

R2D220-RB14-09

AC centrifugal fan - RadiCal

backward-curved, single-intake

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Nominal data

| | | | | |
|-----------------------------|-------------------|------|------|---------|
| Type | R2D220-RB14-09 | | | |
| Motor | M2D068-CF | | | |
| Phase | | 3~ | 3~ | 3~ |
| Nominal voltage | VAC | 400 | 400 | 460 |
| Wiring | | Y | Y | Y |
| Frequency | Hz | 50 | 60 | 60 |
| Method of obtaining data | | ml | ml | ml |
| Valid for approval/standard | | CE | CE | UL 2111 |
| Speed (rpm) | min ⁻¹ | 2450 | 2580 | 2800 |
| Power consumption | W | 98 | 130 | 145 |
| Current draw | A | 0.19 | 0.22 | 0.22 |
| Min. back pressure | Pa | 0 | 0 | 0 |
| Min. back pressure | in. wg | 0 | 0 | 0 |
| Min. ambient temperature | °C | -25 | -25 | -25 |
| Max. ambient temperature | °C | 75 | 65 | 55 |
| Starting current | A | 0.40 | 0.42 | 0.46 |

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

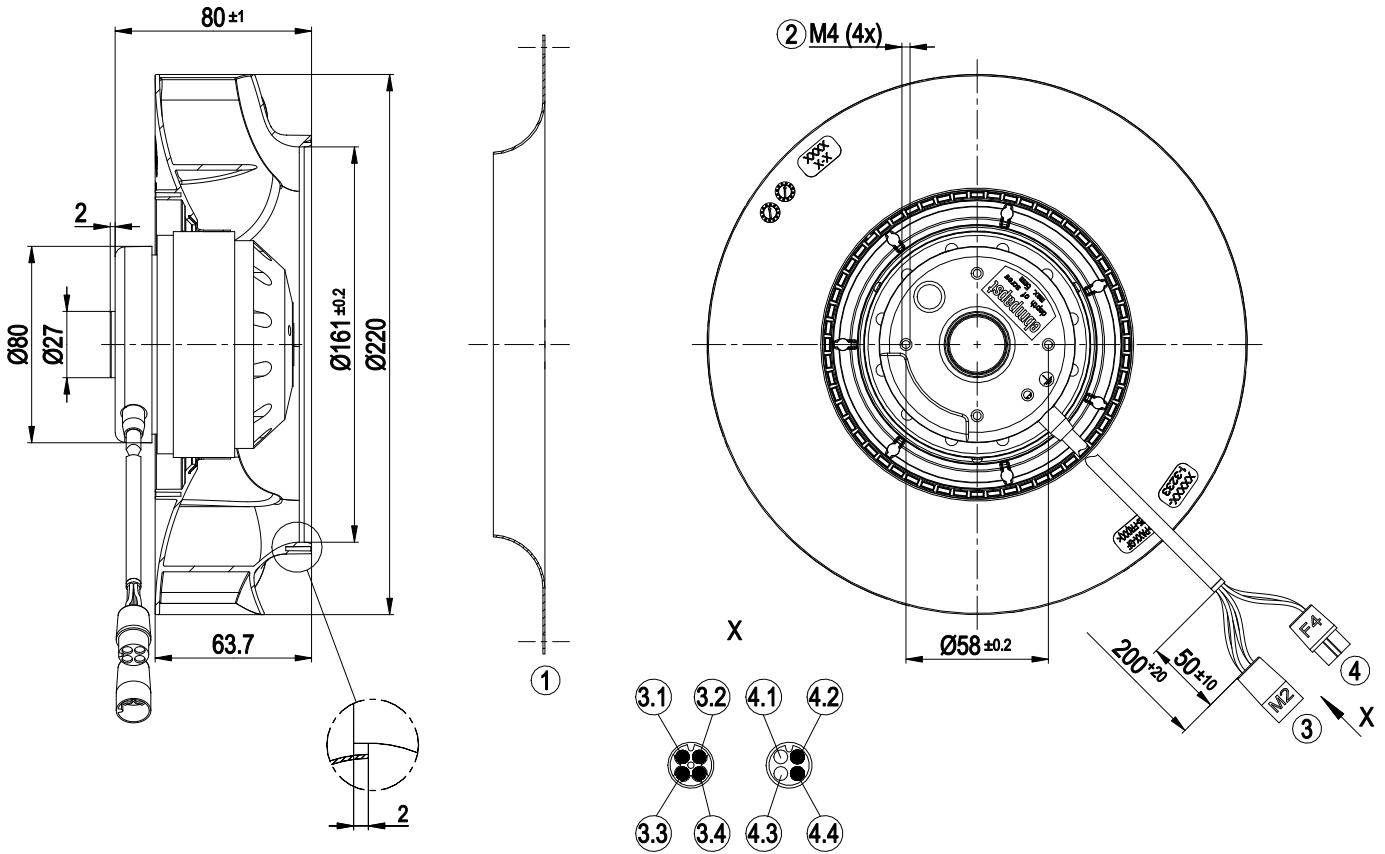


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Technical description

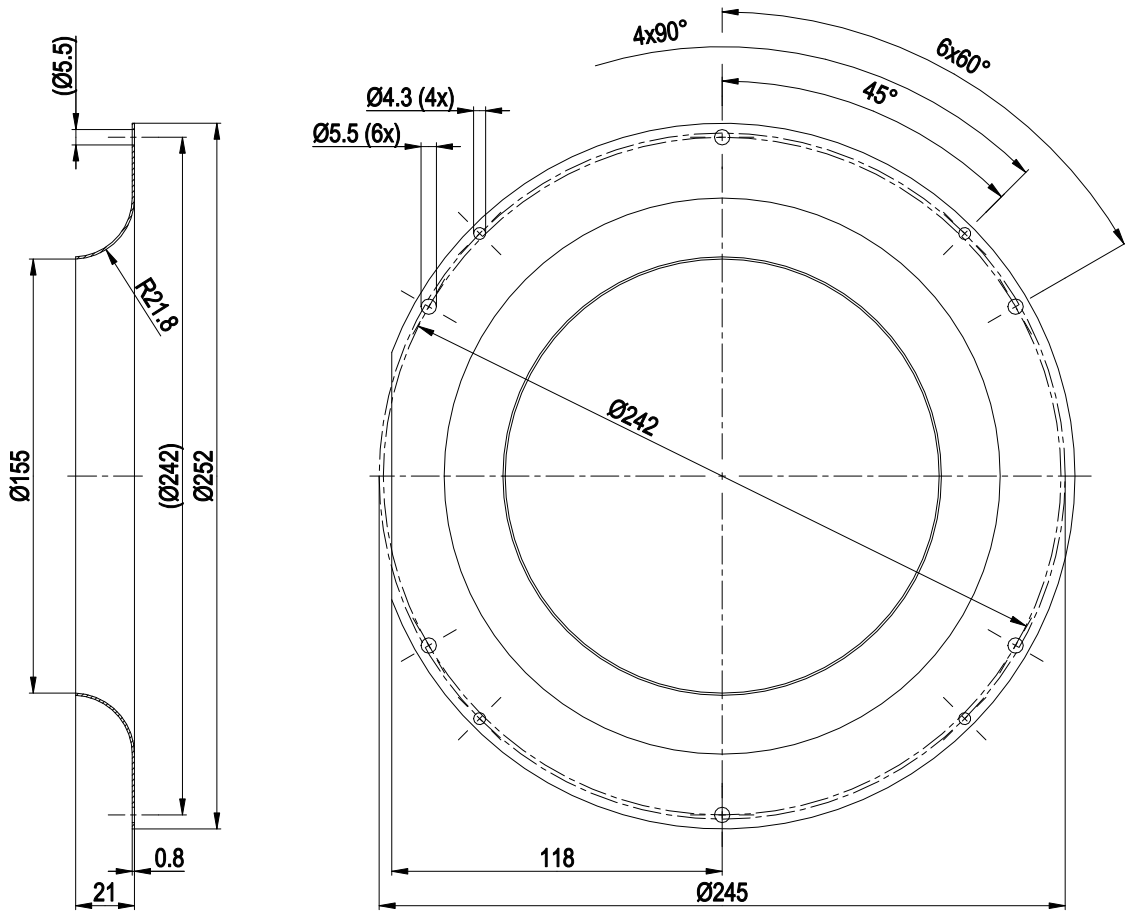
| | |
|--|---|
| Weight | 1.66 kg |
| Size | 220 mm |
| Motor size | 68 |
| Rotor surface | Painted black |
| Impeller material | PA plastic |
| Number of blades | 7 |
| Direction of rotation | Clockwise, viewed toward rotor |
| Degree of protection | IP44; installation- and position-dependent |
| Insulation 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 | Any |
| Condensation drainage holes | None |
| Mode | S1 |
| Motor bearing | Ball bearing |
| Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system) | < 0.75 mA |
| Electrical hookup | Connector with cable |
| Motor protection | Thermal overload protector (TOP) internally connected |
| With cable | Lateral |
| Protection class | I (with customer connection of protective earth) |
| Conformity with standards | EN 60335-1; CE |
| Approval | CSA C22.2 No. 77; UL 1004-3 |

Product drawing



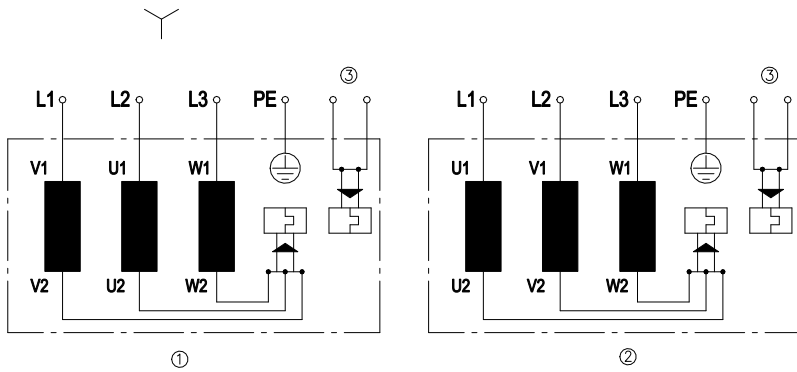
| | |
|-----|--|
| 1 | Accessory part: inlet ring 09609-2-4013 not included in scope of delivery |
| 2 | Max. clearance for screw 5 mm |
| 3 | Cable PFA AWG20, 4-pole connector housing tyco 925075-7, 4x plug pin tyco 163555-6 |
| 3.1 | PE (green/yellow) |
| 3.2 | L1 (black) |
| 3.3 | L3 (brown) |
| 3.4 | L2 (blue) |
| 4 | Cable PFA AWG20, 4-pole connector housing tyco 925076-7, 4x socket tyco 163300-8 |
| 4.1 | not used |
| 4.2 | TOP (gray) |
| 4.3 | not used |
| 4.4 | TOP (gray) |

Accessory part



Inlet ring 09609-2-4013 not included in scope of delivery

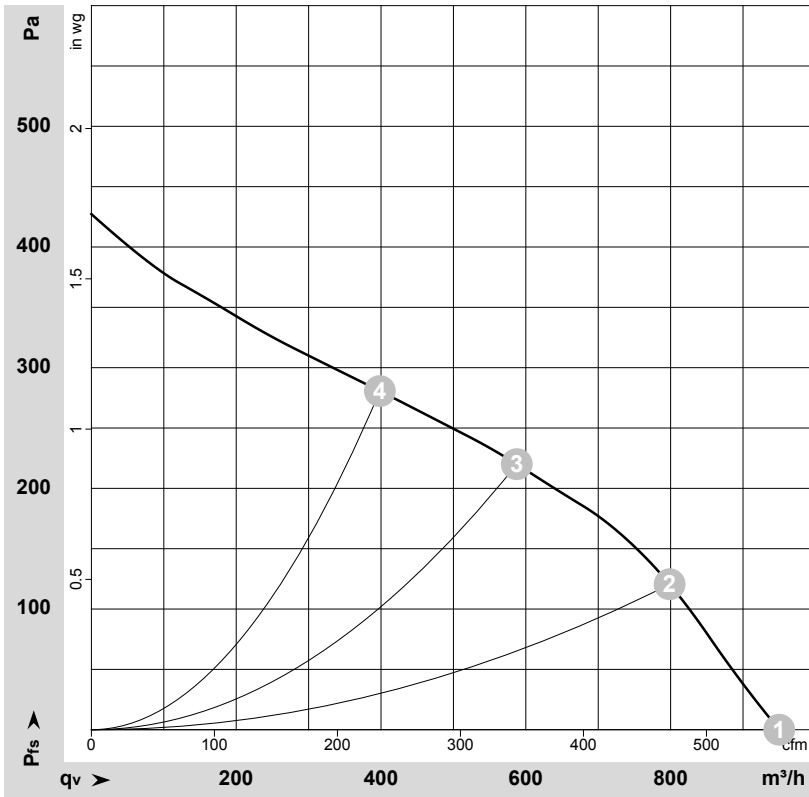
Connection diagram



Change of rotation direction by reversing two phases

| | |
|----|----------------------------|
| | Three-phase motor |
| Y | Star connection |
| 1 | Counterclockwise operation |
| L1 | = V1 = blue |
| L2 | = U1 = black |
| L3 | = W1 = brown |
| 2 | Clockwise operation |
| L1 | =U1=black |
| L2 | =V1=blue |
| L3 | =W1=brown |
| PE | green/yellow |
| 3 | TOP signal, 2x gray |

Curves: Air performance 50 Hz



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-169066-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebmpapst. 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.

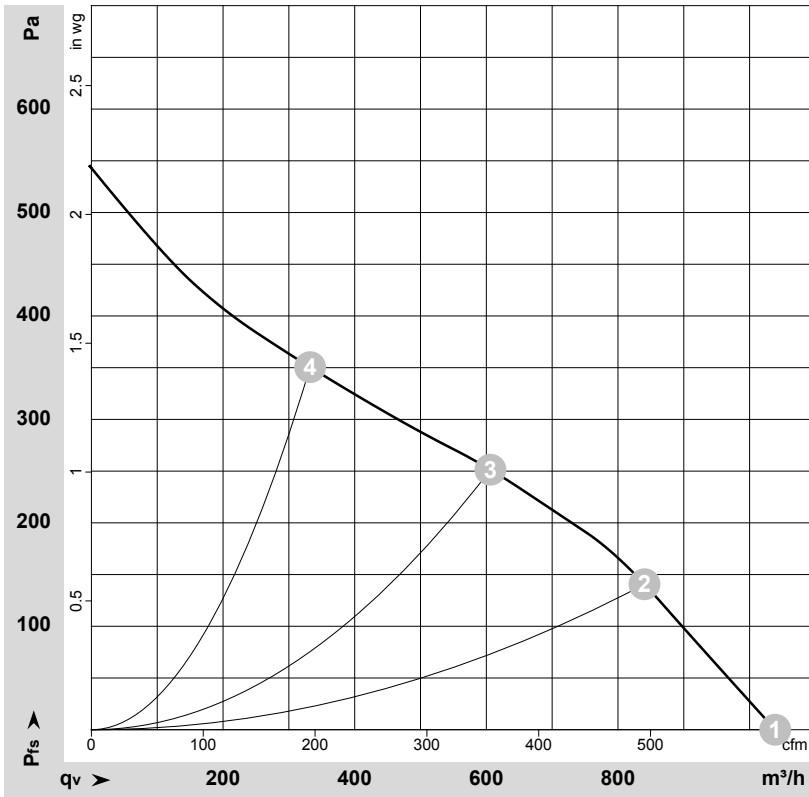
Measured values

| | Wired | U | f | n | P _e | I | LpA _{in} | LwA _{in} | q _v | P _{fs} | q _v | P _{fs} |
|---|-------|-----|----|-------------------|----------------|------|-------------------|-------------------|-------------------|-----------------|----------------|-----------------|
| | | V | Hz | min ⁻¹ | W | A | dB(A) | dB(A) | m ³ /h | Pa | cfm | in. wg |
| 1 | Y | 400 | 50 | 2610 | 79 | 0.16 | 62 | 70 | 950 | 0 | 560 | 0.00 |
| 2 | Y | 400 | 50 | 2540 | 88 | 0.17 | 58 | 66 | 800 | 120 | 470 | 0.48 |
| 3 | Y | 400 | 50 | 2450 | 98 | 0.19 | 56 | 64 | 585 | 220 | 345 | 0.88 |
| 4 | Y | 400 | 50 | 2500 | 92 | 0.17 | 59 | 66 | 400 | 280 | 235 | 1.12 |

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
 q_v = Air flow · p_s = Pressure increase



Curves: Air performance 60 Hz



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-169148-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebmpapst. 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} | q _v | p _{fs} | q _v | p _{fs} |
|---|-------|-----|----|-------------------|----------------|------|-------------------|-------------------|-------------------|-----------------|----------------|-----------------|
| | | V | Hz | min ⁻¹ | W | A | dB(A) | dB(A) | m ³ /h | Pa | cfm | in. wg |
| 1 | Y | 400 | 60 | 2830 | 106 | 0.17 | 63 | 71 | 1040 | 0 | 610 | 0.00 |
| 2 | Y | 400 | 60 | 2700 | 119 | 0.19 | 59 | 67 | 840 | 140 | 495 | 0.56 |
| 3 | Y | 400 | 60 | 2580 | 130 | 0.22 | 56 | 64 | 605 | 250 | 355 | 1.00 |
| 4 | Y | 400 | 60 | 2705 | 118 | 0.19 | 63 | 70 | 330 | 350 | 195 | 1.41 |

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
 q_v = Air flow · p_{fs} = Pressure increase

