AC centrifugal fan - RadiCal

backward-curved, single-intake

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	**R4D400-RO12-09**
Motor	**M4D094-HA**

Phase		3~	3~	3~	3~	3~
Nominal voltage	VAC	230	230	400	400	460
Wiring		Δ	Δ	Y	Y	Y
Frequency	Hz	50	60	50	60	60
Method of obtaining data		ml	ml	ml	ml	ml
Valid for approval/standard		CE	CE	CE	CE	CE
Speed (rpm)	min^{-1}	1410	1610	1410	1610	1650
Power consumption	W	490	740	490	740	780
Current draw	A	2.2	2.36	1.27	1.36	1.4
Min. ambient temperature	°C	-40	-40	-40	-40	-40
Max. ambient temperature	°C	60	50	60	50	50
Starting current	A	9.7	9	5.6	5.2	

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 (EN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	50.6	48.3
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		64.3	62
05 Variable speed drive		No	

09 Power consumption P_e	kW	0.49
09 Air flow q_v	m^3/h	2810
09 Pressure increase p_{fs}	Pa	319
10 Speed (rpm) n	min^{-1}	1410
11 Specific ratio*		1.00

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-172257

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Technical description

Weight	8.8 kg
Size	400 mm
Motor size	94
Rotor surface	Painted black
Impeller material	PP plastic
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2
Max. permitted ambient temp. for motor (transport/storage)	+70 °C
Min. permitted ambient temp. for motor (transport/storage)	-40 °C
Installation position	Any
Condensation drainage holes	None
Mode	S1
Motor bearing	Ball bearing with low-temperature lubricant
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	< 0.75 mA
Motor protection	Thermal overload protector (TOP) with basic insulation
With cable	Variable
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60034-1 (2010); CE
Approval	UL 1004-1; EAC

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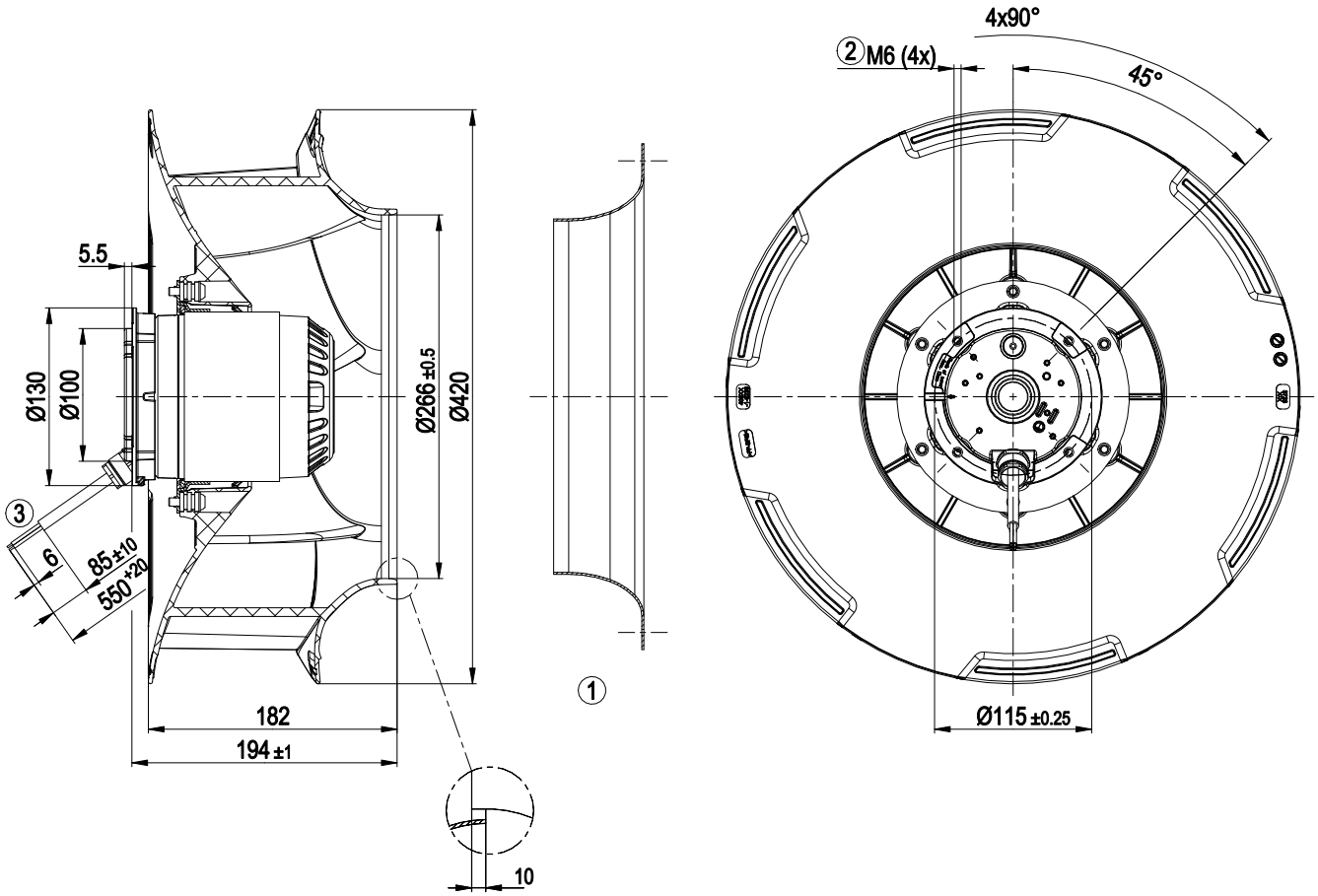
Product drawing



1	Accessory part: inlet ring 54476-2-4013 not included in scope of delivery
2	Max. clearance for screw 12 mm
3	Cable silicone 9G 0.75 mm², 9x crimped splices

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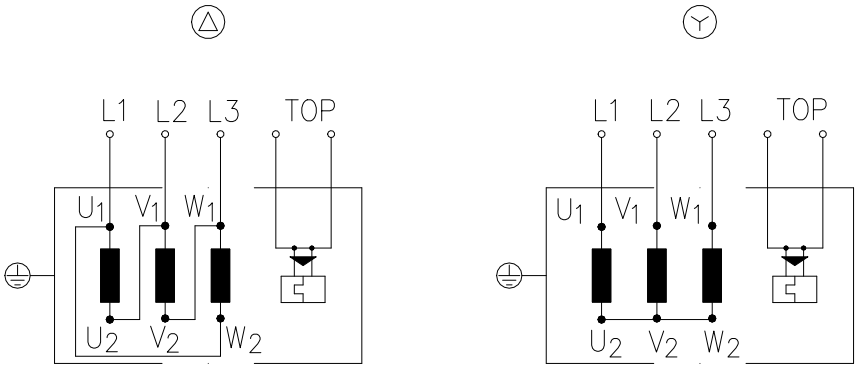
Connection diagram



Change of rotation direction by reversing two phases

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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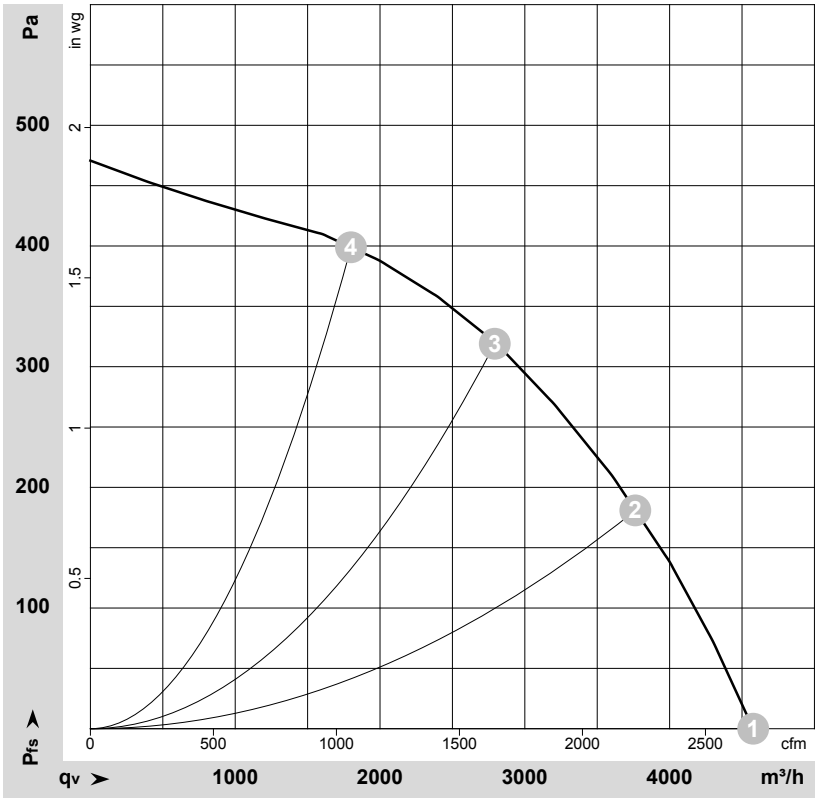
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-172257-1

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	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	Y	400	50	1435	389	1.24	4570	0	2690	0.00
2	Y	400	50	1415	475	1.29	3765	181	2215	0.73
3	Y	400	50	1410	490	1.27	2790	320	1645	1.28
4	Y	400	50	1420	459	1.27	1800	399	1060	1.60

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · q_V = Air flow · p_{fs} = Pressure increase

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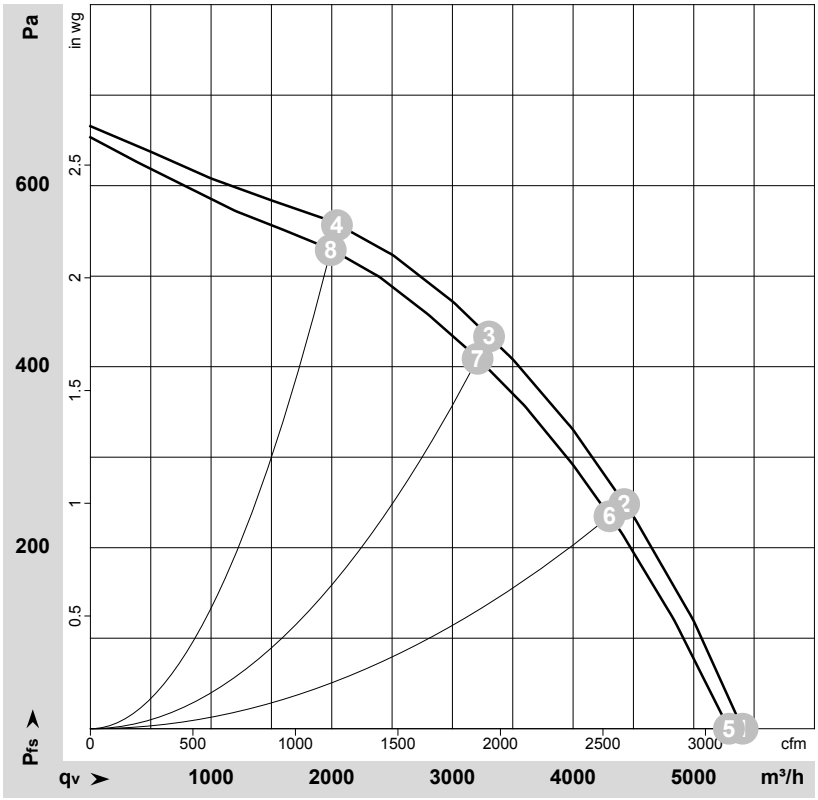
Curves: Air performance 60 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-172363-1
Measurement: LU-172362-1

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	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	m^3/h	Pa	cfm	in. wg
1	Y	460	60	1700	598	1.27	5400	0	3180	0.00
2	Y	460	60	1665	754	1.41	4425	249	2605	1.00
3	Y	460	60	1650	780	1.40	3305	433	1945	1.74
4	Y	460	60	1670	713	1.35	2045	558	1200	2.24
5	Y	400	60	1665	563	1.16	5290	0	3115	0.00
6	Y	400	60	1620	710	1.35	4300	235	2530	0.94
7	Y	400	60	1610	740	1.36	3210	410	1890	1.65
8	Y	400	60	1630	675	1.30	1990	530	1170	2.13

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · q_V = Air flow · p_{fs} = Pressure increase