W6D910-KD01-01/F02

AC axial fan - AxiBlade

sickle-shaped blades (S series)

with square full nozzle

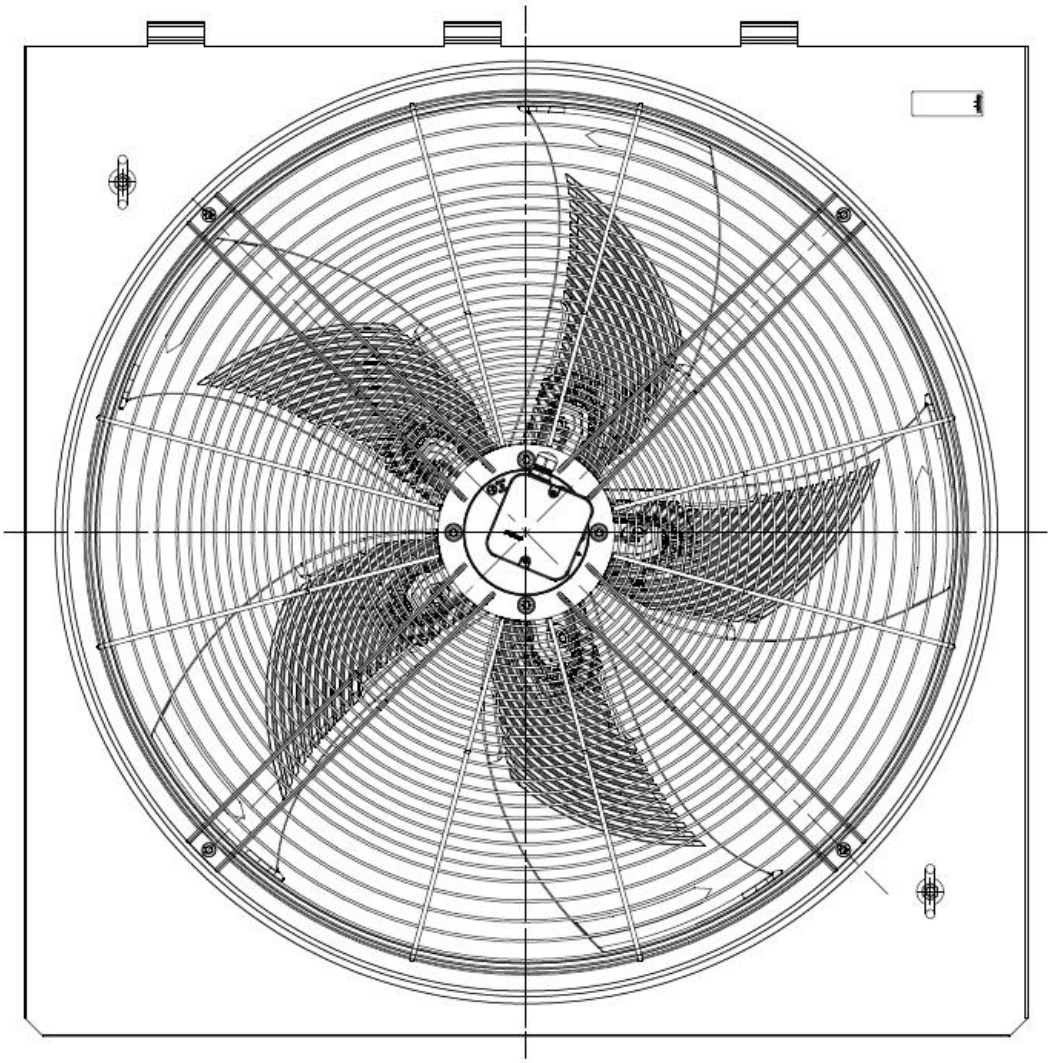
ebm-papst Ventilator (Shanghai) Co.,Ltd.

No.418, Hua Jing Road, Wai Gao Qiao Free Trade Zone, Pudong

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Specification



Version	Date	Response	Content
0	2018/10/29	Vicky	initiate

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AC axial fan - AxiBlade

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Nominal data

Type	**W6D910-KD01-01/F02**
Motor	**M6D138-LA**

Phase		3~	3~
Nominal voltage	VAC	400	400
Wiring		Δ	Y
Frequency	Hz	50	50
Method of obtaining data		ml	ml
Status		prelim.	prelim.
Valid for approval/standard		CE	CE
Speed (rpm)	min^{-1}	870	640
Power consumption	W	1920	1170
Current draw	A	3.8	2.2
Max. back pressure	Pa	170	95
Max. back pressure	in. wg	0.68	0.38
Min. ambient temperature	°C	-40	-40
Max. ambient temperature	°C	55	55
Starting current	A	13	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

		Actual	Req. 2015
01 Overall efficiency η_{es}	%	41.9	35.1
02 Measurement category		A	
03 Efficiency category		Static	
04 Efficiency grade N		46.8	40
05 Variable speed drive		No	

09 Power consumption P_e	kW	1.68
09 Air flow q_v	m^3/h	18355
09 Pressure increase p_{fs}	Pa	139
10 Speed (rpm) n	min^{-1}	900
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-192850

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Technical description

Weight	53.4 kg
Size	910 mm
Motor size	138
Rotor surface	Cast in aluminum
Terminal box material	PP plastic
Blade material	PP plastic
Fan housing material	Sheet steel, galvanized and coated with black plastic (RAL 7030)
Guard grille material	Steel, coated with black plastic (RAL 9005)
Number of blades	5
Blade pitch	0°
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	Any
Condensation drainage holes	On rotor and stator sides
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)
Approval	EAC

Approve

ТАМОЖЕННЫЙ СОЮЗ

СЕРТИФИКАТ СООТВЕТСТВИЯ

EAC

№ ТС RU C-DE.AE44.B.00464

Серия RU № 0035878

ОРГАН ПО СЕРТИФИКАЦИИ Орган по сертификации промышленной продукции АНО "Научно-технический центр стандартизации метрологии подтверждения соответствия (сертификации) "Тест-С.-Петербург", Адрес: 190103,Российская Федерация, г. Санкт-Петербург, ул. Курляндская, д. 1; 190103,Санкт-Петербург, ул. Курляндская, д. 1 (фактический), Телефон: (812) 2446219, Факс: (812) 2446219, E-mail: bogdanova@rustest.spb.ru, Аттестат рег. № РОСС RU.0001.11AE44, выдан 08.04.2013

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ИЗГОТОВИТЕЛЬ «ebm-papst Mulfingen GmbH & Co. KG», Адрес: Bachmühle 2, D-74673 Mulfingen, Germany, Германия, Телефон: +49793881223;, Факс: +497938819223, Адрес филиала: Производственные филиалы (см. Приложение – бланк № 0040232)

ПРОДУКЦИЯ Вентиляторы промышленные осевые торговой марки ebm-papst, модели и комплектующие (см. Приложение – бланк № 0040233, 0040234, 0040235). Изготовлены в соответствии EN 60335-1:2002+A11:2004+A1:2004+A12:2006+A2:2006+A13:2008+A14:2010 +A15:2011. Серийный выпуск

КОД ТН ВЭД ТС 8414 00 000 0

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ Технического регламента Таможенного союза ТР ТС 004/2011 "О безопасности низковольтного оборудования"; ТР ТС 010/2011 "О безопасности машин и оборудования"; ТР ТС 020/2011 "Электромагнитная совместимость технических средств"

СЕРТИФИКАТ ВЫДАН НА ОСНОВАНИИ Протокол испытаний № FGG2013/01/01/257-01 от 28.10.2013 Испытательная лаборатория ФБУ «Тест-С.-Петербург». Рег. № РОСС RU.0001.21ME01 от 21.10.2011 до 16.06.2015, адрес: 190103, С.-Петербург, Курляндская ул., 1; Акт проверки состояния производства № 01/2-08-2013 от 28.08.2013 ОС, Рег. № РОСС RU.0001.11AE44

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ Уполномоченные представители по договору № 2013-01 от 01.08.2013: Общество с ограниченной ответственностью «ЭБМ-Папст Урал» (ООО «ЭБМ-Папст Урал»), юридический адрес: 620102, Российская Федерация, г. Екатеринбург, ул. Посадская, 23, литер Е, № 3, тел: +7 (343) 233-77-88, Факс: +7 (343) 233-77-85, e-mail: epural@ru.ebmpapst.com , ОГРН 1026602330996; Иностранное общество с ограниченной ответственностью «ЭБМ-ПАПСТ БЕЛ» (ИООО «ЭБМ-ПАПСТ БЕЛ»), юридический адрес: 223010 Республика Беларусь, г. Минск, пер. Рабкоровский, 4, изолированное помещение №6, комн. 106, 107, тел. +375 17 385 15 56, факс + 375 17 385 15 56, e-mail: info@by.ebmpapst.com, УНП 190668... Дополнительная информация (см. Приложение – бланк № 0040236), схема сертификации 1с

СРОК ДЕЙСТВИЯ С 12.11.2013 **ПО** 11.11.2018 **ВКЛЮЧИТЕЛЬНО**

М.П.

Руководитель (уполномоченное лицо) органа по сертификации (подпись) С. Н. Богданова (инициалы, фамилия)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) (подпись) В. В. Романов, М. В. Касьянова (инициалы, фамилия)

AC axial fan - AxiBlade

sickle-shaped blades (S series)

with square full nozzle

Reliability

Basic test

NO	ITEMS	Test Method/Standard	Results
1	Air performance	Air performance measurements are conducted on intake-side chamber test rigs conforming to the requirements of ISO 5801 and DIN 24163.	OK
2	Acoustic test	All acoustic values are determined in accordance with ISO 13347, DIN 45635 and ISO 3744/3745 as per accuracy class 2 and given in A-rated form.	OK
3	Vibration test	Vibration tests are carried out in compliance with – Vibration test in operation according to DIN IEC 68, parts 2-6 – Vibration test at standstill according to DIN IEC 68, parts 2-6	OK
4	Shock load	Shock load tests are carried out in compliance with – Shock load according to DIN IEC 68, parts 2-27	OK
5	Balancing quality	Testing the balancing quality is carried out in compliance with – Residual imbalance according to DIN ISO 1940 – Standard balancing quality level G 4.1	OK
6	Motor temperature rise	Temperature rise of fans, according to DIN EN 60034-2	OK
7	Balance tab fastness confirmation	In order to confirm the fixity of balancing weights we perform "spinning tests". In this tests, we turn the fan wheel to Min speed of 1.4x nominal speed and check the position of the individual balancing weights.	OK
8	Blade life test(1,000,000start/off cycle):	No cycle test was performed with the 910 blade, As a reference we may mention the Hyblade 630mm blade which we can guarantee 1Mio cycles for (Indeed, diameter is smaller, however, speed is higher)	OK
9	Rotor locked test	Tested according to EN60034-11	OK
10	Reverse rotary start test(low voltage):	basically, it shouldn't be a problem for the fan to start in reversed rotation conditions. This would mean that the motor is breaking down from revered direction to 0 rpm and then starts into normal operation mode. During this phase, howerwer, LRA is applied.	OK
11	Overcurrent protection test	Locked rotor test is the condition of Max current draw, this is tested according to EN60034-11	OK
12	Rain test (Heavy rainfall standard)	IPX4 tested in the style of DIN 60529 and DIN 60034-5 for critical parts	OK

Reliability

Ball bearing life expectancy calculation

calculation number:	15798	note:	Data and temperature of bearings based on reference measurements. Calculated for 22500 m³/h @ 80 Pa.
date:	25.07.2018		
type:	W6D 910-KD01-01		
motor:	M6D 138-LA		
customer:	Trane		

motor data		general data	
voltage[V]:	380	lubricant:	Asonic HQ 72-102
frequency[Hz]:	50	rs ball bearing type:	6204
capacitor[µF]:	0	ss ball bearing type:	6204
power[W]:	1380	amb. temperature[°C]:	40
speed[1/min]:	900	probability a1:	1

operating pos: rotor above	bearing:	rotor side	coeff. of grease a_{23} : 0,7
nominal life expectancy		L_{nh}	141693
modified nominal life expectancy		L_{nah}=a1*a23*L_{nh}	96279
lubricant life expectancy		t_f	74123

The life expectancy is limited to 74123 hours by the lubricant life expectancy.

operating pos: rotor below	bearing:	rotor side	coeff. of grease a_{23} : 0,7
nominal life expectancy		L_{nh}	372192
modified nominal life expectancy		L_{nah}=a1*a23*L_{nh}	252901
lubricant life expectancy		t_f	74123

The life expectancy is limited to 74123 hours by the lubricant life expectancy.

operating pos: horizontal shaft	bearing:	rotor side	coeff. of grease a_{23} : 0,7
nominal life expectancy		L_{nh}	260653
modified nominal life expectancy		L_{nah}=a1*a23*L_{nh}	177111
lubricant life expectancy		t_f	74123

The life expectancy is limited to 74123 hours by the lubricant life expectancy.

This calculation only takes influences into account, which occur within the scope of optimal application of the above motor and ventilator type.

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Reliability

Ball bearing life expectancy calculation

calculation number:	15799	note:	Data and temperature of bearings based on reference measurements. Calculated for 22500 m³/h @ 80 Pa.
date:	25.07.2018		
type:	W6D 910-KD01-01		
motor:	M6D 138-LA		
customer:	Trane		

motor date		general data	
voltage[V]:	380	lubricant:	Asonic HQ 72-102
frequency[Hz]:	50	rs ball bearing type:	6204
capacitor[µF]:	0	ss ball bearing type:	6204
power[W]:	1380	amb. temperature[°C]:	55
speed[1/min]:	900	probability a1:	1

operating pos: rotor above	bearing:	rotor side	coeff. of grease a_{bb} : 0,6
nominal life expectancy		L_{nh}	141693
modified nominal life expectancy		L_{neh}=a1*a23*L_{nh}	82771
lubricant life expectancy		t_f	37062

The life expectancy is limited to 37062 hours by the lubricant life expectancy.

operating pos: rotor below	bearing:	rotor side	coeff. of grease a_{bb} : 0,6
nominal life expectancy		L_{nh}	372192
modified nominal life expectancy		L_{neh}=a1*a23*L_{nh}	217418
lubricant life expectancy		t_f	37062

The life expectancy is limited to 37062 hours by the lubricant life expectancy.

operating pos: horizontal shaft	bearing:	rotor side	coeff. of grease a_{bb} : 0,6
nominal life expectancy		L_{nh}	260653
modified nominal life expectancy		L_{neh}=a1*a23*L_{nh}	152261
lubricant life expectancy		t_f	37062

The life expectancy is limited to 37062 hours by the lubricant life expectancy.

This calculation only takes influences into account, which occur within the scope of optimal application of the above motor and ventilator type.

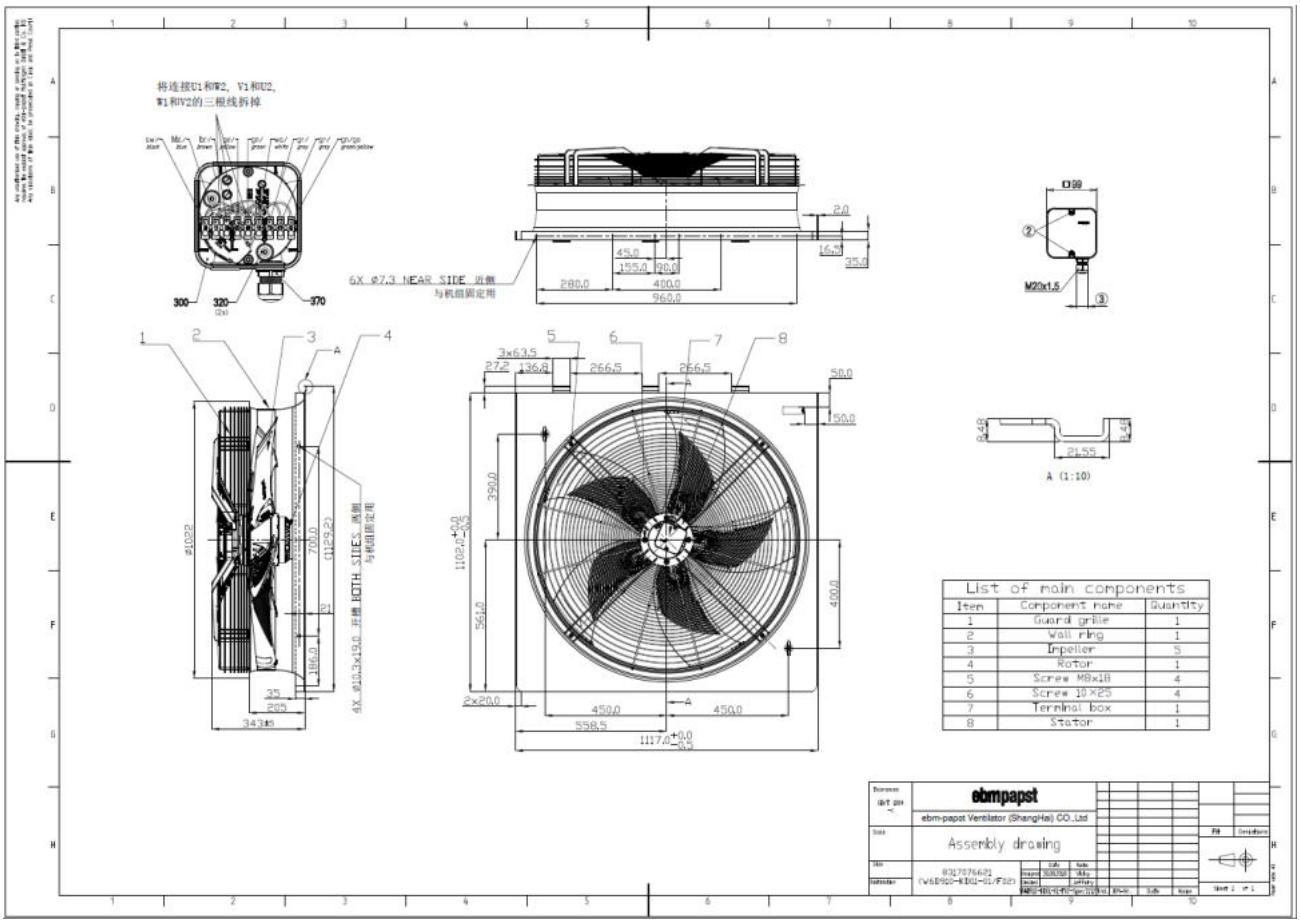
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Product drawing



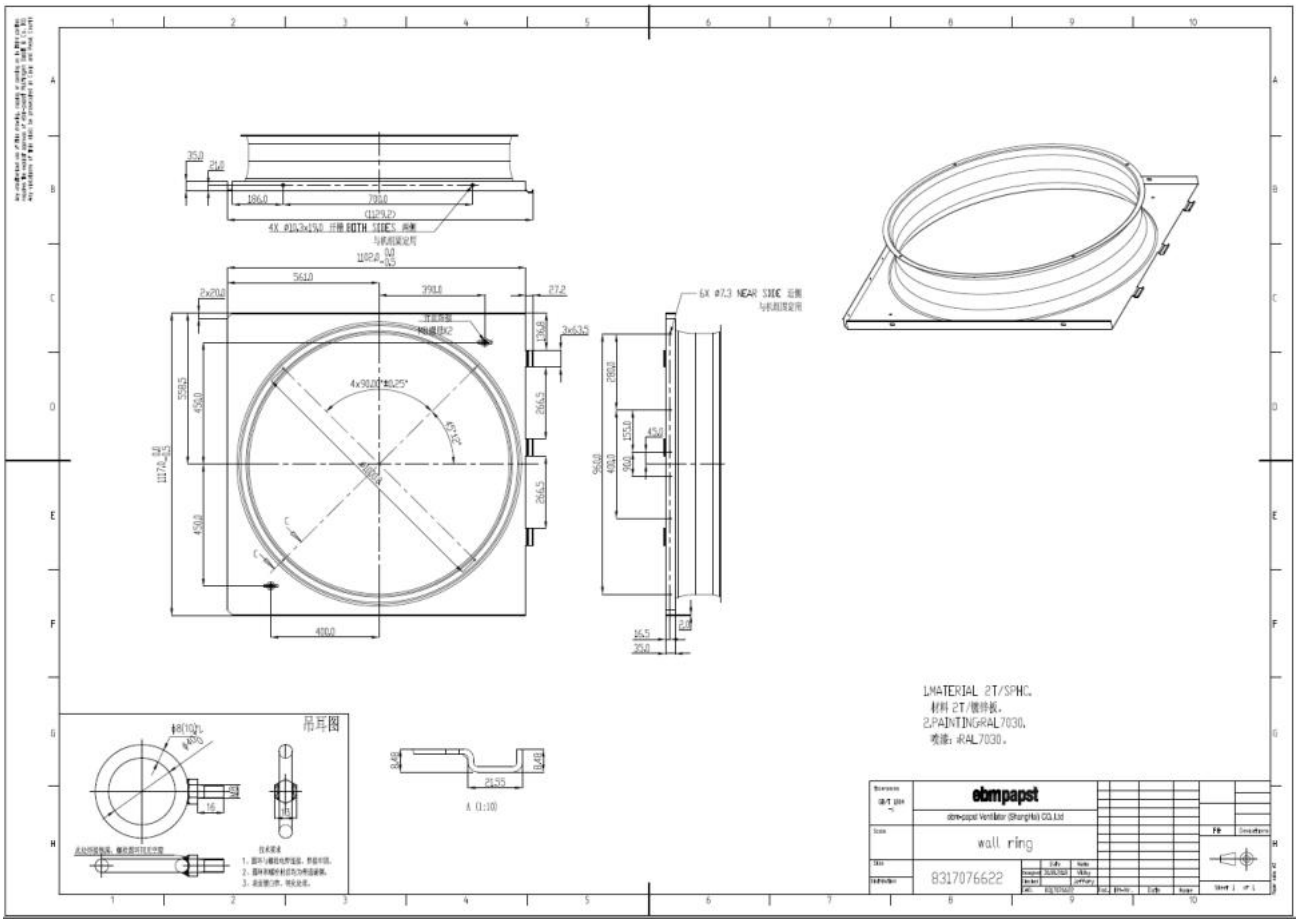
1	Airflow direction "V"
2	Tightening torque 1.5 ± 0.2 Nm
3	Cable diameter min. 7 mm, max. 14 mm, tightening torque 2 ± 0.3 Nm

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Wallring drawing



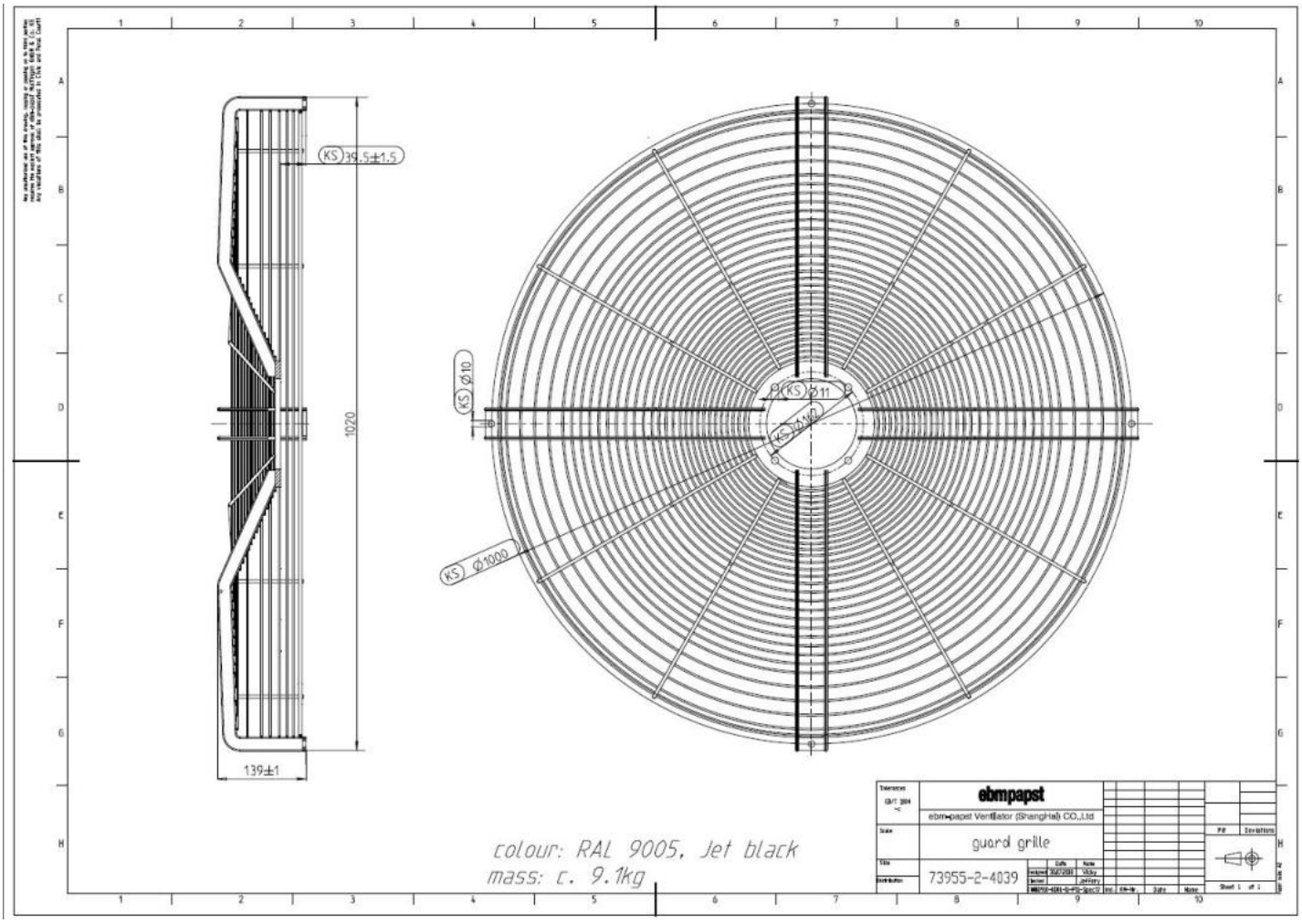
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Guard grille drawing



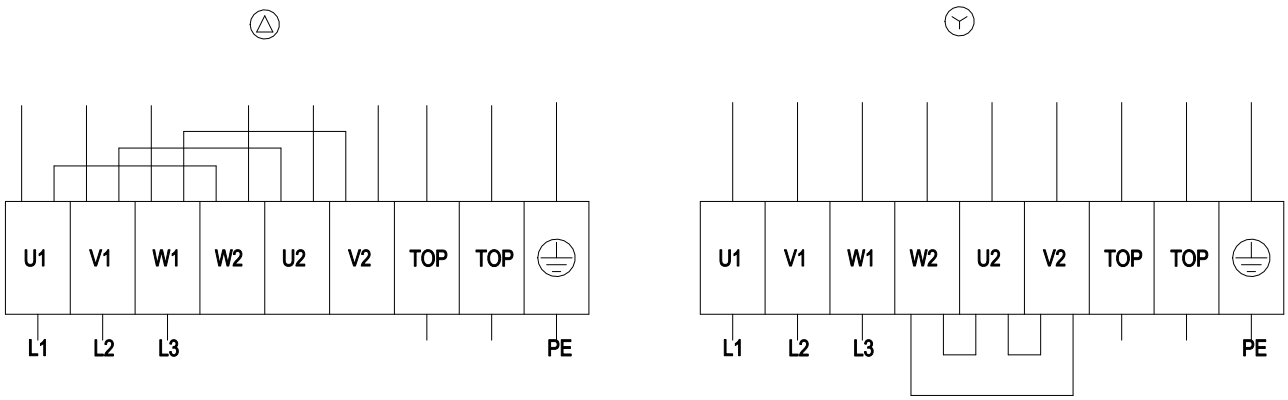
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Connection diagram



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				

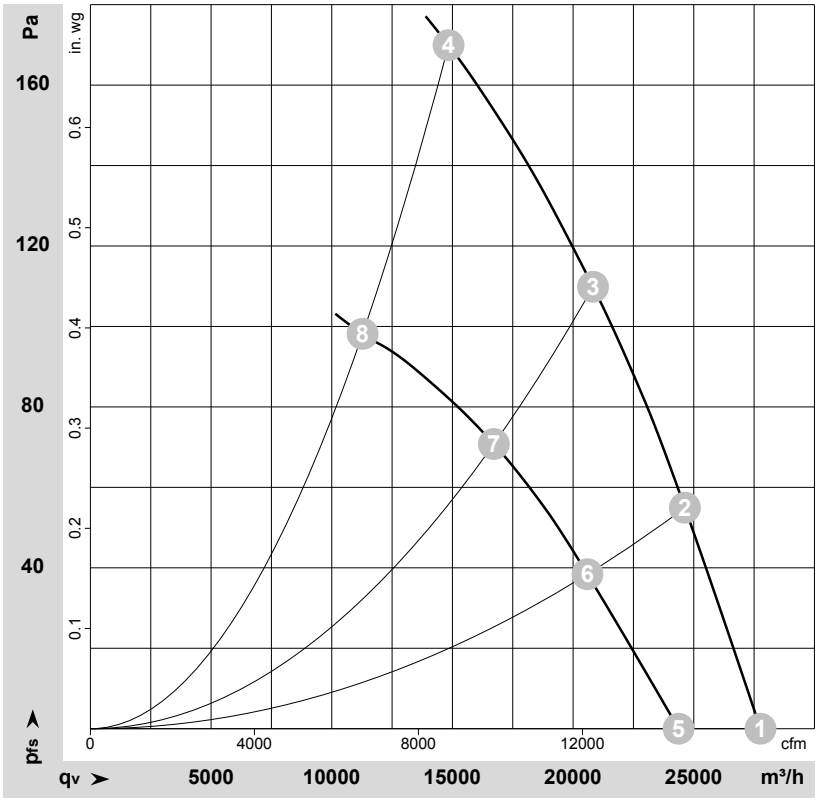
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Curves: Air performance 50 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-192850-1
Measurement: LU-193182-1

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	945	1113	2.82	70	77	77	27765	0	16340	0.00
2	Δ	400	50	925	1349	3.09	68	75	75	24635	56	14500	0.22
3	Δ	400	50	910	1572	3.36	68	75	75	20825	110	12255	0.44
4	Δ	400	50	870	1920	3.80	77	85	85	14840	170	8735	0.68
5	Y	400	50	825	836	1.58	66	74	73	24370	0	14345	0.00
6	Y	400	50	775	970	1.84	63	71	70	20595	39	12120	0.16
7	Y	400	50	730	1064	2.03	61	68	68	16715	71	9840	0.29
8	Y	400	50	640	1170	2.20	69	76	77	11280	98	6640	0.39

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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