

W4D450-CO10-80

AC axial fan - HyBlade

sickle-shaped blades (S series)

with round full nozzle

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Amtsgericht (court of registration) Stuttgart · HRB 590142

Nominal data

Type	W4D450-CO10-80				
Motor	M4D094-HA				
Phase		3~	3~	3~	3~
Nominal voltage	VAC	230	277	400	480
Wiring		Δ	Δ	Y	Y
Frequency	Hz	50	60	50	60
Method of obtaining data		fa	fa	fa	fa
Valid for approval/standard		CE	CE	CE	CE
Speed (rpm)	min ⁻¹	1400	1640	1400	1640
Power consumption	W	375	620	375	620
Current draw	A	1.6	1.82	0.9	1.05
Max. back pressure	Pa	120	110	120	110
Max. back pressure	in. wg	0.48	0.44	0.48	0.44
Min. ambient temperature	°C	-40	-40	-40	-40
Max. ambient temperature	°C	65	65	65	65
Starting current	A	7.0	7.5	4	4.3

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 (EN 17166)

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	33.9	31.5	09 Power consumption P_e	kW	0.45
02 Measurement category		A		09 Air flow q_v	m ³ /h	4530
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	124
04 Efficiency grade N		42.4	40	10 Speed (rpm) n	min ⁻¹	1375
05 Variable speed drive		No		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 = $1 + p_{fs} / 100\,000\text{ Pa}$

LU-111305



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Technical description

Weight	12.8 kg
Size	450 mm
Motor size	94
Rotor surface	Painted black
Terminal box material	Die-cast aluminum
Blade material	Press-fitted sheet steel blank, sprayed with PP plastic
Fan housing material	Sheet steel, galvanized and coated with white aluminum plastic (RAL 9006)
Guard grille material	Steel, coated with white-aluminum plastic (RAL 9006)
Number of blades	5
Airflow direction	A
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 top; rotor on bottom on request
Condensation drainage holes	On stator 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 overload protector (TOP) with basic insulation
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60034-1 (2010); CE
Approval	EAC

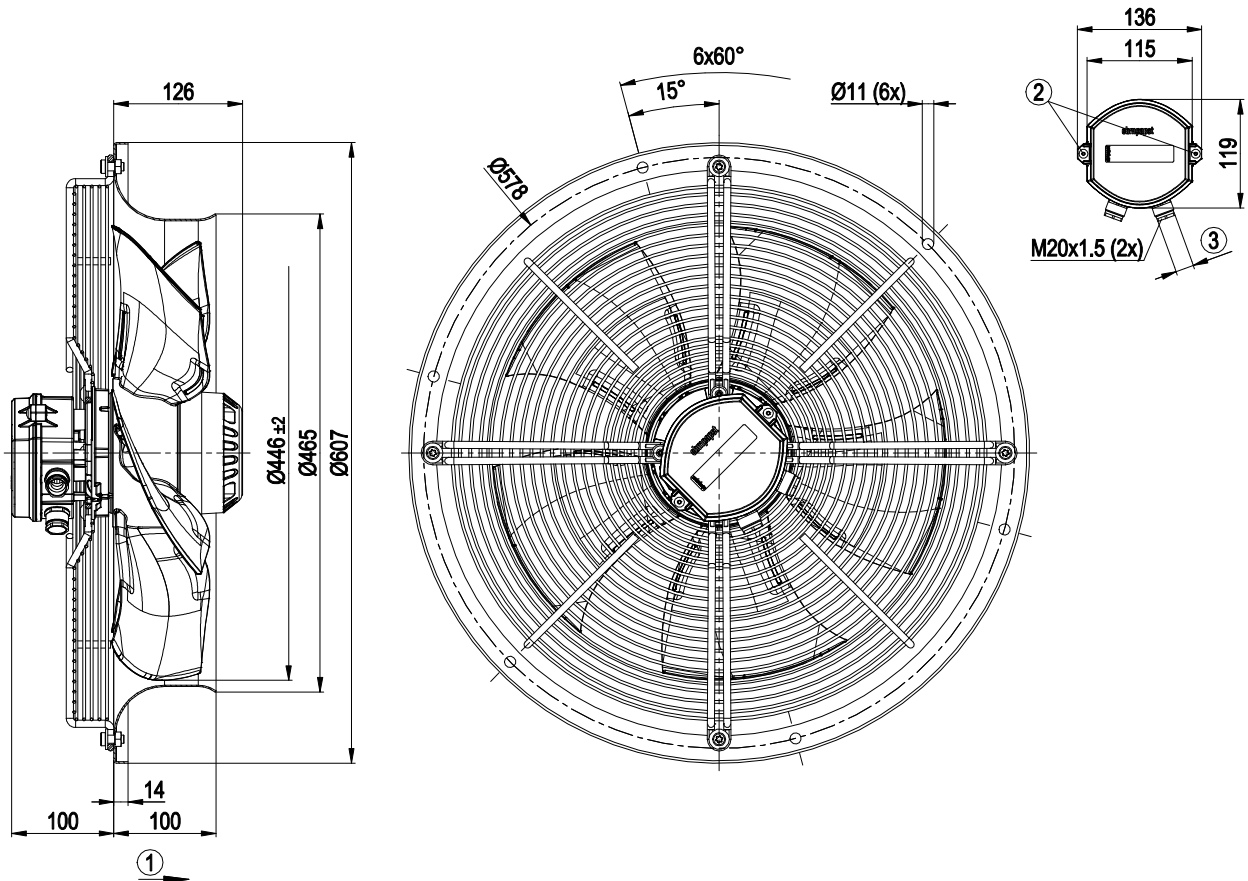


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Product drawing



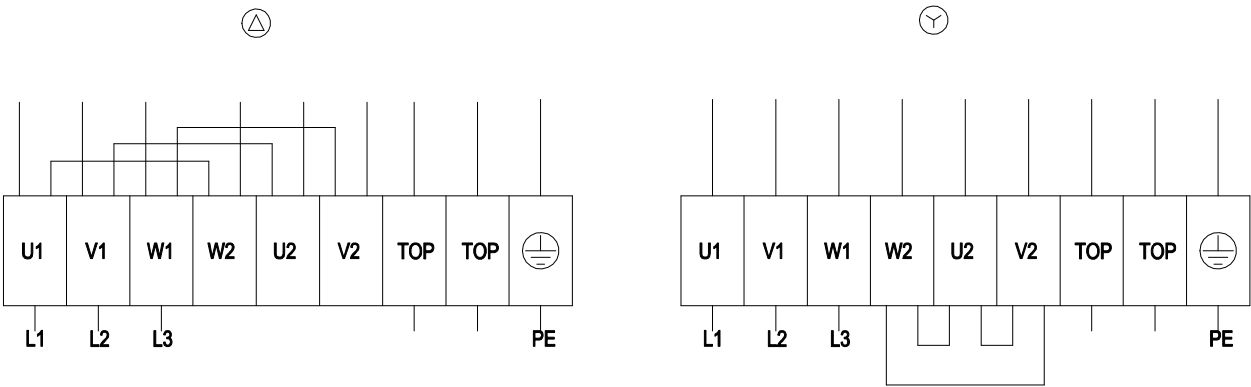
- | | |
|---|---|
| 1 | Direction of air flow "A" |
| 2 | Tightening torque 2.5 ± 0.4 Nm |
| 3 | Cable diameter min. 10 mm, max. 12 mm, tightening torque 4 ± 0.6 Nm |



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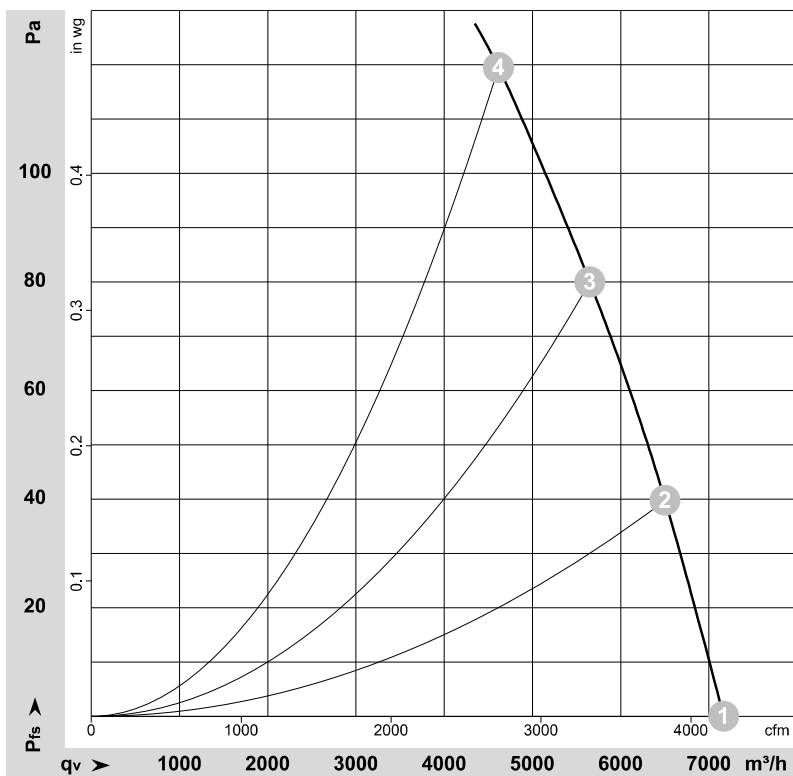
Connection diagram



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				



Curves: Air performance 50 Hz



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

Measurement: LU-111305-1

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 _{ts}	q _v	p _{ts}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	dB(A)	m³/h	Pa	cfm	in. wg
1	Y	400	50	1400	375	0.90	65	71	72	7165	0	4220	0.00
2	Y	400	50	1395	402	0.96	63	69	70	6500	40	3825	0.16
3	Y	400	50	1385	429	0.98	62	68	69	5650	80	3325	0.32
4	Y	400	50	1370	455	1.02	62	68	68	4615	120	2715	0.48

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_{ts} = Pressure increase

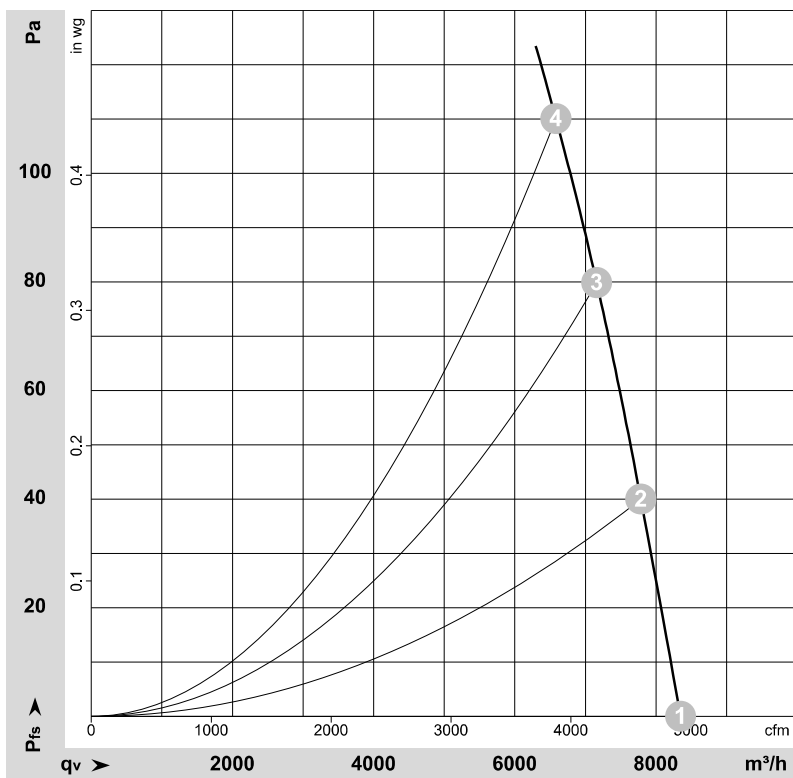


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Curves: Air performance 60 Hz



$$\rho = 1.176 \text{ kg/m}^3 \pm 2 \%$$

Measurement: LU-116997-1

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 _{ts}	q _v	p _{ts}
		V	Hz	min ⁻¹	W	A	dB(A)	dB(A)	dB(A)	m³/h	Pa	cfm	in. wg
1	Y	480	60	1640	620	1.05	68	74	76	8350	0	4915	0.00
2	Y	480	60	1635	658	1.08	66	72	74	7785	40	4580	0.16
3	Y	480	60	1625	692	1.11	65	71	73	7160	80	4215	0.32
4	Y	480	60	1620	720	1.17	65	71	73	6580	110	3875	0.44

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_{ts} = Pressure increase

