

# AC centrifugal fan

backward curved, single inlet

**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

County court Stuttgart · HRA 590344

General partner: Elektrobau Mulfingen GmbH · Headquarters Mulfingen

County court Stuttgart · HRB 590142



## Nominal data

|                               |                    |         |         |
|-------------------------------|--------------------|---------|---------|
| Type                          | R4E310-AP11-09/F01 |         |         |
| Motor                         | M4E074-DF          |         |         |
| Phase                         |                    | 1~      | 1~      |
| Nominal voltage               | VAC                | 230     | 230     |
| Frequency                     | Hz                 | 50      | 60      |
| Type of data definition       |                    | fa      | fa      |
| Valid for approval / standard |                    | CE      | CE      |
| Speed                         | min <sup>-1</sup>  | 1390    | 1580    |
| Power input                   | W                  | 115     | 160     |
| Current draw                  | A                  | 0.52    | 0.70    |
| Motor capacitor               | µF                 | 4       | 4       |
| Capacitor voltage             | VDB                | 400     | 400     |
| Capacitor standard            |                    | P0 (CE) | P0 (CE) |
| Min. back pressure            | Pa                 | 0       | 0       |
| Max. ambient temperature      | °C                 | 65      | 50      |

ml = max. load · me = max. efficiency · fa = running at free air · cs = customer specs · cu = customer unit  
Subject to alterations

## Data according to ErP directive

|                                 |        |
|---------------------------------|--------|
| Installation category           | A      |
| Efficiency category             | Static |
| Variable speed drive integrated | No     |
| Specific ratio*                 | 1,00   |

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

|                                |                   | Actual | Request 2013 | Request 2015 |
|--------------------------------|-------------------|--------|--------------|--------------|
| Overall efficiency $\eta_{es}$ |                   | 38,5   | 38,5         | 42,5         |
| Efficiency grade N             |                   | 58     | 58           | 62           |
| Power input $P_e$              | kW                | 0,14   |              |              |
| Air flow $q_v$                 | m <sup>3</sup> /h | 1120   |              |              |
| Pressure increase $p_{fs}$     | Pa                | 175    |              |              |
| Speed n                        | min <sup>-1</sup> | 1325   |              |              |

Data established at point of optimum efficiency



# AC centrifugal fan

backward curved, single inlet

## Technical features

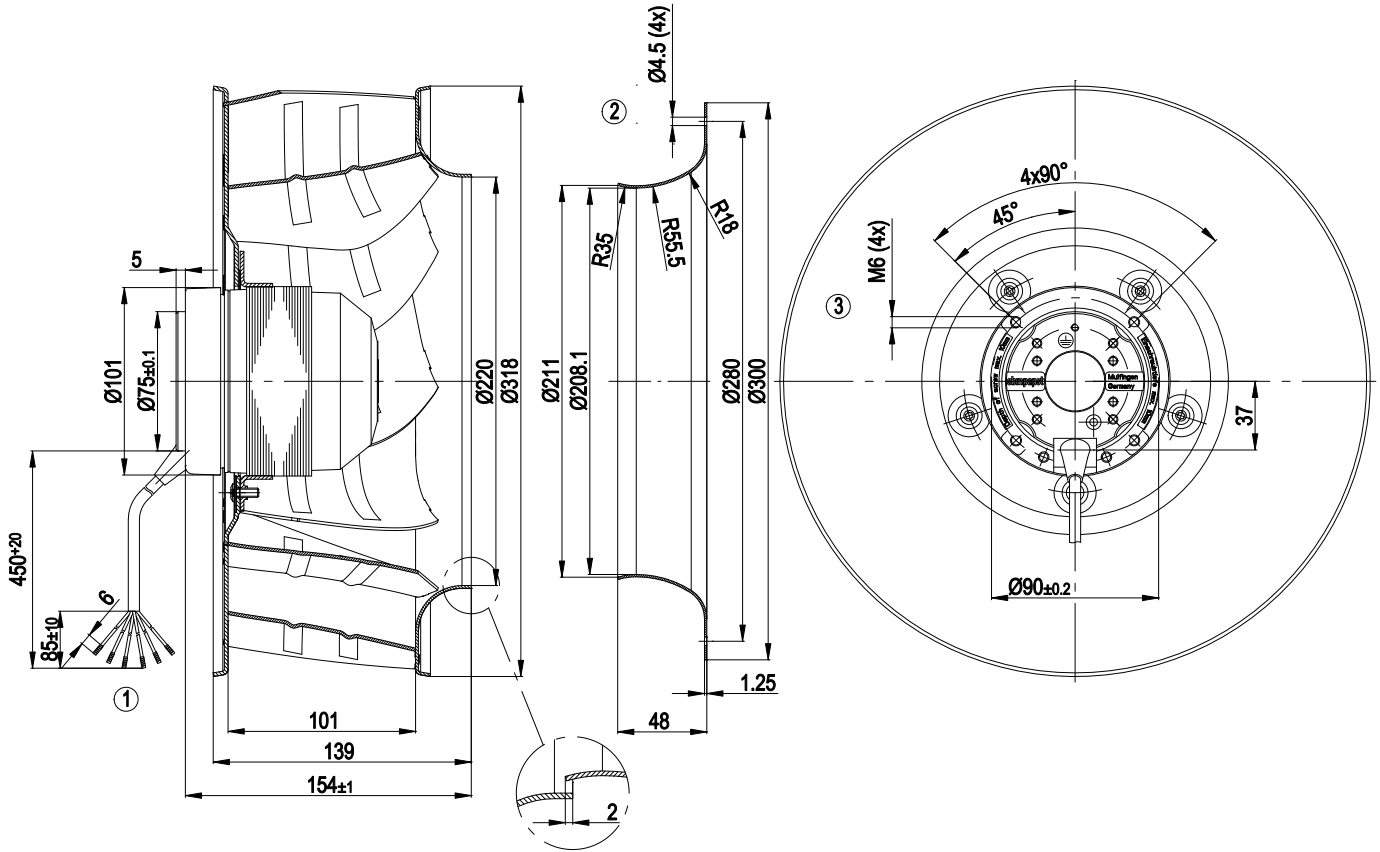
|                                                         |                                                                 |
|---------------------------------------------------------|-----------------------------------------------------------------|
| Mass                                                    | 3.8 kg                                                          |
| Size                                                    | 310 mm                                                          |
| Surface of rotor                                        | Coated in black                                                 |
| Material of impeller                                    | Sheet aluminium, riveted                                        |
| Number of blades                                        | 6                                                               |
| Direction of rotation                                   | Clockwise, seen on rotor                                        |
| Type of protection                                      | IP 44; Depending on installation and position as per EN 60034-5 |
| Insulation class                                        | "F"                                                             |
| Humidity class                                          | F1-2                                                            |
| Max. permissible ambient motor temp. (transp./ storage) | + 80 °C                                                         |
| Min. permissible ambient motor temp. (transp./storage)  | - 40 °C                                                         |
| Mounting position                                       | Shaft horizontal or rotor on bottom; rotor on top on request    |
| Condensate discharge holes                              | Rotor-side                                                      |
| Operation mode                                          | S1                                                              |
| Motor bearing                                           | Ball bearing                                                    |
| Leakage current                                         | < 0.75 mA                                                       |
| Motor protection                                        | Thermal overload protector (TOP) brought out                    |
| Cable exit                                              | Variable                                                        |
| Protection class                                        | I (if protective earth is connected by customer)                |
| Product conforming to standard                          | EN 60335-1; CE                                                  |



## AC centrifugal fan

backward curved, single inlet

## Product drawing

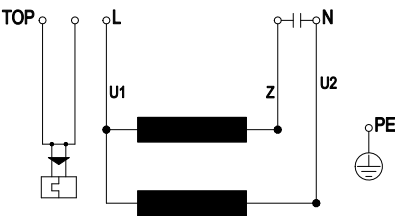


|   |                                                                                                                                  |
|---|----------------------------------------------------------------------------------------------------------------------------------|
| 1 | Connection line silicone 0.5, 6x brass lead tips crimped                                                                         |
| 2 | Accessory part: Inlet nozzle 31050-2-4013, not included in the standard scope of delivery. Short nozzle 31051-2-4013 on request. |
| 3 | Depth of screw max. 10 mm                                                                                                        |

# AC centrifugal fan

backward curved, single inlet

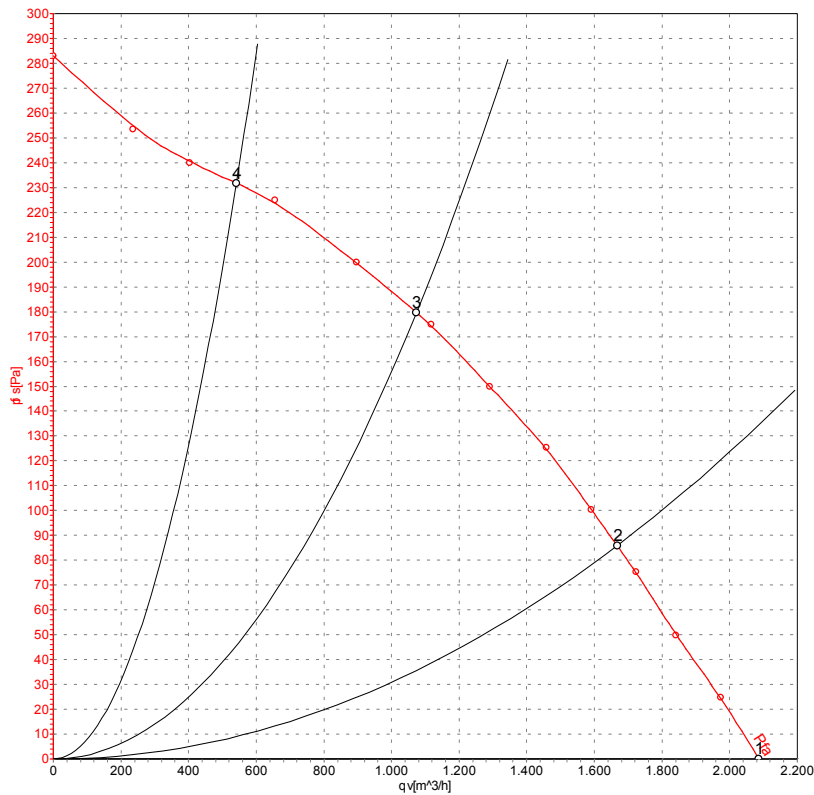
Connection screen



|     |          |    |                |   |       |
|-----|----------|----|----------------|---|-------|
| TOP | 2 x grey | U1 | blue           | Z | brown |
| U2  | black    | PE | green / yellow |   |       |



## Charts: Air flow 50 Hz



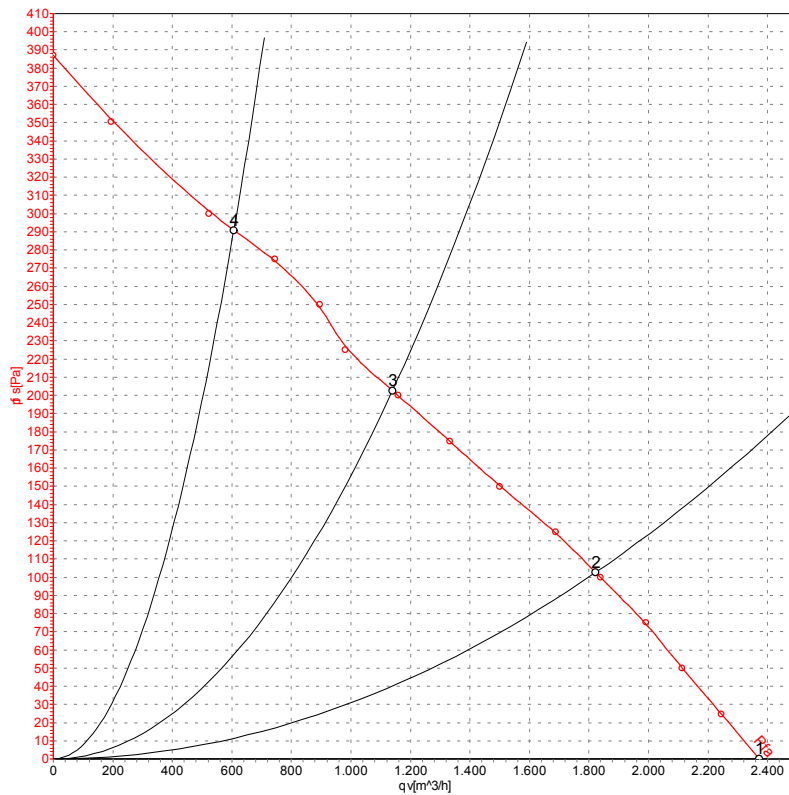
Measurement: LU-53848  
Measurement: LU-53848

Air performance measured as per ISO 5801  
Installation category A. For detailed  
information on the measuring set-up, please  
contact ebm-papst. Suction-side noise  
levels: LwA measured as per ISO 13347 /  
LpA measured with 1m distance to fan axis.  
The values given are valid under the  
measuring conditions mentioned above and  
may vary according to the actual installation  
situation. With any deviation from the  
standard set-up, the specific values have to  
be checked and reviewed with the unit  
installed.

## Measured values

|   | f  | n                 | P <sub>e</sub> | I    | q <sub>v</sub>    | p <sub>fs</sub> |
|---|----|-------------------|----------------|------|-------------------|-----------------|
|   | Hz | min <sup>-1</sup> | W              | A    | m <sup>3</sup> /h | Pa              |
| 1 | 50 | 1390              | 115            | 0.52 | 2080              | 0.0             |
| 2 | 50 | 1350              | 135            | 0.60 | 1665              | 85.9            |
| 3 | 50 | 1330              | 144            | 0.64 | 1075              | 180.0           |
| 4 | 50 | 1370              | 125            | 0.56 | 540               | 231.8           |

## Charts: Air flow 60 Hz



Measurement: LU-53849  
Measurement: LU-53849

Air performance measured as per ISO 5801  
Installation category A. For detailed  
information on the measuring set-up, please  
contact ebm-papst. Suction-side noise  
levels: LwA measured as per ISO 13347 /  
LpA measured with 1m distance to fan axis.  
The values given are valid under the  
measuring conditions mentioned above and  
may vary according to the actual installation  
situation. With any deviation from the  
standard set-up, the specific values have to  
be checked and reviewed with the unit  
installed.

## Measured values

|   | f  | n                 | P <sub>e</sub> | I    | q <sub>v</sub>    | p <sub>fs</sub> |
|---|----|-------------------|----------------|------|-------------------|-----------------|
|   | Hz | min <sup>-1</sup> | W              | A    | m <sup>3</sup> /h | Pa              |
| 1 | 60 | 1580              | 160            | 0.70 | 2370              | 0.0             |
| 2 | 60 | 1475              | 188            | 0.82 | 1820              | 102.5           |
| 3 | 60 | 1410              | 199            | 0.87 | 1140              | 202.6           |
| 4 | 60 | 1530              | 174            | 0.76 | 605               | 290.7           |