AC centrifugal fan - RadiCal

backward curved, single inlet

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Nominal data

Type	**R2D190-RA22-12**			
Motor	**M2D068-BF**			
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}	2450	2550	2750
Power input	W	60	65	83
Current draw	A	0.13	0.11	0.12
Min. ambient temperature	°C	-25	-25	-25
Max. ambient temperature	°C	50	50	50

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

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Technical features

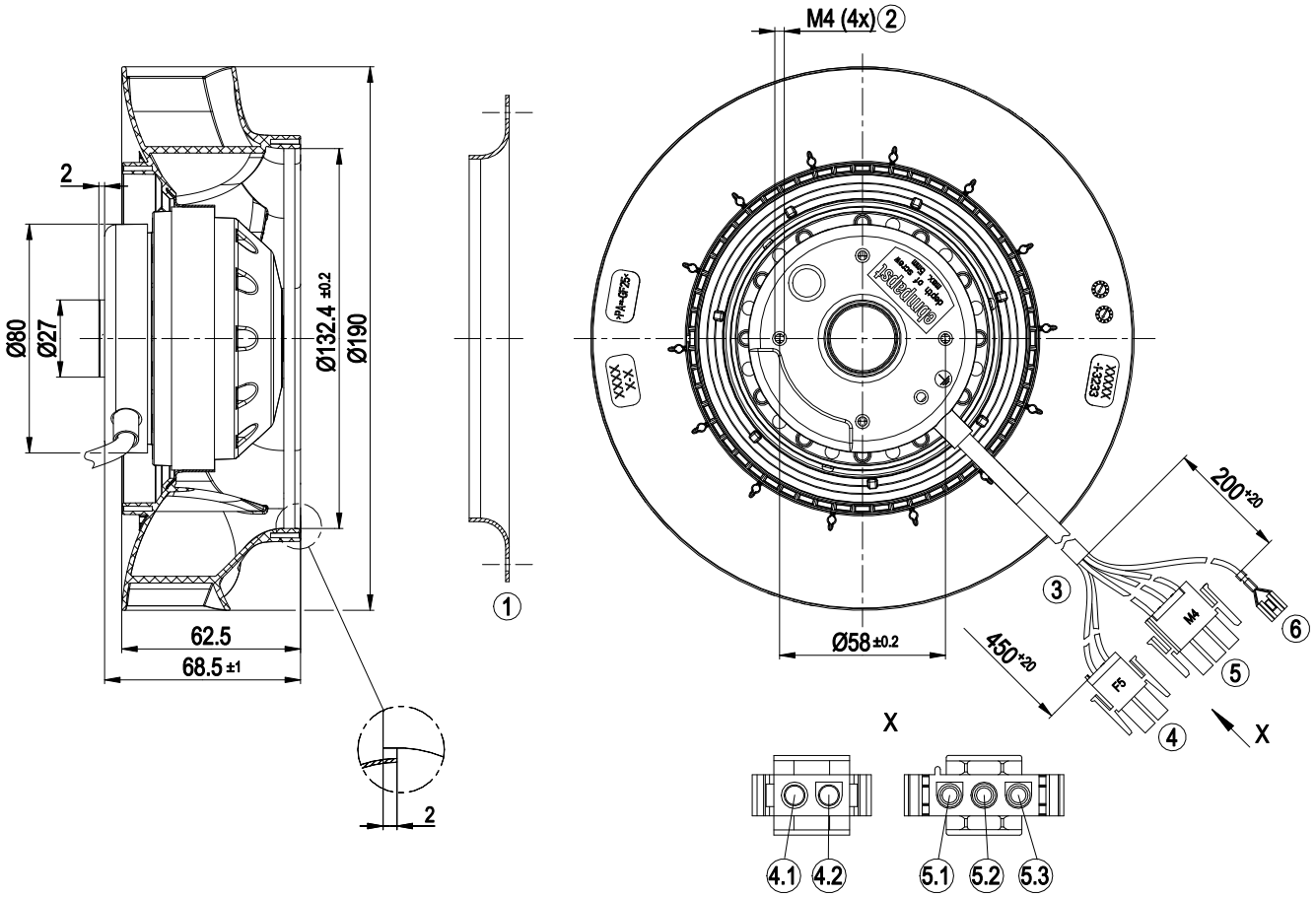
Mass	1.3 kg
Size	190 mm
Motor size	68
Surface of rotor	Coated in black
Material of impeller	PP plastic
Number of blades	7
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP44; Depending on installation and position as per EN 60034-5
Insulation class	"B"
Humidity (F) / environmental protection class (H)	H1+
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
Condensation drainage holes	Rotor-side
Operation mode	S1
Motor bearing	Ball bearing
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	< 0.75 mA
Electrical connection	Connector with connection line
Motor protection	Thermal overload protector (TOP) wired internally
Cable exit	Lateral
Safety classification	I; If a protective earth is connected by the customer This component to be built-in can have several local protection class ratings. The specification refers to the basic design of this component. The final protection class is based on the intended installation and connection of the component.
Product conforming to standard	EN 60034-1; EN 60204-1; EN 60335-1; CE
Approval	CSA C22.2 no. 77; UL 1004-3

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Product drawing



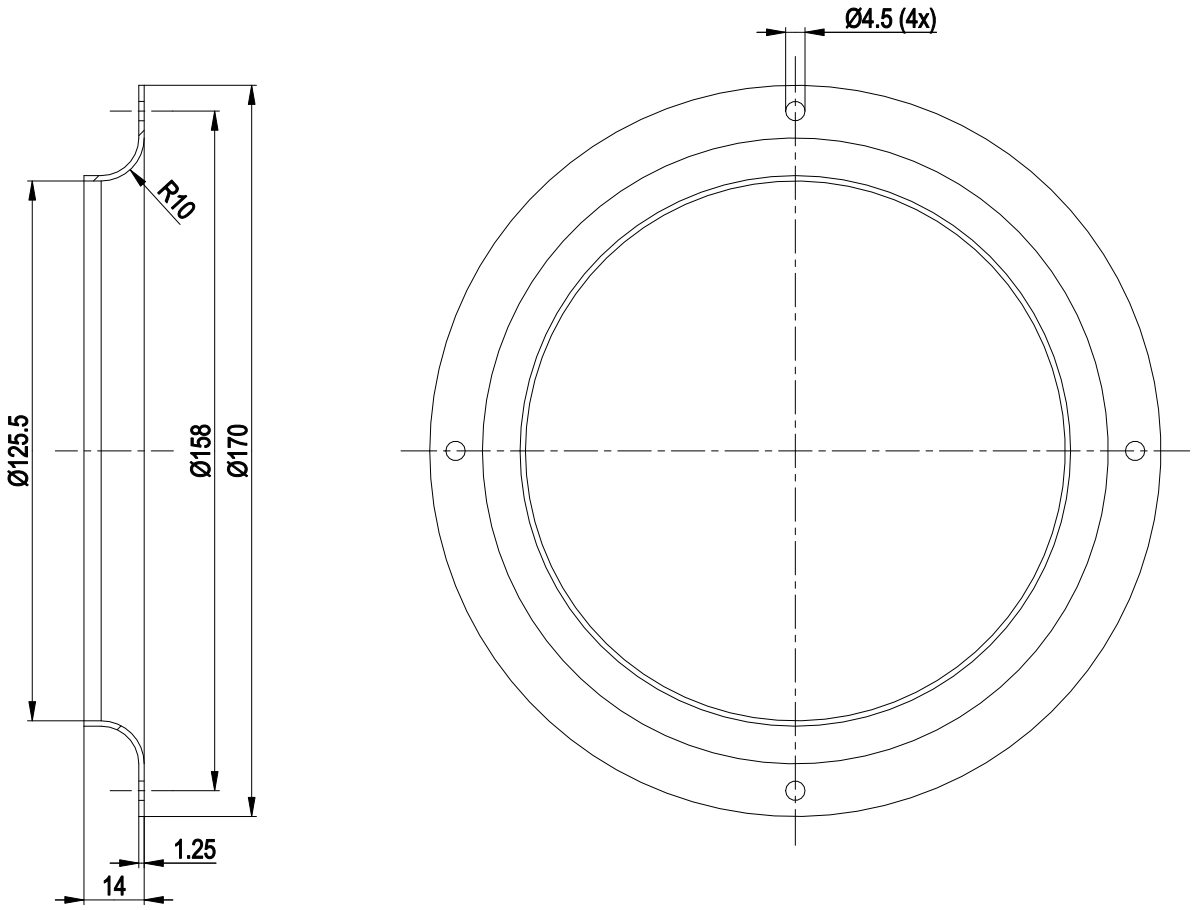
1	Accessory part: Inlet nozzle 09576-2-4013 not included in scope of delivery
2	Thread reach max. 5 mm
3	Connection line PFA AWG20 (green/yellow AWG18)
4	2-pole connector housing tyco 1-1703061-3
	2x plug pin tyco 926885-1
4.1	TOP
4.2	TOP
5	3-pole connector housing tyco 2178473-3
5	3x plug pin tyco 926885-1
5.1	L3
5.2	L2
5.3	L1
6	PE (green/yellow), threaded pin 6.3x0.8 lockable

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Accessory part



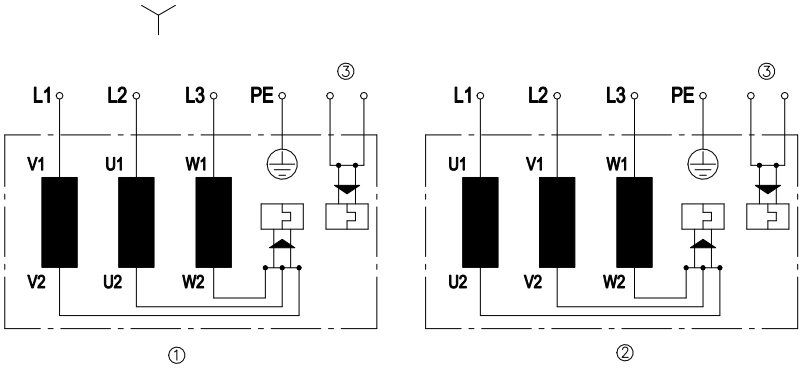
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Connection screen



Change in direction of rotation by reversing two phases

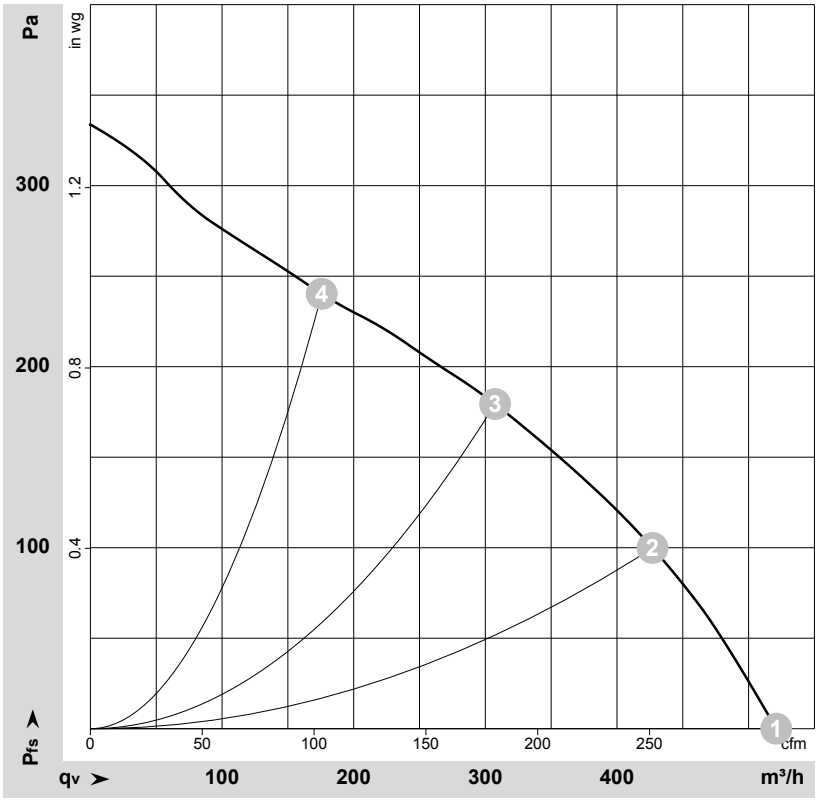
	Three-phase motor
Y	Star connection
1	Anti-clockwise operation
L1	= V1 = blue
L2	= U1 = black
L3	= W1 = brown
2	Clockwise operation
L1	=U1=black
L2	=V1=blue
L3	=W1=brown
PE	green/yellow
3	TOP signal, 2x grey

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Charts: Air flow 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-160894-1

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

	Conn.	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	2540	54	0.13	520	0	305	0.00
2	Y	400	50	2485	56	0.13	425	100	250	0.40
3	Y	400	50	2450	60	0.13	305	180	180	0.72
4	Y	400	50	2490	56	0.13	175	240	105	0.96

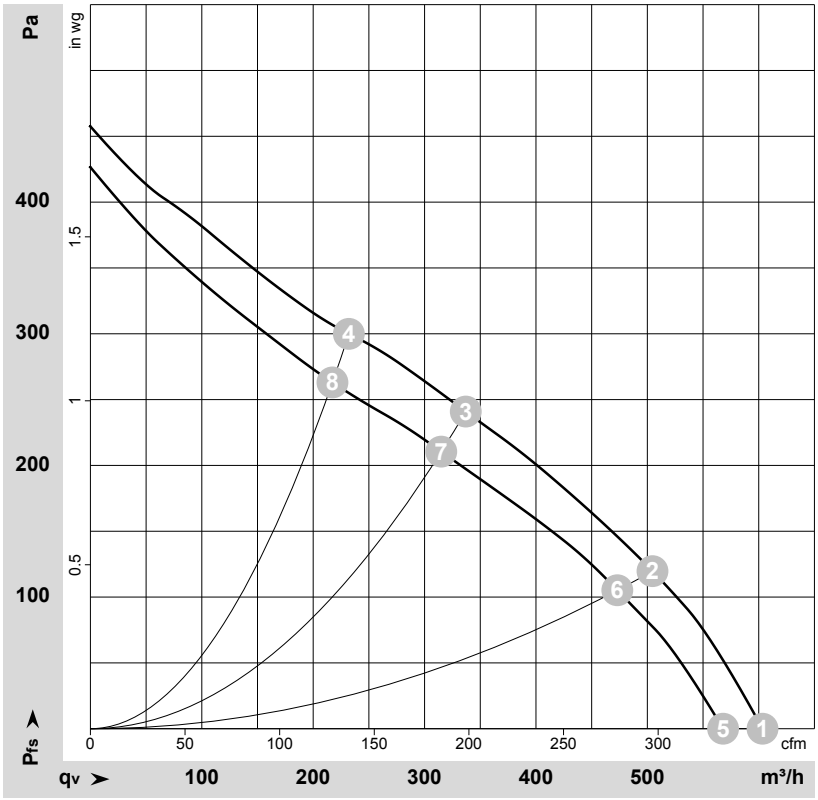
Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed (rpm) · P_e = Power input · I = Current draw · q_V = Air flow · p_{fs} = Pressure increase

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Charts: Air flow 60 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-160948-1
Measurement: LU-160947-1

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

	Conn.	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	2930	70	0.13	605	0	355	0.00
2	Y	460	60	2865	73	0.13	505	120	295	0.48
3	Y	460	60	2750	80	0.13	335	240	200	0.96
4	Y	460	60	2815	76	0.13	230	300	135	1.20
5	Y	400	60	2765	57	0.10	570	0	335	0.00
6	Y	400	60	2695	61	0.11	475	105	280	0.42
7	Y	400	60	2550	65	0.11	315	210	185	0.84
8	Y	400	60	2650	63	0.11	215	263	130	1.06

Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed (rpm) · P_e = Power input · I = Current draw · q_V = Air flow · p_{fs} = Pressure increase

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