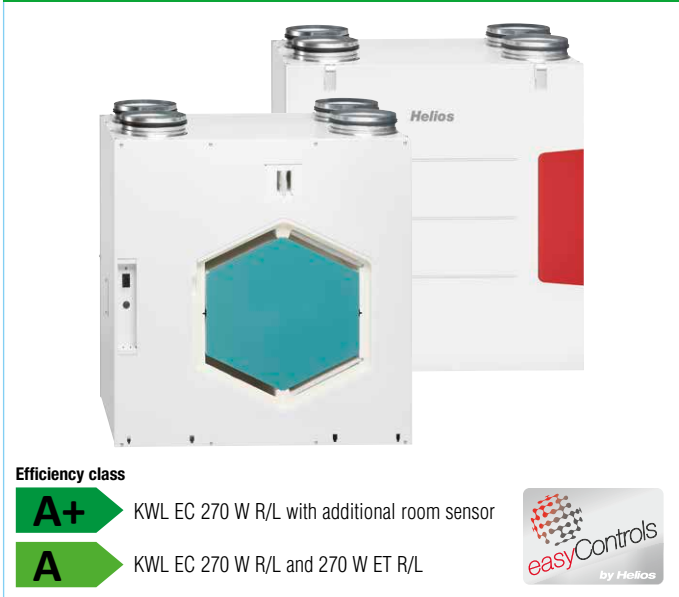


KWL EC 270 W

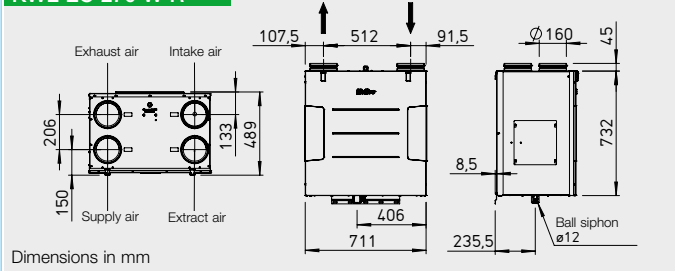


Efficiency class

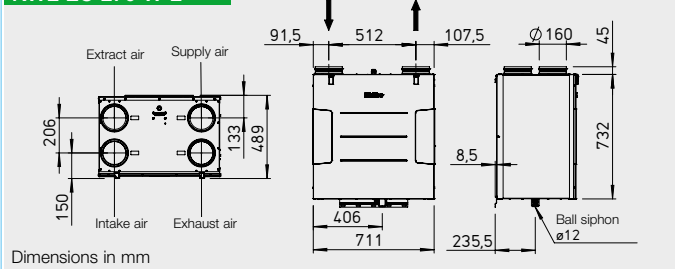
- A+** KWL EC 270 W R/L with additional room sensor
- A** KWL EC 270 W R/L and 270 W ET R/L



KWL EC 270 W R



KWL EC 270 W L



Compact unit with heat recovery for the central supply and extract ventilation of residential buildings and apartments. Certified according to the passive house standard. Equipped with Helios easyControls, the innovative control concept for simple network connection and web browser control. Optionally available with highly efficient plastic or enthalpy heat exchangers for additional moisture recovery. The units come with energy-efficient EC motors and constant volume flow control.

■ Casing

Made of galvanised steel sheet, powder-coated in white. Internal casing components made of highly heat-insulating EPS. Installation-friendly and maintenance-friendly. All elements are easily accessible through removable front panels.

- Heat exchanger**
- Condensate connection**
- Summer operation**

See description on page 96.

■ Fans

Two low-noise high-performance centrifugal fans with energy-saving EC motors and constant volume flow control ensure the uniform air supply and extraction, even in case of pressure loss changes in the system. Maintenance-free, easily accessible from the front.

■ Ducts

Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 160 mm to the top connectors with lip seals.

■ Air filter

Clean intake air supply via G4 filter³⁾, an F7 pollen filter⁴⁾ (generally required for passive houses) is also optionally available. The heat exchanger requires a G4 filter³⁾ on the extract air side. A G4 bypass filter³⁾ is included as standard, optional F7⁴⁾.

■ Heat exchanger anti-icing protection

The standard frost monitoring system automatically controls the supply air flow volume and the external preheating element (EHR-R 1.2/160, accessories). Control is via the extension module (KWL-EM, accessories). A G4 air filter³⁾ must be installed upstream of the preheating element (LFBR 160 G4⁵⁾, accessories).

■ Helios easyControls

The standard equipment with Helios easyControls allows simple LAN connection of the KWL® unit in a PC network. The ventilation units are conveniently controlled via the Helios easyControls menu in the web browser, via a PC/laptop on LAN or tablet/smartphone on WLAN – though a home network or on the go via the internet. See page 93 for functionality. Helios easyControls is prepared for:

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

■ Electrical connection

Fixed connection via mains connection cable 3 x 1.5 mm², long with wire end ferrules. Control line for control elements, sensors, ModBus and LAN connection can be plugged into the unit from outside.

■ Accessories – Functional description (see right for details)

KWL EC 270 W can be individually expanded with the following accessories:

- Slide switch control element**
 - Three-step operation via slide switch.
 - Three freely definable operating levels within the entire performance diagram.
 - The extract air fan can be operated with a difference of ± 20 % via the offset function.
 - The control voltage can be measured directly on the control element.
 - Weekly timer (WSUP / WSUP-S, no. 09990 / 09577, accessories) can also be added to implement a further operating level, e.g. night mode.
 - LED for visual indication of operating statuses, e.g. filter replacement, supply air temp. < +5 °C, errors and operation.
- Comfort control element**
 - Comfort control element with graphic display and user-friendly menu navigation:
 - Commissioning assistant.
 - Operating level selection (auto/manual, level 1-4).
 - Four freely definable operating levels within the entire performance diagram.
 - Weekly ventilation/heating programme adjustment.
 - Adjustment of CO₂, VOC and humidity parameters.
 - Indication of e.g. filter replace-

ment, operating statuses, operating hours and error messages.

- Locking function.

KNX/EIB module

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

Room sensors

Room sensors, which measure the mixed gas, CO₂ concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

Extension module

For the connection of accessories such as shutters, ground heat exchangers for intake air preheating or post-heating (optional warm water or electric heating element with max. 2.6 kW, 230 V, 50 Hz).

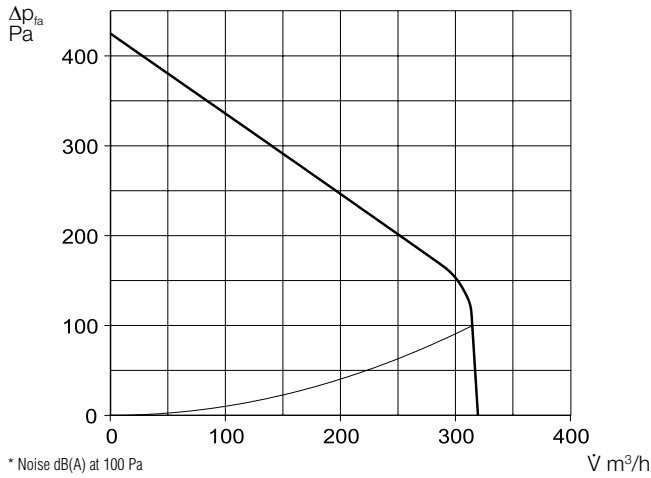
Post-heating

Depending on performance, Helios easyControls can control an electric (EHR with KWL-LTK, accessories) or warm water post-heating element (WHR with WHSH and KWL-LTK, accessories) via an extension module (KWL-EM, accessories). Temperature profiles can be adjusted in the weekly programme. Autonomous operation of the warm water heating element via an air temperature control (WHST 300 T38, accessories) is also possible, independently of Helios easyControls.

References	Page
Helios easyControls The innovative KWL®-control concept	Page 93
Moisture recovery through enthalpy heat exchangers	Page 92

KWL EC 270 W

Frequency*	Hz	Tot.	125	250	500	1k	2k	4k	8k	
L _{WA} Extract air		dB(A)	49	29	43	46	36	38	33	22
L _{WA} Supply air		dB(A)	63	49	56	59	57	54	48	41
L _{PA} Radiation		dB(A)	43	30	35	41	36	33	29	25



* Noise dB(A) at 100 Pa

Slide switch control element

Type KWL-BE Ref. no. 04265

Three-step slide switch including operation indicator, for flush-mounted installation. Function see left. Control line SL 6/3 (3 m long) included in delivery, other lengths available (SL 6/..., accessories).

Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

Type KWL-APG Ref. no. 04270

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


Comfort control element

Type KWL-BEC Ref. no. 04263

With graphic display, for flush-mounted installation. Function see left. Connection of up to 8 pcs. possible. Control line SL 4/3 (3 m long) incl. in delivery, other lengths available (SL 4/..., accessories).

Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

Type KWL-APG Ref. no. 04270

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



Technical data	With plastic heat exchanger			With enthalpy heat exchanger		
	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
Right-hand version	KWL EC 270 W R	04228	KWL EC 270 W ET R	04229		
Left-hand version	KWL EC 270 W L	04230	KWL EC 270 W ET L	04231		
Flow rate at level¹⁾						
Supply air/extract air V m ³ /h	③	②	①	③	②	①
	285	170	110	285	170	110
Noise dB(A)²⁾						
Supply air L _{WA} (sound power)	63	52	46	63	52	46
Extract air L _{WA} (sound power)	49	38	32	49	38	32
Radiation L _{PA} at 1 m	43	32	27	43	32	27
Power consumption fans 2xW ¹⁾	68	19	10	68	19	10
Voltage/Frequency	1-, 230 V, 50 Hz					
Rated current A – Ventilation	1.0					
Summer bypass	automatic (adjustable)					
Wiring diagram no.	1044					
Temperature operating range	-20 °C to +40 °C					
Installation temperature	+5 °C to +40 °C					
Weight approx. kg	49					

¹⁾ At 0 Pa, performance levels adjustable.

²⁾ At 100 Pa, noise data increases with increasing system pressure.

³⁾ G4 = ISO coarse 60%.

⁴⁾ F7 = ISO ePM2.5 70%.

⁵⁾ See product page.

KNX/EIB module

Type KWL-KNX Ref. no. 04275

For connecting the ventilation unit to a KNX/EIB building control system. For switch cabinet installation (1 space unit required).


Adapter board

Type KWL-RJ10 KL No. 04277

Adapter from flat ribbon cable to stranded wire or cable. For connection of KNX module and RJ10 control line.

Room sensor

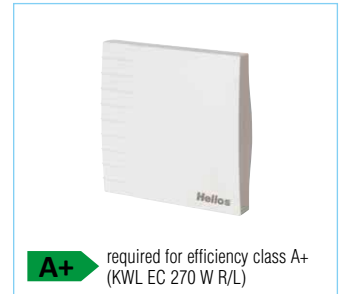
Type KWL-CO₂ Ref. no. 04272

Type KWL-FTF Ref. no. 04273

Type KWL-VOC Ref. no. 04274

For measuring the CO₂, mixed gas (VOC) concentration or relative room air humidity. Max. 8 pcs. can be connected, control according to highest measured value. Includes control line KWL-SL 4/3 (3 m long), see Accessories for other lengths (SL 4/...).

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



A+ required for efficiency class A+ (KWL EC 270 W R/L)

Electric preheating element

EHR-R 1.2/160 Ref. no. 09434

LFBR 160 G4⁵⁾ Ref. no. 08578

For preheating the intake air at very low outdoor temperatures (heat exchanger anti-icing protection). Mandatory for passive houses. Output: 1200 W.

Controllable via extension module (KWL-EM, below). G4 filter⁵⁾ must be fitted upstream (LFBR 160 G4⁵⁾).


Extension module

Type KWL-EM Ref. no. 04269

For controlling external shutters and/or post-heating elements. Includes temp. sensor KWL-LTK and control line KWL-SL 4/3.

Dim. mm (WxHxD) 210x210x100


Electric post-heating element

For additional supply air heating.

EHR-R 2.4/160 Ref. no. 09435

Duct temperature sensor

KWL-LTK (1 pc. required) No. 09644

Warm water post-heat. element

For additional supply air heating.

Type WHR 160 Ref. no. 09481

Duct temperature sensor

KWL-LTK (1 pc. required) No. 09644

Hydraulic unit

WHSHE 24 V (0-10V) No. 08318

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 08817


Other accessories Page

KNX® peripherals	126 ff.
– Ground heat exchanger	132 ff.
– Insulated duct system	136 f.
– Air distribution systems	140 ff.
– Control lines, etc.	150 f.
Heating element, control	460 ff.
Ventilation grilles, ducts, roof outlets	533 ff.
Extract air elements,	
Design ventilation valves	546 ff.

Reference

Enthalpy heat exchanger (accessories) for retrofitting:
Type KWL-ET 270 No. 05912

Replacement air filter

– **2 pcs. G4 filter³⁾**
ELF-KWL 270/4/4 No. 09613
– **1 pc. F7 filter⁴⁾**
ELF-KWL 270/7 No. 09614
– **2 pcs. G4 filter³⁾ for bypass**
ELF-KWL 270/4/4 BP No. 09617
– **1 pc. F7 filter⁴⁾ for bypass**
ELF-KWL 270/7 BP No. 09618