KWL 470 W CF





Efficiency class

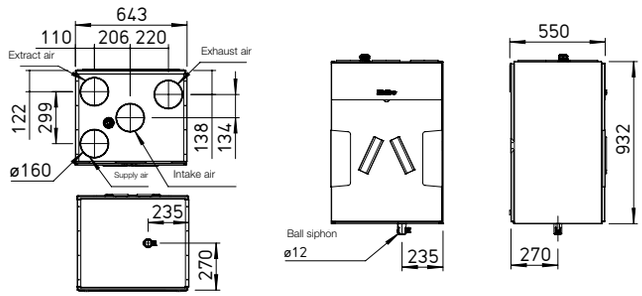
A+ KWL 470 W CF with additional room sensor

A KWL 470 W CF

easy Controls 3.0

EC

Dimensions KWL 470 W CF



Dimensions in mm

Compact unit with heat recovery for the central supply and extract ventilation of residential buildings and apartments. Perfectly prepared for modern communication and operation with the new Helios easyControls 3.0 control system incl. integrated network connection.
Equipped with energy-efficient EC fans featuring constant airflow or constant speed control, as well as a highly efficient plastic heat exchanger or, optionally, an enthalpy heat exchanger for additional moisture recovery.

■ **Casing**
Universal casing concept: Intake air and exhaust air side left/right, with integrated sound insulation. Made of galvanised sheet steel with sound and heat insulation, powder-coated in white. The intake air and exhaust air connection can be on the left or right side. Maintenance-friendly access to all unit components through removable front panel. Delivery condition: Intake air and exhaust air side on the right.

■ **Heat exchanger**
☐ Large cross counterflow heat exchanger made of plastic, heat recovery efficiency up to 90 %.
☐ Type “ET” is equipped with highly efficient enthalpy heat exchanger for additional moisture recovery.

■ **Fans**
Two low-noise, high-performance centrifugal fans with EC motors and constant airflow or constant speed control ensure supply and extract air ventilation.

■ **Ducts**
Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 160 mm using duct connectors (RVBD 160 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 65 % (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 65 % (G4) filter in front of the heat exchanger. Easy filter maintenance without opening the unit.

■ **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 360/470 W, 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 for functionality. 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 470 W CF 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.

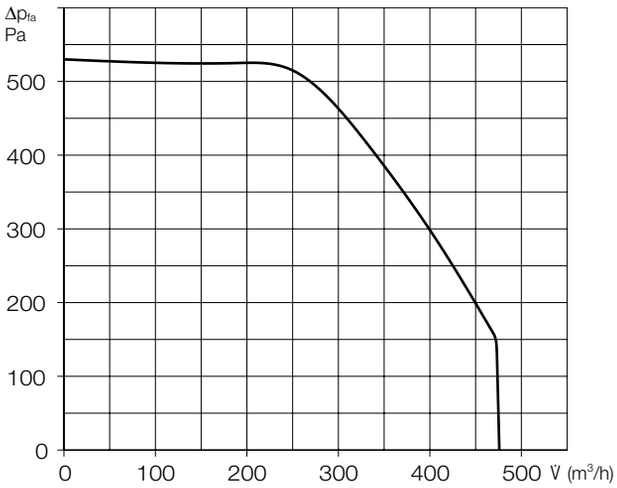
☐ **Room sensors**
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and demand-oriented air exchange.

☐ **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.
Moisture recovery through enthalpy heat exchangers	111

Performance curves KWL 470 W CF

Frequency*		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	53	41	52	42	34	29	20	20
L_{WA}	Supply air	dB(A)	61	43	60	53	52	45	30	23
L_{PA} at 1 m	Radiation	dB(A)	36	19	35	24	19	24	21	13



*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.

KNX/EIB module

KNX Connect Ref. no. 40969

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 360/470 W No. 07360

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: 1500 W.

A+ required for efficiency class A+



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 2.4/160 Ref. no. 09435

Rectangular duct temp. sensor

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

Warm water post-heating element

For additional supply air heating.

WHR 160 Ref. no. 09481

Rectangular duct temp. sensor

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

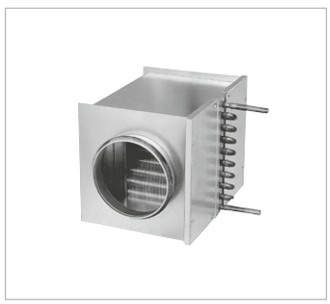
Hydraulic unit

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

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 08817



Technical data	With plastic heat exchanger Type				With enthalpy heat exchanger Type			
	Ref. no.				Ref. no.			
	KWL 470 W CF			40409	KWL 470 W ET CF			40410
Flow rate at level [1) 2)] Supply air/extract air V̇ m³/h	415	306	252	145	415	306	252	145
Power consumption fans 2xW [1)]	61	35	25	14	60	33	23	13
Voltage/Frequency	1~, 230 V, 50 Hz							
Rated current A – ventilation	1.4							
– preheating	6.3							
– max. total	1.4 (7.7 incl. preheater, accessories)							
Electric preheater kW	1.5 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	70				69			

[1)] At 50 Pa, performance levels adjustable. [2)] Volume reduction by approx. 10 % when using pollen filter.

Replacement air filters

– 2 pcs. ISO Coarse 65 % (G4)
ELF-KWL 360/470/4/4 No. 07371
– 1 pc. ISO ePM₁ 50 % (F7)
ELF-KWL 360/470/7 No. 07375
– 1 pc. Activated carbon filter
ELF-KWL 360/470 AK No. 08129

Circular duct connector

Connector with seal for unit connection to circular duct system with Ø 160 mm.
RVBD 160 K No. 03415

Reference

Enthalpy heat exchanger (accessories) for retrofitting:
KWL-ET 360/470 No. 07354