

# EC axial fans for *animal husbandry*.

*Optimum air circulation. Maximum yield.*

**ebmpapst**

the engineer's choice



# A concept with a future.

As technological leader for ventilation and drive engineering, ebm-papst is in demand as an engineering partner in many industries. With over 15,000 different products, we provide the right solution for just about any challenge. Our fans and drives are reliable, quiet and energy-efficient.

## 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.** Our GreenTech EC technology is setting standards worldwide. And our lead is your competitive advantage.

**Closeness to our customers.** At 49 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.

## Taking a step forward: the farm of the future

High-tech and farming? This seems to go against our idea of the idyllic small country farm. But modern farmers use satellite navigation when working fields with their tractors, produce milk with fully automated milking machines, breed pigs using electronic ovulation monitoring, and operate their pens and sheds with maintenance-free and energy-efficient ventilation and air conditioning. The latter not only helps keep their animals healthy, it also saves money and helps the environment.



# Progress made perfect.



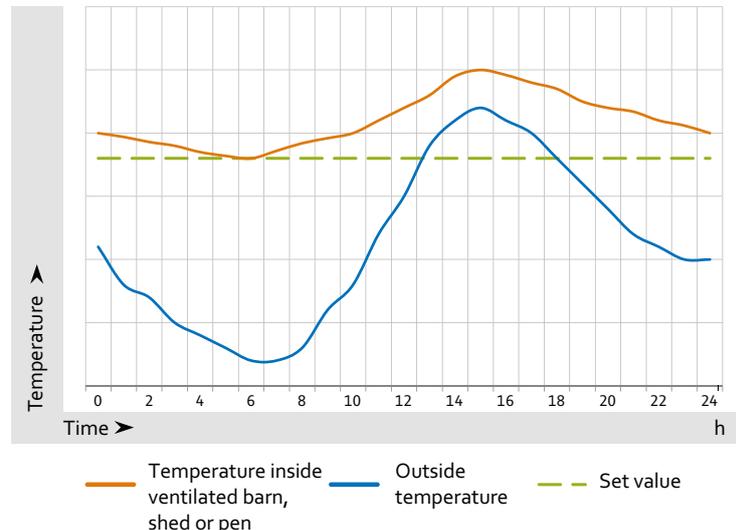
## Areas of application

High-efficiency, energy-saving axial fans are mainly used in agriculture and livestock farming, but also for the ventilation of large buildings. Ideal ventilation is especially important for breeding and fattening facilities. Uniform air flow throughout the building and the extraction of ammonia gases help to maintain the animals' health and ensure their growth.

Low noise emission and uniform air throughput are important characteristics for fans used in animal husbandry.

## Temperature variations

The temperature in a pen or shed varies over the course of the day. The diagram on the right compares the actual outdoor temperature with the indoor temperature with appropriate ventilation. The ideal temperature is shown as a target value. Optimum ventilation of the pen or shed is very important to compensate for these temperature variations and maintain the health of the animals – no problem with the speed control of EC fans.



## Energy savings and noise reduction in partial-load operation

Speed reduction can be used to adjust the air volume according to requirements. With high outside temperatures during the day, the fans work at full load; when less air is needed at night, the fans all switch to partial-load operation. Here, EC technology has an important advantage: With continuous speed adjustment at sustained high efficiency, GreenTech EC fans adapt much more effectively than previous solutions involving the activation or deactivation of individual fans. So all fans are kept in operation, with significant reductions in power consumption and noise and also with a positive impact on the service life of the fans.

# Where good *things* come together.



## Motor mount

The motor can be mounted in a hot-dip galvanized welded design or with bolted steel profiles. Great care must be taken to ensure that the forces are transmitted into the building's structure. The robust design keeps the motor safely in place and enables quick and easy installation.



## EC motor

- + Direct drive**
  - More efficient because the impeller is mounted directly on the external rotor motor – no belt drive required
  - Integrated control electronics
  - Simplifies installation and control electronics
- + Maximum energy efficiency**
  - High efficiency
  - Low intrinsic heat
- + Extremely durable**
  - Special surface treatment for top splash water protection
- + Exact closed-loop control**
  - Exact control of air flow – via 0-10 V linear or PWM input
  - Monitoring and control via MODBUS-RTU
- + Long service life**
  - Extremely durable thanks to maintenance-free ball bearings and brushless commutation

## Fan housing

The fan housing with its aerodynamically optimized design ensures maximum efficiency and quiet operation. Its intelligent design makes installation easy. The fan housing can be made of plastic or sendzimir-galvanized sheet steel. We will gladly provide you with the ideal geometry for flow control.



Power Density



Monitoring



Control



Impeller

- + Quiet operation**
  - Low noise level and low power consumption
  - Adjustable to diameter of customer nozzle
- + High efficiency**
  - Direct drive
  - Aerodynamically optimized blade profile
- + Simple installation**
  - Easy on site and removal installation
  - Fully replaceable
  - Designed for easy cleaning
  - Balanced, pre-assembled and ready to use
- + Robust design**
  - Blades made of high-quality composite material
  - Hub made of die-cast aluminum



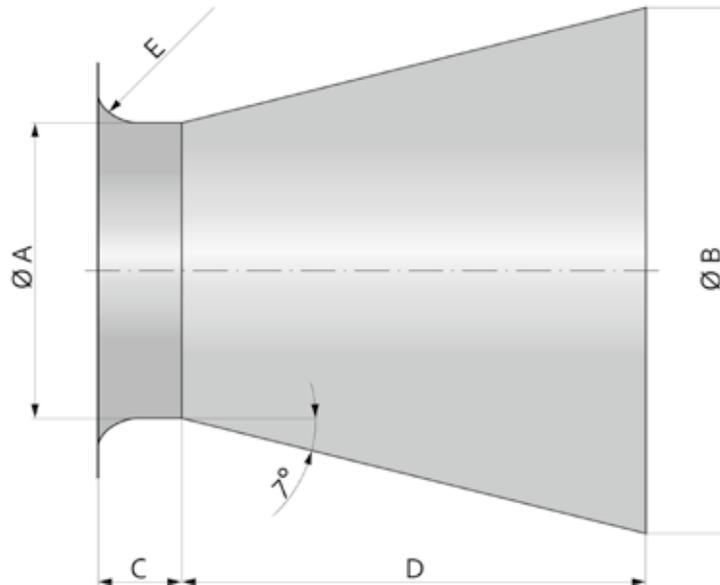
Diffuser

Part of the dynamic flow energy at the fan outlet is converted to static flow energy in the diffuser. With power consumption unchanged, the diffuser increases the amount of air moved by the fan.



These elements are not included in the scope of delivery. ebm-papst will gladly assist you in dimensioning accessory parts.

# Outer dimensions ...



## Dimensions

Size	Designation	A	B	C	D	E
54"	A1370-54	1,385 mm	1,727 mm	180 mm	1,349 mm	54 mm
56"	A1420-56	1,436 mm	1,790 mm	186 mm	1,399 mm	56 mm
58"	A1470-58	1,488 mm	1,855 mm	193 mm	1,449 mm	58 mm
60"	A1520-60	1,540 mm	1,920 mm	200 mm	1,500 mm	60 mm

Data sheets on request. Subject to technical changes.

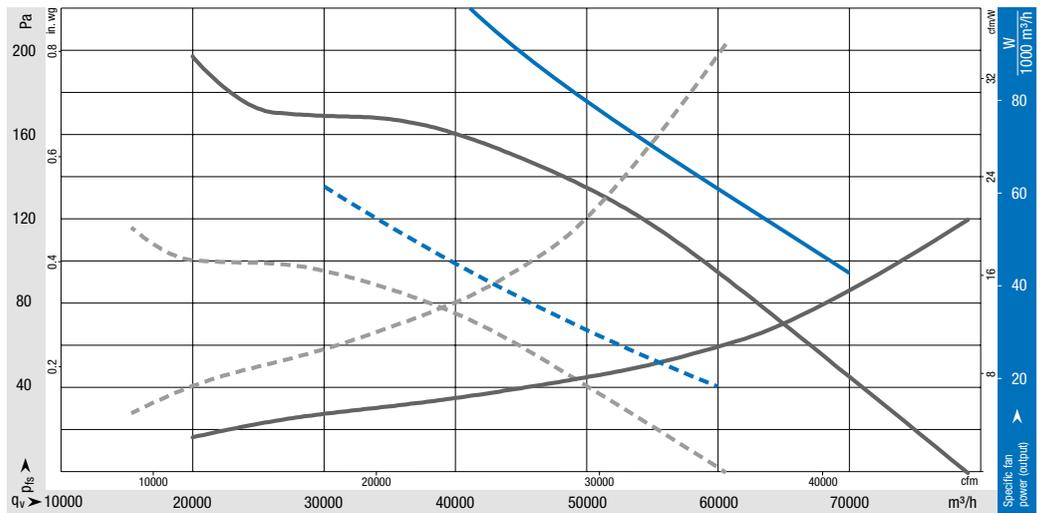
The drawing above gives an idea for optimum installation of the EC axial fan.

The given characteristic curves were established in this mounting position. The characteristic curves on the following pages show the static pressure over air volume and the specific fan power in both cfm/Watt and Watt/(1000 m<sup>3</sup>/h).

The following tables specify the pressure stability indicating how the fan responds to external influences and loads such as wind. It is also defined as the ratio of air flow at 50 Pa (0.2 in. wg) to the air flow at 12.5 Pa (0.05 in. wg). Maximum input power and maximum current are based on operation at 50 Pa static pressure.

... and inner values.

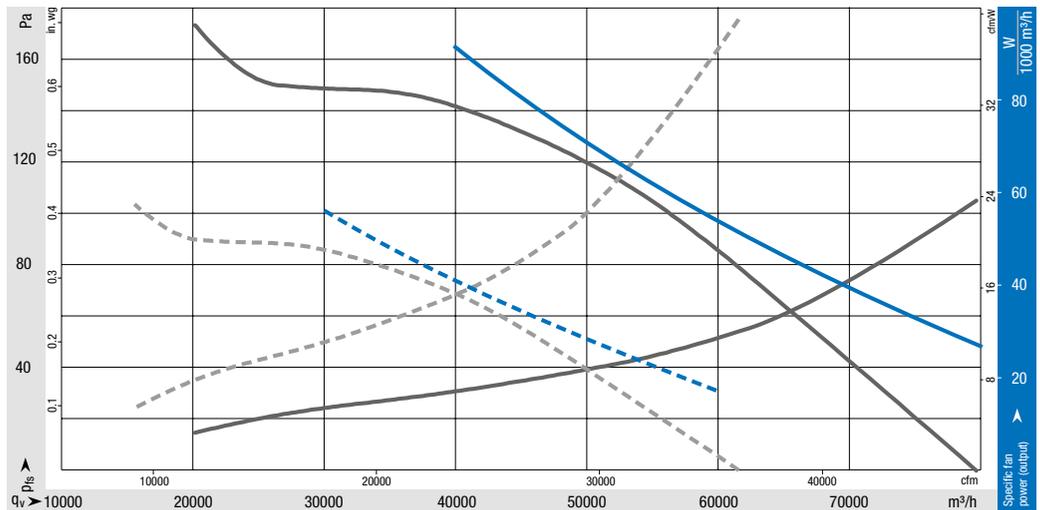
54"  
1,370 mm



Nominal data

Size	Designation*	Motor	Nominal voltage version 1 VAC	Nominal voltage version 2 VAC	Frequency Hz	Speed rpm	Max. input power W	Max. input current A	Weight motor / impeller kg	Pressure stability AFR
54" 1,370 mm	— A1370-54-3-150NAP	3 ~ M3G150NAP	3 ~ 400-480	3 ~ 200-240	50/60	730	3,590	10.0/5.0	30.5	0.90
	- - A1370-54-3-150NA	3 ~ M3G150NA	3 ~ 400-480	3 ~ 200-240	50/60	570	1,800	5.7/3.0	32.5	0.85
	- - A1370-54-1-150NA	1 ~ M3G150NA	1 ~ 200-277	-	50/60	530	1,470	4.2	32.5	0.84

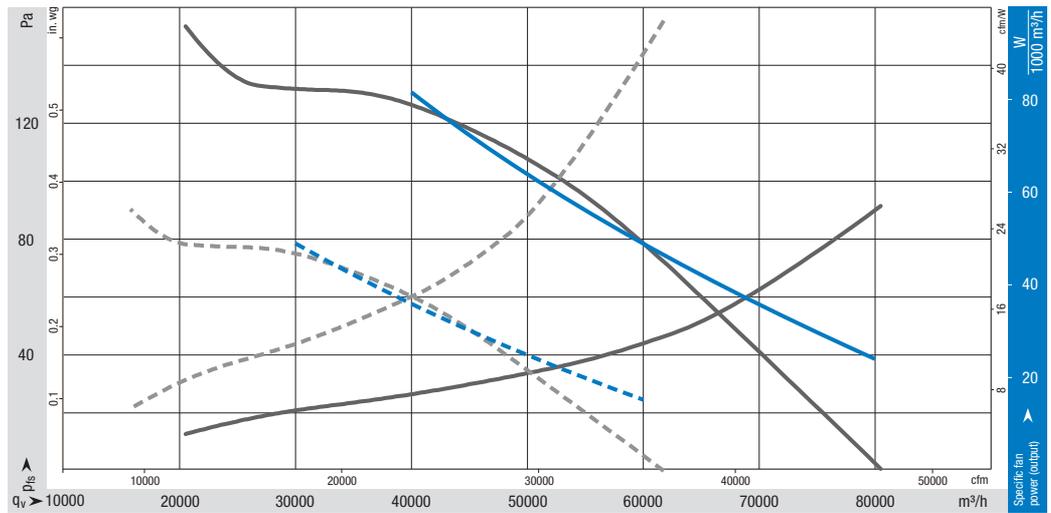
56"  
1,420 mm



Nominal data

Size	Designation*	Motor	Nominal voltage version 1 VAC	Nominal voltage version 2 VAC	Frequency Hz	Speed rpm	Max. input power W	Max. input current A	Weight motor / impeller kg	Pressure stability AFR
56" 1,420 mm	— A1420-56-3-150NAP	3 ~ M3G150NAP	3 ~ 400-480	3 ~ 200-240	50/60	660	3,220	10.0/5.0	30.5	0.89
	- - A1420-56-3-150NA	3 ~ M3G150NA	3 ~ 400-480	3 ~ 200-240	50/60	520	1,660	5.1/2.8	32.5	0.82
	- - A1420-56-1-150NA	1 ~ M3G150NA	1 ~ 200-277	-	50/60	500	1,490	4.2	32.5	0.81

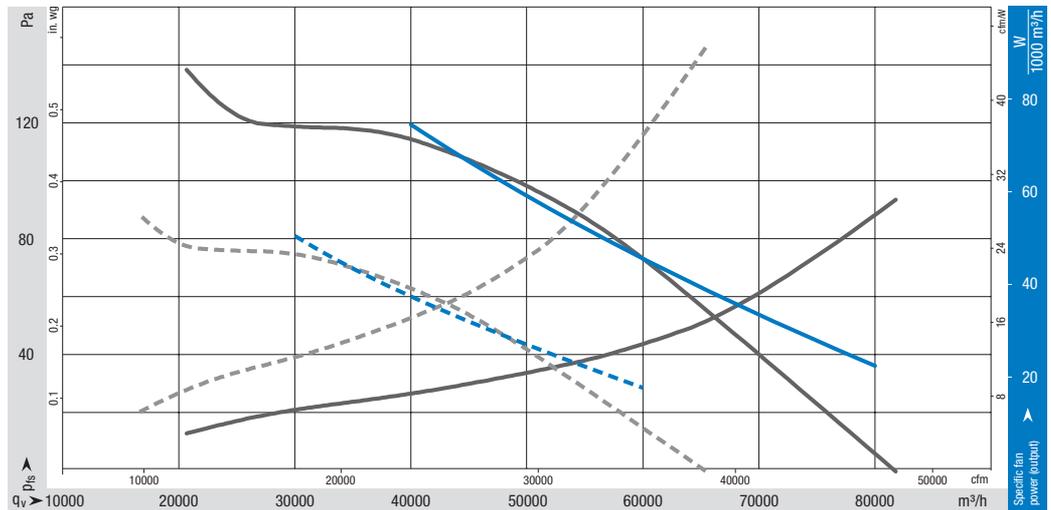
# 58" 1,470 mm



## Nominal data

Size	Designation*	Motor	Nominal voltage version 1 VAC	Nominal voltage version 2 VAC	Frequency Hz	Speed rpm	Max. input power W	Max. input current A	Weight motor / impeller kg	Pressure stability AFR
58" 1,470 mm	— A1470-58-3-150NAP	3 ~ M3G150NAP	3 ~ 400-480	3 ~ 200-240	50/60	600	3,590	9.1/4.6	31.0	0.87
	-- A1470-58-3-150NA	3 ~ M3G150NA	3 ~ 400-480	3 ~ 200-240	50/60	485	1,800	5.0/2.7	31.0	0.79
	-- A1470-58-1-150NA	1 ~ M3G150NA	1 ~ 200-277	-	50/60	470	1,470	4.2	33.0	0.78

# 60" 1,520 mm



## Nominal data

Size	Designation*	Motor	Nominal voltage version 1 VAC	Nominal voltage version 2 VAC	Frequency Hz	Speed rpm	Max. input power W	Max. input current A	Weight motor / impeller kg	Pressure stability AFR
60" 1,520 mm	— A1520-60-3-150NAP	3 ~ M3G150NAP	3 ~ 400-480	3 ~ 200-240	50/60	550	2,700	8.3/4.2	31.0	0.86
	-- A1520-60-3-150NA	3 ~ M3G150NA	3 ~ 400-480	3 ~ 200-240	50/60	450	1,560	4.8/2.6	31.0	0.79
	-- A1520-60-1-150NA	1 ~ M3G150NA	1 ~ 200-277	-	50/60	440	1,450	4.2	33.0	0.78

Data sheets on request. Subject to technical changes. The permissible ambient temperature is 40 °C in all versions.  
\*The designation is not a part number. For other information, simply contact your ebm-papst representative.

# The fast, sure way to an optimum fan solution.



## **Real values. True values.**

Fan power measurements 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. This ensures that we obtain reliable data, and that you can count on these values being achieved when selecting a fan.

Permanent internal monitoring of the test facilities used and the values obtained ensures lasting fan quality and reliability. So there are no unpleasant surprises when commissioning the fans. The data are validated after the measurements, ensuring that all information provided in the documentation really reflects the correct values.

## **ebm-papst FanScout.**

With our proven ebm-papst FanScout selection software, you can quickly find the ideal product from our extensive product range and be absolutely sure it will meet your exact requirements. We make a preliminary selection of suitable products for you, saving you time and simplifying your search for the right fan. FanScout can be used to calculate expected operating costs or to perform lifecycle cost analyses.

**Just contact your ebm-papst representative.**

For other information, or for questions about specific applications, simply contact your ebm-papst representative. We can also prepare an ebm-papst FanScout collection based on your needs and requirements.

[www.ebmpapst.com](http://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](mailto:info1@de.ebmpapst.com)