**R3G190-RH50-01**

# EC centrifugal fan - RadiCal

backward curved, single inlet

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## Nominal data

| | |
|---|---|
| **Type** | **R3G190-RH50-01** |
| **Motor** | **M3G074-BF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 277 |
| Frequency | Hz | 50/60 |
| Type of data definition | | ml |
| State | | prelim. |
| Speed (rpm) | $min^{-1}$ | 3880 |
| Power input | W | 145 |
| Current draw | A | 1.15 |
| Min. ambient temperature | °C | -25 |
| Max. ambient temperature | °C | 60 |

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

| | | Actual | Request 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 51.1 | 42.5 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 70.6 | 62 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power input $P_{ed}$ | kW | 0.14 |
| 09 Air flow $q_v$ | $m^3/h$ | 580 |
| 09 Pressure increase $p_{fs}$ | Pa | 402 |
| 10 Speed (rpm) n | $min^{-1}$ | 3895 |
| 11 Specific ratio* | | 1.00 |

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

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

LU-126693

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## Technical features

| | |
|---|---|
| **Mass** | 1.8 kg |
| **Size** | 190 mm |
| **Surface of rotor** | Thick layer passivated |
| **Material of electronics housing** | Die-cast aluminium |
| **Material of impeller** | PA plastic |
| **Number of blades** | 7 |
| **Direction of rotation** | Clockwise, seen on rotor |
| **Type of protection** | IP 44 |
| **Insulation class** | "B" |
| **Humidity (F)/environmental protection class (H)** | F3-1 |
| **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 top; rotor on bottom on request |
| **Condensate discharge holes** | None |
| **Operation mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Control input 0-10 VDC / PWM<br>- Output 10 VDC, max. 1.1 mA<br>- Tach output<br>- Over-temperature protected motor<br>- Soft start |
| **EMC interference immunity** | Acc. to EN 61000-6-2 |
| **EMC harmonics** | Acc. to EN 61000-3-2/3 |
| **EMC interference emission** | Acc. to EN 61000-6-3 (household environment) |
| **Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)** | <= 3.5 mA |
| **Motor protection** | Thermal overload protector (TOP) wired internally |
| **Cable exit** | Variable |
| **Protection class** | I (if protective earth is connected by customer) |
| **Product conforming to standard** | EN 60335-1 |
| **Approval** | CSA C22.2 No.77; UL 2111 |

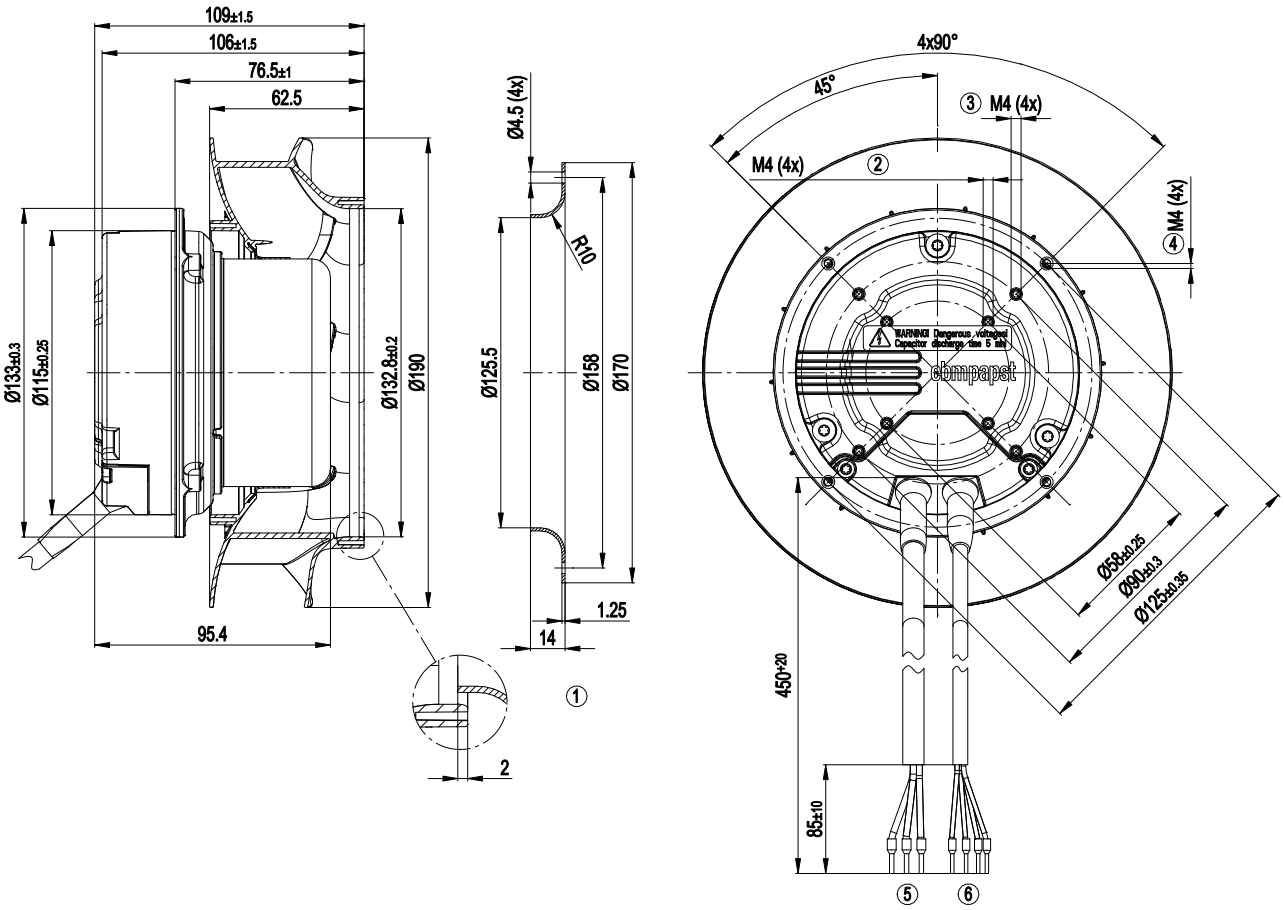


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## Product drawing




| | |
|---|---|
| 1 | Accessory part: Inlet nozzle 09576-2-4013, not included in the standard scope of delivery |
| 2 | Pilot hole prepared for self-tapping screw M4, depth of screw max. 8 mm |
| 3 | Pilot hole prepared for self-tapping screw M4, depth of screw max. 6 mm |
| 4 | Depth of screw 8 - 10 mm |
| 5 | Connection line AWG 18, 3x crimped core-end sleeves |
| 6 | Connection line AWG 22, 4x crimped core-end sleeves |

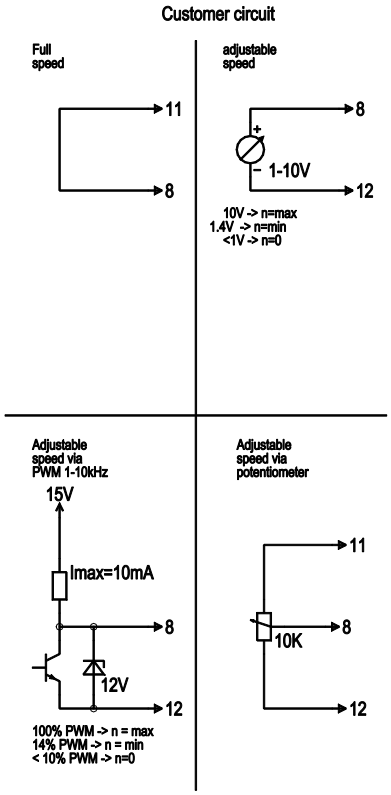


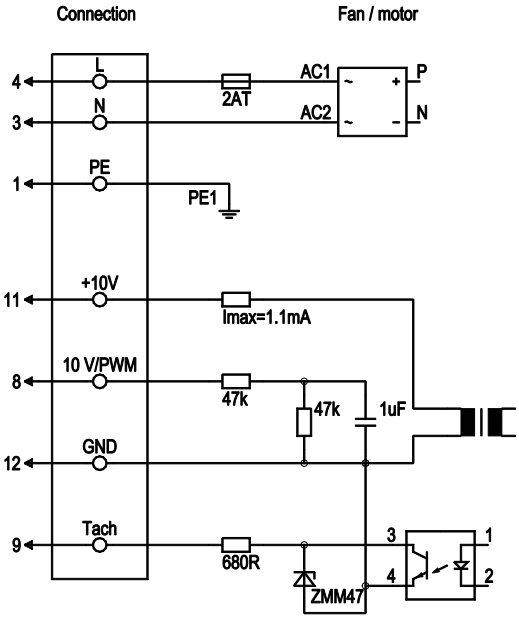
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## Connection screen




| No. | Conn. | Designation | Colour | Function / assignment |
|---|---|---|---|---|
| | 4 | L | black | Power supply 230 VAC, 50-60 Hz, see type plate for voltage range |
| | 3 | N | blue | Neutral conductor |
| | 1 | PE | green/yellow | Protective earth |
| | 8 | 0-10 V PWM | yellow | Control input 0 - 10 V or PWM, electrically isolated |
| | 9 | Tach | white | Tach output: open collector, 1 pulse per revolution, electrically isolated |
| | 11 | 10V / max 1.1 mA | red | Voltage output 10 V / max. 1.1 mA, electrically isolated |
| | 12 | GND | blue | GND - Connection for control interface |

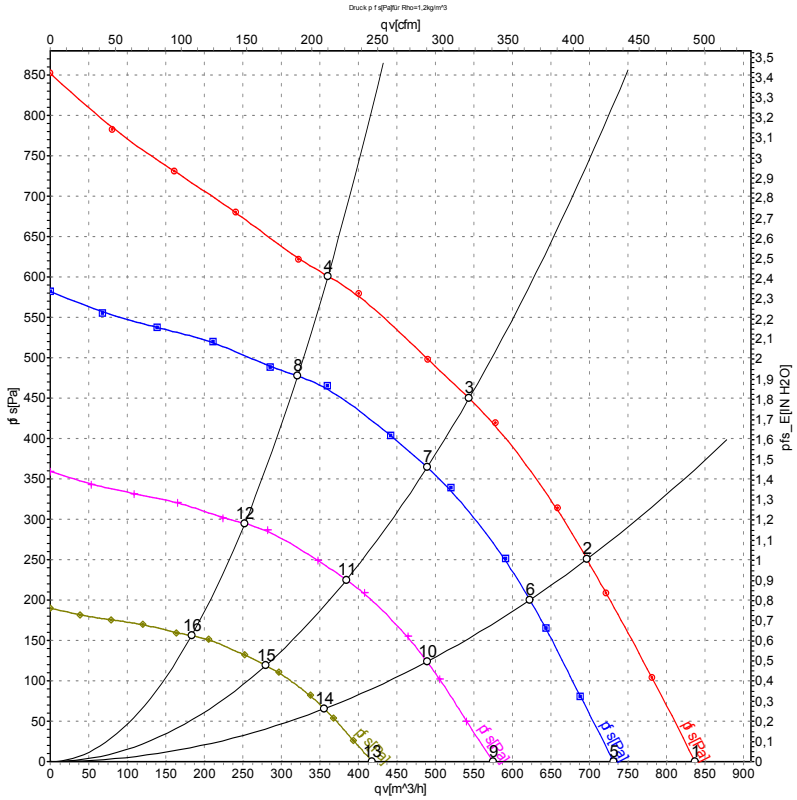


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## Charts: Air flow 50 Hz




Measurement: LU-126693-1

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

| | U | f | n | $P_{ed}$ | 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 | inH2O |
| 1 | 230 | 50 | 4005 | 123 | 0.99 | 72 | 80 | 840 | 0 | 495 | 0.00 |
| 2 | 230 | 50 | 3915 | 138 | 1.09 | 66 | 74 | 695 | 250 | 410 | 1.00 |
| 3 | 230 | 50 | 3880 | 145 | 1.15 | 63 | 71 | 545 | 450 | 320 | 1.81 |
| 4 | 230 | 50 | 3925 | 139 | 1.11 | 66 | 73 | 360 | 600 | 210 | 2.41 |
| 5 | 230 | 50 | 3500 | 82 | 0.66 | 69 | 77 | 730 | 0 | 430 | 0.00 |
| 6 | 230 | 50 | 3500 | 98 | 0.78 | 64 | 72 | 625 | 200 | 365 | 0.80 |
| 7 | 230 | 50 | 3500 | 106 | 0.84 | 61 | 69 | 490 | 364 | 290 | 1.46 |
| 8 | 230 | 50 | 3500 | 99 | 0.78 | 63 | 70 | 320 | 477 | 190 | 1.91 |
| 9 | 230 | 50 | 2750 | 40 | 0.32 | 64 | 72 | 575 | 0 | 340 | 0.00 |
| 10 | 230 | 50 | 2750 | 48 | 0.38 | 58 | 66 | 490 | 124 | 290 | 0.50 |
| 11 | 230 | 50 | 2750 | 51 | 0.41 | 55 | 63 | 385 | 225 | 225 | 0.90 |
| 12 | 230 | 50 | 2750 | 48 | 0.38 | 58 | 65 | 250 | 295 | 150 | 1.18 |
| 13 | 230 | 50 | 2000 | 15 | 0.12 | 57 | 65 | 420 | 0 | 245 | 0.00 |
| 14 | 230 | 50 | 2000 | 18 | 0.15 | 52 | 60 | 355 | 65 | 210 | 0.26 |
| 15 | 230 | 50 | 2000 | 20 | 0.16 | 49 | 56 | 280 | 119 | 165 | 0.48 |
| 16 | 230 | 50 | 2000 | 18 | 0.15 | 51 | 58 | 185 | 156 | 110 | 0.63 |

U = Supply voltage · f = Frequency · n = Speed (rpm) · $P_{ed}$ = Power input · I = Current draw · $LpA_{in}$ = Sound pressure level inlet side · $LwA_{in}$ = Sound power level inlet side · $q_V$ = Air flow
$p_{fs}$ = Pressure increase



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