

# Tangential Fans - Basic principles

Expertise, performance, innovation

**ebmpapst**

The engineer's choice

**ebmpapst**



# Tangential blowers



# Tangential blowers

**Stove jacket cooling, storage heaters, wood-burning stoves, underfloor convectors, tanning beds, air conditioners and heaters – common to all these applications is the need for a ventilation system of shallow design with high air flow rates. The ideal solution: Tangential blowers from ebm-papst. These provide high air flow rates and extremely good noise characteristics.**

## **The facts at a glance:**

- Low noise with high air flow rates and low back pressures
- High air throughput with low flow velocities
- Expanded-width discharge area ensures that air makes good contact with ducts and surfaces to be cooled
- Extremely shallow design
- Moisture-proof versions for refrigeration applications for example
- Higher speeds with GreenTech EC motors than with AC motors
- Power adjustment via PWM signal or 0–10 V analog voltage

[Tangential blowers >](#)

# Tangential blowers

## Performance ranges

### Optimum usage range

In the last right third of the air performance curve:

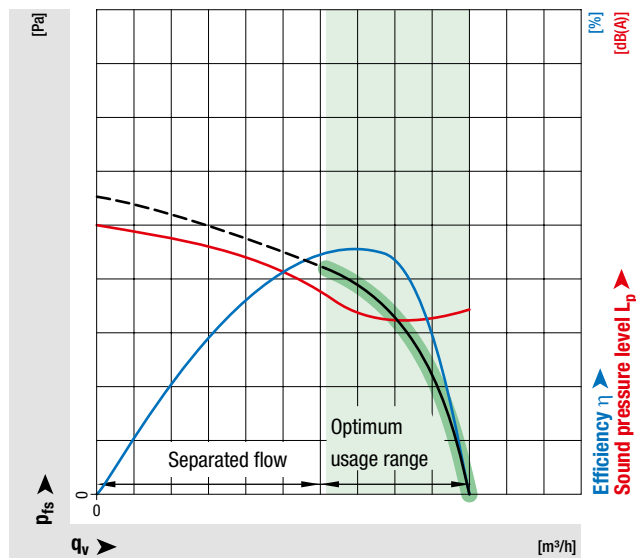
- Max. efficiency
- Minimum noise

Left area of the air performance curve:

- Unstable behavior due to stalling
- Poor efficiency
- Slightly increasing noise level

The operating range is at much lower pressures than with all other fans.

The optimum operating range is highlighted in green in the adjacent graph.



- Fan curve
- System or device curve
- Efficiency  $\eta$
- Operating point
- Noise curve
- Usage range

# Selection of fans

The product catalogs contain all the relevant information on

**– Product designation**

The header defines the technology (AC or EC), the type (centrifugal, axial, ...), the series (e.g. S series), the impeller diameter and other features of the product.

**– Product description**

Depending on the product, the following items of information are presented here:

Material, number of blades, airflow direction, direction of rotation, degree of protection, insulation class, installation position, condensation drainage holes, mode of operation, bearings, technical features, EMC, touch current, motor protection, electrical hookup, cable/terminal box design, protection class, capacitor, conformity with standards, approvals and options.

**– Nominal data**

AC products (up to motor size 074) and EC products (with DC supply):

Free air/with minimum back pressure AC products (as of motor size 094) and EC products (with AC supply):

At the operating point with maximum load

**– Order designation/type**

An explanation of the order designation and type is given under Type code.

**– Product drawing**

The air performance curves for the product are shown in the graph.

**– Connection diagram**

The connection diagrams show the connections for power supply and interface.

The compatible connectors are also given.

QL 100

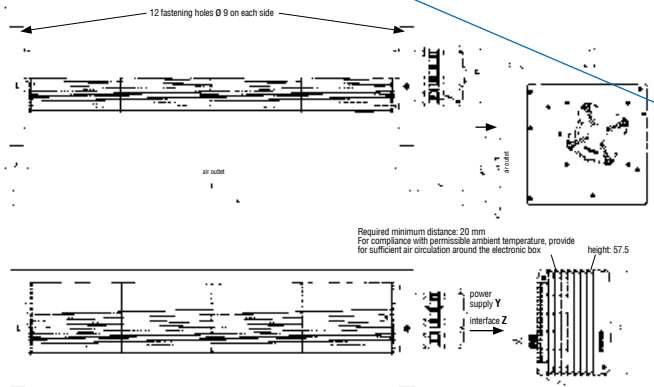


**Tangential blowers with electronically commutated direct current motors**

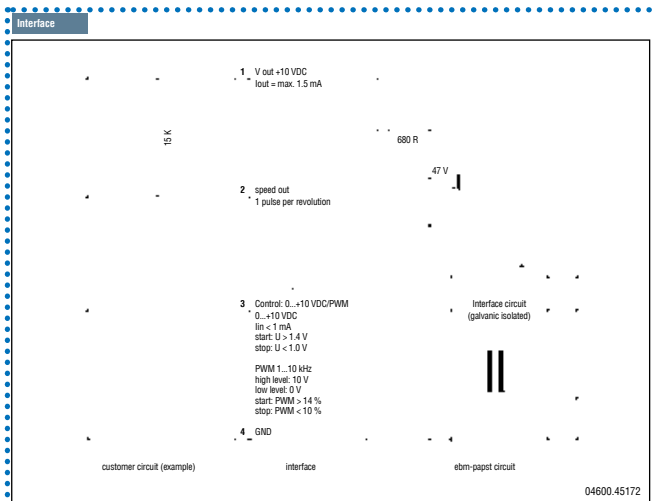
- With external commutation electronics
- Vibration-cushioned suspension
- Blower speed adjustable through PWM signal, or through 0-10 V analog voltage signal (see page 7)
- Impeller diameter: 100 mm
- Mounting position: horizontal; vertical with motor on the bottom on request
- Permissible ambient temperature electronics: 0 - 50 °C
- Degree of protection: IP00 (electronics), IP54 (motor) possible
- Protection class I
- Overload protected by software class B
- Controlled speed

Nominal data

Type	Part number	Characteristic curve	Nominal voltage (AC)	Air flow	Max. pressure increase	Max. power input	Speed	Permissible ambient temperature (motor)	Permissible medium temperature	Dimensions in mm
			V	m <sup>3</sup> /h	Pa	W	min <sup>-1</sup>	°C	°C	a b c
QL100/5000-8G4320	55669.11010	1	220-240	1075	75	80	1500	0 - 60	-15 - 80	836 560 520
QL100/6000-8G4320	55669.12010	2	220-240	1200	75	80	1500	0 - 60	-15 - 80	736 660 620
QL100/7000-8G4320	55669.13010	3	220-240	1300	75	80	1500	0 - 60	-15 - 80	836 760 720
QL100/8000-8G4320	55669.14010	4	220-240	1360	75	80	1500	0 - 60	-15 - 80	936 860 820

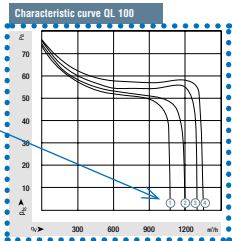
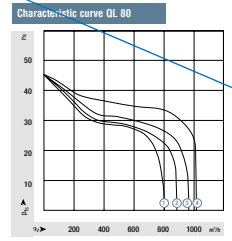
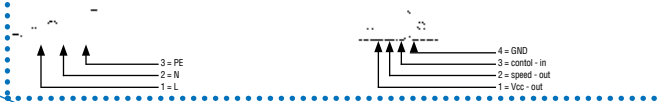


## Characteristic curve, electrical interfaces and connectors



**Power supply Y**  
Coding of the PCB fits to edge connector:  
e.g. MFW9590-03-EG05-000-960-000-00 (Fa. Stocko)  
Part number for mating connector: 24310.45065

**Interface Z**  
Coding of the PCB fits to edge connector:  
e.g. MFW7238-004-061-960-000-00-G (Fa. Stocko)  
Part number for mating connector: 24310.45066



We hope that this brochure was able to provide you with an in-depth insight into our technologies, our product applications and important basic principles. Please do not hesitate to contact us should you have any further questions on specific applications. Our specialists will be delighted to help.

**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)

**ebmpapst**

The engineer's choice