

AC axial fans

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / GreenTech EC-compact fans

AC axial fans

AC centrifugal fans

Accessories

Representatives

AC axial fan overview

143

AC axial fans

144



AC fans

Technical information

Product line

The renowned ebm-papst AC fans are used when DC voltage is not available. The AC range of fans is based on experience gained from decades of development activity, millions of units in series production and competence in innovation of a world-wide technological leader.

A wide range of fans for AC operation is presented in this catalogue. In addition to complete device fans, you will also find fans without external housing, providing a particularly economical advantage when the air duct can be integrated in the respective device.

Variety of sizes

AC fans are available in a variety of sizes with either air exhaust or air intake over struts. Silent running models with sleeve bearings or for extreme ambient conditions; fans with ball bearings are available with plug connection or external leads.

Shaded-pole or capacitor motors

Fan drives by shaded-pole or capacitor motors, most of which incorporate the world-famous ebm-papst external rotor principle: The fan blades are directly attached to the external rotor of the external rotor motor, thus combining both high performance and profitability.

Flat built AC fans

ebm-papst also has particularly flat built AC fans with internal rotor motor. Their advantage: quick start to full speed. A plastic impeller and the both smaller and lighter internal rotor motor lead to a lower moment of inertia.

Bearings

AC fans with sleeve bearings are powered by Class E insulated motors. Fans with ball bearings are equipped with Class B, E or F insulated motors.

Protection class

All ebm-papst fans conform to the requirements of IP 20. Fans conforming to IP 54 and special types of protection class are also available.

AC voltage

The line of AC fans for Euro voltage according to IEC 60038 (230 V + 6 %, -10 %) is basically also available for 115 V.

Frequencies

AC fans can be operated at frequencies of 50 Hz or 60 Hz. However, their technical data then changes accordingly.

Capacitor

Fans driven by capacitor external motors provide particularly high operating efficiency. Generally, the required operating capacitor is already integrated in the fan housing.

Overloading

Almost all AC fans are protected against overloading (e.g. due to locked rotor) the drive motors are either impedance protected (marked "Impedance protected", and/or "Z.P.") or are equipped with a thermal switch (marked "Thermally protected" or "Th.P."). The model designation of these fans ends with "S".

max. 57 m³/h

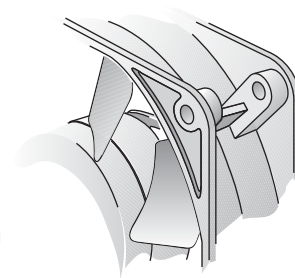
AC axial fans

Series 8000 A 80 x 80 x 38 mm

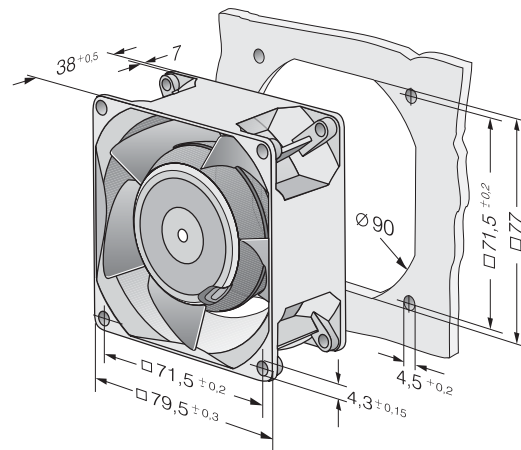
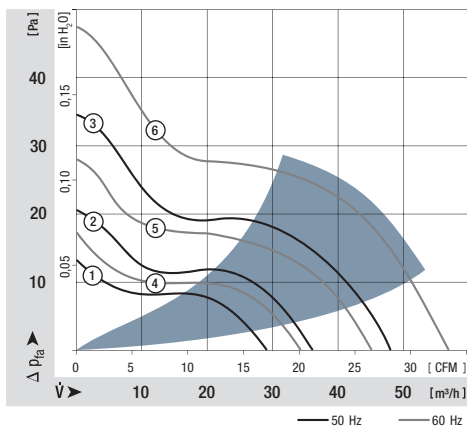


- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller.
- Air intake over struts. Direction of rotation clockwise, seen on rotor.
- Electrical connection via 2 flat plugs 2.8 x 0.5 mm.
- Fan housing with grounding lug and screw M4 x 8 (TORX).
- Mass: 490 g.
- Optionally available with electrical connection via leads.
- Optionally available with air exhaust over struts and clockwise direction of rotation.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data	Air flow		Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM									V	Hz	
8880 A	29	17,1	230	50	26	4,1	□	9,0	1 750	-10...+80	60 000 / 25 000		1
8850 A	36	21,2	230	50	31	4,6	□	12,5	2 150	-10...+70	52 500 / 25 000		2
8550 A	48	28,3	230	50	36	5,0	□	12,0	2 700	-10...+70	52 500 / 25 000		3
8556 A	48	28,3	230	50	37	5,1	■	12,0	2 800	-40...+90	52 500 / 15 000		3
8830 A	34	20,0	115	60	29	4,3	□	8,0	1 950	-10...+80	62 500 / 25 000		4
8800 A	45	26,5	115	60	34	4,8	□	11,0	2 500	-10...+70	55 000 / 27 500		5
8500 A	57	33,5	115	60	41	5,5	□	11,0	3 200	-10...+75	55 000 / 25 000		6
8506 A	57	33,5	115	60	42	5,7	■	11,0	3 300	-40...+95	55 000 / 15 000		6



Series 8000 A with reinforced flanges



max. 61 m³/h

AC axial fans

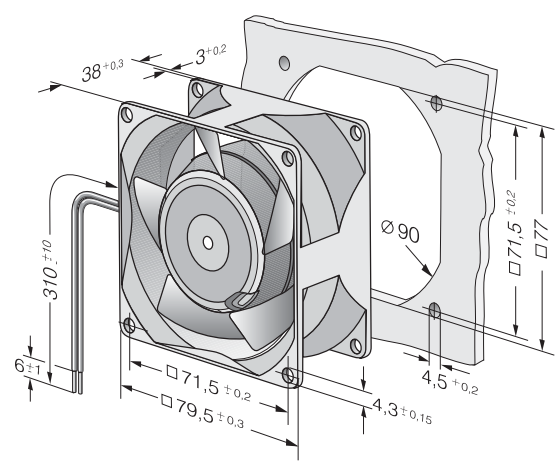
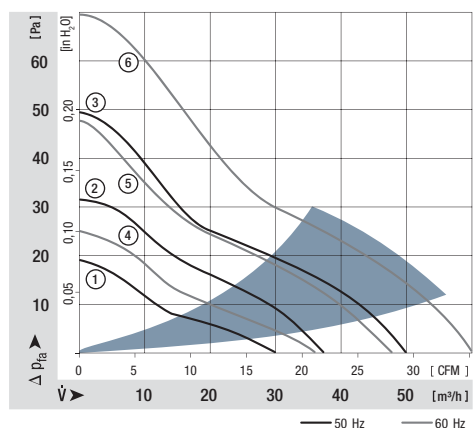
Series 8000 N 80 x 80 x 38 mm



- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller.
- Air exhaust over struts. Direction of rotation clockwise, seen on rotor.
- Electrical connection via 2 leads. Bared and tin-plated.
- Fan housing with grounding lug for screw M4 x 8 (TORX).
- Mass: 490 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data		Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type		m ³ /h	CFM	V	Hz	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	
8880 N		30	17,7	230	50	18	3,3	□	9,0	1 750	-10...+80	60 000 / 25 000		1
8850 N		37	21,8	230	50	24	3,9	□	12,5	2 150	-10...+70	52 500 / 25 000		2
8550 N		50	29,4	230	50	30	4,4	□	12,0	2 700	-10...+70	52 500 / 25 000		3
8556 N		50	29,4	230	50	31	4,5	■	12,0	2 800	-40...+90	52 500 / 15 000		3
8830 N		36	21,2	115	60	21	3,7	□	8,0	1 950	-10...+80	62 500 / 25 000		4
8800 N		47	27,7	115	60	28	4,3	□	11,0	2 500	-10...+70	55 000 / 27 500		5
8500 N		61	35,9	115	60	34	4,8	□	11,0	3 200	-10...+75	55 000 / 25 000		6
8506 N		61	35,9	115	60	35	5,0	■	11,0	3 300	-40...+95	55 000 / 15 000		6

Fan type				Lead wires	
8830 N	8800 N	8550 N	8500 N	310 mm long	AWG 18, TR 64
8880 N				310 mm long	AWG 18, TR 64
8556 N	8506 N			310 mm long	AWG 22
8850 N				440 mm long	AWG 18, TR 64

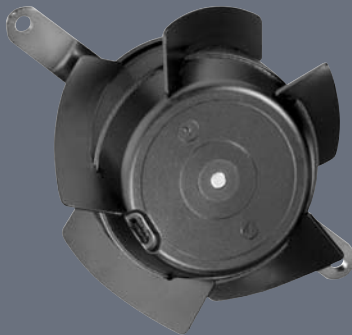


Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 45 m³/h

AC axial fans

Series 8000 TA 76 Ø x 37 mm

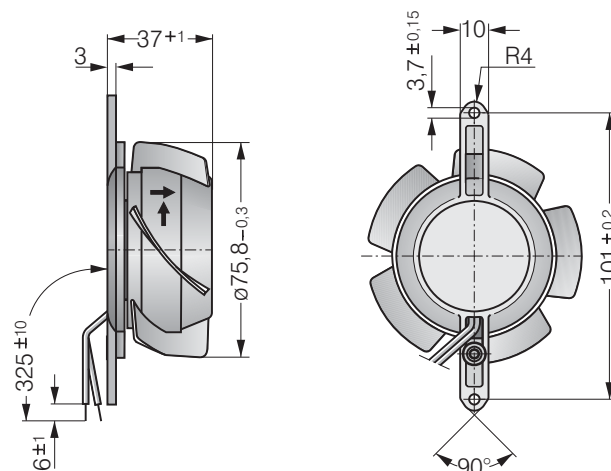


- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Impeller and mounting bracket of metal.
- Air intake over mounting bracket. Direction of rotation clockwise, seen on rotor.
- Electrical connection via 2 leads. Bared and tin-plated.
- Mass: 370 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data	Air flow		Nominal voltage	Frequency	Sound pressure level	Sinter sleeve bearings Ball bearings		Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C		Curve
	m ³ /h	CFM				V	Hz				dB(A)	□ / ■	
8880 TA	23	13,5	230	50	15	□	9,0	1 650	-10...+80	60 000 / 25 000		-	
8850 TA	30	17,7	230	50	19	□	12,0	2 100	-10...+70	52 500 / 25 000		-	
8550 TA	38	22,4	230	50	25	□	12,0	2 650	-10...+70	52 500 / 25 000		-	
8556 TA	38	22,4	230	50	26	■	12,0	2 750	-40...+90	52 500 / 15 000		-	
8830 TA	26	15,3	115	60	18	□	8,0	1 850	-10...+80	62 500 / 25 000		-	
8800 TA	34	20,0	115	60	23	□	11,0	2 450	-10...+70	55 000 / 27 500		-	
8500 TA	45	26,5	115	60	30	□	11,0	3 150	-10...+75	55 000 / 25 000		-	
8506 TA	45	26,5	115	60	31	■	11,0	3 250	-40...+95	55 000 / 15 000		-	

The air flow and noise level of fans without external housing depends on the installation conditions. The stated air flow and noise has been measured with an orifice 76.5 mm Ø at a distance of approx. 17 mm from the mounting bracket. Under exceptionally favourable mounting conditions, the air flow of fan series 8000 A is achievable. The noise in the optimal operating range can only be measured for these fans in a specific application.

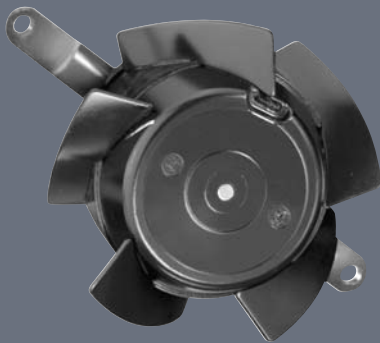
Fan type				Lead wires	
8880 TA	8850 TA	8830 TA	8800 TA	325 mm long	AWG 18, TR 64
8550 TA	8500 TA			325 mm long	AWG 18, TR 64
8556 TA	8506 TA			325 mm long	AWG 18



max. 47 m³/h

AC axial fans

Series 8000 TV 76 Ø x 37 mm

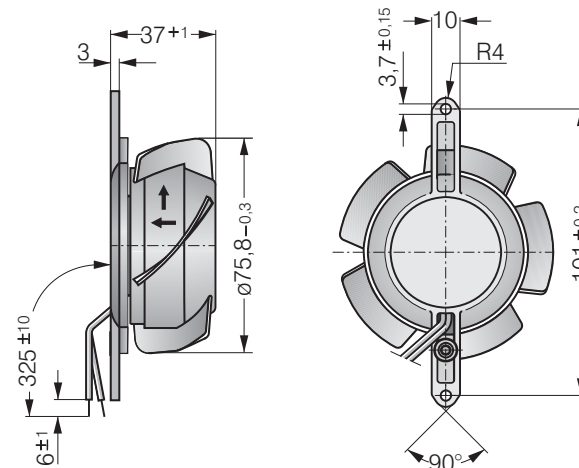


- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Impeller and mounting bracket of metal.
- Air exhaust over mounting bracket. Direction of rotation clockwise, seen on rotor.
- Electrical connection via 2 leads. Bared and tin-plated.
- Mass: 370 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data	Air flow		Nominal voltage	Frequency	Sound pressure level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C		Curve
	m ³ /h	CFM								V	Hz	
8880 TV	24	14,1	230	50	15	□	9,0	1 650	-10...+80	60 000 / 25 000		-
8850 TV	31	18,2	230	50	20	□	12,0	2 100	-10...+70	52 500 / 25 000		-
8550 TV	40	23,5	230	50	27	□	12,0	2 650	-10...+70	52 500 / 25 000		-
8556 TV	40	23,5	230	50	28	■	12,0	2 750	-40...+90	52 500 / 15 000		-
8830 TV	27	15,9	115	60	18	□	8,0	1 850	-10...+80	62 500 / 25 000		-
8800 TV	36	21,2	115	60	24	□	11,0	2 450	-10...+70	55 000 / 27 500		-
8500 TV	47	27,7	115	60	32	□	11,0	3 150	-10...+75	55 000 / 25 000		-
8506 TV	47	27,7	115	60	33	■	11,0	3 250	-40...+95	55 000 / 15 000		-

The air flow and noise level of fans without external housing depends on the installation conditions. The stated air flow and noise has been measured with an orifice 76.5 mm Ø at a distance of approx. 17 mm from the mounting bracket. Under exceptionally favourable mounting conditions, the air flow of fan series 8000 N is achievable. The noise in the optimal operating range can only be measured for these fans in a specific application.

Fan type				Lead wires	
8880 TV	8850 TV	8830 TV	8800 TV	325 mm long	AWG 18, TR 64
8550 TV	8500 TV			325 mm long	AWG 18, TR 64
8556 TV	8506 TV			325 mm long	AWG 18



Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 70 m³/h

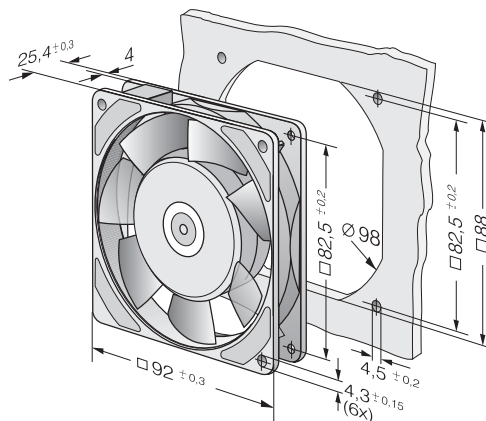
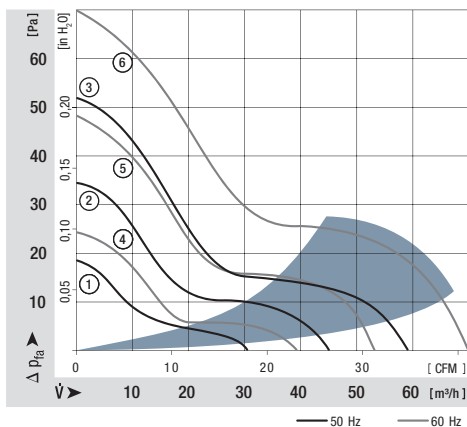
AC axial fans

Series 3900 92 x 92 x 25 mm



- AC fans with internal rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing, impeller of mineral-reinforced plastic PA.
- Air exhaust over struts. Direction of rotation counter-clockwise, seen on rotor.
- Electrical connection via 2 flat plugs 2.8 x 0.5 mm.
- Fan housing with grounding lug for screw M4.
- Mass: 280 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data	Air flow		Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM									V	Hz	
3950 L	31	18,2	230	50	24	3,8	□	6,0	1 550	-10...+80	70 000 / 27 500		1
3956 L	31	18,2	230	50	24	3,8	■	6,0	1 550	-40...+80	70 000 / 27 500		1
3950 M	45	26,5	230	50	29	4,2	□	6,0	2 150	-10...+80	70 000 / 27 500		2
3956 M	45	26,5	230	50	29	4,2	■	6,0	2 150	-40...+80	70 000 / 27 500		2
3950	59	34,7	230	50	35	4,7	□	11,0	2 650	-20...+80	55 000 / 20 000		3
3956	59	34,7	230	50	35	4,7	■	11,0	2 650	-40...+80	55 000 / 20 000		3
3900 L	39	23,0	115	60	27	4,0	□	5,0	1 850	-10...+80	70 000 / 27 500		4
3906 L	39	23,0	115	60	27	4,0	■	5,0	1 850	-40...+80	70 000 / 27 500		4
3900 M	53	31,2	115	60	34	4,6	□	5,0	2 600	-10...+80	70 000 / 27 500		5
3906 M	53	31,2	115	60	34	4,6	■	5,0	2 600	-40...+80	70 000 / 27 500		5
3900	70	41,2	115	60	40	5,1	□	9,0	3 150	-20...+80	60 000 / 22 500		6
3906	70	41,2	115	60	40	5,1	■	9,0	3 150	-40...+80	60 000 / 22 500		6



max. 89 m³/h

AC axial fans

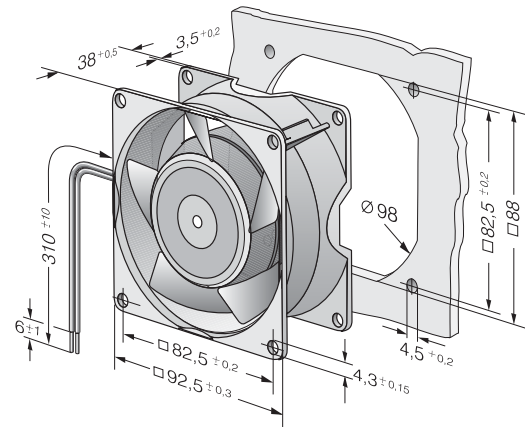
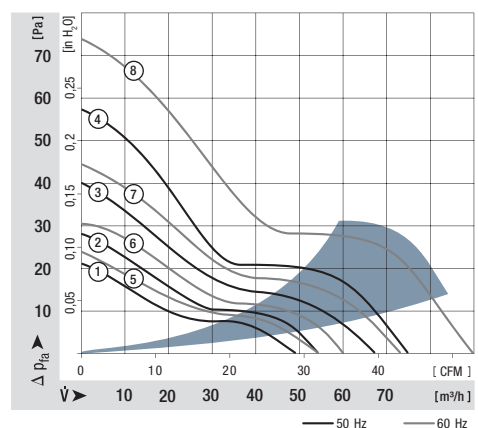
Series 3000 92 x 92 x 38 mm



- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller.
- Air exhaust over struts. Rotational direction CW looking at rotor.
- Electrical connection via 2 leads. Bared and tin-plated.
- Fan housing with grounding lug and screw M4 x 8 (TORX).
- Mass: 420 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data		Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type		m ³ /h	CFM	V	Hz	dB(A)	Bel(A)	□ / ■	Watts	RPM	°C	Hours	Hours	
3850		49	28,8	230	50	24	3,7	□	9,0	1 750	-10...+75	60 000 / 27 500	1	
3856		54	31,8	230	50	26	3,9	■	9,0	1 950	-40...+90	60 000 / 20 000	2	
3550		67	39,4	230	50	32	4,4	□	8,5	2 300	-10...+80	60 000 / 25 000	3	
3556		67	39,4	230	50	33	4,5	■	8,5	2 400	-40...+90	60 000 / 20 000	3	
3650		75	44,1	230	50	36	4,8	□	12,0	2 650	-10...+55	52 500 / 37 500	4	
3656		75	44,1	230	50	37	4,9	■	12,0	2 700	-40...+75	52 500 / 22 500	4	
3800		54	31,8	115	60	26	3,9	□	8,0	1 900	-10...+80	62 500 / 25 000	5	
3806		60	35,3	115	60	29	4,2	■	8,0	2 150	-40...+95	62 500 / 17 500	6	
3500		73	43,0	115	60	35	4,6	□	8,0	2 500	-10...+80	62 500 / 25 000	7	
3506		73	43,0	115	60	36	4,7	■	8,0	2 600	-40...+95	62 500 / 17 500	7	
3600		89	52,4	115	60	41	5,1	□	11,0	3 100	-10...+65	55 000 / 30 000	8	
3606		89	52,4	115	60	42	5,2	■	11,0	3 200	-40...+75	55 000 / 25 000	8	

Fan type	Lead wires	
With sleeve bearings	310 mm long	AWG 18, TR 64
With ball bearings	310 mm long	AWG 18



Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 135 m³/h

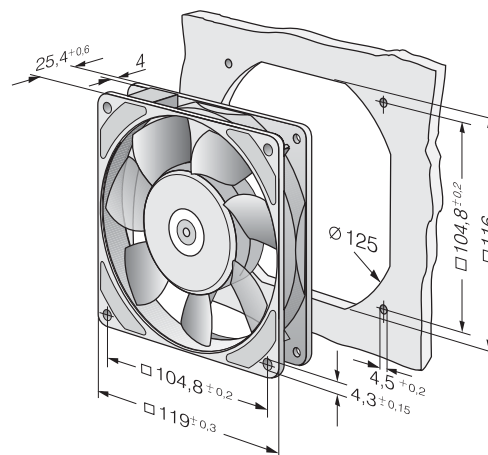
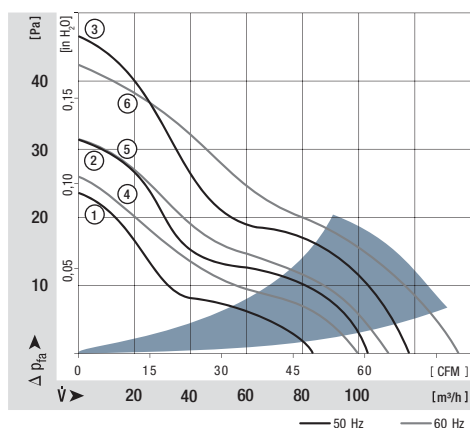
AC axial fans

Series 9900 119 x 119 x 25 mm



- AC fans with external rotor shaded-pole motor.
Protected against overloading by thermal cut-out.
- Metal fan housing and impeller.
- Air exhaust over struts. Direction of rotation counter-clockwise, seen on rotor.
- Electrical connection via 2 flat plugs 2.8 x 0.5 mm.
- Fan housing with grounding lug and screw M4 x 8 (TORX).
- Mass: 320 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data	Air flow		Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM									at 40 °C	at T _{max}	
Type	m ³ /h	CFM	V	Hz	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	
9956 L	84	49,4	230	50	29	4,4	■	9,5	1850	-40...+80	57 500 / 22 500		1
9956 M	104	61,2	230	50	35	4,7	■	10,0	2250	-40...+80	57 500 / 22 500		2
9950	117	68,9	230	50	37	5,0	□	14,0	2450	-20...+70	47 500 / 22 500		3
9956	117	68,9	230	50	37	5,0	■	14,0	2450	-40...+70	47 500 / 22 500		3
9906 L	100	58,9	115	60	34	4,6	■	8,0	2100	-40...+80	62 500 / 25 000		4
9906 M	111	65,3	115	60	37	5,0	■	8,0	2450	-40...+80	62 500 / 25 000		5
9900	135	79,5	115	60	42	5,4	□	12,0	2850	-20...+70	52 500 / 25 000		6
9906	135	79,5	115	60	42	5,4	■	12,0	2850	-40...+70	52 500 / 25 000		6



max. 180 m³/h

AC axial fans

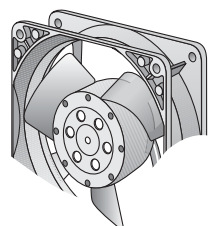
Series 4000 N 119 x 119 x 38 mm



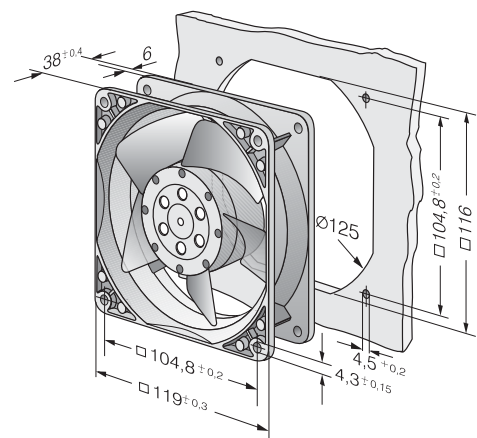
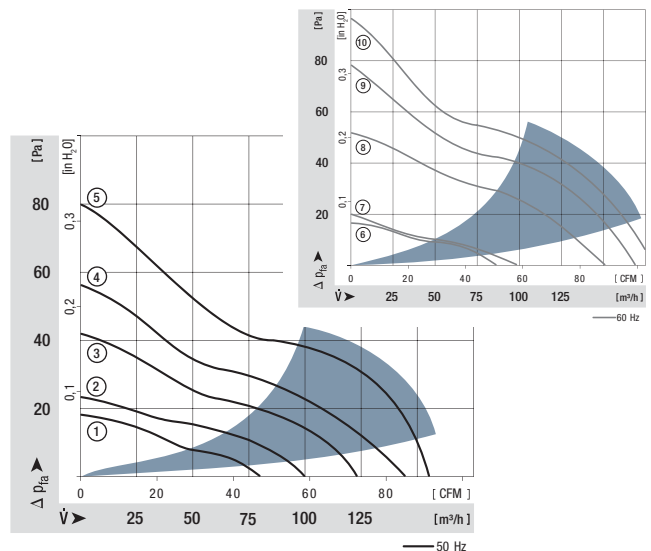
- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller
- Air intake over struts. Direction of rotation clockwise, seen on rotor.
- Types 4890 N and 4840 N air exhaust over struts.
- Electrical connection via 2 flat plugs 3.0 x 0.5 mm.
- Impeller with 3 or 5 blades, see note for fan type.
- Optionally available: Models with reinforced flanges and single leads.
- Fan housing with grounding lug for screw M 4 and UNC.
- Mass: 550 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	CFM	V	Hz	dB(A)	Bel(A)	□ / ■	Watts	RPM	°C	Hours	Hours	
4890 N	80	47,1	230	50	25	4,0	□	11,0	1 550	-10...+70	55 000 / 27 500		1
4850 N*	100	58,9	230	50	32	4,4	□	10,0	1 800	-10...+70	57 500 / 27 500		2
4580 N*	123	72,4	230	50	41	5,2	□	18,0	2 350	-10...+55	40 000 / 27 500		3
4550 N*	145	85,3	230	50	44	5,4	□	16,5	2 550	-10...+55	42 500 / 30 000		4
4650 N	160	94,2	230	50	46	5,4	□	19,0	2 650	-10...+55	37 500 / 27 500		5
4656 N	160	94,2	230	50	47	5,5	■	19,0	2 650	-40...+85	37 500 / 15 000		5
4840 N	85	50,0	115	60	26	4,1	□	10,0	1 650	-10...+75	57 500 / 25 000		6
4800 N*	97	57,1	115	60	32	4,3	□	9,0	1 750	-10...+75	60 000 / 27 500		7
4530 N*	151	88,9	115	60	45	5,4	□	16,0	2 700	-10...+65	42 500 / 25 000		8
4500 N*	169	99,5	115	60	48	5,7	□	15,0	3 000	-10...+65	47 500 / 25 000		9
4600 N	180	105,9	115	60	50	5,7	□	18,0	3 100	-10...+60	40 000 / 25 000		10
4606 N	180	105,9	115	60	51	5,8	■	18,0	3 100	-40...+90	40 000 / 15 000		10

230 V and 115 V versions are rated for both 50 Hz and 60 Hz operation.
For 60 Hz data, please refer to the corresponding 115 V 60 Hz model,
for 50 Hz data please refer to the corresponding 230 V 50 Hz model.



* Fan with 3 blades.



Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 180 m³/h

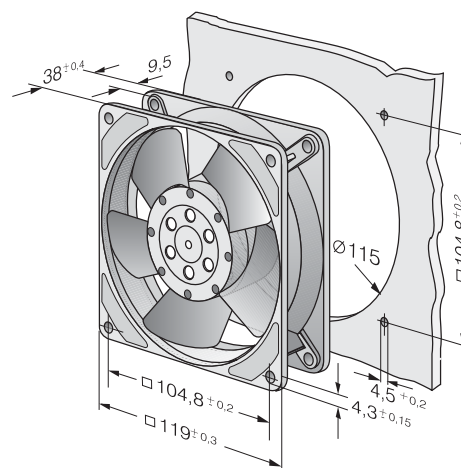
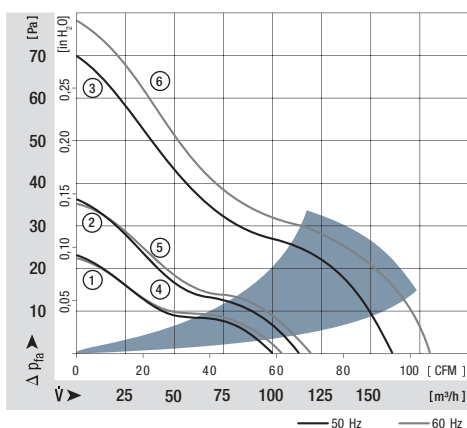
AC axial fans

Series 4000 Z 119 x 119 x 38 mm



- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller.
- Air exhaust over struts. Direction of rotation clockwise, seen on rotor.
- Electrical connection via 2 flat plugs 2.8 x 0.5 mm.
- Optionally available: Models with reinforced flanges and single leads.
- Fan housing with grounding lug and screw M4 x 8 (TORX).
- Mass: 540 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

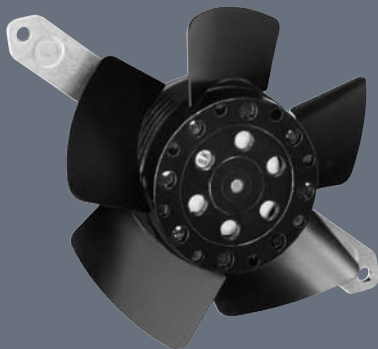
Nominal data	Air flow		Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM									at 40 °C	at T _{max}	
Type	m ³ /h	CFM	V	Hz	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	
4850 Z	100	58,9	230	50	26	4,0	□	13,0	1 700	-10...+65	50 000 / 27 500		1
4856 Z	100	58,9	230	50	26	4,0	■	13,0	1 700	-40...+75	50 000 / 20 000		1
4580 Z	115	67,7	230	50	30	4,3	□	13,0	1 900	-10...+65	50 000 / 27 500		2
4586 Z	115	67,7	230	50	30	4,3	■	13,0	1 900	-40...+75	50 000 / 20 000		2
4650 Z	160	94,2	230	50	40	5,3	□	19,0	2 650	-10...+50	37 500 / 30 000		3
4656 Z	160	94,2	230	50	40	5,3	■	19,0	2 650	-40...+75	37 500 / 17 500		3
4800 Z	105	61,6	115	60	28	4,1	□	12,0	1 800	-10...+70	52 500 / 25 000		4
4806 Z	105	61,6	115	60	28	4,1	■	12,0	1 800	-40...+75	52 500 / 17 500		4
4530 Z	120	70,6	115	60	32	4,4	□	12,0	2 000	-10...+70	52 500 / 25 000		5
4536 Z	120	70,6	115	60	32	4,4	■	12,0	2 000	-40...+75	52 500 / 17 500		5
4600 Z	180	105,9	115	60	45	5,6	□	18,0	3 100	-10...+60	40 000 / 25 000		6
4606 Z	180	105,9	115	60	45	5,6	■	18,0	3 100	-40...+85	40 000 / 15 000		6



max. 147 m³/h

AC axial fans

Series 4600 TA 113 Ø x 37 mm

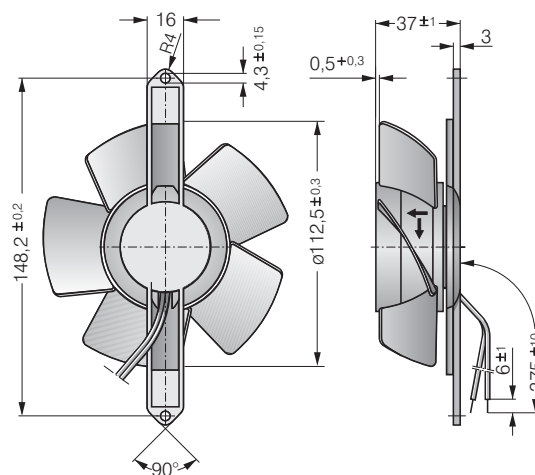


- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Impeller and mounting bracket of metal.
- Air intake over mounting bracket. Direction of rotation clockwise, seen on rotor.
- Electrical connection via 2 leads. Bared and tin-plated.
- Mass: 430 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data	Air flow		Nominal voltage	Frequency	Sound pressure level	Sinter sleeve bearings Ball bearings		Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C		Curve
	m ³ /h	CFM				V	Hz				dB(A)	□ / ■	
4650 TA	138	81,2	230	50	41	□	19,0	2 550	-10...+45	37 500 / 32 500		-	
4656 TA	138	81,2	230	50	42	■	19,0	2 550	-40...+75	37 500 / 17 500		-	
4600 TA	147	86,5	115	60	43	□	18,0	2 900	-10...+50	40 000 / 32 500		-	
4606 TA	147	86,5	115	60	44	■	18,0	2 900	-40...+80	40 000 / 17 500		-	

The air flow and noise level of fans without external housing depends on the installation conditions. The stated air flow and noise has been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket. Under exceptionally favourable mounting conditions, the air flow of fan series 4600 N is achievable. The noise in the optimal operating range can only be measured for these fans in a specific application.

Fan type	Lead wires
4650 TA	4600 TA
	AWG 22, TR 32

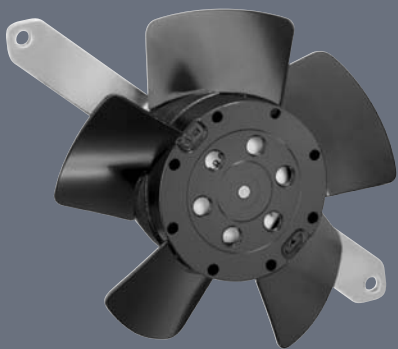


Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 140 m³/h

AC axial fans

Series 4600 TZ 108 Ø x 37 mm

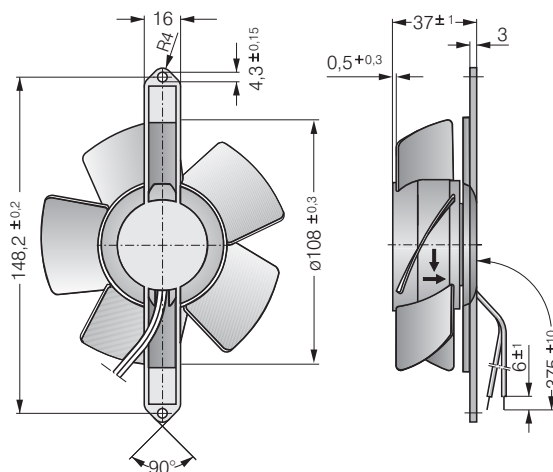


- AC fans with external rotor shaded-pole motor. Impedance protected against overloading.
- Impeller and mounting bracket of metal.
- Air exhaust over mounting bracket. Direction of rotation clockwise, seen on rotor.
- Electrical connection via 2 leads. Bared and tin-plated.
- Mass: 430 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data	Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM								V	Hz	
4650 TZ	125	73,6	230	50	42	□	19,0	2 600	-10...+50	37 500 / 37 500		-
4656 TZ	125	73,6	230	50	42	■	19,0	2 600	-40...+65	37 500 / 20 000		-
4600 TZ	140	82,4	115	60	45	□	18,0	2 950	-10...+50	40 000 / 32 500		-
4606 TZ	140	82,4	115	60	45	■	18,0	2 950	-40...+75	40 000 / 17 500		-

The air flow and noise level of fans without external housing depends on the installation conditions. The stated air flow and noise has been measured with an orifice 109 mm Ø at a distance of approx. 17 mm from the mounting bracket. Under exceptionally favourable mounting conditions, the air flow of fan series 4000 Z is achievable. The noise in the optimal operating range can only be measured for these fans in a specific application.

Fan type	Lead wires
4650 TZ	4600 TZ
4656 TZ	4606 TZ
	AWG 22, TR 32
	AWG 18



max. 206 m³/h

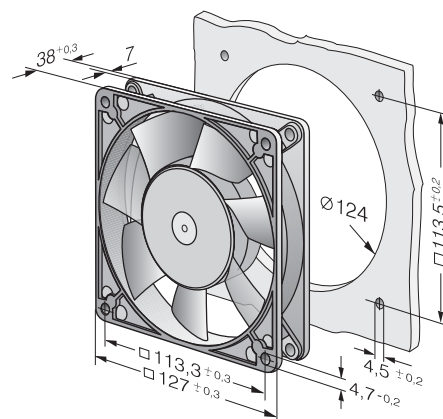
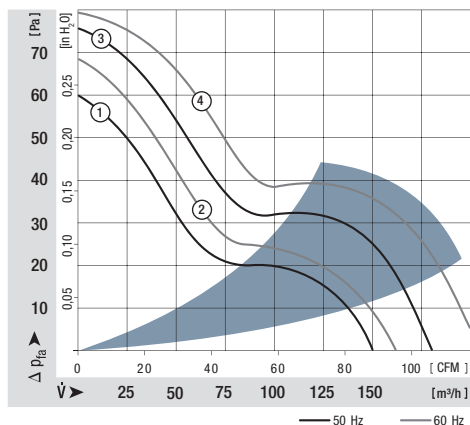
AC axial fans

Series 5900 127 x 127 x 38 mm



- AC fans with internal rotor shaded-pole motor. Impedance protected against overloading.
- Metal fan housing and impeller of fibreglass-reinforced plastic PA.
- Air exhaust over struts. Direction of rotation counter-clockwise, seen on rotor.
- Electrical connection via 2 flat plugs 2.8 x 0.8 mm.
- Fan housing with grounding lug and screw M4 x 6.
- Mass: 570 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data		Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type		m ³ /h	CFM	V	Hz	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	
5988		150	88,3	230	50	37	4,9	■	13,0	2 250	-30...+55	35 000 / 20 000		1
5950		180	105,9	230	50	43	5,4	□	18,0	2 700	-20...+50	40 000 / 32 500		3
5958		180	105,9	230	50	44	5,5	■	18,0	2 750	-30...+60	40 000 / 25 000		3
5938		162	95,3	115	60	40	4,9	■	12,0	2 500	-30...+55	35 000 / 20 000		2
5900		206	121,2	115	60	46	5,7	□	17,0	3 050	-20...+55	42 500 / 30 000		4
5908		206	121,2	115	60	47	5,8	■	17,0	3 100	-30...+75	42 500 / 20 000		4

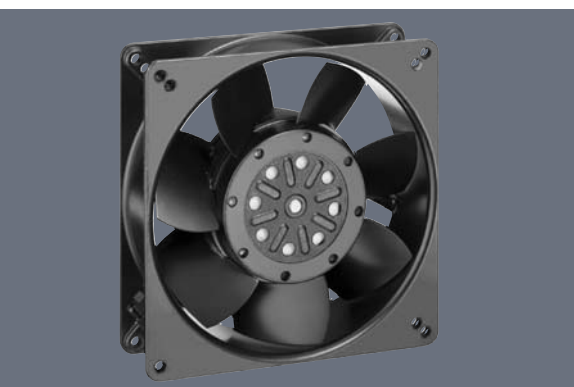


Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 270 m³/h

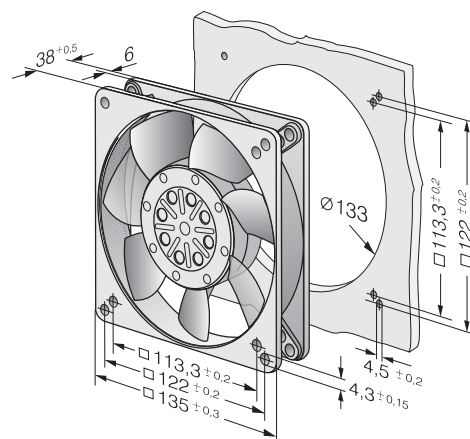
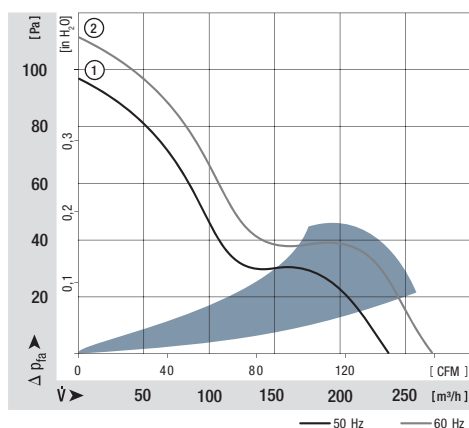
AC axial fans

Series 5600 135 x 135 x 38 mm



- AC fans with external rotor shaded-pole motor.
Protected against overloading by thermal cut-out.
- Metal fan housing and impeller.
- Air exhaust over struts. Direction of rotation counter-clockwise, seen on rotor.
- Electrical connection via 2 flat plugs 2.8 x 0.5 mm.
- Fan housing with grounding lug and screw M4 x 8 (TORX).
- Mass: 800 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

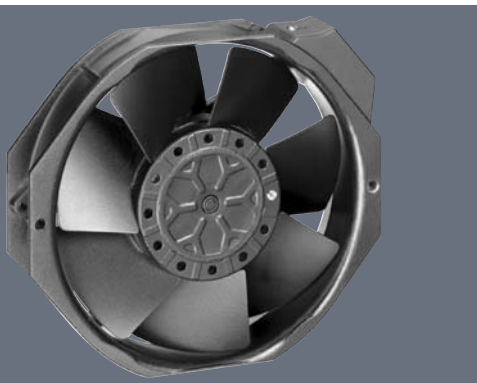
Nominal data		Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type		m ³ /h	CFM	V	Hz	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	
5656 S		235	138,3	230	50	46	5,9	■	30,0	2 700	-35...+70	45 000 / 20 000		1
5606 S		270	158,9	115	60	50	6,2	■	26,0	3 100	-35...+80	47 500 / 20 000		2



max. 380 m³/h

AC axial fans

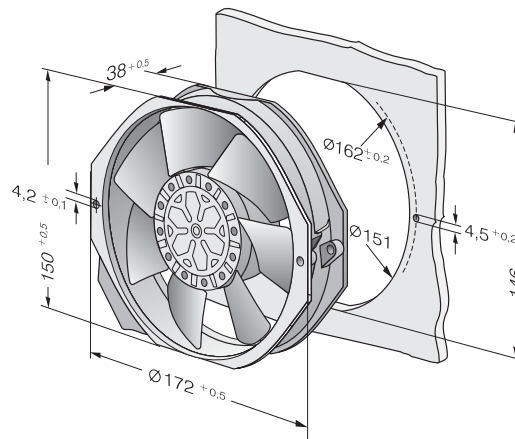
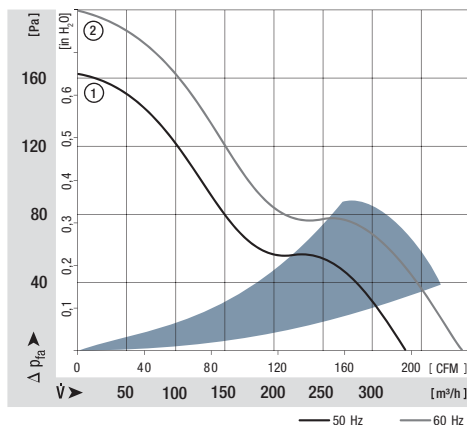
Series 7000 150 x 172 x 38 mm



- AC fans with external rotor capacitor motor. Protected against overloading by integrated thermal cut-out.
- Metal fan housing and impeller.
- Air exhaust over struts. Direction of rotation counter-clockwise, seen on rotor.
- Electrical connection via 2 flat plugs 2.8 x 0.5 mm.
- Fan housing with grounding lug and screw M4 x 6.
- Mass: 900 g.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data		Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type		m ³ /h	CFM	V	Hz	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	
7056 ES		320	188,3	230	50	51	6,4	■	27,0	2 800	-25...+55	60 000 / 32 000		1
7006 ES		380	223,6	115	60	56	6,8	■	28,0	3 350	-25...+65	55 000 / 18 000		2

Minimum ambient temperature -15 °C.



Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 380 m³/h

AC axial fans

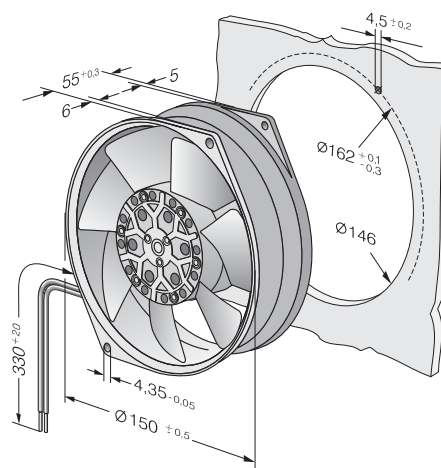
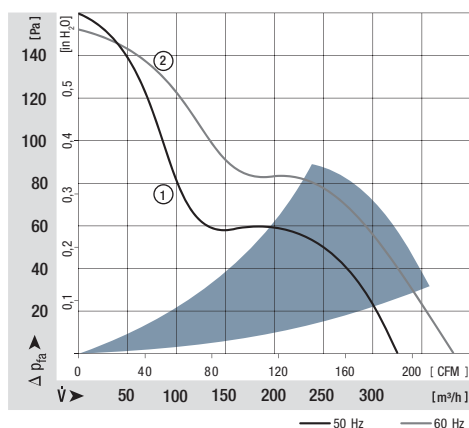
Series 7800 150 Ø x 55 mm



- AC fans with external rotor shaded-pole motor. Protected against overloading by integrated thermal cut-out.
- Metal fan housing and impeller.
- Air exhaust over struts. Direction of rotation counter-clockwise, seen on rotor.
- Electrical connection via 2 leads. Bared and tin-plated.
- Fan housing with grounding lug and screw M4 x 6.
- Mass: 1.1 kg.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data	Air flow		Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM									V	Hz	
7855 ES	325	191,3	230	50	49	6,0	■	45,0	2 800	-25...+50	60 000 / 47 000	1	
7856 ES	325	191,3	230	50	49	6,0	■	45,0	2 800	-25...+70	60 000 / 23 000	1	
7805 ES	380	223,7	115	60	53	6,4	■	38,0	3 250	-25...+70	60 000 / 47 000	2	
7806 ES	380	223,7	115	60	53	6,4	■	38,0	3 250	-25...+90	60 000 / 18 000	2	

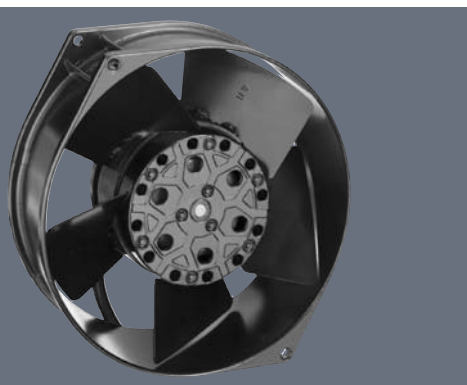
Minimum ambient temperature -15 °C, admissible for a short time at -30 °C; without condensation.



max. 425 m³/h

AC axial fans

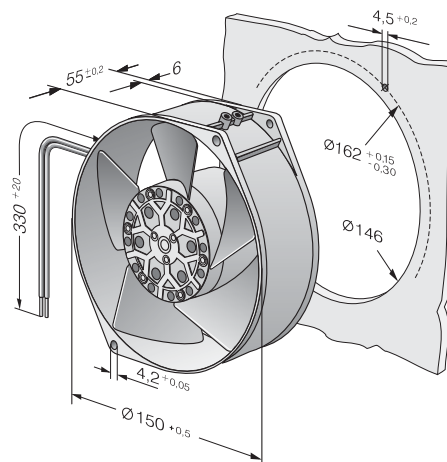
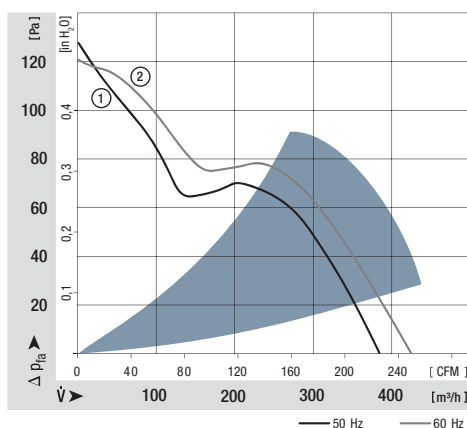
Series 7400 150 Ø x 55 mm



- AC fans with external rotor shaded-pole motor. Protected against overloading by integrated thermal cut-out.
- Metal fan housing and impeller.
- Air exhaust over struts. Direction of rotation counter-clockwise, seen on rotor.
- Electrical connection via 2 leads. Strand ends with brass lead tips.
- Fan housing with grounding lug and screw M4 x 6.
- Mass: 1.1 kg.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data		Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type		m ³ /h	CFM	V	Hz	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	
7450 ES		380	223,6	230	50	60	6,8	■	47,0	2 700	-25...+50	63 000 / 50 000		1
7400 ES		425	250,1	115	60	62	6,9	■	46,0	3 050	-25...+70	50 000 / 24 000		2

Minimum ambient temperature -15 °C, admissible for a short time at -30 °C; without condensation.



Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 500 m³/h

AC axial fans

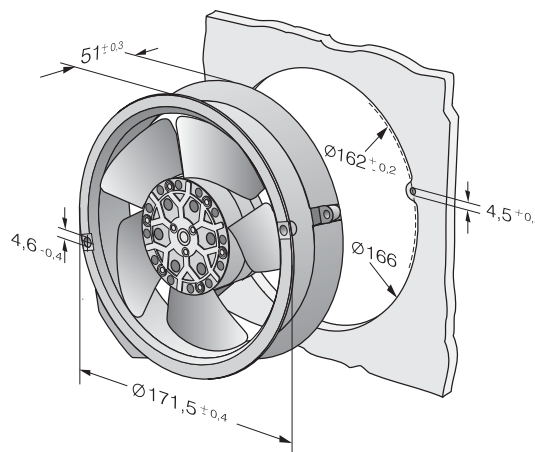
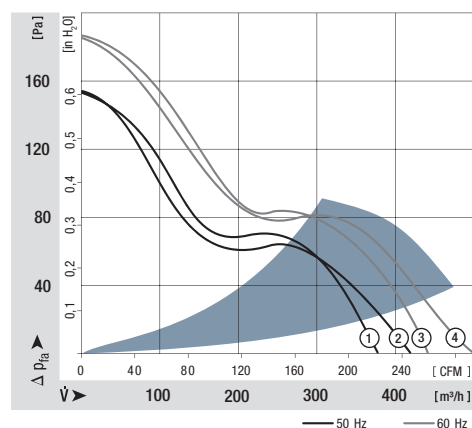
Series 6000 172 Ø x 51 mm



- AC fans with external rotor capacitor motor. Protected against overloading by integrated thermal cut-out.
- Metal fan housing and impeller.
- Air exhaust over struts. Direction of rotation counter-clockwise, seen on rotor.
- Electrical connection via 2 flat plugs 2.8 x 0.5 mm.
- Fan housing with grounding lug and screw M4 x 6.
- Mass: 1.0 kg.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data	Air flow		Nominal voltage	Frequency	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM									V	Hz	
6058 ES	375	220,7	230	50	55	5,9	■	24,0	2 800	-25...+70	62 000 / 31 000		1
6078 ES	420	247,2	230	50	54	6,3	■	26,0	2 800	-25...+60	62 000 / 39 000		2
6008 ES	440	259,0	115	60	60	6,4	■	26,0	3 300	-25...+70	57 000 / 28 000		3
6028 ES	500	284,3	115	60	58	6,7	■	29,0	3 300	-25...+75	57 000 / 22 000		4

Minimum ambient temperature -15 °C, admissible for a short time at -30 °C; without condensation.



max. 1030 m³/h

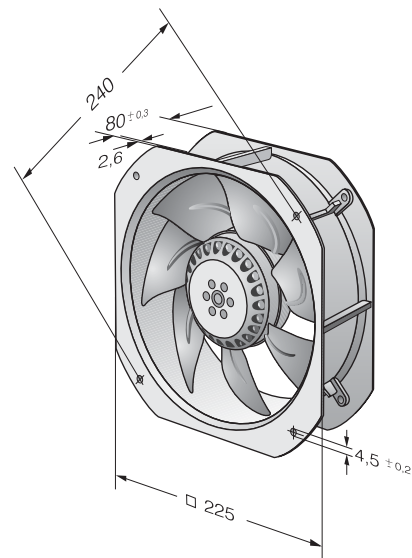
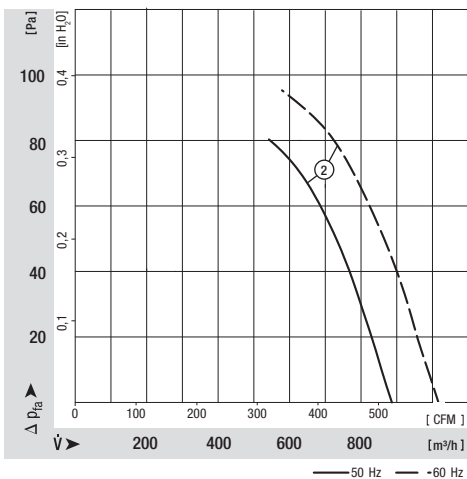
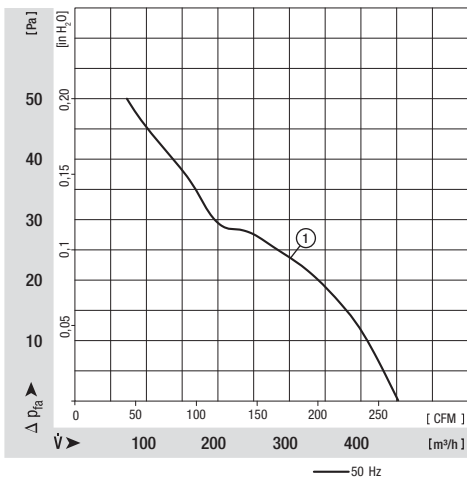
AC axial fans

W** 200 225 x 225 x 80 mm



- External-rotor single-phase motor.* / External rotor shaded-pole motor.**
- Motor protection: TOP wired internally.
- Material: Wall ring die-cast aluminium, seven blades of sheet steel. Blades and rotor coated in black.
- Direction of air flow "V", air exhaust over struts. Direction of rotation: counter-clockwise, seen on rotor.
- Electrical connection: Terminal strip (operating capacitor connected).
- Continuous operation (S1).
- Insulation class: "F"
- Mass: 2 kg.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data		Air flow		Nominal voltage	Frequency	Sound pressure level	Sound power level	Sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type	m ³ /h	CFM	V	Hz	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours		
W2E200-HK86-01*	1030	606,2	115	60	61	6,7	■	80,0	2800	-25...+65	60 000 / 58 000		2	
W2E200-HK38-01*	880	517,9	230	50	58	6,6	■	64,0	2550	-25...+60	63 000 / 60 000		2	
W4S200-HK04-01**	450	264,9	230	50	40	4,7	■	30,0	1370	-25...+70	85 000 / 80 000		1	



Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 1865 m³/h

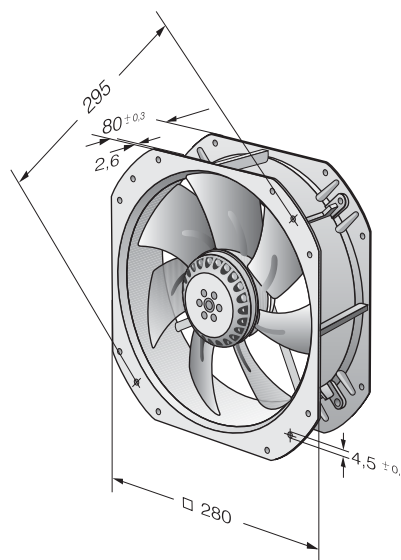
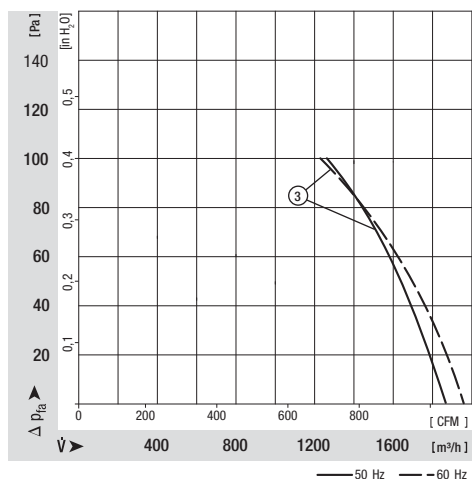
AC axial fans

W2E 250 280 x 280 x 80 mm



- External-rotor single-phase motor.
- Motor protection: TOP wired internally.
- Material: Wall ring die-cast aluminium, seven blades of sheet steel. Blades and rotor coated in black.
- Direction of air flow "V", air exhaust over struts. Direction of rotation: counter-clockwise, seen on rotor.
- Electrical connection: Terminal strips (operating capacitor connected).
- Continuous operation (S1).
- Insulation class: "F"
- Mass: 2 kg.
- Please note our new ACmaxx series. With identical mounting dimensions and voltages, this series achieves higher energy efficiency.

Nominal data		Air flow	Air flow	Nominal voltage	Frequency	Sound pressure level	Sound power level	Sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type		m ³ /h	CFM	V	Hz	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	
W2E 250-HL06-01		1865	1077,1	230	50	66	7,2	■	127,0	2 550	-25...+60	63 000 / 70 000		3



AC centrifugal fans

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / GreenTech EC-compact fans

AC axial fans

AC centrifugal fans

Accessories

Representatives

AC centrifugal fan overview	165
AC centrifugal fans	166



AC fans

Technical information

Product line

The renowned ebm-papst AC fans are used when DC voltage is not available. The AC range of fans is based on experience gained from decades of development activity, millions of units in series production and competence in innovation of a world-wide technological leader.

A wide range of fans for AC operation is presented in this catalogue. In addition to complete device fans, you will also find fans without external housing, providing a particularly economical advantage when the air duct can be integrated in the respective device.

Variety of sizes

AC fans are available in a variety of sizes with either air exhaust or air intake over struts. Silent running models with sleeve bearings or for extreme ambient conditions; fans with ball bearings are available with plug connection or external leads.

Shaded-pole or capacitor motors

Fan drives by shaded-pole or capacitor motors, most of which incorporate the world-famous ebm-papst external rotor principle: The fan blades are directly attached to the external rotor of the external rotor motor, thus combining both high performance and profitability.

Flat built AC fans

ebm-papst also has particularly flat built AC fans with internal rotor motor. Their advantage: quick start to full speed. A plastic impeller and the both smaller and lighter internal rotor motor lead to a lower moment of inertia.

Bearings

AC fans with sleeve bearings are powered by Class E insulated motors. Fans with ball bearings are equipped with Class B, E or F insulated motors.

Protection class

All ebm-papst fans conform to the requirements of IP 20. Fans conforming to IP 54 and special types of protection class are also available.

AC voltage

The line of AC fans for Euro voltage according to IEC 60038 (230 V + 6 %, -10 %) is basically also available for 115 V.

Frequencies

AC fans can be operated at frequencies of 50 Hz or 60 Hz. However, their technical data then change accordingly.

Capacitor

Fans driven by capacitor external motors provide particularly high operating efficiency. Generally, the required operating capacitor is already integrated in the fan housing.

Overloading

Almost all AC fans are protected against overloading (e.g. due to locked rotor) the drive motors are either impedance protected (marked "Impedance protected", and/or "Z.P.") or are equipped with a thermal switch (marked "Thermally protected" or "Th.P."). The model designation of these fans ends with "S".

Centrifugal fans for AC operation

Overview of air pformance

Dimension	Series	Air flow	10	20	30	40	50	60	70	80	90	100	200	300	400	500	600	700	800	900	1000	2000	3000	Page		
mm		m ³ /h																								
□ 121 x 37	RL 90	40...42																								166
□ 135 x 38	RG 90	47...54																								167
□ 180 x 40	RG 125	86...94																								168
□ 220 x 56	RG 160	202...223																								169
∅ 138 x 40	RER 125	104...115																								170
∅ 176 x 54	RER 160	234...274																								171

Overview of technically feasible designs

Centrifugal fans		Dimension	VDE, UL, CSA	Sleeve bearings/ Ball bearings	Speed sensor	Humidity protection	IP >= IP54	Salt spray fog protection	Page
Series	mm			□ / ■	–	•	•	•	P.
RL 90	121 x 121 x 37	yes	□ / ■	–	•	•	•	•	166
RG 90	135 x 135 x 38	yes	□ / ■	–	•	•	•	•	167
RG 125	180 x 180 x 40	yes	■	–	•	•	•	•	168
RG 160	220 x 220 x 56	yes	■	–	•	•	•	•	169
RER 125	138 ∅ x 40	yes	■	–	•	•	•	•	170
RER 160	176 ∅ x 54	yes	■	–	•	•	•	•	171

• available – not yet available □ Sleeve bearings ■ Ball bearings

Information on pictograms

On the pages of the catalogue and on the following overview pages, the pictograms illustrated below provide information about technically possible special versions in the fan line presented.

Please note that these special versions are not possible for all voltages and speeds, and not in all combinations.

The special versions are designed for specific customers and projects and are not usually available off the shelf.



Speed signal

The fan uses a separate wire to output information about its speed, and thus about the speed of the rotor. For technical details, please refer to page 110.



Protection against moisture

Protection for the fan's electronics against moisture and condensation. For technical details, please refer to page 123.



IP 54

Protection of motor and PCB board against splashed water and humidity. For technical details, please refer to page 123.



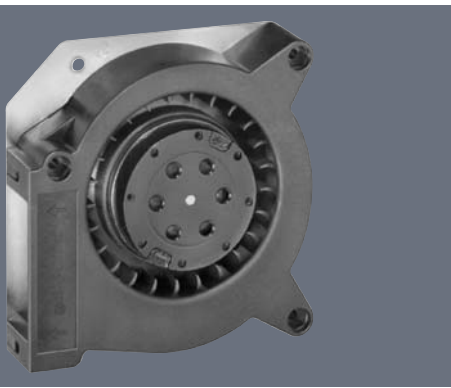
Protection against salt spray fog

Protection of fan against the damaging effects of salt spray fog. For technical details, please refer to page 123.

max. 42 m³/h

AC centrifugal fans

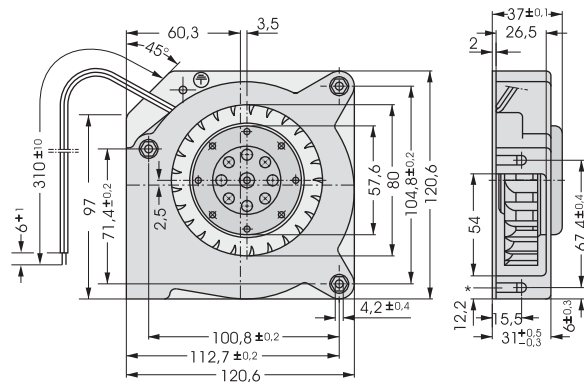
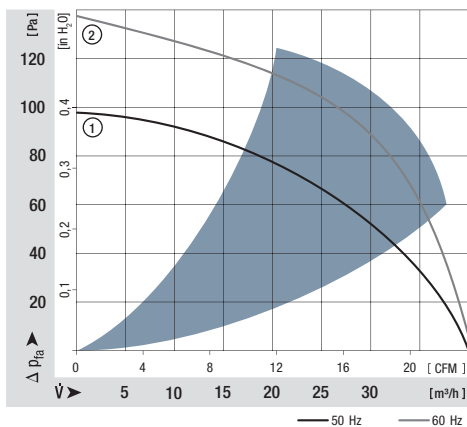
Series RL 90 121 x 121 x 37 mm



- AC centrifugal fan with external rotor shaded-pole motor. Impedance protected against overloading.
- Spiral housing and impeller of fibreglass-reinforced plastic. Housing base of galvanised steel plate. Housing base with flat plug 6.3 x 0.8 mm for protective earth.
- Direction of air flow radial, through housing port. Direction of rotation clockwise, seen on rotor.
- Electrical connection via 2 leads. Bared and tin-plated.
- Mass: 680 g.

Nominal data	Air flow		Nominal voltage	Frequency	Sound power level	Sinter sleeve bearings		Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM				□ / ■	Watts				RPM	°C	
RL 90-18/50	40	23,5	230	50	5,6	□	20,0	2 450	-10...+50	37 500 / 30 000	1	1	
RL 90-18/56	40	23,5	230	50	5,6	■	20,0	2 450	-30...+70	37 500 / 20 000	1	1	
RL 90-18/00	42	24,7	115	60	6,0	□	19,5	2 550	-10...+60	37 500 / 25 000	2	2	
RL 90-18/06	42	24,7	115	60	6,0	■	19,5	2 550	-30...+85	37 500 / 15 000	2	2	

Fan type	Lead wires
RL 90-18/50	RL 90-18/00
	AWG 18, TR 32



*Speed nut M4 or 8-32UNC. Screw- in depth max.12,5 min.9,0



max. 54 m³/h

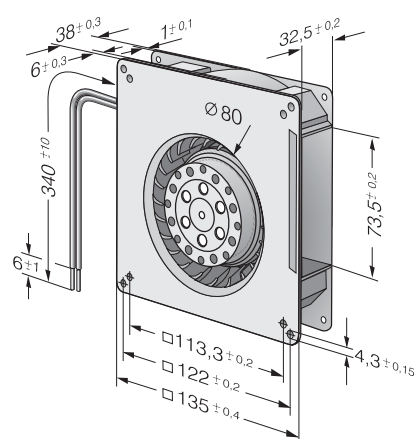
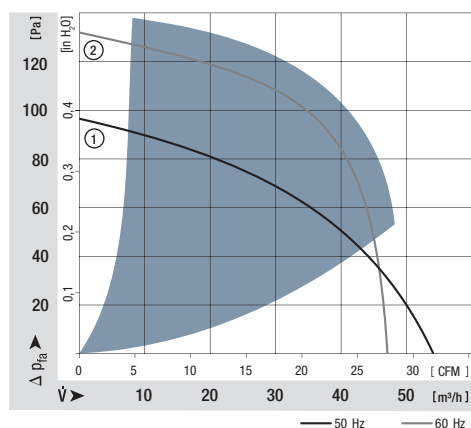
AC centrifugal fans

Series RG 90 135 x 135 x 38 mm



- AC centrifugal fan with external rotor shaded-pole motor. Impedance protected against overloading.
- Spiral housing and impeller of fibreglass-reinforced plastic. Housing base of galvanised steel plate.
- Direction of air flow radial, through housing port. Direction of rotation clockwise, seen on rotor.
- Electrical connection via 2 leads AWG 22. Bared and tin-plated.
- Mass: 560 g.

Nominal data	Air flow		Nominal voltage	Frequency	Sound power level	Sinter sleeve bearings Ball bearings		Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C		Curve
	m ³ /h	CFM				V	Hz				Bel(A)	□ / ■	
RG 90-18/50	54	31,8	230	50	5,8	□	22,0	2 200	-30...+60	35 000 / 20 000		1	
RG 90-18/56	54	31,8	230	50	5,8	■	22,0	2 200	-30...+60	35 000 / 20 000		1	
RG 90-18/00	47	27,7	115	60	6,2	□	22,0	1 900	-30...+65	35 000 / 20 000		2	
RG 90-18/06	47	27,7	115	60	6,2	■	22,0	1 900	-30...+65	35 000 / 20 000		2	

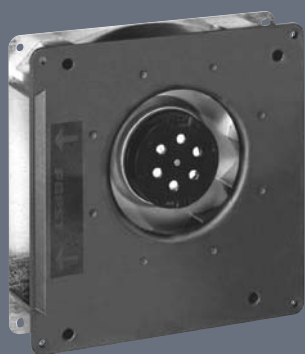


Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 94 m³/h

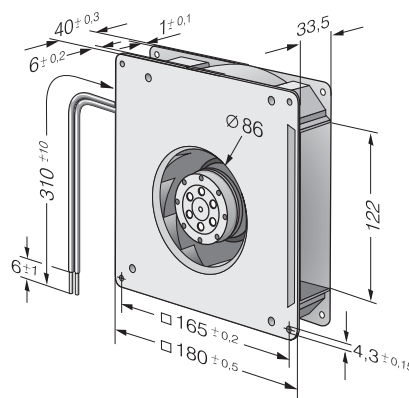
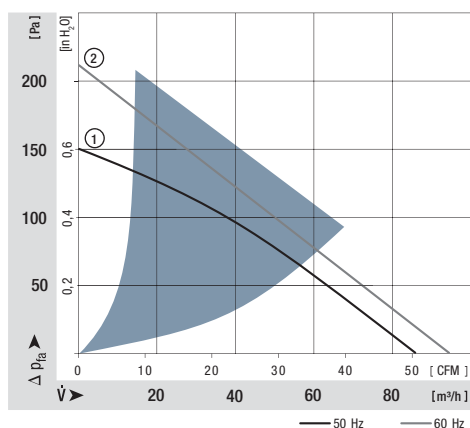
AC centrifugal fans

Series RG 125 180 x 180 x 40 mm



- AC centrifugal fan with external rotor shaded-pole motor. Impedance protected against overloading.
- Spiral housing and impeller of fibreglass-reinforced plastic. Housing base of galvanised steel plate.
- Direction of air flow radial, through housing port. Direction of rotation clockwise, seen on rotor.
- Electrical connection via 2 leads AWG 22. Bared and tin-plated.
- Mass: 850 g.

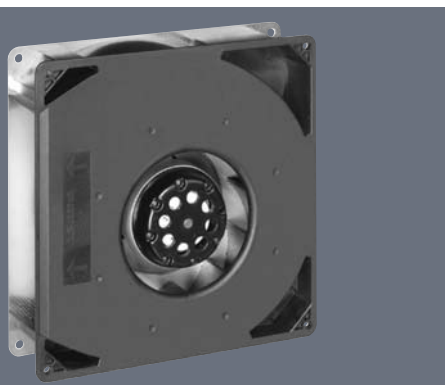
Nominal data		Air flow	Air flow	Nominal voltage	Frequency	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type		m ³ /h	CFM	V	Hz	Bel(A)	□ / ■	Watts	RPM	°C	Hours	Hours	
RG 125-19/56		86	50,6	230	50	5,8	■	20,0	2 550	-30...+70	37 500 / 20 000		1
RG 125-19/06		94	55,3	115	60	6,0	■	19,0	2 750	-30...+80	40 000 / 15 000		2



max. 223 m³/h

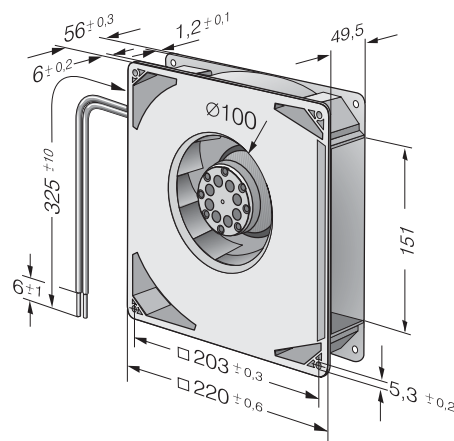
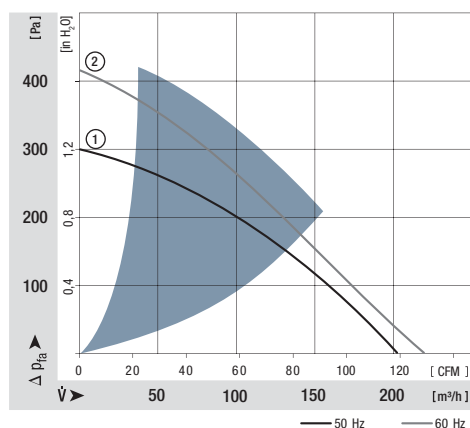
AC centrifugal fans

Series RG 160 220 x 220 x 56 mm



- AC centrifugal fan with external rotor shaded-pole motor. Thermal contactor as protection against thermal overloading.
- Spiral housing and impeller of fibreglass-reinforced plastic. Housing base of galvanised steel plate.
- Direction of air flow radial, through housing port. Direction of rotation counter-clockwise, seen on rotor.
- Electrical connection via leads AWG 18. Bared and tin-plated.
- Mass: 1.7 kg.

Nominal data		Air flow	Air flow	Nominal voltage	Frequency	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type		m ³ /h	CFM	V	Hz	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	
RG 160-28/56S		202	118,9	230	50	6,6	■	47,0	2 750	-30...+70	30 000 / 15 000		1
RG 160-28/06S		223	131,3	115	60	6,9	■	50,0	3 050	-30...+80	27 500 / 12 500		2



Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 274 m³/h

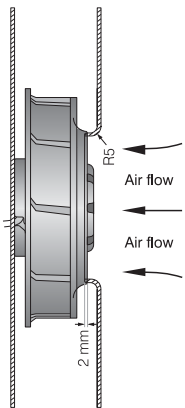
AC centrifugal fans

Series RER 160 176 Ø x 54 mm

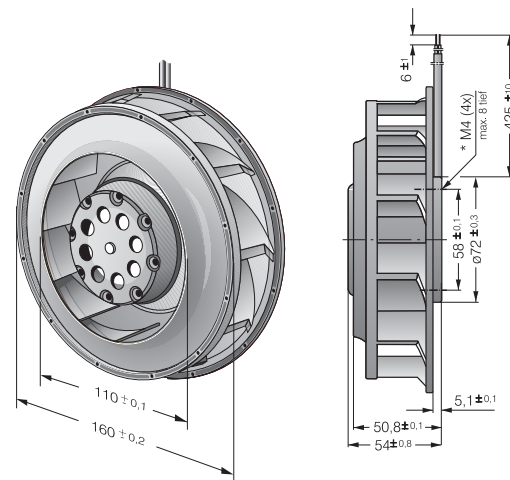
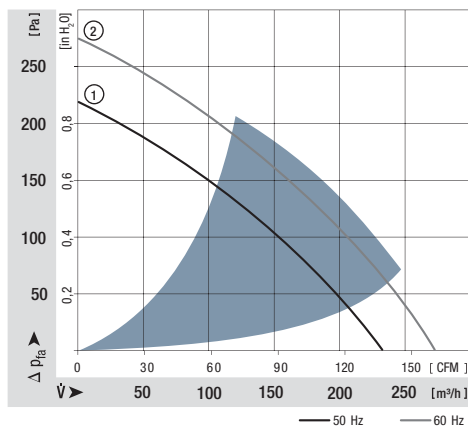


- AC centrifugal fan with external rotor shaded-pole motor. Impedance protected against overloading.
- Impeller of fibreglass-reinforced plastic, with steel plate reinforced.
- Direction of air flow radial. Direction of rotation counter-clockwise, seen on rotor.
- Electrical connection via leads AWG 18. Bared and tin-plated.
- Mass: 1.0 kg.

Nominal data	Air flow		Nominal voltage	Frequency	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM								V	Hz	
RER 160-28/56S	234	137,7	230	50	6,6	■	45,0	2 800	-30...+60	30 000 / 20 000		1
RER 160-28/06S	274	161,3	115	60	6,8	■	46,0	3 250	-30...+70	30 000 / 15 000		2

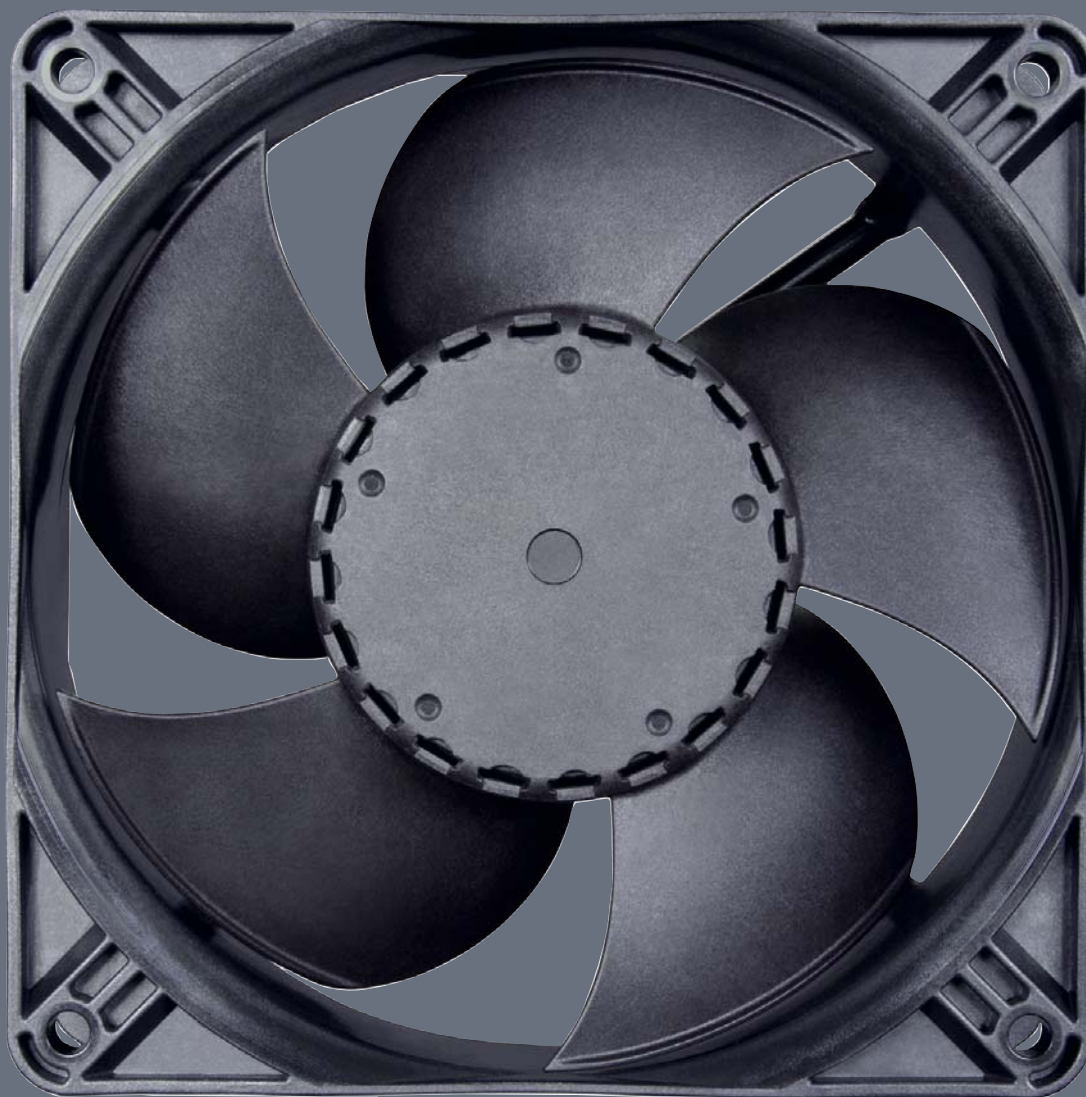


The air flow and noise level of fans without external housing depend on the installation conditions. The stated air flow and noise levels have been measured under the following conditions:
Centrifugal fan mounted on a base plate 260 x 260 mm. Cover plate 260 x 260 mm with an air inlet of Ø 100 mm, concentric to the impeller.



ACmaxx / GreenTech EC-compact fans

ACmaxx / GreenTech EC-compact fans technical information	126
ACmaxx / GreenTech EC-compact fans overview	130
ACmaxx / GreenTech EC-compact fans axial fans	131



Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / GreenTech EC-compact fans

AC axial fans

AC centrifugal fans

Accessories

Representatives

ACmaxx / GreenTech EC-compact fans

Technical information

Progress made by ebm-papst

The best example: The ACmaxx fans from ebm-papst, which, thanks to an ingenious yet simple improvement over conventional AC fans, provide substantial benefits.

The aim in developing the new ACmaxx series was to raise the technology standard of the conventional AC fan significantly and, in the process, facilitate the transition to the new technology by retaining the overall mounting dimensions. In short, to ensure the fans can be replaced 1:1 without any peripheral changes or changes to the voltage situation.

ebm-papst offers two generations of ACmaxx products that meet different needs.



AC

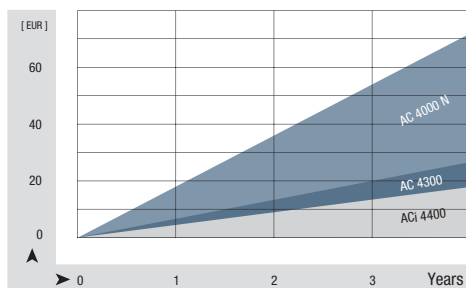
ACmaxx

GreenTech EC-compact fans

What ACmaxx and GreenTech EC-compact fan have in common:

Energy efficiency

The drive concept is based on state-of-the-art GreenTech EC technology with outstanding motor efficiency. Compared to AC fans of the same size, ACmaxx energy consumption is up to 77% lower—for higher cooling capacity! The energy balance alone means that the products pay for themselves after only a few months. The savings over the entire service life, especially in systems with multiple fans, is considerable.

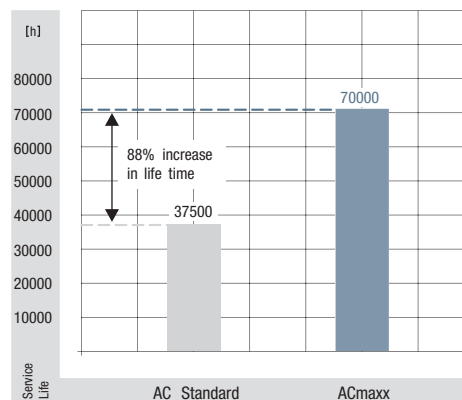


Independent of mains frequency and mains voltage

The ACmaxx and GreenTech EC-compact fans are prepared for direct connection to all AC voltages and frequencies. The speed, and thus important properties of the fan such as air flow and noise, are independent of the power frequency and do not change, even within the defined voltage range. Voltage fluctuations in the power system are automatically compensated for.

Long service life

The efficiency of ACmaxx and GreenTech EC-compact fan motors is up to 75% higher than that of conventional AC fan variants. This not only saves energy, it also means less intrinsic heating in the motor. The reduced heating has a direct, positive effect on the bearing system, which is why the fans have a service life that is up to 85% longer! This also lengthens the service and maintenance intervals significantly. The expense of replacement fans, and even more expensive downtimes, are kept to a manageable minimum.



ACmaxx / GreenTech EC-compact fans

Information

DC axial fans

DC centrifugal fans

DC fans - specials

ACmaxx / GreenTech EC-compact fans

AC axial fans

AC centrifugal fans

Accessories

Representatives

Safety

- Safety certifications: UL, CSA and VDE 0805 / EN60950. VDE 0700 / EN60335 on request.
- Our fans have the CE mark of conformity.
- EMC protection:
 - > EN61000-4-4 Level 1 (1 kV or 2 kV)B
 - > EN61000-4-2 Level 8 kV/15 kV or 4 kV/8 kV
 - > EN61000-4-3
 - > EN61000-4-6
 - > EN61000-4-8
 - > EN55022 Class B

Ambient influences

AC fans are extremely common and are used in a wide variety of applications. In control cabinet cooling, beer coolers, cooling cabinets, wood-burning stoves, medical devices – all have different requirements for resistance to ambient influences. ACmaxx and GreenTech EC-compact fans offer the same features for protection against moisture, splash water and rough ambient conditions.

Particular design features of the GreenTech EC-compact fans (ACi 4400):

GreenTech EC-compact fans is more compact!

As large as existing AC fans – and not a bit larger. This is the most outstanding feature of the new GreenTech EC-compact fans ACi 4400. Even in the hub area, the fan does not differ from typical 119x119x38 mm AC fans. Out with the AC, in with the GreenTech EC-compact fans ACi 4400 – it's that simple.

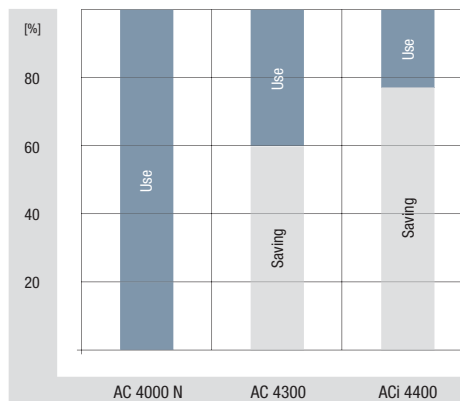


ACmaxx

GreenTech EC-compact fans

GreenTech EC-compact fans is more efficient!

ACmaxx saves energy, and the GreenTech EC-compact fans generation saves even more. While an AC fan at 50 Hz can barely reach an overall efficiency of 5-6%, the ACmaxx makes it to approx. 20-25%. With the new GreenTech EC-compact fans ACi 4400, a remarkable level of up to 30% is reached. This is the result of the optimisation of the entire package made up of drive, electronics, AC/DC conversion and aerodynamics. Thus the new GreenTech EC-compact fans series boasts energy savings of almost 75% compared to the corresponding AC fan, thus providing significantly higher savings than the 40% level of the old AC 4300 generation.



GreenTech EC-compact fan is quieter!

The GreenTech EC-compact fan ACi 4400 is quieter! Quieter than AC fans and quieter than the existing ACmaxx generation. The reason for this is the optimised aerodynamics and the drive, which is optimised for minimum structure-borne noise. Thus the fan is only half as loud at comparable air performance, and is up to 6 dB(A) quieter at some operating points.

Speed independent of voltage and frequency

For the GreenTech EC-compact fans ACi 4400, the speed, and thus the air flow and operating noise, are independent of the supply voltage and power frequency.

Versions are available for 115 VAC with a voltage range from 85 to 132 VAC and 230 VAC with a voltage range of 195 to 265 VAC. Voltage fluctuations and frequency differences in the power system are compensated for automatically.

ACmaxx / GreenTech EC-compact fans

Technical information

Particular design features of the ACmaxx:

Prepared for all AC voltages

These models have a very wide voltage range from 85 to 265 VAC – the global voltage range, so to speak. This enables the fan to be used around the world, opening up large savings potentials. In addition to reduced logistics effort and stock-keeping, worldwide availability is key. ACmaxx is compatible with every supply voltage—no switching needed. From 85 to 265 volts and mains frequencies of 50 and 60 hertz. Voltage fluctuations in the power system are automatically compensated for.

Higher performance

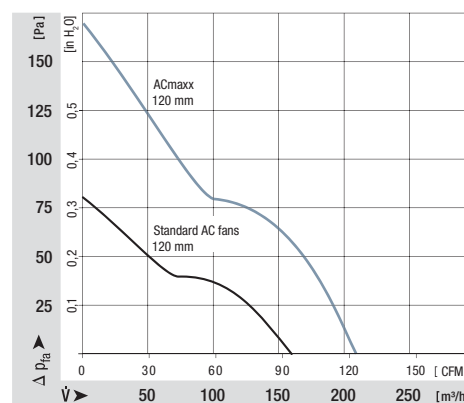
Unlike conventional AC technology, the state-of-the-art drive concept of this fan series is not linked to a fixed power frequency. This allows the motor speed to be increased over a wide range. Thus ACmaxx provides significantly higher air flow and significantly increased pressure.

Higher flexibility

The flexibility of ACmaxx is one-of-a-kind. With its intelligent features, ACmaxx can be individually adapted to the specific application: standby mode, overload mode at peak times or night reduction all the way to temperature-controlled quiet operation are all possible. From speed setting to alarm or speed signal outputs, ACmaxx offers optional interfaces with which you can quickly and easily implement operation monitoring.

You can find further information about these fan options in the "Specialised fans" chapter, starting on page 107.

Or you can simply contact our application engineers to discuss your ideal ACmaxx or GreenTech EC-compact fan.



Optional special versions

Information on pictograms

On the pages of the catalogue and on the following overview pages, the pictograms illustrated below provide information about technically possible special versions in the fan line presented.

Please note that these special versions are not possible for all voltages and speeds, and not in all combinations.

The special versions are designed for specific customers and projects and are not usually available off the shelf.



Speed signal

The fan uses a separate wire to output information about its speed, and thus about the speed of the rotor. For technical details, please refer to page 110.



Go / No-go alarm

The fan uses a separate wire to output a static signal when it is stationary, thus providing information about whether or not the rotor is turning. For technical details, please refer to page 117.



Alarm with limit speed

If the speed drops below a certain level defined in the fan's electronics, the fan will emit a static signal, thus providing information about whether or not the rotor is turning. For technical details, please refer to page 114.



External temperature sensor

An NTC is connected to the fan via a separate wire and the fan changes its speed depending on the temperature at the NTC. For technical details, please refer to page 120.



Internal temperature sensor

In this case, the NTC is integrated into the fan and the fan changes its speed depending on the temperature at the NTC. For technical details, please refer to page 120.



PWM control input

The speed of the fan can be changed via a pulse-width-modulated signal. This signal is applied to a specially provided wire. For technical details, please refer to page 121.



Analogue control input

The speed of the fan can be changed via a control voltage. This control voltage is applied to a specially provided wire. For technical details, please refer to page 121.



Multi-option control input

The fan has a control input that the user can trigger either using a PWM signal, an analogue signal or a resistor. For technical details, please refer to page 122.



Protection against moisture

Protection for the fan's electronics against moisture and condensation. For technical details, please refer to page 123.



IP 54

Protection of motor and PCB board against splashed water and humidity. For technical details, please refer to page 123.



Protection against salt spray fog

Protection of fan against the damaging effects of salt spray fog. For technical details, please refer to page 123.

Fans for AC operation

Overview of air performance

Dimension	Series	Air flow	Air flow (m³/h)																		Page
			10	20	30	40	50	60	70	80	90	100	200	300	400	500	600	700	800	900	
□ 80 x 32	AC 8300 H	80																			131
□ 92 x 38	AC 3200 J	144																			132
□ 119 x 25	AC 4400 FN	205																			133
□ 119 x 32	AC 4300 H	204																			134
NEW □ 119 x 38	ACi 4400	100..180																			135
172 Ø x 51	AC 6100 N	350																			136
172 Ø x 51	AC 6200 N	350																			137
NEW 98,5 Ø x 130	AC 100 NR	80..135																			138

Overview of technically feasible designs

Dimension	VDE, UL, CSA	Sinter sleeve bearings / ball bearings	Sensor	Go / No-go alarm	Alarm with limit speed	External temperature sensor	Internal temperature sensor	PWM control input	Analogue control input	Multi-option control input	Humidity protection	IP >= IP54	Salt spray fog protection	Page
Series	mm													P.
AC 8300 H	80 x 80 x 32	* ■	•	•	•	•	•	•	•	•	•	•	•	131
AC 3200 J	92 x 92 x 38	* ■	•	•	•	•	•	•	•	•	•	•	•	132
AC 4400 FN	119 x 119 x 25	* ■	•	•	•	•	•	•	•	•	•	•	•	133
AC 4300	119 x 119 x 32	* ■	•	•	•	•	•	•	•	•	•	•	•	134
NEW ACi 4400	119 x 119 x 38	■	-	-	-	-	-	-	-	-	•	•	•	135
AC 6100 N	172 Ø x 51	* ■	•	•	•	•	•	•	•	•	•	•	•	136
AC 6200 N	172 Ø x 51	* ■	•	•	•	•	•	•	•	•	•	•	•	137
NEW AC 100	100 Ø x 130	■	-	-	-	-	-	-	-	-	•	•	-	138

- not yet available □ Sleeve bearings
 • available ■ Ball bearings
 * Partially granted, partially in registration stage.

Please note that these special versions are not possible for all voltages and speeds, and not in all combinations. The special versions are designed for specific customers and projects. As a rule they are not available off the shelf and are tied to minimum volumes.

Please consult your customer support representative about the feasibility of your special variant.

max. 80 m³/h

ACmaxx axial fans

Series AC 8300 H 80 x 80 x 32 mm



Highlights:

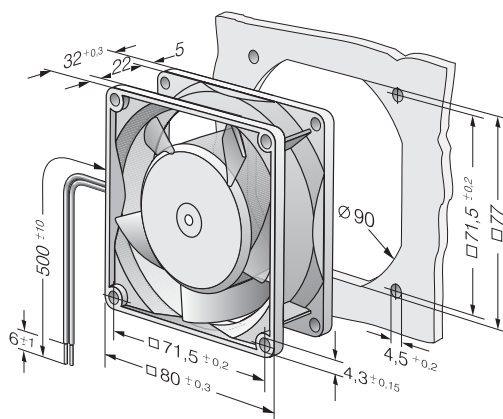
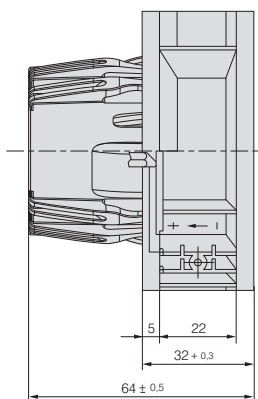
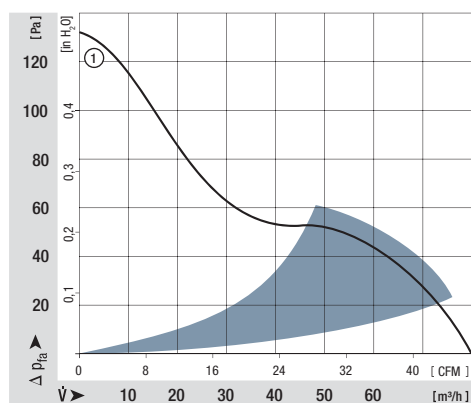
- Universally suitable for all AC voltages between 85 and 265 V.
- Fan speed not dependent on line frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.

General attributes:

- Material: fibreglass-reinforced plastic. PA impeller, PBTP housing.
- Fully integrated electronic commutation.
- Protected against locking.
- Connection via single strands AWG 22, TR 64. Bared and tin-plated.
- Air exhaust over struts. Direction of rotation clockwise, seen on rotor.
- Mass: 325 g.

Nominal data	Air flow		Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C		Curve
	m ³ /h	CFM										Hours	Hours	
AC 8300 H	80	47,1	115 / 230	50 / 60	85 ... 265	48	6,2	■	7,5	5 000	-20...+75	55 000 / 25 000	1	

Speed variants available on request.



max. 144 m³/h

ACmaxx axial fans

Series AC 3200 J 92 x 92 x 38 mm



Highlights

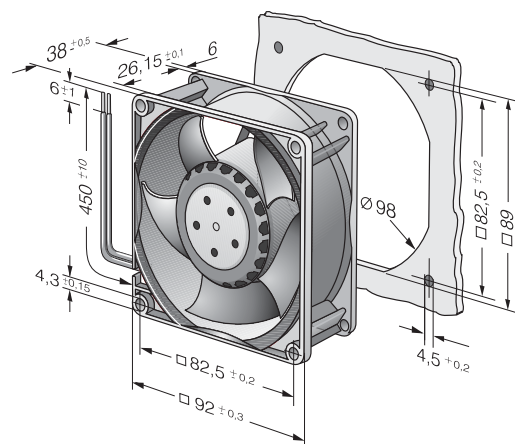
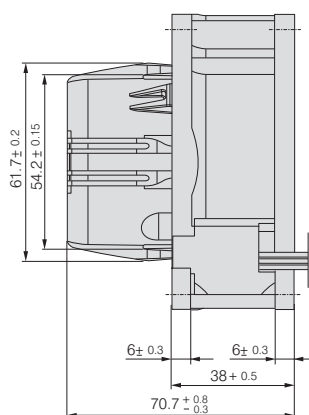
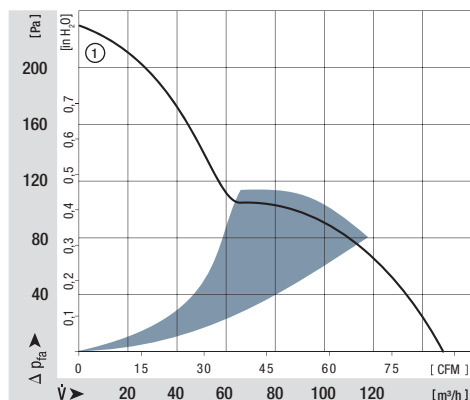
- Universally suitable for all AC voltages between 85 and 265 V.
- Fan speed independent of power frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.
- Rigid compression curve for high air flow at high back pressure.
- Innovative impeller with winglets for low noise levels.

General attributes:

- Material: fibreglass-reinforced plastic. PA impeller, PBTP housing.
- Fully integrated electronic commutation. Protected against locking.
- Connection via single strands AWG 22, TR 64. Bared and tin-plated.
- Air exhaust over struts. Direction of rotation clockwise, seen on rotor.
- Mass: 325 g.

Nominal data	Air flow		Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM										at 40 °C	at T _{max}	
Type	m ³ /h	CFM	V	Hz	VAC	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	
AC 3200 JH	144	84,8	115 / 230	50 / 60	85 ... 265	55	6,4	■	11	6 800	-20...+70	70 000 / 35 000	1	

Speed variants available on request.



max. 205 m³/h

ACmaxx axial fans

Series AC 4400 FN 119 x 119 x 25 mm



Highlights:

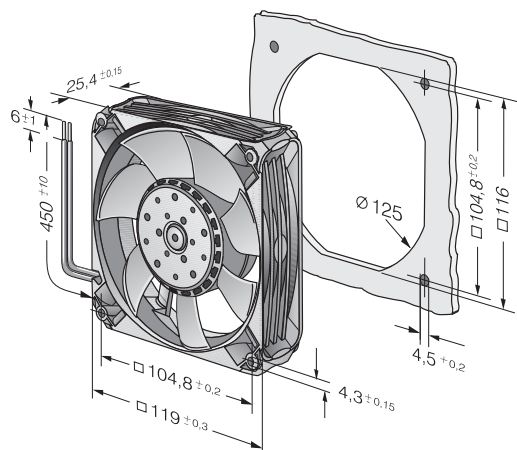
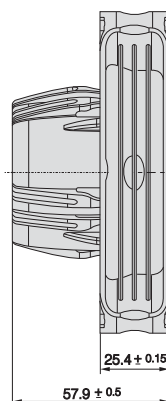
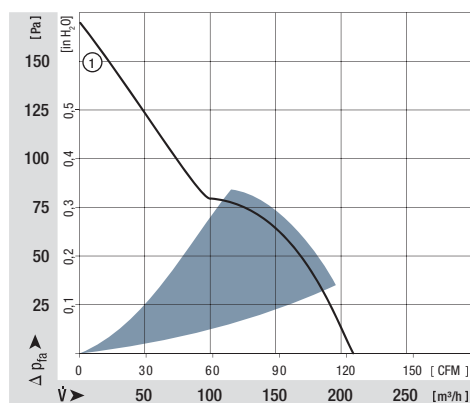
- Universally suitable for all AC voltages between 85 and 265 V.
- Fan speed independent of power frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.
- Rigid compression curve for high air flow at high back pressure.
- Innovative impeller with winglets for low noise levels.

General attributes:

- Material: fibreglass-reinforced plastic. PA impeller, PBTP housing.
- Fully integrated electronic commutation. Protected against locking.
- Connection via single strands AWG 22, TR 64. Bared and tin-plated.
- Air exhaust over struts. Direction of rotation counter-clockwise, seen on rotor.
- Mass: 370 g..

Nominal data	Air flow		Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM										Hours	Hours	
AC 4400 FNN	205	120,7	115 / 230	50 / 60	85 ... 265	53	6,2	■	12	4 850	-20...+70	60 000 / 30 000	1	

Speed variants available on request.



Information
DC axial fans
DC centrifugal fans
DC fans - specials
ACmaxx / GreenTech EC-compact fans
AC axial fans
AC centrifugal fans
Accessories
Representatives

max. 204 m³/h

ACmaxx axial fans

Series AC 4300 119 x 119 x 32 mm



Highlights:

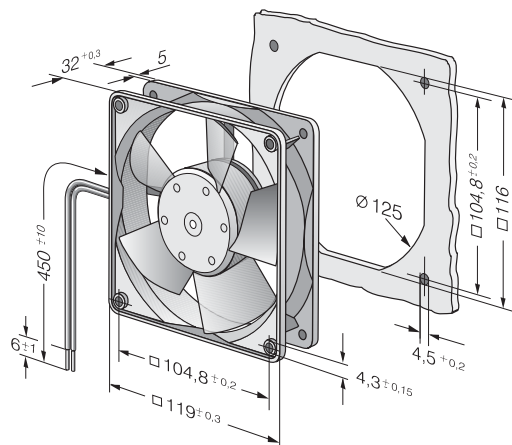
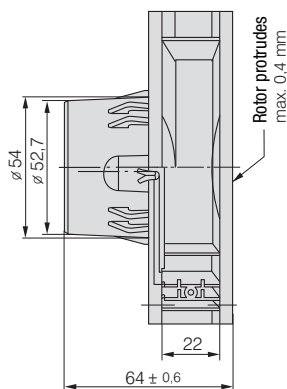
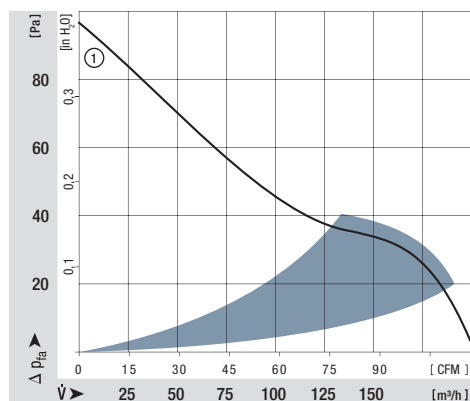
- Universally suitable for all AC voltages between 85 and 265 V.
- Fan speed independent of power frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.

General attributes:

- Material: fibreglass-reinforced plastic. PA impeller, PBTP housing.
- Fully integrated electronic commutation.
- Protected against locking.
- Connection via single strands AWG 22, TR 64. Bared and tin-plated.
- Air exhaust over struts. Direction of rotation clockwise, seen on rotor.
- Mass: 325 g.

Nominal data	Air flow		Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM										Hours	Hours	
AC 4300 H	204	120,1	115 / 230	50 / 60	85 ... 265	51	6,4	■	11	3 400	-20...+70	45 000 / 22 500	1	

Speed variants available on request.



max. 180 m³/h

GreenTech EC-compact fans axial fans

Series ACi 4400 119 x 119 x 38 mm



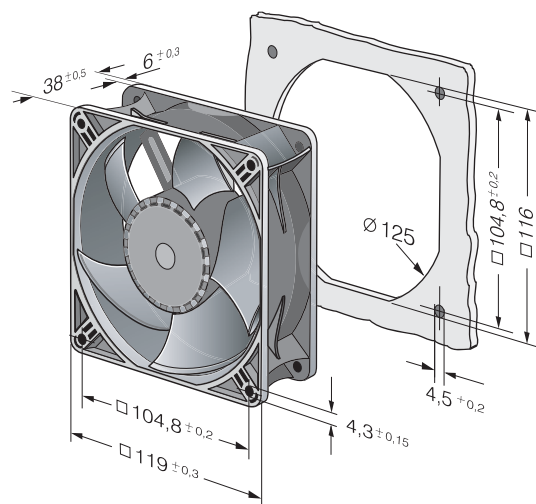
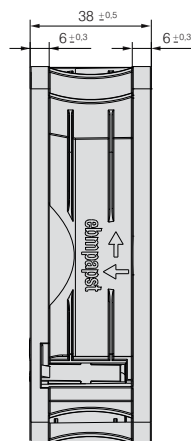
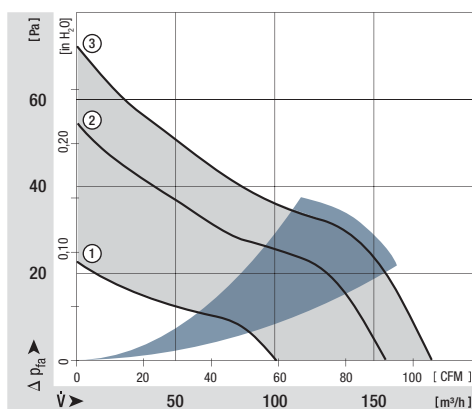
Highlights:

- Energy efficient AC fan with EC technology.
- Conversion and drive electronics fully integrated.
- Significant lower power consumption than **existing** AC fans.
- Significantly lower noise than existing AC fans.
- Significantly higher service life than existing AC fans.
- Fan speed not dependent on line frequency.

General characteristics:

- Material: fibreglass-reinforced plastic. Impeller PA, housing PBT.
- Electronic locked rotor protection.
- Electrical connection via 2 flat plugs 2,8 x 0,5 mm, flying leads optional.
- Air exhaust over struts, direction of rotation clockwise, seen on rotor.
- Mass: 250 g.

Nominal data		Air flow	Air flow	Nominal voltage	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ (40 °C) ebm-papst Standard	Service life L ₁₀ (T _{max}) ebm-papst Standard	Life expectancy L ₁₀ Δ (40 °C)	Curve
Type		m ³ /h	CFM	VAC	VAC	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	Hours	
NEW ACi 4420 ML		100	58,8	230	195...265	25	4,1	■	1,4	1 850	-20...+75	80 000 / 30 000	160 000	1	
NEW ACi 4420 H		160	94,1	230	195...265	39	5,1	■	3,3	3 000	-20...+75	70 000 / 30 000	140 000	2	
NEW ACi 4420 HH		180	105,9	230	195...265	42	5,3	■	4,4	3 350	-20...+75	62 500 / 30 000	125 000	3	
NEW ACi 4410 HH		180	105,9	115	85...132	42	5,3	■	4,4	3 350	-20...+75	62 500 / 30 000	125 000	3	



max. 350 m³/h

ACmaxx axial fans

Series AC 6100 N 172 ø x 51 mm



Highlights:

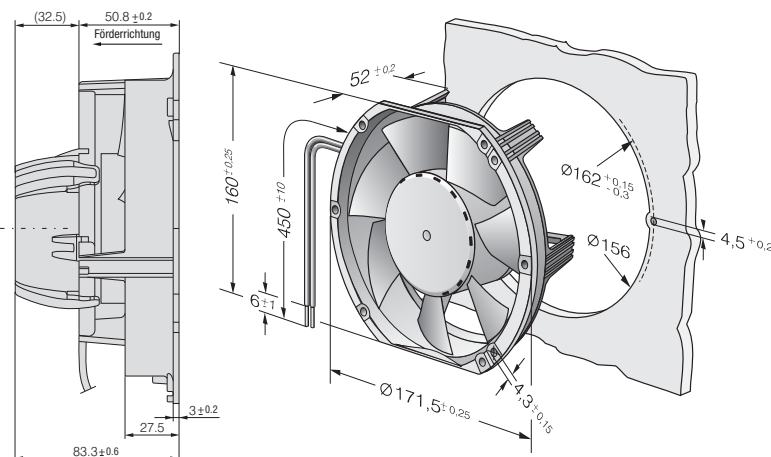
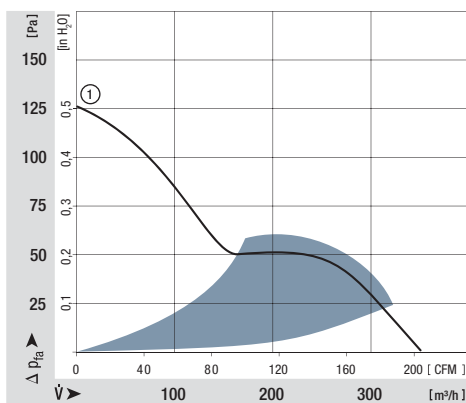
- Universally suitable for all AC voltages between 85 and 265 V.
- Fan speed independent of power frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.

General attributes:

- Material: fibreglass-reinforced PA housing and impeller.
- Fully integrated electronic commutation.
- Protected against locking.
- Connection via single strands AWG 22, TR 64. Bared and tin-plated.
- Air exhaust over struts. Direction of rotation clockwise, seen on rotor.
- Mass: 760 g.

Nominal data	Air flow		Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
	m ³ /h	CFM												
AC 6100 NM	350	206,0	115 / 230	50 / 60	85 ... 265	52	6,1	■	14	2 850	-20...+70	80 000 / 37 500		1

Speed variants available on request.



max. 350 m³/h

ACmaxx axial fans

Series AC 6200 N 172 ø x 51 mm



Highlights:

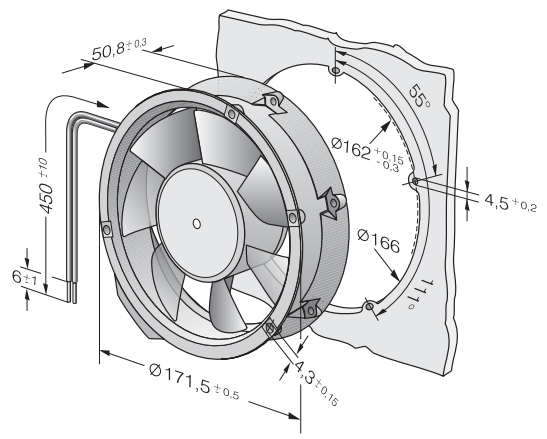
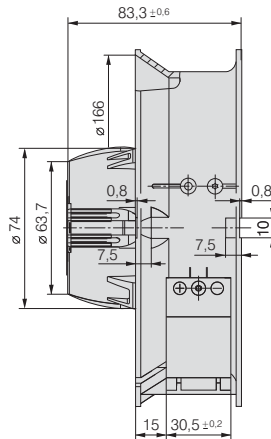
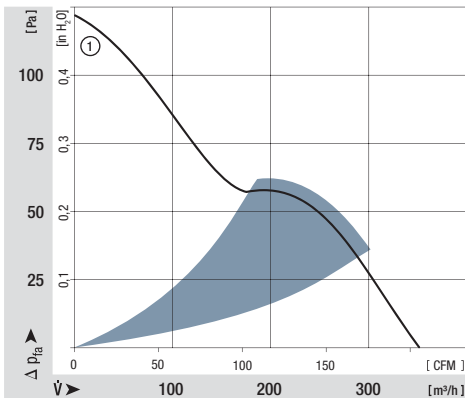
- Universally suitable for all AC voltages between 85 and 265 V, 50-60 Hz.
- Fan speed independent of power frequency.
- Significantly reduced power consumption compared to conventional AC fans.
- Open loop speed control, sensor and alarm signal possible on request.

General attributes:

- Material: aluminium housing, fibreglass-reinforced PA impeller. Housing with grounding lug for screw M4 x 8 (Torx).
- Fully integrated electronic commutation.
- Protected against locking.
- Connection via single strands AWG 22, TR 64. Bared and tin-plated.
- Air exhaust over struts. Direction of rotation counter-clockwise, seen on rotor.
- Mass: 900 g.

Nominal data	Air flow		Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sinter sleeve bearings		Power input	Nominal speed	Temperature range	Service life L ₁₀		Curve
	m ³ /h	CFM						□	■				Watts	RPM	
AC 6200 NM	350	206,0	115 / 230	50 / 60	85 ... 265	50	5,7	■	■	14	2 850	-20...+70	80 000 / 40 000	1	

Speed variants available on request.



max. 135 m³/h

ACmaxx in-line duct fan

Series AC 100 NR Ø 98,5 x 130 mm



Highlights:

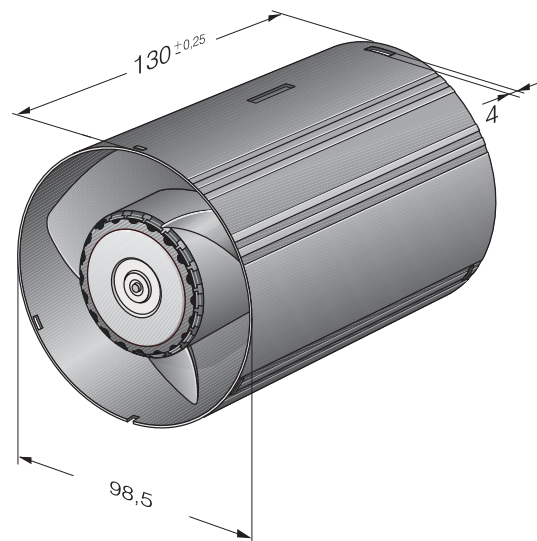
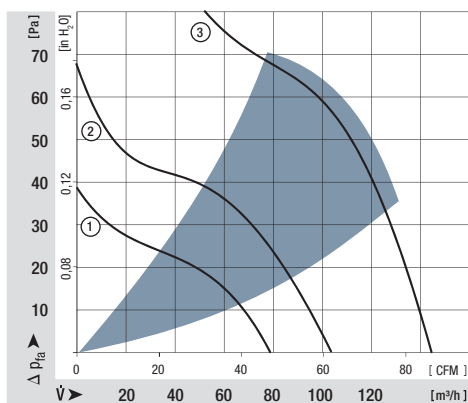
- Highest energy efficiency thanks to EC technology.
- Protection class IP44 (IP45 possible depending on mounting position).
- Speed-boost function via mains voltage switch.
- Vibration-isolated motor.
- Global voltage - one product applicable for all line voltages and frequencies between 85-265 VAC and 50/60 Hz. Fan speed independent from power frequency.

General features:

- Material: fibreglass-reinforced plastic, housing PP, impeller PA.
- Electrical connection via 3-pole terminal block, max. 1.5 mm².
- Protection class 2.
- Approvals: VDE 60335-3-80. UL, CE, CSA on request.
- Mass: 400 g.

Nominal data		Air flow	Air flow	Nominal voltage	Frequency	Voltage range	Sound pressure level	Sound power level	Sintec sleeve bearings Ball bearings	Power input	Nominal speed	Temperature range	Service life L ₁₀ at 40 °C	at T _{max}	Curve
Type		m ³ /h	CFM	V	Hz	VAC	dB(A)	Bel(A)	□/■	Watts	RPM	°C	Hours	Hours	
NEW <small>nominal boost</small> AC 100 NR		80	47,1	115/230	50-60	85...265	35	4,7	■	2,5	2 750	-10...+55	70 000 / 40 000		1
		105	61,8				42	5,3		4,5	3 500				2

Optional: Max. speed at 135 m³/h (Curve 3).

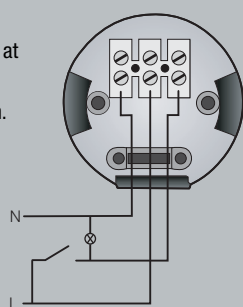


Highest energy efficiency: 0.03 - 0.045 W/m³/h free air (Specific fan power).
Boost speed setting: 2 speed settings possible via boost function.
Vibration isolation: Reduced transmission of vibrations from motor to housing.
Intelligence: Speed settings and control outputs optional.

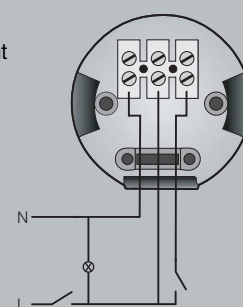
Connection



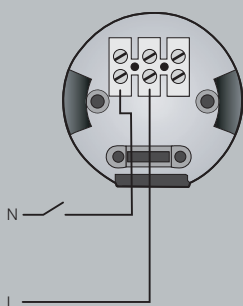
Example 1:
 Continuous operation at nominal speed boost speed via light switch.



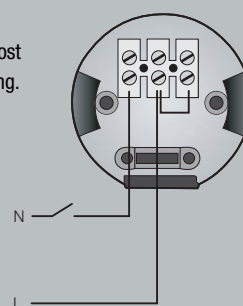
Example 2:
 Nominal speed via light switch, separate boost switch.



Example 3:
 Simple connection, nominal speed without switching.



Example 4:
 Simple connection, boost speed without switching.



Scope of delivery

