**WZD990-CD01-83**

# AC axial fan

sickle-shaped blades (S series)

with round full nozzle



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** | **WZD990-CD01-83** |
| **Motor** | **MZD138-LA** |

| | | | | |
|---|---|---|---|---|
| Phase | | 3~ | 3~ | 3~ |
| Nominal voltage | VAC | 230 | 400 | 400 |
| Wiring | | Δ | Δ | Y |
| Frequency | Hz | 50 | 50 | 50 |
| Method of obtaining data | | fa | fa | fa |
| Valid for approval/standard | | - | - | - |
| Speed | $min^{-1}$ | 400 | 460 | 400 |
| Power consumption | W | 290 | 490 | 290 |
| Current draw | A | 1.2 | 1.75 | 0.67 |
| Max. back pressure | Pa | 29 | 45 | 29 |
| Min. ambient temperature | °C | -40 | -40 | -40 |
| Max. ambient temperature | °C | 70 | 70 | 70 |
| Starting current | A | 2.3 | 4.0 | 1.34 |

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



WZD990-CD01-83 ebmpapst Datasheet FansCo sales@fansco.com www.fansco.com

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## Technical description

| | |
|---|---|
| **Weight** | 58 kg |
| **Fan size** | 990 mm |
| **Rotor surface** | Painted black |
| **Terminal box material** | Die-cast aluminum, painted black |
| **Blade material** | Sheet aluminum insert (painted black), sprayed with PP plastic |
| **Fan housing material** | Sheet steel, galvanized and coated with gray-white plastic (RAL 9002) |
| **Guard grille material** | Steel, coated with gray-white plastic (RAL 9002) |
| **Number of blades** | 5 |
| **Blade pitch** | 0° |
| **Airflow direction** | "A" |
| **Direction of rotation** | Counterclockwise, viewed toward rotor |
| **Degree of protection** | IP54 |
| **Insulation class** | "F" |
| **Moisture (F) / Environmental (H) protection class** | F4-2 |
| **Max. permitted ambient temp. for motor (transport/storage)** | + 80 °C |
| **Min. permitted ambient temp. for motor (transport/storage)** | (Transportation) -40 °C / (storage) -45 °C |
| **Installation position** | Shaft horizontal or rotor on top; rotor on bottom on request |
| **Condensation drainage holes** | On stator 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 |
| **Motor protection** | Thermal overload protector (TOP) with basic insulation |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 60034-1 (2010); EN 61800-5-1 |
| **Approval** | EAC; VDE |

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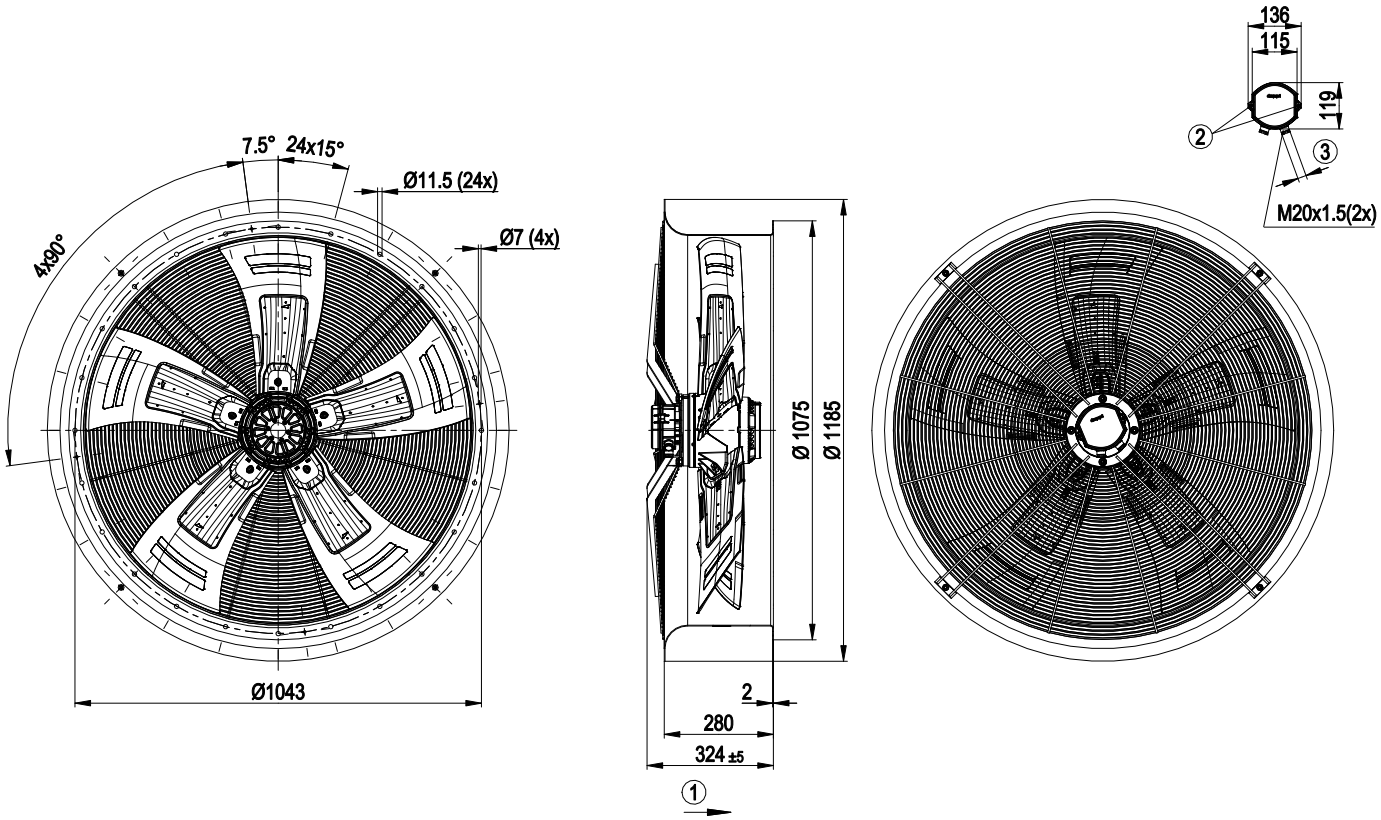
## Product drawing




| | |
|---|---|
| 1 | Direction of air flow "A" |
| 2 | Tightening torque 2.5 ± 0.4 Nm |
| 3 | Cable diameter: min. 10 mm, max. 12 mm, tightening torque 4 ± 0.4 Nm |

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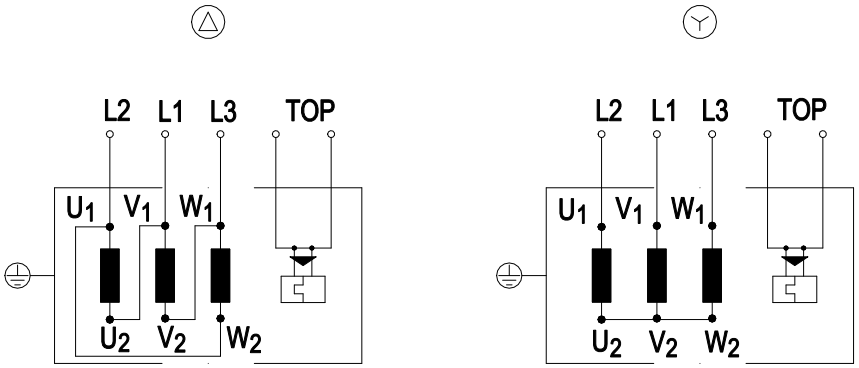
## Connection diagram




Change of rotation direction by reversing two phases

| | | | | | |
|---|---|---|---|---|---|
| Δ | Delta connection | Y | Star connection | L2 | = U1 = black |
| L1 | = V1 = blue | L3 | = W1 = brown | W2 | yellow |
| U2 | green | V2 | white | TOP | 2x gray |
| PE | green/yellow | | | | |

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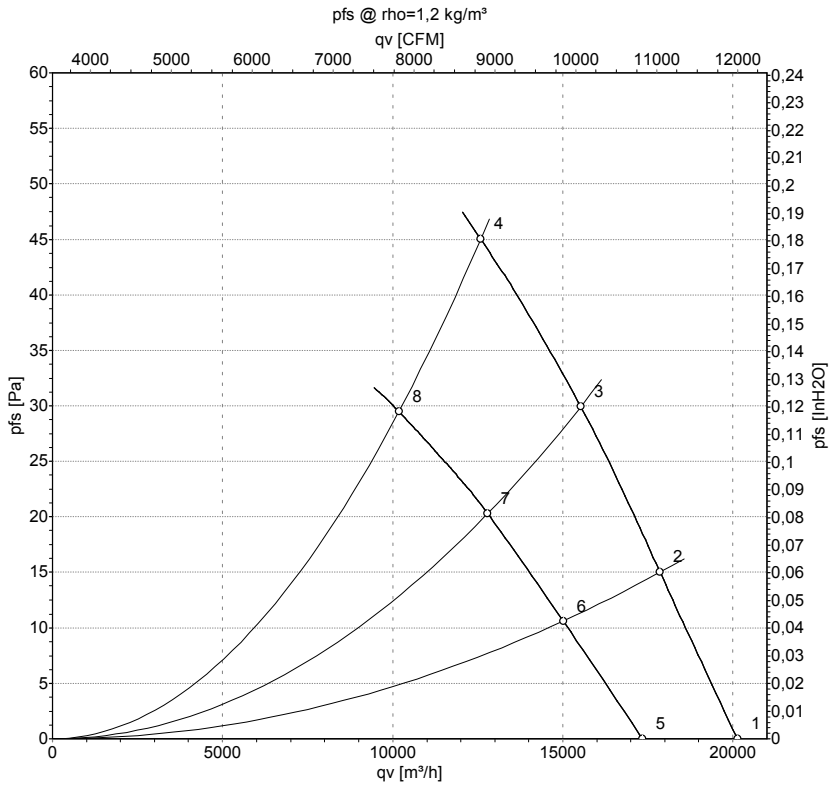
## Curves: Air performance 50 Hz




Measurement: LU-150478-1
Measurement: LU-151937-1

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

| | Wired | U | f | n | $P_e$ | I | $LpA_{in}$ | $LwA_{in}$ | $LwA_{out}$ | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | $min^{-1}$ | W | A | dB(A) | dB(A) | dB(A) | $m^3/h$ | Pa |
| 1 | Δ | 400 | 50 | 460 | 490 | 1.75 | 57 | 64 | 64 | 20135 | 0 |
| 2 | Δ | 400 | 50 | 455 | 537 | 1.76 | 55 | 63 | 62 | 17860 | 15 |
| 3 | Δ | 400 | 50 | 450 | 574 | 1.77 | 54 | 61 | 61 | 15530 | 30 |
| 4 | Δ | 400 | 50 | 440 | 620 | 1.80 | 55 | 62 | 62 | 12585 | 45 |
| 5 | Y | 400 | 50 | 400 | 290 | 0.67 | 54 | 61 | 60 | 17345 | 0 |
| 6 | Y | 400 | 50 | 385 | 317 | 0.69 | 51 | 58 | 58 | 15010 | 11 |
| 7 | Y | 400 | 50 | 370 | 341 | 0.73 | 49 | 56 | 56 | 12790 | 21 |
| 8 | Y | 400 | 50 | 360 | 360 | 0.76 | 49 | 56 | 56 | 10180 | 29 |

Wired = Wiring · U = Power supply · f = Frequency · n = Speed · $P_e$ = Power consumption · I = Current draw · $LpA_{in}$ = Sound pressure level intake side · $LwA_{in}$ = Sound power level intake side
$LwA_{out}$ = Sound power level outlet side · qv = Air flow · $p_{fs}$ = Pressure increase