W4E450-ZK04-01

AC axial fan - AxiEco

Fan housing with guard grille

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Nominal data

Type	**W4E450-ZK04-01**
Motor	**M4E094-HA**

Phase		1~	1~
Nominal voltage	VAC	230	230
Frequency	Hz	50	60
Method of obtaining data		ml	ml
Valid for approval/standard		CE	CE
Speed (rpm)	min^{-1}	1400	1575
Power consumption	W	490	740
Current draw	A	2.4	3.3
Capacitor	µF	14	14
Capacitor voltage	VDB	400	400
Capacitor standard		S0 (CE)	S0 (CE)
Max. back pressure	Pa	200	255
Max. back pressure	in. wg	0.8	1.02
Min. ambient temperature	°C	-40	-40
Max. ambient temperature	°C	60	60

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

230 V 50/60 Hz
Max. voltage tolerance +/-5%

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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	41.2	31.7
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		49.5	40
05 Variable speed drive		No	

09 Power consumption P_e	kW	0.48
09 Air flow q_v	m^3/h	4105
09 Pressure increase p_{fs}	Pa	176
10 Speed (rpm) n	min^{-1}	1405
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-211529

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Technical description

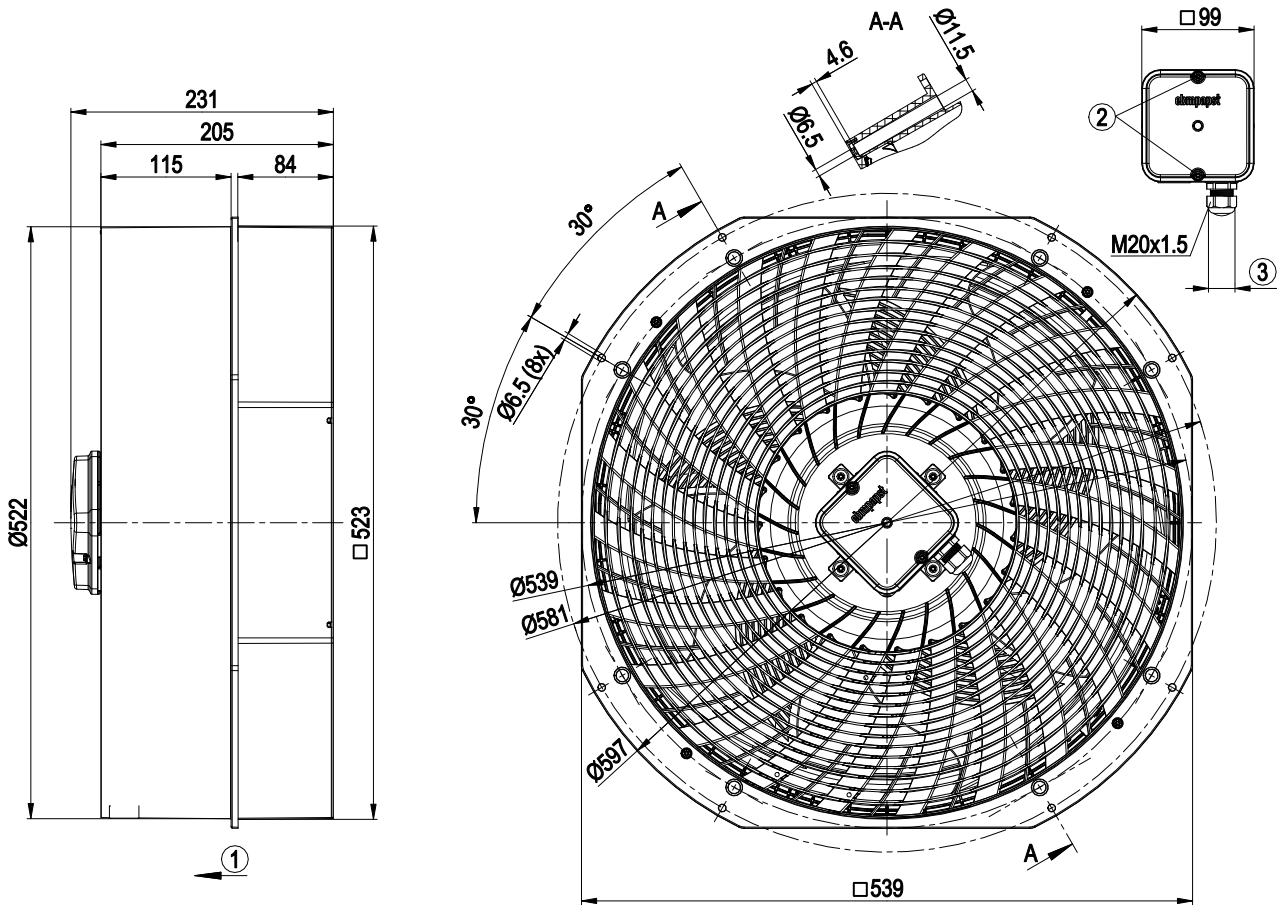
Size	450 mm
Motor size	94
Rotor surface	Painted black
Terminal box material	PP plastic
Impeller material	PP plastic, galvanized sheet-metal plate
Fan housing material	PP plastic
Number of blades	5
Airflow direction	V
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation 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; Capacitor integrated and connected
Motor protection	Thermal overload protector (TOP) with basic insulation
Protection class	I (with customer connection of protective earth)
Motor capacitor according to EN 60252-1 in safety protection class	S0
Conformity with standards	EN 60034-1; CE
Approval	EAC; UL 1004-1; CSA C22.2 No. 100

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Product drawing



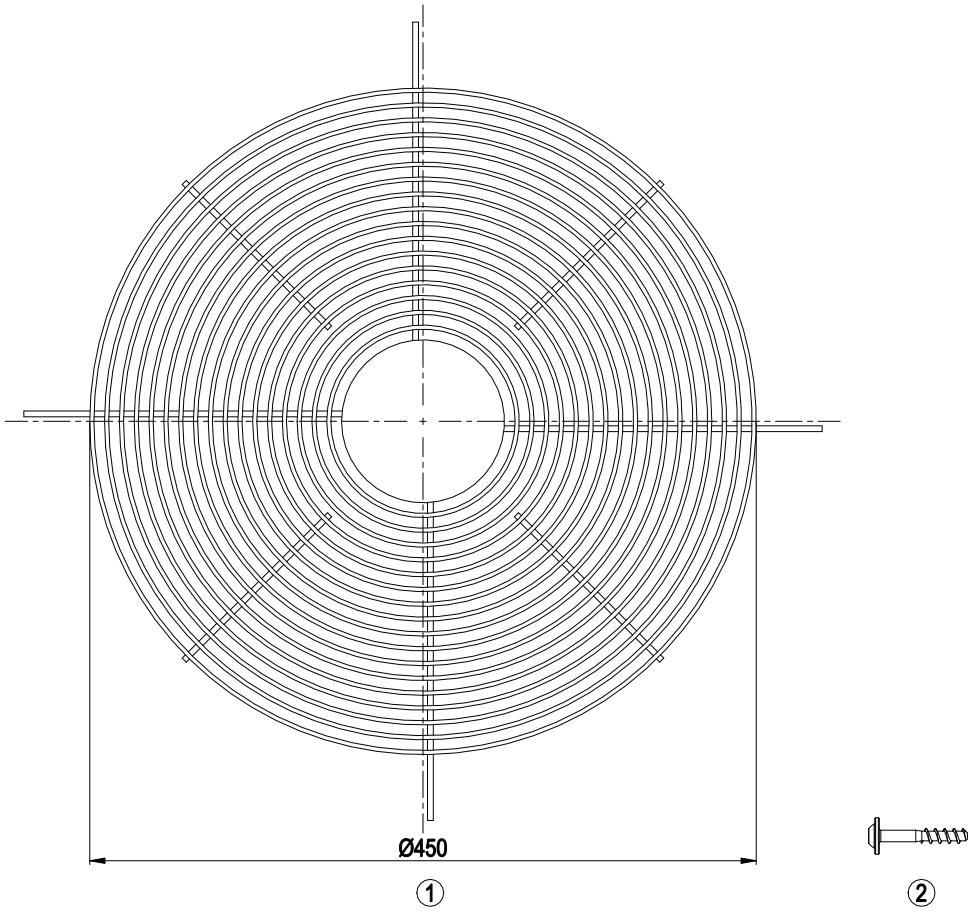
1	Airflow direction "V"
2	Tightening torque 1.5 ± 0.2 Nm
3	Cable diameter min. 6 mm, max. 12 mm, tightening torque 2 ± 0.3 Nm
	Accessory part: Guard grill 45050-2-4039 with oval head screw 60080-7-6201 (4x), can be fitted on the intake side. Not included in scope of delivery.
	The installation of accessories may change the air performance and noise values.

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Accessory part



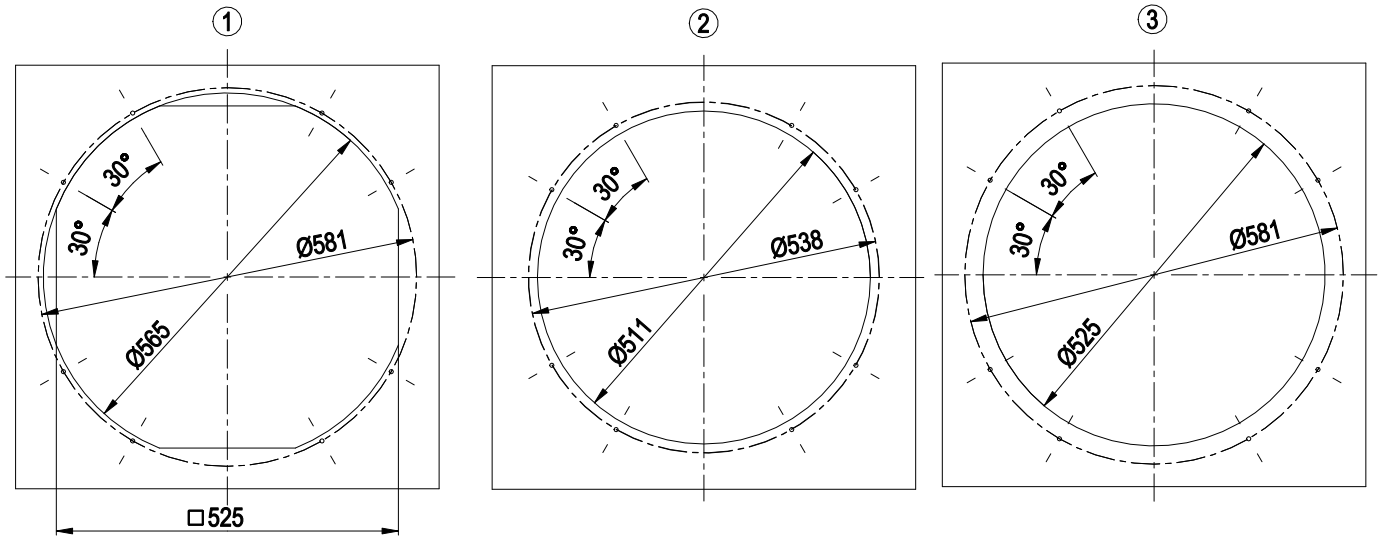
1	Guard grill 45050-2-4039
2	Oval head screw 60080-7-6201 (4x)

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Mounting dimensions



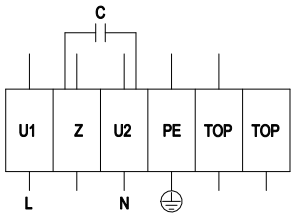
	All 8 holes on the relevant pitch circle must always be used for all types of fastening.
1	intake-side mounting on flange
2	intake-side mounting on suction nozzle
	The Ø6.5 mm holes must be pierced from the underside with a mandrel or similar tool.
	We recommend using M6 cheese-head screws with hexagon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

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Connection diagram



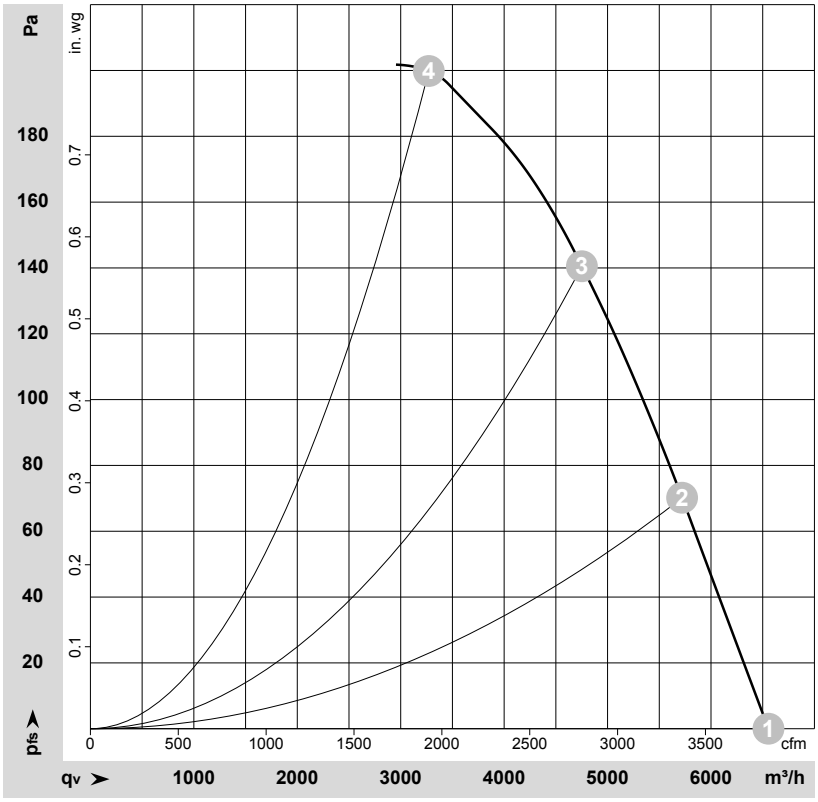
L	= U1 = blue	Z	brown	N	= U2 = black
PE	green/yellow	TOP	gray	TOP	gray

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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-211529-1

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	1~	230	50	1430	423	2.11	69	75	76	6555	0	3860	0.00
2	1~	230	50	1415	450	2.18	67	73	75	5720	70	3365	0.28
3	1~	230	50	1410	473	2.27	66	72	74	4750	140	2795	0.56
4	1~	230	50	1400	490	2.40	68	75	77	3270	200	1925	0.80

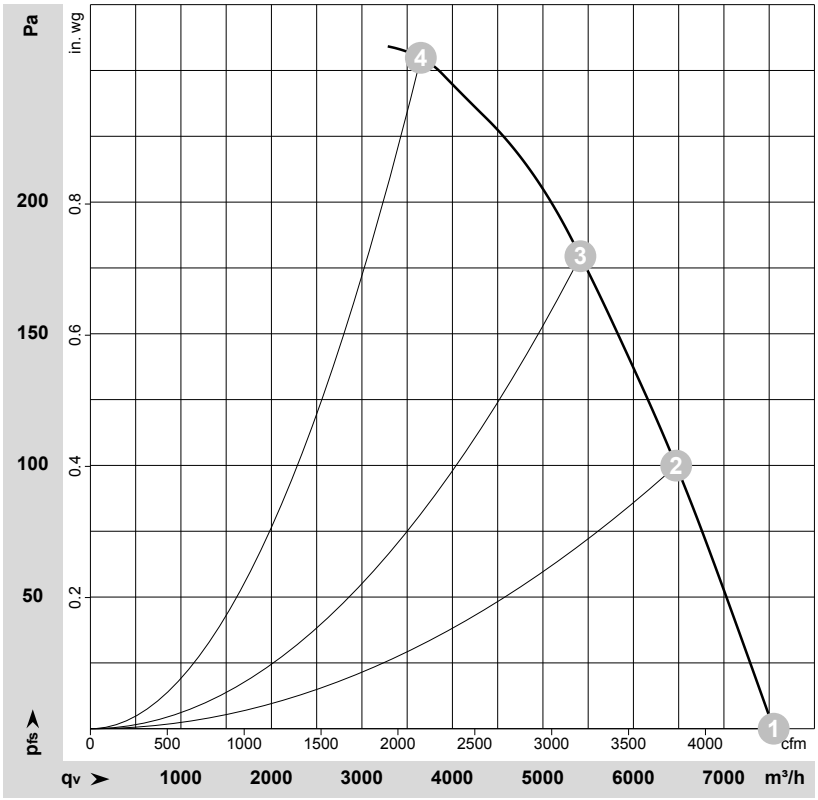
Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P_e = Power consumption · I = Current draw · LpA_{in} = Sound pressure level intake side · LwA_{in} = Sound power level intake side
LwA_{out} = Sound power level outlet side · q_V = Air flow · p_{fs} = Pressure increase

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Curves: Air performance 60 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-212146-1

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	1~	230	60	1645	615	2.69	72	78	80	7550	0	4445	0.00
2	1~	230	60	1615	673	2.94	70	76	78	6475	100	3810	0.40
3	1~	230	60	1595	704	3.07	69	75	77	5415	180	3185	0.72
4	1~	230	60	1575	740	3.30	72	78	80	3650	255	2150	1.02

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
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