

# AC axial fan

sickle-shaped blades (S series)

with guard grille for short nozzle

S6E450-AU04-02 ebmpapst Datasheet

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## Nominal data

|                             |                       |      |      |
|-----------------------------|-----------------------|------|------|
| <b>Type</b>                 | <b>S6E450-AU04-02</b> |      |      |
| <b>Motor</b>                | <b>M6E094-EA</b>      |      |      |
| Phase                       |                       | 1~   | 1~   |
| Nominal voltage             | VAC                   | 230  | 230  |
| Frequency                   | Hz                    | 50   | 60   |
| Method of obtaining data    |                       | ml   | ml   |
| Valid for approval/standard |                       | -    | -    |
| Speed (rpm)                 | min <sup>-1</sup>     | 900  | 990  |
| Power consumption           | W                     | 190  | 260  |
| Current draw                | A                     | 0.86 | 1.16 |
| Capacitor                   | µF                    | 5    | 5    |
| Capacitor voltage           | VDB                   | 450  | 450  |
| Max. back pressure          | Pa                    | 60   | 75   |
| Max. back pressure          | inH <sub>2</sub> O    | 0.24 | 0.3  |
| Min. ambient temperature    | °C                    | -25  | -25  |
| Max. ambient temperature    | °C                    | 65   | 65   |

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment  
Subject to change



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## Technical description

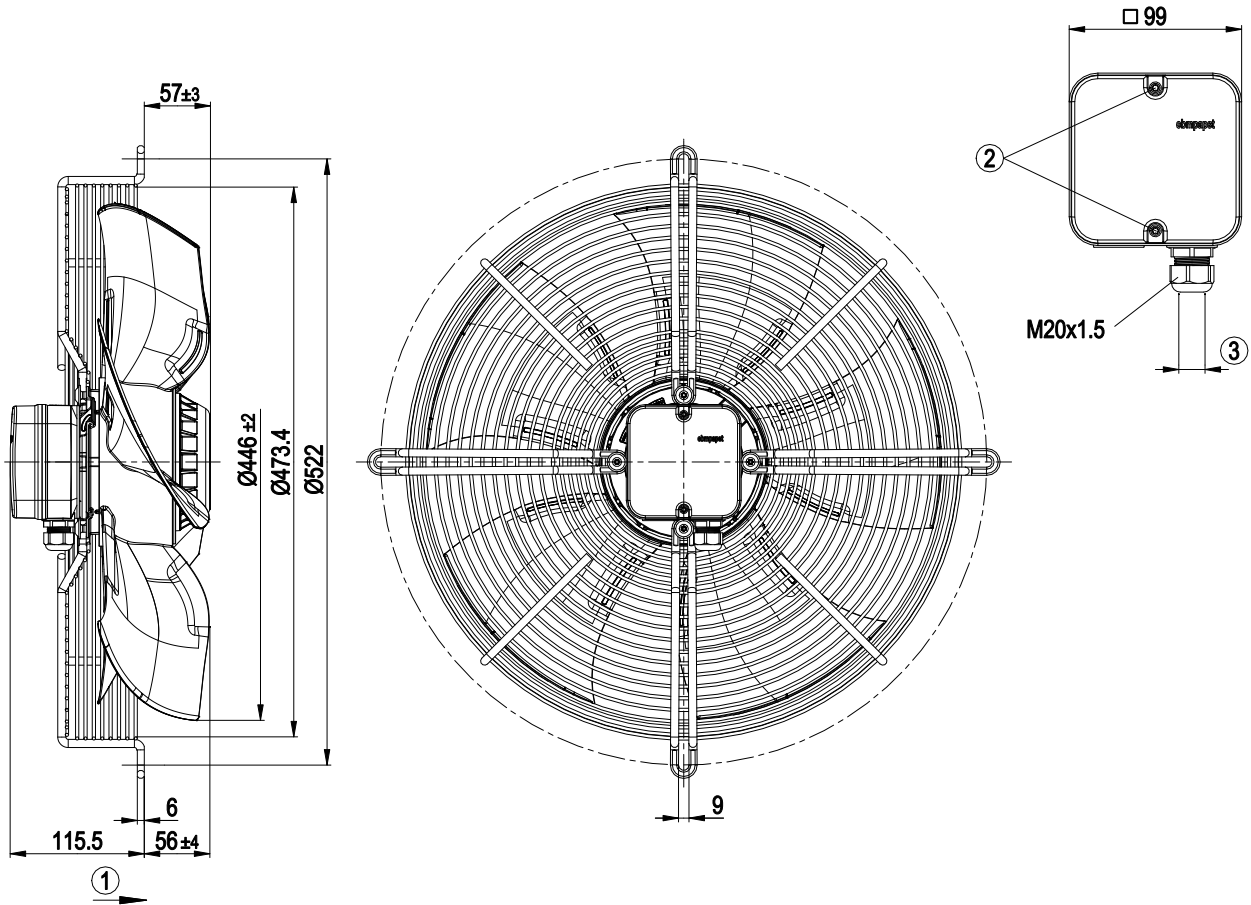
|  |  |
|--|--|
| Weight   | 7.3 kg   |
| Fan size   | 450 mm   |
| Rotor surface  | Painted black  |
| Terminal box material  | ABS plastic  |
| Blade material   | Press-fitted sheet steel blank, sprayed with PP plastic  |
| Guard grille material  | Steel, coated with black plastic (RAL 9005)  |
| Number of blades   | 5  |
| Airflow direction  | "A"  |
| Direction of rotation  | Clockwise, viewed toward rotor   |
| Degree of protection   | IP54   |
| Insulation class   | "F"  |
| Moisture (F) / Environmental (H) protection class                          | F4-1   |
| Ambient temperature note   | Occasional start-up between -40°C and -25°C is permissible.<br>For continuous operation at temperatures below -25°C (e.g. refrigeration applications) we recommend our fan design with special low-temperature bearings. |
| Max. permitted ambient temp. for motor (transport/storage)                 | +80 °C   |
| Min. permitted ambient temp. for motor (transport/storage)                 | -40 °C   |
| Installation position  | Shaft horizontal or rotor on bottom; rotor on top on request   |
| Condensation drainage holes  | On rotor side  |
| Mode   | S1   |
| Motor bearing  | Ball bearing   |
| Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system) | <= 3.5 mA  |
| Electrical hookup  | Via terminal box, capacitor integrated and connected   |
| Motor protection   | Thermal overload protector (TOP) internally connected  |
| Protection class   | I (with customer connection of protective earth)   |
| Motor capacitor according to EN 60252-1 in safety protection class         | S0   |
| Conformity with standards  | EN 60034-1 (2010)  |
| Approval   | CCC  |



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## Product drawing



|   |   |
|---|---|
| 1 | Direction of air flow "A"   |
| 2 | Tightening torque 0.8 ± 0.15 Nm                                   |
| 3 | Cable diameter: min. 6 mm, max. 12 mm; tightening torque 2±0.3 Nm |

## Connection diagram



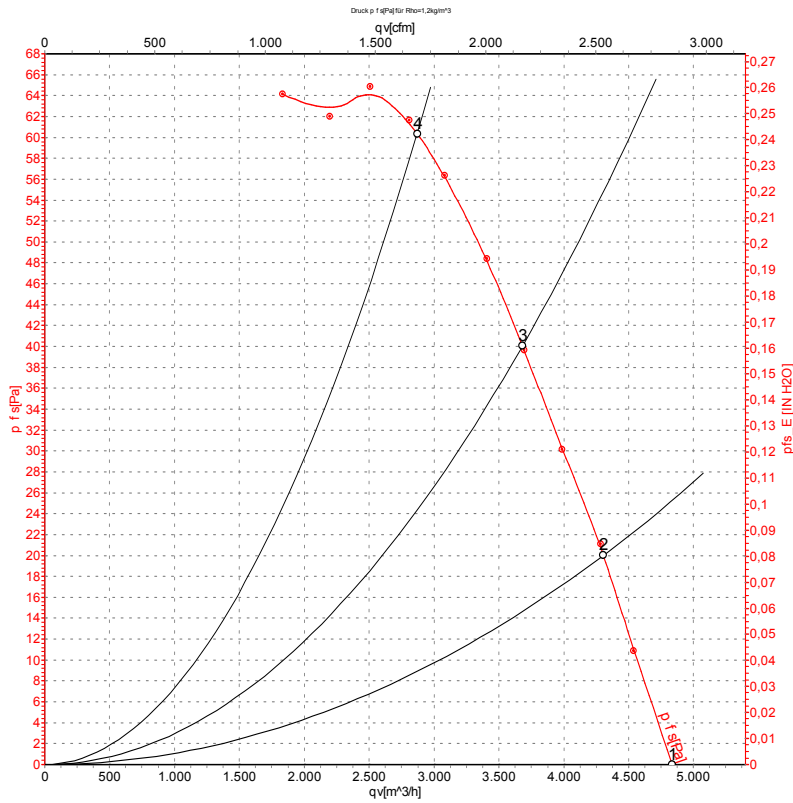
|    |              |   |       |   |              |
|----|--------------|---|-------|---|--------------|
| L  | = U1 = blue  | Z | brown | N | = U2 = black |
| PE | green/yellow |   |       |   |              |



# AC axial fan

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## Curves: Air performance 50 Hz



Measurement: LU-106691-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

## Measured values

|   | U   | f  | n                 | P <sub>e</sub> | I    | LpA <sub>in</sub> | LwA <sub>in</sub> | LwA <sub>out</sub> | q <sub>v</sub>    | p <sub>fs</sub> | q <sub>v</sub> | p <sub>fs</sub>    |
|---|-----|----|-------------------|----------------|------|-------------------|-------------------|--------------------|-------------------|-----------------|----------------|--------------------|
|   | V   | Hz | min <sup>-1</sup> | W              | A    | dB(A)             | dB(A)             | dB(A)              | m <sup>3</sup> /h | Pa              | cfm            | inH <sub>2</sub> O |
| 1 | 230 | 50 | 925               | 171            | 0.79 | 56                | 61                | 62                 | 4830              | 0               | 2845           | 0.00               |
| 2 | 230 | 50 | 915               | 180            | 0.82 | 55                | 60                | 60                 | 4305              | 20              | 2535           | 0.08               |
| 3 | 230 | 50 | 905               | 186            | 0.84 | 54                | 59                | 60                 | 3680              | 40              | 2165           | 0.16               |
| 4 | 230 | 50 | 900               | 190            | 0.86 | 53                | 59                | 59                 | 2870              | 60              | 1690           | 0.24               |

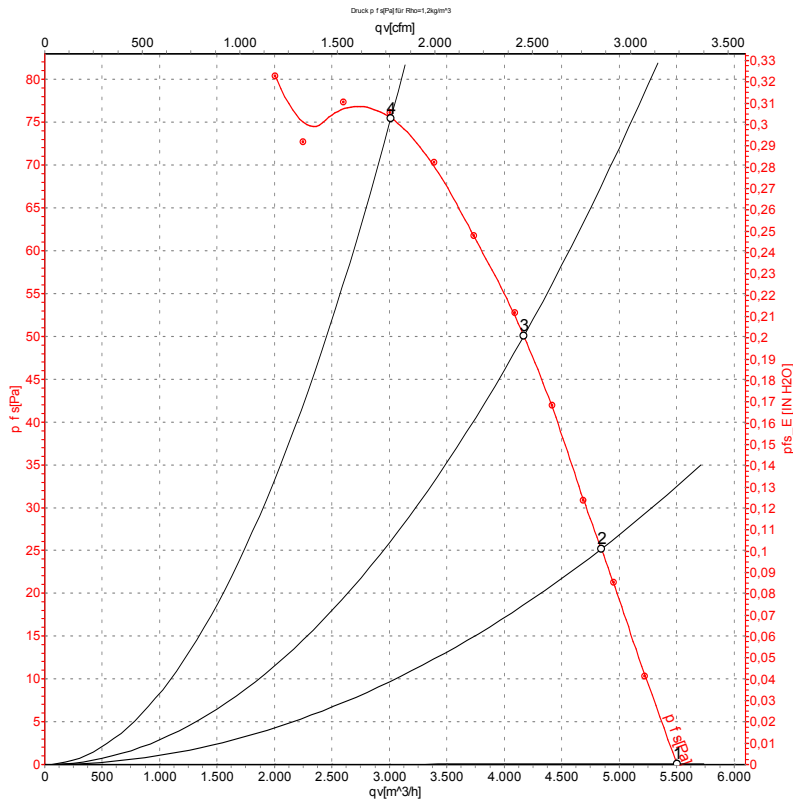
U = Power supply · f = Frequency · n = Speed (rpm) · P<sub>e</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
LwA<sub>out</sub> = Sound power level outlet side · q<sub>v</sub> = Air flow · p<sub>fs</sub> = Pressure increase



# AC axial fan

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## Curves: Air performance 60 Hz



Measurement: LU-106697-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebmpapst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

## Measured values

|   | U   | f  | n                 | P <sub>e</sub> | I    | LpA <sub>in</sub> | LwA <sub>in</sub> | LwA <sub>out</sub> | q <sub>v</sub>    | p <sub>fs</sub> | q <sub>v</sub> | p <sub>fs</sub>    |
|---|-----|----|-------------------|----------------|------|-------------------|-------------------|--------------------|-------------------|-----------------|----------------|--------------------|
|   | V   | Hz | min <sup>-1</sup> | W              | A    | dB(A)             | dB(A)             | dB(A)              | m <sup>3</sup> /h | Pa              | cfm            | inH <sub>2</sub> O |
| 1 | 230 | 60 | 1060              | 241            | 1.05 | 58                | 64                | 65                 | 5500              | 0               | 3235           | 0.00               |
| 2 | 230 | 60 | 1035              | 251            | 1.09 | 57                | 63                | 63                 | 4845              | 25              | 2850           | 0.10               |
| 3 | 230 | 60 | 1015              | 260            | 1.13 | 56                | 62                | 62                 | 4170              | 50              | 2455           | 0.20               |
| 4 | 230 | 60 | 990               | 260            | 1.16 | 56                | 62                | 62                 | 3015              | 75              | 1775           | 0.30               |

U = Power supply · f = Frequency · n = Speed (rpm) · P<sub>e</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
LwA<sub>out</sub> = Sound power level outlet side · q<sub>v</sub> = Air flow · p<sub>fs</sub> = Pressure increase

