**S4D450-AP01-05**

# AC axial fan

sickle-shaped blades (S series)

with guard grille for short nozzle



**ebm-papst Mulfingen GmbH & Co. KG**
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

## Nominal data

| | |
|---|---|
| **Type** | **S4D450-AP01-05** |
| **Motor** | **M4D074-GA** |

| | | | | | |
|---|---|---|---|---|---|
| Phase | | 3~ | 3~ | 3~ | 3~ |
| Nominal voltage | VAC | 230 | 230 | 400 | 400 |
| Wiring | | Δ | Δ | Y | Y |
| Frequency | Hz | 50 | 60 | 50 | 60 |
| Method of obtaining data | | fa | fa | fa | fa |
| Valid for approval/standard | | CE | CE | CE | CE |
| Speed (rpm) | $min^{-1}$ | 1380 | 1540 | 1380 | 1540 |
| Power consumption | W | 200 | 285 | 200 | 285 |
| Current draw | A | 0.83 | 0.92 | 0.48 | 0.53 |
| Max. back pressure | Pa | 120 | 70 | 120 | 70 |
| Max. back pressure | in. wg | 0.48 | 0.28 | 0.48 | 0.28 |
| Min. ambient temperature | °C | -25 | -25 | -25 | -25 |
| Max. ambient temperature | °C | 60 | 60 | 60 | 60 |

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

## Data according to Commission Regulation (EU) 327/2011 (EN 17166)

| | | Actual | Req. 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 35.4 | 30.1 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 45.3 | 40 |
| 05 Variable speed drive | | No | |

| | | |
|---|---|---|
| 09 Power consumption $P_e$ | kW | 0.27 |
| 09 Air flow $q_v$ | $m^3/h$ | 3765 |
| 09 Pressure increase $p_{fs}$ | Pa | 96 |
| 10 Speed (rpm) n | $min^{-1}$ | 1315 |
| 11 Specific ratio* | | 1.00 |

Data obtained at optimum efficiency level.

* Specific ratio = 1 + $p_{fs}$ / 100 000 Pa

LU-194765

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings).
The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again.

The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).

# AC axial fan

sickle-shaped blades (S series)

with guard grille for short nozzle

## Technical description

| | |
|---|---|
| **Weight** | 7.2 kg |
| **Size** | 450 mm |
| **Motor size** | 74 |
| **Rotor surface** | Painted black |
| **Terminal box material** | PP plastic |
| **Blade material** | Sheet steel, painted black |
| **Guard grille material** | Steel, phosphated and coated with black plastic |
| **Number of blades** | 5 |
| **Airflow direction** | V |
| **Direction of rotation** | Counterclockwise, viewed toward rotor |
| **Degree of protection** | IP44; installation- and position-dependent as per EN 60034-5 |
| **Insulation class** | "F" |
| **Moisture (F) / Environmental (H) protection class** | H1 |
| **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)** | < 0.75 mA |
| **Electrical hookup** | Terminal box |
| **With cable** | Variable |
| **Protection class assignment** | I; If a protective earth is connected by the customer<br>This component for installation may have several local protection classes. This information relates to this component's basic design.<br>The final protection class is based on the component's intended installation and connection. |
| **Conformity with standards** | EN 60335-1, motor does not have factory-installed overheating protection; CE |



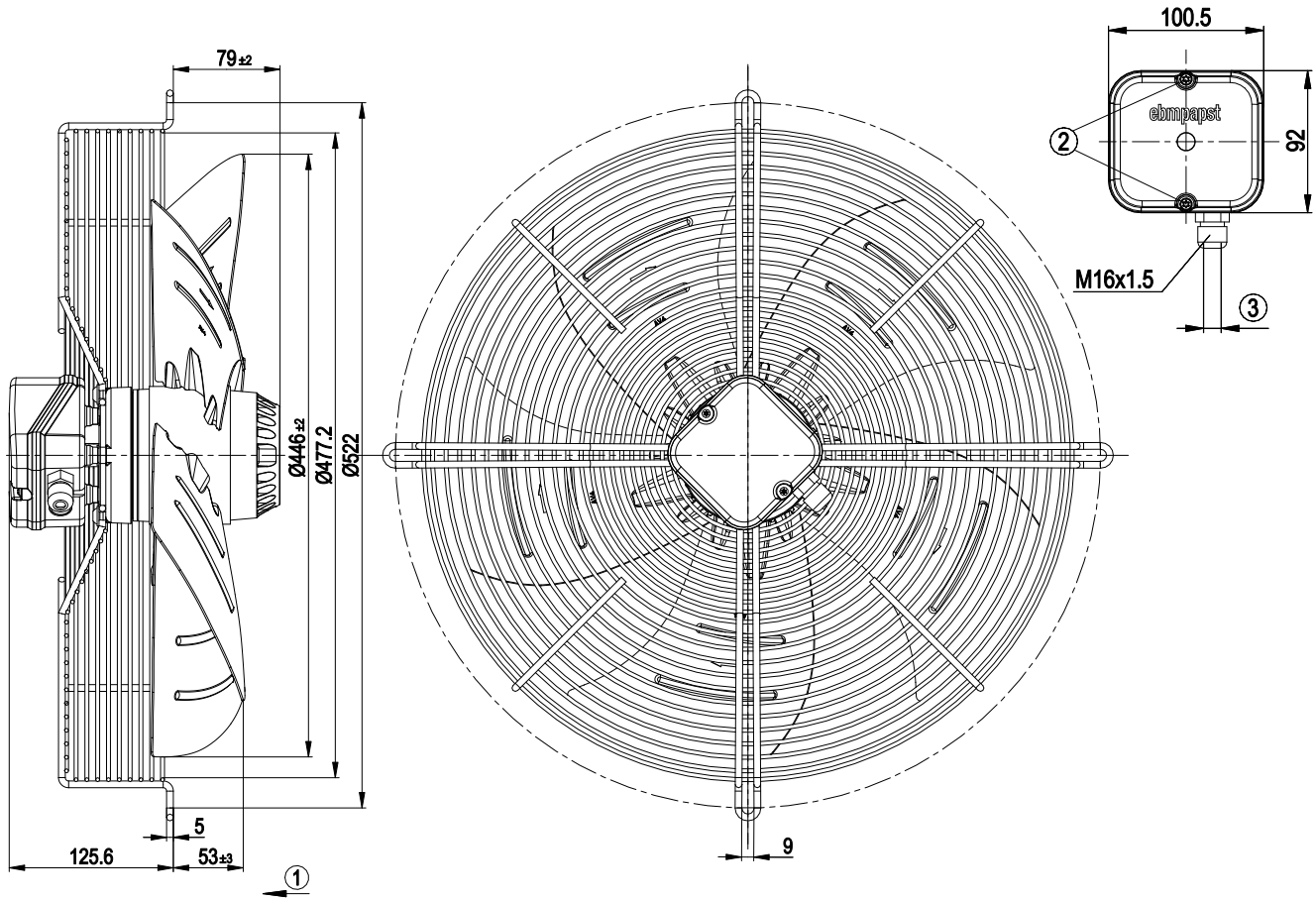
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# AC axial fan

sickle-shaped blades (S series)

with guard grille for short nozzle

## Product drawing




| | |
|---|---|
| 1 | Direction of air flow "V" |
| 2 | Tightening torque 1.5 ± 0.2 Nm |
| 3 | Cable diameter max. 7.5 mm, tightening torque 1.3 ± 0.2 Nm |



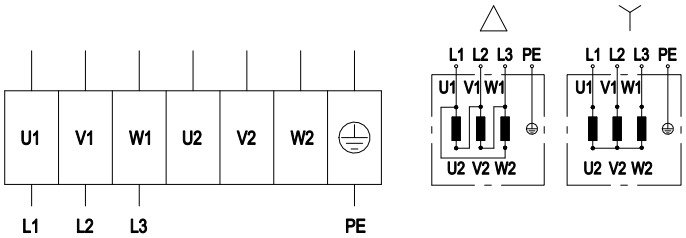
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# AC axial fan

sickle-shaped blades (S series)

with guard grille for short nozzle

## Connection diagram




| | | | | | |
|---|---|---|---|---|---|
| | Three-phase motor | Y | Star connection | Δ | Delta connection |
| L1 | = U1 = black | L2 | = V1 = blue | L3 | = W1 = brown |
| U2 | green | V2 | white | W2 | yellow |
| PE | PE (green/yellow) | | | | |



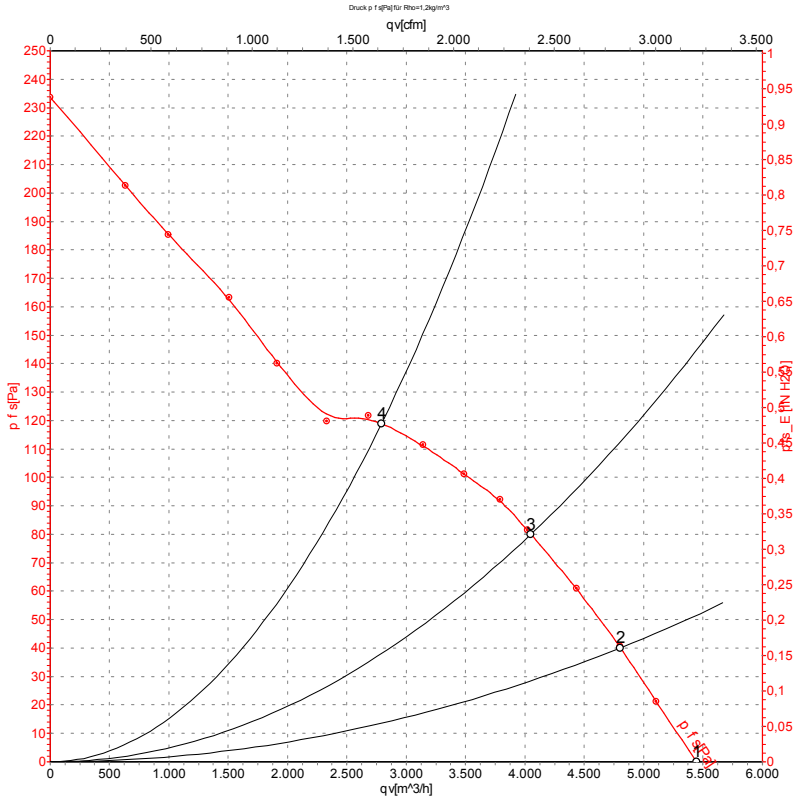
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# AC axial fan

sickle-shaped blades (S series)

with guard grille for short nozzle

## Curves: Air performance 50 Hz




Measurement: LU-27634-1

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 | $P_e$ | I | $q_V$ | $p_{fs}$ | $q_V$ | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | $m^3/h$ | Pa | cfm | in. wg |
| 1 | 400 | 50 | 1380 | 200 | 0.48 | 5445 | 0 | 3205 | 0.00 |
| 2 | 400 | 50 | 1345 | 235 | 0.53 | 4800 | 40 | 2825 | 0.16 |
| 3 | 400 | 50 | 1320 | 264 | 0.57 | 4050 | 80 | 2385 | 0.32 |
| 4 | 400 | 50 | 1285 | 301 | 0.61 | 2790 | 120 | 1645 | 0.48 |

U = Voltage · f = Frequency · n = Speed (rpm) · $P_e$ = Power consumption · I = Current draw · $q_V$ = Air flow · $p_{fs}$ = Pressure increase



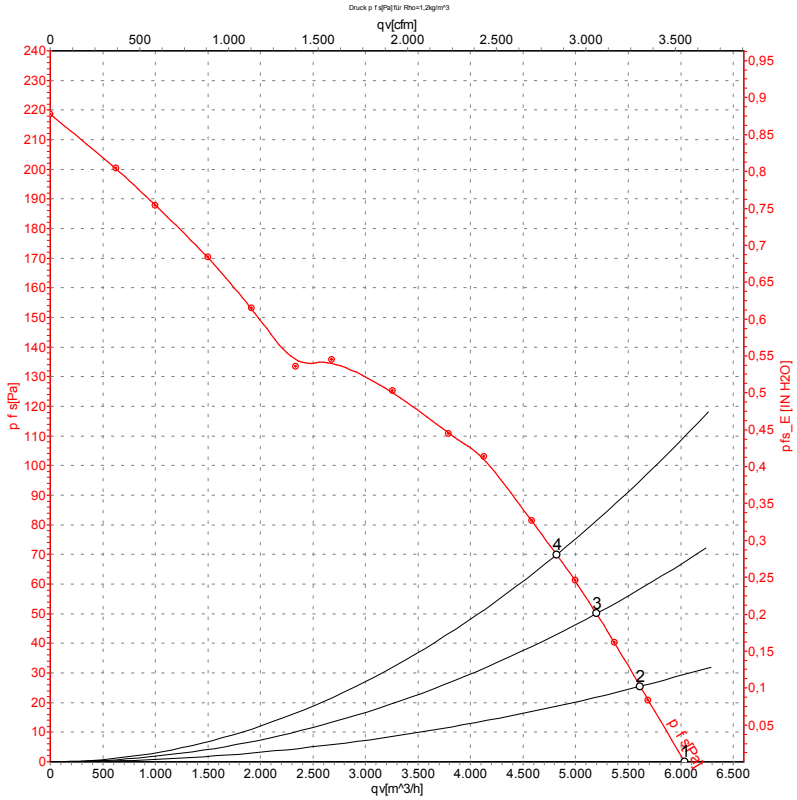
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# AC axial fan

sickle-shaped blades (S series)

with guard grille for short nozzle

## Curves: Air performance 60 Hz




Measurement: LU-27635-1

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 | $P_e$ | I | $q_V$ | $p_{fs}$ | $q_V$ | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | $m^3/h$ | Pa | cfm | in. wg |
| 1 | 400 | 60 | 1540 | 285 | 0.53 | 6040 | 0 | 3555 | 0.00 |
| 2 | 400 | 60 | 1505 | 314 | 0.58 | 5615 | 25 | 3305 | 0.10 |
| 3 | 400 | 60 | 1475 | 337 | 0.62 | 5200 | 50 | 3060 | 0.20 |
| 4 | 400 | 60 | 1450 | 355 | 0.64 | 4820 | 70 | 2835 | 0.28 |

U = Voltage · f = Frequency · n = Speed (rpm) · $P_e$ = Power consumption · I = Current draw · $q_V$ = Air flow · $p_{fs}$ = Pressure increase



ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com