

AC centrifugal fan

forward-curved, dual-intake
with housing (flange)

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General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen

Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	D2E146-HS97-03		
Motor	M2E068-DF		
Phase		1~	1~
Nominal voltage	VAC	230	230
Frequency	Hz	50	60
Method of obtaining data		fa	ml
Valid for approval/standard		CE	CE
Speed (rpm)	min ⁻¹	1350	1750
Power consumption	W	195	215
Current draw	A	0.86	0.94
Capacitor	µF	5	5
Capacitor voltage	VDB	400	400
Capacitor standard		S2 (CE)	S2 (CE)
Min. back pressure	Pa	0	150
Min. back pressure	in. wg	0	0.6
Min. ambient temperature	°C	-25	-25
Max. ambient temperature	°C	45	40

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

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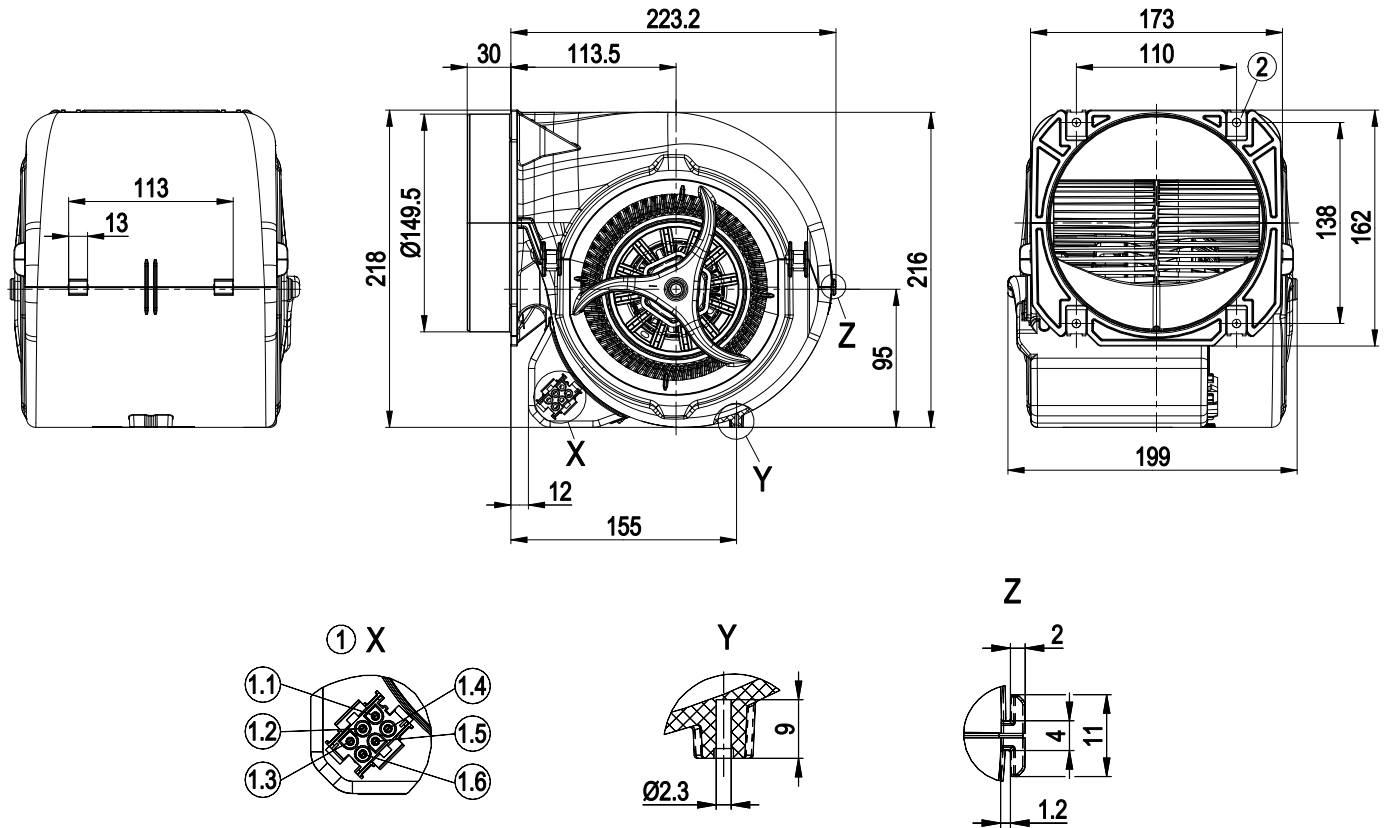
Technical description

Weight	2.98 kg
Size	146 mm
Motor size	68
Rotor surface	Unpainted
Terminal box material	PP plastic
Impeller material	PP plastic
Housing material	PP plastic
Motor suspension	Motor vibration-damped on both sides
Direction of rotation	Counterclockwise, viewed toward rotor
Degree of protection	IP20
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H0 - dry environment
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, open rotor
Mode	S1
Motor bearing	Ball bearing
Speed levels	4
Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)	< 0.75 mA
Electrical hookup	Plug; Via terminal box, capacitor integrated and connected
Motor protection	Thermal switch auto reset, internally connected
With cable	Variable
Protection class assignment	I; If a protective earth is connected by the customer This component for installation may have several local protection classes. This information relates to this component's basic design. The final protection class is based on the component's intended installation and connection.
Motor capacitor according to EN 60252-1 in safety protection class	S2
Conformity with standards	EN 60335-1; EN 60335-2-31; CE
Comment on CE	Ecodesign Directive 2009/125/EC + Fan Directive (EC) No. 327/2011 does not apply, as use only in range hoods with a total output of <280W.
Approval	EAC; CCC; VDE

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Product drawing

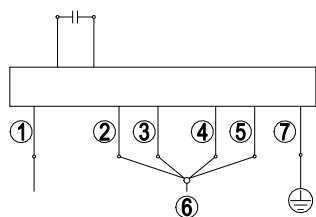


1	Coded plug system: 6-pole connector housing TE 2178773-1, 6x plug pin TE 926886-1
	The following cables: 21956-4-1040 (length 300 mm); 21957-4-1040 (length 450 mm); 21958-4-1040 (length 650 mm); 21959-4-1040 (length 1000 mm) are available as accessories
1.1	L = step 1
1.2	L = step 2
1.3	L = step 3
1.4	L = step 4
1.5	N
1.6	PE
2	4x sheet metal nut for thread EN ISO 1478-ST4.8 (min. screw length 14.5 mm plus material thickness of attachment)

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Connection diagram



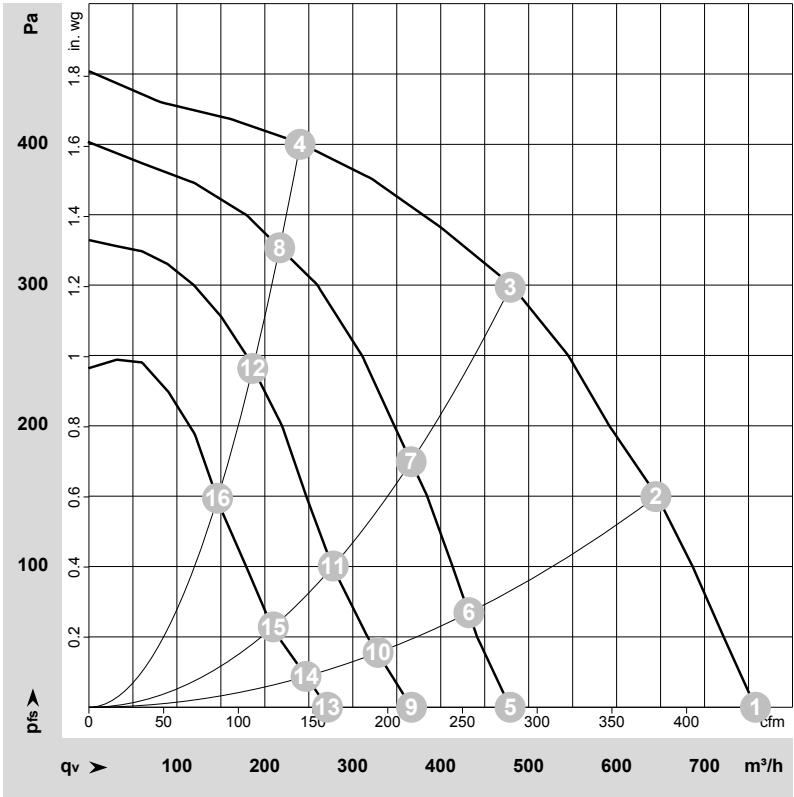
Note: High speed (step IV); low speed (step I); the switch must interrupt the circuit on switching.

1	N (blue)
2	Step I black 1/white
3	Step II black 2/red
4	Step III black 3/gray
5	Step IV black 4/black
6	L1
7	= PE = green/yellow

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Curves: Air performance 50 Hz



$\rho = 1.186 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-72087-1
Date: 2006-01-23
Nozzle: 66104-2-2945

Measurement: LU-72089-1
Date: 2006-01-23

Measurement: LU-72091-1
Date: 2006-01-23

Measurement: LU-72094-1
Date: 2006-01-23

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

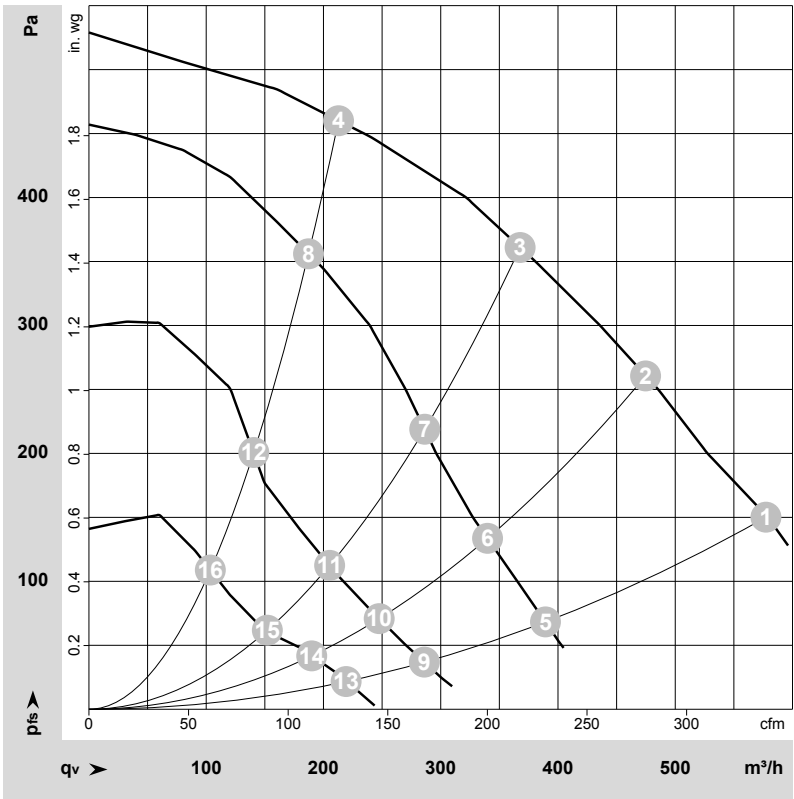
	Stage	Wired	U	f	n	P _e	I	LpA _{in}	LwA _{in}	q _v	p _{fs}	q _v	p _{fs}
			V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	m³/h	Pa	cfm	in. wg
1	4	1~	230	50	1350	195	0.86	53	65	760	0	445	0.00
2	4	1~	230	50	1800	185	0.81	53	65	645	150	380	0.60
3	4	1~	230	50	2200	169	0.74	55	67	480	300	280	1.20
4	4	1~	230	50	2540	144	0.65	58	70	240	400	140	1.61
5	3	1~	230	50	875	129	0.61	42	54	480	0	280	0.00
6	3	1~	230	50	1220	125	0.60	43	55	430	67	255	0.27
7	3	1~	230	50	1685	115	0.58	49	61	365	174	215	0.70
8	3	1~	230	50	2290	93	0.52	56	68	215	327	130	1.31
9	2	1~	230	50	660	109	0.53	35	46	365	0	215	0.00
10	2	1~	230	50	915	106	0.52	36	48	330	38	195	0.15
11	2	1~	230	50	1280	102	0.51	43	54	280	99	165	0.40
12	2	1~	230	50	1980	86	0.47	52	64	185	241	110	0.97
13	1	1~	230	50	510	95	0.47	27	39	270	0	160	0.00
14	1	1~	230	50	715	94	0.47	28	40	245	22	145	0.09
15	1	1~	230	50	960	92	0.46	34	46	210	55	125	0.22
16	1	1~	230	50	1575	84	0.44	46	58	145	148	85	0.59

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



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-72088-1
Date: 2006-01-23

Measurement: LU-72090-1
Date: 2006-01-23

Measurement: LU-72092-1
Date: 2006-01-23

Measurement: LU-72095-1
Date: 2006-01-23

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	q _v	p _{fs}	q _v	p _{fs}
			V	Hz	min ⁻¹	W	A	m³/h	Pa	cfm	in. wg
1	4	1~	230	60	1750	215	0.94	575	150	340	0.60
2	4	1~	230	60	2075	212	0.92	475	260	280	1.04
3	4	1~	230	60	2405	208	0.91	370	360	215	1.45
4	4	1~	230	60	2730	201	0.89	215	460	125	1.85
5	3	1~	230	60	1180	131	0.67	390	68	230	0.27
6	3	1~	230	60	1500	128	0.67	340	133	200	0.53
7	3	1~	230	60	1885	124	0.66	285	219	170	0.88
8	3	1~	230	60	2410	113	0.65	185	356	110	1.43
9	2	1~	230	60	890	106	0.57	285	37	170	0.15
10	2	1~	230	60	1110	105	0.56	250	71	145	0.29
11	2	1~	230	60	1390	104	0.56	205	112	120	0.45
12	2	1~	230	60	1885	98	0.56	140	200	85	0.80
13	1	1~	230	60	665	92	0.50	220	22	130	0.09
14	1	1~	230	60	825	91	0.50	190	42	110	0.17
15	1	1~	230	60	1025	90	0.50	150	60	90	0.24
16	1	1~	230	60	1355	88	0.50	105	109	60	0.44

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