

EC centrifugal fan - RadiCal

backward-curved, single-intake

for rail applications

R1G190-RD79-81 ebmpapst Datasheet

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Nominal data

Type	R1G190-RD79-81	
Motor	M1G074-BF	
Nominal voltage	VDC	24
Nominal voltage range	VDC	16 .. 32
Method of obtaining data		fa
Speed (rpm)	min ⁻¹	4200
Power consumption	W	135
Current draw	A	5.6
Min. ambient temperature	°C	-25
Max. ambient temperature	°C	60

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



Technical description

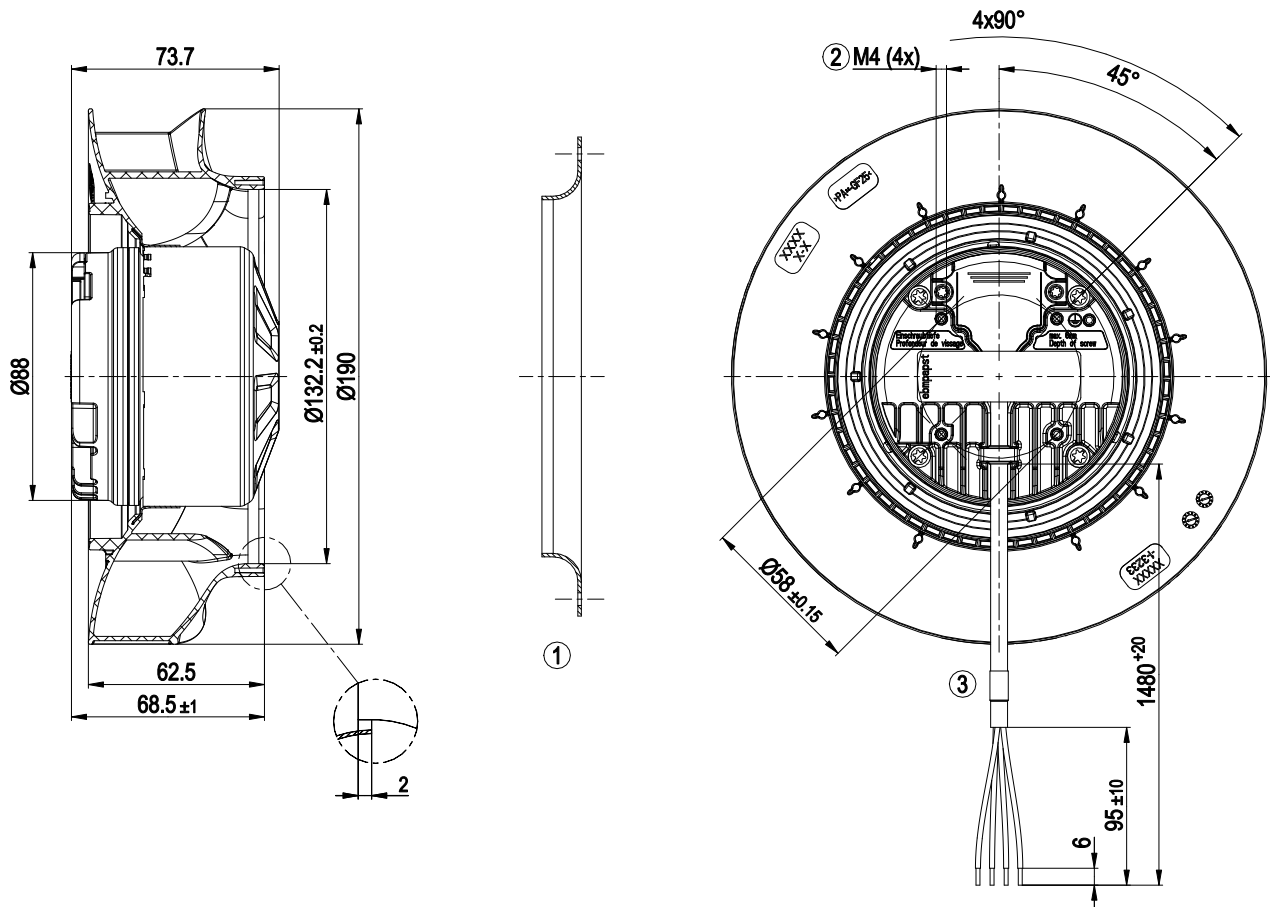
Weight	1.5 kg
Size	190 mm
Motor size	74
Rotor surface	Painted black
Electronics housing material	Die-cast aluminum, painted black
Impeller material	PA plastic, sheet-metal plate painted black
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	Motor IP24 KM
Insulation class	"B"
Moisture (F) / Environmental (H) protection class	H3
Max. permitted ambient temp. for motor (transport/storage)	+80 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensation drainage holes	On rotor side
Mode	S1
Motor bearing	Ball bearing; (sealed)
Technical features	- Tach output - Motor current limitation - Soft start - Control input 0-10 VDC / PWM - Overvoltage detection - Thermal overload protection for electronics - Reverse polarity protection
EMC regulations	According to EN 50121-3-2
With cable	Axial
Protection class assignment	III; Requires supply with safety extra-low voltage SELV. This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
Conformity with standards	EN 45545-2, HL3; EN 50155; EN 61373, Cat. 1B
Comment on CE	Ecodesign Directive 2009/125/EC + Fan Regulation (EC) No. 327/2011 does not apply, as use only in means of transport for transporting persons or goods.
Approval	EAC
Comment	EN 50155:2021 (Section 5.2.4) assessment criterion "C"

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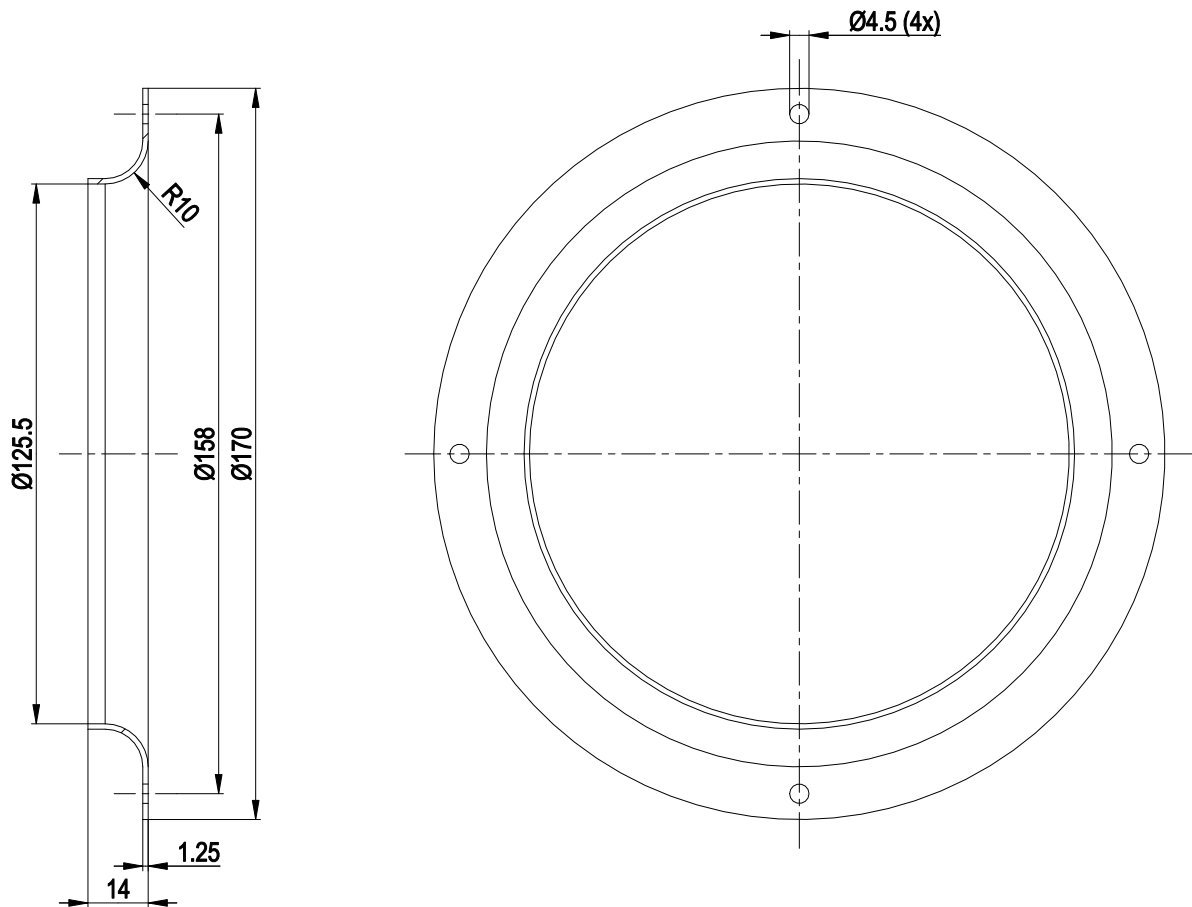
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Product drawing



1	Accessory part: inlet ring 09576-2-4013 not included in scope of delivery
2	Max. clearance for screw 6 mm
3	Cable, halogen-free, railway application EN 45545, 4x 0.75 mm²
	4x splice

Accessory part



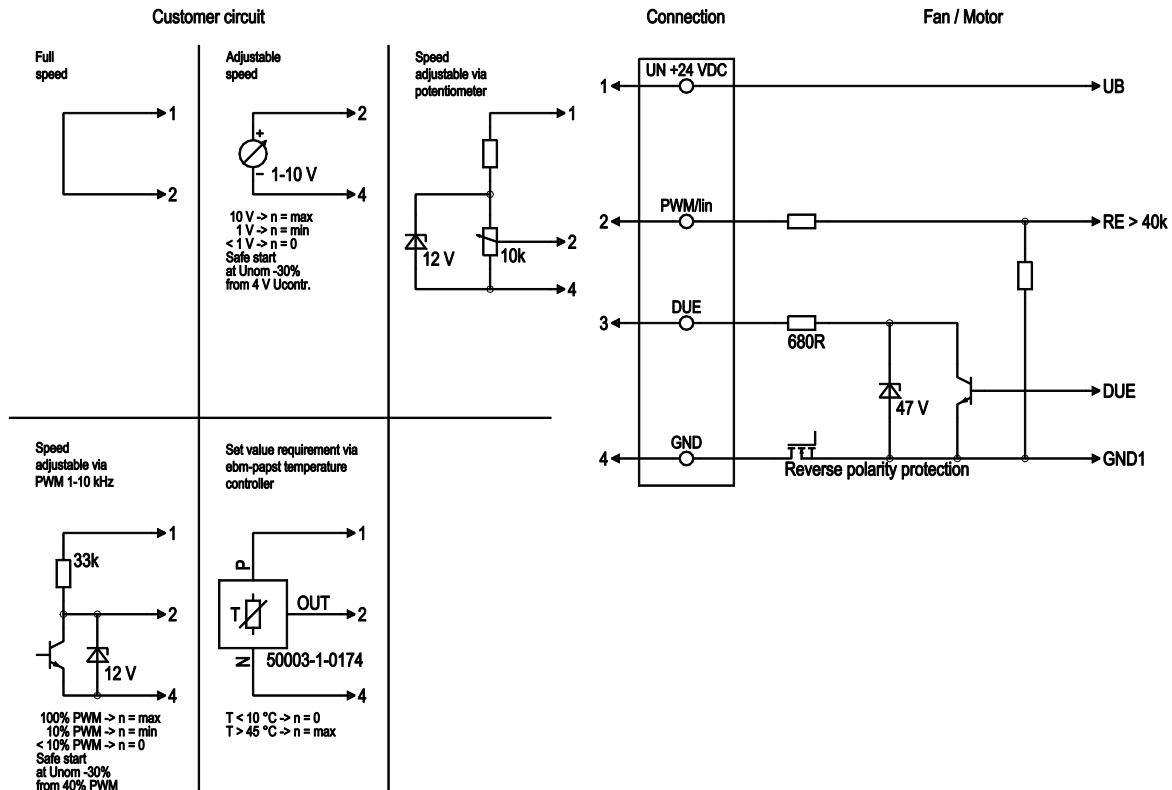
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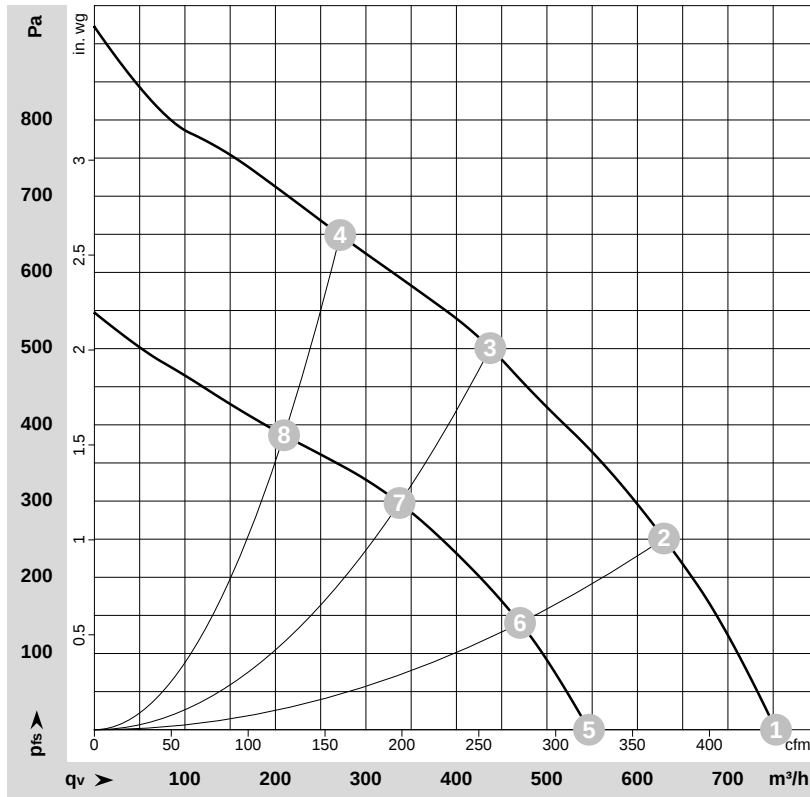
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Connection diagram



No.	Conn.	Designation	Color	Function/assignment
	1	UN +24 VDC	red	Power supply 24 VDC, maximum ripple 3.5%
	2	PWM/LIN	yellow	Control input Re > 40k
	3	DUE	white	Tach output, 3 pulses per revolution, Isink max = 10 mA
	4	GND	blue	Reference ground

Curves: Air performance



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

Measurement: LU-183446-1
Measurement: LU-183599-1

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

	U	n	P _{ed}	I	LpA _{in}	LwA _{in}	q _V	p _{fs}	q _V	p _{fs}
	V	min ⁻¹	W	A	dB(A)	dB(A)	m ³ /h	Pa	cfm	in. wg
1	24-32	4200	135	5.60*	73	81	755	0	445	0.00
2	24-32	4080	142	5.90*	69	77	630	250	370	1.00
3	24-32	3985	147	6.10*	65	73	435	500	255	2.01
4	24-32	4115	140	5.80*	67	75	270	650	160	2.61
5	16	3205	66	4.10	65	73	545	0	320	0.00
6	16	3145	68	4.26	63	71	470	140	275	0.56
7	16	3085	71	4.45	59	67	335	298	200	1.20
8	16	3165	68	4.22	61	68	210	386	125	1.55

U = Voltage · n = Speed (rpm) · P_{ed} = Power consumption · I = Current draw · * = Current measured at nominal voltage · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
q_V = Air flow · p_{fs} = Pressure increase