

R3G190-RD45-03

# EC centrifugal fan - RadiCal

backward curved



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## Nominal data

Type	R3G190-RD45-03	
Motor	M3G055-CF	
Phase		1~
Nominal voltage	VAC	230
Nominal voltage range	VAC	200 .. 240
Frequency	Hz	50/60
Type of data definition		ml
Speed (rpm)	min <sup>-1</sup>	4120
Power input	W	169
Current draw	A	1.35
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 in accordance with ecodesign regulation EU 327/2011

		Actual	Request 2015
01 Overall efficiency $\eta_{es}$	%	56	43.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		74.9	62
05 Variable speed drive		Yes	

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

09 Power input $P_{ed}$	kW	0.16
09 Air flow $q_v$	m <sup>3</sup> /h	640
09 Pressure increase $p_{fs}$	Pa	455
10 Speed (rpm) $n$	min <sup>-1</sup>	4070
11 Specific ratio*		1.01

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

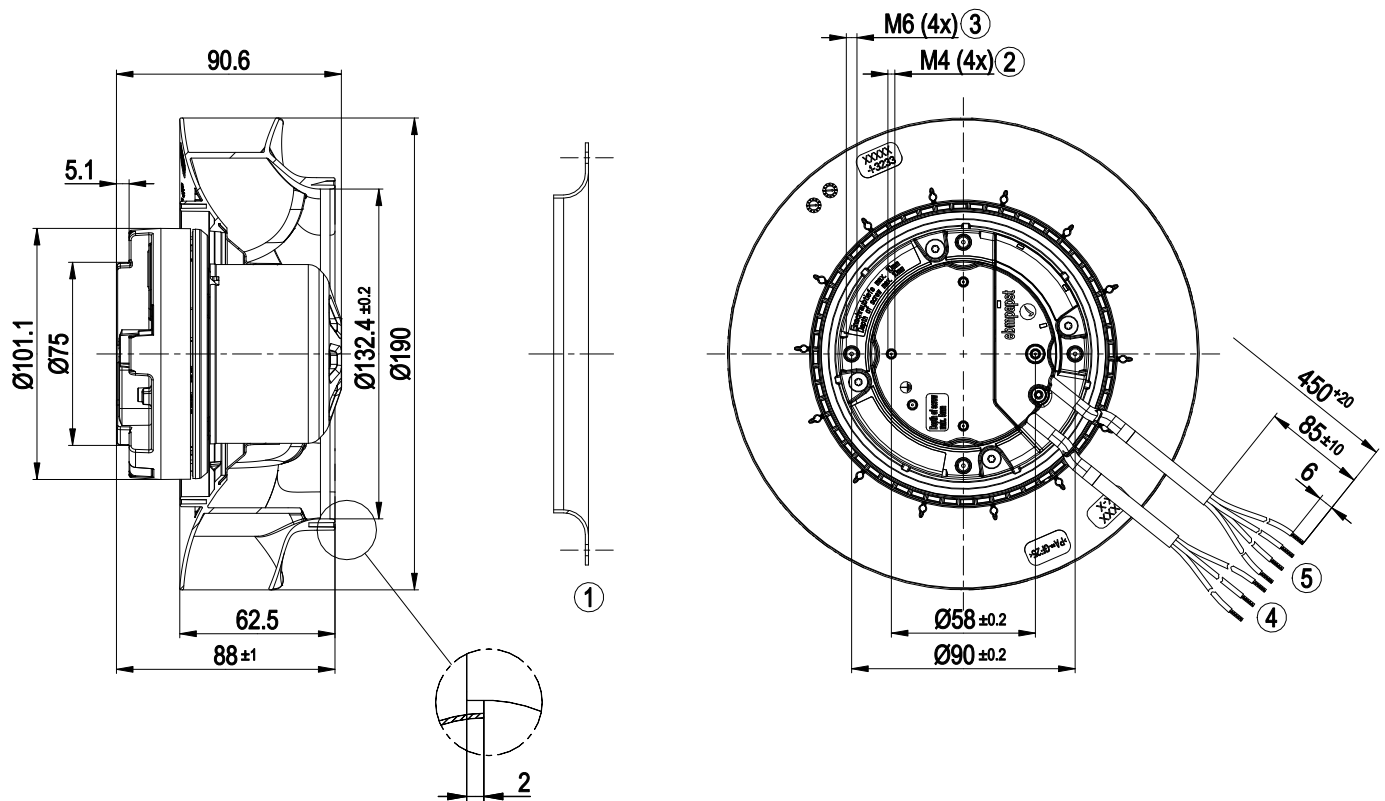
LU-132500



## Technical features

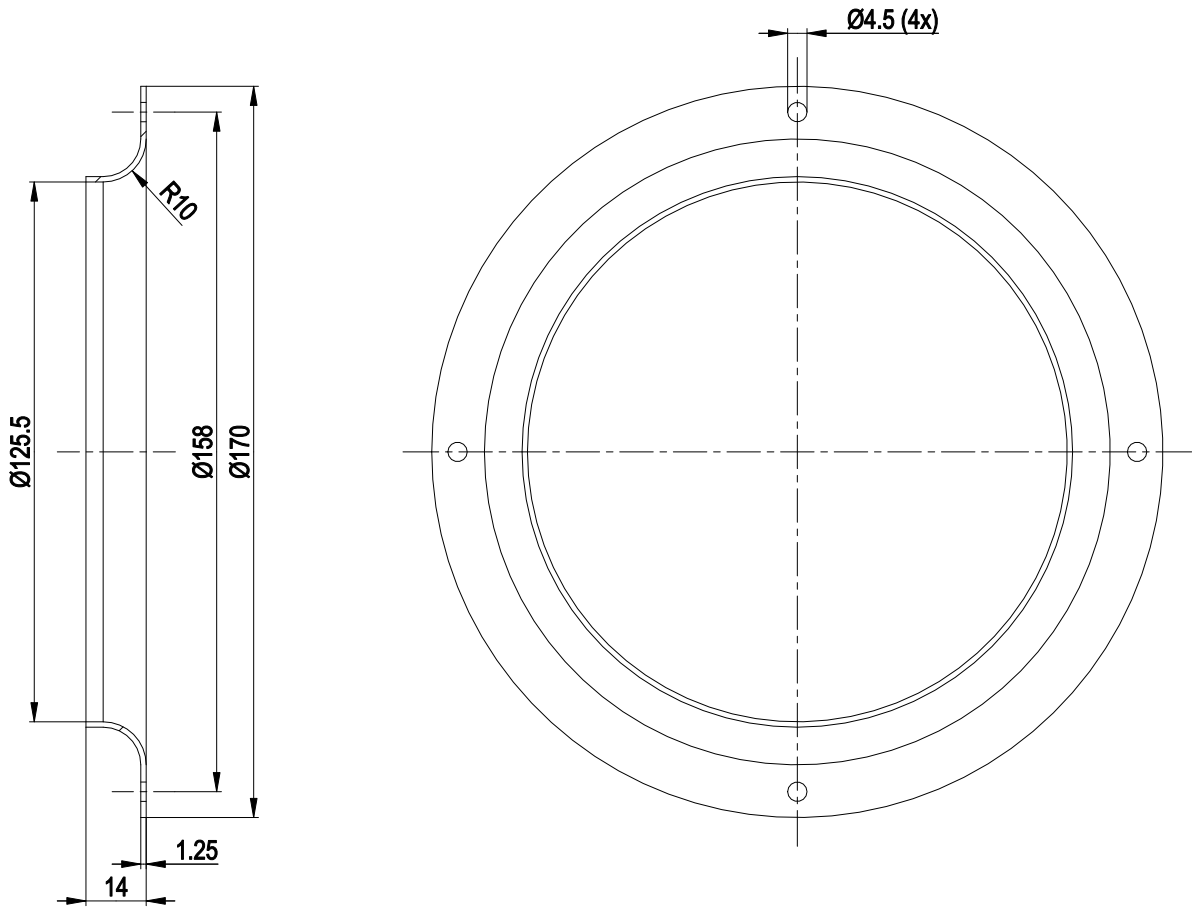
<b>Mass</b>	1.4 kg
<b>Size</b>	190 mm
<b>Surface of rotor</b>	Thick layer passivated
<b>Material of electronics housing</b>	Die-cast aluminium
<b>Material of impeller</b>	PA plastic
<b>Number of blades</b>	7
<b>Direction of rotation</b>	Clockwise, seen on rotor
<b>Type of protection</b>	IP 54
<b>Insulation class</b>	"B"
<b>Humidity (F)/environmental protection class (H)</b>	H1
<b>Max. permissible ambient motor temp. (transp./ storage)</b>	+ 80 °C
<b>Min. permissible ambient motor temp. (transp./storage)</b>	- 40 °C
<b>Mounting position</b>	Any
<b>Condensation drainage holes</b>	None, open rotor
<b>Operation mode</b>	S1
<b>Motor bearing</b>	Ball bearing
<b>Technical features</b>	<ul style="list-style-type: none"> <li>- Output 10 VDC, max. 10 mA</li> <li>- Tach output</li> <li>- Output limit</li> <li>- Motor current limit</li> <li>- Soft start</li> <li>- Control input 0-10 VDC / PWM</li> <li>- Control interface with SELV potential safely disconnected from the mains</li> <li>- Overvoltage detection</li> <li>- Over-temperature protected electronics / motor</li> <li>- Line undervoltage detection</li> </ul>
<b>EMC interference immunity</b>	Acc. to EN 61000-6-2 (industrial environment)
<b>EMC interference emission</b>	Acc. to EN 61000-6-4 (industrial environment)
<b>Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)</b>	<= 3.5 mA
<b>Motor protection</b>	Electronic motor protection
<b>Cable exit</b>	Variable
<b>Protection class</b>	I (if protective earth is connected by customer)
<b>Product conforming to standard</b>	EN 60335-1; CE
<b>Approval</b>	CCC; C22.2 Nr.77 + CAN/CSA-E60730-1; UL 1004-7 + 60730; EAC

## Product drawing



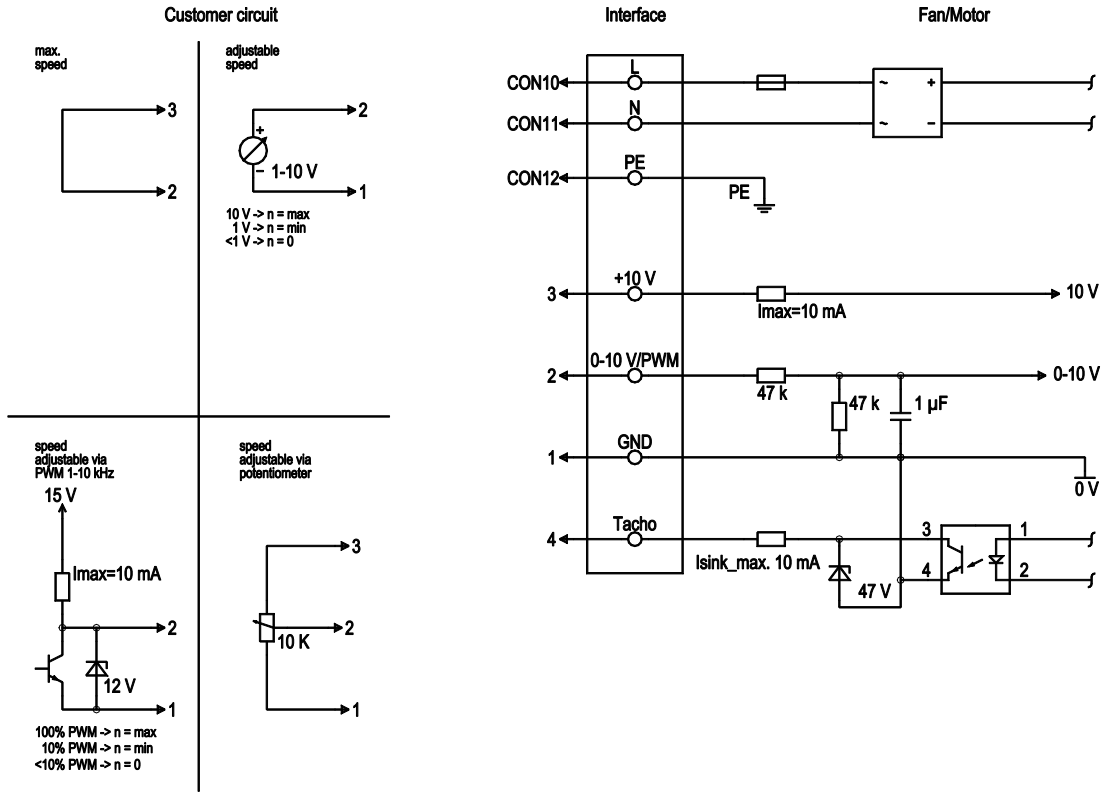
1	Accessory part: Inlet nozzle 09576-2-4013, not included in the standard scope of delivery
2	Thread reach max. 5 mm
3	Thread reach max. 10 mm
4	Connection line PVC AWG20, 3x lead tips crimped
5	Connection line PVC AWG22, 4x lead tips crimped

## Accessory part



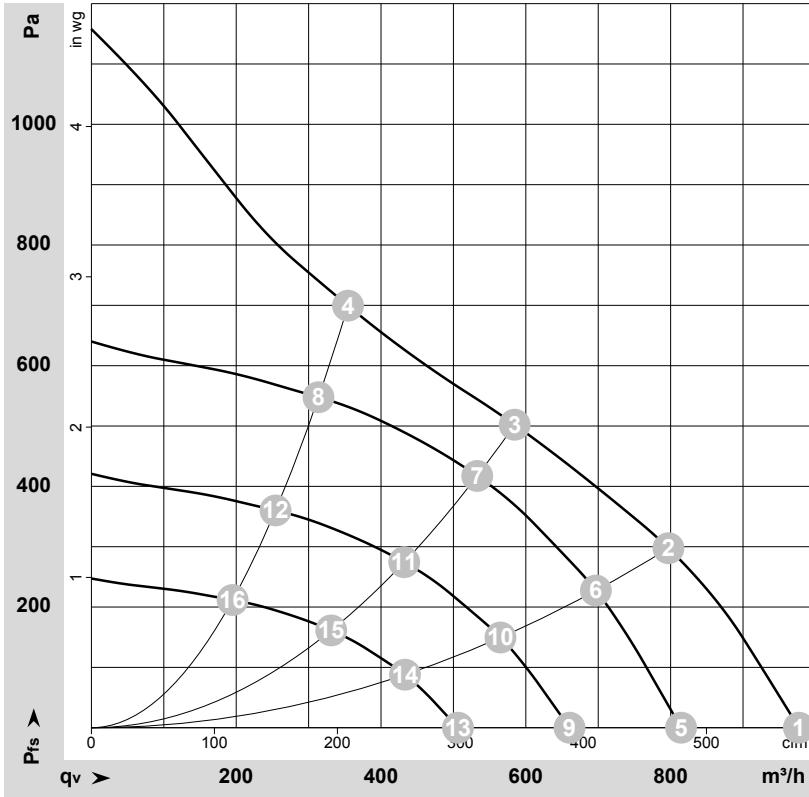
1 Accessory part: Inlet nozzle 09576-2-4013 not included in scope of delivery

## Connection screen



No.	Conn.	Designation	Colour	Function / assignment
	CON10	L	black	Mains connection, power supply, phase, see type plate for voltage range
	CON11	N	blue	Mains connection, power supply, neutral conductor, see type plate for voltage range
	CON12	PE	green/yellow	Earth connection
	2	0- 10V PWM	yellow	0-10 V/PWM control input, R <sub>i</sub> =100 kΩ, SELV
	4	Tach	white	Speed monitoring output, open collector, 1 pulse per revolution, I <sub>sink max</sub> = 10 mA, SELV
	3	+10 V	red	Fixed voltage output 10 VDC +/-3 %, I <sub>max</sub> . 10 mA, short-circuit-proof, power supply for ext. devices (e.g. potentiometer), SELV
	1	GND	blue	Signal ground for control interface, SELV

## Charts: Air flow 50 Hz



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

Measurement: LU-132500-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebmpapst. 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 <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)	m <sup>3</sup> /h	Pa	cfm	in. wg
1	230	50	4440	161	1.35	72	81	975	0	575	0.00
2	230	50	4230	165	1.35	67	75	795	300	470	1.20
3	230	50	4120	169	1.35	63	71	585	500	345	2.01
4	230	50	4180	160	1.35	67	75	355	700	210	2.81
5	230	50	3700	93	0.80	68	77	815	0	480	0.00
6	230	50	3700	110	0.94	63	72	695	230	410	0.92
7	230	50	3700	126	1.07	60	69	535	417	315	1.67
8	230	50	3700	111	0.95	64	72	315	548	185	2.20
9	230	50	3000	50	0.43	63	71	660	0	390	0.00
10	230	50	3000	59	0.50	58	67	565	152	335	0.61
11	230	50	3000	67	0.57	55	64	430	274	255	1.10
12	230	50	3000	59	0.51	58	66	255	360	150	1.45
13	230	50	2300	22	0.19	56	65	505	0	300	0.00
14	230	50	2300	27	0.22	51	60	435	89	255	0.36
15	230	50	2300	30	0.26	48	57	330	161	195	0.65
16	230	50	2300	27	0.23	52	60	195	212	115	0.85

U = Supply voltage · f = Frequency · n = Speed (rpm) · P<sub>ed</sub> = Power input · I = Current draw · LpA<sub>in</sub> = Sound pressure level inlet side · LwA<sub>in</sub> = Sound power level inlet side · q<sub>v</sub> = Air flow  
P<sub>fs</sub> = Pressure increase

