KWL 220 D





Efficiency class

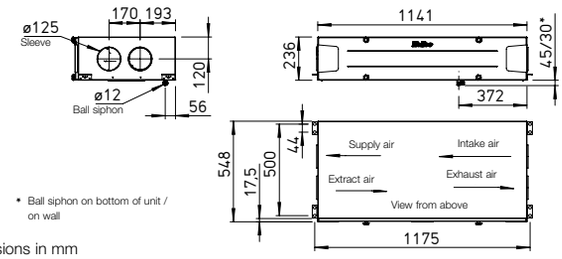
A+ KWL 220 D R/L with additional room sensor

A KWL 220 D R/L

easy Controls 3.0

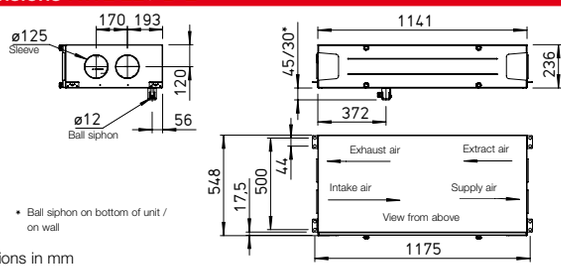
EC

Dimensions KWL 220 D R



Dimensions in mm

Dimensions KWL 220 D L



Dimensions in mm

CERTIFIED COMPONENT Passive House Institute

Ultra-flat ceiling units with heat recovery for the central supply and extract ventilation of apartments and small single family houses. Certified according to the passive house standard. Equipped with Helios easyControls 3.0, the innovative control concept for simple network connection and web browser control. Units come with highly efficient plastic heat exchangers and energy-efficient EC motors.

Casing
Made of galvanised steel sheet, inner and front panels powder-coated in white, double-walled, with 20 mm heat and sound insulation on all sides. Installation-friendly and maintenance-friendly. All elements are easily accessible through removable side panels.

Heat exchanger
Large cross counterflow heat exchanger made of plastic, heat recovery efficiency of up to 90 %.

Fans
Two low-noise high-performance centrifugal fans with energy-saving EC motors ensure the air supply and extraction. Maintenance-free, easily removable for cleaning, if required.

Ducts
Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 125 mm using duct connectors (RVBD 125 K, accessories).

Condensate connection
Condensate drain at the bottom; ball siphon included in delivery. On-site connection to drain pipe.

Air filter
Clean outdoor air supply via ISO Coarse 75 % (G4) filter and 2nd filter stage via optional ISO ePM$_1$ 50 % (F7) or activated carbon filter. Extract air side equipped with an ISO Coarse 75 % (G4) filter in front of the heat exchanger.

Summer operation
Equipped with automatic bypass function and heat exchanger cover as standard.

Heat exchanger anti-icing protection
The standard frost monitoring system automatically controls the supply air flow volume and the optionally installed electrical preheater (KWL-EVH 220 D, accessories).

Control system
EasyControls 3.0 is the new, modern control system for all KWL compact units from Helios. The standard LAN interface allows the simple integration of the KWL unit in a network and the integration in Helios Cloud. The unit is optionally controlled via an external control element, on PC/laptop, tablet and Smartphone via the integrated web browser or on the move via the Cloud. See page 112 f. Helios easyControls 3.0 is prepared for:

- ☐ The control elements KWL-BE ECO and KWL-BE Touch (optional accessories)
- ☐ The humidity sensor integrated as standard and other optionally available external air quality sensors (KWL-CO2 eC, -FTF eC, -VOC eC, accessories) enable automatic, demand-controlled ventilation.
- ☐ Connection to building control system via integrated Modbus interface or optional KNX module (KWL-KNX Connect, accessories).

Electrical connection
Fixed connection via a mains connection cable 3 x 1.5 mm², approx. 2 m with wire end ferrules.

Accessories – Functional description (see right for details)
KWL EC 220 D can be individually expanded with the following accessories:

☐ Control element ECO
– Three ventilation profiles selectable via slide switch.
– Control voltage can be measured directly on the control element.
– LED for visual indication of operating statuses, e.g. filter replacement and faults.

☐ Control element Touch
Touch control element with graphic display and user-friendly menu navigation:
– Commissioning assistant.
– Selection of four ventilation profiles.
– Adjustment of an individual weekly programme.
– Adjustment of parameters for room sensors.
– Indication of e.g. filter replacement, operating statuses and error messages.
– Different access authorisations and child lock.
– Other functions (see operating instructions).

☐ KNX/EIB module
For connecting the ventilation unit to the building control system via the KNX Connect module.

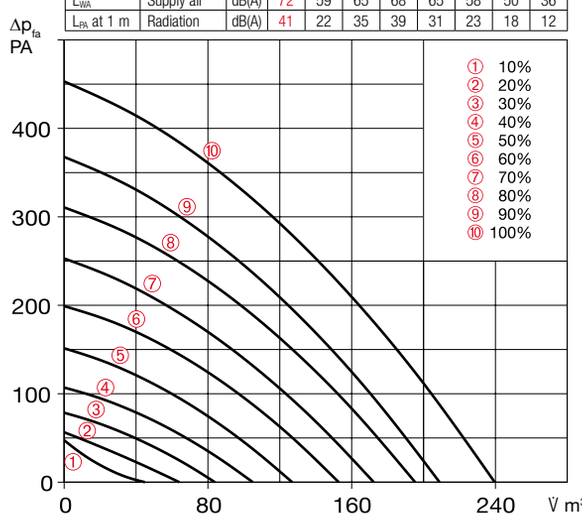
☐ Room sensors
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and demand-oriented air exchange.

☐ Post-heating
Helios easyControls 3.0 can be used with an electric post-heating element (EHR with KWL-LTK, accessories). The autonomous operation of the warm water heating element can be controlled via an air temperature control (WHS HE, accessories) independently from Helios easyControls 3.0.

References	Page
Helios easyControls 3.0 The innovative KWL control concept	112 f.

Performance curves KWL 220 D

Frequency*		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	57	48	53	53	45	39	27	20
L_{WA}	Supply air	dB(A)	72	59	65	68	65	58	50	36
L_{PA} at 1 m	Radiation	dB(A)	41	22	35	39	31	23	18	12



*Sound information relates to Vref. according to ErP data sheet.

Slide switch control element

KWL BE ECO Ref. no. 20246

Three-step slide switch including operation indicator, for flush-mounted installation. Function see left.
Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

KWL APG Ref. no. 04270

Dim. mm (W x H x D) 83 x 83 x 41



Touch control element

KWL BE Touch bl (black) Ref. no. 20244
KWL BE Touch wh (white) Ref. no. 20245

With graphic display, for flush-mounted installation. Function see left. Connection of up to 6 pcs. possible (additional power supply unit may be required). Can be integrated in common switch ranges with the dimensions mm (W x H x D) 55 x 55 x 35, Dim. with frame mm (W x H x D) 88 x 88 x 35



Casing for surface installation

KWL APG Touch bl No. 40178
KWL APG Touch wh No. 40177

Dim mm (W x H x D) 85 x 85 x 25

Control line cable

KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180

Control line cables in 5 or 10 meters, suitable for KWL-BE ECO / Touch as well as room sensor.

Technical data	KWL 220 D R/L		For ceiling installation		
Right-hand version	**KWL 220 D R**		Ref. no. 40057		
Left-hand version	**KWL 220 D L**		Ref. no. 40058		
Flow rate at level [1) 2)]	⑩	❽	❻	❹	❷
Supply air/extract air V̇ m³/h	239	195	153	105	64
Power consumption fans 2xW [1)]	47	30	18	10	6
Voltage/Frequency	1~, 230 V, 50 Hz				
Rated current A – ventilation	0.8				
– preheating	4.4				
– max. total	0.8 (5.2 incl. preheater, accessories)				
Electric preheater kW	1.0 kW (accessories)				
Summer bypass	automatic (adjustable), with heat exchanger cover				
Wiring diagram no.	1433				
Temperature operating range	–20 °C to +40 °C				
Installation temperature	+5 °C to +40 °C (90 % rel. humidity, non-condensing)				
Weight approx. kg	47				

[1)] At 0 Pa, performance levels adjustable. [2)] Volume reduction by approx. 10 % when using pollen filter.
[3)] AK = Activated carbon filter

KNX/EIB module

KWL-KNX Connect No. 20253

For integrating the ventilation unit in a KNX system. For switch cabinet installation (1 space unit required).

Room sensors

KWL-CO2 eC Ref. no. 20248
KWL-FTF eC Ref. no. 20249
KWL-VOC eC Ref. no. 20247

For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. Please note the maximum number of sensors, additional power supply unit may be required.
Dim. mm (W x H x D) 98 x 98 x 33

Electric preheater

KWL-EVH 220 D No. 09636

Electrical preheater for simple, plug-in unit installation. For preheating the intake air at very low outdoor temperatures (heat exchanger anti-icing protection). Mandatory for passive houses. Output: 1000 W.

Extension module

KWL-EM eC Ref. no. 40155

For controlling external post-heating elements.
Dim. mm (W x H x D) 210 x 210 x 100

Motion detector

BWM Ref. no. 08323

Motion detector for detecting the presence of persons in the room. Surface-mounted wall installation (cable entry at top or bottom) or installation in flush-mounted box Ø 55 mm (cable entry at back).

Electric post-heating element

For additional supply air heating.

EHR-R 1.2/125 Ref. no. 09433

Rectangular duct temp. sensor

KWL-LTK eC (1 pc. req.) No. 40156

Warm water post-heating element

For additional supply air heating.

WHR 125 Ref. no. 09480

Rectangular duct temp. sensor

KWL-LTK eC (2 pc. req.) No. 40156

Hydraulic unit

WHSH HE 24 V (0-10 V) No. 08318

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 08817

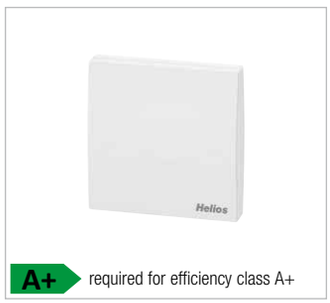
Replacement air filters

– 2 pcs. ISO Coarse 75 % (G4)
ELF-KWL 220 D/4/4 No. 09638
– 1 pc. ISO ePM$_1$ 50 % (F7)
ELF-KWL 220 D/7 No. 09639
– 1 pc. ISO ePM$_{2.5}$ 60 % (AK)[3)]
ELF-KWL 220 AK No. 03050

Circular duct connector

Connector with seal for unit connection to circular duct system with Ø 125 mm.
RVBD 125 K No. 03414

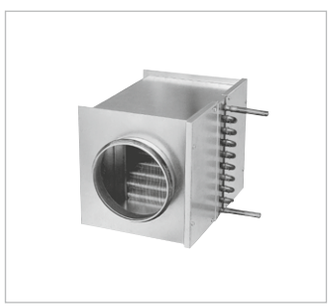




A+ required for efficiency class A+







Other accessories	Page
KWL peripherals	160 ff.
– Ground heat exchanger	184 ff.
– Insulated duct system	174 f.
– Air distribution systems	176 ff.
Heating element, control	488 ff.
ventilation grilles, ducts, roof outlets	132 ff.
extract air elements, design ventilation valves	132 ff.