Iso-Mix EC

Sound-insulated inline mixed-flow fans with EC motor



Use

- Combined supply and exhaust ventilation systems of various commercial and industrial spaces with stringent noise requirements (such as libraries, conference halls, classrooms, kindergarten playrooms etc.).
- For ventilation air ducts requiring high pressure, powerful air flow and low noise level.
- Compatible with ∅ 100 up to ∅ 315 mm air ducts.

Air flow:
up to 1970 m³/h
547 l/s

Power:
from 17 W

EC motor

ErP 2018

Features

- The new series of **Iso-Mix EC** duct fan series is provided with a special sound-insulated casing which ensures silent operation and excellent aerodynamic characteristics.
- **Iso-Mix EC** fans combine the versatility and outstanding performance of both axial and centrifugal fans producing a powerful air flow and high pressure while retaining the signature energy-efficiency and response of EC motors.
- Several fans can be integrated into a single computer-controlled system with sensor feedback combined with speed control across the entire dynamic range.

Design

- The external casing is made of steel with a polymer coating.
- The internal casing perforations conduct sound waves and direct them at the noise-absorbing material at a specific angle. Noise and heat insulation is ensured by a mineral wool layer 50 mm in thickness. Wideband noise control is achieved by means of special casing perforation and the use of noise-absorbing material.
- The inner casing and the impeller are made of durable high-quality plastic.
- Conical impellers with specially profiled blades help boost angular velocity of the air flow resulting in higher pressure and air capacity compared to the conventional designs. The combination of a diffuser, a specially designed impeller and flow straightener vanes at the fan outlet allow for an optimum flow distribution to achieve high capacity and increased air pressure without generating excessive noise.
- The fan casing is equipped with an external water-tight terminal box for electrical connections.

Motor

- High-efficient direct current EC motor.
- EC technology meets the up-to-date requirements to energy-saving and controllable ventilation and provides up to 35 % energy saving as compared to asynchronous motors.
- EC motor ensures totally controllable speed range for the fan and has integrated overheating protection with automatic restart.
- EC motor has no friction and wearing parts as capacitor und brushes. Instead a maintenance-free EC controller electronic circuit board is used.
- The impeller is dynamically balanced.
- The fan is compatible with 50 Hz and 60 Hz power mains and the maximum speed does not depend on power mains frequency.

Speed control

- The fan speed is controlled with a 0–10 V control signal from the following sources:
  - integrated or external speed controller
  - controller with sensors
  - central BMS system.
- The control signal value changes depending on air temperature, pressure, smoke concentration and other parameters.
- During signal value change the fan with EC motor correspondingly changes the rotations speed and delivers required air volume to the ventilation system.
- The computer central building management systems (BMS) enable integration of several EC motors in network and precise individual operation control for each fan.

Designation key

Series	Motor type	Spigot diameter [mm]	Options
Iso-Mix	**EC:** electronically commutated motor	**100; 125; 150; 160; 200; 250; 315**	**FR1:** smooth speed controller adjustable from 0 to 100 % and power cable with mains plug **G1:** speed controller, temperature controller with external temperature sensor, power cable with mains plug **GI1:** speed controller, temperature controller with integrated temperature sensor and power cable mains plug

Accessories

Silencers	Filter boxes		Electric heaters	Water heaters	Backdraft air dampers	Air dampers	Clamps	Speed controllers
								
SD	KFBK	KFBT	EKH	WKH	VRV	VK / VKA	K	CDT E/0-10

Mounting

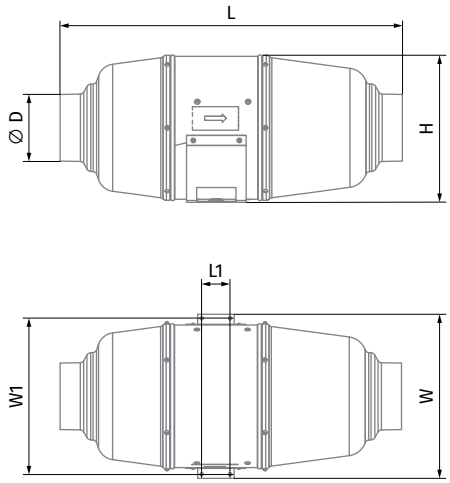
- The fans are designed to be used with round air ducts.
- The fan casing has mounting brackets for convenient installation onto the floor, walls or ceiling. The ducts can be fitted at any angle relative to the fan axis.
- Make sure to provide sufficient maintenance access during fan installation. Electrical connection and installation must be performed in accordance with the instruction manual and the electrical connections diagram applied to the terminal box.
- A single system may have several fans installed in parallel to boost the output capacity or in series to boost the working pressure.

Modifications and options

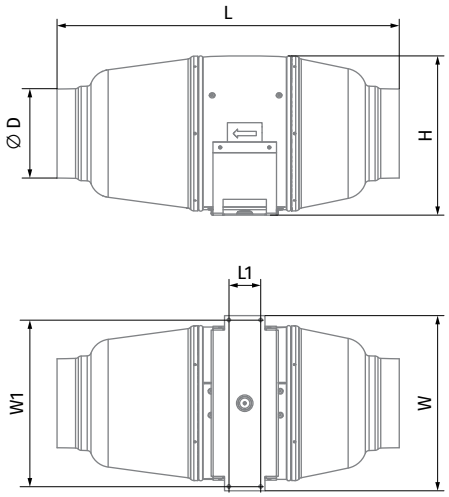
- **FR1:** smooth speed controller adjustable from 0 to 100 % and power cable with mains plug.
- **G1:** speed controller, temperature controller with external temperature sensor (cable length 4 m), power cable with mains plug.
- **GI1:** speed controller, temperature controller with integrated temperature sensor and power cable with mains plug.

Dimensions [mm]

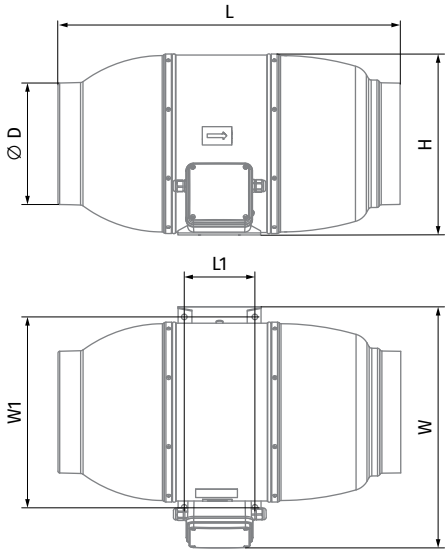
Type	∅ D	H	L	L1	W	W1
Iso-Mix EC 100	98	220	505	42	243	231
Iso-Mix EC 125	123	220	474	42	243	231
Iso-Mix EC 150	148	249	581	44	314	261
Iso-Mix EC 160	157	263	580	44	273	231
Iso-Mix EC 200	198	295	560	115	392	310
Iso-Mix EC 250	248	360	665	130	445	370
Iso-Mix EC 315	313	434	785	180	526	450



Iso-Mix EC 100, Iso-Mix EC 125, Iso-Mix EC 160



Iso-Mix EC 150



Iso-Mix EC 200, Iso-Mix EC 250, Iso-Mix EC 315

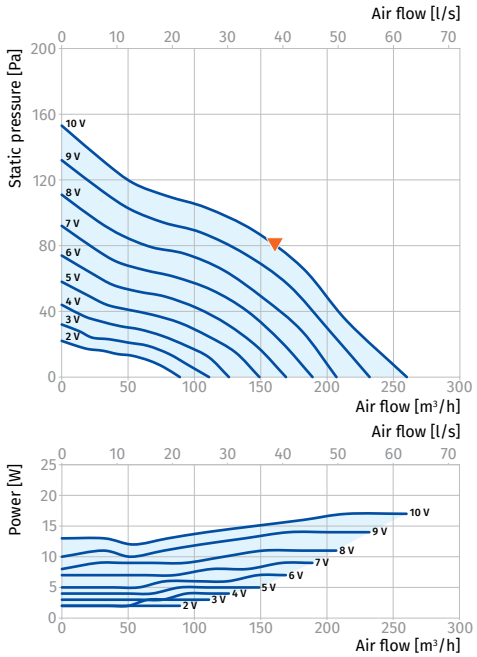
Technical data

Parameters	Iso-Mix EC 100	Iso-Mix EC 125	Iso-Mix EC 150 (160)	Iso-Mix EC 200	Iso-Mix EC 250	Iso-Mix EC 315
Voltage [V / 50 Hz]	1 ~ 230	1 ~ 230	1 ~ 230	1 ~ 230	1 ~ 230	1 ~ 230
Power [W]	17	18	55	120	169	284
Current [A]	0.18	0.19	0.48	0.97	1.38	1.25
Maximum air flow [m³/h (l/s)]	260 (72)	370 (103)	600 (167)	1240 (344)	1285 (357)	1970 (547)
RPM [min⁻¹]	2892	2895	3390	3534	2870	2826
Sound pressure at 3 m [dBA]	28	29	38	43	42	46
Transported air temperature [°C]	-25...+55	-25...+55	-25...+55	-25...+55	-25...+55	-25...+55
IP rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4
SEC class	B	B	B	-	-	-
ErP	2018	2018	2018	2018	2018	2018

To comply with ErP 2018 it is necessary to use a local demand control typology (connect the sensor).

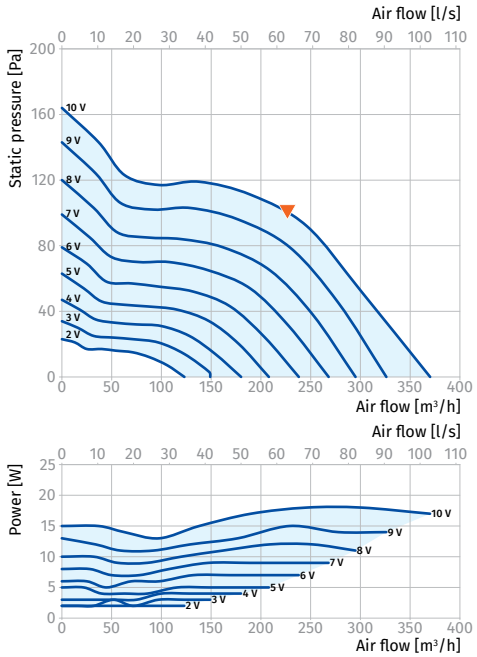
ISO-MIX EC 100

Sound power level, A-weighted	Total	Octave frequency bands [Hz]								LpA 3 m	LpA 1 m
		63	125	250	500	1000	2000	4000	8000		
L_{WA} to inlet [dBA]	**57**	37	50	54	50	47	43	36	29	**37**	**46**
L_{WA} to outlet [dBA]	**60**	35	49	58	54	45	43	38	30	**40**	**49**
L_{WA} to environment [dBA]	**49**	31	43	44	41	41	36	27	22	**28**	**38**



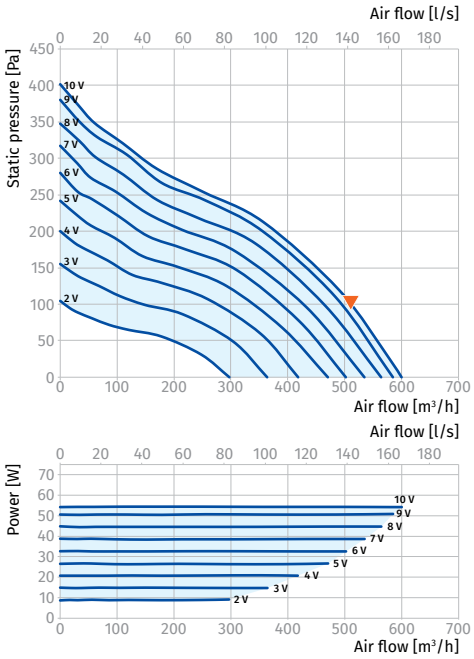
ISO-MIX EC 125

Sound power level, A-weighted	Total	Octave frequency bands [Hz]								LpA 3 m	LpA 1 m
		63	125	250	500	1000	2000	4000	8000		
L_{WA} to inlet [dBA]	**58**	38	51	54	51	48	44	37	29	**37**	**47**
L_{WA} to outlet [dBA]	**61**	36	49	59	54	45	44	39	30	**40**	**50**
L_{WA} to environment [dBA]	**49**	32	43	44	42	41	36	27	22	**29**	**38**



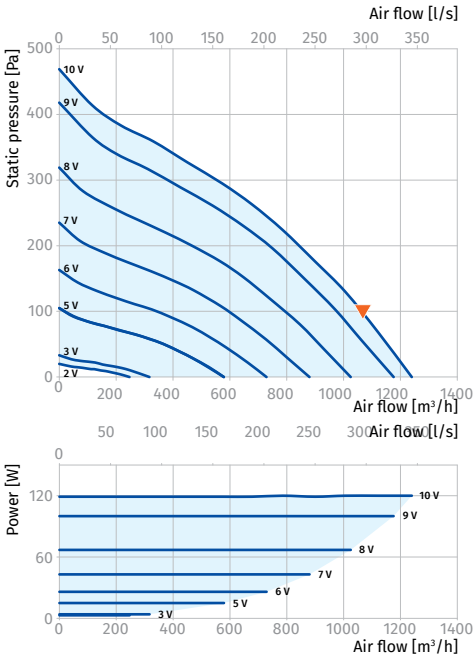
ISO-MIX EC 150 (160)

Sound power level, A-weighted	Total	Octave frequency bands [Hz]								LpA 3 m	LpA 1 m
		63	125	250	500	1000	2000	4000	8000		
L_{WA} to inlet [dBA]	**61**	45	58	58	41	37	33	30	23	**41**	**51**
L_{WA} to outlet [dBA]	**58**	47	58	46	43	39	32	27	20	**38**	**48**
L_{WA} to environment [dBA]	**58**	48	48	50	57	45	43	36	30	**38**	**48**



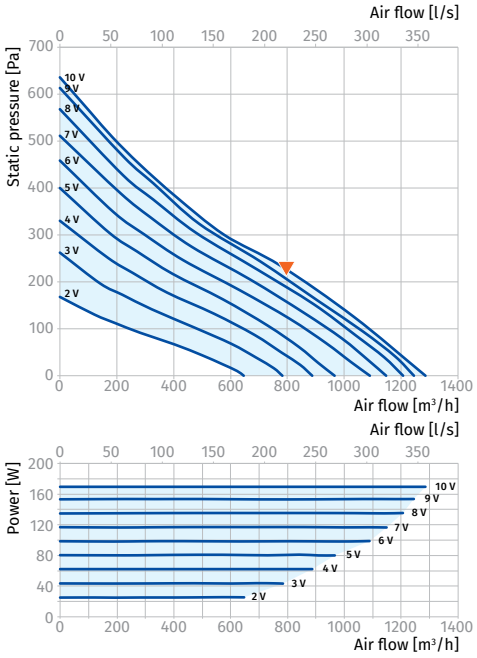
ISO-MIX EC 200

Sound power level, A-weighted	Total	Octave frequency bands [Hz]								LpA 3 m	LpA 1 m
		63	125	250	500	1000	2000	4000	8000		
L_{WA} to inlet [dBA]	**68**	37	47	57	63	63	62	61	55	**48**	**58**
L_{WA} to outlet [dBA]	**70**	42	50	59	64	66	64	63	58	**50**	**60**
L_{WA} to environment [dBA]	**63**	31	43	53	61	56	53	47	37	**43**	**52**



ISO-MIX EC 250

Sound power level, A-weighted	Total	Octave frequency bands [Hz]								LpA 3 m	LpA 1 m
		63	125	250	500	1000	2000	4000	8000		
L_{WA} to inlet [dBA]	**70**	45	48	60	66	65	63	58	52	**50**	**60**
L_{WA} to outlet [dBA]	**74**	46	54	62	70	69	66	63	56	**54**	**64**
L_{WA} to environment [dBA]	**63**	40	45	52	60	57	51	43	31	**42**	**52**



ISO-MIX EC 315

Sound power level, A-weighted	Total	Octave frequency bands [Hz]								LpA 3 m	LpA 1 m
		63	125	250	500	1000	2000	4000	8000		
L_{WA} to inlet [dBA]	**72**	41	55	64	65	70	65	63	55	**52**	**62**
L_{WA} to outlet [dBA]	**77**	52	61	67	74	71	69	67	62	**57**	**66**
L_{WA} to environment [dBA]	**66**	33	48	58	60	63	57	50	38	**46**	**55**

