



Inline centrifugal fans with EC motor

## Box-I EC

Air capacity - up to 10850 m<sup>3</sup>/h



### ■ Use

- Supply and exhaust ventilation systems installed in various premises.
- For arranging energy-saving and controllable ventilation systems.
- Compatible with 600x300 up to 1000x500 mm rectangular air ducts.

### ■ Design

- The casing and impeller are made of galvanized steel.
- The casing is heat- and sound-insulated with 50 mm mineral wool
- The fan is rated for continuous operation always connected to power mains.
- The fan casing has threaded openings for connection of rectangular air ducts.
- The access cover on the fan casing facilitates servicing and maintenance.



- Mounting angles with rubber anti vibration mounts for easy fan mounting.

### ■ Motor

- High-efficient direct current EC motor with external rotor and backward curved blades.



- EC technologies meet the latest requirements to arrange high-efficient energy saving ventilation.

- EC motors have energy demand by 50 % less as compared to standard motors and have efficiency up to 90 %.

- EC motors are featured with high performance, low noise level and well controllable total speed range.
- Dynamically balanced turbine.

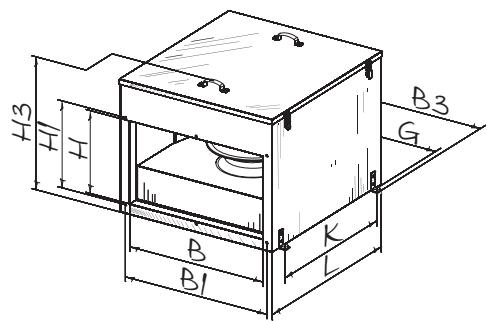
### ■ Operation and speed control

- The fan is controlled with a 0-10 V external control signal, e.g. CDT E/0-10 speed controller for EC motors.
- The fan capacity is regulated by various parameters, including temperature level, pressure, smoke, etc.
- EC motor changes its rotation speed synchronously with fluctuations of a control parameter to ensure the best suitable air flow.
- The fan is compatible both with 50 and 60 Hz power mains with no influence to the motor maximum speed.
- The parameters may be set and controlled due to data exchange between a PC and the fan.
- The fans can be integrated into a unified decentralized computerized network to adjust ventilation system with respect to specific user's demands.

### ■ Mounting

- For connection to rectangular air ducts.
- The fan flanges are connected to the air duct by the bolts inserted into the flange holes.
- In case of the fan connection to the air duct via flexible connectors the fan must be secured to a mounting frame with supports, hangers or brackets.
- While mounting provide enough space for accessing the cover for service operations.

## ■ Overall dimensions

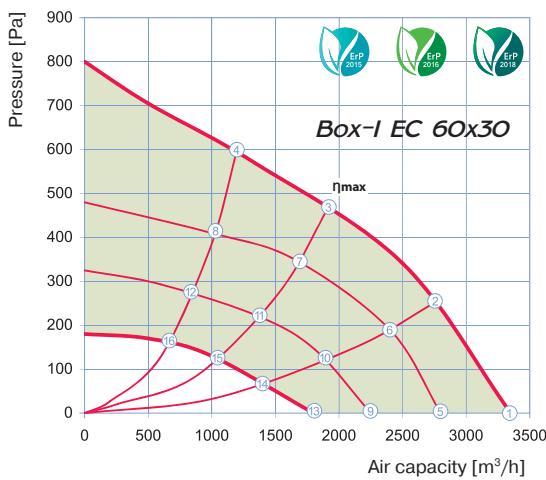


Type	Dimensions [mm]									Weight [kg]
	B	H	B1	H1	B3	H3	L	G	K	
Box-I EC 60x30	600	300	620	320	775	530	752	745	500	55
Box-I EC 60x35	600	350	620	370	775	630	802	745	500	66
Box-I EC 70x40	700	400	720	420	875	690	880	845	742	90
Box-I EC 80x50	800	500	820	520	975	810	935	945	800	113
Box-I EC 90x50	900	500	920	520	1075	810	1000	1045	800	128
Box-I EC 100x50	1000	500	1020	520	1175	810	1000	1145	800	135

ErP data	
Overall efficiency	η, (%)
Measurement category	MC
Efficiency category	EC
Efficiency grade	N
Variable speed drive	VSD
Power	[kW]
Current	[A]
Air flow	[m³/h]
Static pressure	[Pa]
Speed	[n/min⁻¹]
Specific ratio	SR

## ■ Specifications

Parameters	Box-I EC 60x30	Box-I EC 60x35	Box-I EC 70x40	Box-I EC 80x50	Box-I EC 90x50	Box-I EC 100x50
Voltage [V / 50 /60 Hz]	1 ~ 200-277	3 ~ 380-480	3 ~ 380-480	3 ~ 380-480	3 ~ 380-480	3 ~ 380-480
Power [kW]	0.48	0.99	1.70	2.95	2.98	2.98
Current [A]	3.10	1.70	2.60	4.60	4.60	4.60
Maximum air capacity [m³/h]	3350	4550	6300	8900	10850	10850
RPM [min⁻¹]	2300	2580	2600	2500	2040	2040
Sound pressure level at 3 m distance [dBA]	49	51	54	57	60	60
Max. operating temperature [°C]	-25 +60	-25 +50	-25 +40	-25 +40	-25 +40	-25 +40
Ingress protection rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4

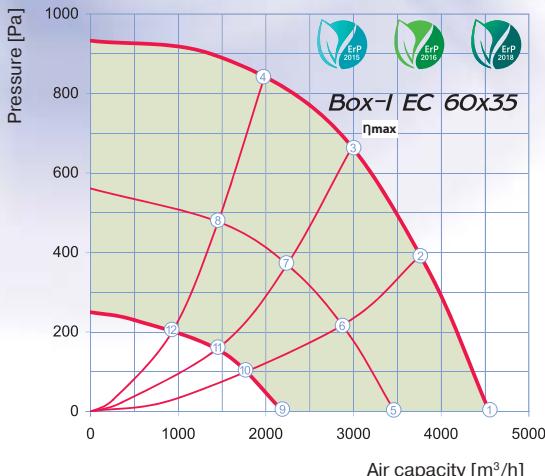


Sound-power level	Octave-frequency band [Hz]								
	Gen	63	125	250	500	1000	2000	4000	8000
L <sub>WA</sub> to inlet, [dBA]	74	63	73	62	61	68	72	64	68
L <sub>WA</sub> to outlet, [dBA]	79	55	74	67	75	73	72	69	69
L <sub>WA</sub> to environment, [dBA]	58	30	52	52	52	47	44	37	39

n, (%)	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
53.3	A	Static	67.1	Yes	0.480	3.1	1920	470	2170	1

point	P, (W)	I, (A)	n, (min⁻¹)
1	370	2.35	2300
2	445	2.85	2215
3	480	3.10	2170
4	448	2.85	2220
5	210	1.30	1900
6	284	1.70	1900
7	312	1.80	1900
8	278	1.70	1900
9	124	0.80	1560
10	158	1.00	1560
11	175	1.10	1560
12	158	1.00	1560
13	57	0.40	1200
14	73	0.50	1200
15	80	0.50	1200
16	70	0.50	1200

## ■ Specifications

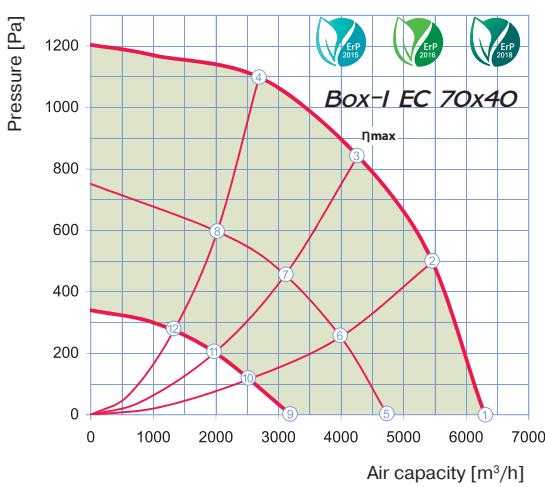


Sound-power level	Octave-frequency band [Hz]									
	Gen	63	125	250	500	1000	2000	4000	8000	
L <sub>wA</sub> to inlet, [dBA]	77	69	72	64	66	67	65	64	63	
L <sub>wA</sub> to outlet, [dBA]	76	60	70	64	71	75	74	69	68	
L <sub>wA</sub> to environment, [dBA]	55	38	54	53	51	46	44	39	33	

$\eta$ , (%)	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
56.6	A	Static	67.2	Yes	0.990	1.7	2979	664	2580	1

point	P, (W)	I, (A)	n, (min⁻¹)
1	669	1.17	2580
2	862	1.46	2580
3	990	1.70	2580
4	907	1.53	2580
5	288	0.57	1930
6	348	0.69	1910
7	396	0.77	1900
8	360	0.72	1905
9	123	0.28	1305
10	144	0.33	1305
11	151	0.34	1305
12	151	0.34	1300



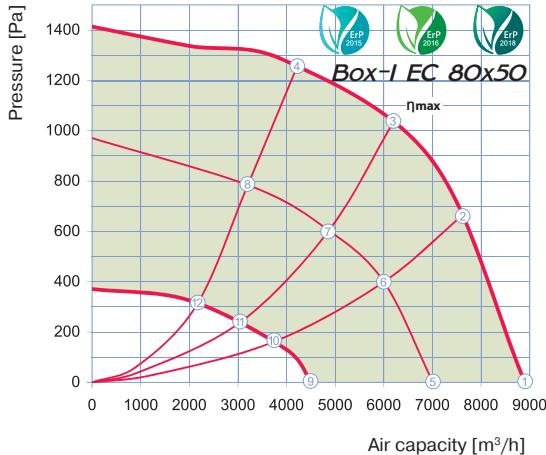
Sound-power level	Octave-frequency band [Hz]									
	Gen	63	125	250	500	1000	2000	4000	8000	
L <sub>wA</sub> to inlet, [dBA]	79	74	69	66	59	74	73	64	64	
L <sub>wA</sub> to outlet, [dBA]	78	67	66	71	74	74	71	74	68	
L <sub>wA</sub> to environment, [dBA]	63	43	54	54	51	54	52	55	48	

$\eta$ , (%)	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
59.9	A	Static	68	Yes	1.700	2.6	4270	842	2600	1

point	P, (W)	I, (A)	n, (min⁻¹)
1	1140	1.74	2600
2	1510	2.30	2600
3	1700	2.60	2600
4	1594	2.42	2600
5	436	0.73	1940
6	541	0.88	1910
7	533	0.95	1885
8	558	0.91	1905
9	194	0.40	1330
10	226	0.45	1315
11	239	0.47	1305
12	236	0.46	1305

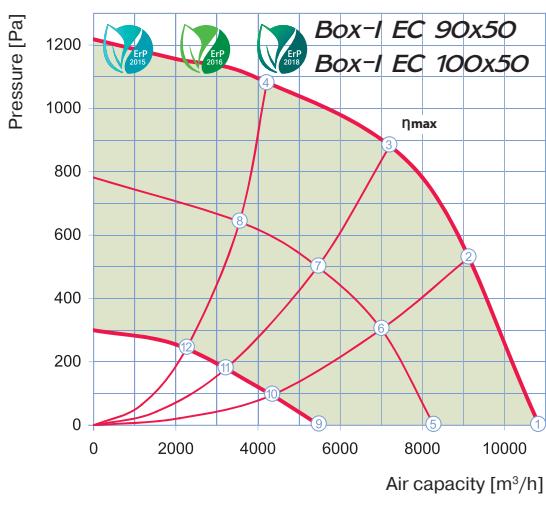
## ■ Specifications



Sound-power level	Octave-frequency band [Hz]									
	Gen	63	125	250	500	1000	2000	4000	8000	
L <sub>WA</sub> to inlet, [dBA]	81	67	67	70	68	72	71	67	61	
L <sub>WA</sub> to outlet, [dBA]	85	66	72	73	76	82	81	74	69	
L <sub>WA</sub> to environment, [dBA]	63	50	56	54	56	58	49	45	45	

η, (%)	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
62	A	Static	67.6	Yes	2.950	4.6	6210	1039	2500	1



Sound-power level	Octave-frequency band [Hz]									
	Gen	63	125	250	500	1000	2000	4000	8000	
Box-I EC 90x50										
L <sub>WA</sub> to inlet, [dBA]	76	65	63	59	61	69	63	58	56	
L <sub>WA</sub> to outlet, [dBA]	80	61	66	68	69	75	71	63	67	
L <sub>WA</sub> to environment, [dBA]	59	46	50	49	54	52	47	42	46	
Box-I EC 100x50										
L <sub>WA</sub> to inlet, [dBA]	77	68	64	59	64	69	65	62	57	
L <sub>WA</sub> to outlet, [dBA]	80	64	63	68	74	76	73	65	66	
L <sub>WA</sub> to environment, [dBA]	59	44	53	54	53	49	44	42	41	

η, (%)	MC	EC	N	VSD	[kW]	[A]	[m³/h]	[Pa]	[RPM]	SR
60.5	A	Static	66	Yes	2.980	4.6	7210	882	2040	1