Box-F

Centrifugal fans for rectangular ducts

Use

- Supply and extract ventilation systems installed in various premises.
- Compatible with 400x200 up to 1000x500 mm rectangular air ducts.

Air flow: up to 9540 m³/h 2650 l/s

Power: from 282 W

Noise level: from 50 dBA

ErP 2018

Design

- Atmospheric resistant galvanized steel casing and impeller.
- The fan is rated for continuous operation.
- Fitted with standard 20 mm connecting flanges for connection to rectangular air ducts.
- Access cover on the casing for inspection and maintenance operations.
- The fans with standard size from 40x20 up to 60x35 are equipped with a terminal block integrated into the casing with leaded outside sealed electrical lead-in for connection to power mains.
- The fans with standard size from 70x40 up to 100x50 are equipped with an external terminal block for connection to power mains.

Motor

- Four-, six- or eight-pole asynchronous motor with external rotor and centrifugal impeller with forward curved blades.
- Due to its impeller design the fan has excellent air dynamic charakteristics (high performance and pressure drop).
- Single-phase (**E**) or three-phase (**D**) motor modifications.
- Equipped with ball bearings for longer service life.
- Dynamically balanced impeller.
- Overheating protection by built-in thermal switches with leaded outside terminals for connection to external protecting controls.
- The thermal switch terminal leads are designed for connection to respective circuit ot the overload relay or respective terminals of the autotransformer or thyristor speed controller.

Speed control

- Smooth speed control with an external thyristor controller or step speed control with an external auto transformer (both available upon separate order).

Mounting

- The fan is designed for mounting inside rectangular air ducts and can be installed in any position.
- The fan flanges are connected to the air ducts through the bolts inserted into the flange holes.
- Mounting to a round air duct on exhaust flange through a round pipe reducer. Available upon order.
- If flexible vibration-absorbing connectors are used to connect the fan to the air ducts provide their fixation to mounting structures with supports or brackets.
- While mounting provide enough space for accessing the cover for service operations.

Designation key

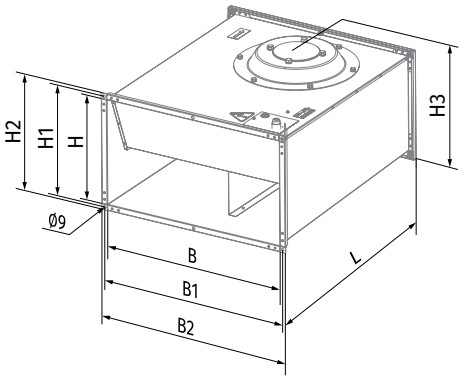
Series	Flange size (width x height) [cm]	Motor	
		Number of poles	Phase
Box-F	40x20; 50x25; 50x30; 60x30; 60x35; 70x40; 80x50; 90x50; 100x50	4; 6; 8	**E:** single-phase **D**: three-phase

Accessories

Silencer	Filter box	Electric heater	Water heater	Air dampers	Flexible antivibration connector
SD	**KFBK / KFBT**	**EKH**	**WKH**	**SL / VG**	**EVA**

Overall dimensions [mm]

Type	B	B1	B2	H	H1	H2	H3	L	Weight [kg]
Box-F 40x20 4E	400	420	440	200	220	240	255	500	17.5
Box-F 40x20 4D	400	420	440	200	220	240	255	500	17.5
Box-F 50x25 4E	500	520	540	250	270	290	335	640	24.0
Box-F 50x25 6E	500	520	540	250	270	290	335	640	24.0
Box-F 50x25 4D	500	520	540	250	270	290	335	640	24.0
Box-F 50x25 6D	500	520	540	250	270	290	335	640	24.0
Box-F 50x30 4E	500	520	540	300	320	340	365	680	33.0
Box-F 50x30 6E	500	520	540	300	320	340	365	680	33.0
Box-F 50x30 4D	500	520	540	300	320	340	365	680	33.0
Box-F 50x30 6D	500	520	540	300	320	340	365	680	33.0
Box-F 60x30 4E	600	620	640	300	320	340	375	680	35.0
Box-F 60x30 6E	600	620	640	300	320	340	375	680	35.0
Box-F 60x30 4D	600	620	640	300	320	340	375	680	35.0
Box-F 60x30 6D	600	620	640	300	320	340	375	680	35.0
Box-F 60x35 4E	600	620	640	350	370	390	425	735	49.5
Box-F 60x35 6E	600	620	640	350	370	390	425	735	49.5
Box-F 60x35 4D	600	620	640	350	370	390	425	735	49.5
Box-F 60x35 6D	600	620	640	350	370	390	425	735	49.5
Box-F 70x40 4D	700	720	740	400	420	440	480	780	60.0
Box-F 70x40 6D	700	720	740	400	420	440	480	780	56.0
Box-F 80x50 4D	800	820	840	500	520	540	580	820	74.0
Box-F 80x50 6D	800	820	840	500	520	540	580	820	70.0
Box-F 80x50 8D	800	820	840	500	520	540	580	820	70.0
Box-F 90x50 6D	900	920	940	500	520	540	580	954	90.0
Box-F 90x50 8D	900	920	940	500	520	540	580	954	90.0
Box-F 100x50 6D	1000	1020	1040	500	520	540	580	954	95.0
Box-F 100x50 8D	1000	1020	1040	500	520	540	580	954	95.0

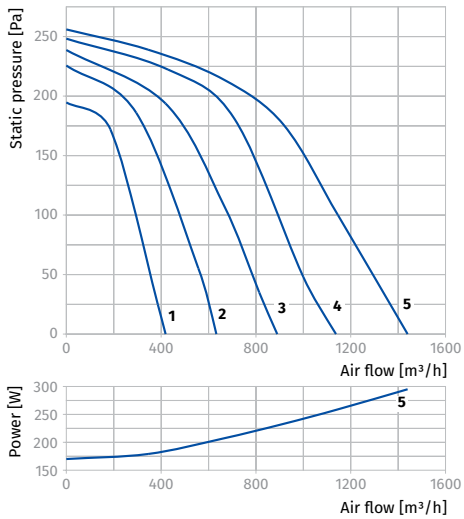


Technical data

Parameters	Box-F 40x20 4E	Box-F 40x20 4D	Box-F 50x25 4E	Box-F 50x25 6E	Box-F 50x25 4D	Box-F 50x25 6D	Box-F 50x30 4E
Voltage [V]	1 ~ 230	3 ~ 400	1 ~ 230	1 ~ 230	3 ~ 400	3 ~ 400	1 ~ 230
Frequency [Hz]	50	50	50	50	50	50	50
Power [W]	295	282	535	244	570	274	710
Current [A]	1.32	0.60	2.49	1.22	0.94	0.67	3.10
Maximum air flow [m³/h (l/s)]	1440 (400)	1470 (408)	1750 (486)	1460 (406)	1850 (514)	1490 (414)	2350 (653)
RPM [min⁻¹]	1350	1300	1250	910	1270	930	1230
Sound pressure at 3 m [dBA]	50	52	53	45	54	45	57
Transported air temperature [°C]	-25...+40	-25...+45	-20...+40	-20...+50	-20...+40	-20...+60	-25...+70
SEC class	–	–	–	–	–	–	–
IP rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4
Motor IP rating	IP44	IP44	IP44	IP44	IP44	IP44	IP44

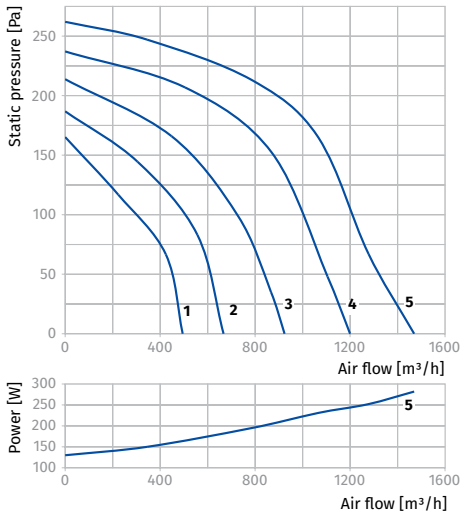
BOX-F 40x20 4E

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**69**	58	68	63	59	56	53	53	45
L_{WA} to outlet [dBA]	**70**	53	63	67	62	65	63	58	55
L_{WA} to environment [dBA]	**59**	34	46	57	52	49	43	40	36



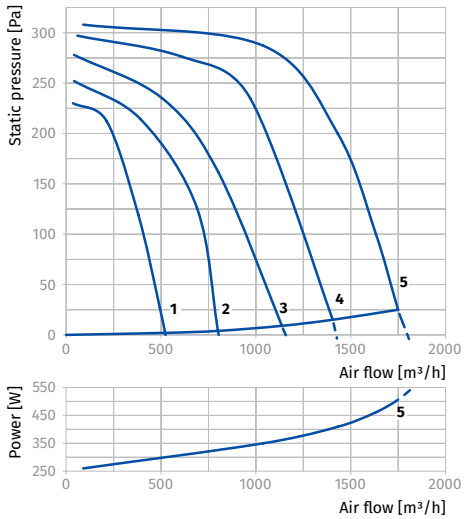
BOX-F 40x20 4D

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**72**	56	69	65	57	58	57	53	48
L_{WA} to outlet [dBA]	**74**	54	65	66	61	63	60	61	55
L_{WA} to environment [dBA]	**61**	34	44	56	52	50	44	40	33



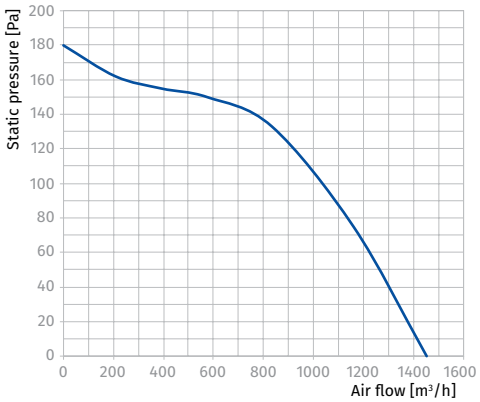
BOX-F 50x25 4E

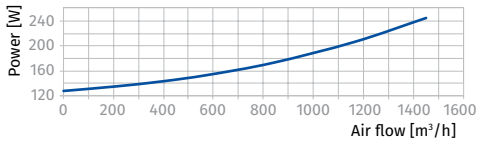
Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**72**	58	67	62	57	62	64	62	60
L_{WA} to outlet [dBA]	**77**	57	63	62	66	72	69	68	63
L_{WA} to environment [dBA]	**62**	41	49	54	53	56	52	51	53



BOX-F 50x25 6E

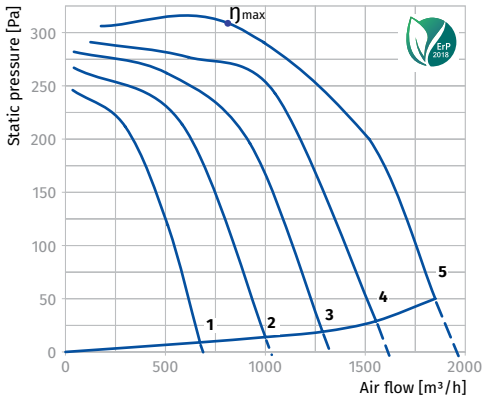
Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**58**	45	53	48	49	48	47	43	41
L_{WA} to outlet [dBA]	**55**	45	50	49	55	52	50	51	39
L_{WA} to environment [dBA]	**43**	25	34	41	36	38	33	24	24

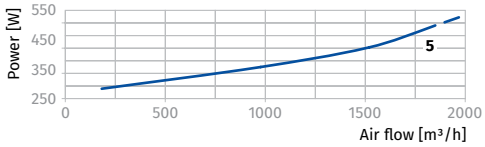




BOX-F 50x25 4D

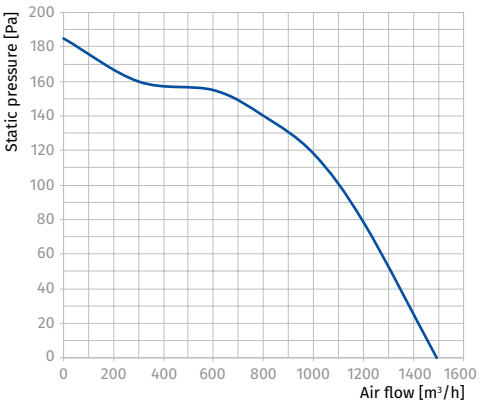
Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**74**	60	67	64	61	64	62	60	58
L_{WA} to outlet [dBA]	**76**	57	65	65	67	69	69	68	63
L_{WA} to environment [dBA]	**61**	41	48	53	53	56	52	50	53

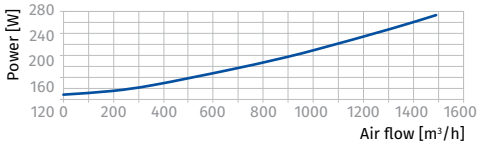




BOX-F 50x25 6D

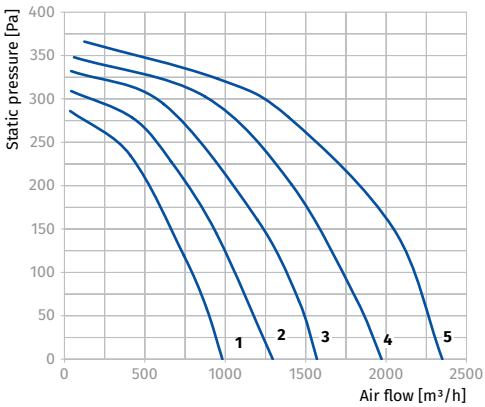
Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**59**	48	55	52	50	51	49	47	42
L_{WA} to outlet [dBA]	**58**	47	54	52	57	56	53	53	43
L_{WA} to environment [dBA]	**45**	29	36	45	38	42	35	28	26

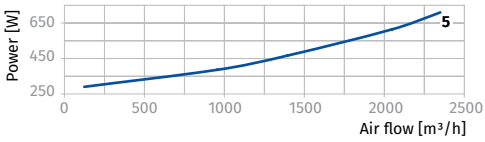




BOX-F 50x30 4E

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**74**	64	69	65	63	66	67	65	60
L_{WA} to outlet [dBA]	**79**	62	69	66	72	73	72	71	64
L_{WA} to environment [dBA]	**64**	46	53	59	54	58	56	49	50

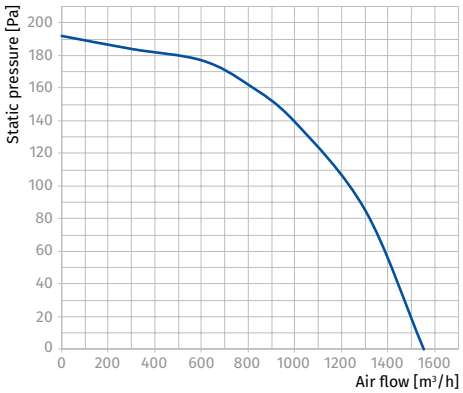


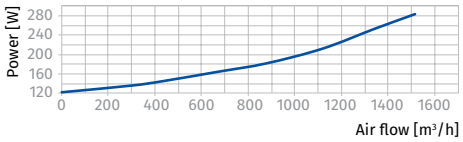


Parameters	Box-F 50x30 6E	Box-F 50x30 4D	Box-F 50x30 6D	Box-F 60x30 4E	Box-F 60x30 6E	Box-F 60x30 4D	Box-F 60x30 6D
Voltage [V]	1 ~ 230	3 ~ 400	3 ~ 400	1 ~ 230	1 ~ 230	3 ~ 400	3 ~ 400
Frequency [Hz]	50	50	50	50	50	50	50
Power [W]	283	855	303	1240	419	1560	397
Current [A]	1.59	1.70	0.8	6.45	2.05	2.73	0.78
Maximum air flow [m³/h (l/s)]	1550 (431)	2350 (653)	1620 (450)	2950 (820)	2260 (628)	3740 (1039)	2320 (644)
RPM [min⁻¹]	890	1300	910	1210	870	1310	920
Sound pressure at 3 m [dBA]	47	56	51	59	50	57	49
Transported air temperature [°C]	-20...+70	-20...+50	-20...+60	-25...+50	-20...+70	-25...+65	-20...+70
SEC class	–	–	–	–	–	–	–
IP rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4
Motor IP rating	IP44	IP44	IP44	IP44	IP44	IP44	IP44

BOX-F 50x30 6E

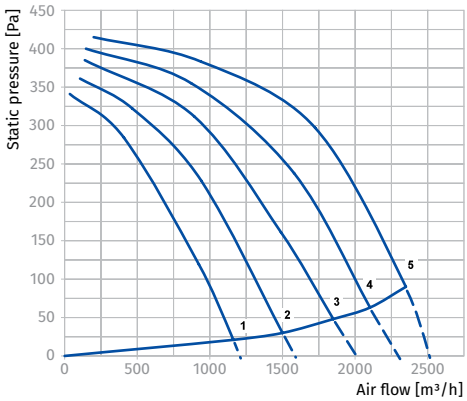
Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**65**	53	58	56	50	57	55	51	47
L_{WA} to outlet [dBA]	**68**	53	56	53	60	64	58	60	51
L_{WA} to environment [dBA]	**51**	45	44	50	42	45	43	34	31

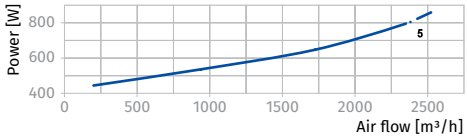




BOX-F 50x30 4D

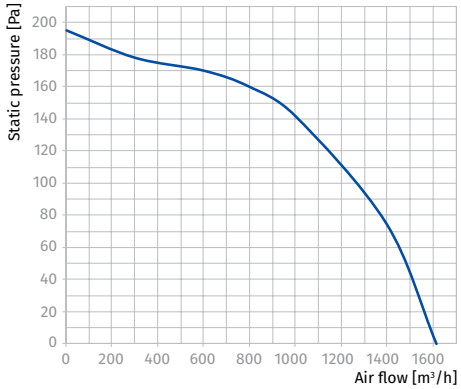
Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**77**	67	69	62	63	68	68	68	63
L_{WA} to outlet [dBA]	**79**	61	68	69	71	75	74	73	68
L_{WA} to environment [dBA]	**65**	46	55	58	56	60	54	48	47

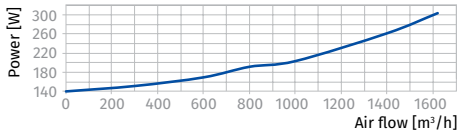




BOX-F 50x30 6D

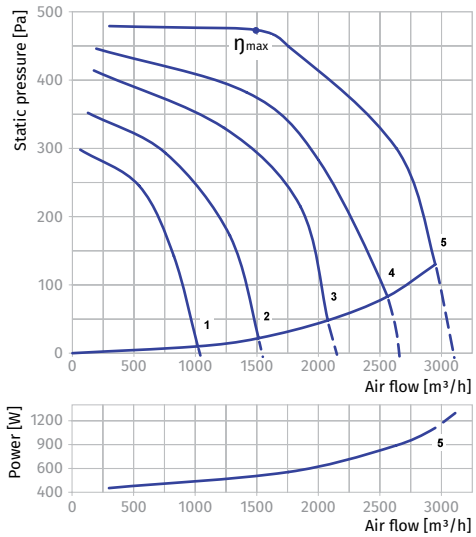
Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**62**	56	59	52	53	57	51	50	44
L_{WA} to outlet [dBA]	**66**	51	57	55	62	59	54	55	48
L_{WA} to environment [dBA]	**52**	30	45	47	42	43	40	33	31





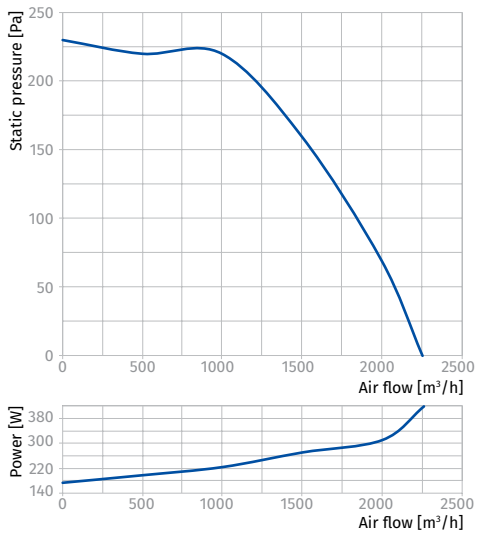
BOX-F 60x30 4E

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**83**	66	77	69	66	71	70	71	67
L_{WA} to outlet [dBA]	**85**	62	77	71	74	79	76	73	67
L_{WA} to environment [dBA]	**69**	42	65	66	61	61	56	53	47



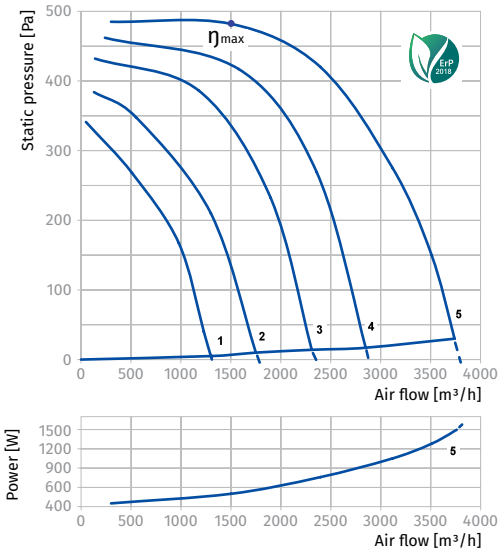
BOX-F 60x30 6E

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**69**	62	64	61	56	62	62	55	52
L_{WA} to outlet [dBA]	**74**	53	63	58	67	67	63	61	56
L_{WA} to environment [dBA]	**57**	49	47	56	45	45	49	37	34



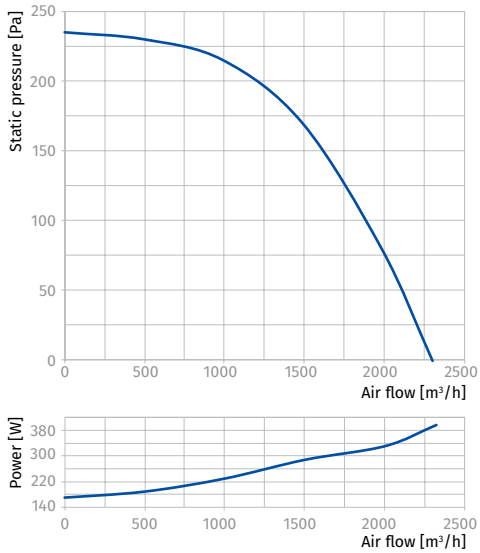
BOX-F 60x30 4D

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**82**	66	77	67	67	70	72	68	69
L_{WA} to outlet [dBA]	**82**	62	77	71	76	79	75	76	67
L_{WA} to environment [dBA]	**71**	43	63	62	64	62	55	49	51



BOX-F 60x30 6D

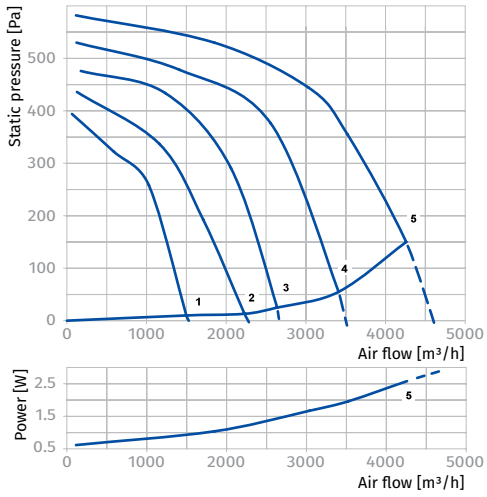
Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**63**	50	56	55	53	54	55	52	46
L_{WA} to outlet [dBA]	**73**	53	59	53	66	63	62	62	54
L_{WA} to environment [dBA]	**55**	31	44	52	47	46	46	40	32



Parameters	Box-F 60x35 4E	Box-F 60x35 6E	Box-F 60x35 4D	Box-F 60x35 6D	Box-F 70x40 4D	Box-F 70x40 6D
Voltage [V]	1 ~ 230	1 ~ 230	3 ~ 400	3 ~ 400	3 ~ 400	3 ~ 400
Frequency [Hz]	50	50	50	50	50	50
Power [W]	2840	720	2460	743	3630	1150
Current [A]	13.90	3.6	3.93	1.47	6.00	2.3
Maximum air flow [m³/h (l/s)]	4260 (1183)	2755 (765)	5020 (1395)	3310 (920)	6450 (1792)	4050 (1125)
RPM [min⁻¹]	1260	820	1300	940	1320	890
Sound pressure at 3 m [dBA]	59	51	60	55	65	58
Transported air temperature [°C]	-20...+40	-20...+60	-20...+40	-20...+70	-25...+40	-20...+70
SEC class	–	–	–	–	–	–
IP rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4
Motor IP rating	IP44	IP44	IP44	IP44	IP44	IP44

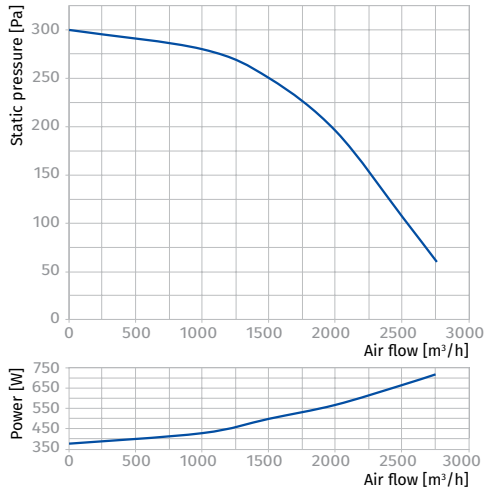
BOX-F 60x35 4E

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**78**	71	74	65	66	75	72	70	64
L_{WA} to outlet [dBA]	**86**	69	73	74	74	78	76	77	68
L_{WA} to environment [dBA]	**67**	54	60	63	58	62	55	51	48



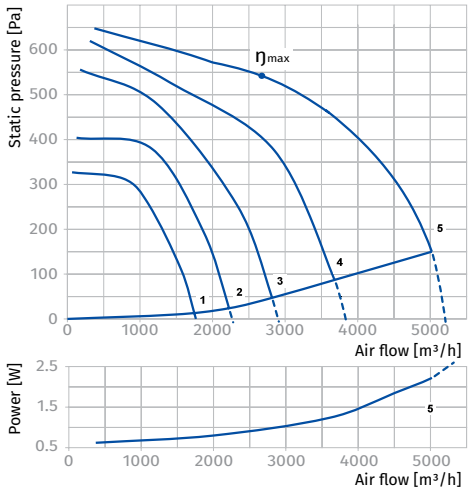
BOX-F 60x35 6E

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**68**	54	59	56	57	59	57	56	50
L_{WA} to outlet [dBA]	**72**	52	59	59	67	64	60	64	53
L_{WA} to environment [dBA]	**55**	47	47	52	46	49	48	40	34



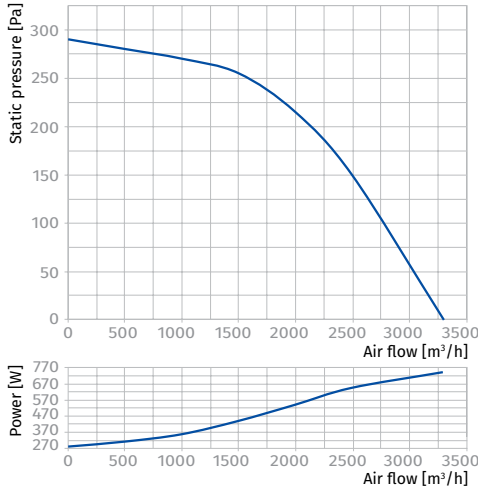
BOX-F 60x35 4D

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**80**	72	75	69	67	73	71	69	67
L_{WA} to outlet [dBA]	**84**	66	74	70	76	79	76	74	68
L_{WA} to environment [dBA]	**68**	52	62	65	61	58	56	52	48



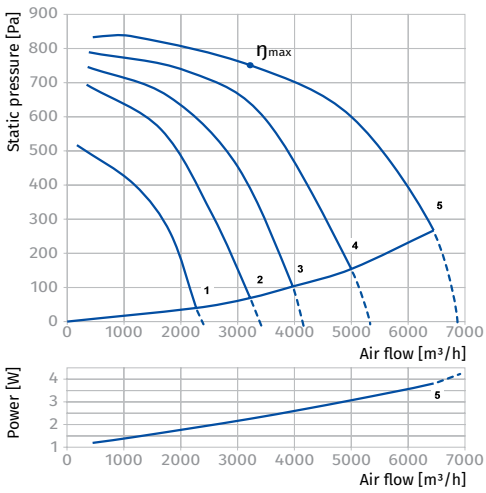
BOX-F 60X35 6D

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**66**	59	65	55	56	62	60	56	53
L_{WA} to outlet [dBA]	**72**	57	60	60	64	67	63	61	55
L_{WA} to environment [dBA]	**59**	36	50	55	48	47	44	41	37



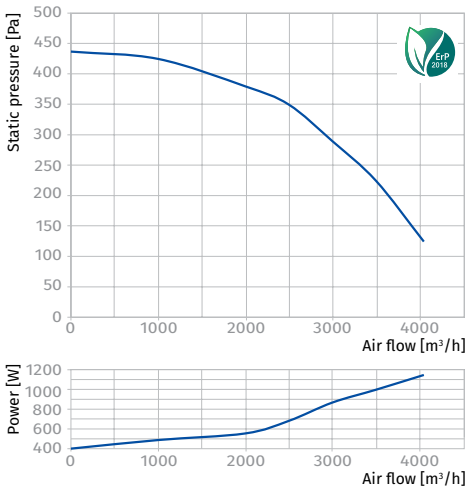
BOX-F 70x40 4D

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**82**	80	77	70	71	75	73	71	68
L_{WA} to outlet [dBA]	**86**	74	77	75	78	83	81	77	71
L_{WA} to environment [dBA]	**71**	55	64	69	67	70	63	62	59



BOX-F 70x40 6D

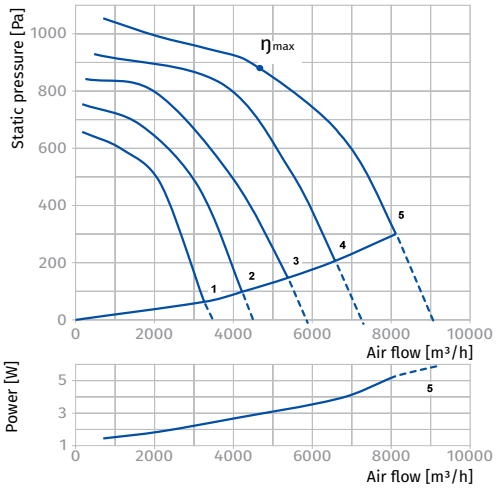
Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**70**	65	61	59	59	64	61	59	54
L_{WA} to outlet [dBA]	**74**	62	62	61	67	68	63	68	58
L_{WA} to environment [dBA]	**64**	39	51	56	55	51	48	42	39



Parameters	Box-F 80x50 4D	Box-F 80x50 6D	Box-F 80x50 8D	Box-F 90x50 6D	Box-F 90x50 8D	Box-F 100x50 6D	Box-F 100x50 8D
Voltage [V]	3 ~ 400	3 ~ 400	3 ~ 400	3 ~ 400	3 ~ 400	3 ~ 400	3 ~ 400
Frequency [Hz]	50	50	50	50	50	50	50
Power [W]	5850	2790	1377	3870	2000	3870	2000
Current [A]	9.35	5.18	3.40	7.0	4.1	7.0	4.1
Maximum air flow [m³/h (l/s)]	8120 (2256)	7610 (2114)	5620 (1561)	9540 (2650)	7175 (1993)	9540 (2650)	7175 (1993)
RPM [min⁻¹]	1140	830	710	930	680	930	680
Sound pressure at 3 m [dBA]	67	59	58	61	59	61	59
Transported air temperature [°C]	-25...+40	-20...+50	-20...+40	-20...+55	-20...+40	-20...+55	-20...+40
SEC class	–	–	–	–	–	–	–
IP rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4
Motor IP rating	IP44	IP44	IP44	IP44	IP44	IP44	IP44

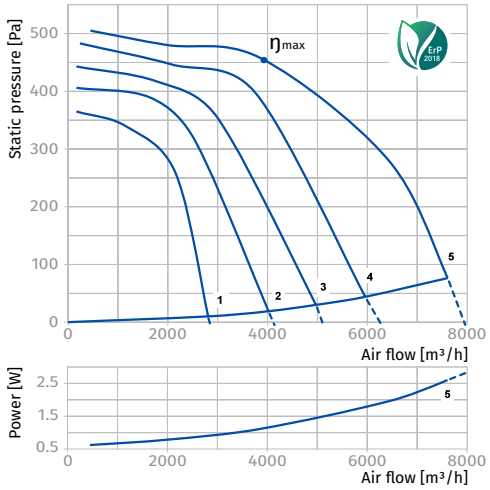
BOX-F 80x50 4D

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**82**	71	74	75	70	75	75	70	67
L_{WA} to outlet [dBA]	**90**	72	77	76	82	86	85	80	78
L_{WA} to environment [dBA]	**73**	61	68	67	65	70	66	61	60



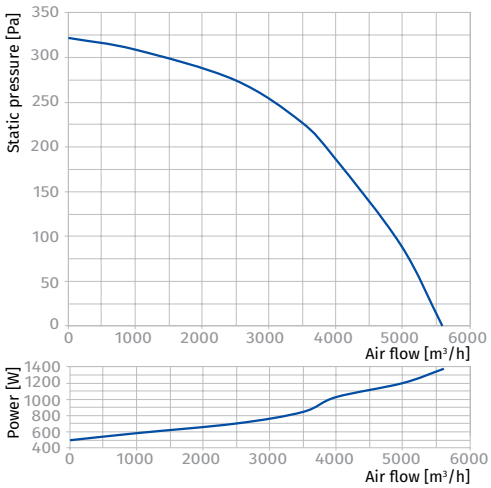
BOX-F 80x50 6D

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**77**	64	66	66	70	71	70	66	62
L_{WA} to outlet [dBA]	**82**	64	66	69	76	74	73	73	64
L_{WA} to environment [dBA]	**64**	51	59	58	61	60	55	50	49



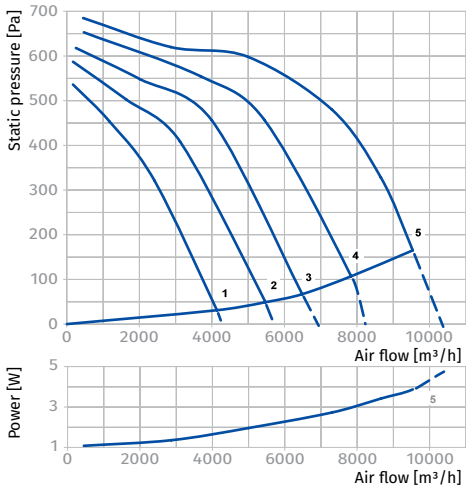
BOX-F 80x50 8D

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**66**	55	57	56	54	61	58	54	47
L_{WA} to outlet [dBA]	**71**	54	56	59	68	65	63	60	53
L_{WA} to environment [dBA]	**64**	47	46	55	49	51	52	53	58



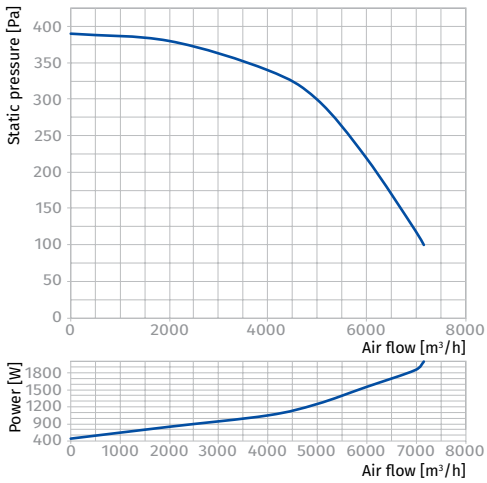
BOX-F 90x50 6D

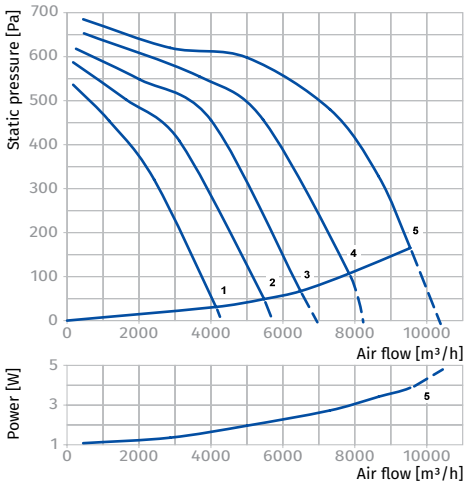
Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**78**	70	68	63	72	69	71	68	64
L_{WA} to outlet [dBA]	**83**	71	70	70	80	78	79	74	68
L_{WA} to environment [dBA]	**65**	56	64	60	63	58	56	52	51



BOX-F 90x50 8D / BOX-F 100x50 8D

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**72**	59	61	58	62	63	61	58	54
L_{WA} to outlet [dBA]	**74**	58	58	64	72	67	66	66	58
L_{WA} to environment [dBA]	**64**	48	51	59	55	53	52	49	43



BOX-F 100x50 6D

Sound power level, A-weighted	Octave frequency bands [Hz]								
	Total	63	125	250	500	1000	2000	4000	8000
L_{WA} to inlet [dBA]	**80**	73	68	64	74	71	72	69	66
L_{WA} to outlet [dBA]	**86**	70	71	71	78	78	78	75	71
L_{WA} to environment [dBA]	**69**	59	61	59	65	61	58	53	53