

One system for *many applications?*

The AxiBlade axial fan
in sizes 630, 710, 800 & 910.

ebm**papst**

the engineer's choice



Yes!

AxiBlade

Your ebm-papst solution.

About ebm-papst.

ebm-papst is a leader in ventilation and drive engineering technology and a much sought-after engineering partner in many industries. With around 20,000 different products, we have the perfect solution for practically every requirement. We believe the consistent further development of our highly-efficient GreenTech EC technology provides our customers with the best opportunities for the future in industrial digitization. With GreenIntelligence, ebm-papst already offers intelligent networked complete solutions that are unique anywhere in the world today.

ebmpapst

the engineer's choice

Six reasons that make us the ideal partner:

Our systems expertise: as experts in advanced motor technology, electronics and aerodynamics, we provide system solutions from a single source.

Our spirit of invention: our 600 engineers and technicians will develop a solution that precisely fits your needs.

Our lead in technology: with our EC technology and GreenIntelligence, we combine the highest energy efficiency with the advantages of IoT and digital networking.

Closeness to our customers: at 48 sales offices worldwide.

Our standard of quality: our quality management is uncompromising, at every step in every process.

Our sustainable approach: we assume responsibility with our energy-saving products, environmentally-friendly processes, and social commitment.

GreenIntelligence. *Making Engineers Happy.*



Why do our customers look so happy? Because when it comes to the Internet of Things and the digital transformation, we provide them with a clear competitive edge with GreenIntelligence for intelligent control and interconnection of fans, drives and systems to make applications more powerful, processes more efficient, businesses more successful and their customers more satisfied.

Modern, functional and reliable solutions are in high demand for **refrigeration and air conditioning**. GreenIntelligence supplies easy-to-install fan solutions with intelligent networking capabilities and a wide variety of ideas and functions that make it possible to exploit the great potential of digitalization right away.

Here is how much GreenIntelligence there is in the AxiBlade:

- Simple monitoring via MODBUS
- Detects imbalance e.g. caused by ice forming on the fan impeller (optional)
- Efficient operation over a wide range



Björn already has a lot of ideas for making his refrigeration systems smarter.

Four sizes, *almost unlimited possibilities.*

The innovative AxiBlade range sets the benchmark for large axial fans when it comes to energy efficiency and noise characteristics. There are four sizes from 630 to 910 to choose from as well as different motor designs with AC and EC technology. AxiBlades are real all-rounders as they can be individually configured for each application.

The large fans in sizes 800 and 910 are particularly applicable to refrigerating plants like evaporators or condensers. They allow air flows up to 40,000 m³/h, with a maximum pressure range of up to 350 Pa.

The sizes 630 and 710 are even more versatile. They are perfectly suited to heat pumps or exhaust air FanGrid solutions, for example. Offering air flows of up to 25,000 m³/h at a maximum pressure range of up to 450 Pa, they open up a myriad of applications in ventilation, air conditioning and refrigeration technology.



Condenser



Cooling tower



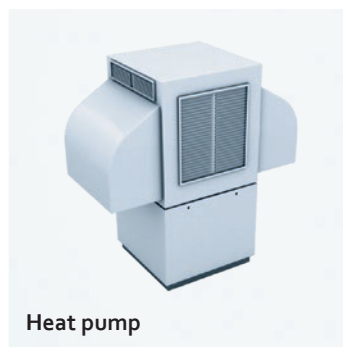
Commercial evaporator



Transformer station



Exhaust FanGrid



Heat pump

The highly efficient, whisper-quiet ebm-papst axial fans convey air for heating and cooling purposes in a variety of different devices and systems.



Air/water heat pump



Process refrigeration systems



Oil cooler



Condenser unit

Your ebm-papst solution: *AxiBlade.*

Air conditioning and refrigeration systems can have very different requirements. To offer your customers a tailored solution in all cases, the heart of the system – the fan – also needs to be tailored.

This is perfectly satisfied by the AxiBlade series, developed by ebm-papst. By optimizing all the components that affect efficiency and enabling maximum flexibility when configuring them, highly efficient fans become “Your ebm-papst solution.”

The AxiBlade has many different and improved features. And despite the improvements, we were able to keep the same footprint dimensions. They are exactly the same as today’s industry standard, so the end device requires only minimal design changes. Additionally, the overall height has been reduced for the AxiBlade. Even though this is not the most important factor during installation, it is a major advantage when transporting the device, and ultimately cuts costs.

Increased refrigerating performance

- Significant increase in air flow to the high-performance heat exchanger
- Enables heat exchanger downsizing

Lower sound emission

- Optimized aerodynamics
- Noise reduction up to 8 dB(A)

Low installation height

- Decisive for efficient transport and loading

Have we really *thought of everything?*

Yes!

- Each fan component optimizes the overall system in a way that targets the specific requirements
- Optimal noise level and overall efficiency values

Improved performance.

All components have been optimized for maximum system performance. The results are a static efficiency of up to 60% and up to 8 dB(A) lower noise emissions compared to the HyBlade® series.

Maximum flexibility.

For all applications, the AxiBlade series's modular system provides the ideal efficiency and noise levels for meeting your requirements.

It's simple.

We have improved the performance while maintaining the same footprint. This means you will not have to implement any design-related conversion measures on your application. The new AxiBlade series is an exact replacement (with fan housing).

Improved power

- New standards of power density for your application
- Significantly higher power per square meter of installation area

Rugged design

- Top protection against splash water (to IP 55)
- Durable, corrosion-resistant components for the highest standards

Same installation area

- Exterior dimensions identical to industry standard
- Simple to install with few screws

Xplore: the whole ebm-papst world in an app.

1. Activate the module

Go into the ebm-papst Xplore app and select the "AxiBlade product brochure" module.



2. Scan the images

Aim the camera at the images marked with this icon, and away you go.



Do we deliver the *best values* for each operating point?

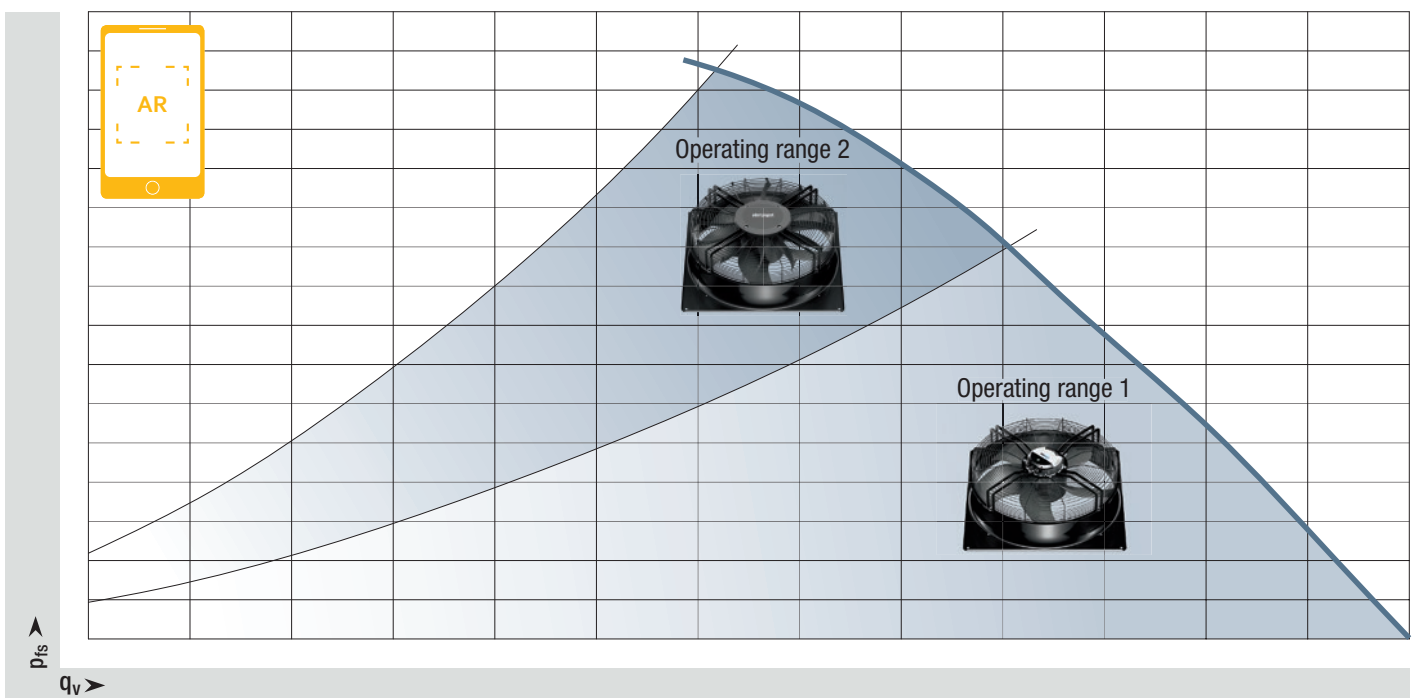
Yes!

- Because it is adapted to each application
- With clever individual solutions
- In a uniquely broad performance spectrum

Modular design – the right solution for every pressure range.

With fans, different back pressures have to be taken into consideration depending on the application and installation conditions. There is no fan that will work with the same efficiency or noise levels in all conditions: searching for an all-purpose unit is futile. However, with

their modular design, the AxiBlade axial fans can be combined with great flexibility. Components can be combined depending on the pressure ranges required and the fans can be produced accordingly. There are optimized plug & play system solutions available to suit the conditions expected for a specific application.



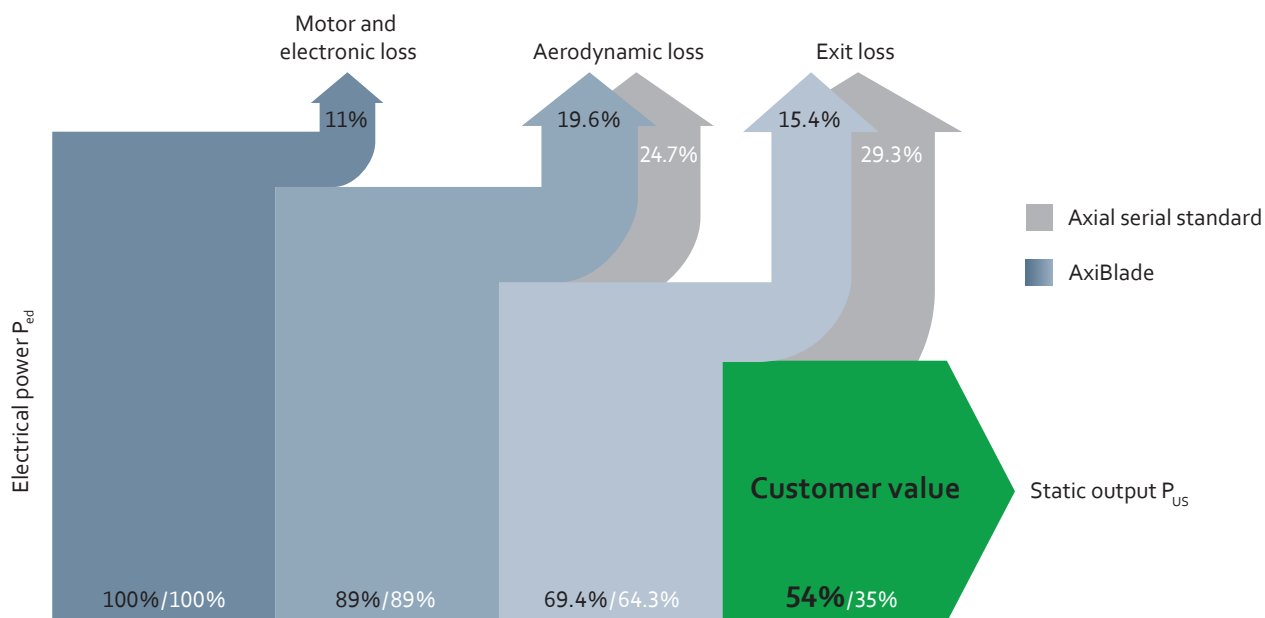
Air performance

The diagram shows the AxiBlade's operating points typical in applications, for example for sizes 800 and 910. The dark areas represent high back pressures of up to approx. 350 Pa, where the benefits of the system with the guide vanes come into full play. The light areas represent low to medium back pressures up to approx. 200 Pa.

Does AxiBlade exploit *all of its optimization potential?*

Yes!

The overall system, consisting of an impeller, motor, housing and commutation electronics, is always taken into consideration with the AxiBlade. After all, making the right adjustments is the only way to fully exploit the potential of a fan. As the figure shows, aerodynamics is practically the only area in which decisive improvements can be achieved nowadays. At the same time, it is also important to bear the exact installation conditions and the application-specific operating points in mind so that the fans actually operate as efficiently as possible later on.



Values apply to size 800 EC and are measured with guard grill.

Each detail counts.

The complete modular system consists of a fan housing with an aerodynamically optimized geometry; sizes 800 and 910 have optional guide vanes. The diffuser raises the pressure, minimizing the outlet losses. In addition, there are impellers with a profiled blade geometry and winglets that are harmonized with the motor that has been installed. This, too, increases efficiency and reduces noise.

Depending on their requirements, the user can have GreenTech EC motors with integrated control electronics or conventional AC motors installed as drives. And the guard grills, which are matched to the various combinations, are also aerodynamically optimized. Not only do they protect against accidental contact, but they also contribute to the axial fans' high overall efficiency. In this fashion, the new axial fans can be optimally configured for a given application.

One *benefit* after another.



FlowGrid

- + **Reduced noise spectrum**
 - Low noise level
 - Dramatically dampened blade passing noise
- + **Retained efficiency**
 - Unchanged air performance
 - Continued low power consumption
- + **Effective environmental protection**
 - Noise reduction as an essential element of environmentally-friendly operation
- + **Rugged design**
 - Made of resistant composite material



Fan housing

- + **Optimized aerodynamics**
 - Optimized inlet ring for maximum efficiency and quiet operation
- + **Simple installation**
 - Exterior dimensions identical to industry standard
 - Simple to install with only a few screws
- + **Rugged design**
 - Durable, corrosion-resistant, sendzimir galvanized and coated sheet steel for the highest standards



Impeller

- + **High efficiency**
 - Profiled blade geometry and winglets for maximum efficiency
- + **Quiet operation**
 - Aerodynamically optimized shape for noise reduction
- + **Innovative materials**
 - Impeller made of tough composite material
 - UV and corrosion-resistant



GreenTech EC motor

- + **Top energy efficiency**
 - High efficiency
 - High power density
 - Optimized heat management for low self-heating
- + **Long service life**
 - Very long service life thanks to no-maintenance ball bearing, brushless commutation and minimum self-heating
- + **Extremely durable**
 - IP 55 protection class provides optimum protection against splash water
- + **Safe operation**
 - Insulated bearing system to prevent bearing currents
- + **Unrivalled compactness**
 - An axial fan unit: The external rotor motor is directly integrated into the impeller





Electronics

- + Precision control**
 - Infinitely variable speed control with, for example, 0–10 V DC/PWM control signal or MODBUS RTU
 - Remote maintenance and monitoring using MODBUS RTU interface
- + Universally deployable**
 - For use with 50 and 60 Hz grids
 - Worldwide voltage variants and grid forms
- + Safe operation**
 - Safety provided by integrated locked-rotor and thermal overload protection
 - Status LED
- + Simple commissioning**
 - Simple hook-up via terminal box
 - Plug & play: no adjustment effort required
 - RFID for wireless parameterization
- + Maximum flexibility**
 - Programmable interface



Guide vanes*

- + Maximum efficiency**
 - Integrated streaming system to minimize flow turbulence for maximum efficiency and minimum noise
- + Aerodynamically perfected**
 - Optimized internal diffuser in combination with guide vanes reduces turbulence and increases air performance

*available in sizes 800 and 910



Guard grill

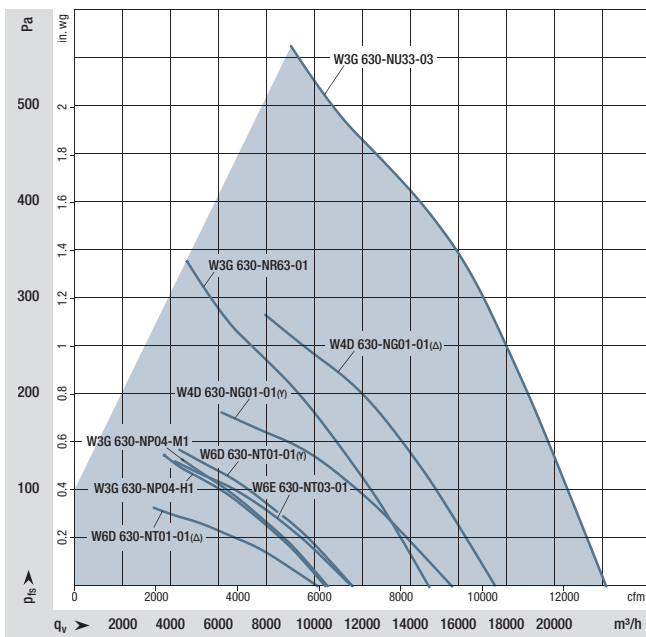
- + Safe operation**
 - Motor cover protects against splash water
 - Contact protection according to standard DIN EN ISO 13857
- + Robust design**
 - Double-coated metal ring guard
- + Aerodynamically optimized**
 - Innovative design minimizes pressure loss



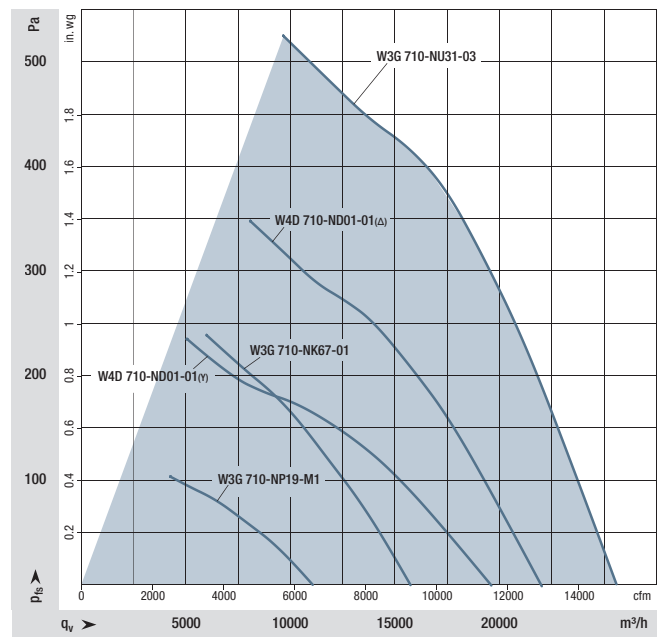
Top values for every operating point.

Values are measured with a guard grill.

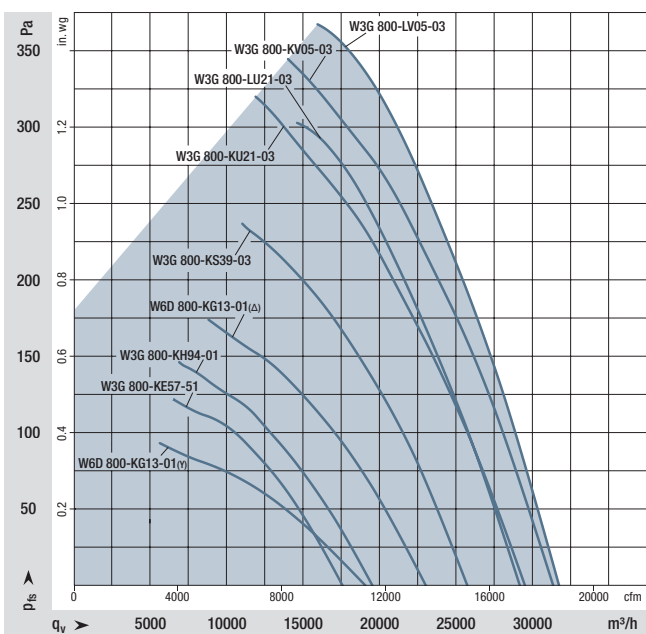
AxiBlade size 630



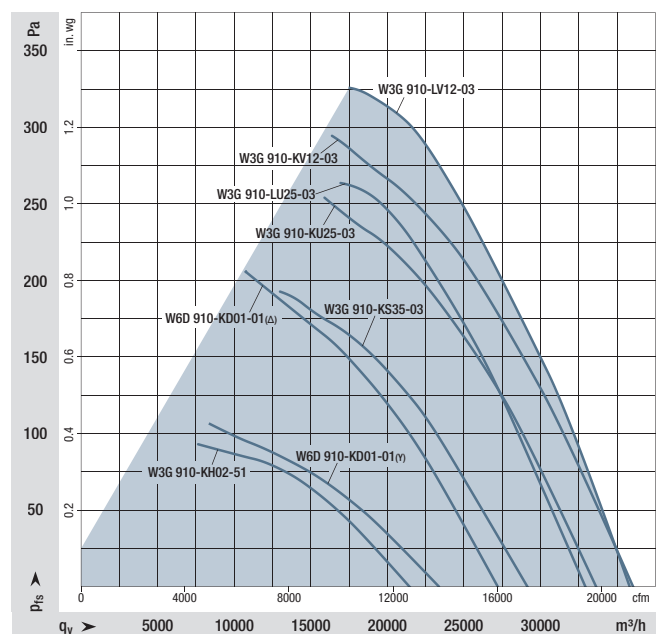
AxiBlade size 710



AxiBlade size 800 (AC/EC)



AxiBlade size 910 (AC/EC)



Nominal data		Nominal voltage range	Frequency	Speed	Max. power consumption ¹	Max. input current ¹	Permissible ambient temperature	Weight	
Size	Item number	VAC	Hz	rpm	W	A	°C	kg	
630	EC	W3G 630-NP04-H1	1~ 200–277	50/60	830	410	1.8	–25...+60	21
		W3G 630-NP04-M1	3~ 380–480	50/60	840	450	0.7	–25...+60	21
		W3G 630-NR63-01	3~ 380–480	50/60	1,260	1,150	1.8	–25...+60	24
		W3G 630-NU33-03	3~ 380–480	50/60	1,800	3,600	5.5	–25...+60	38
	AC	W6E 630-NT03-01	1~ 230	50	850	540	2.4	–25...+60	24
		W6D 630-NT01-01	3~ 400	50	890/680	545/360	1.2 Δ/0.65 Y	–25...+60	24
		W4D 630-NG01-01	3~ 400	50	1,350/1,100	1,700/1,200	3.1 Δ/2.0 Y	–25...+60	36
710	EC	W3G 710-NP19-M1	3~ 380–480	50/60	720	370	0.65	–25...+60	22
		W3G 710-NK67-01	3~ 380–480	50/60	1,100	1,000	1.5	–25...+60	25
		W3G 710-NU31-03	3~ 380–480	50/60	1,680	3,800	5.8	–25...+60	40
	AC	W4D 710-ND01-01	3~ 400	50	1,350/1,100	2,350/1,600	4.6 Δ/2.7 Y	–25...+60	41
800	EC	W3G 800-KE57-51	3~ 380–480	50/60	720	660	1.0	–25...+60	31
		W3G 800-KH94-01	3~ 380–480	50/60	780	830	1.3	–25...+60	32
		W3G 800-KS39-03	3~ 380–480	50/60	940	1,950	3.1	–25...+60	40
		W3G 800-KU21-03	3~ 380–480	50/60	1,080	2,900	4.4	–25...+60	46
		W3G 800-KV05-03	3~ 380–480	50/60	1,150	3,400	5.2	–25...+60	51
		W3G 800-LU21-03	3~ 380–480	50/60	1,090	2,650	4.0	–25...+60	47
		W3G 800-LV05-03	3~ 380–480	50/60	1,190	3,500	5.3	–25...+60	52
	AC	W6D 800-KG13-01	3~ 400	50	870/650	1,430/840	2.8 Δ/1.6 Y	–25...+60	39
910	EC	W3G 910-KH02-51	3~ 380–480	50/60	610	630	1.0	–25...+60	36
		W3G 910-KS35-03	3~ 380–480	50/60	850	1,770	2.8	–25...+60	45
		W3G 910-KU25-03	3~ 380–480	50/60	980	2,550	3.9	–25...+60	48
		W3G 910-KV12-03	3~ 380–480	50/60	1,050	3,200	4.9	–25...+60	54
		W3G 910-LU25-03	3~ 380–480	50/60	980	2,500	3.9	–25...+60	51
		W3G 910-LV12-03	3~ 380–480	50/60	1,070	3,250	5.0	–25...+60	55
	AC	W6D 910-KD01-01	3~ 400	50	870/640	1,920/1,170	3.8 Δ/2.2 Y	–25...+55	47

¹ Nominal data at operating point with maximum load and 400 VAC.

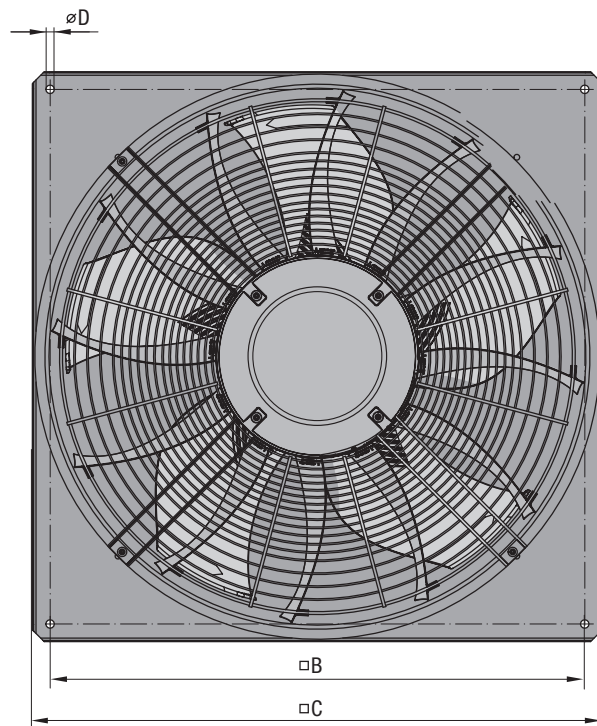
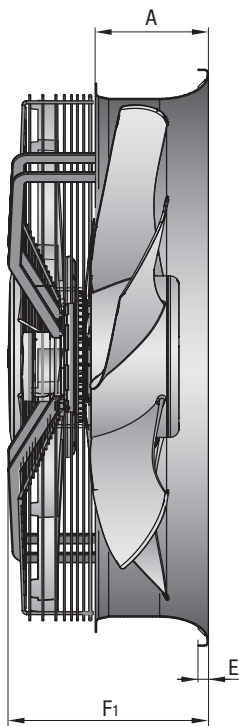
Subject to technical changes.

Y: AC motor star circuit diagram; Δ: AC motor delta circuit diagram.

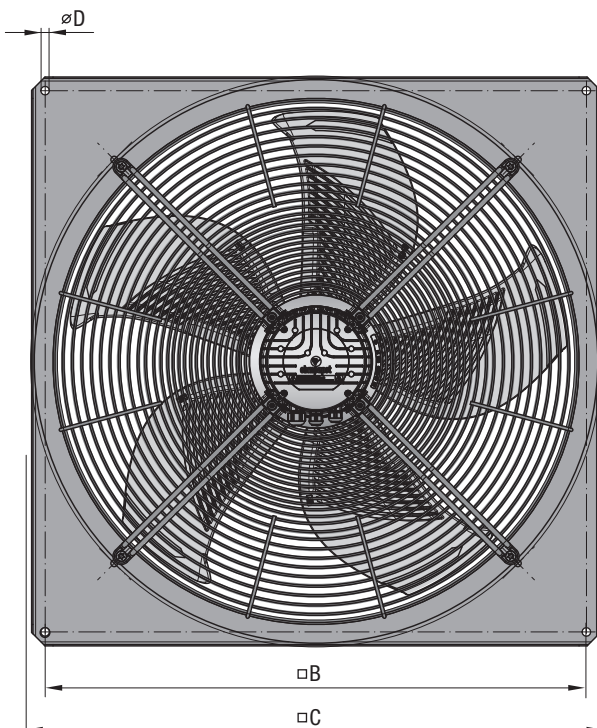
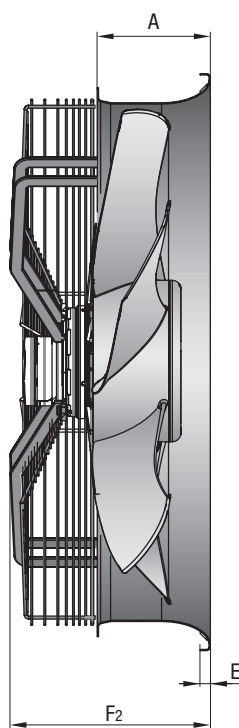
Variants with round fan housing or with conduit connection on request.

The product descriptions in this catalog do not represent guaranteed properties.

The new *standard!*



System with guide vanes



System without guide vanes

Dimensions

Size		Item number	A	B	C	D	E	F1	F2
630	EC	W3G 630-NP04-H1	145	750	805	ø 11 (4x)	20	–	255
		W3G 630-NP04-M1	145	750	805	ø 11 (4x)	20	–	280
		W3G 630-NR63-01	145	750	805	ø 11 (4x)	20	–	273
	AC	W3G 630-NU33-03	145	750	805	ø 11 (4x)	20	–	270
		W6E 630-NT03-01	145	750	805	ø 11 (4x)	20	–	244
		W6D 630-NT01-01	145	750	805	ø 11 (4x)	20	–	244
710	EC	W4D 630-NG01-01	145	750	805	ø 11 (4x)	20	–	288
		W3G 710-NP19-M1	152	810	850	ø 14.5 (4x)	20	–	288
		W3G 710-NK67-01	152	810	850	ø 14.5 (4x)	20	–	280
	AC	W3G 710-NU31-03	152	810	850	ø 14.5 (4x)	20	–	280
		W4D 710-ND01-01	152	810	850	ø 14.5 (4x)	20	–	267
		W3G 800-KE57-51	190	910	970	ø 14.5 (4x)	17	–	338
800	EC	W3G 800-KH94-01	190	910	970	ø 14.5 (4x)	17	–	338
		W3G 800-KS39-03	190	910	970	ø 14.5 (4x)	17	–	334
		W3G 800-KU21-03	190	910	970	ø 14.5 (4x)	17	–	334
	AC	W3G 800-KV05-03	190	910	970	ø 14.5 (4x)	17	–	334
		W3G 800-LU21-03	190	910	970	ø 14.5 (4x)	17	350	–
		W3G 800-LV05-03	190	910	970	ø 14.5 (4x)	17	350	–
910	EC	W6D 800-KG13-01	190	910	970	ø 14.5 (4x)	17	–	336
		W3G 910-KH02-51	205	1,010	1,070	ø 14.5 (4x)	20	–	334
		W3G 910-KS35-03	205	1,010	1,070	ø 14.5 (4x)	20	–	338
	AC	W3G 910-KU25-03	205	1,010	1,070	ø 14.5 (4x)	20	–	338
		W3G 910-KV12-03	205	1,010	1,070	ø 14.5 (4x)	20	–	338
		W3G 910-LU25-03	205	1,010	1,070	ø 14.5 (4x)	20	352	–
		W3G 910-LV12-03	205	1,010	1,070	ø 14.5 (4x)	20	352	–
		W6D 910-KD01-01	205	1,010	1,070	ø 14.5 (4x)	20	–	343

All dimensions in mm. Data sheets available on request.

Variants with round fan housing or with conduit connection on request.

Subject to technical changes.

ebm-papst FanScout: click your way to the optimum AxiBlade.

Our axial fans can be configured individually for each application, and it is important to correctly consider all the relevant aspects when selecting your axial fan. When making your selection, you can rely on our experts' many years of experience – and on our professional fan selection software as well.

The ebm-papst FanScout has proven itself with its combination of user friendliness and real-world measured values. Not only is the performance of the individual fan components measured but also that of the fan as a complete system. The program allows you to quickly select the best fan for your application, to describe and modify the operating behavior and to document the technical specifications. During this process, factors such as air performance, operating time and installation space can be taken into account. TÜV SÜD has tested the difference between the actual measurements and the data calculated using the software and assigned the accuracy of the calculation to the highest class.

Exact presentation of the life cycle costs:

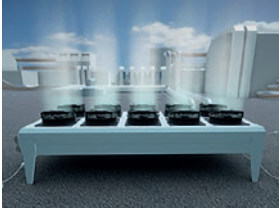
The costs of everything from operation, procurement and installation to service can be calculated over a time period that can be individually defined. Practical: The software can be integrated into your device's configuration program very easily, via DLL interface.

The best part:

ebm-papst will pre-select the products that are suitable for you. This saves you the trouble of searching through the broad product portfolio and helps you configure your application in advance.



AxiBlade: the answer to a whole host of requirements.



A series for a wide variety of applications? Yes!

The AxiBlade can be configured with maximum flexibility, making it the first choice for a multitude of ventilation, air conditioning and refrigeration technology applications.



Do all components match perfectly? Yes!

Each fan component optimizes the overall system in a way that targets the specific requirements.



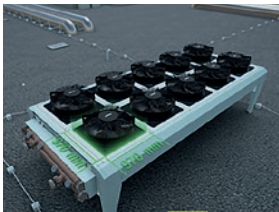
High power with low noise levels? Yes!

Up to 60 % overall efficiency and up to 8 dB(A) lower noise emissions compared to the HyBlade®.



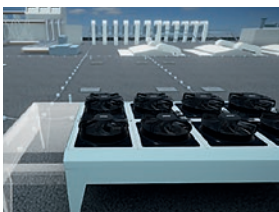
Suitable for all weather conditions? Yes!

Regardless of whether it is raining, snowing or it is sunny, the robust and corrosion-resistant components withstand any weather.



Easy, like-for-like replacement? Yes!

Despite its increased power, its installation dimensions with the fan housing are the same: only the height has changed: the AxiBlade is particularly low.



More cooling performance per square meter? Yes!

The AxiBlades' high power density allows greater cooling performance with the same dimensions or alternatively enables downsizing with the same performance.

Do you have more questions?

For technical queries, simply call us on +49 7938 81-0
Or send us an e-mail to info1@de.ebmpapst.com

www.ebmpapst.com

ebmpapst

the engineer's choice

ebm-papst Mulfingen GmbH & Co. KG

Bachmühle 2
74673 Mulfingen
Germany
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com