

W2D250-HJ02-09 ebmpapst Datasheet

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## Nominal data

|                               |                   |      |      |         |      |         |
|-------------------------------|-------------------|------|------|---------|------|---------|
| Type                          | W2D250-HJ02-09    |      |      |         |      |         |
| Motor                         | M2D068-DC         |      |      |         |      |         |
| Phase                         |                   | 3~   | 3~   | 3~      | 3~   | 3~      |
| Nominal voltage               | VAC               | 400  | 400  | 400     | 460  | 460     |
| Connection                    |                   | Y    | Y    | Y       | Y    | Y       |
| Frequency                     | Hz                | 50   | 60   | 60      | 60   | 60      |
| Type of data definition       |                   | fa   | fa   | fa      | fa   | fa      |
| Valid for approval / standard |                   | CE   | CE   | UL 2111 | CE   | UL 2111 |
| Speed                         | min <sup>-1</sup> | 2660 | 2920 | 2920    | 3050 | 3050    |
| Power input                   | W                 | 115  | 165  | 165     | 180  | 190     |
| Current draw                  | A                 | 0.23 | 0.27 | 0.27    | 0.28 | 0.29    |
| Max. back pressure            | Pa                | 155  | 175  | 175     | 195  | 195     |
| Min. ambient temperature      | °C                | -25  | -25  | -25     | -25  | -25     |
| Max. ambient temperature      | °C                | 65   | 45   | 45      | 45   | 45      |

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  | No     |
| Specific ratio*       | 1.00   |

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

|                                |                   | Actual | Request 2013 | Request 2015 |
|--------------------------------|-------------------|--------|--------------|--------------|
| Overall efficiency $\eta_{es}$ | %                 | 28.4   | 24.3         | 28.3         |
| Efficiency grade N             |                   | 40.1   | 36           | 40           |
| Power input $P_e$              | kW                | 0.14   |              |              |
| Air flow $q_v$                 | m <sup>3</sup> /h | 1450   |              |              |
| Pressure increase $p_{fs}$     | Pa                | 100    |              |              |
| Speed n                        | min <sup>-1</sup> | 2530   |              |              |

Data definition with optimum efficiency.  
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

LU-51572



# AC axial compact fan

sickled blades (S series), single inlet

## Technical features

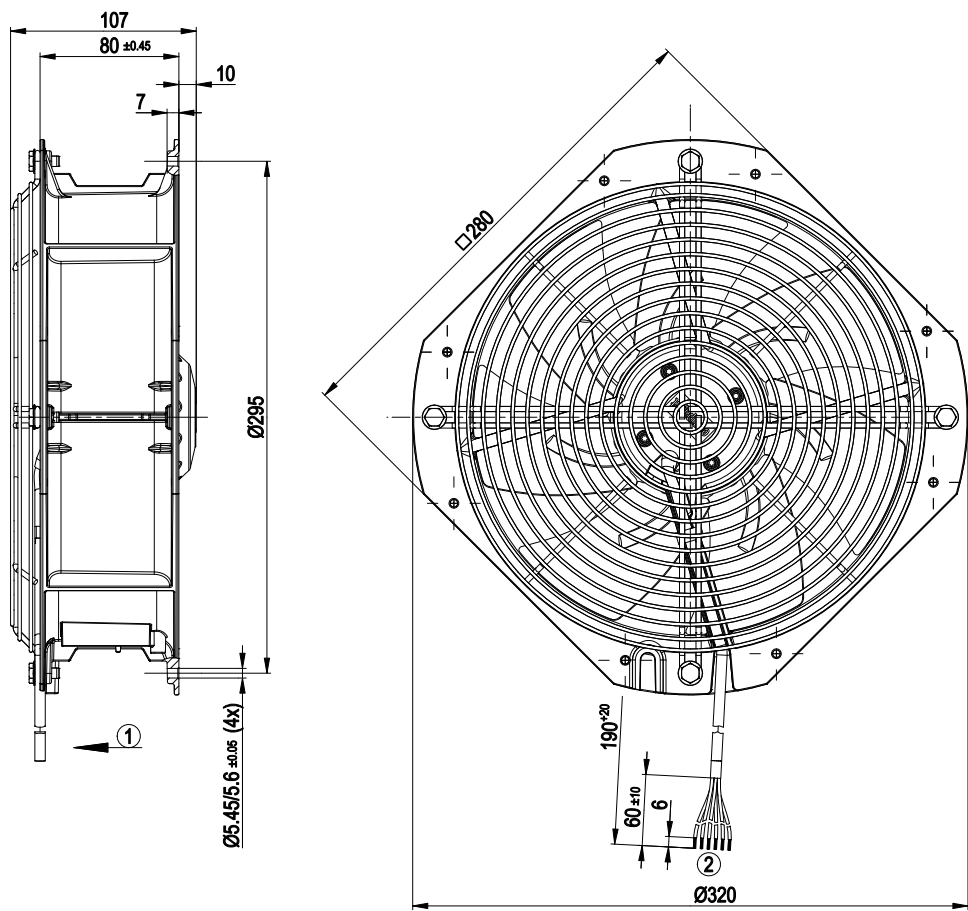
|                                                                    |                                                     |
|--------------------------------------------------------------------|-----------------------------------------------------|
| Mass                                                               | 3.4 kg                                              |
| Size                                                               | 250 mm                                              |
| Surface of rotor                                                   | Coated in black                                     |
| Material of blades                                                 | Sheet steel, coated in black                        |
| Material of wall ring                                              | Die-cast aluminium                                  |
| Material of guard grille                                           | Steel, coated in white aluminium plastic (RAL 9006) |
| Number of blades                                                   | 7                                                   |
| Direction of air flow                                              | "V"                                                 |
| Direction of rotation                                              | Counter-clockwise, seen on rotor                    |
| Type of protection                                                 | IP 44; Depending on installation and position       |
| Insulation class                                                   | "B"                                                 |
| Humidity class                                                     | F2-2                                                |
| Max. permissible ambient motor temp. (transp./ storage)            | + 80 °C                                             |
| Min. permissible ambient motor temp. (transp./storage)             | - 40 °C                                             |
| Mounting position                                                  | Any                                                 |
| Condensate discharge holes                                         | None                                                |
| Operation mode                                                     | S1                                                  |
| Motor bearing                                                      | Ball bearing                                        |
| Touch current acc. IEC 60990 (measuring network Fig. 4, TN system) | < 0.75 mA                                           |
| Motor protection                                                   | Thermal overload protector (TOP) brought out        |
| Cable exit                                                         | Axial                                               |
| Protection class                                                   | I (if protective earth is connected by customer)    |
| Product conforming to standard                                     | EN 60335-1; CE                                      |
| Approval                                                           | CSA C22.2 Nr.100; UL 1004-1                         |



# AC axial compact fan

sickled blades (S series), single inlet

Product drawing



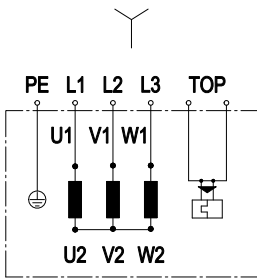
|   |                                                 |
|---|-------------------------------------------------|
| 1 | Direction of air flow "V"                       |
| 2 | Connection line PFA AWG20, 6x lead tips crimped |



# AC axial compact fan

sickled blades (S series), single inlet

Connection screen



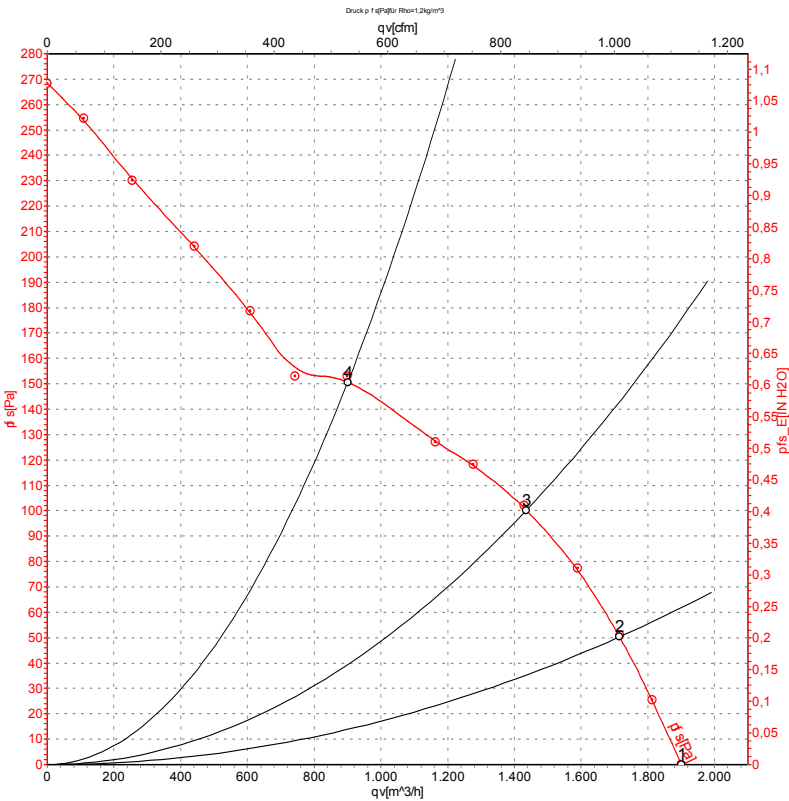
Note: Direction of rotation changes when two phases are reversed

|    |                 |    |              |     |             |
|----|-----------------|----|--------------|-----|-------------|
| Y  | Star connection | L1 | = U1 = black | L2  | = V1 = blue |
| L3 | = W1 = brown    | PE | green/yellow | TOP | 2x grey     |



AC axial compact fan  
sickled blades (S series), single inlet

Charts: Air flow 50 Hz



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: L<sub>WA</sub> measured as per ISO 13347 /  
L<sub>pA</sub> 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.

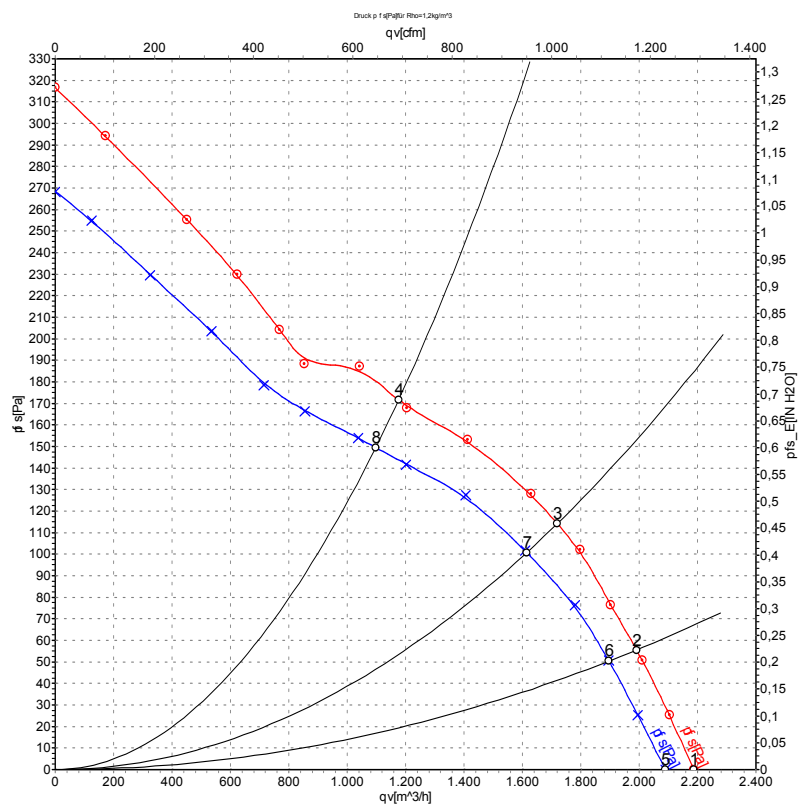
Measured values

|   | U   | f  | n                 | P <sub>e</sub> | I    | qv   | p <sub>fs</sub> |
|---|-----|----|-------------------|----------------|------|------|-----------------|
|   | V   | Hz | min <sup>-1</sup> | W              | A    | m³/h | Pa              |
| 1 | 400 | 50 | 2660              | 115            | 0.23 | 1900 | 0               |
| 2 | 400 | 50 | 2610              | 129            | 0.25 | 1715 | 50              |
| 3 | 400 | 50 | 2545              | 146            | 0.27 | 1435 | 100             |
| 4 | 400 | 50 | 2470              | 164            | 0.29 | 900  | 150             |

U = Supply voltage · f = Frequency · n = Speed · P<sub>e</sub> = Power input · I = Current draw · qv = Air flow · p<sub>fs</sub> = Pressure increase



## Charts: Air flow 60 Hz



Air performance measured as per ISO 5801  
Installation category A. For detailed  
information on the measuring set-up, please  
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levels: L<sub>WA</sub> measured as per ISO 13347 /  
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standard set-up, the specific values have to  
be checked and reviewed with the unit  
installed.

## Measured values

|   | U   | f  | n                 | P <sub>e</sub> | I    | qv   | p <sub>fs</sub> |
|---|-----|----|-------------------|----------------|------|------|-----------------|
|   | V   | Hz | min <sup>-1</sup> | W              | A    | m³/h | Pa              |
| 1 | 460 | 60 | 3050              | 180            | 0.28 | 2185 | 0               |
| 2 | 460 | 60 | 2985              | 198            | 0.29 | 1990 | 56              |
| 3 | 460 | 60 | 2900              | 220            | 0.32 | 1720 | 114             |
| 4 | 460 | 60 | 2785              | 248            | 0.35 | 1175 | 170             |
| 5 | 400 | 60 | 2920              | 165            | 0.27 | 2090 | 0               |
| 6 | 400 | 60 | 2835              | 182            | 0.29 | 1895 | 50              |
| 7 | 400 | 60 | 2730              | 200            | 0.32 | 1615 | 100             |
| 8 | 400 | 60 | 2610              | 221            | 0.35 | 1095 | 150             |

U = Supply voltage · f = Frequency · n = Speed · P<sub>e</sub> = Power input · I = Current draw · qv = Air flow · p<sub>fs</sub> = Pressure increase