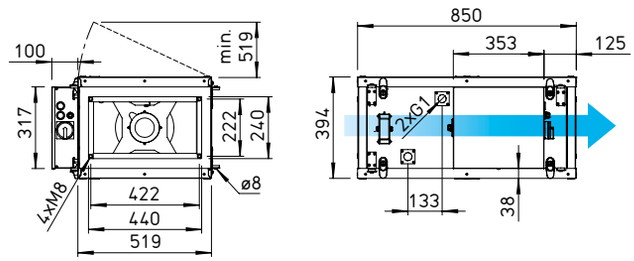
Fresh air box ALB EC WW
backward curved, for rectangular ducts 40 x 20 cm

ALB EC 40/20 WW

Dimensions ALB EC 40/20 WW



Dim. in mm

Application /Function
Pleasant indoor climate through the addition of external fresh air which is filtered and automatically heated to the specified temperature.

Operational unit for connection to rectangular duct systems. Suitable for a wide range of commercial applications.

Description/ Scope of delivery
The air filter, fan and warm water heater are integrated in a compact flat casing which is thermally and acoustically insulated. The unit is delivered ready for connection and includes an external control unit for controlling the unit, as well as a connection cable (10 metres). Air quality, humidity and temperature sensors (see Accessories) can be connected to the electronics in the terminal box to control the specified setpoints. In order to prevent frost damage to the unit, a shutter (see Accessories) is essential.

Casing
Robust construction made of coated steel sheet, double-walled with 30 mm thick mineral wool lining. The cover is easy to open with screw caps and hinge for cleaning purposes.
Rectangular duct connectors on inlet side and outlet side, adapted to standard rectangular duct dimensions.
No thermal bridges, smooth surface for easy cleaning.

Filter
The large filter for long cleaning intervals is freely accessible by opening the casing cover. Standard version ISO Coarse 90% (G4).
Alternatively, filters with higher classifications ISO ePM_{10} 70% (M5) or ISO ePM_1 50% (F7) (see accessories) can be used. The volume output reduction must be taken into account.
Periodic filter inspection /cleaning is required.
A filter monitoring system is integrated.
The filters comply with VDI 6022.

Fan
The volume flow rate switching is continuously variable with the control unit. Low-noise and high performance centrifugal fan made of galvanised steel sheet. Motor/impeller unit freely accessible for servicing. Drive through energy-saving, speed-controllable EC motor with a high level of efficiency. Maintenance-free, with lifetime lubricated ball bearings.

Heating element
Air heater with AL blades and staggered copper pipes heat the intake air to the specified setpoint temperature. Control through connection of a hydraulic unit (accessories) via the integrated control board.
The setpoint and the temperature measured by the room sensor (accessories) are constantly compared.
A frost protection circuit is integrated as standard.
Max. operating pressure 1.6 MPa. Water connection pipes with external thread.

Electrical connection
Spacious terminal box in IP20 on outside of casing.

Motor protection
Deactivation when overheating is imminent. Automatic reactivation after cool down.

Noise
The type table shows the radiated noise and outlet side air noise as sound pressure at 1 m (free field conditions). If necessary, a cross talk silencer (see Accessories) must be integrated in the duct system on site. The radiated noise as sound pressure level at 1 m (free field conditions) is additionally stated in the type table as well as in the table below the performance curve.

Control
The control element is included in the delivery and offers the following functions:
- ☐ Operation with different volume flows.
- ☐ Weekly and seasonal timer.
- ☐ Temperature control (using room sensor, accessories).
- ☐ Frost protection.
- ☐ Control of hydraulic unit (accessories) to control the WW heating element. Specification of min./max. temperature.
- ☐ Control of an EC extract air fan.
- ☐ Display of ambient temperature, fan control and filter contamination.

Other inputs and outputs:
- ☐ Emergency switch contact.
- ☐ Boost switch contact.
- ☐ External switch.
- ☐ Input for air quality or humidity sensor.
- ☐ Input for room temperature sensor.
- ☐ Output for shutter control.

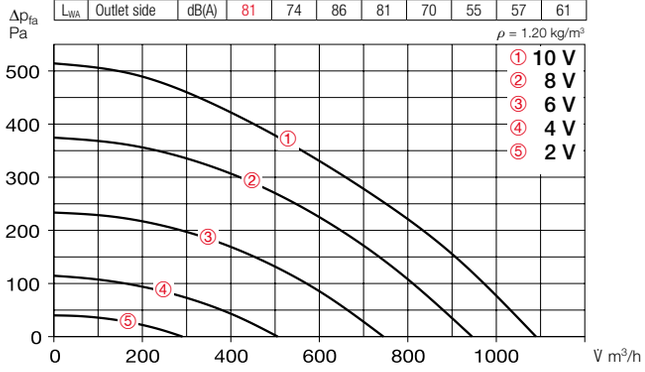
Control element with connection cable (10 m) included in delivery.
Dimensions mm (W x H x D) 115 x 80 x 25

Type	Ref. no.	Flow rate* free blowing	Max. speed	Sound pressure level		Voltage 50/60 Hz	Power consump.		Current consump. max. tot.	Wiring diagram	Maximum intake temp.	Weight net aprx.
				Case-radiation	Air noise outlet side		Motor	Heating				
		$\dot{V}$ m³/h (max.)	min-1	dB(A) at 1m	dB(A) at 1m	Volt	kW	kW	A	No.	+°C	kg
ALB EC 40/20 WW	06533	1100	2900	52	73	230, 1~	0.15	–	1.09	1371	40	37

* Volume reduction by approx. 5 % when using the filter ISO ePM_{10} 50 % (M5), by approx. 15 % when using the filter ISO ePM_1 50 % (F7).

Performance curves ALB EC 40/20 WW

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Radiation	dB(A)	60	60	64	60	49	44	42	35
L_{WA}	Inlet side	dB(A)	75	73	78	72	67	65	64	59
L_{WA}	Outlet side	dB(A)	81	74	86	81	70	55	57	61



Free blowing					
Voltage V	**n** min⁻¹	**V̇** m³/h	**P** W	**I** A	**Lp** dB(A)
10	2890	1090	128	0.92	52
8	2365	945	89	0.68	48
6	1840	745	49	0.38	42
4	1193	505	22	0.20	33

Accessories

Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
For controlling the heat output of the warm water heating element in combination with room/duct sensors. Includes flow/return temperature display, pump, actuator, mixer valve, gravity brake, thermal cladding and flexible connection hoses.

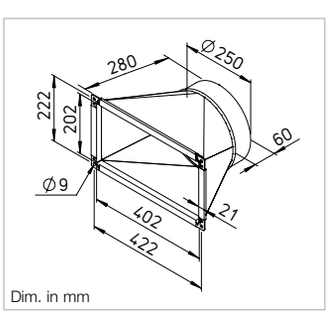
Replacement and pollen filter
– ISO Coarse 90 % (G4)
ELF-ALB 40/20 G4 No. 07619
– Filter class ISO ePM_{10} 70 % (M5)
ELF-ALB 40/20 M5 No. 06766
– Filter class ISO ePM_1 50 % (F7)
ELF-ALB 40/20 F7 No. 06767
Large cassette filter for long cleaning intervals. Unit = 3 pcs.

Room sensor – Air quality
AIR1/KWL-CO2 0-10V No. 20251
AIR1/KWL-FTF 0-10V No. 20252
For measuring the CO_2 concentration or relative room humidity. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 85 x 85 x 27

Room sensor – Temperature
TFR-ALB/KWL Ref. no. 07277
For measuring the room temperature and controlling the ventilation unit according to the setpoint.
Dim. mm (W x H x D) 80 x 80 x 25

Connection cable
– 20 metres long
ALB EC-SK 20 Ref. no. 06816
– 40 metres long
ALB EC-SK 40 Ref. no. 06817
Attach between ALB and control element as well as between ALB and TFR-ALB/KWL.

Transition piece – Symmetrical
ALB-ÜS 40/20 Ref. no. 07617
From unit flange to round duct systems.



Dim. in mm

Duct shutter, motorised
RVM 250 Ref. no. 02576
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor. Installation in any position, closing force adjustable corresponding to fan power and installation position.

Flexible connecting sleeve
FM 250 Ref. no. 01672
For acoustic decoupling, incl. 2 pcs. hose clamps.

Angle flange ring
FR 250 Ref. no. 01203
Made of galvanised steel sheet, for duct connection.

Flexible connector
VS 40/20 Ref. no. 05694
Flexible rectangular duct connector with double-sided flange frame.

Counter flange
GF 40/20 Ref. no. 06919
Flange frame made of galvanised steel sheet for connection to the rectangular duct.

Multi-leaf damper for rectangular duct installation
JVK 40/20 Ref. no. 06910
Frame casing with double-sided flanges, positioning mechanism outside of air flow. Electrical drive see STM, Accessories.

Fitting
FSK 40/20 Ref. no. 00832
For cost-effective integration of rectangular duct fans in round duct systems with Ø 200 mm.

Rectangular duct silencer
KSD 40/20 Ref. no. 08728
For outlet and inlet side insertion in the rectangular duct system.

Other accessories	Page
Silencers	496 ff.
Hydraulic unit details	494 ff.
Flexible ventilation ducts, ventilation grilles, fittings, shutters	563 ff.
Supply air disc valves	586 f.

Reference
The integration of air filters ELF-ALB 40/20 F7 (ISO ePM_1 50 % (F7)) in intake air systems fulfils the requirements of VDI 6022.

Reference	Page
Planning information	14 ff.