

AC axial fan

sickle-shaped blades (S series)
with round full nozzle, Transformer fan

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Nominal data

Type	W4D450-CG01-80						
Motor	M4D110-EF						
Phase		3~	3~	3~	3~	3~	3~
Nominal voltage	VAC	400	400	400	400	480	480
Wiring		Δ	Y	Δ	Y	Δ	Y
Frequency	Hz	50	50	60	60	60	60
Method of obtaining data		fa	fa	fa	fa	fa	fa
Valid for approval/standard		CE	CE	CE	CE	CE	CE
Speed (rpm)	min ⁻¹	1380	1150	1550	1140	1620	1305
Power consumption	W	410	295	605	375	640	460
Current draw	A	0.9	0.5	1.06	0.64	1.03	0.64
Max. back pressure	Pa	115	75	105	50	155	90
Max. back pressure	inH ₂ O	0.46	0.3	0.42	0.2	0.62	0.36
Min. ambient temperature	°C	-40	-40	-40	-40	-40	-40
Max. ambient temperature	°C	95	95	60	60	60	60
Starting current	A	3.8	1.2	3.45	1.1	4.2	1.3

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

Data according to ErP Directive

		Actual	Req. 2015			
01 Overall efficiency η_{es}	%	31.8	31.7	09 Power consumption P_e	kW	0.49
02 Measurement category		A		09 Air flow q_v	m ³ /h	4805
03 Efficiency category		Static		09 Pressure increase p_{fs}	Pa	117
04 Efficiency grade N		40.1	40	10 Speed (rpm) n	min ⁻¹	1350
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-74752



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Technical description

Weight	18 kg
Fan size	450 mm
Rotor surface	Painted black
Terminal box material	Die-cast aluminum
Blade material	Sheet aluminum, painted black
Fan housing material	Sheet steel, pre-galvanized and coated with white-aluminum plastic (RAL 9006)
Guard grille material	Steel, galvanized and coated with white-aluminum plastic (RAL 9006)
Number of blades	5
Blade pitch	0°
Airflow direction	"A"
Direction of rotation	Clockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F4-2
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	Via terminal box
Motor protection	Thermal overload protector (TOP) with basic insulation
With cable	Axial
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 61800-5-1; CE

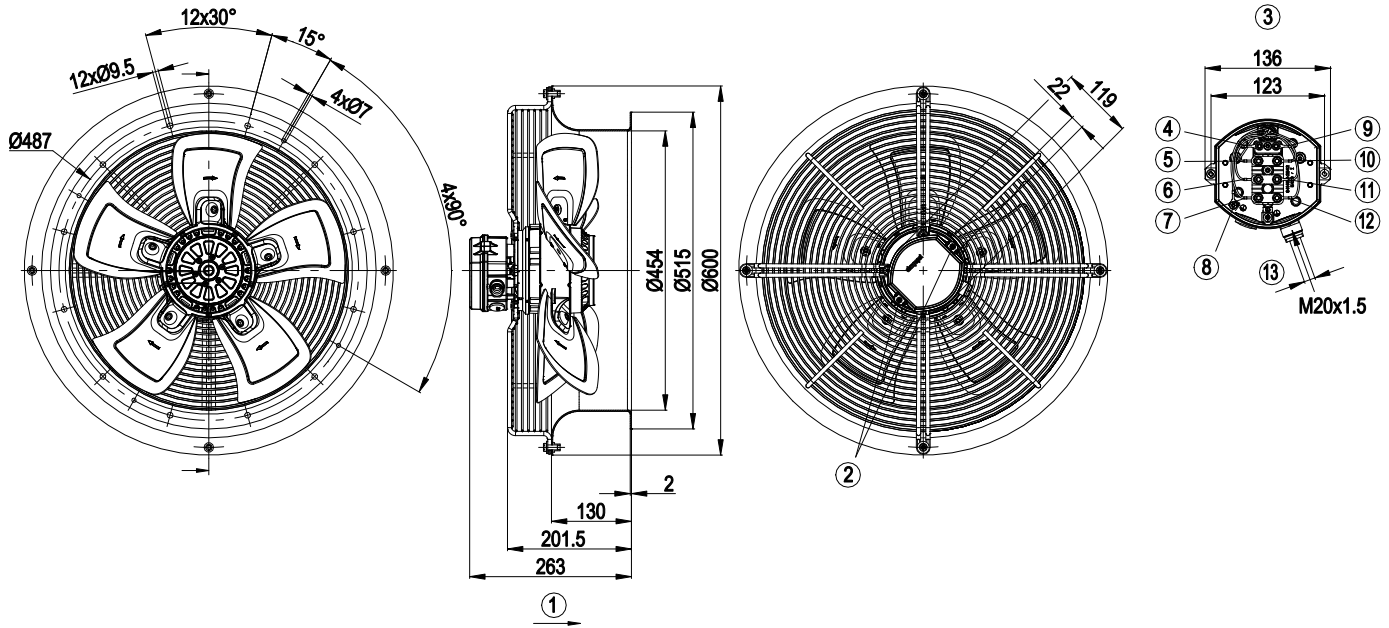


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Product drawing



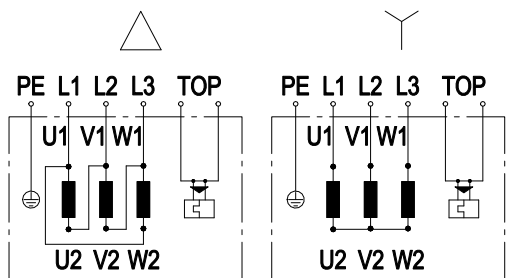
1	Direction of air flow "A"
2	Tightening torque 2.0 ± 0.2 Nm
3	Shown without terminal box cover
4	gray
5	white
6	green
7	yellow
8	green/yellow
9	gray
10	brown
11	light blue
12	black
13	Cable diameter: min. 10, max. 12 mm; tightening torque 2.5 ± 0.3 Nm



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Connection diagram

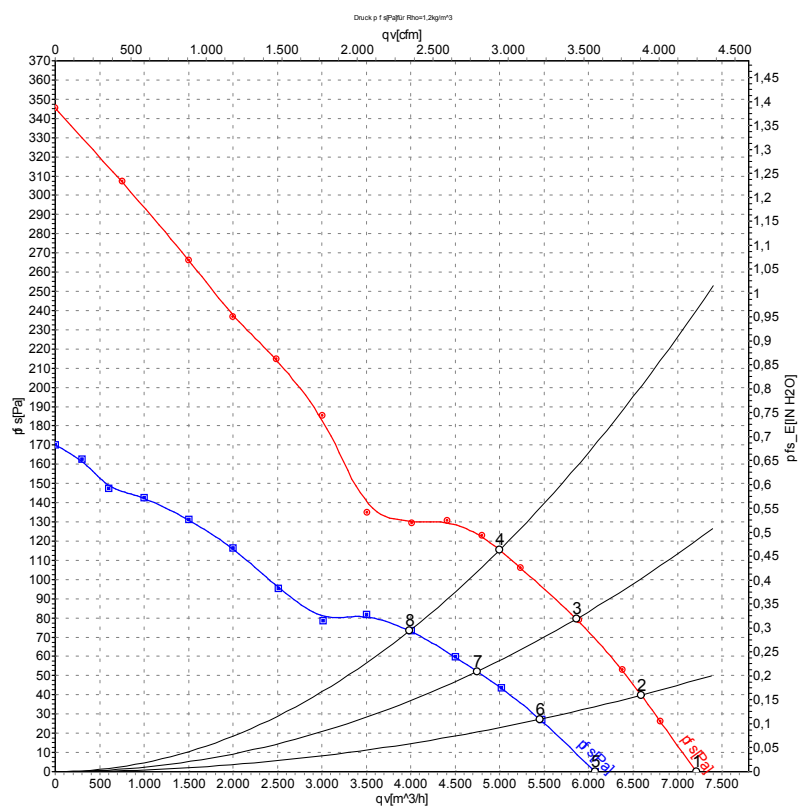


Note: Change of rotation direction by reversing two phases

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



Curves: Air performance 50 Hz Δ



Measurement: LU-74752-1
Measurement: LU-74756-1

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	qv	p _{fs}	qv	p _{fs}
		V	Hz	min ⁻¹	W	A	m ³ /h	Pa	CFM	inH ₂ O
1	Δ	400	50	1380	410	0.90	7210	0	4245	0.00
2	Δ	400	50	1370	442	0.94	6590	40	3880	0.16
3	Δ	400	50	1360	469	0.97	5860	80	3450	0.32
4	Δ	400	50	1350	490	1.00	5000	115	2940	0.46
5	Y	400	50	1150	295	0.50	6070	0	3575	0.00
6	Y	400	50	1125	316	0.53	5450	28	3210	0.11
7	Y	400	50	1100	330	0.55	4745	52	2795	0.21
8	Y	400	50	1075	340	0.58	3985	75	2345	0.30

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

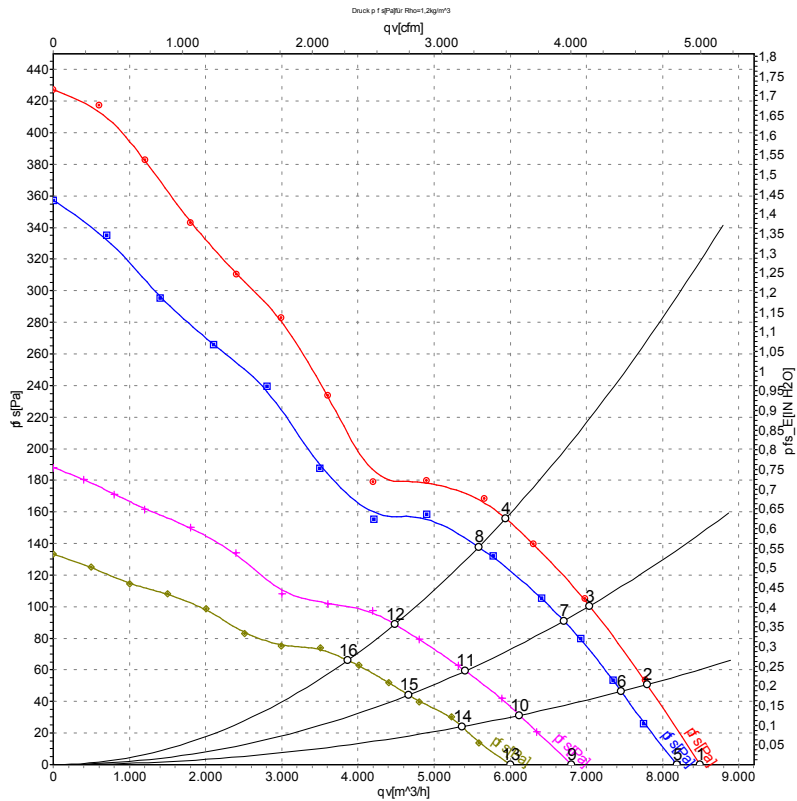


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Curves: Air performance 60 Hz Δ



Measurement: LU-74754-1
 Measurement: LU-74753-1
 Measurement: LU-74759-1
 Measurement: LU-74758-1

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	qv	p _{fs}	qv	p _{fs}
		V	Hz	min ⁻¹	W	A	m³/h	Pa	CFM	inH ₂ O
1	Δ	480	60	1620	640	1.03	8490	0	4995	0.00
2	Δ	480	60	1605	711	1.11	7795	50	4590	0.20
3	Δ	480	60	1590	754	1.15	7040	100	4145	0.40
4	Δ	480	60	1575	800	1.20	5940	155	3495	0.62
5	Δ	400	60	1550	605	1.06	8185	0	4820	0.00
6	Δ	400	60	1525	647	1.11	7455	46	4385	0.18
7	Δ	400	60	1505	687	1.17	6700	91	3945	0.37
8	Δ	400	60	1495	700	1.20	5585	138	3285	0.55
9	Y	480	60	1305	460	0.64	6805	0	4005	0.00
10	Y	480	60	1260	485	0.68	6120	31	3605	0.12
11	Y	480	60	1230	502	0.70	5410	59	3185	0.24
12	Y	480	60	1195	520	0.75	4485	90	2640	0.36
13	Y	400	60	1145	375	0.64	6000	0	3530	0.00
14	Y	400	60	1095	388	0.67	5365	24	3160	0.10
15	Y	400	60	1060	395	0.68	4665	44	2745	0.18
16	Y	400	60	1045	400	0.69	3865	66	2275	0.26

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