

AC centrifugal fans backward curved

Centrifugal fans, backward curved

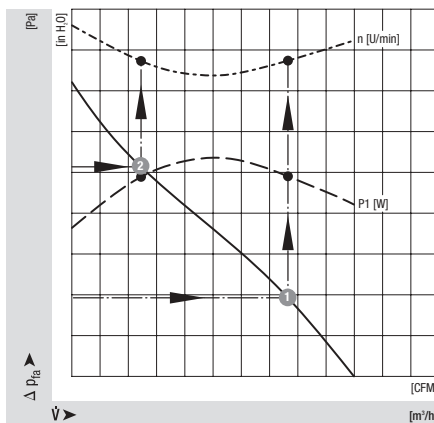
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Technical information

Backward curved centrifugal fans feature extremely long blades. These impellers are highly resistant to dirt and dust. Moreover, their hydraulic efficiency is very high. They are mainly used in sucking mode. In most cases, a scroll housing becomes superfluous. Depending on the application, it suffices to place a square or round box around the impeller to convert part of the dynamic pressure of the fan and to guide the air flow in the desired direction.

Especially when used in range hoods, computer fan trays, duct fans, roof units etc, this kind of fan is of particular advantage due to its dimensions and performance. In range hoods, for example, the rectangular-shaped over-pressure area around the impeller facilitates the simple switch from exhaust to re-circulated air. This principle allows you to freely choose the exhaust air direction.



Air performance characteristics for backward curved centrifugal fans

Air performance characteristic

Air performance data are determined with ebm-papst inlet rings at sucking operation and free air flow.

Each air performance curve shows two operation points for which the corresponding data, such as speed and power input, is listed in the adjoining table.

Impellers

Backward curved impellers, also called free-blowing, are available in various versions:

- plastic with sheet metal flange made of galvanised sheet steel
- completely made of plastic
- completely made of galvanised sheet steel
- completely made of aluminium sheet

The impellers are press-fitted onto the rotor or screwed onto a flange. In keeping with DIN ISO 1940, the unit is dynamically balanced in two planes.

Direction of rotation

clockwise rotation, seen on suction side

Type of protection

IP44 when installed

(final evaluation has to be carried out in the customer's application)

Bearings

maintenance-free ball bearings

Approvals

CE

Cable exit

variable, either lateral or front side

Electrical data

Electrical data has been established at free air flow, i.e. at a back pressure of 0 Pa.

In the lower third of the air performance curve, there is maximum power consumption. After that, power consumption decreases as back pressure increases.

Insulation class

"B" if not otherwise stated

Moisture protection

The stator is humidity protected and the rotor has condensate discharge.

AC centrifugal fans

backward curved, Ø 250



- **Material:** plastic impeller made of PA 6.6 (polyamide, glass-fibre reinforced), round sheet-metal plate

ebm-papst • Muldingen

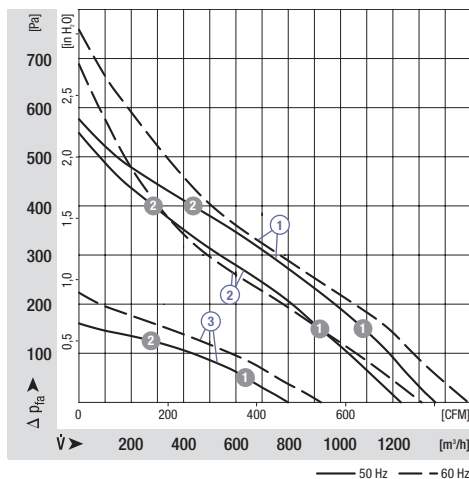
| Nominal data | | Characteristic | Voltage | Frequency | Air flow | Speed/rpm | Power input | Current draw | Capacitor | Noise level | Perm. amb. temp. | Mass |
|------------------|------------|----------------|---------|-------------------|-------------------|-------------------|-------------|--------------|-----------|-------------|------------------|------|
| Type | Motor | | VAC | Hz | m ³ /h | min ⁻¹ | W | A | µF/VDB | dB(A) | °C | kg |
| R2E 250-AS47 -05 | M2E 068-EC | ① | 230 | 50 | 1450 | 2600 | 155 | 0,70 | 5,0/400 | 75 | 50 | 3,1 |
| | | | 230 | 60 ⁽¹⁾ | 1490 | 2700 | 215 | 0,95 | 5,0/400 | 76 | 45 | |
| R2E 250-AQ05 -05 | M2E 068-DF | ② | 230 | 50 | 1230 | 2550 | 130 | 0,57 | 4,0/400 | 73 | 50 | 2,6 |
| | | | 230 | 60 | 1320 | 2750 | 180 | 0,80 | 4,0/400 | 75 | 40 | |
| R4E 250-AH01 -05 | M4E 068-CF | ③ | 230 | 50 | 810 | 1400 | 43 | 0,20 | 1,5/400 | 61 | 70 | 2,2 |
| | | | 230 | 60 | 930 | 1600 | 43 | 0,20 | 1,0/400 | 64 | 80 | |

subject to alterations

⁽¹⁾ Insulation class "F" required at 60 Hz

| | n [min ⁻¹] | P ₁ [W] |
|-----|------------------------|--------------------|
| ① ① | 2400 | 152 |
| ① ② | 2400 | 152 |
| ② ① | 2460 | 172 |
| ② ② | 2435 | 175 |
| ③ ① | 1385 | 46 |
| ③ ② | 1370 | 47 |

Characteristics



Dimensions

| Type | b | c | d | e | g | k | Inlet ring |
|------------------|------|----|------|----|----|----|--------------|
| R2E 250-AS47 -05 | 84,3 | 99 | 97,5 | 42 | 56 | 27 | 96359-2-4013 |
| R2E 250-AQ05 -05 | 73,3 | 89 | 82,5 | 35 | 45 | 27 | 96359-2-4013 |
| R4E 250-AH01 -05 | 84,3 | 99 | 72,6 | 25 | 56 | 29 | 96359-2-4013 |

