R4D450-AH03-01

AC centrifugal fan

backward-curved

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ErP2015 EXCEEDS THE NORM

Nominal data

Type	**R4D450-AH03-01**
Motor	**M4D110-IA**

Phase		3~	3~	3~	3~	3~	3~
Nominal voltage	VAC	230	230	277	400	400	480
Wiring		Δ	Δ	Δ	Y	Y	Y
Frequency	Hz	50	60	60	50	60	60
Method of obtaining data		ml	ml	ml	ml	ml	ml
Valid for approval/standard		CE	CE	CE	CE	CE	CE
Speed (rpm)	min^{-1}	1405	1600	1660	1405	1600	1660
Power consumption	W	810	1210	1320	810	1210	1320
Current draw	A	3.8	4.11	4.25	2.2	2.37	2.46
Min. back pressure	Pa	0	0	0	0	0	0
Min. back pressure	inH2O	0	0	0	0	0	0
Min. ambient temperature	°C	-40	-40	-40	-40	-40	-40
Max. ambient temperature	°C	80	65	65	80	65	65

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment
Subject to change

Data according to ErP Directive

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	50.5	50.5
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	0.8
09 Air flow q_v	m^3/h	3505
09 Pressure increase p_{fs}	Pa	411
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-101919

AC centrifugal fan

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Technical description

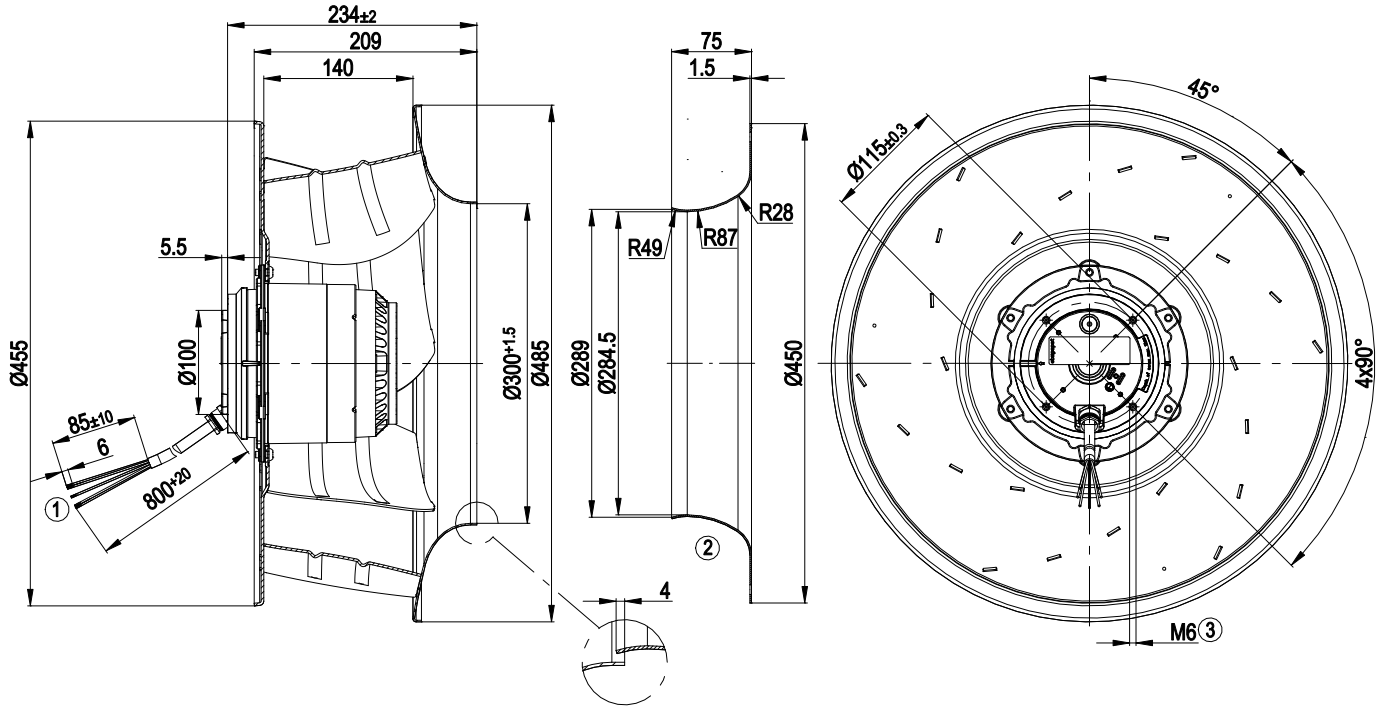
Weight	14.5 kg
Fan size	450 mm
Impeller material	Sheet aluminum
Number of blades	6
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F3-1
Max. permitted ambient temp. for motor (transport/storage)	+ 80 °C
Min. permitted ambient temp. for motor (transport/storage)	- 40 °C
Installation position	Shaft horizontal or rotor on bottom; rotor on top on request
Condensation drainage holes	On rotor side
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
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE
Approval	EAC; VDE; UL 1004-1; CSA C22.2 No. 100

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Product drawing



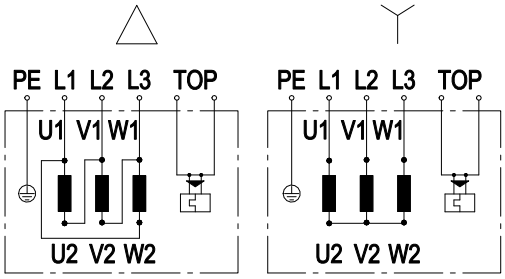
1	Cable silicone, 9x crimped splices
2	Accessory part: Inlet ring 63045-2-4013 not included in scope of delivery. Other inlet rings on request.
3	Max. clearance for screw 12 mm

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Connection diagram



Note: Change of rotation direction by reversing two phases

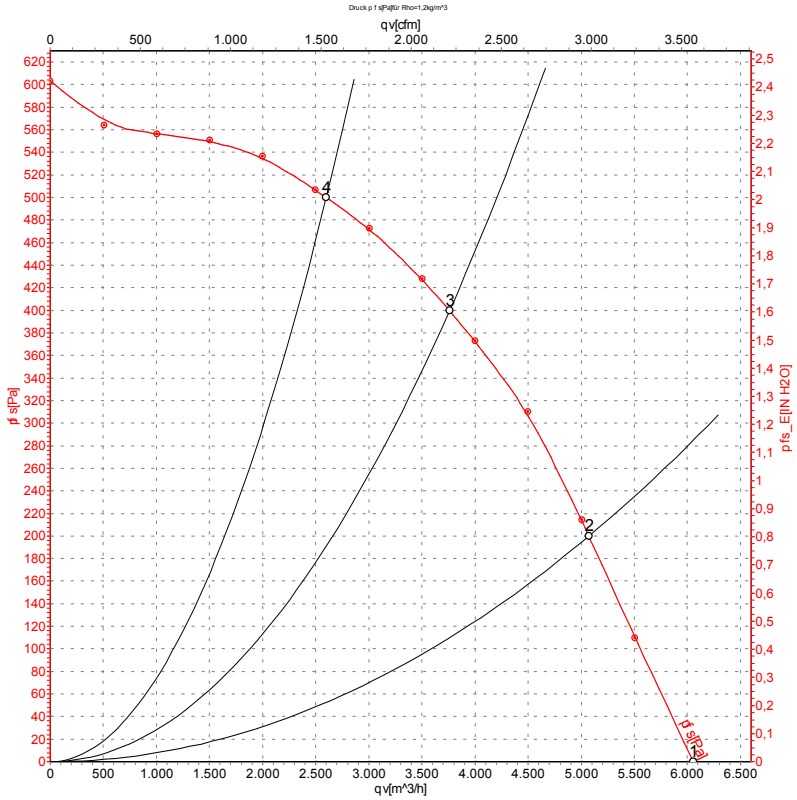
Δ	Delta connection	Y	Star connection	L1	black
L2	blue	L3	brown	U1	black
V1	blue	W1	brown	U2	green
V2	white	W2	yellow	TOP	2x gray
PE	green/yellow				

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Curves: Air performance 50 Hz



Measurement: LU-101919-1

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}	qv	p_{fs}	qv	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	CFM	inH2O
1	Y	400	50	1435	633	1.86	72	80	6055	0	3565	0.00
2	Y	400	50	1415	749	1.93	68	76	5070	200	2985	0.80
3	Y	400	50	1405	810	2.20	64	72	3760	400	2215	1.61
4	Y	400	50	1415	758	1.94	67	75	2600	500	1530	2.01

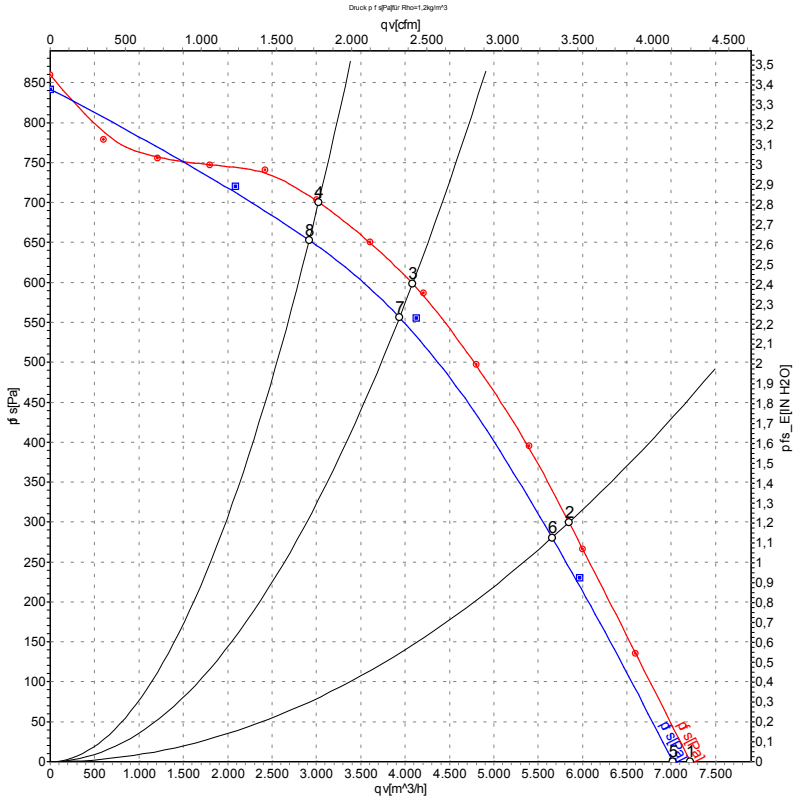
Wired = Wiring · U = Power supply · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
qv = Air flow · p_{fs} = Pressure increase

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Curves: Air performance 60 Hz



Measurement: LU-101921-1
Measurement: LU-103396-1

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}	qv	p_{fs}	qv	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	CFM	inH2O
1	Y	480	60	1700	1024	2.05	77	84	7215	0	4245	0.00
2	Y	480	60	1675	1225	2.21	73	81	5845	300	3440	1.20
3	Y	480	60	1660	1320	2.46	69	76	4085	600	2405	2.41
4	Y	480	60	1675	1231	2.21	71	79	3025	700	1780	2.81
5	Y	400	60	1660	956	1.86	76	84	7020	0	4130	0.00
6	Y	400	60	1625	1127	2.09	71	79	5655	285	3330	1.14
7	Y	400	60	1600	1210	2.37	68	76	3935	571	2315	2.29
8	Y	400	60	1630	1103	2.07	71	79	2920	653	1720	2.62

Wired = Wiring · U = Power supply · 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
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