

EC medium pressure axial fans.

The efficient system solution.

ebm**papst**

The engineer's choice

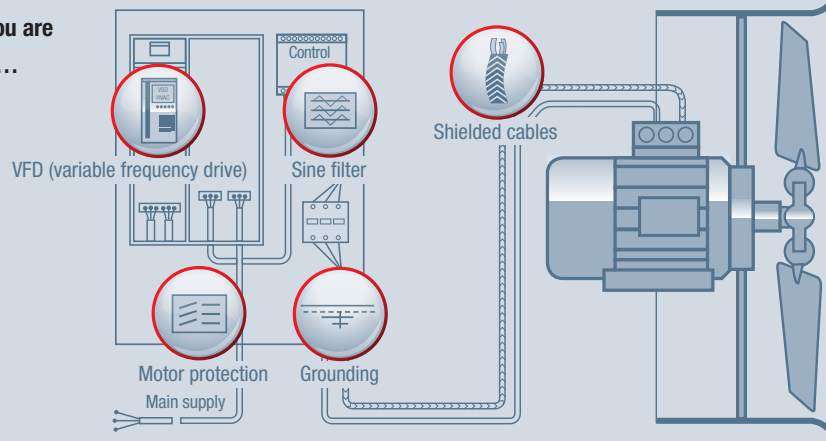


GreenTech EC technology in a new dimension.

Thanks to the new axial fans, our highly efficient GreenTech EC technology is now available for the first time for the medium pressure range. Not only does this create new possibilities, it also makes things easier.



The previous solution that you are familiar with looks like this ...



Conventional fans with VFD

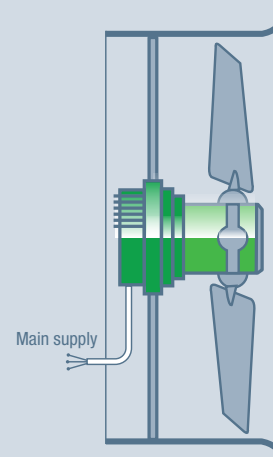
With the GreenTech EC solution from ebm-papst, you get ...

... a complete system, consisting of a motor, impeller and integrated variable speed drive. All from one source and ready configured. That means no extra components and simple commissioning. In addition, you can be sure that all legal requirements have been fulfilled in line with the Ecodesign Directive for fans. Standardised measurements and clear documentation are available.

... high adaptability. The number and angle of the blades are adjusted to your operating point. The system can also be mounted in any desired orientation.

... high efficiency. This is ensured thanks to the GreenTech EC motor in combination with the integrated variable speed drive.

... an integrated derating function. The perfect protection against overheating and mechanical overload.



GreenTech EC fan



Areas of application.

Medium pressure axial fans with GreenTech EC motors are used wherever high volume flows need to be moved against elevated pressures. Examples of this include shock freezers or cold storage facilities, as well as process cooling applications.

Top of the class in efficiency.

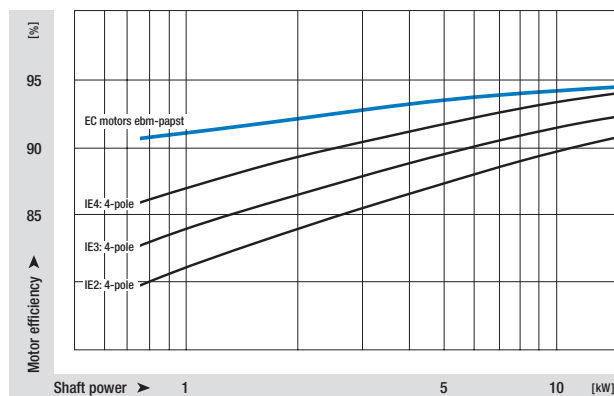
The legal requirements for energy efficiency are becoming increasingly strict. According to the Ecodesign Directive for motors (EU 640/2009), the minimum efficiency class IE2 is valid in Europe. The efficiency class IE3 must be fulfilled as of 2015. Similar legislation applies in other countries. In the USA, for example, the IE3 efficiency class (premium efficiency) is already obligatory. The good news is that GreenTech EC motors from ebm-papst already exceed the IE4 efficiency class (super premium efficiency) today. This gives you perfect planning security for many years to come.

Efficient also means cost-effective. In addition, the fan speed can be adjusted to requirements, meaning that you only use the energy that you really need.

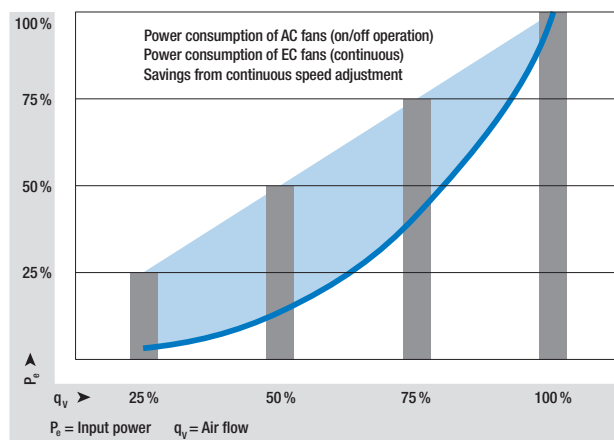
Continuously cost-effective.

The adjustment of the air flow to the current requirements is a decisive factor for a system's energy consumption. For AC fans, this is often achieved by switching individual fans on or off. In contrast, GreenTech EC fans have an integrated variable speed drive, which can be used to adjust the air mass to requirements. When the fan speed n is reduced, the input power P_e decreases drastically ($P \sim n^3$).

A simple sample calculation makes the enormous potential for savings clear: A system with four fans arranged in parallel consumes 40 kW in rated operation. If this system is operated over one year, with an average of half the time in the design point and the other half of the time at half the rated air flow, this results in energy savings of 65 MWh per year.



50 Hz; According to IEC 60034-30



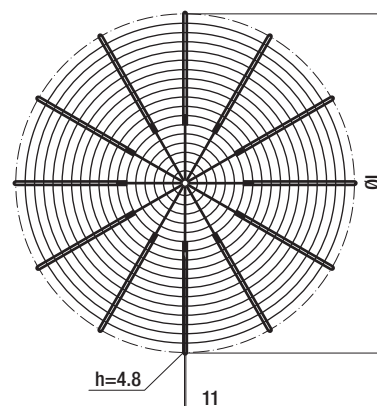
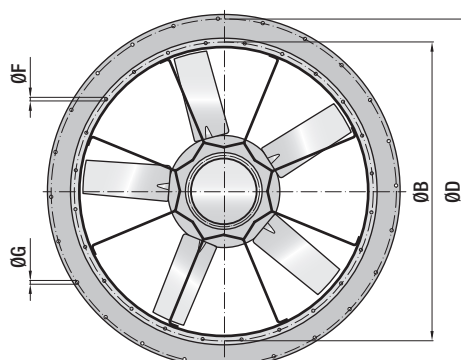
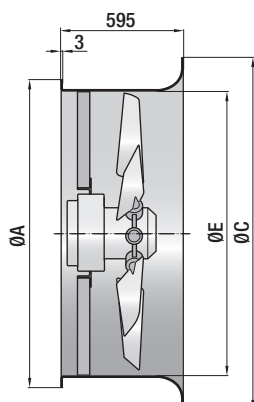
Outer dimensions and inner values.

Nominal data		Nominal voltage range	Frequency	Speed/rpm ⁽¹⁾	Max. input power ⁽¹⁾	Max. current draw ⁽¹⁾	Perm. amb. temp.	Mass
Article number	Motor	VAC	Hz	min ⁻¹	W	A	°C	kg
W3GB20IQ0701	M3G 200-QA	3 ~ 380-480	50/60	1,550	9,500	14.60	-40...+60	195
W3GZ50IQ0801	M3G 200-QA	3 ~ 380-480	50/60	1,140	8,300	12.80	-40...+50	205
W3GE00IT1001	M3G 200-QA	3 ~ 380-480	50/60	950	7,350	11.20	-40...+60	210
W3GG00IT0201	M3G 200-QA	3 ~ 380-480	50/60	700	5,620	8.55	-40...+60	225

Subject to alterations (1) Nominal data in operating point with maximum load and 400 VAC

- Temperatures of flow medium deviating from this upon request
- All fans exceed the ecodesign requirements in line with EU 327/2011
- GreenTech EC motor exceeds efficiency class IE4 (super premium efficiency)
- Balance quality of the rotating unit Q 6.3
- Protection class IP54
- Mounting dimensions in line with EUROVENT 1/2

Dimensions



Fan	Size	A	B	C	D	E	F	G
W3GB20IQ0701	1,120	1,230	1,190	1,360	1,320	1,120	15 (20x)	15 (20x)
W3GZ50IQ0801	1,250	1,360	1,320	1,510	1,470	1,260	15 (20x)	15 (20x)
W3GE00IT1001	1,400	1,510	1,470	1,730	1,680	1,400	15 (20x)	19 (24x)
W3GG00IT0201	1,600	1,730	1,680	1,930	1,880	1,600	19 (24x)	19 (24x)

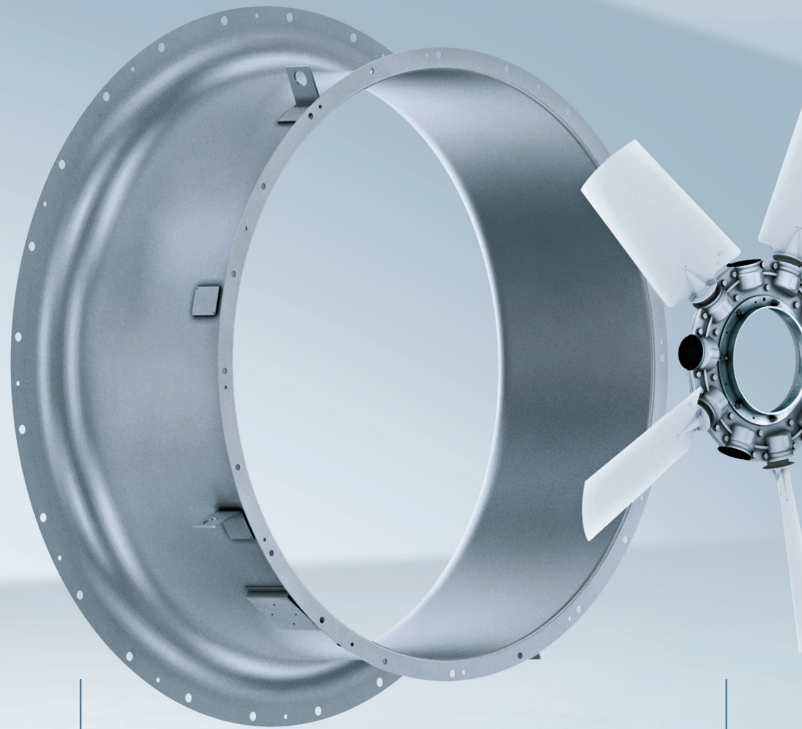
A: Flange outer dimension, pressure side C: Flange outer dimension, intake side E: Housing diameter
B: Flange pitch circle dimension, pressure side D: Flange pitch circle dimension, intake side F, G: Bore hole diameter (number of boreholes)

Dimensions in mm

Guard grille*	Size for intake side mounting	Size for pressure side mounting	L
91112-2-4039	–	1,120	1,190
91125-2-4039	1,120	1,250	1,320
91140-2-4039	1,250	1,400	1,470
91160-2-4039	1,400	1,600	1,680
91180-2-4039	1,600	–	1,880

*By separate delivery, not mounted L: Pitch circle diameter of guard grille Dimensions in mm

Incredible attention to detail.



Double-flange housing

- + Low noise emissions**
 - Inlet ring shape integrated on the intake side
 - Precise roundness ensures minimal air gap
- + High efficiency**
 - Inlet ring shape integrated on the intake side
- + Robust design**
 - Galvanised steel sheet
 - Corrosion protection in line with DIN EN ISO 12944, class C5
- + Safe handling during transport and installation**
 - Transport loops
 - Housing covers motor system and impeller completely
- + Flexible installation**
 - Installation with horizontal and vertical motor shafts
 - Installation on intake and pressure side



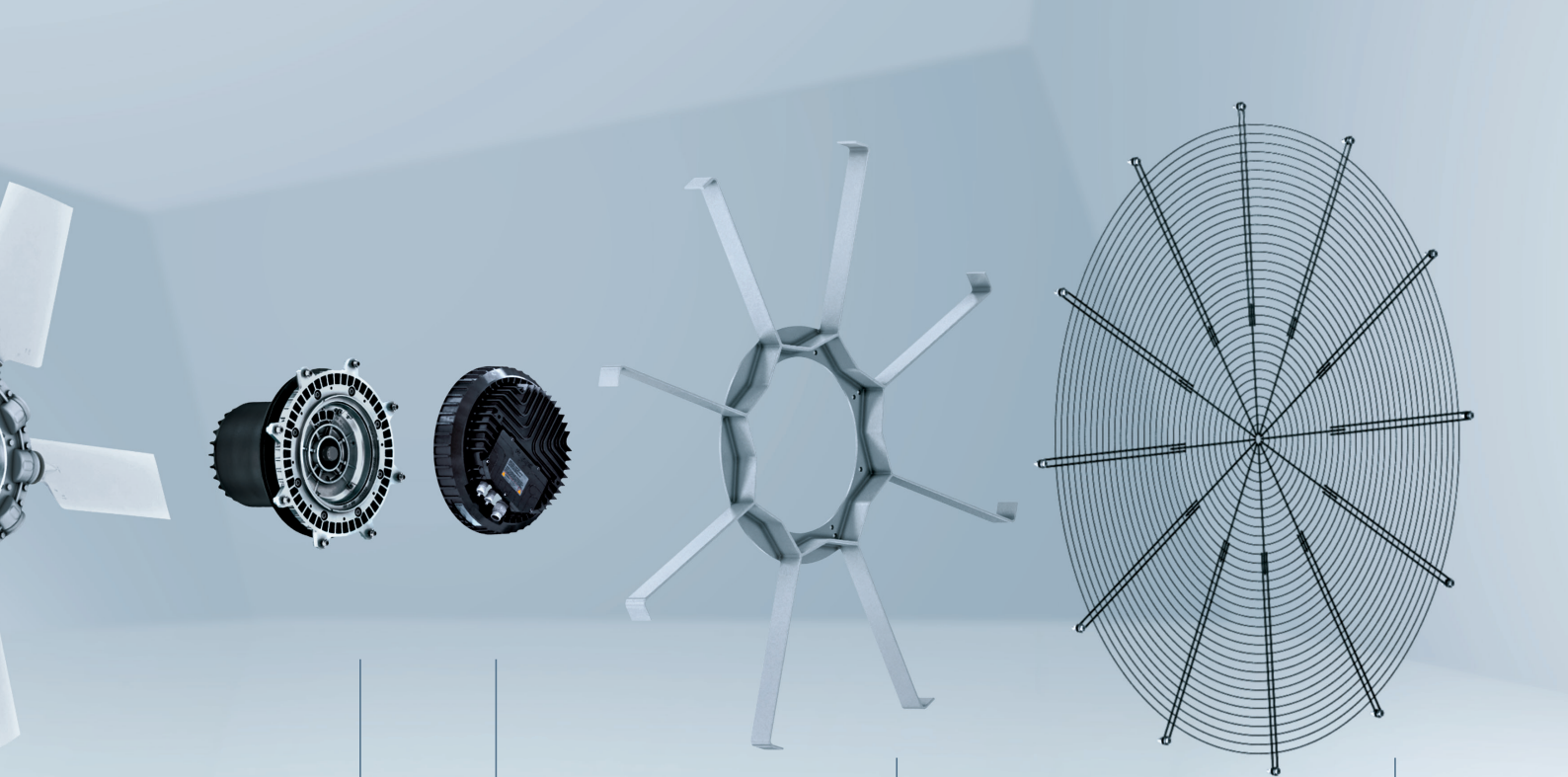
Terminal box (optional)

- + Accessible from outside**
 - Brought out connections and interfaces
- + Simple wiring**
 - Ample connection space



Impeller

- + Versatile**
 - Number and angle of blades adapted to the desired operating point prior to delivery
- + Low vibration**
 - Impeller rotor unit dynamically balanced in two levels
 - High balance quality
- + Robust design**
 - Die-cast aluminium blades
 - Die-cast aluminium hub
 - Proven blade geometry (Airfoil)



GreenTech EC motor

- + Low noise emissions**
 - Commutation and stator design ensure quiet running
 - Acoustically imperceptible clock frequency
- + Long service life**
 - Maintenance-free ball bearings
 - Brushless commutation
- + Unrivalled compactness**
 - The impeller is mounted directly onto the motor rotor
- + High efficiency**
 - Low copper and iron losses in the stator
 - Use of permanent magnets means no magnetisation losses in the rotor
 - No slip losses thanks to synchronous running
- + Economical operation**
 - Enables optimised commutating partial-load operation up to 1:10 while still maintaining high efficiency
- + Safe operation**
 - Insulated bearing system to avoid bearing currents



Electronics

- + Simple putting into service**
 - Central terminal connection area for power supply, alarm relay, control and communication
 - Spatial separation of the connection area from the motor electronics
 - High-quality terminal clamps
 - Pre-set operating parameters
- + Versatile**
 - Continuously variable speed settings
 - 0–10 VDC/PWM interface and MODBUS RTU
 - Integrated PID controller
- + Universal applicability**
 - Various voltage types for worldwide use
 - Suitable for 50 and 60 Hz supply frequency
- + Safe operation**
 - Integrated derating function
 - Integrated locked rotor and over-temperature protection



Motor mount

- + Robust design**
 - Galvanised welded design
 - Corrosion protection in line with DIN EN ISO 12944, class C5
- + Intake/pressure side guard grille (optional)**
- + Safety**
 - Contact protection in line with DIN EN ISO 13857
- + Noise optimisation**
 - Large gap between the guard grille and the impeller
- + Robust design**
 - Corrosion protection in line with DIN EN ISO 12944, class C5

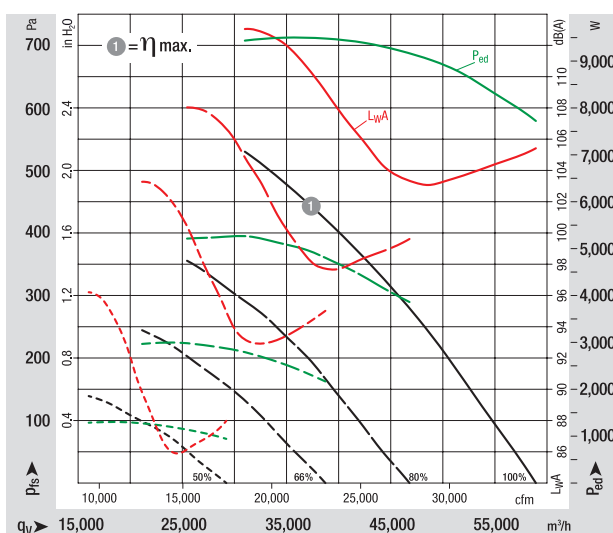


Impressive figures.

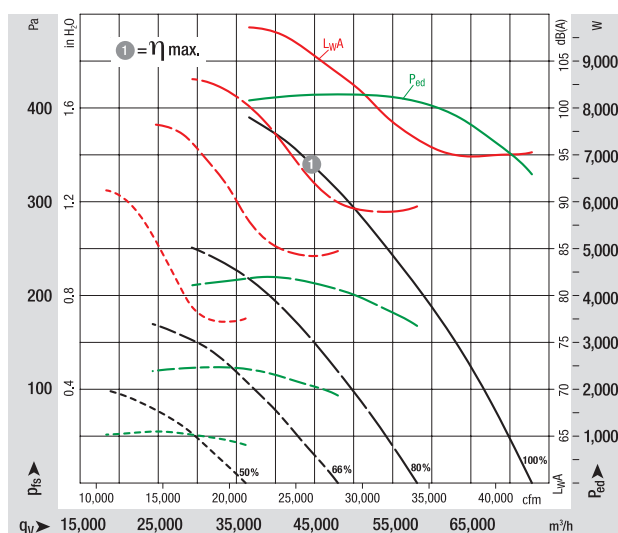
The performance measurements for all fans are conducted on state of the art test rigs. The entire fan unit, consisting of the motor, the commutation electronics and the impeller, is measured at different load levels. This provides us with reliable data, meaning that when you are choosing your fans, you can count on these values being

met. This rules out any unpleasant surprises when commissioning the fans. The measurement data forms the basis for the design program available on request. Use this software to calculate expected operating costs or conduct a cost analysis for the life cycle.

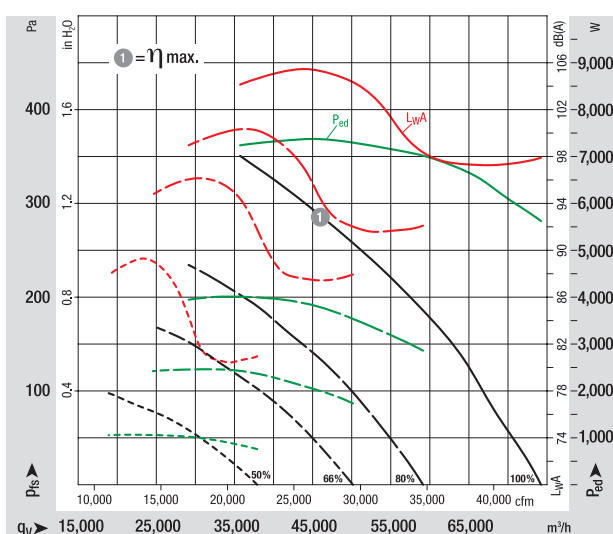
EC medium pressure axial fan size 1120



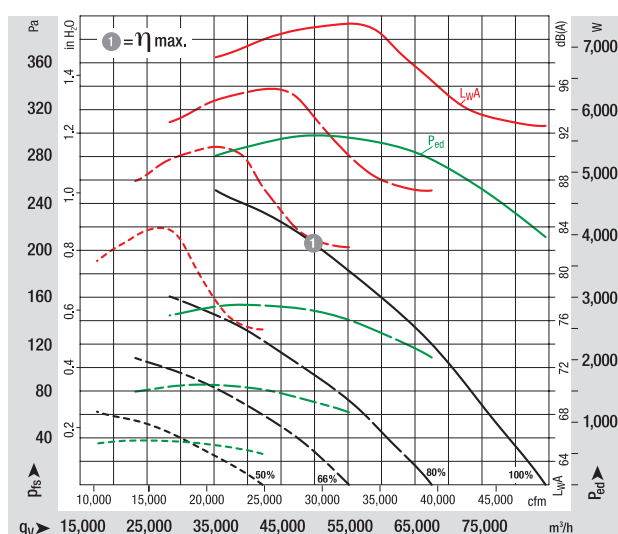
EC medium pressure axial fan size 1250



EC medium pressure axial fan size 1400



EC medium pressure axial fan size 1600



Air performance measured as per: ISO 5801, Installation category A, with ebm-papst inlet nozzle without protection against accidental contact. Suction-side noise levels: L_{wA} as per ISO 13347, L_{pA} measured at 1 m distance to fan axis. The acoustic values given are only valid under the measurement conditions listed and may vary depending on the installation situation. With any deviation to the standard setup, the specific values have to be checked and reviewed once installed or fitted!

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