

# EC centrifugal fan - RadiCal

backward-curved, single-intake  
with housing (flange)

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Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

|                          |                   |            |
|--------------------------|-------------------|------------|
| Type                     | G3G190-RQ45-04    |            |
| Motor                    | M3G055-CF         |            |
| Phase                    |                   | 1~         |
| Nominal voltage          | VAC               | 230        |
| Nominal voltage range    | VAC               | 200 .. 240 |
| Frequency                | Hz                | 50/60      |
| Method of obtaining data |                   | ml         |
| Speed (rpm)              | min <sup>-1</sup> | 4150       |
| Power consumption        | W                 | 170        |
| Current draw             | A                 | 1.35       |
| Min. ambient temperature | °C                | -25        |
| Max. ambient temperature | °C                | 50         |

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

Data according to Commission Regulation (EU) 327/2011 (prEN 17166)

|                                   |   | Actual | Req. 2015 |                               |                   |      |
|-----------------------------------|---|--------|-----------|-------------------------------|-------------------|------|
| 01 Overall efficiency $\eta_{es}$ | % | 64.8   | 42.5      | 09 Power consumption $P_{ed}$ | kW                | 0.17 |
| 02 Measurement category           |   | A      |           | 09 Air flow $q_v$             | m³/h              | 465  |
| 03 Efficiency category            |   | Static |           | 09 Pressure increase $p_{fs}$ | Pa                | 763  |
| 04 Efficiency grade N             |   | 83.3   | 61        | 10 Speed (rpm) n              | min <sup>-1</sup> | 4215 |
| 05 Variable speed drive           |   | Yes    |           | 11 Specific ratio*            |                   | 1.01 |

Data obtained at optimum efficiency level.

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

LU-188479

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings).  
The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again.  
The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).

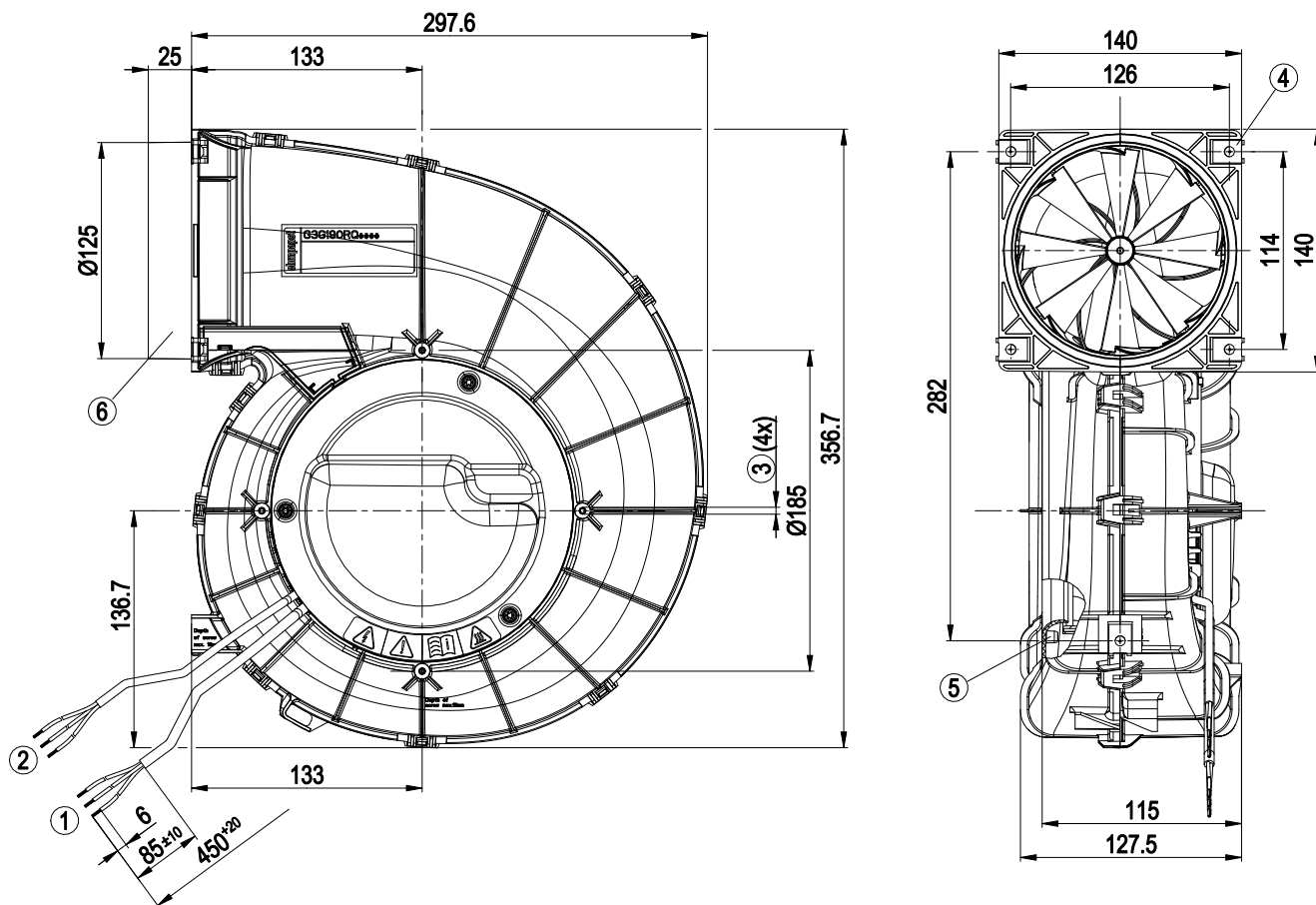
## Technical description

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                                                                     | 2.14 kg                                                                                                                                                                                                                                                                                                                                                                           |
| Size                                                                       | 190 mm                                                                                                                                                                                                                                                                                                                                                                            |
| Motor size                                                                 | 55                                                                                                                                                                                                                                                                                                                                                                                |
| Rotor surface                                                              | Thick-film passivated                                                                                                                                                                                                                                                                                                                                                             |
| Impeller material                                                          | PP plastic                                                                                                                                                                                                                                                                                                                                                                        |
| Housing material                                                           | PP plastic                                                                                                                                                                                                                                                                                                                                                                        |
| Number of blades                                                           | 7                                                                                                                                                                                                                                                                                                                                                                                 |
| Direction of rotation                                                      | Clockwise, viewed toward rotor                                                                                                                                                                                                                                                                                                                                                    |
| Degree of protection                                                       | Motor IP54, electronics IP20                                                                                                                                                                                                                                                                                                                                                      |
| Insulation class                                                           | "B"                                                                                                                                                                                                                                                                                                                                                                               |
| Moisture (F) / Environmental (H) protection class                          | H0+                                                                                                                                                                                                                                                                                                                                                                               |
| 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, open rotor                                                                                                                                                                                                                                                                                                                                                                  |
| Mode                                                                       | S1                                                                                                                                                                                                                                                                                                                                                                                |
| Motor bearing                                                              | Ball bearing                                                                                                                                                                                                                                                                                                                                                                      |
| Technical features                                                         | <ul style="list-style-type: none"> <li>- Power limiter</li> <li>- Motor current limitation</li> <li>- RS-485 MODBUS-RTU</li> <li>- Soft start</li> <li>- Control interface with SELV potential safely disconnected from the mains</li> <li>- Overvoltage detection</li> <li>- Thermal overload protection for electronics/motor</li> <li>- Line undervoltage detection</li> </ul> |
| EMC immunity to interference                                               | According to EN 61000-6-2 (industrial environment)                                                                                                                                                                                                                                                                                                                                |
| EMC circuit feedback                                                       | According to EN 61000-3-2/3                                                                                                                                                                                                                                                                                                                                                       |
| EMC interference emission                                                  | According to EN 61000-6-3 (household environment)                                                                                                                                                                                                                                                                                                                                 |
| Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system) | <= 3.5 mA                                                                                                                                                                                                                                                                                                                                                                         |
| Motor protection                                                           | Electronic motor protection                                                                                                                                                                                                                                                                                                                                                       |
| With cable                                                                 | Variable                                                                                                                                                                                                                                                                                                                                                                          |
| Protection class assignment                                                | <p>I; If a protective earth is connected.</p> <p>The built-in component has several local protection class assignments.</p> <p>The final protection class is determined by the intended installation.</p>                                                                                                                                                                         |
| Conformity with standards                                                  | EN 60335-1; CE; UKCA                                                                                                                                                                                                                                                                                                                                                              |
| Approval                                                                   | EAC; CCC                                                                                                                                                                                                                                                                                                                                                                          |

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## Product drawing

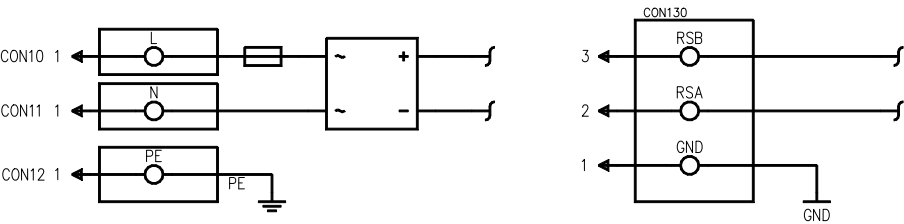


|   |                                                                                                                                                                                    |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Cable PVC AWG20, 3x crimped splices                                                                                                                                                |
| 2 | Cable PVC AWG22, 3x crimped splices                                                                                                                                                |
| 3 | Tapping hole prepared for self-tapping screw for fastening plastics (Remform) dia. 4 mm, clearance for screw max. 15 mm. The torque is to be determined on the basis of the screw. |
| 4 | 5x sheet metal nut for thread EN ISO 1478-ST4.8 (max. screw length 16 mm plus thickness of mounting material)                                                                      |
| 5 | Screw-on domes are only permissible for Flowgrid!                                                                                                                                  |
| 6 | Connecting sleeve not suitable for installation with pipe clamps                                                                                                                   |

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## Connection diagram

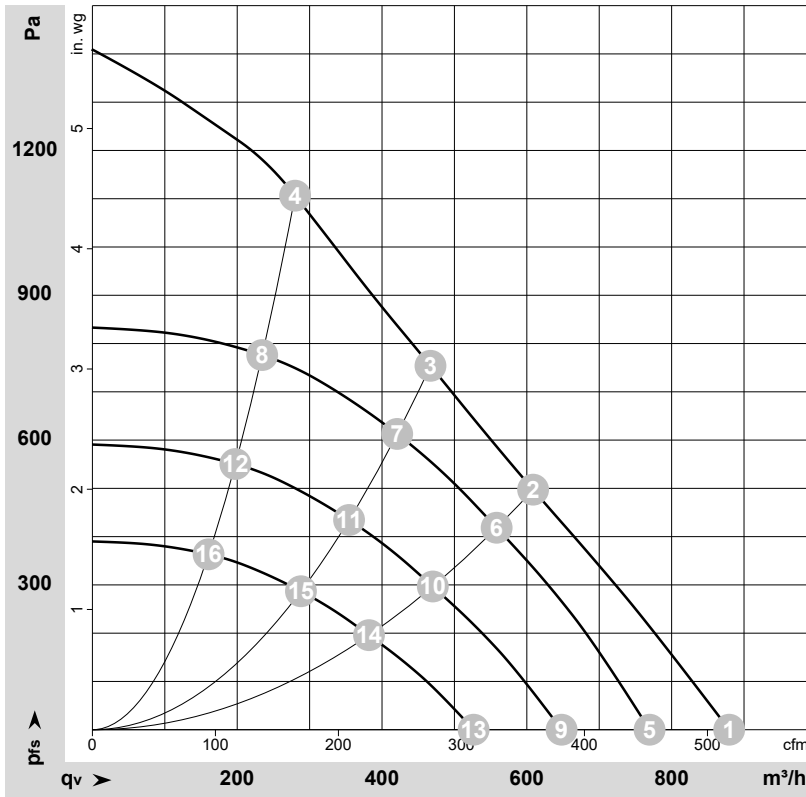


| No.    | Conn. | Designation | Color        | Function/assignment                                              |
|--------|-------|-------------|--------------|------------------------------------------------------------------|
| CON10  | 1     | L           | black        | Power supply, phase, see nameplate for voltage range             |
| CON11  | 1     | N           | blue         | Power supply, neutral conductor, see nameplate for voltage range |
| CON12  | 1     | PE          | green/yellow | Protective earth                                                 |
| CON130 | 3     | RSB         | brown        | RS485 interface for MODBUS, RSB; SELV                            |
| CON130 | 2     | RSA         | white        | RS485 interface for MODBUS, RSA; SELV                            |
| CON130 | 1     | GND         | blue         | Reference ground for control interface, SELV                     |

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## Curves: Air performance 50 Hz



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

Measurement: LU-188479-1  
Date: 2017-09-06  
Nozzle: 19000-1-2950

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 <sub>ed</sub> | I    | LpA <sub>in</sub> | LwA <sub>in</sub> | q <sub>v</sub> | p <sub>fs</sub> | q <sub>v</sub> | p <sub>fs</sub> |
|----|-------|-----|----|-------------------|-----------------|------|-------------------|-------------------|----------------|-----------------|----------------|-----------------|
|    |       | V   | Hz | min <sup>-1</sup> | W               | A    | dB(A)             | dB(A)             | m³/h           | Pa              | cfm            | in. wg          |
| 1  | 1~    | 230 | 50 | 4345              | 170             | 1.35 | 76                | 82                | 880            | 0               | 520            | 0.00            |
| 2  | 1~    | 230 | 50 | 4150              | 170             | 1.35 | 68                | 75                | 610            | 500             | 360            | 2.01            |
| 3  | 1~    | 230 | 50 | 4210              | 170             | 1.35 | 68                | 74                | 465            | 750             | 275            | 3.01            |
| 4  | 1~    | 230 | 50 | 4535              | 170             | 1.35 | 73                | 79                | 280            | 1100            | 165            | 4.42            |
| 5  | 1~    | 230 | 50 | 3800              | 115             | 0.92 | 72                | 78                | 770            | 0               | 455            | 0.00            |
| 6  | 1~    | 230 | 50 | 3800              | 133             | 1.06 | 66                | 72                | 560            | 419             | 330            | 1.68            |
| 7  | 1~    | 230 | 50 | 3800              | 126             | 1.01 | 65                | 71                | 420            | 614             | 250            | 2.46            |
| 8  | 1~    | 230 | 50 | 3800              | 101             | 0.80 | 68                | 74                | 235            | 776             | 140            | 3.12            |
| 9  | 1~    | 230 | 50 | 3200              | 69              | 0.55 | 68                | 74                | 650            | 0               | 380            | 0.00            |
| 10 | 1~    | 230 | 50 | 3200              | 80              | 0.64 | 62                | 68                | 470            | 297             | 275            | 1.19            |
| 11 | 1~    | 230 | 50 | 3200              | 75              | 0.60 | 60                | 67                | 355            | 436             | 210            | 1.75            |
| 12 | 1~    | 230 | 50 | 3200              | 60              | 0.48 | 64                | 70                | 195            | 550             | 115            | 2.21            |
| 13 | 1~    | 230 | 50 | 2600              | 37              | 0.29 | 63                | 69                | 525            | 0               | 310            | 0.00            |
| 14 | 1~    | 230 | 50 | 2600              | 43              | 0.34 | 56                | 63                | 380            | 196             | 225            | 0.79            |
| 15 | 1~    | 230 | 50 | 2600              | 40              | 0.32 | 55                | 61                | 290            | 288             | 170            | 1.16            |
| 16 | 1~    | 230 | 50 | 2600              | 32              | 0.26 | 59                | 65                | 160            | 363             | 95             | 1.46            |

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>ed</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
q<sub>v</sub> = Air flow · p<sub>fs</sub> = Pressure increase