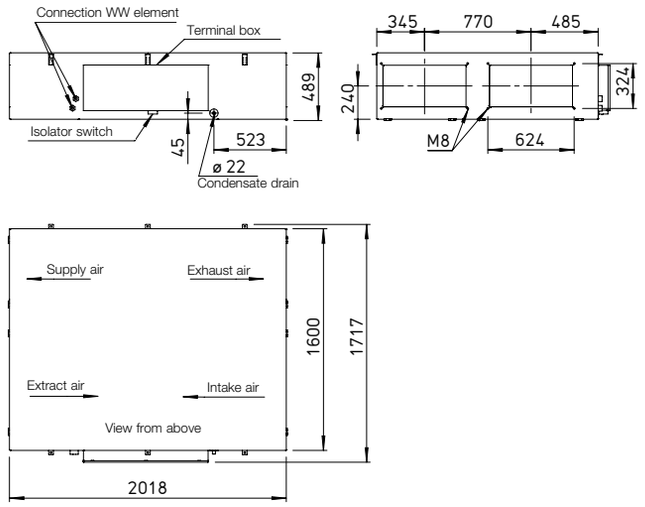
## KWL EC 2000 D




EC

## Dimensions KWL EC 2000 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 400 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 2000 D/5 VDI No. 04197
**– 1 pc. ISO $ePM_1$ 55 % (F7)**
ELF-KWL 2000 D/7 VDI No. 04204

### 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

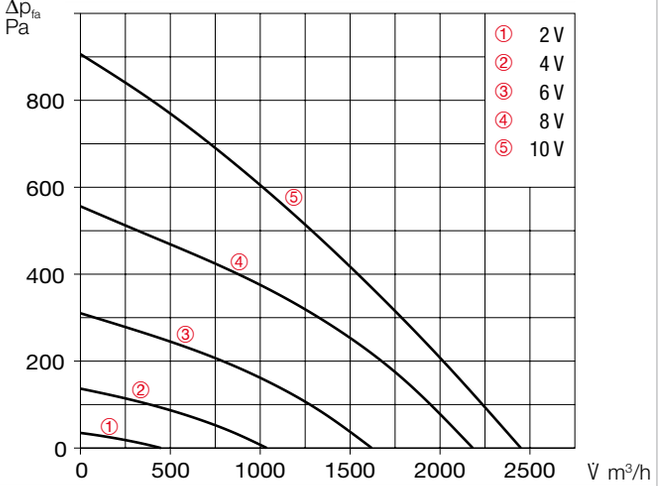

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**Accessory details**


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

## Performance curve KWL EC 2000 D

| Frequency | | Hz | Tot. | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
|---|---|---|---|---|---|---|---|---|---|---|
| $L_{WA}$ | Extract air | dB(A) | 59 | 56 | 52 | 48 | 49 | 47 | 45 | 40 |
| $L_{WA}$ | Supply air | dB(A) | 77 | 66 | 68 | 67 | 72 | 69 | 69 | 64 |
| $L_{PA}$ at 1 m | Radiation | dB(A) | 50 | 46 | 42 | 43 | 44 | 38 | 31 | 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 (WxHxD) 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



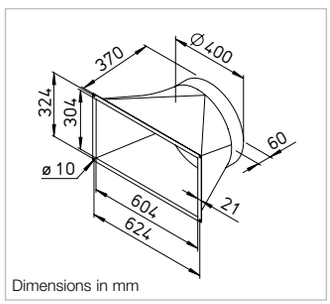

**Room sensor – Temperature**
**TFR-ALB/KWL** No. 07277
For measuring the room temperature and controlling the ventilation unit according to the set value. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 80 x 80 x 25



**Transition piece – Symmetrical**
**KWL-ÜS 2000 D** No. 04208
From unit flange to round duct systems.

**Flexible connecting sleeve**
**FM 400** No. 01676
For acoustic decoupling, incl. 2 pcs. hose clamps.

**Flexible connector**
**FVR 400** No. 40834
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 400/230V** No. 40255
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 2000 D** | | | **KWL EC 2000 D,** with warm water post-heater | | |
|---|---|---|---|---|---|---|
| **For ceiling installation** | **Type KWL EC 2000 D Pro** | | Ref. no. 04175 | **Type KWL EC 2000 D Pro WW** | | Ref. no. 04176 |
| **Flow rate at level** [1] | ❸ | ❷ | ❶ | ❸ | ❷ | ❶ |
| Supply air/extract air V̇ m³/h approx. | 1800 | 1150 | 720 | 1800 | 1150 | 720 |
| **Noise dB(A)** [1] | | | | | | |
| Supply air $L_{WA}$ (sound power) | 76 | 73 | 71 | 76 | 73 | 71 |
| Extract air $L_{WA}$ (sound power) | 62 | 59 | 60 | 62 | 59 | 60 |
| Radiation $L_{PA}$ at 1 m | 50 | 48 | 47 | 50 | 48 | 48 |
| Power consumption fans 2 x W | 441 | 234 | 152 | 460 | 241 | 155 |
| Voltage/Frequency | 3N~, 400 V, 50 Hz | | | 3N~, 400 V, 50 Hz | | |
| Rated current A – Ventilation | 4.2 / – / – | | | 4.2 / – / – | | |
| – Preheating | 11.2 / 11.2 / 11.2 | | | 11.2 / 11.2 / 11.2 | | |
| – max. total | 15.4 / 11.2 / 11.2 | | | 15.4 / 11.2 / 11.2 | | |
| Heat output/Postheater kW | – | | | 8.1 (at 60/40 °C) / 7,3 (at 50/40 °C) / 4.6 (at 40/30 °C) | | |
| Electric preheater kW | 7.2 | | | 7.2 | | |
| 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 | 265 | | | 269 | | |

[1] At 250 Pa.