W4D500-ZL09-01

AC axial fan - AxiEco

Fan housing with guard grille

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Nominal data

Type	**W4D500-ZL09-01**
Motor	**M4D110-GF**

Phase		3~	3~	3~	3~
Nominal voltage	VAC	400	400	480	480
Wiring		Δ	Y	Δ	Y
Frequency	Hz	50	50	60	60
Method of obtaining data		ml	ml	ml	ml
Valid for approval/standard		CE	CE	CE	CE
Speed (rpm)	min^{-1}	1340	1070	1560	1190
Power consumption	W	695	475	1090	700
Current draw	A	1.4	0.8	1.65	1.0
Max. back pressure	Pa	220	140	240	140
Max. back pressure	in. wg	0.88	0.56	0.96	0.56
Min. ambient temperature	°C	-40	-40	-40	-40
Max. ambient temperature	°C	60	60	40	40
Starting current	A	5.5	1.7	6.0	1.9

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

Data according to Commission Regulation (EU) 327/2011 (prEN 17166)

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	44.6	32.6
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		52	40
05 Variable speed drive		No	

09 Power consumption P_e	kW	0.67
09 Air flow q_v	m^3/h	5810
09 Pressure increase p_{fs}	Pa	188
10 Speed (rpm) n	min^{-1}	1345
11 Specific ratio*		1.00

Data obtained at optimum efficiency level.

* Specific ratio = 1 + p_{fs} / 100 000 Pa

LU-210496

The efficiency values displayed for achieving conformity with the Ecodesign Regulation EU 327/2011 has been reached with defined air duct components (e.g. inlet rings).
The dimensions must be requested from ebm-papst. If other air conduction geometries are used on the installation side, the ebm-papst evaluation loses its validity/the conformity must be confirmed again.

The product does not fall within the scope of Regulation (EU) 2019/1781 due to the exception specified in Article 2 (2a) (motors completely integrated into a product).

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Technical description

Weight	14.58 kg
Size	500 mm
Motor size	110
Rotor surface	Painted black
Terminal box material	PP plastic
Impeller material	PP plastic, galvanized sheet-metal plate
Fan housing material	PP plastic
Number of blades	5
Airflow direction	V
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	H2
Ambient temperature note	Occasional start-up at temperatures between -40°C and -25°C is permitted. For continuous operation at ambient temperatures below -25°C (such as refrigeration applications), use must be made of a fan design with special low-temperature bearings.
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
Electrical hookup	Terminal box
Motor protection	Thermal switch auto reset, lead out, with basic insulation
With cable	Axial
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	S0
Conformity with standards	EN 60034-1; CE
Approval	CSA C22.2 No. 100; EAC; UL 1004-1

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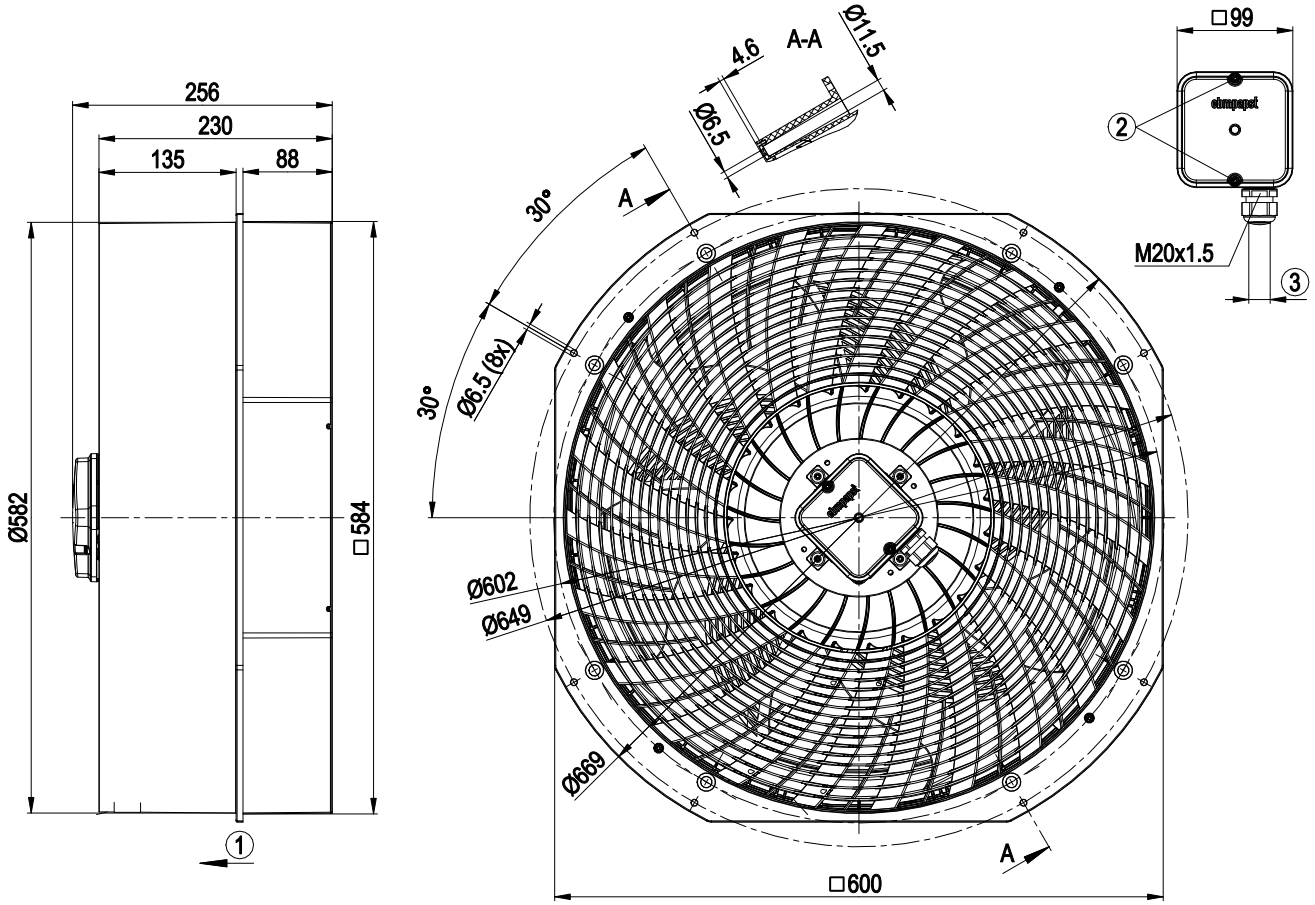
Product drawing



1	Airflow direction "V"
2	Tightening torque 1.5 ± 0.2 Nm
3	Cable diameter min. 6 mm, max. 12 mm, tightening torque 2 ± 0.3 Nm
	Accessory part: Guard grill 50070-2-4039 with oval head screw 60080-7-6201 (4x), can be fitted on the intake side. Not included in scope of delivery.
	The installation of accessories may change the air performance and noise values.

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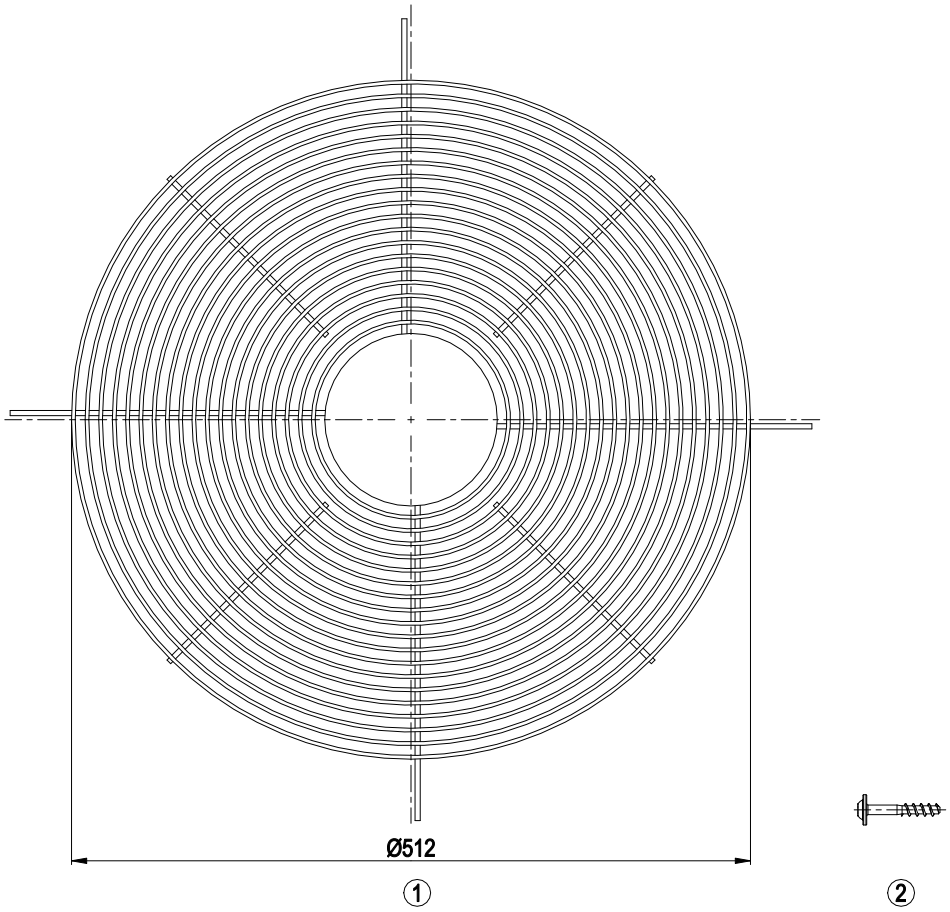
Accessory part



1	Guard grill 50070-2-4039
2	Oval head screw 60080-7-6201 (4x)

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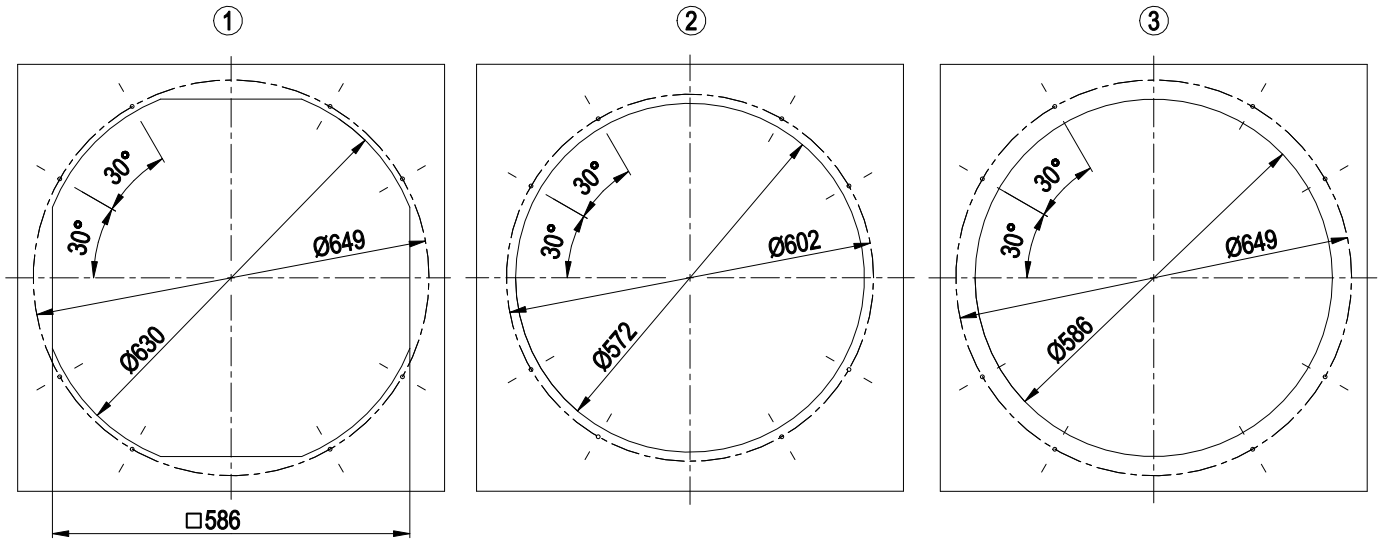
Mounting dimensions



	All 8 holes on the relevant pitch circle must always be used for all types of fastening.
1	intake-side mounting on flange
2	intake-side mounting on suction nozzle
	The Ø6.5 mm holes must be pierced from the underside with a mandrel or similar tool.
	We recommend using M6 cheese-head screws with hexagon socket (DIN 912/DIN EN ISO 4762) for fastening.
3	outlet-side mounting on flange

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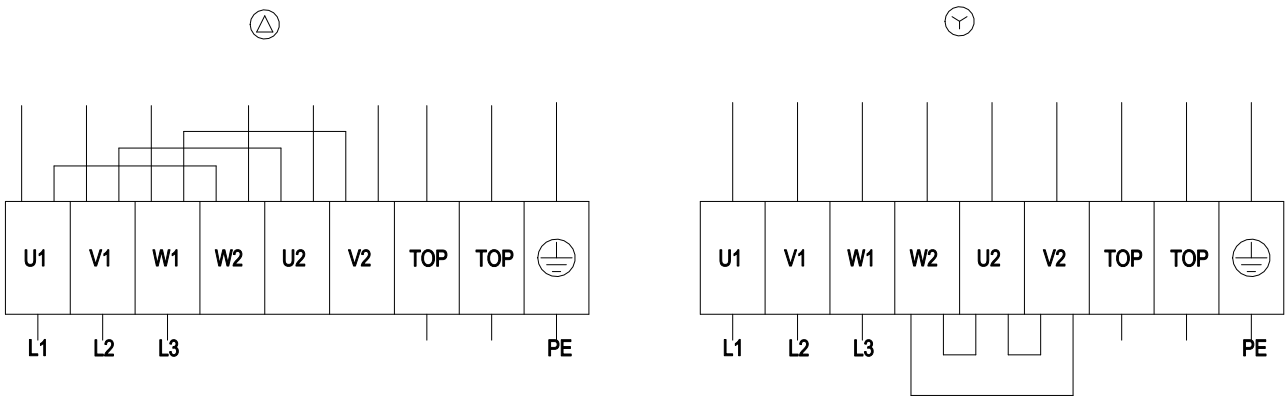
Connection diagram



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

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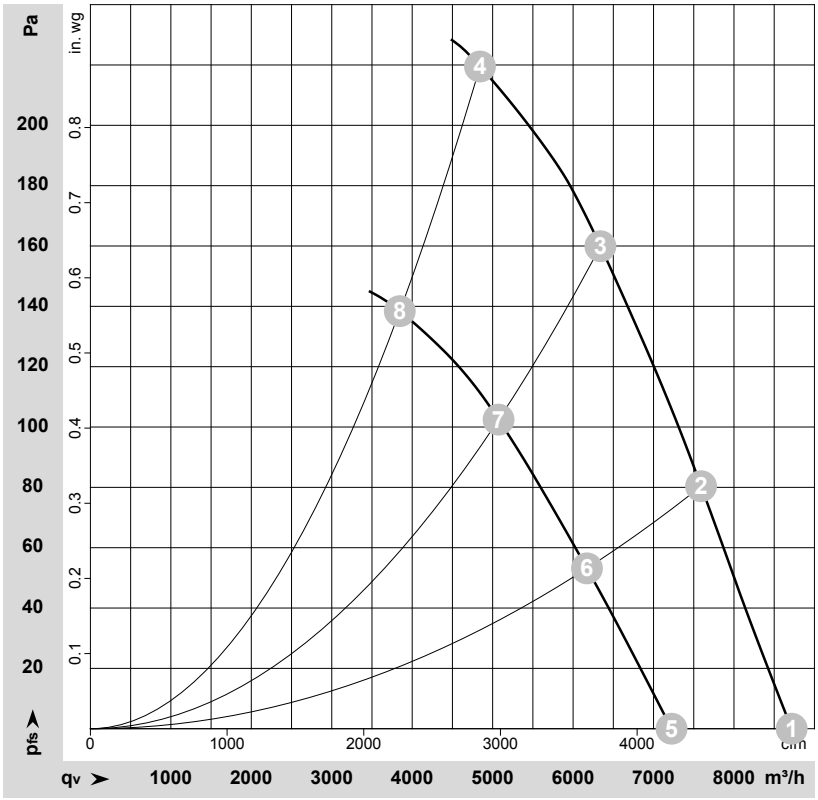
Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-210496-1
Measurement: LU-213509-1

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}	LwA_{out}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	Δ	400	50	1370	574	1.20	72	78	79	8715	0	5130	0.00
2	Δ	400	50	1355	629	1.26	70	76	78	7590	80	4470	0.32
3	Δ	400	50	1350	668	1.32	69	75	77	6340	160	3730	0.64
4	Δ	400	50	1340	695	1.40	70	77	78	4845	220	2850	0.88
5	Y	400	50	1140	415	0.68	68	74	75	7225	0	4250	0.00
6	Y	400	50	1105	443	0.72	65	71	73	6175	53	3635	0.21
7	Y	400	50	1085	460	0.75	63	70	71	5075	102	2985	0.41
8	Y	400	50	1070	475	0.80	64	70	72	3845	140	2265	0.56

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
LwA_{out} = Sound power level outlet side · q_V = Air flow · p_{fs} = Pressure increase

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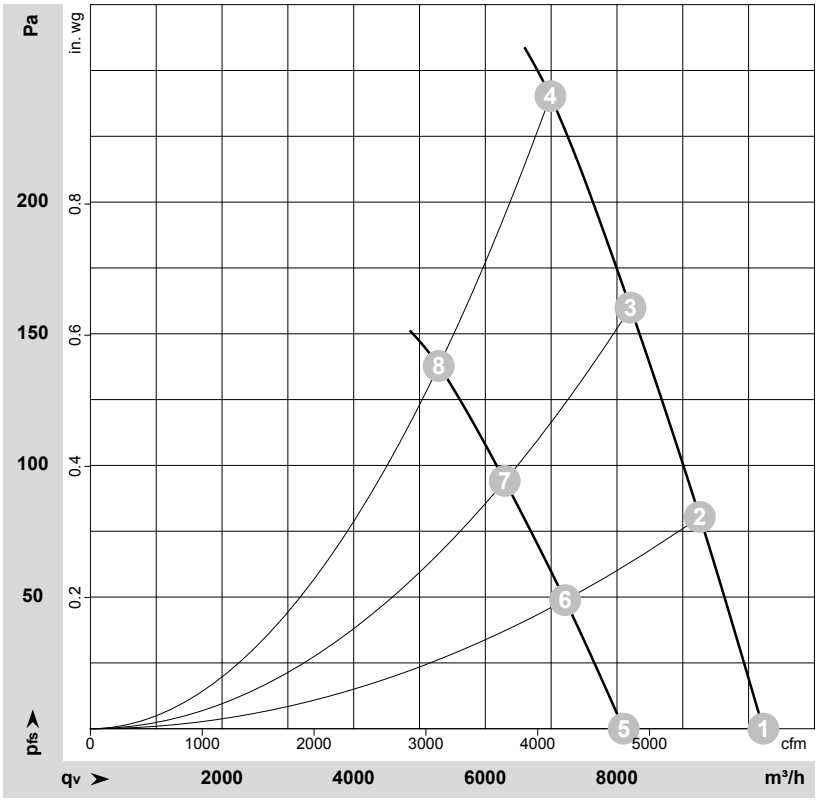
Curves: Air performance 60 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-213506-1
Measurement: LU-213513-1

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}	LwA_{out}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	Δ	480	60	1605	930	1.44	76	82	83	10225	0	6020	0.00
2	Δ	480	60	1585	1002	1.52	75	81	82	9260	80	5450	0.32
3	Δ	480	60	1575	1051	1.58	73	80	81	8205	160	4830	0.64
4	Δ	480	60	1560	1090	1.65	73	79	81	6990	240	4115	0.96
5	Y	480	60	1280	644	0.88	71	77	78	8105	0	4770	0.00
6	Y	480	60	1240	668	0.91	69	75	76	7210	49	4245	0.20
7	Y	480	60	1215	686	0.94	66	73	74	6295	94	3705	0.38
8	Y	480	60	1190	700	1.00	65	72	74	5290	140	3115	0.56

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
LwA_{out} = Sound power level outlet side · q_V = Air flow · p_{fs} = Pressure increase