**D2D146-BG03-14**

# AC centrifugal fan

forward-curved, dual-intake

with housing (flange)



**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

ErP2015 EXCEEDS THE NORM

## Nominal data

| | |
|---|---|
| **Type** | **D2D146-BG03-14** |
| **Motor** | **M2D068-GA** |

| | | | | | |
|---|---|---|---|---|---|
| Phase | | 3~ | 3~ | 3~ | 3~ |
| Nominal voltage | VAC | 400 | 400 | 440 | 480 |
| Nominal voltage range | VAC | 380 .. 440 | 380 .. 480 | 380 .. 440 | 380 .. 480 |
| Wiring | | Y | Y | Y | Y |
| Frequency | Hz | 50 | 60 | 50 | 60 |
| Method of obtaining data | | ml/ce | ml/ce | ml/ce | ml/ce |
| Valid for approval/standard | | CE | UL 507 | CE | UL 507 |
| Speed (rpm) | $min^{-1}$ | 2580 | 2700 | 2650 | 2960 |
| Power consumption | W | 350 | 500 | 430 | 560 |
| Current draw | A | 0.6 | 0.78 | 0.65 | 0.76 |
| Min. back pressure | Pa | 290 | 315 | 300 | 385 |
| Min. back pressure | inH2O | 1.16 | 1.26 | 1.2 | 1.55 |
| 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 ErP Directive

| | | Actual | Req. 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 35.6 | 33.5 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 46.1 | 44 |
| 05 Variable speed drive | | No | |

| | | |
|---|---|---|
| 09 Power consumption $P_e$ | kW | 0.22 |
| 09 Air flow $q_v$ | $m^3/h$ | 705 |
| 09 Pressure increase $p_{fs}$ | Pa | 416 |
| 10 Speed (rpm) n | $min^{-1}$ | 2750 |
| 11 Specific ratio* | | 1.00 |

Data obtained at optimum efficiency level.
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

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

LU-110559

# AC centrifugal fan

forward-curved, dual-intake

with housing (flange)

## Technical description

| | |
|---|---|
| **Weight** | 5.7 kg |
| **Fan size** | 146 mm |
| **Rotor surface** | Painted black |
| **Impeller material** | Sheet steel, painted black |
| **Housing material** | Sheet steel, hot-dip galvanized |
| **Guard grille material** | Steel, phosphated and coated with white-aluminum plastic (RAL 9006) |
| **Motor suspension** | Motor mounted with brackets on one side |
| **Direction of rotation** | Counterclockwise, viewed toward rotor |
| **Degree of protection** | IP55 |
| **Insulation class** | "F" |
| **Moisture (F) / Environmental (H) protection class** | F5 |
| **Ambient temperature note** | Determined on the basis of delta t = 90 k, measured in customer device (size 12), operating point at 400 V/50 Hz = 1050 m³/h at 290 Pa; thermal design in accordance with the following standards: 50 Hz: EN 60034, 60 Hz: UL 1004 (temperature rise in accordance with UL507 thermocouple method); ambient temp. for 60 Hz data records is only valid without speed control, i.e. at maximum speed |
| **Max. permitted ambient temp. for motor (transport/storage)** | + 80 °C |
| **Min. permitted ambient temp. for motor (transport/storage)** | - 40 °C |
| **Installation position** | Shaft horizontal |
| **Condensation drainage holes** | None |
| **Mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)** | <= 3.5 mA |
| **Motor protection** | Thermal overload protector (TOP) with basic insulation |
| **With cable** | Axial |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 60335-1; CE |
| **Approval** | CCC; CSA C22.2 No. 100; UL 1004-1 |



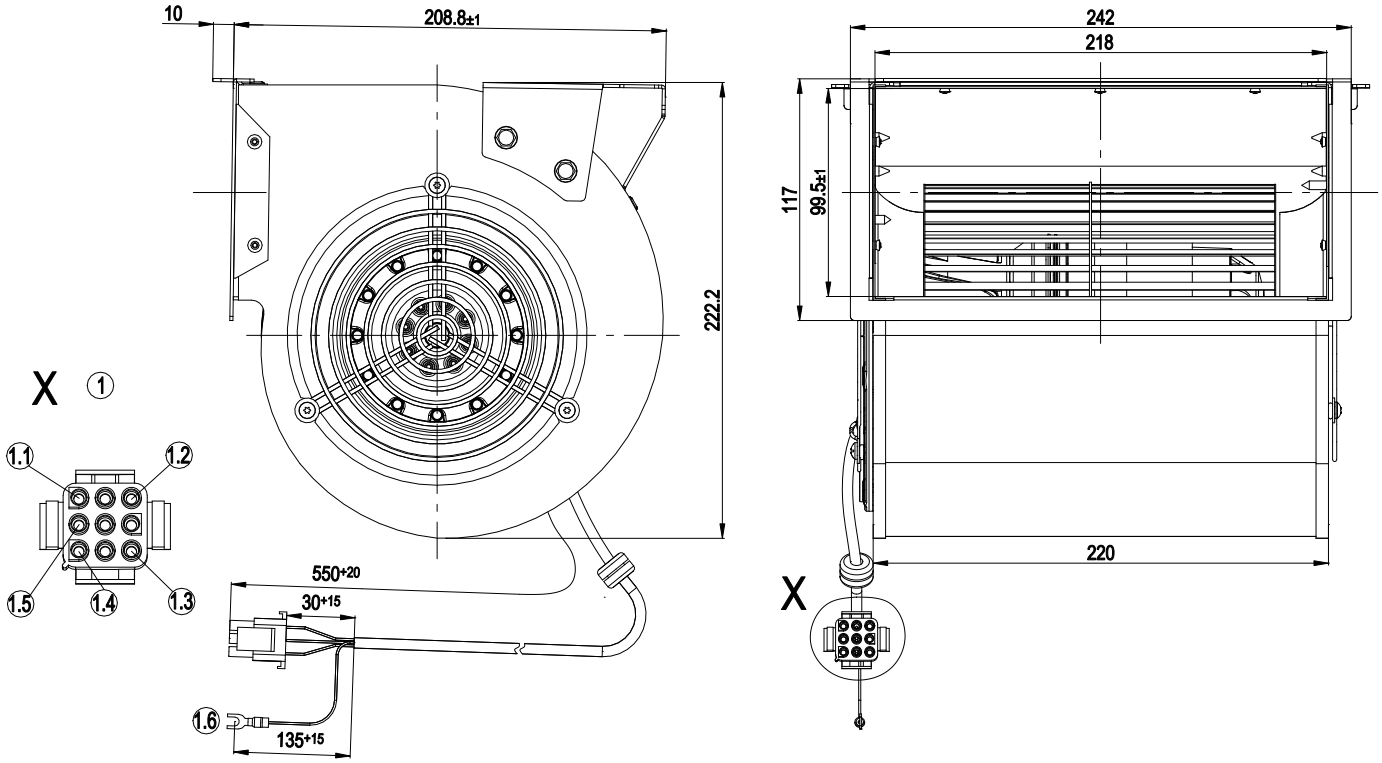
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# AC centrifugal fan

forward-curved, dual-intake

with housing (flange)

## Product drawing




| | |
|---|---|
| 1 | Connector housing AMP Universal Mate-N-Lok 350720-1, pluggable with 350782-1 |
| 1.1 | black |
| 1.2 | brown |
| 1.3 | blue |
| 1.4 | gray |
| 1.5 | gray |
| 1.6 | PE |



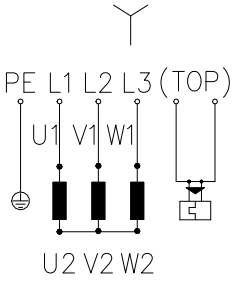
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# AC centrifugal fan

forward-curved, dual-intake

with housing (flange)

## Connection diagram




| | | | | | |
|---|---|---|---|---|---|
| Y | Star connection | L1 | black | L2 | blue |
| L3 | brown | U1 | black | V1 | blue |
| W1 | brown | U2 | green | V2 | white |
| W2 | yellow | TOP | gray | | |



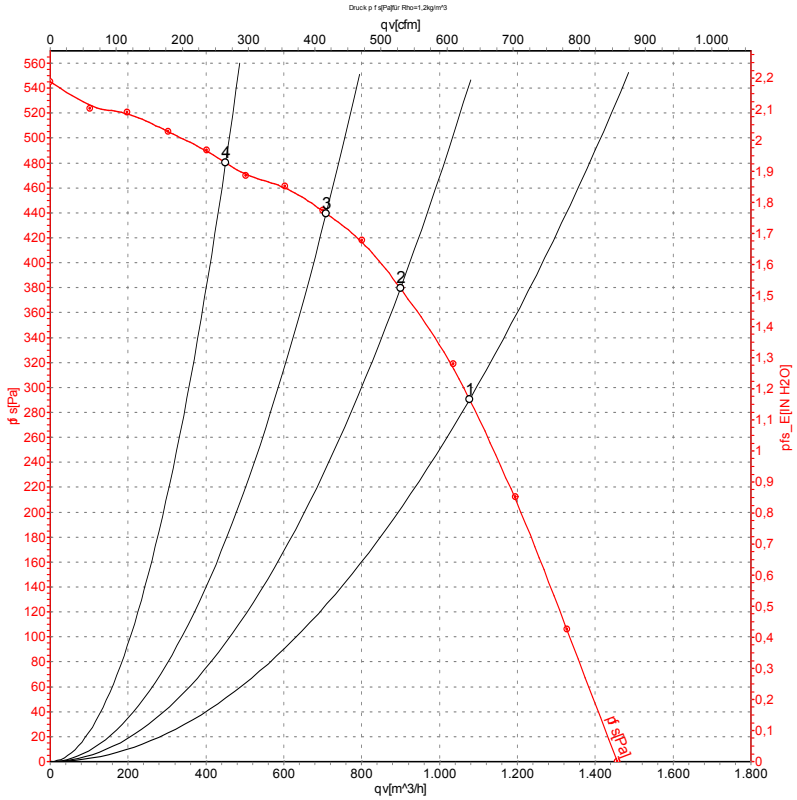
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# AC centrifugal fan

forward-curved, dual-intake

with housing (flange)

## Curves: Air performance 50 Hz




Measurement: LU-110559-1

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 | qv | $p_{fs}$ | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | $min^{-1}$ | W | A | $m^3/h$ | Pa | CFM | inH2O |
| 1 | Y | 400 | 50 | 2580 | 350 | 0.60 | 1075 | 290 | 635 | 1.16 |
| 2 | Y | 400 | 50 | 2665 | 288 | 0.53 | 900 | 380 | 530 | 1.53 |
| 3 | Y | 400 | 50 | 2745 | 230 | 0.47 | 710 | 440 | 415 | 1.77 |
| 4 | Y | 400 | 50 | 2815 | 178 | 0.42 | 450 | 480 | 265 | 1.93 |

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



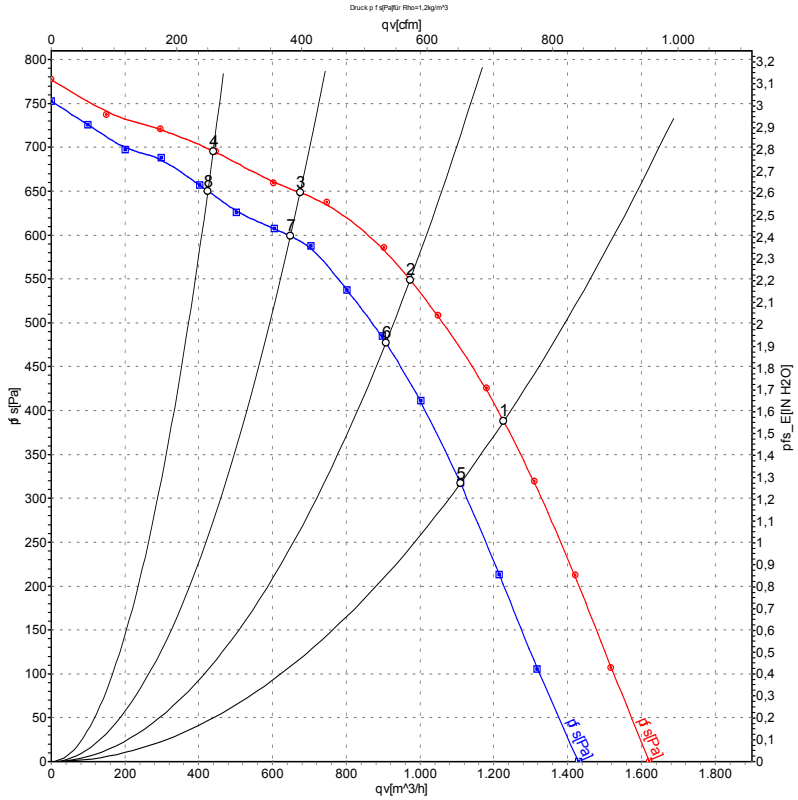
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# AC centrifugal fan

forward-curved, dual-intake

with housing (flange)

## Curves: Air performance 60 Hz




Measurement: LU-110562-1
Measurement: LU-110561-1

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 | qv | $p_{fs}$ | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | | V | Hz | $min^{-1}$ | W | A | $m^3/h$ | Pa | CFM | inH2O |
| 1 | Y | 480 | 60 | 2960 | 560 | 0.76 | 1225 | 385 | 720 | 1.55 |
| 2 | Y | 480 | 60 | 3120 | 447 | 0.63 | 975 | 550 | 575 | 2.21 |
| 3 | Y | 480 | 60 | 3275 | 330 | 0.50 | 675 | 650 | 395 | 2.61 |
| 4 | Y | 480 | 60 | 3365 | 255 | 0.43 | 440 | 700 | 260 | 2.81 |
| 5 | Y | 400 | 60 | 2700 | 500 | 0.78 | 1110 | 315 | 655 | 1.26 |
| 6 | Y | 400 | 60 | 2915 | 404 | 0.64 | 905 | 478 | 535 | 1.92 |
| 7 | Y | 400 | 60 | 3140 | 311 | 0.51 | 650 | 599 | 380 | 2.40 |
| 8 | Y | 400 | 60 | 3240 | 247 | 0.42 | 425 | 650 | 250 | 2.61 |

Wired = Wiring · U = Power supply · f = Frequency · n = Speed (rpm) · $P_e$ = Power consumption · I = Current draw · qv = 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