AC centrifugal fan - RadiCal

R2D250-RA28-17 ebmpapst Datasheet
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Nominal data

Type	**R2D250-RA28-17**
Motor	**M2D068-EC**

Phase		3~	3~	3~
Nominal voltage	VAC	400	400	460
Connection		Y	Y	Y
Frequency	Hz	50	60	60
Type of data definition		ml	ml	ml
Valid for approval / standard		CE	CE	UL 2111
Speed (rpm)	min^{-1}	2560	2700	2910
Power input	W	200	290	315
Current draw	A	0.32	0.44	0.43
Min. back pressure	Pa	0	0	0
Min. ambient temperature	°C	-25	-25	-25
Max. ambient temperature	°C	80	60	60
Starting current	A	0.9	0.9	1.08

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 η_{es}	%	43.9	43.9
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		62	62
05 Variable speed drive		No	

09 Power input P_e	kW	0.19
09 Air flow q_v	m^3/h	805
09 Pressure increase p_{fs}	Pa	374
10 Speed (rpm) n	min^{-1}	2565
11 Specific ratio*		1.00

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

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

LU-152710

Technical features

Mass	3 kg
Size	250 mm
Surface of rotor	Coated in black
Material of impeller	PA plastic
Number of blades	7
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP 44; Depending on installation and position as per EN 60034-5
Insulation class	"F"
Humidity (F)/environmental protection class (H)	F2-1
Max. permissible ambient motor temp. (transp./ storage)	+ 80 °C
Min. permissible ambient motor temp. (transp./storage)	- 40 °C
Mounting position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensate discharge holes	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	< 0.75 mA
Motor protection	Thermal overload protector (TOP) wired internally
Cable exit	Lateral
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 60034-1; EN 60204-1; CE
Approval	CSA C22.2 No.77; UL 2111

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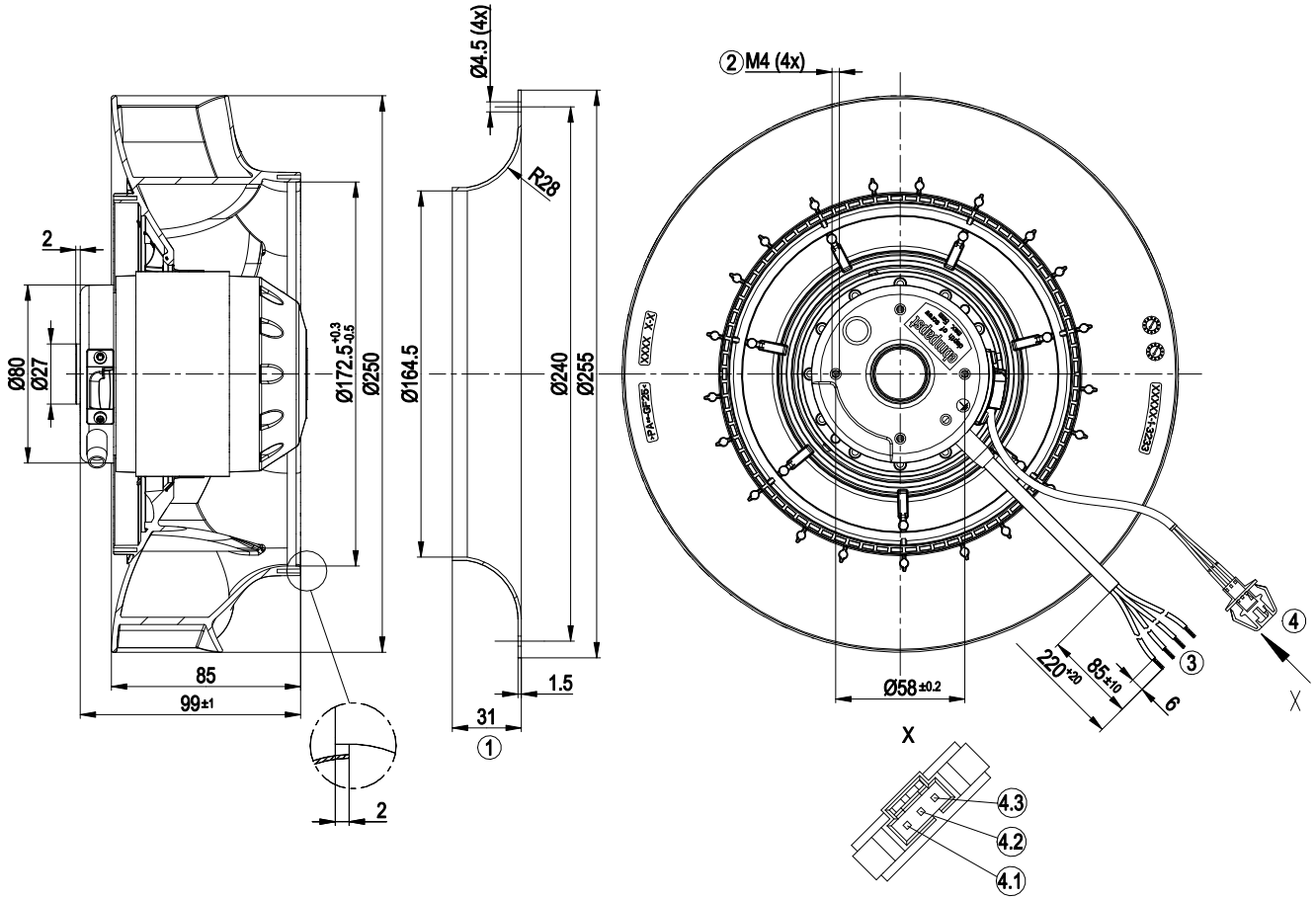
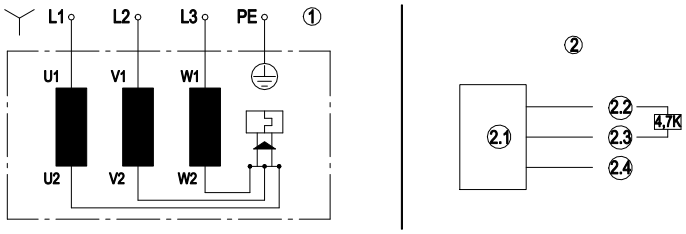
Product drawing



1	Accessory part: inlet nozzle 96359-2-4013, not included in scope of delivery
2	Thread reach max. 5 mm
3	Connection line PFA AWG20 (green/yellow AWG18), 4x lead tips crimped
4	Connection line Raychem Spec. 44, AWG24, connector housing 3-pole Molex 70107-0037, 3x plug pin Molex 16-02-0078
4.1	red (Hall IC)
4.2	white (Hall IC)
4.3	black (Hall IC)

Connection screen



Note: Direction of rotation changes when two phases are reversed

1	Fan connection diagram
L1	black
L2	Blue
L3	brown
PE	green/yellow
2	Hall IC circuit
2.1	Hall IC
2.2	Red (+5V)
2.3	White (out)
2.4	Black (0V)

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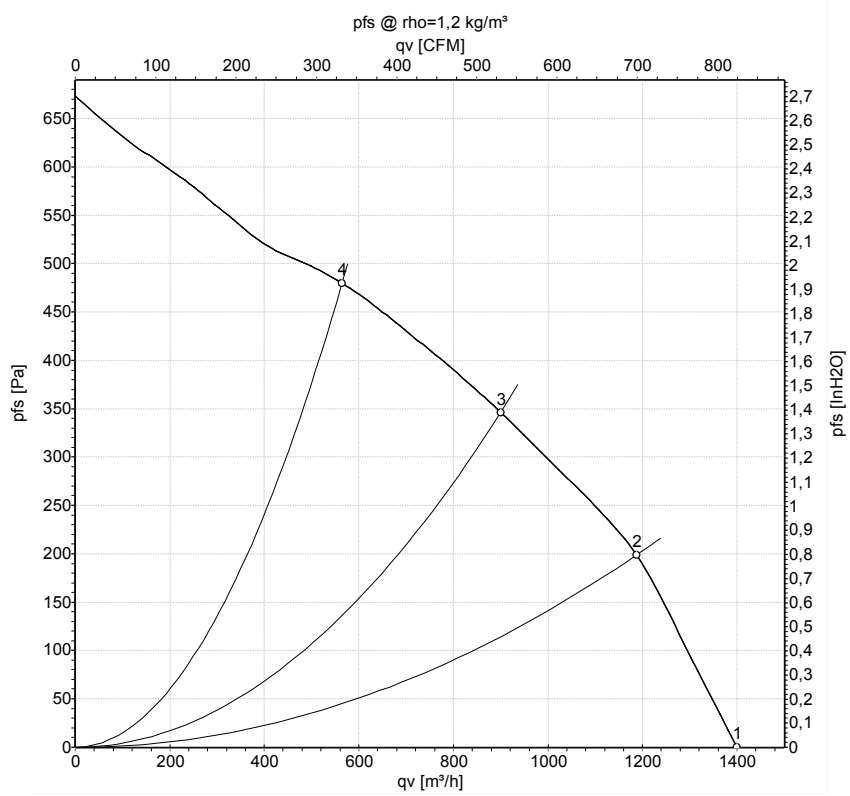
Charts: Air flow 50 Hz



Measurement: LU-152710-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. 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_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	inH2O
1	400	50	2665	161	0.28	67	75	1400	0	825	0.00
2	400	50	2615	180	0.30	63	71	1185	200	700	0.80
3	400	50	2560	200	0.32	60	68	900	350	530	1.41
4	400	50	2610	183	0.30	65	72	565	480	330	1.93

U = Supply voltage · f = Frequency · n = Speed (rpm) · P_e = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side · q_V = Air flow
p_{fs} = Pressure increase

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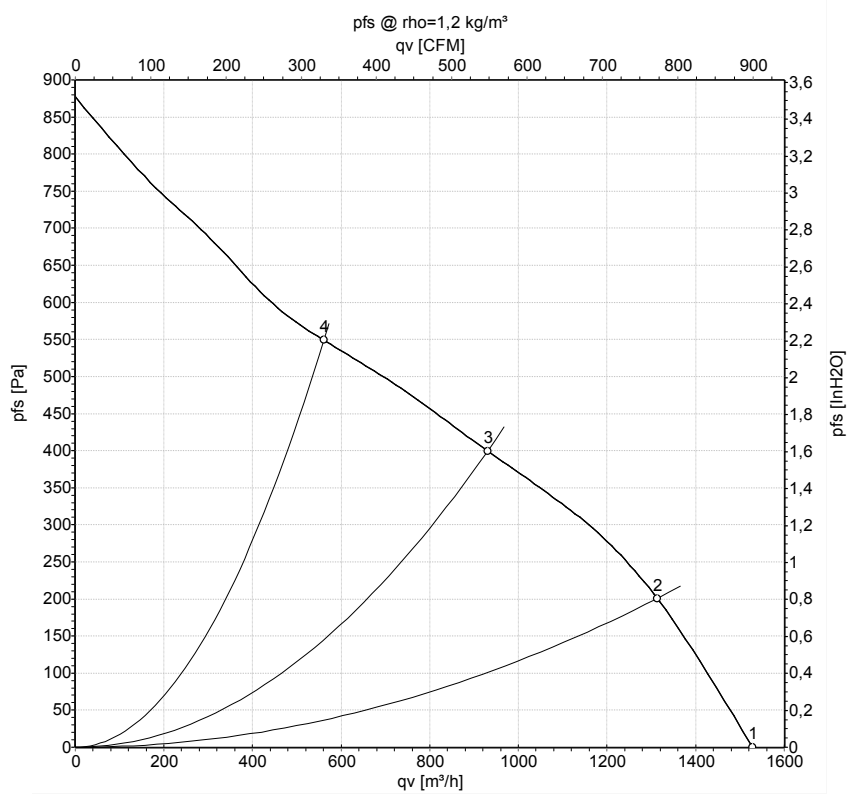
Charts: Air flow 60 Hz



Measurement: LU-152709-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. 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_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	inH2O
1	400	60	2915	239	0.37	70	77	1530	0	900	0.00
2	400	60	2820	262	0.40	65	73	1315	200	775	0.80
3	400	60	2700	290	0.44	60	68	930	400	545	1.61
4	400	60	2785	270	0.41	66	74	560	550	330	2.21

U = Supply voltage · f = Frequency · n = Speed (rpm) · P_e = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side · q_V = Air flow
p_{fs} = Pressure increase