EC medium pressure *axial fans.*

The efficient system solution.

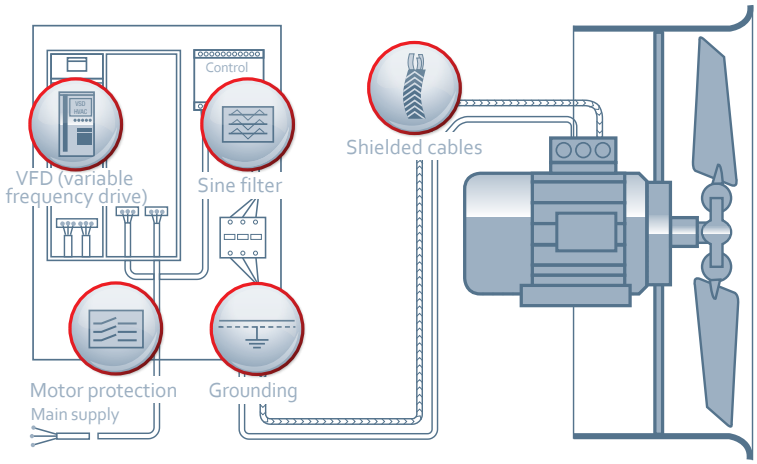
ebmpapst

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 medium pressure range for the first time. 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

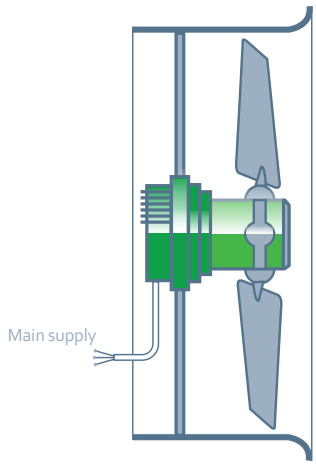
With the GreenTech EC solution from ebm-papst, you get ...

... a complete system, consisting of a motor, impeller and integrated variable speed drive. All from one source and fully configured. That means no extra components and simple commissioning. In addition, you can be sure that all legal requirements are complied with as per Ecodesign Directive for fans. Measurements as per standards and clear documentation are available.

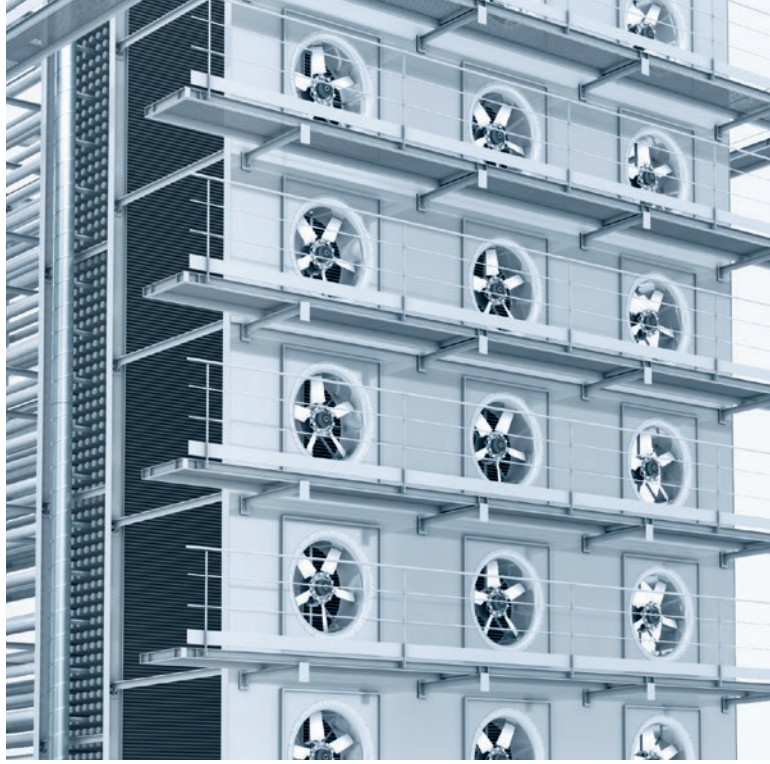
... high adaptability. The number and angle of the blades are adjusted to your operating point. The system can also be mounted in any position.

... highest efficiency. This is due 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.



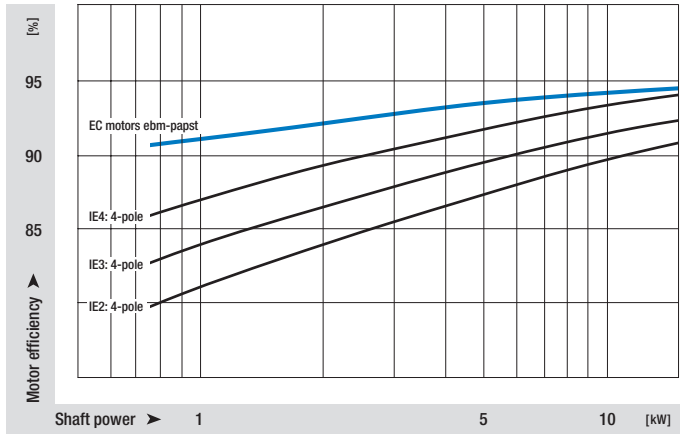
GreenTech EC fan



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

In an efficiency class of their own.
Energy efficiency legislation is becoming ever more stringent. European Ecodesign Regulation EU 640/2009 has also gradually increased the efficiency requirements for motors with a rated output of 0.75 to 375 kW. The following has applied since 1/1/2017: They must either meet at least efficiency class IE3 or comply with efficiency class IE2 and be equipped with a speed control. The good news: GreenTech EC motors from ebm-papst already surpass the standards demanded by efficiency class IE4. Which guarantees you reliable planning well into the future.

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.

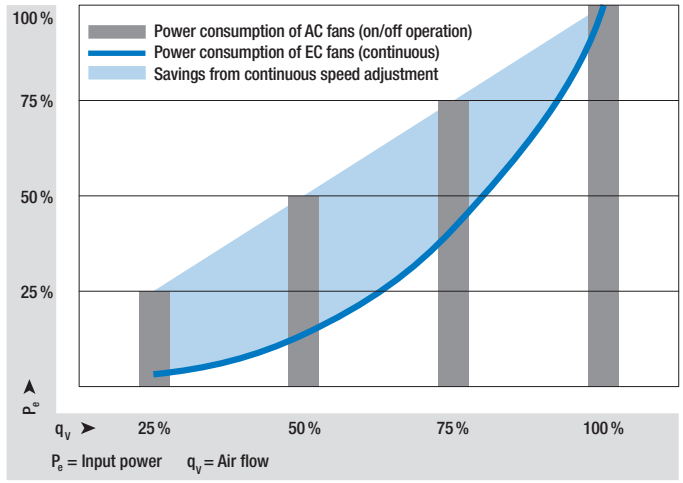


50 Hz; According to IEC 60034-30

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 Pe 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.

The graphs on page 7 illustrate the effects of continuously variable speed control in greater detail.



Outer dimensions and *inner values.*

Nominal data

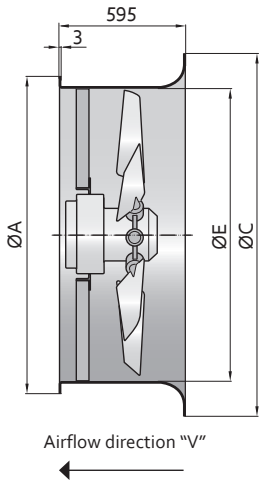
Article number	Motor	Nominal voltage range	Frequency	Speed/rpm[1]	Max. input power[1]	Max. current draw[1]	Perm. amb. temp.	Mass
		VAC	Hz	min^{-1}	W	A	°C	kg
W3G B20-IQ07-01	M3G 200-QA	3~ 380–480	50/60	1,550	9,500	14.60	–40...+60	195
W3G Z50-IQ08-01	M3G 200-QA	3~ 380–480	50/60	1,140	8,300	12.80	–40...+50	205
W3G E00-IT10-01	M3G 200-QA	3~ 380–480	50/60	950	7,350	11.20	–40...+60	210
W3G G00-IT02-01	M3G 200-QA	3~ 380–480	50/60	700	5,430	8.35	–40...+70	225

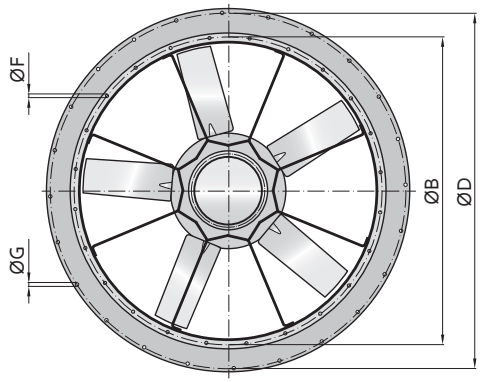
Subject to alterations

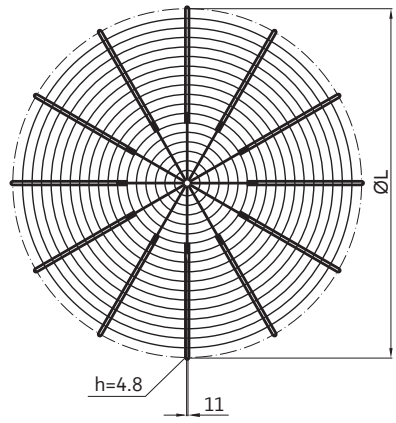
(1) Nominal data in operating point with maximum load and 400 VAC

- Temperatures of flow medium deviating from this upon request
- GreenTech EC motor exceeds efficiency class IE4 (super premium efficiency)
- Balancing quality of the rotating unit Q 6.3
- Protection class IP54
- Mounting dimensions as per EUROVENT 1/2

Dimensions







Fan	Size	A	B	C	D	E	F	G
W3G B20-IQ07-01	1,120	1,230	1,190	1,360	1,320	1,120	15 (20x)	15 (20x)
W3G Z50-IQ08-01	1,250	1,360	1,320	1,510	1,470	1,260	15 (20x)	15 (20x)
W3G E00-IT10-01	1,400	1,510	1,470	1,730	1,680	1,400	15 (20x)	19 (24x)
W3G G00-IT02-01	1,600	1,730	1,680	1,930	1,880	1,600	19 (24x)	19 (24x)

A: Flange outer dimension, pressure side
B: Flange pitch circle dimension, pressure side
C: Flange outer dimension, intake side
D: Flange pitch circle dimension, intake side
E: Housing diameter
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	–	W3G B20-IQ07-01	1,190
91125-2-4039	W3G B20-IQ07-01	W3G Z50-IQ08-01	1,320
91140-2-4039	W3G Z50-IQ08-01	W3G E00-IT10-01	1,470
91160-2-4039	W3G E00-IT10-01	W3G G00-IT02-01	1,680
91180-2-4039	W3G G00-IT02-01	–	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 emission
- Precise roundness ensures minimal air gap

High efficiency
- Inlet ring shape integrated on the intake side

Robust design
- Hot-dip galvanised steel sheet

Safe handling during transport and installation
- Transport loops
- Housing covers motor system and impeller completely

Flexible installation
- Installation with horizontal and vertical motor shaft
- Installation on intake and pressure side

Terminal box (optional)

Accessible from outside
- Connections and interfaces brought out

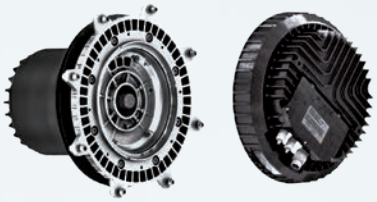
Simple wiring
- Ample connection space

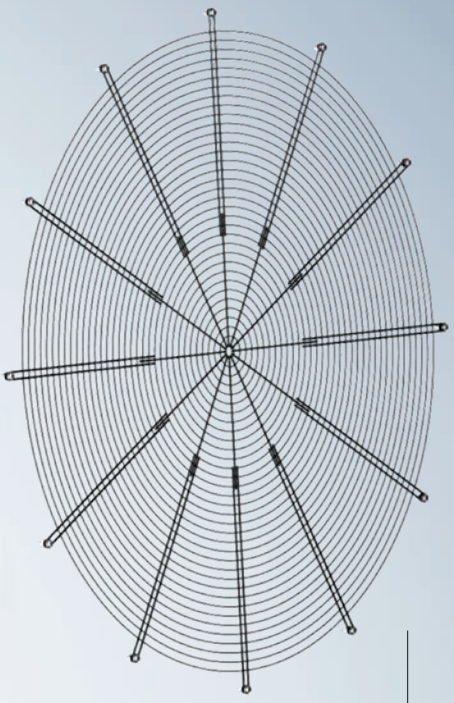
Impeller

Versatile
- Number and angle of blades adapted to the desired operating point prior to delivery

Low vibration
- Impeller rotor unit dynamically balanced in two planes
- High balancing 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 rotor of the motor

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
- Allows optimised commutating partial-load operation of 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

Adjustable
- Continuously variable speed settings
- 0–10 VDC/PWM interface and MODBUS RTU
- Integrated PID controller

Universally applicable
- 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
- Hot-dip galvanised welded design

Intake/pressure side guard grille (optional)

Safety
- Accidental contact protection as per DIN EN ISO 13857

Noise optimization
- Large gap between the guard grille and the impeller

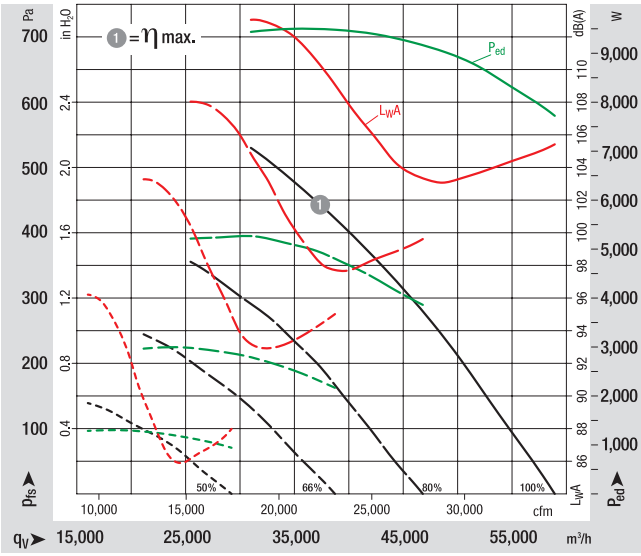
Robust design
- Hot-dip galvanised steel

Impressive *measuring data.*

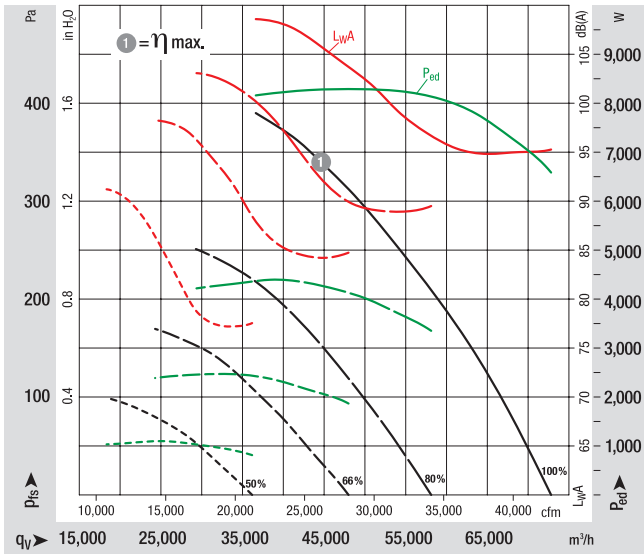
Measurements for fan characteristic curves are carried out on state-of-the-art chamber test rigs. The entire fan unit, consisting of motor, control electronics and impeller, is measured in various load states to ensure that we obtain reliable data and that you can count on these values being achieved when selecting your fan. So there are no unpleasant surprises when commissioning the fans.

The measured data form the basis for our design program, FanScout, which is available on request. This software can be used to calculate the expected operating costs or to perform lifecycle cost analyses.

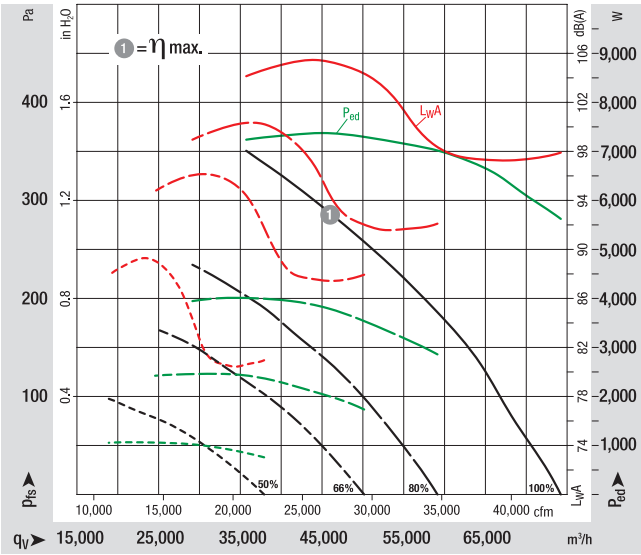
EC medium pressure axial fan size 1120



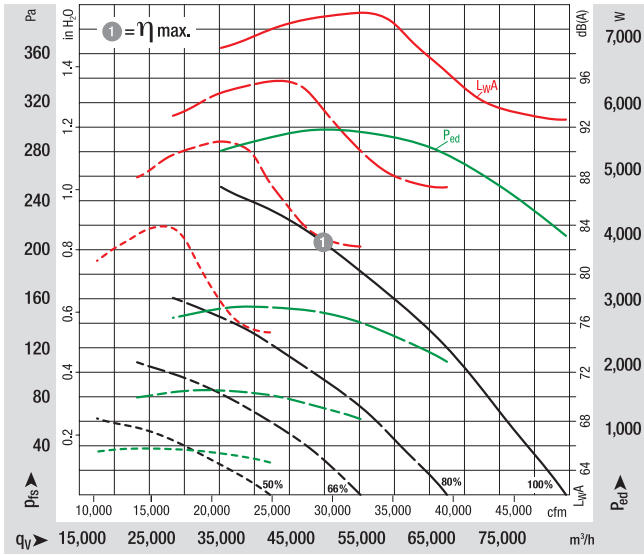
EC medium pressure axial fan size 1250



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, LpA measured at 1 m distance to fan axis. The acoustic values given are only valid under the measurment 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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the engineer's choice

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