WZD990-CD01-83

AC axial fan

sickle-shaped blades (S series)

with round full nozzle

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Nominal data

Type	**WZD990-CD01-83**
Motor	**MZD138-LA**

Phase		3~	3~	3~
Nominal voltage	VAC	230	400	400
Wiring		Δ	Δ	Y
Frequency	Hz	50	50	50
Method of obtaining data		fa	fa	fa
Valid for approval/standard		-	-	-
Speed (rpm)	min^{-1}	400	460	400
Power consumption	W	290	490	290
Current draw	A	1.2	1.75	0.67
Max. back pressure	Pa	29	45	29
Max. back pressure	in. wg	0.12	0.18	0.12
Min. ambient temperature	°C	-40	-40	-40
Max. ambient temperature	°C	70	70	70
Starting current	A	2.3	4.0	1.34

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

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Technical description

Weight	58 kg
Fan size	990 mm
Rotor surface	Painted black
Terminal box material	Die-cast aluminum, painted black
Blade material	Sheet aluminum insert (painted black), sprayed with PP plastic
Fan housing material	Sheet steel, galvanized and coated with gray-white plastic (RAL 9002)
Guard grille material	Steel, coated with gray-white plastic (RAL 9002)
Number of blades	5
Blade pitch	0°
Airflow direction	"A"
Direction of rotation	Counterclockwise, viewed toward rotor
Degree of protection	IP54
Insulation class	"F"
Moisture (F) / Environmental (H) protection class	F4-2
Ambient temperature note	Occasional start-up between -40°C and -25°C is permissible. For continuous operation at temperatures below -25°C (e.g. refrigeration applications) we recommend our 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)	(Transportation) -40 °C / (storage) -45 °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
Protection class	I (with customer connection of protective earth)
Conformity with standards	EN 60034-1 (2010); EN 61800-5-1
Approval	VDE; EAC

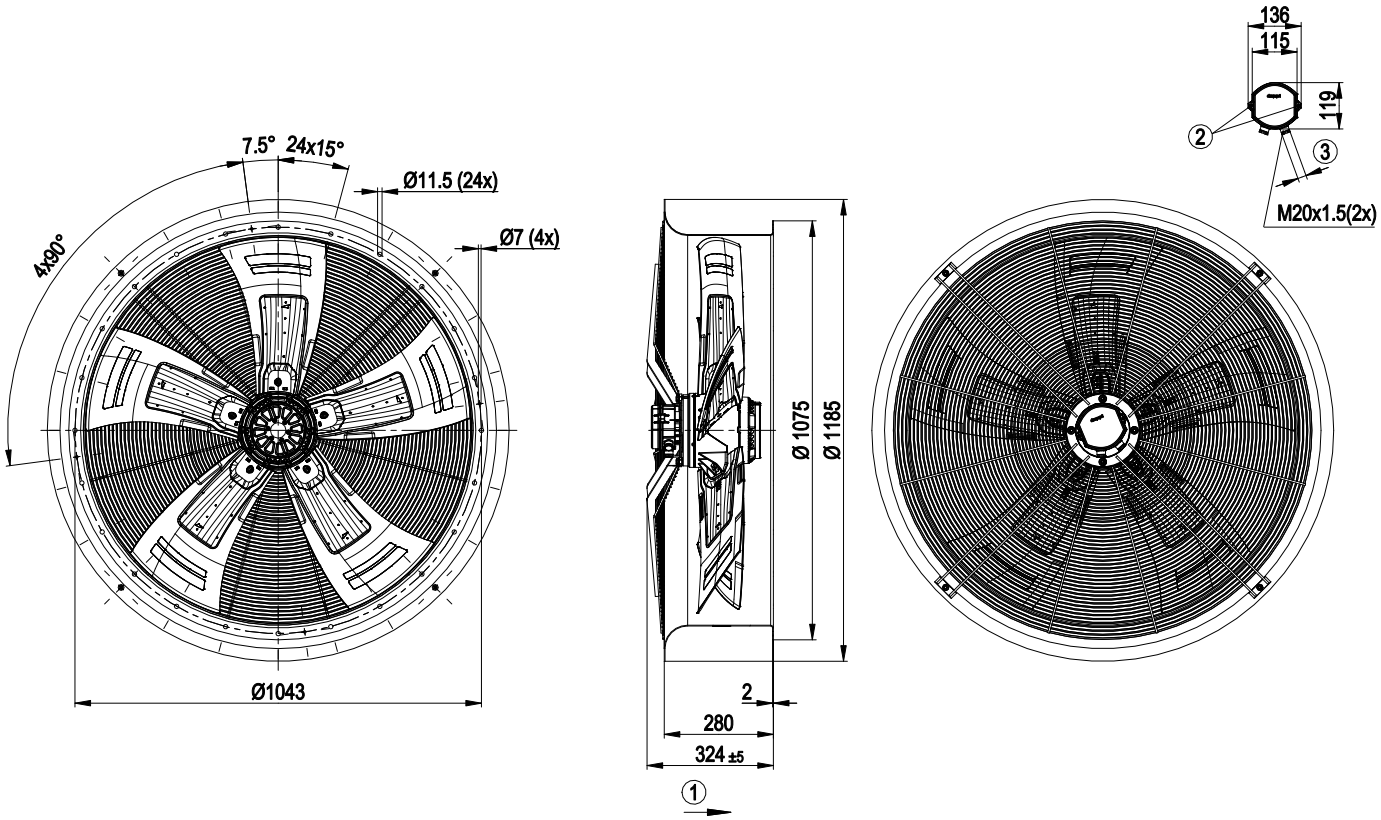
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Product drawing



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 ± 0.4 Nm

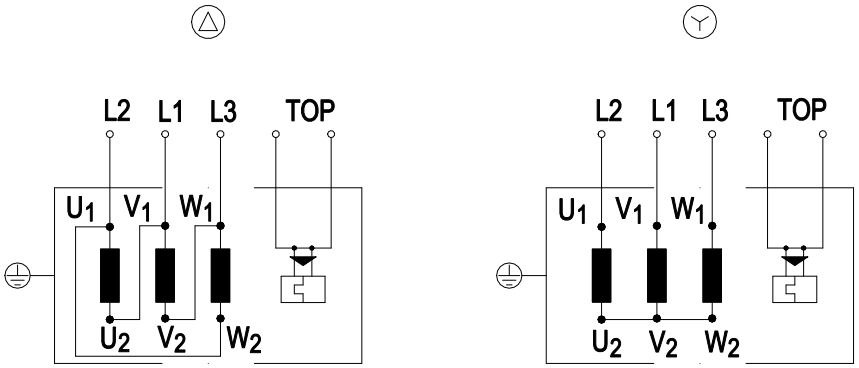
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Connection diagram



Change of rotation direction by reversing two phases

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

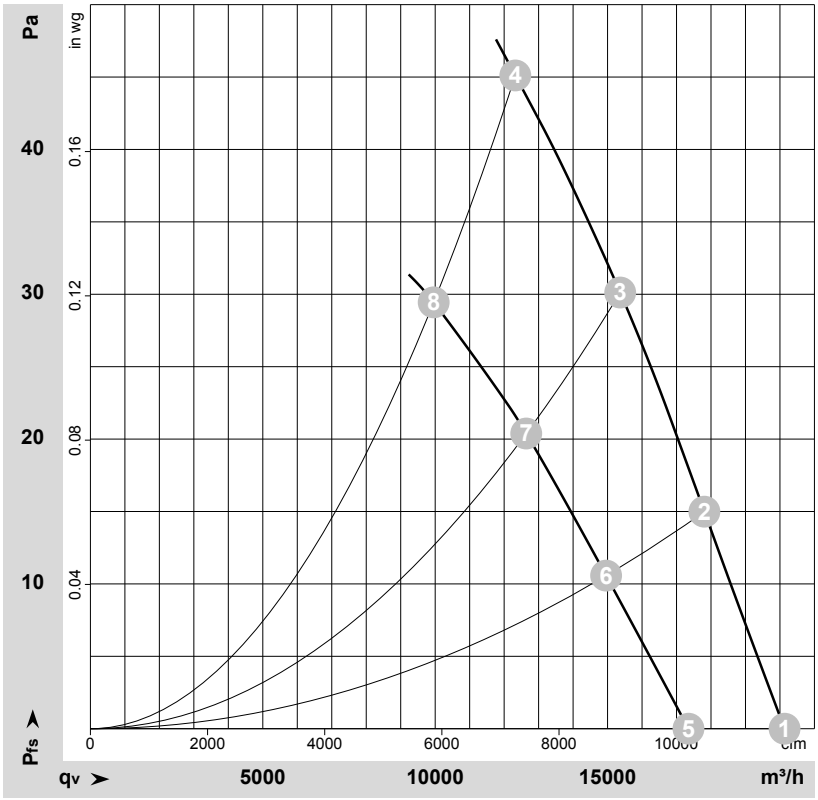
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-150478-1
Measurement: LU-151937-1

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	460	490	1.75	57	64	64	20135	0	11850	0.00
2	Δ	400	50	455	538	1.76	55	63	62	17810	15	10480	0.06
3	Δ	400	50	450	577	1.77	54	61	61	15365	30	9045	0.12
4	Δ	400	50	440	620	1.80	55	62	62	12325	45	7255	0.18
5	Y	400	50	400	290	0.67	54	61	60	17345	0	10210	0.00
6	Y	400	50	385	318	0.70	51	58	58	14960	11	8805	0.04
7	Y	400	50	370	342	0.73	49	56	56	12640	21	7440	0.08
8	Y	400	50	360	360	0.76	49	56	56	9955	29	5860	0.12

Wired = Wiring · U = Power supply · 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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