EN

Movement by Perfection

Product Range

Centrifugal Fans

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

ZIEHL-ABEGG

Using Air Intelligently

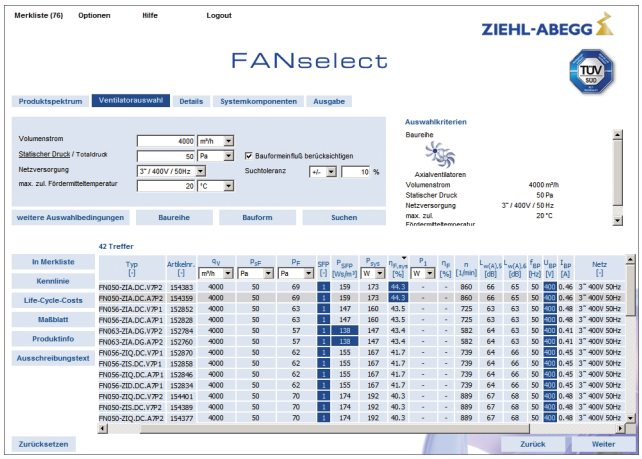
Air is always there but is hardly perceived consciously. Directing air in a specific form of movement is the competence of ZIEHL-ABEGG. As the world's leading provider of fans with adapted control technology, ZIEHL-ABEGG relies on the efficiency and reliability of the products. With the trailblazing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



fanselect.ziehl-abegg.com

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

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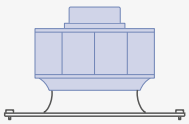
General notes  Page 42-53

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

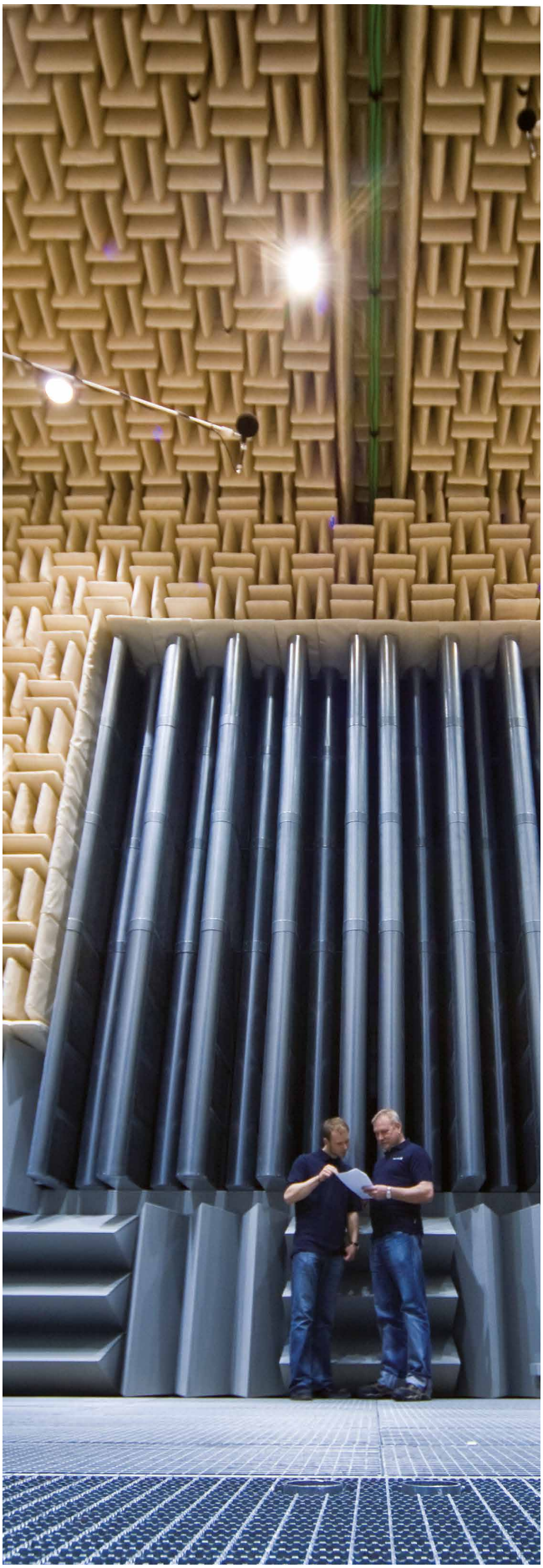
One-Stop Expertise

Fan, motor and control technology

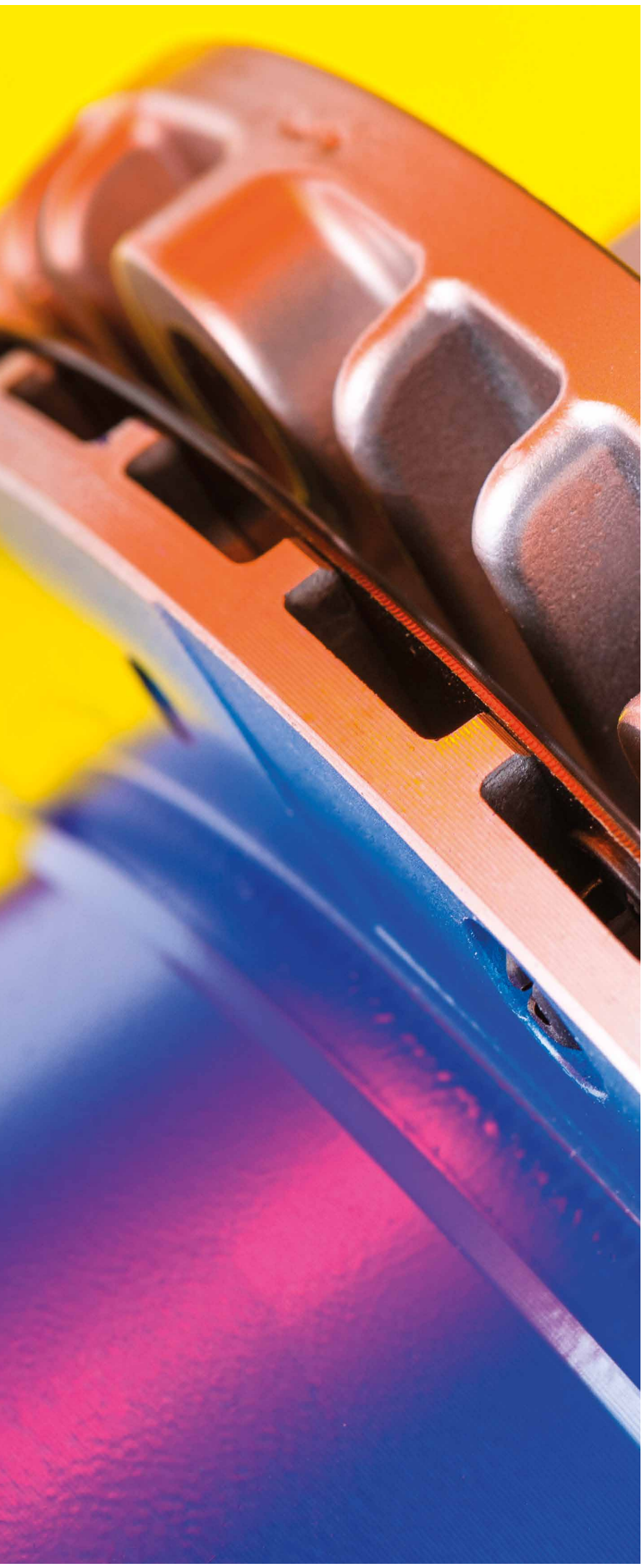
Whether air conditioning, drying, cooling or ventilating, the efficient fans with adapted drive and control technology from ZIEHL-ABEGG cope with these tasks safely and reliably. Individual and also complex customer requirements are welcome challenges.

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)



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.

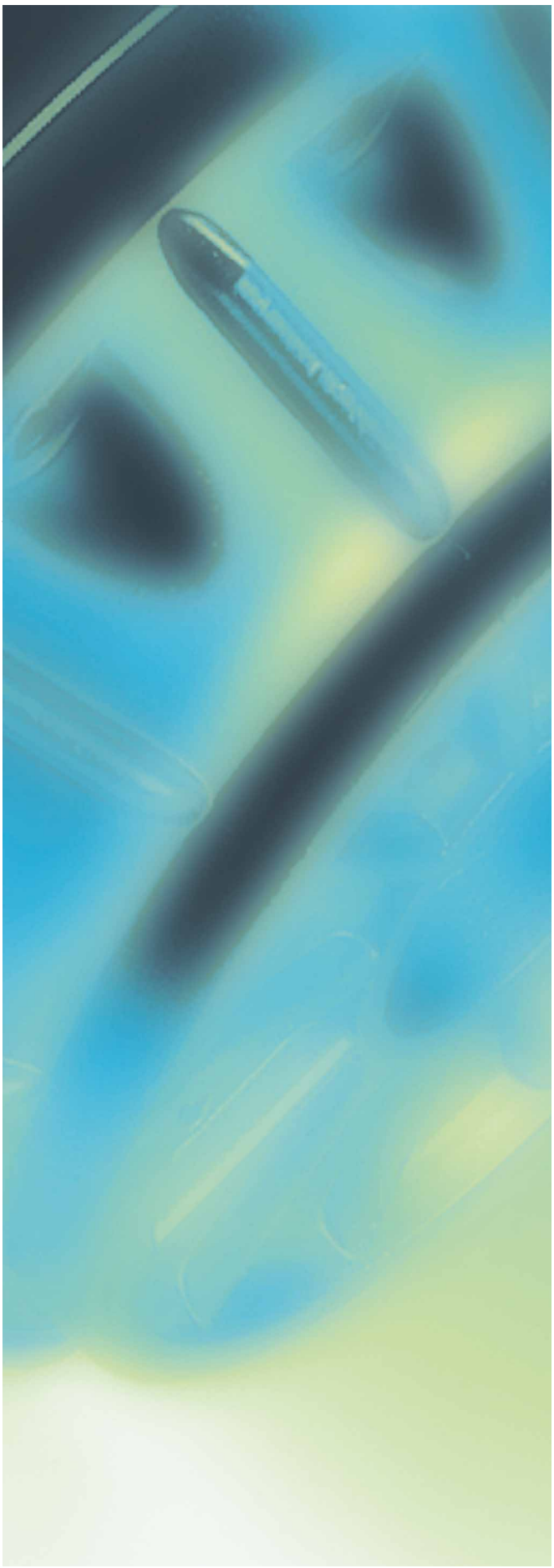
In standard application, EC-fans achieve maximum air flows with extraordinary efficiency despite their low noise. Together with the ECblue motors, ZIEHL-ABEGG fans achieve a dynamic response which makes them absolute leaders in environmental friendliness and efficiency.

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.



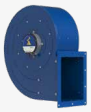
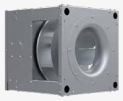
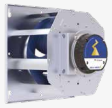
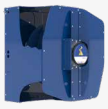
Product Overview

Select your best option

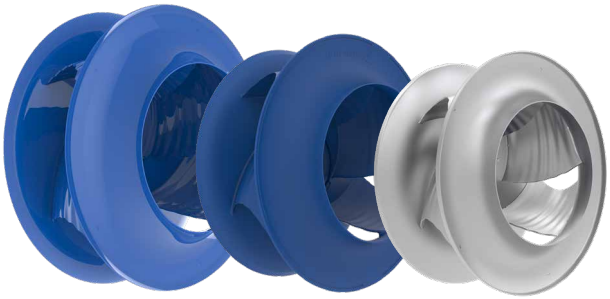
Model range	High efficiency	Low acoustics	Motor	Special feature	Page
Free running impellers					
ZAbluefin-range 	⚡⚡⚡⚡⚡	⚡⚡⚡⚡⚡	IEC, ECblue	Highest efficiency with very low acoustic values	10-11
ZAvblue/ZAvblue2 	⚡⚡⚡⚡	⚡⚡⚡⚡	ECblue	Very efficient and very quiet for compact installation situations	12-13
C-range/Cpro 	⚡⚡⚡	⚡⚡⚡	AC, IEC, ECblue	High stability, flexible and versatile applicable	14-15
Vpro 	⚡⚡	⚡⚡	AC, ECblue	Ideal for low pressure applications	16-17
M-range 	⚡	⚡	AC	Flexible and versatile even at higher speeds	18-19
L-range 	⚡	⚡	AC	Flexible and versatile for use in confined installation conditions	20-21
Housing fans					
 R-range P-range S-range	⚡⚡	⚡⚡⚡	ECblue AC	High efficient power density with directed air flow	22-23

Product Overview

Select your best option

Model range	High efficiency	Low acoustics	Motor	Special feature	Page
Application-specific fans					
ZAcube with Premium Optimizer 			ECblue	Stackable fan module for multiple fan array	24-25
ZAsilo 			ECblue	Specially designed for use in the ventilation of grain silos	26-27
ZAventero 			ECblue	Specially designed for use in kitchen exhaust air	28-29
Q-range 			AC, ECblue	Uniform and homogeneous air flow in a small installation space, ideal for door air curtains or transformer cooling	30-31
Performance-enhancing fans					
ZApilot 			ECblue	Fan system with built-in air guide for even higher efficiency	32-33
ZApilotXL 			ECblue		34-35
ZAbluefin HR 			ECblue		36-37

ZAbluefin model range



Product specification

Next generation free-running centrifugal impeller. The impeller is designed as a centrifugal fan in steel, aluminium or ZAmid® technology with 5 backward-curved blades and is available in various motor technologies. Special features include the biomimetic 3D profiling with an innovative design in the form of specially twisted blade geometry, as well as the blade leading edge developed according to the biomimetic action principle and the V-shaped serrated trailing edge, which enable a wide range of characteristics. In conjunction with an opening rotating diffusor, this fan achieves the highest impeller and system efficiencies.
In combination with the innovatively corrugated blade surface, diffuse sound radiation takes place, which ensures the lowest possible sound level.

Directly online to the model range

> Model selection

Technical data	ZAbluefin	ZAbluefin ZAmid®
Maximum air flow	to 86.000 m^3/h	up to 19.000 m^3/h
Maximum pressure increase	to 2.600 Pa	to 2.200 Pa
Permitted medium temperature	-35°C to +80°C	-20°C to +60°C
Electrical connection external rotor	▪ EC with integrated controller	
Electrical connection internal rotor	▪ PMblue permanent magnet excited motor with built-in controller ▪ IEC	
Sizes	21 sizes from 250 mm to 1120 mm	8 sizes from 250 mm to 560 mm

Motor concepts

ECblue technology

EC090 / EC116 / EC152

Power range
0.5 - 6.0 kW

AC technology
internal rotor
AC077 / AC092 / AC106 / AC115 / AC137

Power range
0.21 - 0.94 kW

Internal rotor motor
IEC
080M - 315 S/M

Power range
0.75 - 75 kW

ZAbluefin model range

Customer benefit

- 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

Wind Energy

AC/AHU

Datacenters

Device Cooling Technology

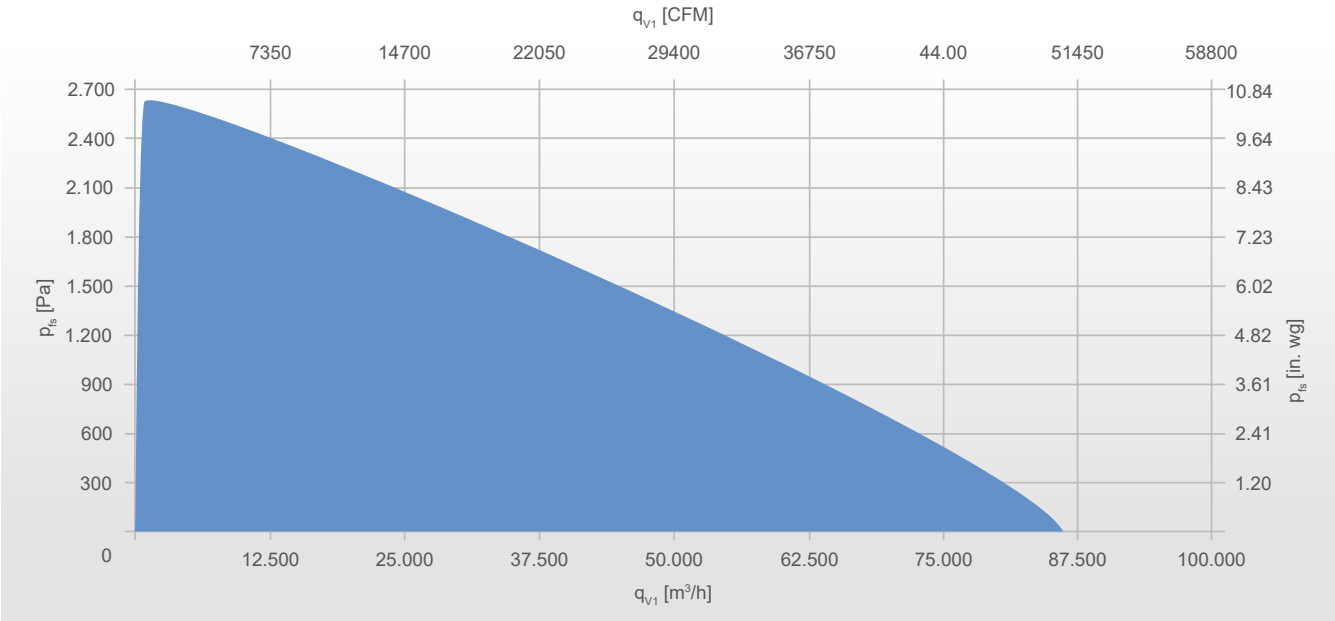
Compressors

Containers

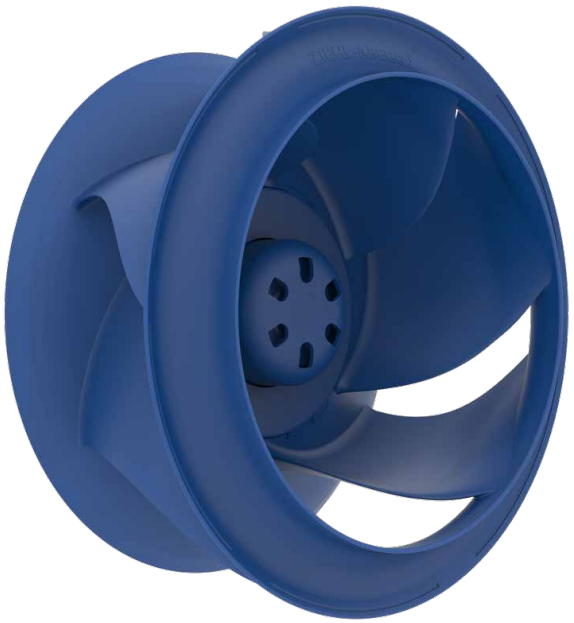
Marine Applications

Noodles, Pasta, Coffee, Tea, Spices and Tobacco

Air performance range depending on motor technology



ZAvblue / ZAvblue2



Product specification

The ZAvblue2 is the logical enhancement on the ZAvblue and achieves unprecedented efficiency values in its class. Optimised for applications with limited space, the fan impresses with its incredibly small and compact design. In combination with highly efficient EC motor technology, the fan achieves the highest performance and efficiency values. With the same overall height as market standards, an immediate switch is possible at any time. The innovative biomimetic design enables significantly reductions in air, performance and deflection losses under axial flow conditions in conjunction with previously unattainable pressure stability. The ZAvblue2 pushes the boundaries of what is possible and is a win in every situation.

Directly online to the model range

> Model selection

Technical data	ZAvblue with EC055	ZAvblue2
Maximum air flow	up to 1.300 m^3/h	up to 22.000 m^3/h
Maximum pressure increase	to 1.000 Pa	to 1.650 Pa
Permitted medium temperature	-30°C to +60°C	-20°C to +60°C
Electrical connection external rotor	EC with integrated controller	
Sizes	7 sizes from 160 mm to 250 mm	2 sizes: 355 mm and 630 mm

Motor concepts

ECblue technology

EC090 / EC116 / EC152

Power range:
0.5 - 4.6 kW

ECblue technology

EC055

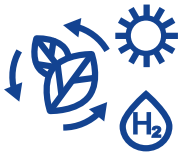
Power range:
0.065 - 0.17 kW

ZAvblue / ZAvblue2

Customer benefit

- Efficiency in its most compact form
- Stable performance in confined installation situations
- 100% speed controllable
- Impeller made of high performance composite material
- Can be used worldwide thanks to numerous certifications (incl. VDE, UL, CCC, UKCA, CE)

Typical applications



Solar Power/ Bio Energy/ Fuel Cells

Ventilation

Residential Ventilation

Heat Pumps

Datacenters

Telecommunication

Prozecc- and Industrial Refrigeration

Frequency Converters

Device Cooling Technology

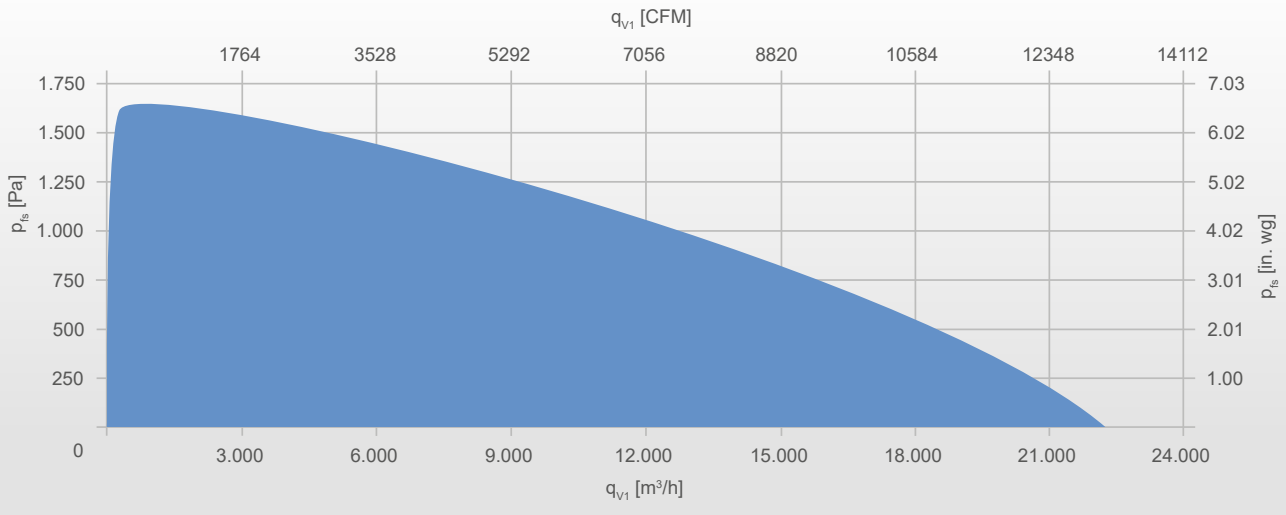
Compressors

Packaging and Production Machines

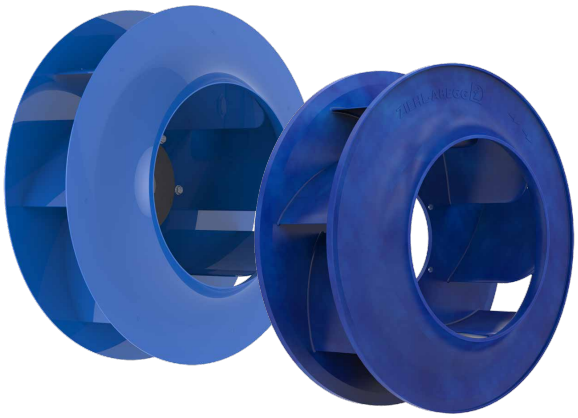
Containers

Clean Room Workstations

Air performance range depending on motor technology



C model range / Cpro



Product specification

ZIEHL-ABEGG offers the largest range of fans featuring different materials, motor technologies, and control technology – perfectly tailored to customer requirements. The modular design allows you to put together system components according to your individual requirements. This means that impellers from our C model range, for example, are available in sheet steel or ATEX versions, and can be combined with standard motors in parallel operation. All dimensions (220 - 1,120 mm) can be combined with highly efficient motor technology for maximum efficiency and quiet acoustic levels. Thanks to a wide range of installation positions, the fans can be used in a variety of applications.
The centrifugal impellers from the C model range with ATEX and IECEx certification are perfectly suited for applications in potentially explosive environments, e.g. with highly flammable gases.

Directly online to the model range

> Model selection

Technical data	C-range	Cpro ZAmid®
Maximum air flow	to 115.000 m^3/h	up to 30.000 m^3/h
Maximum pressure increase	to 3.100 Pa	to 2.500 Pa
Permitted medium temperature	-20°C to +80°C	-35°C to +80°C
Electrical connection external rotor	▪ AC	▪ EC with integrated controller
Electrical connection internal rotor	▪ PMblue permanent magnet excited motor with built-in controller ▪ IEC	
Sizes	225 mm to 1.120 mm	250 mm to 630 mm

Motor concepts

ECblue technology

EC090 / EC116 / EC152

Power range
0.5 - 6.0 kW

AC technology
internal rotor

AC077 / AC092 / AC106 / AC115 / AC137

Power range
0.21 - 0.94 kW

External-/ internal rotor motor IEC

080M - 315 S/M

Power range
0.75 - 75 kW

C model range / Cpro

Customer benefit

- High performance impeller
- Air flow measurement at the inlet ring
- High peripheral speeds with IEC standard motors
- Available with the same high performance for standard or explosionproofed applications
- Can be combined with various standard motor solutions

Typical applications

Wind Energy

AC/AHU

Datacenters

Chemical and Petrochemical Technology

Motors

Drying Technology

Railway Technology

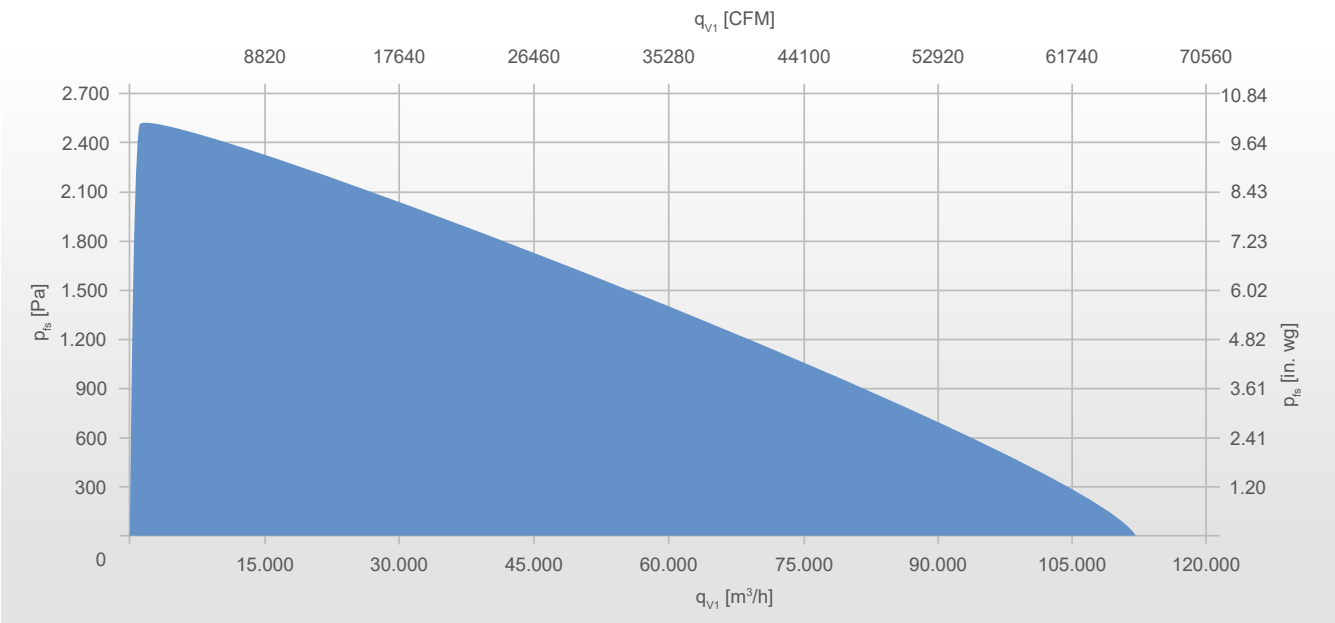
Trucks

Marine Applications

Packaging and Production Machines

Clean Room Workstations

Air performance range depending on motor technology



Vpro

Product specification

ZIEHL-ABEGG strives for fascination, innovation, and always being one step ahead of the curve. We have been active in the application area of cleanrooms for many years. Using our comprehensive project experience, we work together with our customers in order to find the perfect solution to yield the greatest energy efficiency and the highest level of reliability. Out of our diverse range of centrifugal impellers, our Vpro is best suited for universal use. What makes the Vpro stand out is its specially developed, three-dimensional blade geometry, which gives it an exceptionally low sound power level. Combined with the built-in GR module, installation is quick, simple, and highly efficient.

Directly online to the model range

> Model selection

Technical data	
Maximum air flow	up to 18.000 m^3/h
Maximum pressure increase	to 1.300 Pa
Permitted medium temperature	-30°C to +60°C
Electrical connection external rotor	▪ EC with integrated controller ▪ AC
Sizes	190 mm to 630 mm

Motor concepts

ECblue technology

EC055 / EC072 / EC090 / EC116 / EC152

Power range:
0.48 - 3.6 kW

AC technology

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

Power range:
0.06 - 3.9 kW

Vpro

Customer benefit

- Easy to handle thanks to the integrated inlet nozzle
- Efficient and quiet but also compact fan module
- 100% speed controllable
- Impeller made of high performance composite material
- Numerous certifications (incl. VDE, UL, CCC, UKCA, CE)

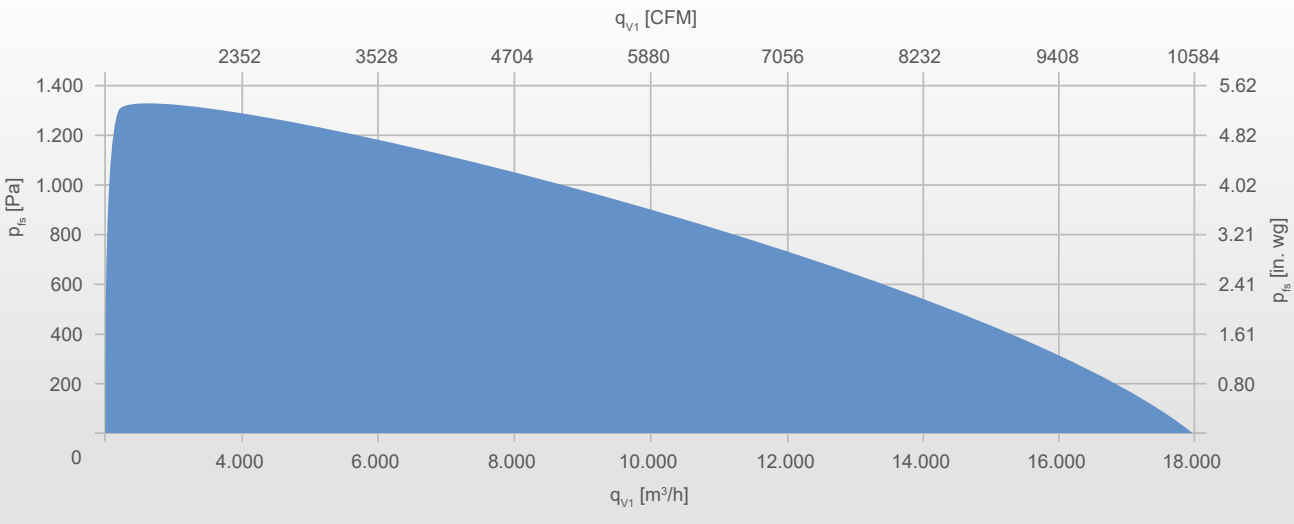
Typical applications

Packaging and Production Machines

Clean Room Workstations

Clean Room Ceilings/FFU

Air performance range depending on motor technology



M model range

Product specification

The centrifugal fans in our M model range with an aluminium impeller are particularly versatile and are suitable for different applications, for example, with high mechanical requirements and at high temperatures. They can be used, for example, in air conditioning and refrigeration technology, in railway operations or in drying plants. The geometry of the impeller allows it to be used both as a free-running impeller and in a spiral housing. This allows high static pressures to be achieved in conjunction with 2-pole motors.

The M model range is also available with ATEX and IECEx certification for potentially explosive applications, e.g. in combination with flammable gases.

Directly online to the model range

> Model selection

Technical data	
Maximum air flow	up to 14.500 m^3/h
Maximum pressure increase	to 1.750 Pa
Permitted medium temperature	-35°C to +80°C
Electrical connection external rotor	AC
Sizes	225 mm to 630 mm

Motor concepts

AC technology

AC077 / AC085 / AC092 / AC106 / AC115 / AC137/ AC165

Power range:
0.19 - 3.3 kW

ECblue technology

on request

M model range

Customer benefit

- Universal
- 100% speed controllable
- Impeller made of high performance composite material ZAmid
- Certifications ATEX and IECEx

Typical applications

Solar Power, Bio Energy, Fuel Cells

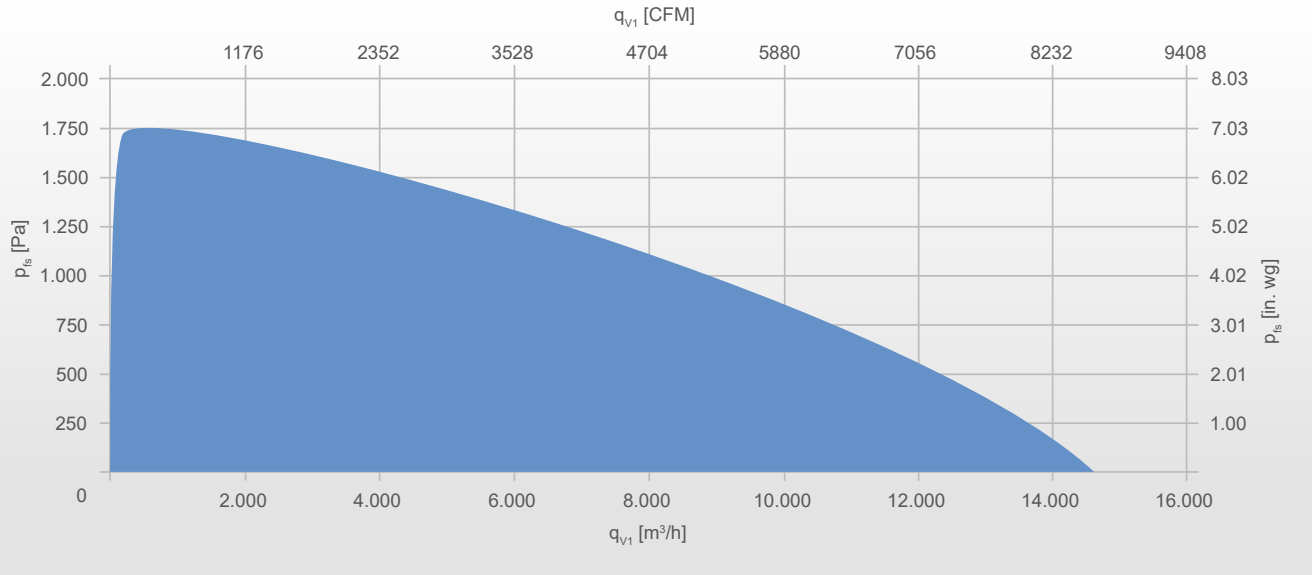
Frequency Converters

Packaging and Production Machines

Railway Technology

Trucks

Air performance range depending on motor technology



L model range

Product specification

What makes our L model range stand out is the special blade design and number of blades. Available in dimensions of 190 - 315 mm, the composite material impeller with AC technology is used wherever outstanding performance is required despite a lack of space. Areas of application of our L model range include, for example, air conditioning and refrigeration technology as well as unit cooling. Thanks to the special impeller geometry, the centrifugal fan is also perfectly suited for selective component cooling. In combination with our low-maintenance AC motors, ZIEHL-ABEGG fans are a solid investment in the future.

Directly online to the model range

> Model selection

Technical data	
Maximum air flow	up to 1.900 m^3/h
Maximum pressure increase	to 600 Pa
Permitted medium temperature	-40°C up to +70°C
Electrical connection external rotor	AC
Sizes	190 mm to 310 mm

Motor concepts

AC technology

AC068 / AC074

Power range:
0.06 - 0.26 kW

L model range

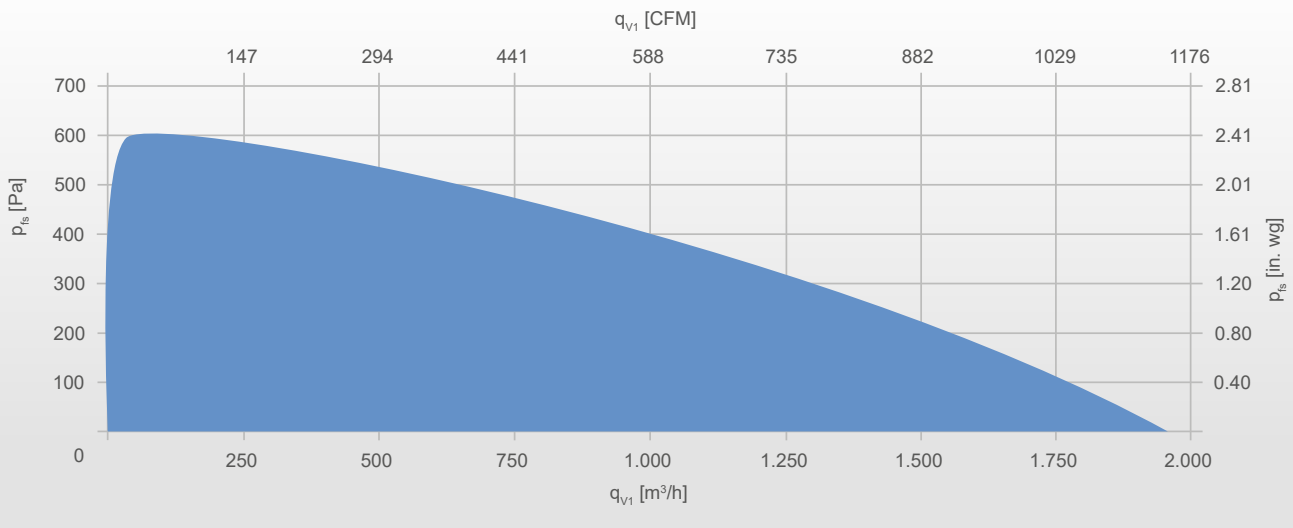
Customer benefit

- High performance impeller for tight installation conditions
- Robust behavior even under difficult installation conditions

Typical applications

Industrial Cooking, Bakery and Confectionary

Air performance range depending on motor technology



R-model range / P-model range / S-model range

Product specification

Directing the natural resource of air in a specific form of movement is ZIEHL-ABEGG's strength. To achieve this, we focus on efficiency and reliability in all our products. The correct integration of our systems to your specific requirements is particularly important to us. We reliably bring air to where it is needed, exactly when it is needed. The impressive variety of our centrifugal fans offers the very best solution for every application. The single or double inlet housing fans from our P model range with AC technology and forward-curved blades are energy optimised for operation in a spiral housing.

For special applications in explosive zones 1 and 2, we also supply the P model range in explosion protected versions with ATEX and IECEx certification.

Directly online to the model range

> Model selection

Technical data	R-model range	P-model range	S-model range
Maximum air flow	up to 13.000 m^3/h	up to 8.100 m^3/h	up to 8.100 m^3/h
Maximum pressure increase	to 1.200 Pa	to 1.050 Pa	to 1.050 Pa
Permitted medium temperature	-20°C to +80°C	-20°C to +80°C	-20°C to +80°C
Electrical connection external rotor	EC with integrated controller	AC	AC
Sizes	108 mm to 450 mm (single-ended) and 250 mm to 450 mm (double-ended)	140 mm to 450 mm	280 mm to 400 mm (single-ended) and 200 mm to 400 mm (double-ended)

Motor concepts

R-range

EC technology

EC055 / EC072 / EC090 / EC116 / EC152

Power range:
0.15 - 4.2 kW

P-range

AC technology

AC085 / AC092 / AC106 / AC137 / AC165

Power range:
0.15 - 2.9 kW

S-range

AC technology

AC085 / AC092 / AC106 / AC137 / AC165

Power range:
0.15 - 2.9 kW

R-model range / P-model range / S-model range

Customer benefit

- Fan consisting of robust and durable components
- Impeller and housing are ideally matched to one another

Typical applications

Ventilation

Packaging and Production Machines

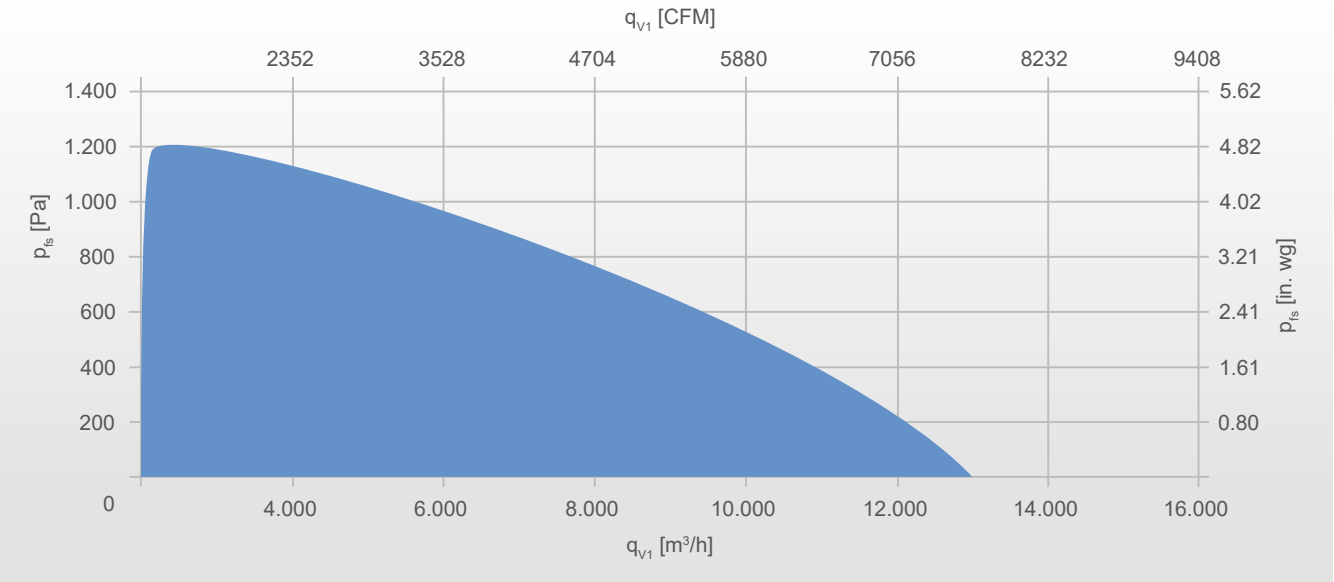
Clean Room Workstations

Motors

Residential Ventilation

Telecommunication

Air performance range depending on motor technology



ZAcube with Premium Optimizer

Product specification

Cubed – flexible – highly efficient. The new ZAcube fan system. With a few simple steps, you can now effortlessly create a highly efficient fan formation in a variety of shapes and sizes, precisely according to your requirements. Up to five levels can be stacked on top of one another. Manual mounting is easy thanks to simple connecting devices on the modules with standard screws. The modules are self-supporting and can therefore be mounted without additional reinforcement measures. Smooth surfaces and no sharp edges make the ZAcube is easy to clean. The ZAcube is suitable for common standard filter dimensions, cost-effective and ideal in planning.

Directly online to the model range

> Model selection

Technical data	
Maximum air flow	to 19.000 m^3/h
Maximum pressure increase	to 2.550 Pa
Permitted medium temperature	-20°C to +60°C
Electrical connection external rotor	EC with integrated controller
Sizes	315 mm to 560 mm; 3 ZAcube sizes: 607 mm, 760 mm and 912 mm

Motor concepts

ECblue technology

EC116 / EC152

Power range:
2.5 - 5.2 kW

ZAcube with Premium Optimizer

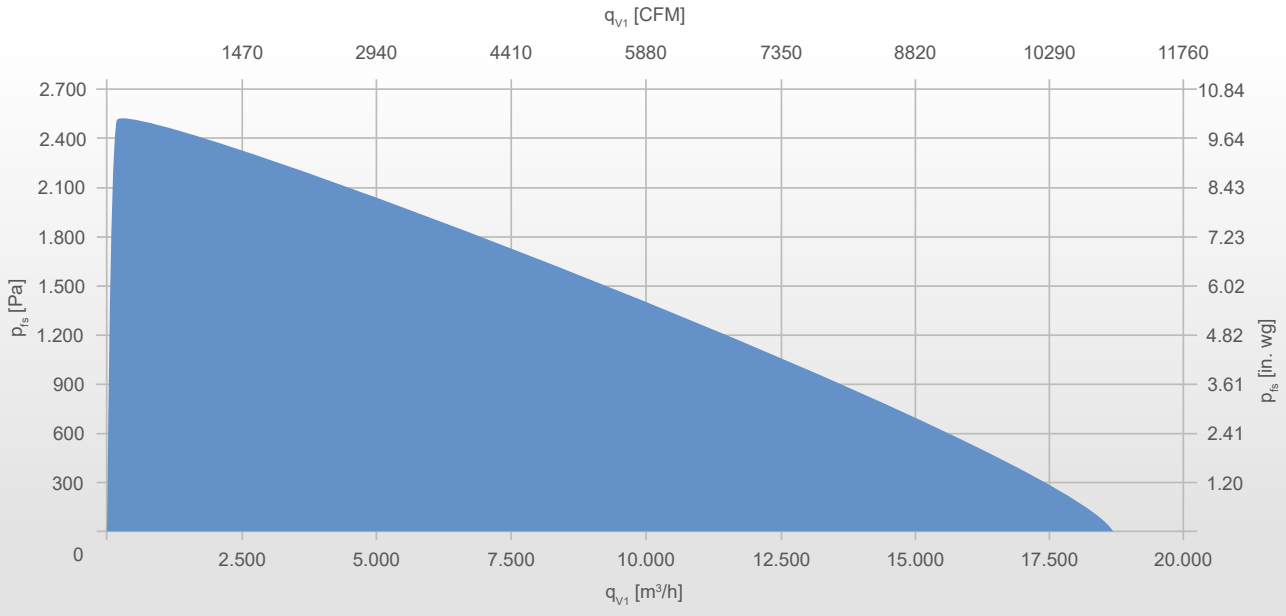
Customer benefit

- „Premium Optimizer“ for improved air performance, higher efficiency and reduced noise
- Plug & Play - quick and easy installation of additional ZAcubes
- Short electrical installation time with M12
- Laminar flow pattern at the outlet
- Fan control via Modbus

Typical applications

AC/AHU

Air performance range depending on motor technology



ZAsilo

Product specification

The ZAsilo combines years of agricultural expertise with German quality. The result is energy savings of 30% compared to a 2-pole AC standard fan – without loss of ventilation performance for your grain silo. The ZAsilo is designed for extreme conditions and combines a perfectly balanced fan impeller with a quiet, high-performance motor in a pest- and corrosion-resistant housing. The ZAsilo provides complete control with ramp-up function and requires virtually no starting current – perfect for single-phase power supply. Thanks to its light and compact construction, it is even suitable for problem-free one-man installation.

Directly online to the model range

> Model selection

Technical data	
Maximum air flow	up to 10.000 m^3/h
Maximum pressure increase	up to almost 2.200 Pa
Permitted medium temperature	-25°C to +50°C
Electrical connection external rotor	EC with integrated controller
Sizes	3 sizes: 250 mm, 315 mm and 400 mm

Motor concepts

ECblue technology

EC090 / EC116 / EC152

Power range:
0.7 - 4.4 kW

ZAsilo

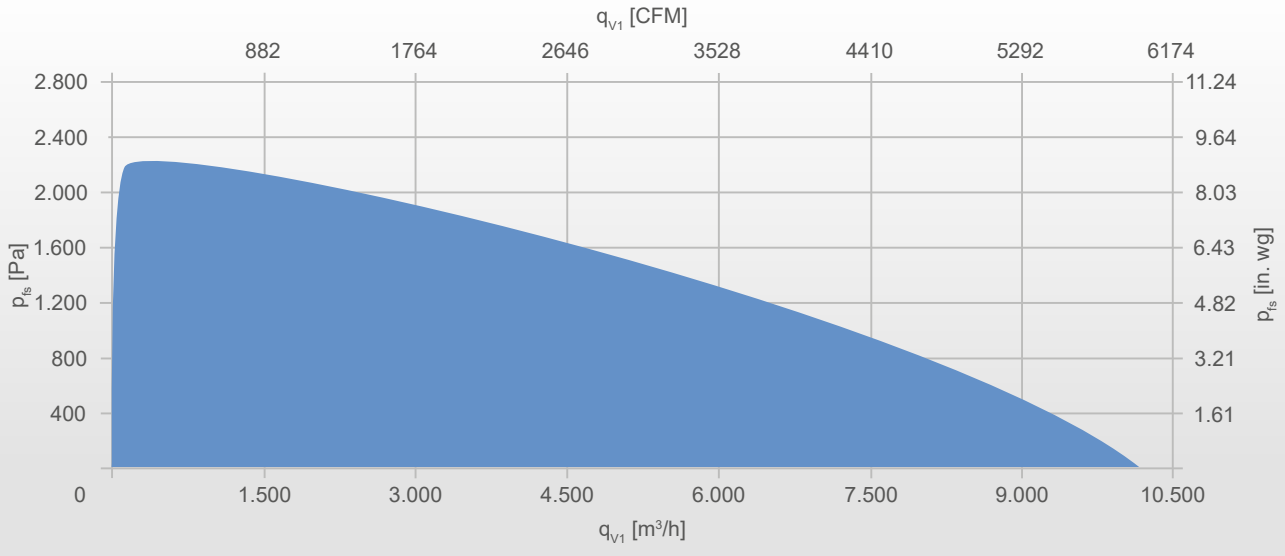
Customer benefit

- Fan consisting of robust and durable components
- Ideal for outdoor use directly on the silo

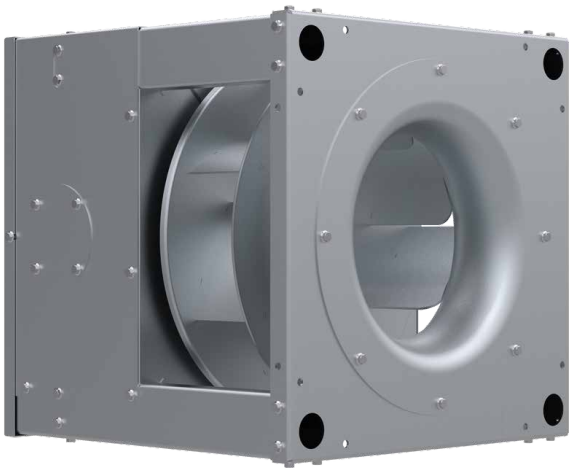
Typical applications

Storage Technology

Air performance range depending on motor technology



ZAventero



Product specification

The newly developed fan impresses not only with its futuristic appearance, minimalistic and compact design, but also trumps on the inside with first-class fan and motor technology and the new, ingenious routing for air discharge. Here, in particular, the developers kept in mind the user during assembly as well as during use and application. With high-tech fan equipment and ECblue motor technology, this well-thought-out system offers the maximum in perfection and operating performance. The ZAventero sets new standards in performance, handling, efficiency, acoustics, and sustainable behaviour. So reach for the new star in the (kitchen) sky.

Directly online to the model range

> Model selection

Technical data	
Maximum air flow	up to 11.000 m^3/h
Maximum pressure increase	up to almost 1.800 Pa
Permitted medium temperature	-25°C to +80°C
Electrical connection external rotor	EC with integrated controller
Sizes	4 sizes from 315 mm to 450 mm

Motor concepts

ECblue technology

EC116 / EC152

Power range:
1.9 - 3.5 kW

ZAventero

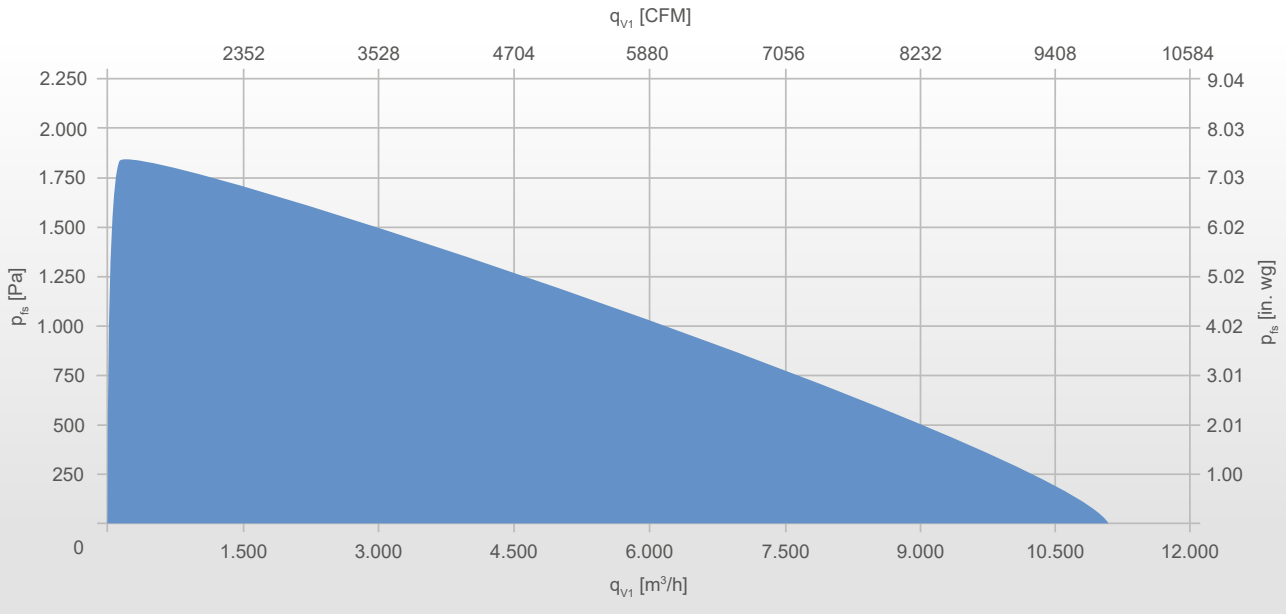
Customer benefit

- Can be used with EC motor at high temperatures
- 100% speed controllable

Typical applications

Industrial Cooking, Bakery and Confectionary

Air performance range depending on motor technology



Q model range

Product specification

Regardless of which system or solution you opt for, ZIEHL-ABEGG is always the right choice. By using targeted cooling with ZIEHL-ABEGG fans, high peak loads can be absorbed. This option offers flexibility when it comes to the system design of new installations. For existing installations, a considerable increase in performance can be achieved with the right retrofitting measures. Thanks to optimum cooling with the crossflow fans in our Q model range, we also achieve more consistent temperatures and a longer service life for your dry transformers. Our philosophy: Ideal adaptation for optimal performance.

Directly online to the model range

> Model selection

Technical data	
Maximum air flow	up to 3.000 m^3/h
Maximum pressure increase	up to almost 375 Pa
Permitted medium temperature	-20°C to +70°C
Electrical connection external rotor	▪ EC with integrated controller ▪ AC
Sizes	4 sizes from 60 mm to 125 mm

Motor concepts

ECblue technology

EC055 / EC072

Power range:
0.07 - 0.17 kW

AC technology

AC085 / AC092 / AC106 / AC137 / AC165

Power range:
0.04 - 0.7 kW

Q model range

Customer benefit

- Laminar air distribution over the entire outflow area of the fan
- Low tonal noise and even outflow

Typical applications

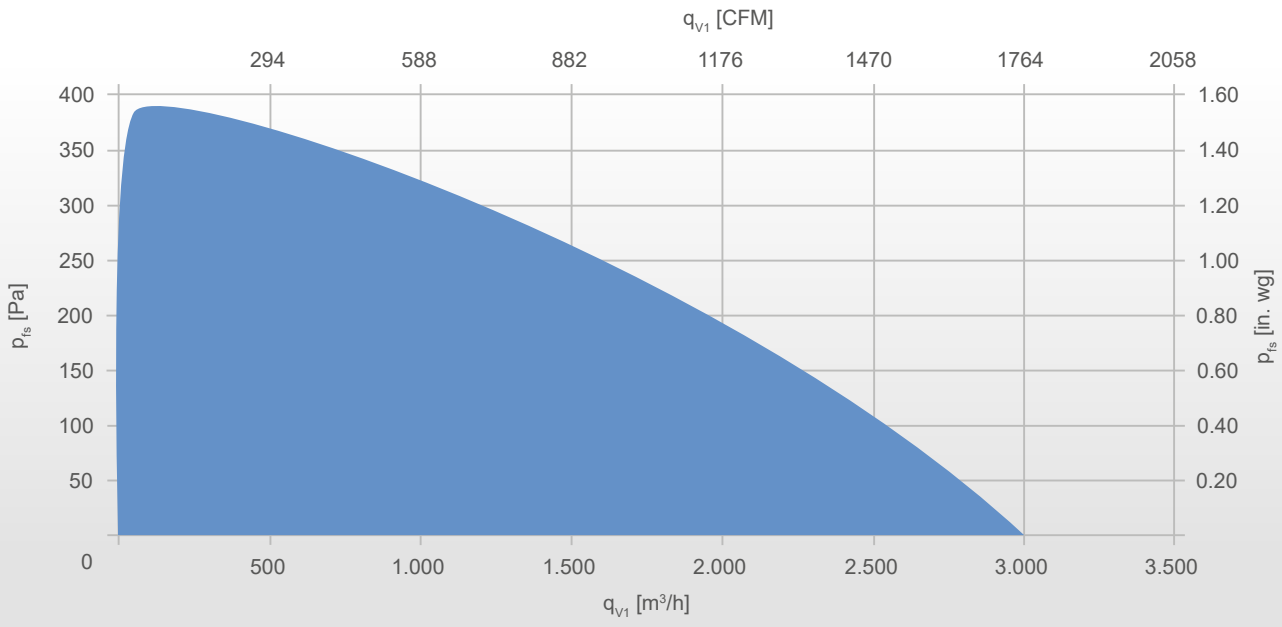
Transformers

Ventilation

Telecommunication

Packaging and Production Machines

Air performance range depending on motor technology



ZApilot

Product specification

The product highlight, ZApilot, sets air flow patterns on the right course for maximum performance and efficiency. The guide vanes integrated into the system and the stationary diffusor convert dynamic pressure into static pressure, thus increasing efficiency. This ingenious invention, for which a patent has already been applied, can hardly be topped in terms of its application. Up to 10 % more efficient compared to the market standards, the smart fan system impresses with a whisper-quiet application. A real pilot that has everything under control, is 100 % designed for the future, and already meets the demands of tomorrow.

Directly online to the model range

> Model selection

Technical data	
Maximum air flow	up to 1.600 m^3/h
Maximum pressure increase	to 1.000 Pa
Permitted medium temperature	-30°C to +60°C
Electrical connection external rotor	EC with integrated controller
Sizes	5 sizes from 180 mm to 250 mm

Motor concepts

EC technology

EC055

Power range:
0.09 - 0.17 kW

ZApilot

Customer benefit

- Durable because it has been in use for decades
- Ideal for difficult installation conditions
- Explosionproofed version possible
- Can be used worldwide thanks to numerous certifications (incl. VDE, UL, CCC, UKCA, CE)

Typical applications

Residential Ventilation

Datacenters

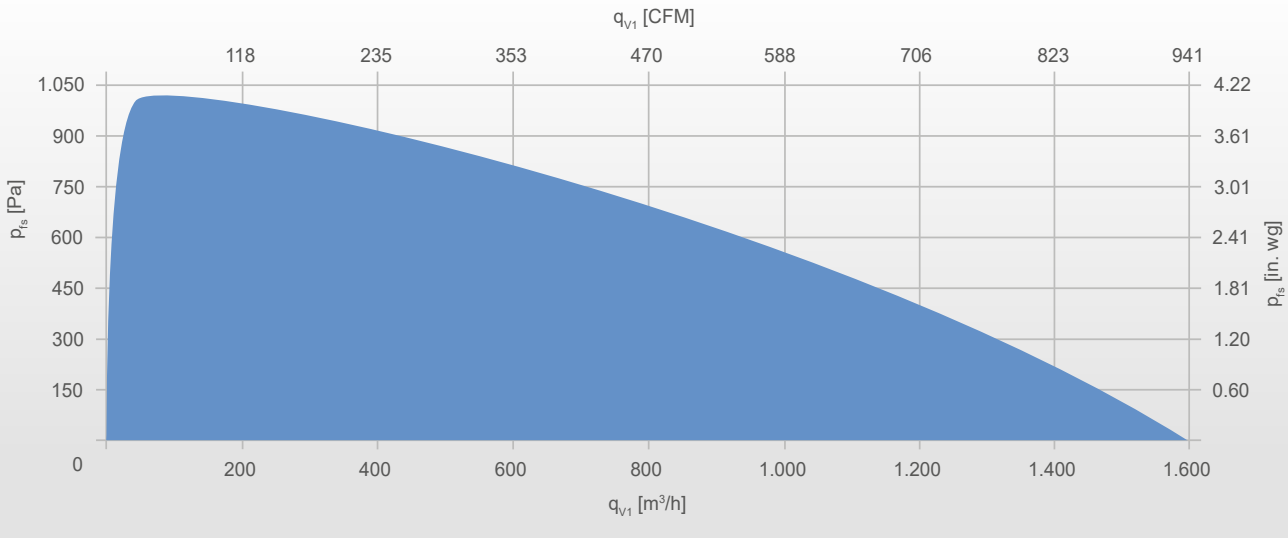
Telecommunication

Frequency Converters

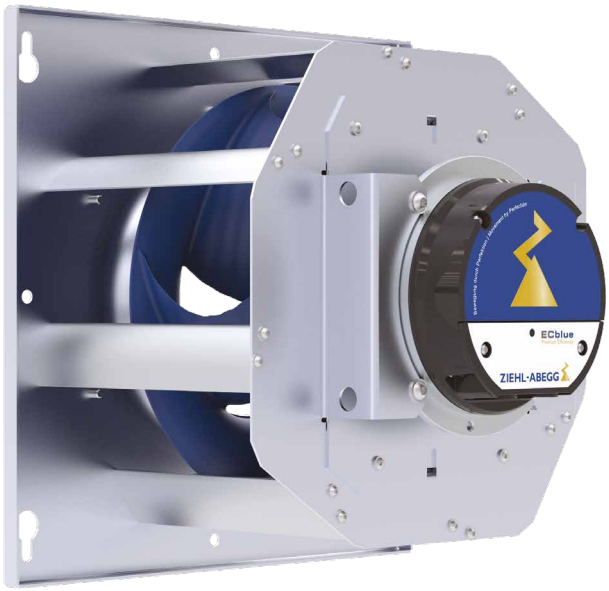
Device Cooling Technology

Noodles, Pasta, Coffee, Tea, Spices and Tobacco

Air performance range depending on motor technology



ZApilotXL



Product specification

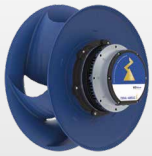
The larger ZApilot model range, the ZApilotXL featuring sizes 250 to 560, is available with a unique power density for all standard application sizes commonly found on the market. With optimally adapted, bionic guide vanes, ZApilotXL continues to increase efficiency by up to 5%. The powerful guide vanes set the air flow on the optimal path for unsurpassed efficiency and sustainability. The guide vanes integrated in the system and the stationary diffuser convert dynamic pressure into static pressure and thus increase efficiency. The multidirectional, unobstructed air flow makes ZApilotXL a flexibly combined fan system. This ingenious development can hardly be topped in terms of business management.

Directly online to the model range

> Model selection

Technical data	
Maximum air flow	up to 19.000 m^3/h
Maximum pressure increase	to 2.000 Pa
Permitted medium temperature	-20°C to +60°C
Electrical connection external rotor	EC with integrated controller
Sizes	8 sizes from 250 mm to 560 mm

Motor concepts



Impeller ZAbluefin ZAmid

ECblue technology

EC090 / EC116 / EC152

Power range:
0.8 bis 5.40 kW

ZApilotXL

Customer benefit

- Universally applicable
- Compact dimensions for every installation situation
- Durable through very quiet running
- Reduction in operating costs possible because 100% speed adjustable
- Retrofit - efficient fan replacement
- Can be used worldwide thanks to numerous certifications (incl. VDE, UL, CCC, UKCA, CE)

Typical applications

ZIEHL-ABEGG RETROFITBLUE

Wind Energy

AC/AHU

Datacenters

Device Cooling Technology

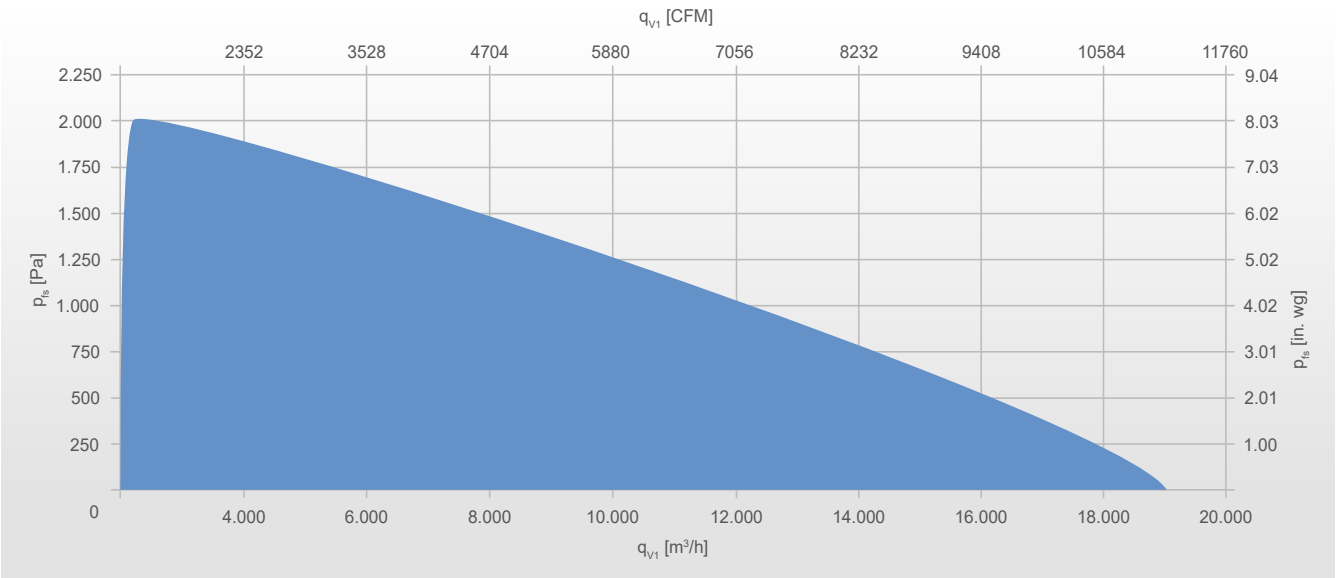
Compressors

Containers

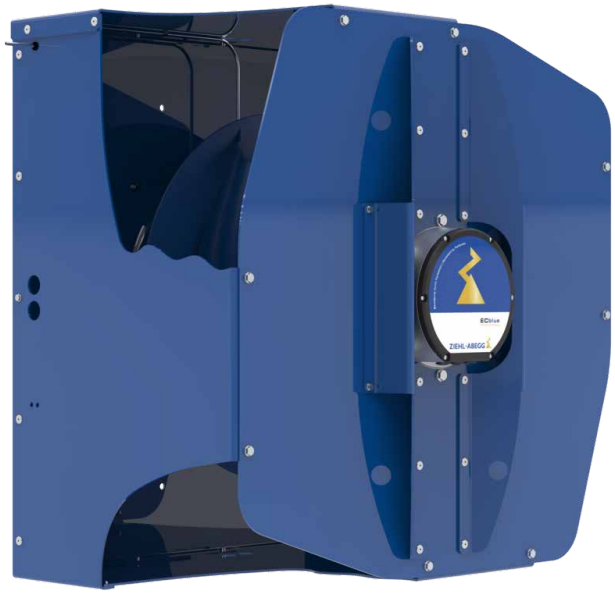
Marine Applications

Noodles, Pasta, Coffee, Tea, Spices and Tobacco

Air performance range depending on motor technology



ZAbluefin high-efficiency HR module



Product specification

The demand for high-end air handling units with state-of-the-art technologies for maximum system efficiency is growing worldwide. The innovative HR module was developed directly for these highest demands. The optimal combination of our highly efficient ZAbluefin-ECblue with IE5 and the aerodynamically sophisticated HR module design enables highest system efficiency for demanding high-end applications. Thus, the innovative HR module as a premium product perfects the ZAbluefin ECblue model range in air performance, acoustics and efficiency.

Directly online to the model range

> Model selection

Technical data	
Maximum air flow	up to 19.000 m^3/h
Maximum pressure increase	to 2.200 Pa
Permitted medium temperature	-20°C to +60°C
Electrical connection external rotor	EC with integrated controller
Sizes	6 sizes from 315 mm to 560 mm

Motor concepts

ECblue technology

EC116 / EC152

Power range:
1.00 - 5.2 kW

ZAbluefin high-efficiency HR module

Customer benefit

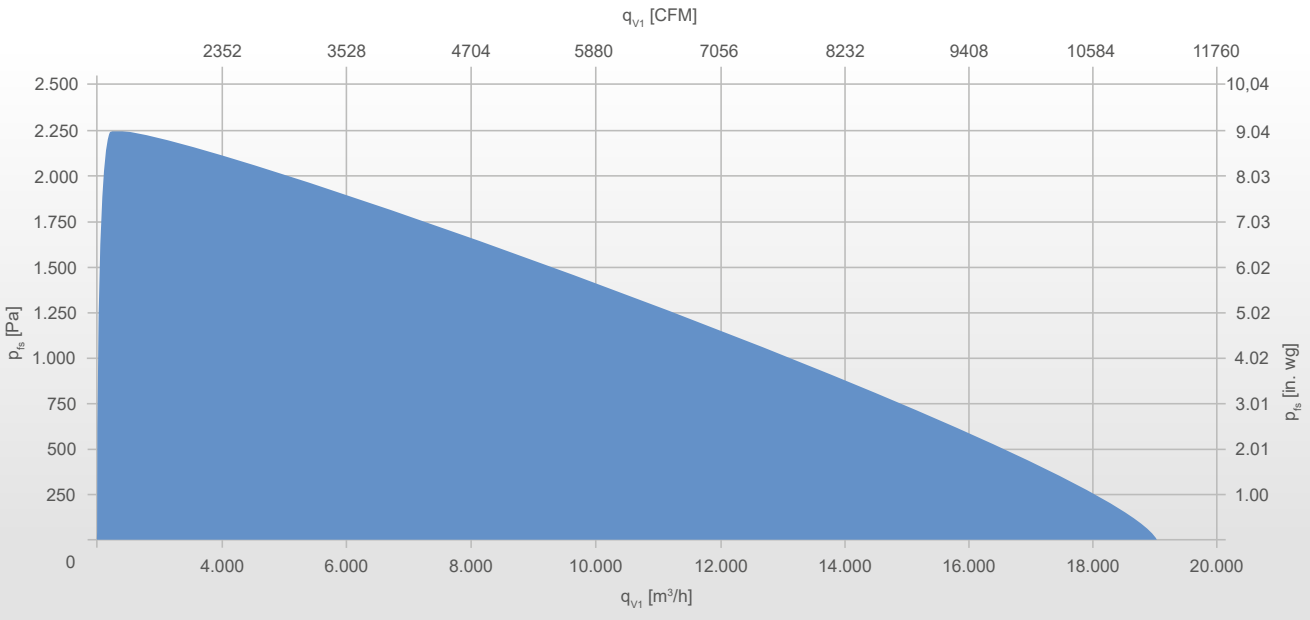
- Impeller made of high performance composite material ZAmid

Typical applications

AC/AHU

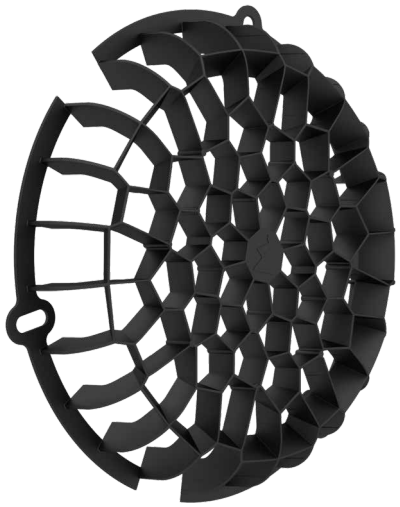
Datacenters

Air performance range depending on motor technology



ZAflow

Reduction of noise level



Bees use honeycomb structures to store honey and raise their larvae in. We are using the advantages of the hexagonal lightweight design in our ZApilot to use less composite material and to conserve our planet's resources. For ZAflow, we have once again taken advantage of the honeycomb structure. We have adapted these in such a way that they have the best conducting properties with minimal blockage for the air flow. In confined installation situations, ZAflow improves the air flow to the impeller and can thus reduce the noise level.

Directly online to the product

> ZAflow

Product specification:

Centrifugal fans react significantly more critically to faults in the incoming air on the suction side than to faults on the already turbulent pressure side. This is where ZAflow comes in and helps to improve the flow into the impeller. The result, in confined installation situations, is a reduction in noise levels and overall acoustic values. Experience has shown that the total sound level of a typical ventilation system can be easily improved by 3 to 6 dB.

If the use of ZAflow does not bring about any improvement, this is a very good indication that the installation situation for the fan in the application is already sufficiently good and the use of ZAflow is not necessary. However, if the use of ZAflow results in an advantage, the easy assembly and handling of ZAflow is a simple and fast solution for optimising your system.

Properties & special features:

- Reduction of noise level by improving the inflow of the fan in confined installation situations
- ZAflow S also fulfils the contact protection requirements in accordance with DIN EN ISO 13857 Table 4 (does not apply to ZAflow M)
- Can also be easily retrofitted into existing systems

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 operating notes

Measuring device for airflow determination

The active pressure process compares the static pressure upstream of the inlet nozzle with the static pressure in the inlet nozzle at the location of the greatest constriction (smallest, free nozzle cross sectional area). The active pressure (differential pressure of the static pressures) can be assigned to the volume flow as follows via the energy retention set:

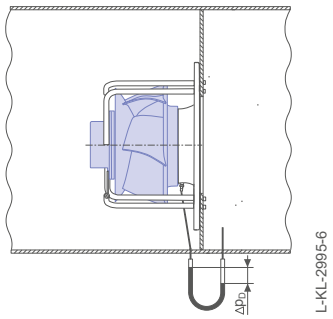
At standard state of 20 °C:

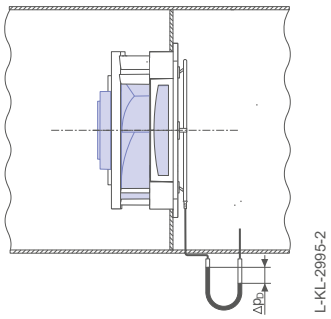
$$q_{V1} = k \cdot \sqrt{\Delta p_D}$$

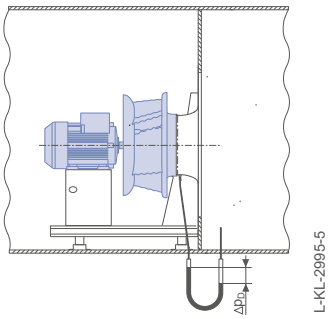
In the case of deviating air conditions:

$$q_{V1} = \sqrt{\frac{\rho_N}{\rho_D}} \cdot k_{20} \cdot \sqrt{\Delta p_D}$$

q_{V1}	Volume flow in m^3/h
Δp_D	Differential pressure of the static pressures in Pa
k	Factor for specific nozzle properties, nozzle coefficient
ρ_N	Standard air density of 1.2 kg/m^3
ρ_D	Air density at present operating point in kg/m^3







Nozzle coefficients

Size	ZAbluefin			Cpro			C model range			C-ATEX	
	k	k_g	k_{ZAflow}	k	k_g	k_{ZAflow}	k	k_g	k_{ZAflow}	k	k_g
160											
175											
190											
200											
220											
225							47	46	46		
250	67	63	66	60	58	59	60	58	59	55	53
280	85	80	83	75	72	74	75	72	74	69	66
315	106	100	104	95	91	93	95	91	93	87	83
355	140	130	137	121	116	119	121	116	119	111	106
400	180	170	176	154	148	151	154	148	151	141	135
450	220	210	216	197	189	193	197	189	193	181	173
500	280	265	274	252	242	247	252	242	247	231	221
560	355	335	348	308	295	302	308	295	302	284	271
630	420	400	412	381	365	373	381	365	373	350	334
710	530	500					490	470		450	429
800	670	630					620	594		569	543
900	850	800					789	756		724	691
1,000	1050	1,000					999	958		916	875
1120	1250	1200					1233	1072			

ρ = 1.20 kg/m^3
k = Standard
k_g = With guard grille
k_{ZAflow} = With inlet guide grille

Installation and operating notes

Measuring device for airflow determination

Nozzle coefficients

Size	ZAvblue2			ZAvblue			ZAvblue with EC055		ZApilot		Vpro
	k	k_g	k_{ZAflow}	k	k_g	k_{ZAflow}	k	k_{ZAflow}*	k	k_{ZAflow}*	k
160									36	35	
175							38	37	38	37	
190							38	37	38	37	
200							38	37	38	37	
220							71	70	71	70	
225							75	74	71	70	50
250							112	110	90	88	63
280				86		84					86
315				112		110					112
355	160	150	157	144		141					144
400				180		176					180
450				220		215					220
500				291		285					291
560				360		352					360
630	530	500	519	445		435					445
710											
800											
900											
1,000											
1120											

ρ = 1.20 kg/m³
k = Standard
k_g = With guard grille
k_{ZAflow} = With inlet guide grille
*k_{ZAflow} = With guard grille / inlet guide grille

Example:
If a differential pressure of 625 Pa is measured for frame size GR35D, the air volume flow can be calculated using the simplified formula as follows. The nozzle coefficients (k-factors) were determined under laboratory conditions with an undisturbed inflow.

$$q_{V1} = k \cdot \sqrt{\Delta p_D} = 160 \cdot \sqrt{625} = 4000 \text{ m}^3/\text{h}$$

The nozzle coefficients (k-factors) were determined under laboratory conditions with an undisturbed supply. If suction side guard grilles (mounted in front of the inlet nozzle) are also used, use the factor k_g. If ZAflow inlet guide grilles (mounted in front of the inlet nozzle) are also used, use the factor k_{ZAflow}.

Notes on the measuring procedure
The measured values determined with the active pressure process are subject to a tolerance of +/- 8.0% in the volume flow result. This tolerance is achieved above a minimum air velocity of approx. 9.0 m/s at the location of the strongest constriction.
Below this minimum air velocity the tolerances cannot be clearly quantified.

This flow measurement method is not suitable for tapping measurements at the location.
For more accurate airflow determination in the existing installation situation, counter calibration of the airflow for active pressure measurement must be carried out at the location. The nozzle coefficients determined here apply explicitly to this installation situation only.

Installation and operating notes

Installation notes for free-running impellers

1st Definition of the geometric reference dimensions

1.1. General nomenclature

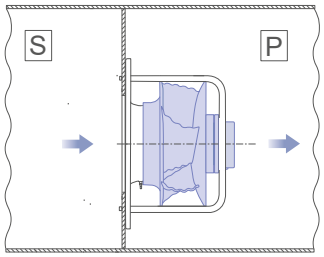
The working area of a free-running fan is divided into two basic areas:

- **Suction side** S
- **Pressure side** P

The fan conveys the air or gaseous medium as a volume flow from the suction to the pressure side, with a corresponding pressure increase.
The suction and pressure sides must always be completely separated in aerodynamic terms.

Suction side S
In front of the inlet nozzle

Lower pressure (-) or vacuum to environment for device installation



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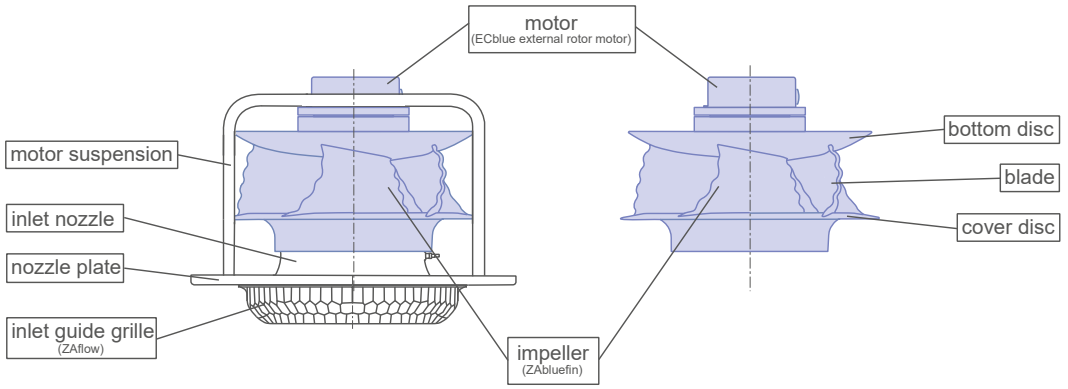
Pressure side P
After leaving the impeller

Higher pressure (+) or overpressure to environment for device installation

The fan's components are uniformly defined in order to ensure clear allocation in the following instructions:



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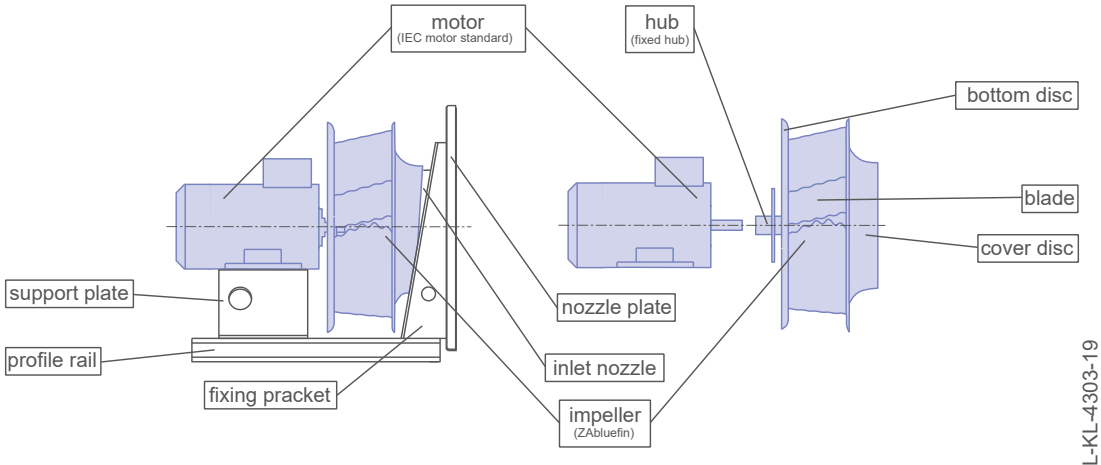

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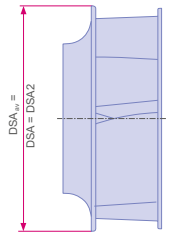
Installation and operating notes

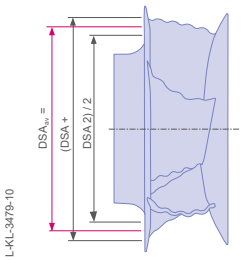
Installation notes for free-running impellers

1.2. Nominal size

The nominal size indicates the size of the impeller according to standardized sizes. Since ZIEHL-ABEGG centrifugal impellers are largely scaled, they broadly follow the standardized size and can be equated to the effective blade external diameter DSA or DSAav as a mm specification.

For ZIEHL-ABEGG fan products, the respective size can always be read in the type code and is therefore ideally suited as a specification for the following specifications. ZIEHL-ABEGG has defined factors for the respective specifications, which must be multiplied by the nominal size (BG) used.





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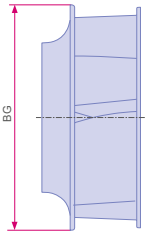

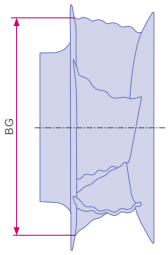

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L-KL-4303-09

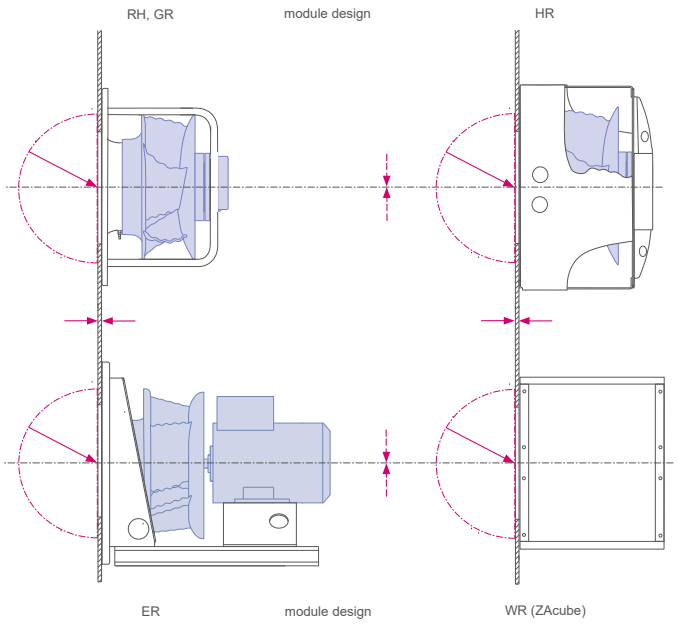
Example of nominal size notion

Model range	Vpro	Cpro	ZAbluefin
	mm	mm	mm
Size 250 mm [BG]			
Ø-DD (outside)	251	290	285
Ø-DSA$_{av}$	250	257	251
Size 560 mm [BG]			
Ø-DD (outside)	584	644	639
Ø-DSA$_{av}$	568	572	563

1.3. Definition of general reference ranges for dimensions

There are three defined reference ranges for clearances:

- For clearances in the air flow direction – leading edge of inlet nozzle **(plane)**
- For radial specifications – fan shaft **(axle)**
- For radial and axial specifications – intersection point of the leading edge of the inlet nozzle to the fan shaft **(point)**



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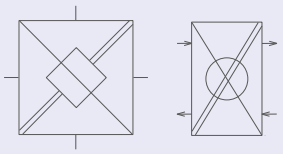
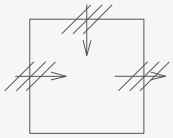
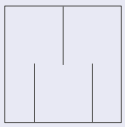
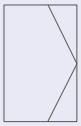
Installation and operating notes

Installation notes for free-running impellers

2nd Definition of the suction side installation instructions

2.1. Suction side – Flow critical components before inlet nozzle

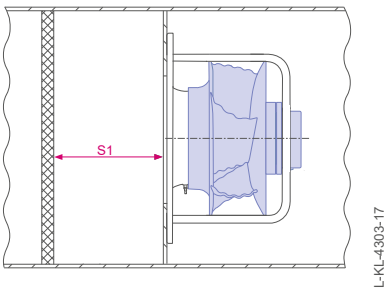
List of the respective components and symbols

1.		Plate and rotary heat exchanger with side bypass Asymmetric inflow with open bypass and thus change of inflow for fan or fan wall
2.		Mixing chambers Irregular inflow due to different flap positions, which is why the volumetric flow rates hit the inlet nozzle in at least two different directions (vortex system)
3.		Splitter attenuators Uneven flow downstream profile due to high gap speed between the splitters in relation to the speed within the entire device cross-section
4.		Demister High potential for turbulent vortexes due to separator profiles within the air flow upstream of the inlet nozzle
5.		Pocket and V-filters If the degree of contamination is high, large blockages can occur, which can result in a high potential for turbulent vortexes in the subsequent air flow upstream of the inlet nozzle

2.2. Suction side – axial inflow in the device or from the duct

Installation recommendation using defined factors

- The prerequisite for the specifications is a homogeneous speed profile upstream of the inlet nozzle
- Components with uneven velocity profiles in the outflow must be assessed on a situational basis



	Evaluation	ZAbluefin	C- / Cpro	ZAvblue2	ZAvblue	Vpro
Recommended	+++	1.00	1.00	1.00	1.00	1.00
Minimum clearance with ZAflow*	++	0.80	0.70	0.85	0.80	0.70
Minimum clearance to other guiding mechanisms*	+	0.80	0.70	0.85	0.80	0.70
Absolute minimum clearance (do not undershoot)**	0	0.60	0.50	0.65	0.60	0.50

*) Additional components to create a more homogeneous air intake
**) If these dimensions are not met, the plant designer is responsible for safe operation

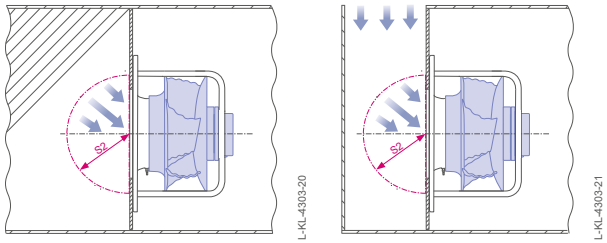
Installation and operating notes

Installation notes for free-running impellers

2.3. Suction side – radial/deflected inflow in the device

Installation recommendation using defined factors

- If air is deflected directly in front of the inlet nozzle, a continuous, circumferential flow of replenishment air is required for effecti-ve operation in addition to the most homogeneous flow profile possible
- This also applies to plate heat exchangers with 45° air outlet or mixing chambers (see critical components) upstream of the inlet nozzle



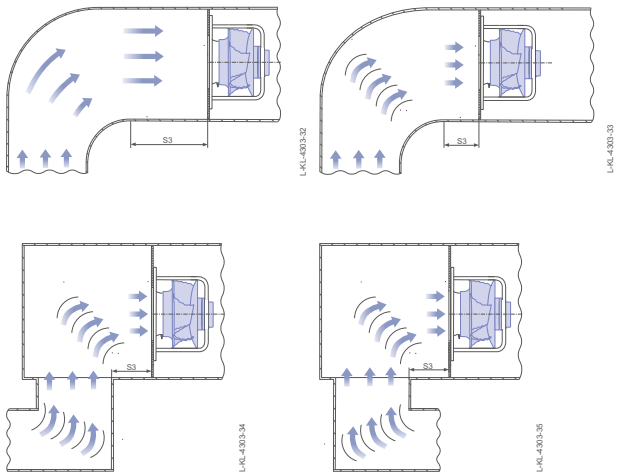
	Evaluation	ZAbluefin	C- / Cpro	ZAvblue2	ZAvblue	Vpro
Recommended	+++	1.30	1.20	1.40	1.30	1.20
Minimum clearance with ZAflow*	++	0.70	0.70	0.70	0.70	0.70
Minimum clearance to other guiding mechanisms	+	0.90	0.80	1.00	0.90	0.80
Absolute minimum clearance (do not undershoot)**	0	0.70	0.70	0.80	0.70	0.70

*) Additional components to create a more homogeneous air intake
**) If these dimensions are not met, the plant designer is responsible for safe operation

2.4. Suction side – radial/deflected inflow from the duct

Installation recommendation using defined factors

The air or gaseous medium does not follow the specified geometry due to its inertia. The higher the air velocity, the greater the inertia. To restore the flow profile before deflection, a settling section is required. This is recommended accordingly in the following table. In the case of inflow from ventilation ducts, the inflow profile is significantly more important than the inflow for devices due to the tendency towards higher air velocities in the duct (usually 5–8 m/s). If there are several air deflectors, these must always be equipped with baffles. The clearance to air deflectors in the duct upstream of the fan inlet nozzle must therefore be carefully considered.



	Evaluation	All model ranges
Recommended	+++	3.00
Minimum clearance with ZAflow*	++	1.00
Minimum clearance with multiple, parallel deflectors*	+	1.00
Absolute minimum clearance (do not undershoot)**	0	1.00

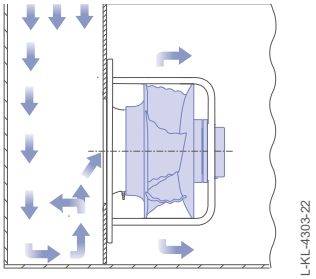
*) Additional components to create a more homogeneous air intake
**) If these dimensions are not met, the plant designer is responsible for safe operation

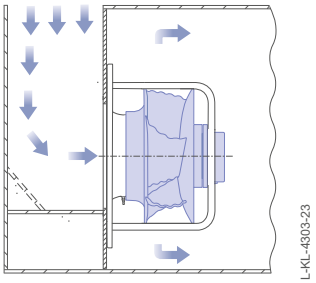
Installation and operating notes

Installation notes for free-running impellers

2.5. Suction side – inlet flow support upstream of inlet nozzle (dead space)

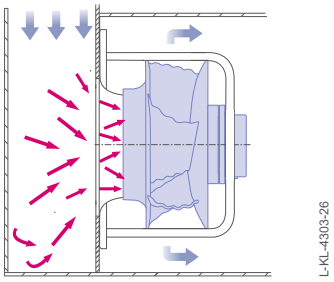
- The dead space between the inlet nozzle and the device side wall facing away from the flow in the inflow area has an additional adverse effect on the inflow situation, especially in narrow ducts (minimum clearance)
- Closing the dead space with sheets (90° or 90° + 45°) reduces this influence. Place sheets as close as possible to the inlet nozzle, but not over the inlet nozzle

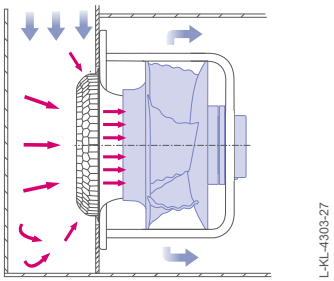




2.6. Suction side – inlet flow support upstream of inlet nozzle (ZAflow)

- The aim of a suction-side inlet guide grille is to ensure as uniform a sink flow as possible at the fan inlet (inlet nozzle).
- Turbulence and irregularities in the flow caused by the installation condition are homogenised by inserting an inlet guide grille (ZAflow). This improves the flow conditions for the fan



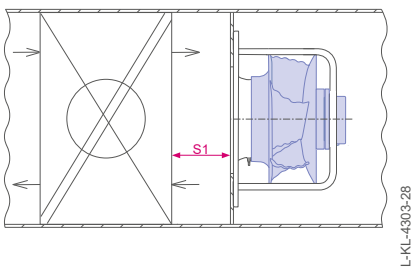


2.7. Example of suction side flow critical components

A GR fan size 560 with ZAvblue2 is installed in a duct. A rotary heat exchanger is due to be connected upstream of this. It must now be clarified whether a ZAflow needs to be installed due to the distance of 0.6 m between the reference plane and the rotary heat exchanger.

Calculation without ZAflow: 1 * 0.56 m = 0.56 m
Calculation with ZAflow: 0.85 * 0.56 m = 0.476 m

Answer: No, it is not necessary to install a ZAflow in this example, as the distance is greater than 0.56 m. Nevertheless, use of the ZAflow is always recommended in integrated applications.



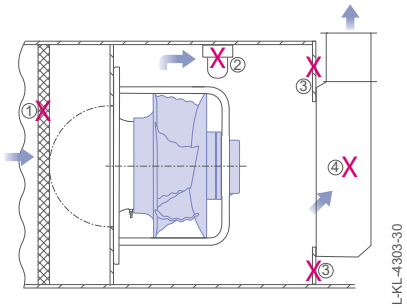
Installation and operating notes

Installation notes for free-running impellers

3. Definition of pressure-side installation notes

3.1. Pressure side – flow critical components downstream of the impeller

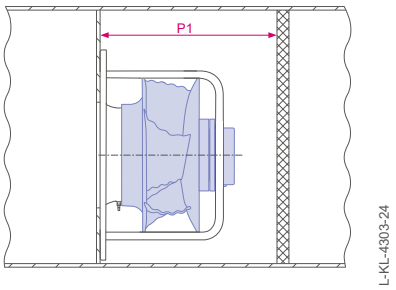
- Interference in the impeller's outflow area leads to increased pressure losses in the device due to the high air velocity behind the impeller. Although these losses are not caused by the impeller, they are often attributed to the fan as a deficiency in the event of a complaint.
- Pressure-side interference is often the cause of increased sound power. Interference at high speeds leads to higher turbulence and this is the cause of a possible increase in sound power
- An unfavourable pressure chamber design can lead to sudden operating point fluctuations. An example of this is a membrane-like change in the pressure chamber caused by instable side walls
- It should be noted that a centrifugal fan impeller's outflow area is subject to heavy swirling, i.e. there is a high speed component perpendicular to the axis of rotation
- Components and slats in the axial direction have a very strong influence on the turbulent outflow. For this reason, such components must be moved to an area in which the swirl component is no longer effective
- The swirl component is the reason why lamella heat exchangers or similar should be installed as far downstream from the impeller as possible. Upstream rectifiers may be helpful for loss-free reduction of the swirl component.
- Since the flow velocity on the housing side walls (near the impeller outlet) is higher, installations in this area are particularly critical and can significantly increase the pressure loss and/or sound power in the device
- Other possible sources of fault during installation are:
  2 Blockage on the pressure side (long lamp, fluorescent lamp, braces)
  3 Narrowing at the outlet
  4 90° change in flow direction and cross-section reduction outside the defined specifications



3.2. Pressure side – axial outflow in the duct

Installation recommendation using defined factors

- Centrifugal fans have a predominantly perpendicular outflow to the axis of rotation
- In a box installation situation, the walls act as a deflection aid, which causes an inhomogeneous axial speed profile to be formed behind the impeller. Only a sufficient settling section or the use of auxiliary inserts leads to moderation of the speed profile
- For this reason, the defined factors apply based on the reference plane “Leading edge of the inlet nozzle”



	Evaluation	ZAbluefin	C- / Cpro	ZAvblue2	ZAvblue	Vpro
Recommended	+++	1.55	1.60	1.55	1.60	1.65
Absolute minimum clearance (do not undershoot)*	0	1.35	1.40	1.35	1.40	1.45

* If these dimensions are not met, the plant designer is responsible for safe operation

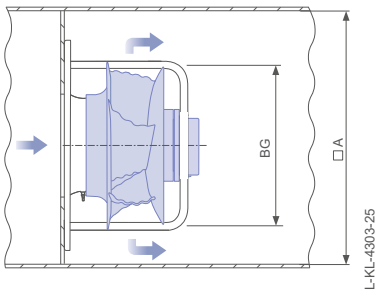
Installation and operating notes

Installation notes for free-running impellers

3.3. Pressure side – wall clearance with a square cross-section

Installation recommendations using defined factors

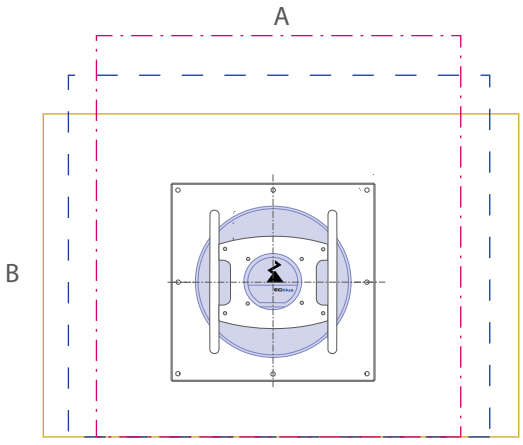
- The lateral clearance from surrounding surfaces/walls is very important for free-running impellers, as these are located opposite the impeller air outlet
- The surrounding surfaces serve as guiding surfaces, which deflect the escaping air volume flow in the axial direction and subsequently join behind the impeller
- Insufficient clearance between the surrounding surfaces reduces the air volume flow and thus the static efficiency of the impeller



	Evaluation	ZAbluefin (RH/GR/ER)	C- / Cpro / Vpro (RH/GR/ER)	ZAvblue / ZAvblue2 (RH/GR)	Highly efficient (HR modules)	ZApilot / ZApilot XL (GR modules)	ZAcube (WR modules)
Recommended	+++	1.70	1.80	1.70	2.10	1.90	Defined by cube dimensions
Minimum clearance	+	< 1.55	< 1.60	< 1.55	< 1.95	< 1.75	
Absolute minimum clearance (do not undershoot)*	0	1.40	1.40	1.40	1.80	1.60	

*) If these dimensions are not met, the plant designer is responsible for safe operation

- A rectangular cross-section can be calculated as follows, using the example of a ZAbluefin ventilation unit GR:
  (A + B)/2 = 1.7 * BG
- Up to a ratio of 2.2 to 1.4 deviating from the square, compensate the 2 opposite smaller clearances with larger clearances on the other sides
- Similarly, an asymmetrical arrangement of impeller's cross-section can be almost fully compensated if the absolute minimum clearance is not undershot on max. 2 sides



Installation and operating notes

Installation notes for free-running impellers

3.4. Pressure side – radially deflected outflow

P4 The radial outlet opening should ideally be in a range of at least 1.5 to 2 x BG

Evaluation: +++

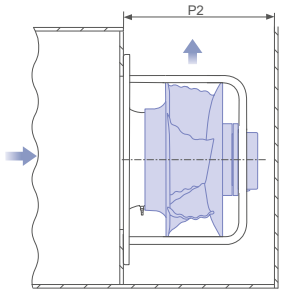
P6 If it is not possible to implement an outflow duct at the height of the impeller (see P4), a clearance of 3.5 to 4 x BG in relation to the reference plane must be maintained. Subsequently, at least one radial outlet opening must be guaranteed, as defined under P4

Evaluation: +

P5 Positioning the radially deflected outflow duct between the areas P4 and P6 is only allowed with additional deflection aids, as otherwise the deflection of the gaseous fluid cannot be optimally guaranteed due to the high axial speed on the device wall

Evaluation: 0

Please note that the outlet profile of the air or gaseous medium contains an additional component with high turbulence.



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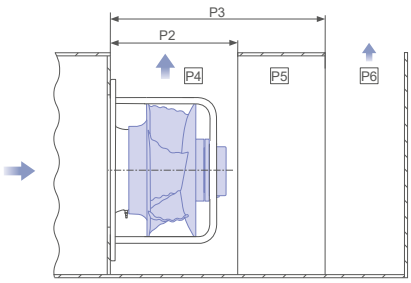

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Expertise in Ventilation

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 set-up, 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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