

KWL EC 220 D

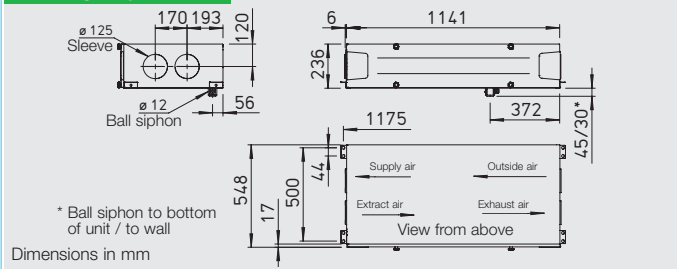


Efficiency class

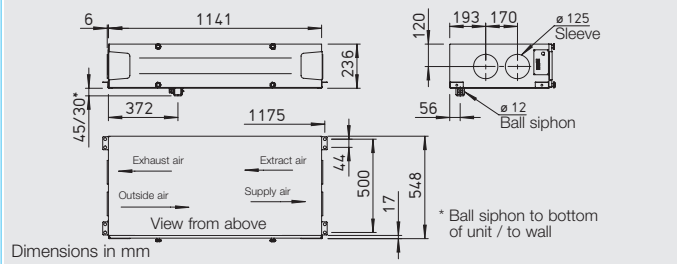
- A+** KWL EC 220 D R/L with additional room sensor
- A** KWL EC 220 D R/L



KWL EC 220 D R



KWL EC 220 D L



Extremely flat ceiling units with heat recovery for central ventilation of multi-storey buildings and small single-family houses. Certified according to passive-house standards. Equipped with Helios easyControls, the innovative control concept for easiest network connection and web browser operation. With highly efficient polymer heat exchanger and energy-saving EC-motors.

Casing

Made from galvanised steel, white powder coated, double walled, heat and noise insulated (20 mm) on all sides. Easy to install and maintain. The removable side panel allows full access.

Heat exchanger

Due to its large surface area the polymer exchanger provides an exceptionally high efficiency of up to 90 %.

Fans

Two silent and energy-saving centrifugal fans with energy saving EC-motors move the supply air and extract air. They are maintenance free and easy to remove for cleaning.

Ducting

Crossover-free connection of intake-, exhaust-, extract- and supply air ducts with NW 125 mm by means of spigots for connection (RVBD 125 K, accessories).

Condensation outlet

Condensation outlet is located below. Ball siphon included in delivery. To be connected to the drain trap by installer.

Air filter

Supply of cleaned outside air using a G4 filter. Additionally a F7 pollen filter is available. Extract air passes through a G4 filter before entering the heat exchanger.

Summer operation

Comes with automatic bypass function and exchanger cover plate as standard.

Frost protection of heat exchanger

The standard frost monitoring automatically regulates the supply air flow and the optional built-in electric pre-heater battery (KWL-EVH 220 D, accessories).

Helios easyControls

The standard equipment with Helios easyControls allows the simple LAN integration of the KWL-unit into a PC network. The ventilation unit is operated comfortably via the Helios easyControls menu in the web browser, by PC/laptop in the LAN or by Tablet/Smartphone in the WLAN – whether in the home network or on the road via Internet. Functionality, see page 85.

EasyControls is prepared for:

- Manual control elements (KWL-BE, -BEC, accessories).
- Air quality sensors for automatic, demand-driven ventilation (KWL-CO₂, -FTF, -VOC, accessories).
- Connection to central building control systems via integrated Modbus interface or optional KNX module (KWL-KNX, accessories).

Electrical connection

Fixed connection via a power cord 3 x 1.5 mm², approx. 2 m long with wire end ferrules. Control line for control elements, sensors, ModBus and LAN to be plugged in on the outside of the unit.

Accessories – functional description (details on right)

KWL EC 220 D is individually expandable with the following accessories:

Slide switch controller

- Three speed operation via slide switch.
- Three freely definable operating levels within the entire family of performance curves.
- Via the offset function, the extract fan can be operated with ± 20 % difference.
- Control voltage directly at the controller measurable.
- For the realisation of a further operation level, such as night mode, expandable option with clock timer (WSUP/WSUP-S, No. 9990/9577, accessories).
- Light-emitting diode for optical display of the operating conditions, such as filter change, supply air temperature < +5 °C, errors and operation.

Comfort controller

- Comfort controller with graphic display and user-friendly menu navigation:
- Start-up assistant.
- Selection of speed level (auto/manual, level 1-4).
- Four freely definable operating levels within the entire family of performance curves.
- Setting of weekly program Ventilation/Heating.
- Setting of CO₂-, VOC- and humidity parameter.

- Display of e.g. filter change, operating conditions, hours of operation and error messages.
- Lock function.

KNX/EIB module

Allows the coupling of the ventilation unit with the central building control system via KNX/EIB.

Room sensor

For the automatic operation and optimal air exchange are sensors available which measure the mixed gas, CO₂-concentration and the relative humidity.

Extension module

For the connection of accessories, such as shutters, under-soil heat exchangers for pre-heating of the outdoor air or a heater battery (optional water- or electric heater battery with maximum 2.6 kW, 230 V, 50 Hz).

Heater battery

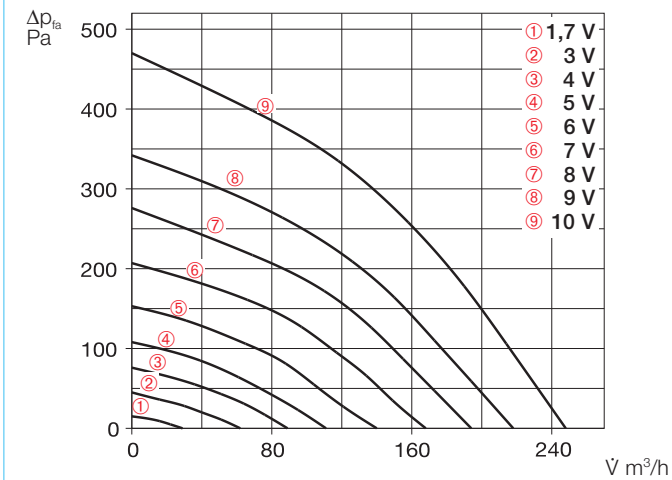
Helios easyControls can regulate via an extension module (KWL-EM, accessories) performance-related an electric (EHR with KWL-LTK, accessories) or water heater battery (WHR with WSHH and KWL-LTK, accessories). Temperature profiles are adjustable in the weekly program. Furthermore is a self-sufficient operation of the water heater battery via an air temperature control system (WHST 300 T38, accessories) possible, regardless of Helios easyControls.

Notes

Helios easyControls
The innovative KWL®
control concept

KWL EC 220 D

Frequency	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Extract air	dB(A)	56	29	42	50	42	37	26	16
L _{WA} Supply air	dB(A)	77	46	55	72	67	62	57	44
L _{PA} Case breakout	dB(A)	58	32	51	59	54	47	40	28



Slide switch controller

Three speed slide switch incl. operation display, for flush installation. Function see on the left. Control line SL 6/3 (length = 3 m) included in delivery, other lengths (SL 6/..., accessories) available for order.

Dim. mm (W x H x D) 80 x 80 x 37
Type KWL-BE Ref. no. 4265

Casing for surface installation

Dim. mm (W x H x D) 83 x 83 x 41
Type KWL-APG Ref. no. 4270



Comfort controller

With graphic display, for flush installation. Function see on the left. Up to 8 pcs. can be installed. Control line SL 4/3 (length = 3 m) included in delivery, other lengths (SL 4/..., accessories) available for order.

Dim. mm (W x H x D) 80 x 80 x 37
Type KWL-BEC Ref. no. 4263

Casing for surface installation

Dim. mm (W x H x D) 83 x 83 x 41
Type KWL-APG Ref. no. 4270



Technical data	KWL EC 220 D R/L		For ceiling installation		
Right-hand version	KWL EC 220 D R		Ref. no. 4226		
Left-hand version	KWL EC 220 D L		Ref. no. 4227		
Air flow volume on step ^{1) 2)}	9	7	5	3	1
Supply/extract air flow vol. V m³/h	245	190	140	90	30
Sound levels dB(A) ³⁾					
Supply air L _{WA} (sound power level)	77	69	61	51	33
Extract air L _{WA} (sound power level)	56	50	43	36	28
Case breakout L _{PA} in 1 m	58	53	45	35	< 25
Fan power 2xW ¹⁾	50	28	16	9	5
Standby power consumption	< 1 W				
Voltage/Frequency	1 ~ 230 V, 50 Hz				
Nom. cur. A	1.2				
– ventilation	1.2				
– pre-heater	4.4				
– max. total	1.2 (5.6 incl. pre-heater, accessories)				
Electric pre-heater kW	1.0 kW (accessories)				
Summer Bypass	automatic (adjustable), with exchanger cover				
Wiring Diagram no.	1043				
Temperature operation range	–20 °C to +40 °C				
Set-up temp.	+5 °C to +40 °C				
Weight approx. kg	50				

¹⁾ At 0 Pa, speed steps adjustable at will. ²⁾ Allow a volume reduction of about 10 % when using a F7 filter.
³⁾ At 100 Pa, sound levels raise with increasing system pressure.

KNX/EIB module

Allows the connection of the ventilation unit to a KNX/EIB central building control system. For switchboard installation (1 space unit required).

Type KWL-KNX Ref. no. 4275



Adapter board

Adapter from ribbon cable to wires or cables. For connection of KNX module and RJ10 control line.

Type KWL-RJ10 KL No. 4277

Room sensor

Measures CO₂, mixed gas- (VOC) concentration or relative humidity. Max. of 8 sensors each can be connected, control according to respective highest measured value. Incl. control line SL 4/3 (length = 3 m), other lengths (SL 4/..., accessories) available for order.

Dim. mm (W x H x D) 95 x 97 x 30

Type KWL-CO₂ Ref. no. 4272

Type KWL-FTF Ref. no. 4273

Type KWL-VOC Ref. no. 4274



A+ required for efficiency class A+

Electric pre-heater battery

Electric pre-heating for simple, plug-in device installation. Allows the pre-heating of the intake air at very low outside temperatures (heat exchanger frost protection). Mandatory for passive houses. Power: 1000 W.

KWL-EVH 220 D Ref. no. 9636



Extension module

For controlling external shutters, undersoil heat exchangers and/or heater batteries. Incl. temperature sensor KWL-LTK and control line KWL-SL 4/3.

Dim. mm (WxHxD) 210x210x100

Type KWL-EM Ref. no. 4269



Electric heater battery

For additional supply air heating.

EHR-R 1,2/125 Ref. no. 9433

Duct temperature sensor

KWL-LTK (1 pc. required.) No. 9644

Water heater battery

For additional supply air heating.

Type WHR 125 Ref. no. 9480

Duct temperature sensor

KWL-LTK (2 pcs. required.) No. 9644

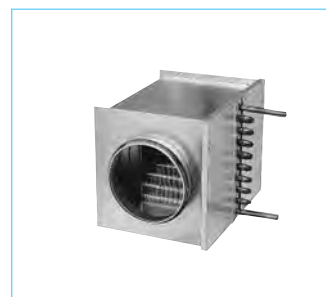
Hydraulic unit

WHSH HE 24 V (0-10V) No. 8318

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 8817



Replacement air filter

– 2 pcs. **G4-Filter**

ELF-KWL 220 D/4/4 No. 9638

– 1 pc. **F7-Filter**

ELF-KWL 220 D/7²⁾ No. 9639

Duct connector

Connector with sealing to ducting with Ø 125 mm.

RVBD 125 K No. 3414

Other accessories Page

KWL® periphery	114 on
– Undersoil heat exch.	118 on
– Insulated duct system	122 on
– Air distribution systems	126 on
– Control lines, a.o.	136 on
Heater battery, -control	426 on
grilles, ducting,	
roof terminations,	487 on
Extract air elements,	
Design valves	500 on