AC centrifugal fan - RadiCal

backward-curved, single-intake

R4D560-RB01-06 ebmpapst Datasheet

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Nominal data

Type	**R4D560-RB01-06**
Motor	**M4D138-LA**

Phase		3~	3~	3~	3~
Nominal voltage	VAC	400	400	400	400
Wiring		Δ	Y	Δ	Y
Frequency	Hz	50	50	60	60
Method of obtaining data		ml	ml	ml	ml
Valid for approval/standard		CE	CE	CE	CE
Speed (rpm)	min^{-1}	1390	1160	1550	1130
Power consumption	W	1950	1450	2990	1800
Current draw	A	3.95	2.45	5.25	3.2
Min. ambient temperature	°C	-40	-40	-40	-40
Max. ambient temperature	°C	60	60	45	45
Starting current	A	19	6.1	16	5.7

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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	54.5	54.5
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		62	62
05 Variable speed drive		No	

09 Power consumption P_e	kW	1.95
09 Air flow q_v	m^3/h	6980
09 Pressure increase p_{fs}	Pa	528
10 Speed (rpm) n	min^{-1}	1385
11 Specific ratio*		1.01

Data obtained at optimum efficiency level.
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

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

LU-166989

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Technical description

Weight	26.25 kg
Size	560 mm
Motor size	138
Rotor surface	Cast in aluminum
Impeller material	PP plastic
Number of blades	7
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
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	On rotor and stator sides
Mode	S1
Motor bearing	Ball bearing
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Electrical hookup	Terminal box
Motor protection	Thermal overload protector (TOP) with basic insulation
With cable	Axial
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60034-1 (2010); CE
Approval	VDE; EAC

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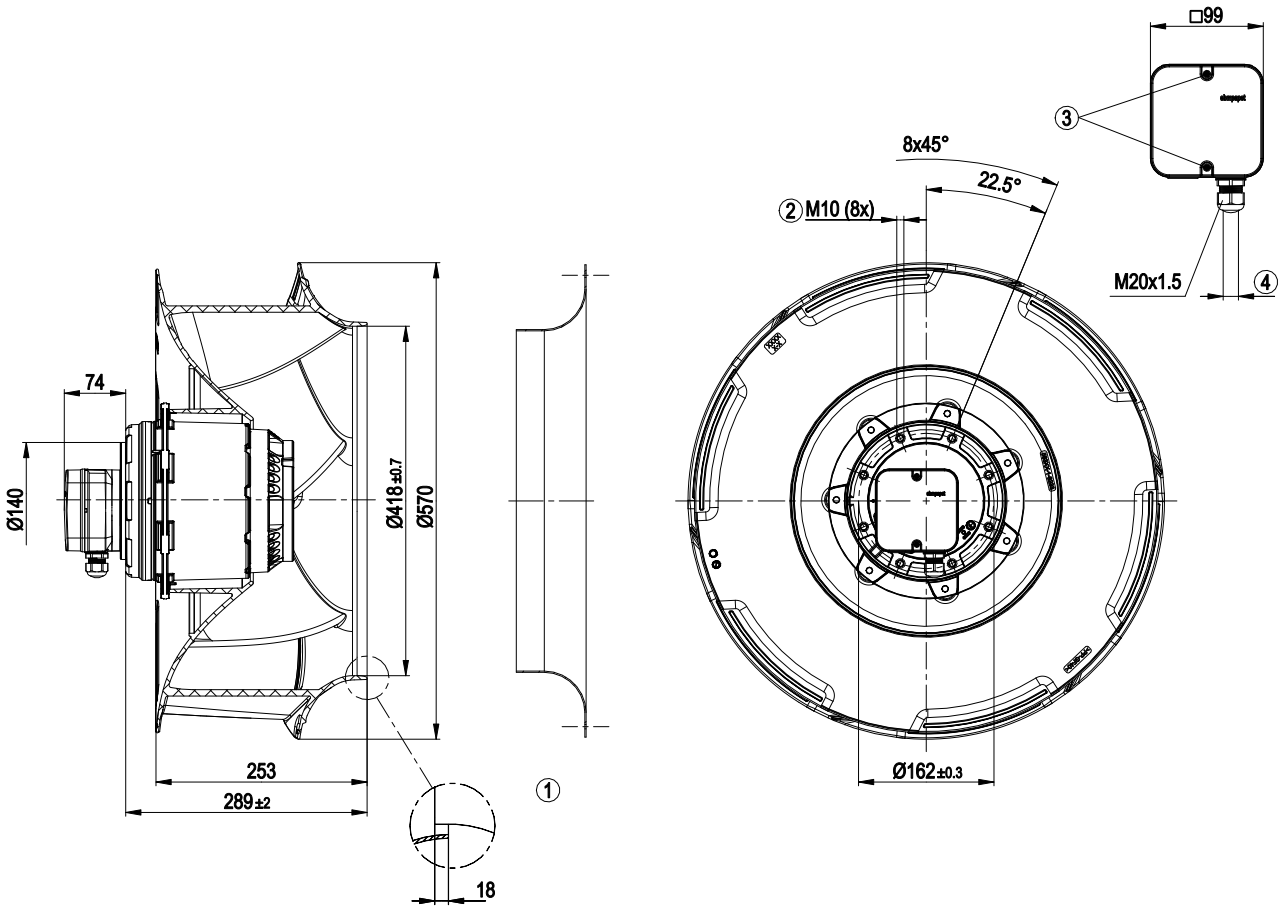
Product drawing



1	Accessory part: inlet ring 54482-2-4013 not included in scope of delivery
2	Max. clearance for screw 18 mm
3	Tightening torque 1.5 ± 0.2 Nm
4	Cable diameter min. 7 mm, max. 14 mm, tightening torque 2 ± 0.3 Nm

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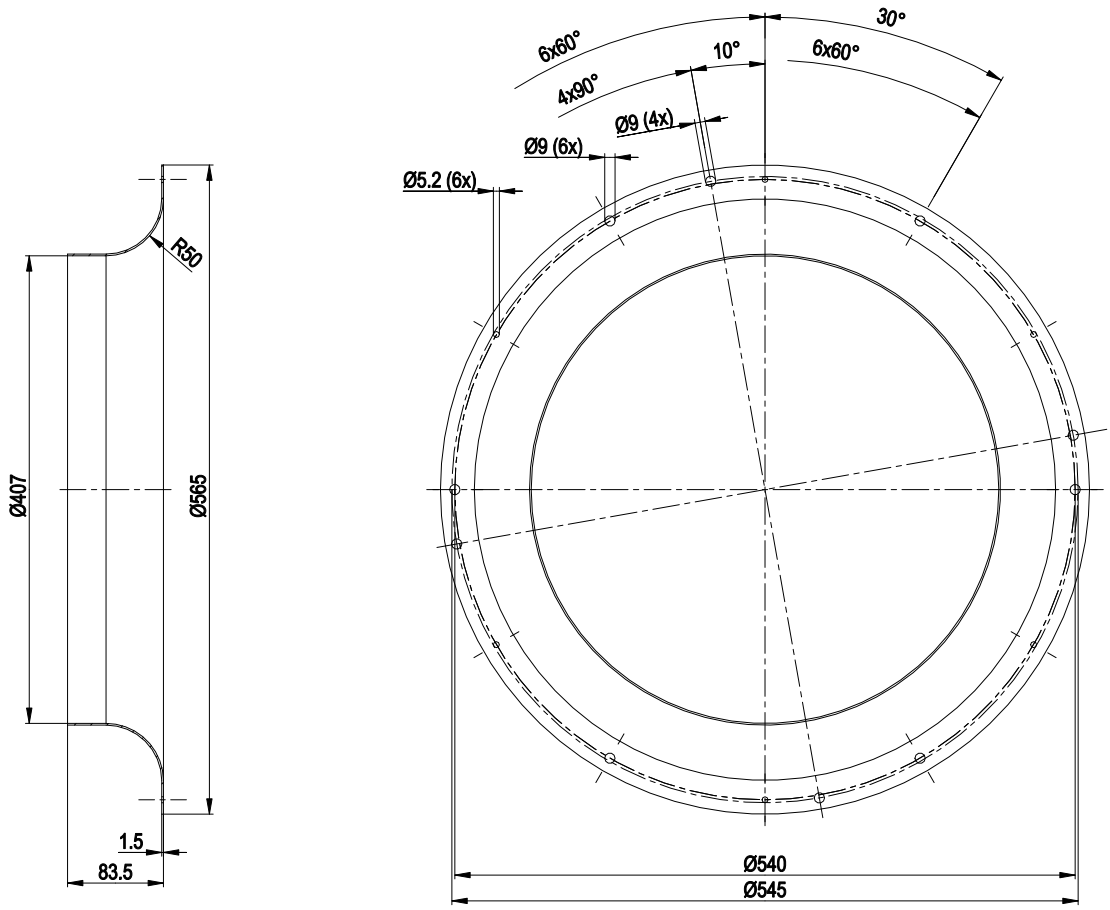
Accessory part



Accessory part: inlet ring 54482-2-4013 not included in scope of delivery

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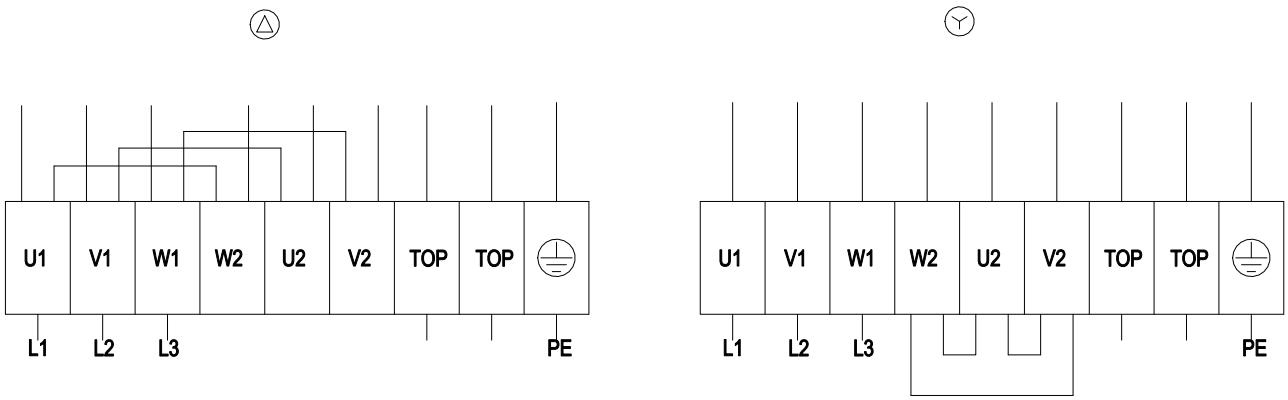
Connection diagram



Δ	Delta connection	Y	Star connection	L1	= U1 = black
L2	= V1 = blue	L3	= W1 = brown	W2	yellow
U2	green	V2	white	TOP	2x gray
PE	green/yellow				

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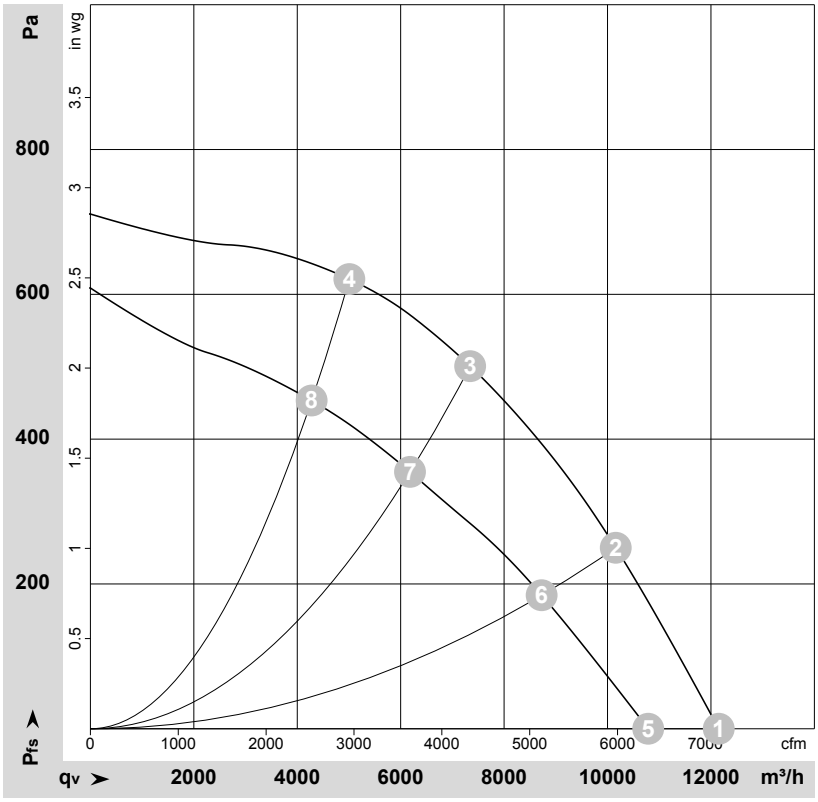
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-166989-1
Measurement: LU-167146-1

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

	Wired	U	f	n	P_e	I	LpA_{in}	LwA_{in}	LwA_{out}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	Δ	400	50	1420	1453	3.22	77	84	87	12150	0	7150	0.00
2	Δ	400	50	1395	1790	3.60	73	80	84	10160	250	5980	1.00
3	Δ	400	50	1390	1950	3.95	71	78	83	7345	500	4325	2.01
4	Δ	400	50	1390	1821	3.63	73	80	84	5005	620	2945	2.49
5	Y	400	50	1260	1151	1.96	74	82	84	10785	0	6350	0.00
6	Y	400	50	1200	1357	2.30	70	77	80	8725	186	5135	0.75
7	Y	400	50	1160	1450	2.45	67	74	79	6180	355	3640	1.43
8	Y	400	50	1190	1374	2.33	68	75	80	4280	454	2520	1.82

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
LwA_{out} = Sound power level outlet side · q_V = Air flow · p_{fs} = Pressure increase

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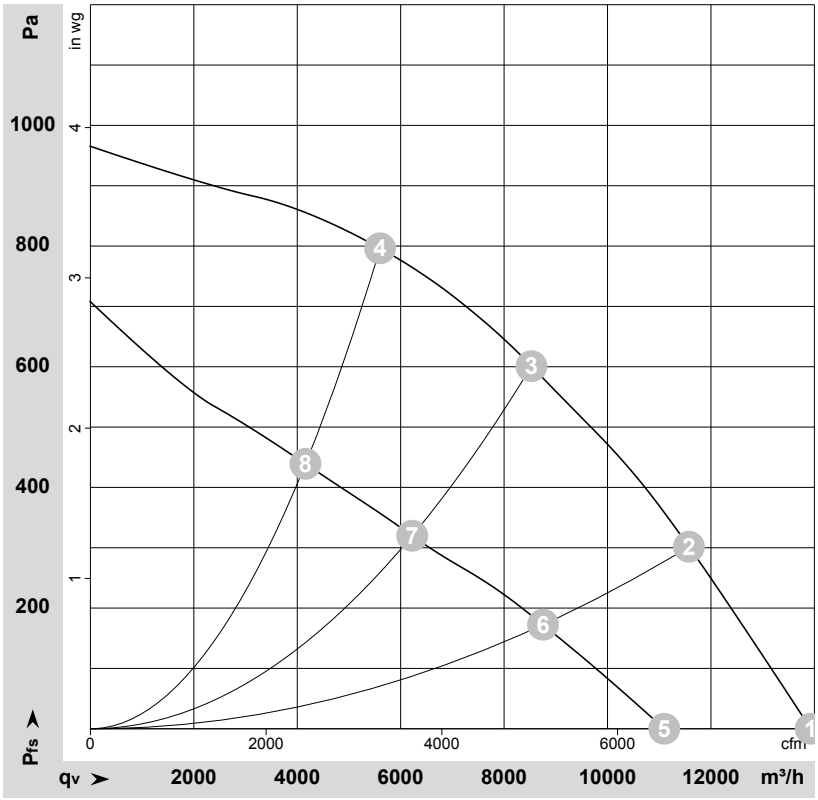
Curves: Air performance 60 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-167578-1
Measurement: LU-167602-1

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

	Wired	U	f	n	P_e	I	LpA_{in}	LwA_{in}	LwA_{out}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	Δ	400	60	1630	2275	4.00	80	87	91	13930	0	8200	0.00
2	Δ	400	60	1575	2751	4.73	76	84	88	11575	300	6815	1.20
3	Δ	400	60	1550	2990	5.25	74	81	86	8530	600	5020	2.41
4	Δ	400	60	1565	2795	4.77	76	83	87	5600	800	3295	3.21
5	Y	400	60	1305	1583	2.77	75	83	85	11095	0	6530	0.00
6	Y	400	60	1190	1751	3.10	71	78	81	8750	173	5150	0.69
7	Y	400	60	1130	1800	3.20	66	73	78	6225	320	3665	1.28
8	Y	400	60	1160	1735	3.06	68	75	80	4160	439	2450	1.76

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
LwA_{out} = Sound power level outlet side · q_V = Air flow · p_{fs} = Pressure increase