AC centrifugal fan - RadiCal

backward-curved, single-intake

Nominal data

Type	**R4E400-RO09-01**			
Motor	**M4E094-HA**			
Phase		1~	1~	1~
Nominal voltage	VAC	230	230	230
Frequency	Hz	50	60	60
Method of obtaining data		ml	ml	ml
Valid for approval/standard		CE	CE	CE
Speed (rpm)	min^{-1}	1340	1430	1470
Power consumption	W	470	650	670
Current draw	A	2.33	3.0	2.97
Capacitor	µF	9	9	10
Capacitor voltage	VDB	400	400	450
Capacitor standard		S0 (CE)	S0 (CE)	S2 (CE)
Min. back pressure	Pa	0	0	
Min. back pressure	in. wg	0	0	
Min. ambient temperature	°C	-40	-40	-40
Max. ambient temperature	°C	65	50	60
Starting current	A	5.9		

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}	%	48.6	48.2
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		62.4	62
05 Variable speed drive		No	

09 Power consumption P_e	kW	0.48
09 Air flow q_v	m^3/h	2810
09 Pressure increase p_{fs}	Pa	306
10 Speed (rpm) n	min^{-1}	1390
11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

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

LU-141329

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings).
The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again.

The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).

R4E400-RO09-01 ebmpapst Datasheet FansCo sales@fansco.com www.fansco.com

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Technical description

Weight	8.84 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
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	None
Mode	S1
Motor bearing	Ball bearing
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) with basic insulation
With cable	Variable
Protection class	I (with customer connection of protective earth)
Motor capacitor according to EN 60252-1 in safety protection class	S0
Conformity with standards	EN 60034-1 (2010); CE; UKCA
Approval	EAC; CCC

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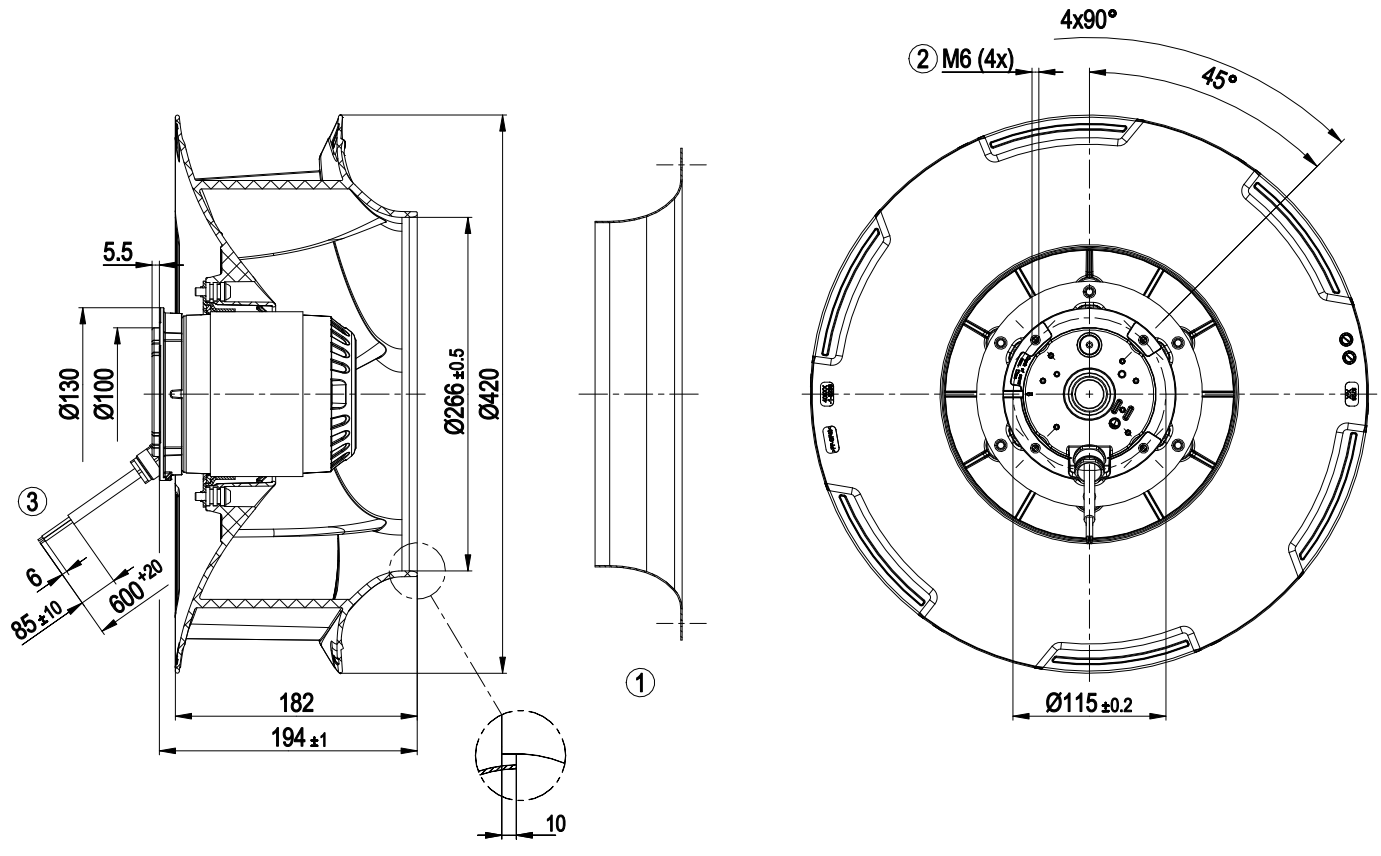
Product drawing



1	Accessory part: inlet ring 54476-2-4013 not included in scope of delivery
2	Max. clearance for screw 12 mm
3	Cable silicone 6G 0.5 mm²
	6x splice

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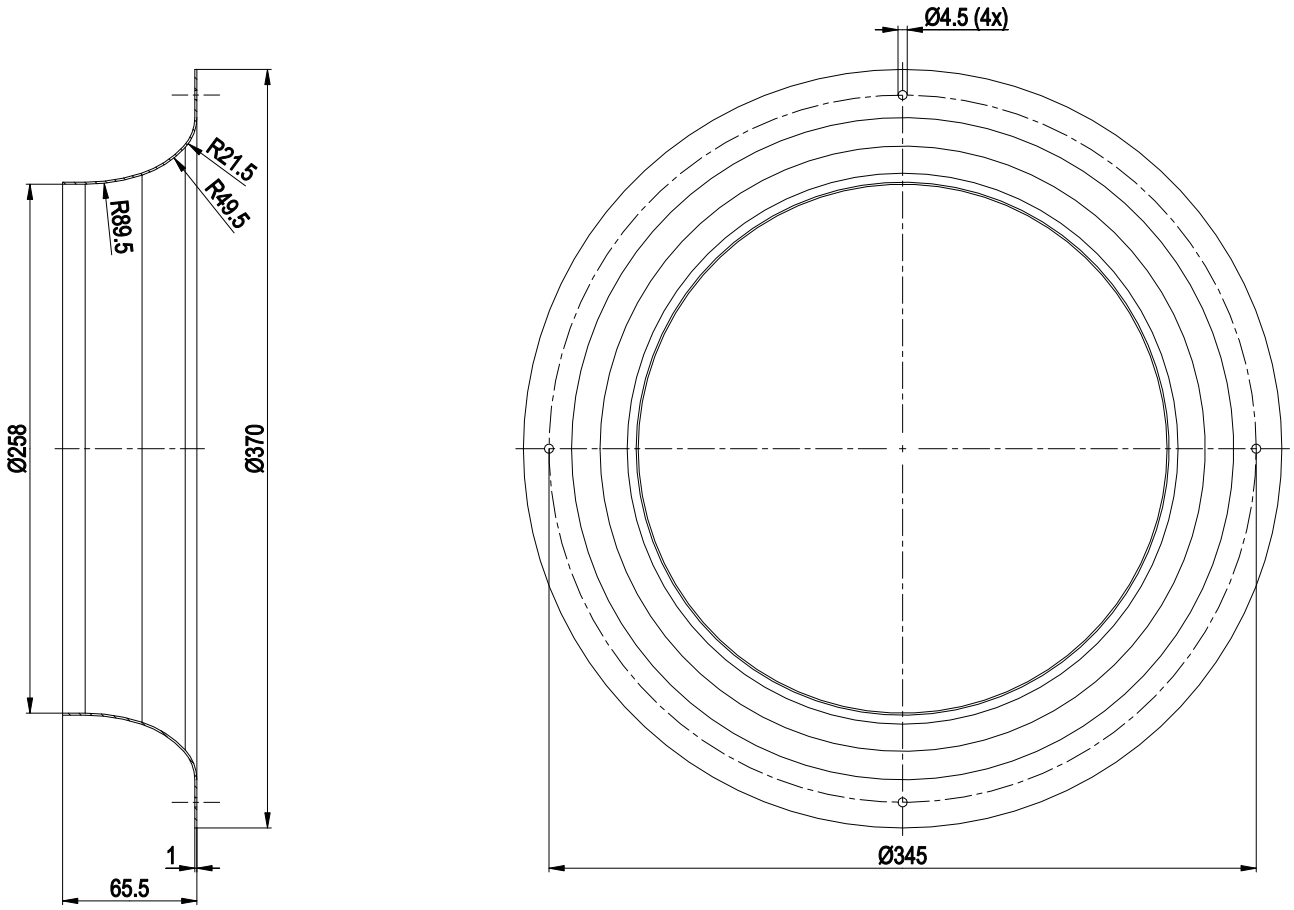
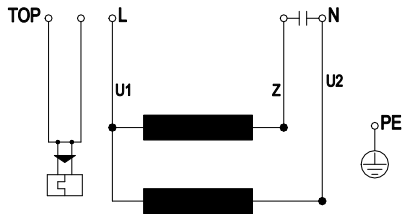
Accessory part



	Inlet ring 54476-2-4013

Connection diagram



TOP	2x gray	U1	blue	Z	brown
U2	black	PE	green/yellow		

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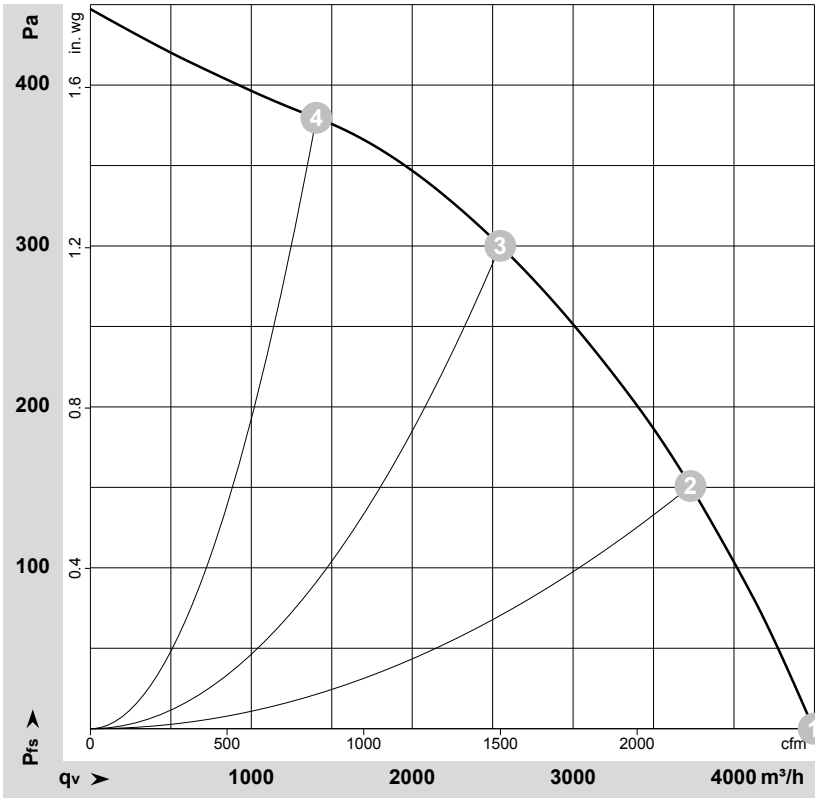
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-152577-1

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}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	1~	230	50	1395	368	1.95	70	78	4495	0	2645	0.00
2	1~	230	50	1360	439	2.22	66	73	3730	150	2195	0.60
3	1~	230	50	1340	470	2.33	58	66	2545	300	1500	1.20
4	1~	230	50	1375	401	2.06	60	68	1405	380	825	1.53

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
q_V = Air flow · p_{fs} = Pressure increase

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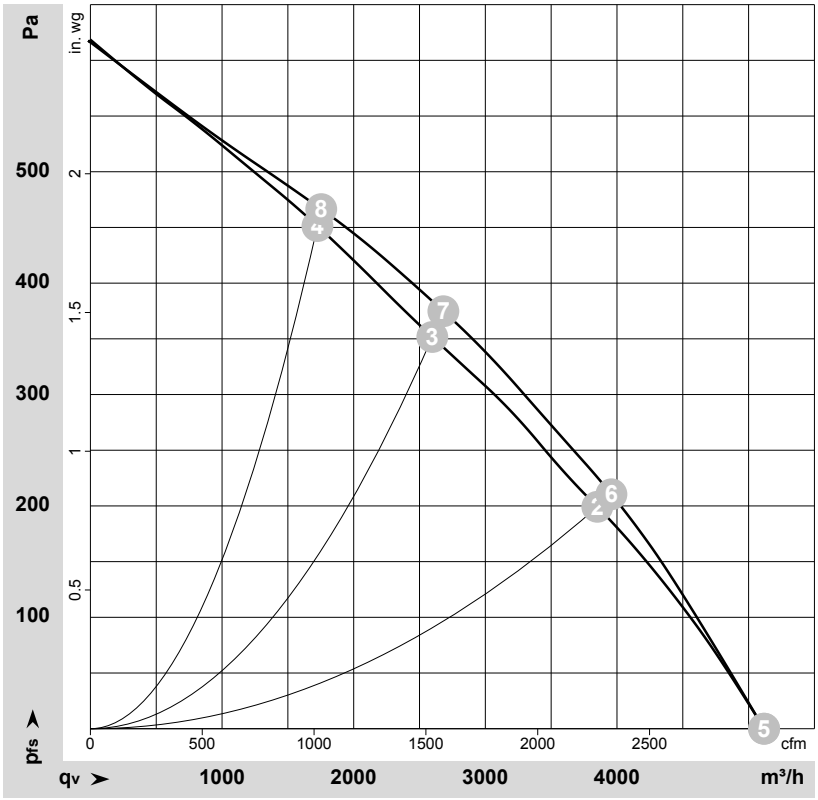
Curves: Air performance 60 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-152583-1
Measurement: LU-173673-1

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

	Stage	Wired	U	f	n	P_e	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	in. wg
1	9µF	1~	230	60	1585	527	2.35	72	80	5120	0	3010	0.00
2	9µF	1~	230	60	1450	637	2.96	64	72	3850	200	2265	0.80
3	9µF	1~	230	60	1430	650	3.00	60	68	2595	350	1530	1.41
4	9µF	1~	230	60	1510	590	2.69	63	71	1725	450	1015	1.81
5	10µF	1~	230	60	1595	540	2.37			5115	0	3010	0.00
6	10µF	1~	230	60	1500	648	2.88			3960	212	2330	0.85
7	10µF	1~	230	60	1470	670	2.97			2680	375	1580	1.51
8	10µF	1~	230	60	1540	610	2.69			1755	466	1030	1.87

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
q_V = Air flow · p_{fs} = Pressure increase