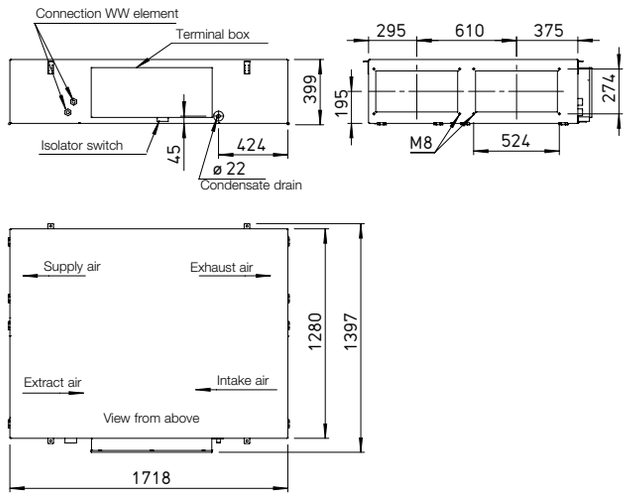
KWL EC 1400 D



EC

Dimensions KWL EC 1400 D



Dimensions in mm

CERTIFIED COMPONENT Passive House Institute

Ultra-flat ventilation units with heat recovery for compact and space-saving ceiling installation.
With a wide range of residential, commercial and industrial applications. Independently certified hygiene properties and energy efficiency according to VDI 6022 and the passive house standard. Unit construction and unit components fulfil the general hygiene requirements according to VDI 6022.
Available in various comfort and equipment variants.

Casing
Double-walled, made of galvanised steel sheet, with 30 mm heat and sound insulation on all sides. The inspection openings for filter replacement are accessible at the bottom of the unit without tools.
Ceiling installation via vibration-damping fastening elements included in the delivery.

Heat exchanger
Large cross counterflow heat exchanger made of aluminium with heat recovery efficiency of up to 90 %. Dismantling possible in just a few simple steps.

Fans
Two low-noise high-performance EC fans with backward-curved impellers ensure energy-efficient operation. The special control technology enables constant volume control or constant pressure control.

Ducts
Installation-friendly connection of intake, exhaust, extract and supply air through pipe or duct system NW 315 mm.

Condensate connection
A separate condensate tray below the heat exchanger facilitates maintenance work on the unit. Drain connectors on the side next to the terminal box. Ball siphon included in delivery. On-site connection to drain pipe.

Air filter
Standard equipment:
Clean intake air supply via ISO ePM_1 55% filter (F7).
The heat exchanger requires an ISO ePM_{10} 50% filter (M5) on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

Summer operation
Standard equipment with automatic bypass function for maximum comfort.

Heat exchanger anti-icing protection
An electric preheating element heats the intake air at very low outdoor temperatures. Thus, it reduces the risk of the heat exchanger icing up and supports its safe functioning and heat recovery during the entire heating period.

Power control
The comfort control element with graphic display and user-friendly menu navigation, which is included in the delivery, enables the following functions:
- ☐ Control directly via touchscreen.
- ☐ Freely definable operating points within the entire range of the performance curve.
- ☐ Selection between constant volume control or constant pressure control.
- ☐ Demand-oriented ventilation using CO_2, VOC (mixed gas) or humidity sensor.
- ☐ Initial commissioning (automatic determination of the system performance curve).
- ☐ Control of external shutters.
- ☐ Connection of a fire alarm contact.
- ☐ Weekly or daily programme.
- ☐ Pressure monitoring of filter contamination.
- ☐ Indication of necessary filter replacement, operating status, error messages.
- ☐ Different access levels. The ventilation unit is alternatively controllable via Modbus (RS 485, TCP/IP).

Electrical connection
Easily accessible terminal box on the side of the casing.
The isolator/main switch can be controlled from below the unit for maintenance work and it can be locked with a padlock to prevent unauthorised access.

Post-heating
Type KWL EC Pro WW
The integrated warm water heating element guarantees the convenient and energy-efficient post-heating of supply air. The setpoint temperature is simply set in the control element.
The hydraulic unit (Type WHSH HE 24 V (0-10 V), accessories) is recommended for controlling the warm water heat exchanger.

Reference
The ventilation unit design according to VDI 6022 requires the use of VDI 6022-compliant air filters.

Replacement air filter
– 1 pc. ISO ePM_{10} 50 % (M5)
ELF-KWL 1400 D/5 VDI No.04193
– 1 pc. ISO ePM_1 55 % (F7)
ELF-KWL 1400 D/7 VDI No.04195

Control lines
ALB EC-SK 20 20m No. 06816
ALB EC-SK 40 40m No. 06817
8-pin AWG24 twisted pair cable for the control element.

Other accessories

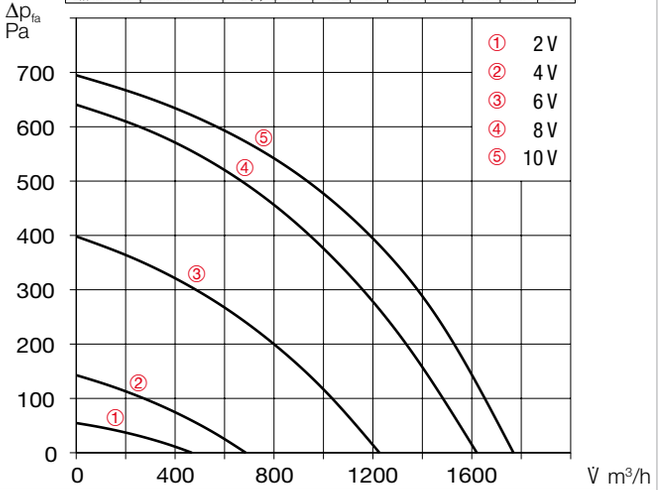
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Accessory details

Ventilation grilles, ducts, fittings	
roof outlets	132 ff.
extract air elements	132 ff.

Performance curve KWL EC 1400 D

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	60	51	53	53	50	51	49	45
L_{WA}	Supply air	dB(A)	80	63	68	71	71	75	71	70
L_{PA} at 1 m	Radiation	dB(A)	53	42	48	48	47	43	33	21



Included in delivery:

Surface comfort control element
User-friendly control via self-explanatory graphic elements with clear text directly on the touchscreen. Control line (10 metres) included in delivery, other lengths available (ALB EC-SK, accessories).
Dim. mm (W x H x D) 115 x 80 x 25



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

Accessories for Type Pro WW

Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Controls the water temperature of the PWW heating element using a three-way valve actuator 24 V (0-10 V) and thus the heat output transferred to the air. Delivered as a complete unit, incl. VL- / RL temperature display, circulating pump and flexible connection hoses.



Accessories for all types

Room sensor – Air quality
AIR1/KWL-VOC 0-10V No. 20250
AIR1/KWL-CO2 0-10V No. 20251
AIR1/KWL-FTF 0-10V No. 20252
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. A maximum of one sensor can be connected.
Dim. mm (W x H x D) 85 x 85 x 27



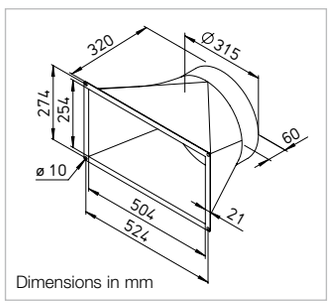
Room sensor – Temperature
TFR-ALB/KWL No. 07277
For measuring the room temperature and controlling the ventilation unit according to the set value. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 80 x 80 x 25



Transition piece – Symmetrical
KWL-ÜS 1400 D No. 04207
For acoustic decoupling, incl. 2 pcs. hose clamps.

Flexible connecting sleeve
FM 315 No. 01674
For acoustic decoupling, incl. 2 pcs. hose clamps.

Flexible connector
FVR 315 No. 40832
Flexible connector round (uninsulated), with lip seals on both sides, for connection to pipe systems.
Accessories for FVR:
Potential equalisation cable
PAK M8 No. 40812



Dimensions in mm

Duct shutter, motorised
RVMD 315/230V No. 40253
Prevents cold draughts when the unit is at a standstill. Can be installed horizontally and vertically in any direction and with attached spring return motor (outside of air flow).



Technical data	**KWL EC 1400 D**			**KWL EC 1400 D,** with warm water post-heater		
For ceiling installation	**Type KWL EC 1400 D Pro**		Ref. no. 04173	**Type KWL EC 1400 D Pro WW**		Ref. no. 04174
Flow rate at level [1]	❸	❷	❶	❸	❷	❶
Supply air/extract air V̇ m³/h approx.	1000	650	400	1000	650	400
Noise dB(A) [1]						
Supply air L_{WA} (sound power)	82	79	76	82	79	76
Extract air L_{WA} (sound power)	67	63	62	67	63	62
Radiation L_{PA} at 1 m	52	50	49	52	50	49
Power consumption fans 2 x W	291	180	128	300	184	129
Voltage/Frequency	3N~, 400 V, 50 Hz			3N~, 400 V, 50 Hz		
Rated current A – Ventilation	6.0 / – / –			6.0 / – / –		
– Preheating	– / 11.7 / 11.7			– / 11.7 / 11.7		
– max. total	6.0 / 11.7 / 11.7			6.0 / 11.7 / 11.7		
Heat output/Postheater kW	–			4.7 (at 60/40 °C) / 4.2 (at 50/40 °C) / 2.7 (at 40/30 °C)		
Electric preheater kW	4.5			4.5		
Summer bypass	automatic			automatic		
Wiring diagram no.	1370			1370		
Temperature operating range	– 20 °C to + 40 °C			– 20 °C to + 40 °C		
Connection PWW heating element	–			IG 1/2"		
Weight approx. kg	179			183		

[1] At 250 Pa.