fans in the FC model range with profiled aluminium die-cast blades stand out thanks to their particularly high level of efficiency. This is why our FC model range is used in such a wide range of fields, such as full nozzles in air-conditioning and refrigeration technology, agriculture, transformer cooling, timber drying, industrial applications and mechanical engineering. Thanks to its robust design, the FC model range demonstrates smooth-running operation and durability.

Directly online to the model range

> Model selection



Technical Data	
Maximum air flow	up to 62,000 m ³ /h
Maximum pressure increase	up to almost 300 Pa
Permitted medium temperature	-60°C to +80°C
Sizes	13 sizes available from 315 mm to 1250 mm

Motor Concepts



AC technology

AC085 / AC092 / AC106 / AC137 / AC165

Power range 0.03 - 5.40 kW

- Versatile applicable
- Powerful efficiency fan
- Durable as it has been in use for decades

 Can be used worldwide thanks to numerous certifications (incl. VDE, UL, CCC, UKCA, CE)

Typical Applications



Power Plants



Wind Energy



Process and Industrial Refrigeration



Petrochemical Technology



Drying Technology



Chiller



Storage Technology



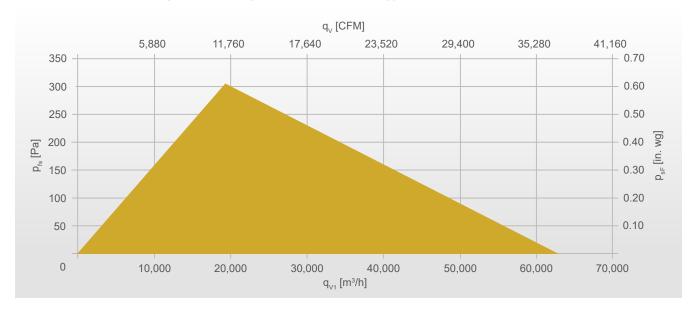
Marine Applications



Transformers

Air performance range depending on motor technology

with AC motor



ZAplus+

Diffusor on ZAplus for greater air flow rate in the lower press ure range



Product specification:

The ZAplus+ high-end diffuser generates more air flow in your existing ZAplus fan system. This optimised flow behaviour significantly reduces energy consumption, which in turn saves energy costs and protects the environment. At the same time, the acoustic directivity significantly reduces the noise level. The mounting diffuser can also be retrofitted to existing systems quickly and easily on site. Efficient and environmentally friendly – ZAplus systems are also the right choice for retrofit projects.

Properties & special features:

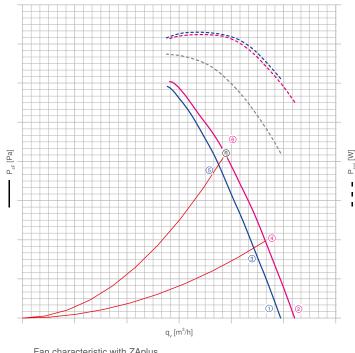
- The usual high ZIEHL-ABEGG quality
- · Easy to install and quick to retrofit
- Lower operating costs thanks to energy optimisation
- Improvement of noise levels
- · Acoustic directivity

The extra air flow is available for ZAplus sizes 500, 630, 800 and 910 mm.

The installation kit includes:

- 2 diffusor halves
- 1 guard grille
- 1 fastening kit
- 1 assembly instructions

Increase in air flow rate ZAplus+ vs ZAplus

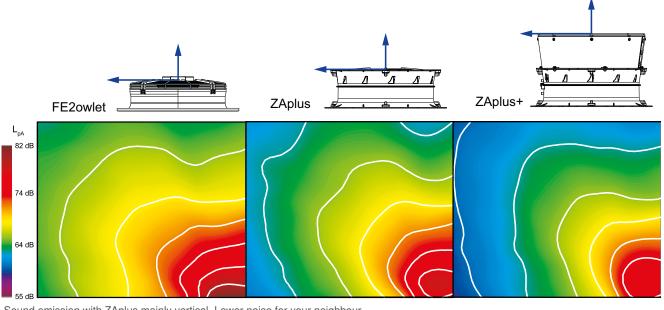


Fan characteristic with ZAplus
Fan characteristic with ZAplus+
Power consumption of fan with ZAplus
Power consumption of fan with ZAplus+

Power consumption with ZAplus+ at identical air flow as ZAplus

Optimized Sound Emission with ZAplus+

Acoustic directivity = reduced centrifugal sound emission



Sound emission with ZAplus mainly vertical. Lower noise for your neighbour.

ZAplus Heater



Technical characteristics

- Aluminium Heater
- Rated voltage U_N: 1~ 200-250 V
- Rated frequency f_N: 50/60 Hz
- Approval: CE + UL
- 1 m cold tail insulated
- 60°C thermostat
- 80°C safety limiter
- Adhesive backside on the whole surface
- · Additional adhesive over perimeter length for legendary fixing on itself

This way of fixing warrenties a better contact and so better heat exchange efficiency.

As an option there is an isolation jacket available. Herewith the loss of heat can be minimized.

Control Technology Ventilation

ZIEHL-ABEGG is the only fan manufacturer that develops and manufactures its own speed controllers for its fans in house. For this reason, no frequency inverter is better matched to a ZIEHL-ABEGG motor and parameterised than the Icontrol and Fcontrol. The Icontrol's plug & play installation concept enables quick setup and easy operation. With an integrated sinusoidal filter, Fcontrol is a one-of-a-kind frequency inverter that meets the highest standards. As a system supplier, ZIEHL-ABEGG enables any version of voltage controllers, motor protection devices, control modules and active harmonic filters to be combined. Products with system expertise, be it a new construction or the retrofitting of existing systems.

Directly online to the product range

> Control technology





Active Harmonic Filters



Electronic Voltage Controllers



Frequency Inverters



Motor Protection



Control Modules



Sensors



Transformer-based Controllers



System Components



This results in perfect system solutions from the optimal interplay of control technology, motors and fans, which you can obtain from us from a single source.



You only have one point of contact for all ventilation and technical control questions and can use sophisticated, coordinated solutions from our comprehensive portfolio for almost any area of application.



ZAbluegalaxy for Ventilation Technology

Convenient information look-up from any location worldwide, for each individual network connect device, in a matter of seconds, for example:

Bearing condition

e.g. lubrication problems, damaged elements

Operating state

e.g. contamination and cooling condition

Vibration state

e.g. unbalance detection

Operating hours

e.g. load profile of the fan

Measurement parameter

e.g. acceleration and temperature sensor

Predictive maintenance

e.g. calculations of the remaining service life

Directly online to the product range

> ZAbluegalaxy





Installation and Usage Information

Materials and Corrosion Protection

Axial fans have an impeller made of high performance composite material or aluminium.

Rotor and stator flange are made of sea water resistant aluminium alloy using a die-casting method.

The fan nozzles are made of hot-dipped thin sheet. ZAplus nozzles consist of high performance composite material.

Additional painting possible upon request and at an extra charge.

Depending on the fan size, motor suspensions are produced as wire support grids or a welded structure with flat steel struts.

The wire carrying grille and welded structure with flat steel struts are provided with weather resistant plastic coating.

Notify us of the area of application subject to increased climatic stress or use in wet rooms such as breweries, dairies or similar.

Installation Position

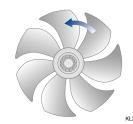
The axial fans are usually suitable for all installation positions. For details please see the part-specific documentation

Shaft horizontal	Shaft vertical	Shaft vertical
	Rotor above	Rotor below
Н	Vo	Vu

Airflow Direction

Airflow direction A

Sucking over stator

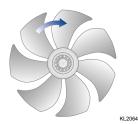


Direction of rotation counter clockwise looking at the rotor



Airflow direction V

Blowing over stator



Direction of rotation clockwise looking at the rotor



Installation and Usage Information

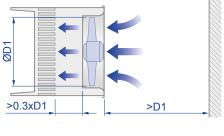
Installation Instructions

Airflow conditions

When installing fans in the devices, favourable airflow conditions must be maintained; this also applies to compact designs.

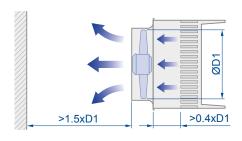
The following installation recommendations indicate the required minimum distances.

Free air intake, connected to outlet side



L-KL-2508

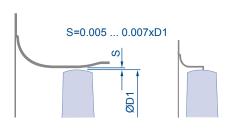
Free air outlet, connected to intake side



L-KL-2508/1

Air inlet nozzles

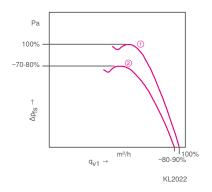
Please observe recommended gap s between fan blade and inner edge of nozzle



L-KL-2507

Influence of nozzle shape, comparison of characteristic curves

- ① Full nozzle (Design Q)
- ② Short nozzle, see accessories



Expertise in Ventilation

ErP Directive

With the Kyoto protocol, the European Union pledged to reduce CO_2 emissions by at least 20 per cent by the year 2020. One measure for achieving this is the ErP Directive 2009/125/ EG for improved energy efficiency and general environmental compatibility of energy-related products – also known in Germany as the Ecodesign Directive. It supports a resource-friendly and energy-efficient product design. These requirements are implemented for electric motors in accordance with Commission Regulation (EU) 2019/1781 and for fans in accordance with Commission Regulation (EU) 327/2011. With the implementation of the ErP Directive, stricter efficiency requirements for fans in

the output range from 125 W to 500 kW apply since 2013 and 2015 in two stages. The currently valid fan regulation is in the process of being revised and a next stage with higher efficiency requirements is planned. Energy efficiency is thus given the same standing as the compliance with the low voltage or EMC directive. The system efficiency requirement is a prerequisite for a CE mark and is thus essential for a product to be used in EU member states.

Notes on EN17166

Inlet nozzles and fan housing represent significant elements according to EN17166. By using different significant elements to the ZIEHL-ABEGG SE measurement setup, the exporter becomes the fan manufacturer according to Regulation 327/2011 and is responsible for the measurement data taking into account EN17166.

Notes pertaining to the ErP evaluation

In order to meet ErP requirements, a fan must achieve a particular minimum efficiency (target energy efficiency). The directive sets out the corresponding formulae for calculating the limit value for the relevant fan type. The actual efficiency in the efficiency optimum of the fan, which is used for the ErP evaluation, is designated η_{statA} . The efficiency N is a parameter in the calculation of the target energy efficiency of the ErP directive. As a reference value for the required efficiency N_{nominal} , ZIEHL-ABEGG specifies the actual efficiency N_{actual} relative to a motor input power of 10 kW. All specifications relevant for ErP relate to the requirements in the 2nd stage of ErP 2015. The measured data was determined in line with measurement category A using an inlet nozzle without contact protection complying with ISO 5801.



The European Ventilation Industry Association (EVIA) represents the European ventilation industry in dealings with national and European institutions. The EVIA is a key

platform for fan manufacturers and provides an interface with politicians, decision-makers in the European Union and other associations that use fans in their products. The EVIA supports the use of high-efficiency fans in Europe, in order to implement the EU efficiency increase targets. ZIEHL-ABEGG played a major role in establishing the EVIA and supports it through active participation in its working groups.

General Notes

The information and data contained in this catalogue were composed to the best of our best ability and do not absolve the user from its duty to check the suitability of the products with respect to it's intended application.

The customer is obligated to inform the supplier about general information concerning the intended use, the type of installation, the operating conditions and any other conditions that need to be taken into consideration if the order is not based on catalogue information.

ZIEHL-ABEGG SE reserves the right to make design changes, which are used for continuous technical improvement.

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The Royal League 🖍





