D2E146-HR93-03

AC centrifugal fan

forward-curved, dual-intake

with housing (flange)



ebm-papst Mulfingen GmbH & Co. KG
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	**D2E146-HR93-03**
Motor	**M2E068-CF**

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}	1100	1600
Power consumption	W	150	160
Current draw	A	0.66	0.71
Capacitor	µF	4	4
Capacitor voltage	VDB	400	400
Capacitor standard		S2 (CE)	S2 (CE)
Min. back pressure	Pa	0	150
Min. back pressure	inH2O	0	0.6
Min. ambient temperature	°C	-25	-25
Max. ambient temperature	°C	50	45

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

AC centrifugal fan

forward-curved, dual-intake

with housing (flange)

Technical description

Weight	2.5 kg
Fan size	146 mm
Impeller material	PP plastic
Housing material	PP plastic
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	With plug; Via terminal box, capacitor integrated and connected
Motor protection	Thermal overload protector (TOP) internally connected
With cable	Variable
Protection class	I (with customer connection of protective earth)
Motor capacitor according to EN 60252-1 in safety protection class	S2
Conformity with standards	EN 60335-1; CE
Approval	CCC; VDE; EAC

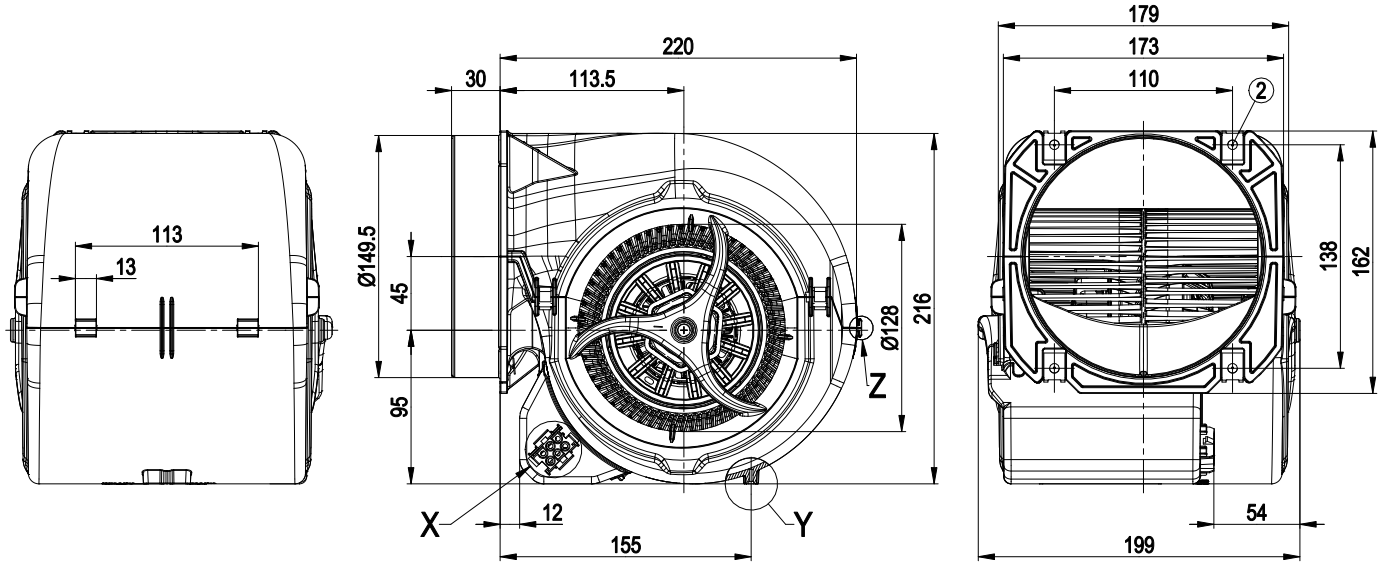
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

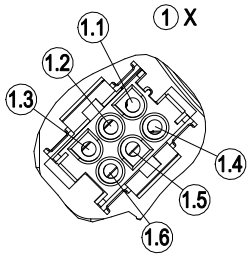
AC centrifugal fan

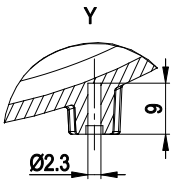
forward-curved, dual-intake

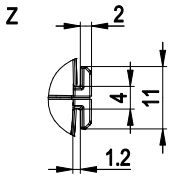
with housing (flange)

Product drawing









1	tyco coded plug system Universal-Mate-N-Lok, connector housing tyco 926682-3, 3x plug pin tyco 926886-1
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	Protective earth
2	4x sheet metal nut for thread EN ISO 1478-ST4.8 (min. screw length 14.5 mm plus material thickness of mounting)

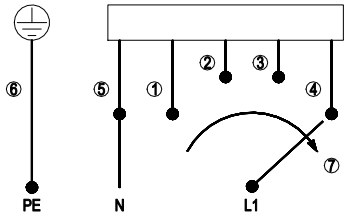
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

AC centrifugal fan

forward-curved, dual-intake

with housing (flange)

Connection diagram



The switch must interrupt the circuit when switching.

1	Step 1 (min.)	2	Step 2	3	Step 3
4	Step 4 (max.)	5	N	6	PE protective earth
7	Speed increasing				

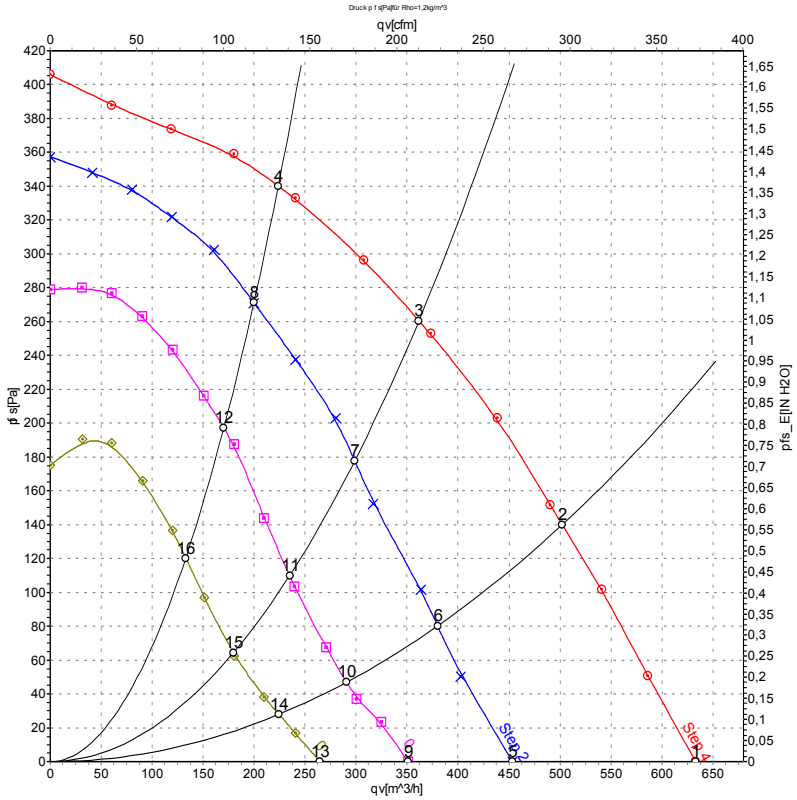
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

AC centrifugal fan

forward-curved, dual-intake

with housing (flange)

Curves: Air performance 50 Hz



Measurement: LU-72081-1
Measurement: LU-72083-1
Measurement: LU-72085-1
Measurement: LU-72098-1

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	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	inH2O
1	4	230	50	1100	150	0.66	635	0	375	0.00
2	4	230	50	1615	141	0.62	500	140	295	0.56
3	4	230	50	2035	132	0.58	360	260	215	1.04
4	4	230	50	2330	124	0.55	225	340	130	1.36
5	3	230	50	805	100	0.49	455	0	265	0.00
6	3	230	50	1225	97	0.48	380	80	225	0.32
7	3	230	50	1675	91	0.47	300	178	175	0.71
8	3	230	50	2105	81	0.45	200	271	120	1.09
9	2	230	50	640	83	0.43	350	0	205	0.00
10	2	230	50	980	80	0.42	290	47	170	0.19
11	2	230	50	1355	77	0.41	235	110	140	0.44
12	2	230	50	1785	71	0.40	170	197	100	0.79
13	1	230	50	505	70	0.38	265	0	155	0.00
14	1	230	50	750	69	0.38	225	28	130	0.11
15	1	230	50	1015	67	0.37	180	63	105	0.25
16	1	230	50	1405	64	0.36	135	120	80	0.48

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

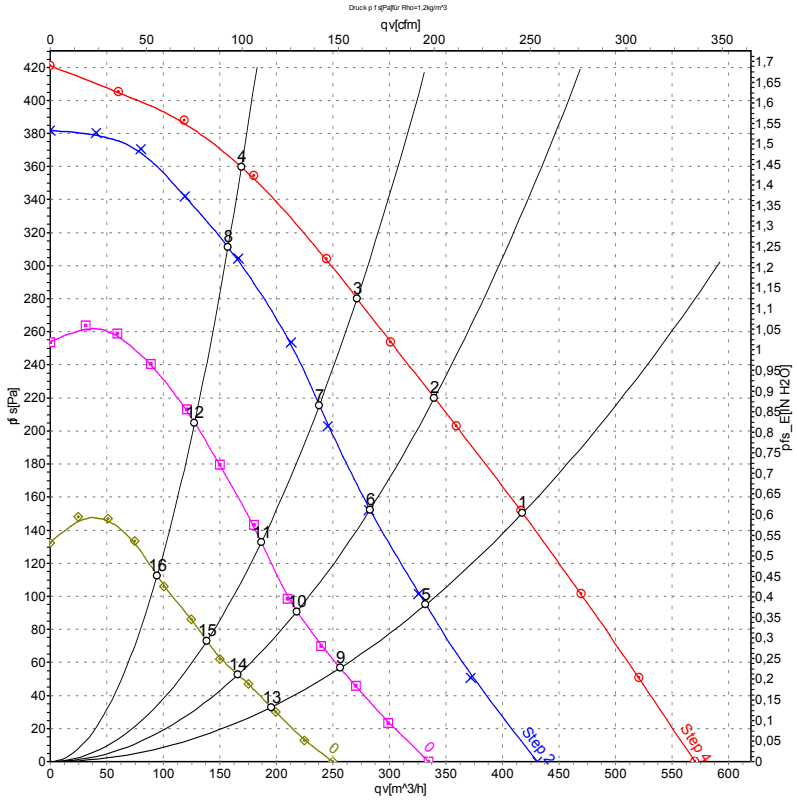
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

AC centrifugal fan

forward-curved, dual-intake

with housing (flange)

Curves: Air performance 60 Hz



Measurement: LU-72082-1
Measurement: LU-72084-1
Measurement: LU-72086-1
Measurement: LU-72099-1

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	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	inH2O
1	4	230	60	1600	160	0.71	420	150	245	0.60
2	4	230	60	1865	159	0.69	340	220	200	0.88
3	4	230	60	2130	157	0.69	270	280	160	1.12
4	4	230	60	2390	155	0.68	170	360	100	1.45
5	3	230	60	1280	107	0.56	330	95	195	0.38
6	3	230	60	1570	105	0.56	285	151	165	0.61
7	3	230	60	1870	103	0.56	240	215	140	0.86
8	3	230	60	2225	98	0.55	155	312	90	1.25
9	2	230	60	1005	84	0.48	255	57	150	0.23
10	2	230	60	1225	83	0.48	220	90	130	0.36
11	2	230	60	1470	81	0.48	185	133	110	0.53
12	2	230	60	1825	79	0.48	130	205	75	0.82
13	1	230	60	770	69	0.42	195	33	115	0.13
14	1	230	60	925	69	0.42	165	53	100	0.21
15	1	230	60	1105	68	0.42	140	73	80	0.29
16	1	230	60	1370	67	0.42	95	112	55	0.45

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

ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com