

AC axial fan - HyBlade

sickled blades (S series)

with guard grille for short nozzle

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Nominal data

Type	S4D450-AO14-01						
Motor	M4D094-HA						
Phase		3~	3~	3~	3~	3~	3~
Nominal voltage	VAC	400	400	400	400	480	480
Connection		Δ	Y	Δ	Y	Δ	Y
Frequency	Hz	50	50	60	60	60	60
Type of data definition		ml	ml	ml	ml	ml	ml
Valid for approval / standard		CE	CE	CE	CE	CE	CE
Speed	min ⁻¹	1360	1110	1510	1060	1600	1240
Power input	W	480	340	690	400	760	520
Current draw	A	0.98	0.58	1.2	0.72	1.17	0.75
Max. back pressure	Pa	140	90	145	70	160	95
Min. ambient temperature	°C	-40	-40	-40	-40	-40	-40
Max. ambient temperature	°C	65	65	50	50	50	50
Starting current	A	3.9	1.3	3.5	1.2	3.9	1.3

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

Data according to ErP directive

		Actual	Request 2015			
01 Overall efficiency η_{es}	%	35.4	31.5	09 Power input P_e	kW	0.46
02 Measurement category		A		09 Air flow q_v	m ³ /h	4530
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	133
04 Efficiency grade N		43.9	40	10 Speed n	min ⁻¹	1365
05 Variable speed drive		No		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 = $1 + p_g / 100\,000\text{ Pa}$

LU-107893



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Technical features

Mass	10 kg
Size	450 mm
Surface of rotor	Coated in black
Material of terminal box	ABS plastic
Material of impeller	PP plastic
Material of guard grille	Steel, coated in black plastic (RAL9005)
Number of blades	5
Direction of air flow	"V"
Direction of rotation	Counter-clockwise, seen on rotor
Type of protection	IP 54
Insulation class	"F"
Humidity class	F4-1
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)	<= 3.5 mA
Electrical leads	Via terminal box
Motor protection	Thermal overload protector (TOP) brought out
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 60034-1 (2010); CE
Approval	EAC; CCC

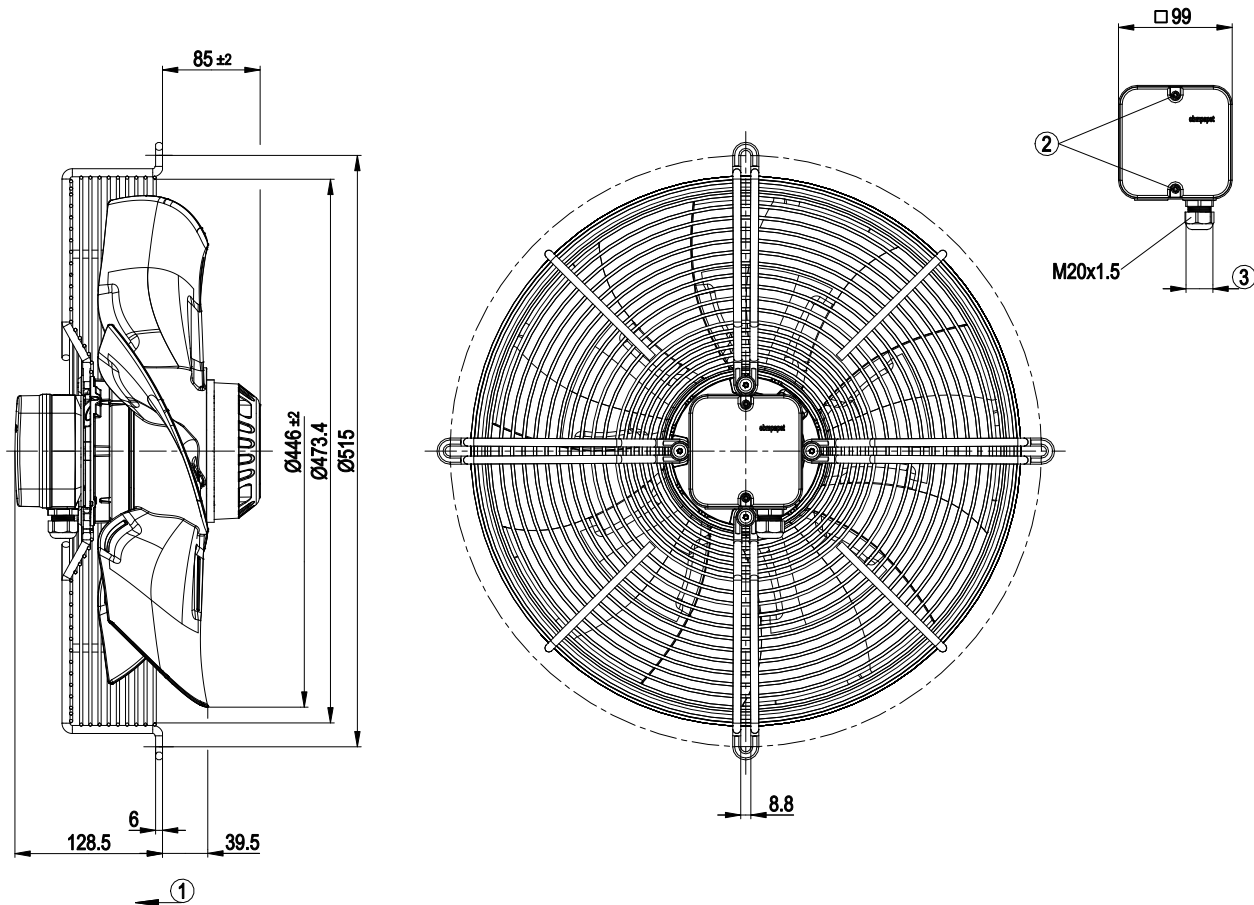


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Product drawing



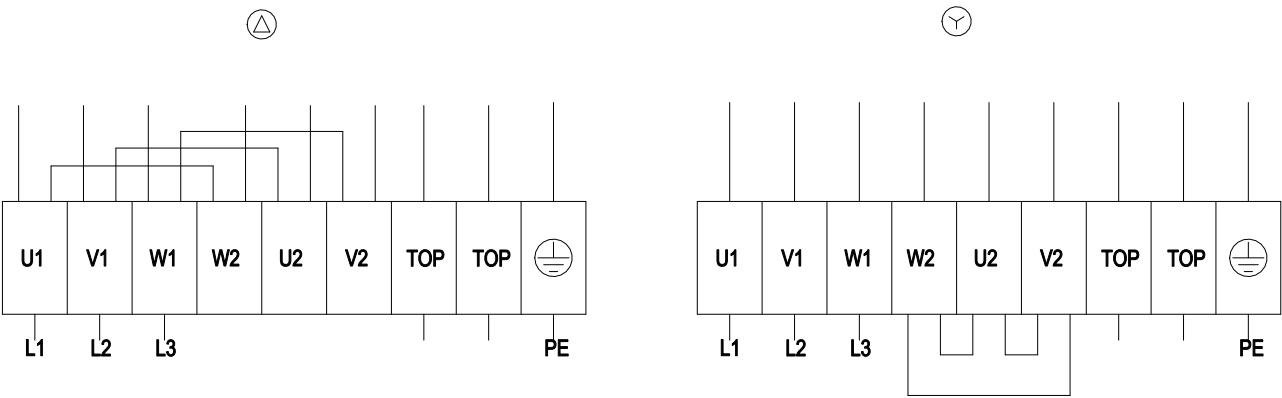
1	Direction of air flow "V"
2	Tightening torque 0.8 ± 0.15 Nm
3	Cable diameter: min. 6 mm, max. 12 mm; tightening torque: 2 ± 0.2 Nm



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Connection screen



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

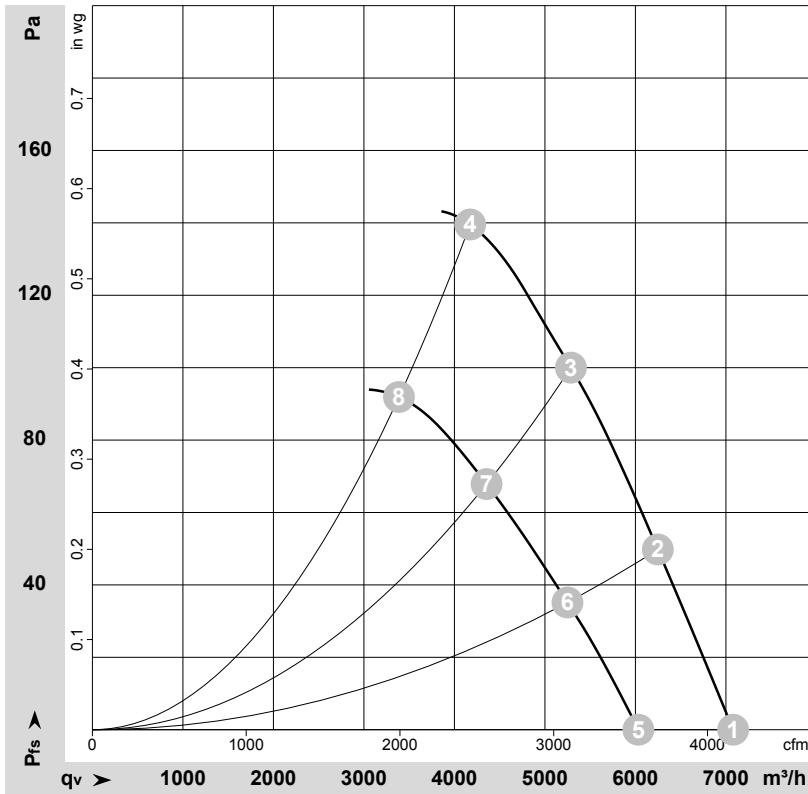


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Charts: Air flow 50 Hz



$$\rho = 1,15 \text{ kg/m}^3 \pm 2\%$$

Measurement: LU-107893
Measurement: LU-107309

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	LpA _{in}	LwA _{in}	LwA _{out}	qv	p _{fs}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	dB(A)	m³/h	Pa
1	Δ	400	50	1400	386	0.88	65	71	72	7080	0
2	Δ	400	50	1385	423	0.91	62	68	69	6250	50
3	Δ	400	50	1370	456	0.95	61	68	68	5290	100
4	Δ	400	50	1360	480	0.98	63	69	70	4175	140
5	Y	400	50	1195	285	0.49				6035	0
6	Y	400	50	1155	309	0.52				5250	35
7	Y	400	50	1130	328	0.55				4355	68
8	Y	400	50	1110	340	0.58				3385	92

Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed · P_e = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side
LwA_{out} = Sound power level outlet side · qv = Air flow · p_{fs} = Pressure increase

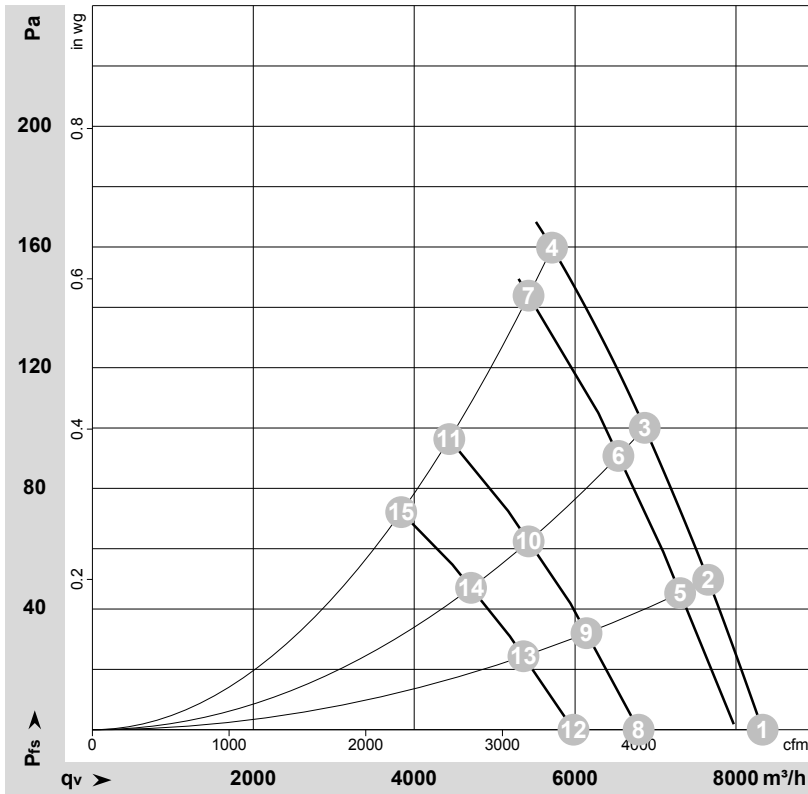


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Charts: Air flow 60 Hz



$$\rho = 1,15 \text{ kg/m}^3 \pm 2\%$$

Measurement: LU-107898
 Measurement: LU-108207
 Measurement: LU-108205
 Measurement: LU-108206

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	LpA _{in}	LwA _{in}	LwA _{out}	qv	p _{fs}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	dB(A)	m ³ /h	Pa
1	Δ	480	60	1645	628	1.03	68	74	76	8330	0
2	Δ	480	60	1630	674	1.08	66	72	74	7655	50
3	Δ	480	60	1615	716	1.12	65	71	73	6865	100
4	Δ	480	60	1600	760	1.17	65	72	72	5715	160
5	Δ	400	60	1550	620	1.09	65	71	73	7305	45
6	Δ	400	60	1530	657	1.15	64	70	71	6540	91
7	Δ	400	60	1510	690	1.20	64	70	71	5420	144
8	Y	480	60	1335	459	0.65	64	70	71	6790	0
9	Y	480	60	1300	480	0.69	61	67	68	6140	32
10	Y	480	60	1265	499	0.72	60	66	67	5420	62
11	Y	480	60	1240	520	0.75	59	65	65	4435	96
12	Y	400	60	1175	375	0.65	62	67	68	5980	0
13	Y	400	60	1130	388	0.68	59	64	65	5360	24
14	Y	400	60	1095	398	0.70	57	63	63	4705	47
15	Y	400	60	1060	400	0.72	56	62	62	3840	72

Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed · P_e = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side
 LwA_{out} = Sound power level outlet side · qv = Air flow · p_{fs} = Pressure increase

