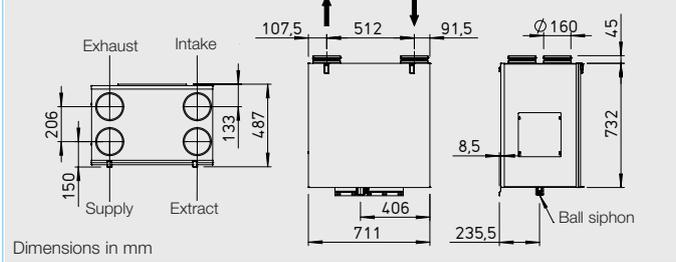


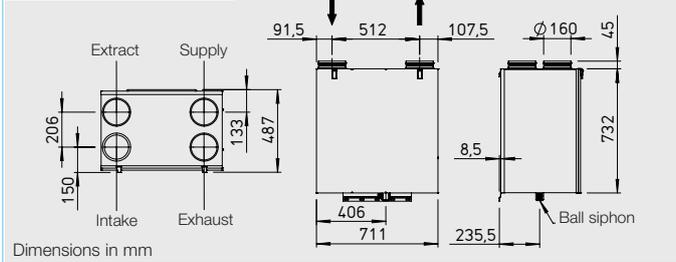
KWL EC 270 W



KWL EC 270 W R



KWL EC 270 W L



CERTIFIED COMPONENT
Passive House Institute

Compact unit with heat recovery for central ventilation of houses and apartments. Certified according to passive-house standards. Equipped with Helios easyControls, the innovative control concept for easiest network connection and web browser operation. Optional with highly efficient polymer- or enthalpy heat exchanger for additional humidity recovery. Energy-saving EC motor with constant air flow regulation.

Casing
Made from galvanised sheet steel, white powder coated. Interior from high quality expanded polystyrene (EPS) for maximum heat insulation. Easy to install and maintain. The removable front panel allows full access.

Heat exchanger
Condensation outlet
Summer operation
See description on page 14.

Fans
Two silent highly efficient centrifugal fans with energy-saving EC motors and constant flow rate regulation move the supply air and extract air continuously also on change of the pressure in the system. They are maintenance free and easily accessible through the front.

Ducting
Crossover-free connection of intake-, exhaust-, extract- and supply air ducts with NW 160. Spigots with sealing lips for connection located on top of the unit.

Air filter
Supply of cleaned outside air using a G4 filter. Superfine pollen filter F7 (always necessary for passive-houses) is also available. Extract air passes through a G4 filter before entering the heat exchanger. A G4 bypass filter is included as standard, optional F7.

Frost protection of heat exchanger
The standard frost monitoring automatically regulates the supply air flow and the external pre-heater battery (KWL-EHR-R 1,2/160, accessories). It is controlled by the extension module (KWL-EM, accessories). An air filter is to be pre-connected to the pre-heater battery in G4 execution (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 13.
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 controls, sensors, ModBus and LAN to be plugged in on the outside of the unit.

Accessories – function description (details see on the right)
KWL EC 270 W 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.

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

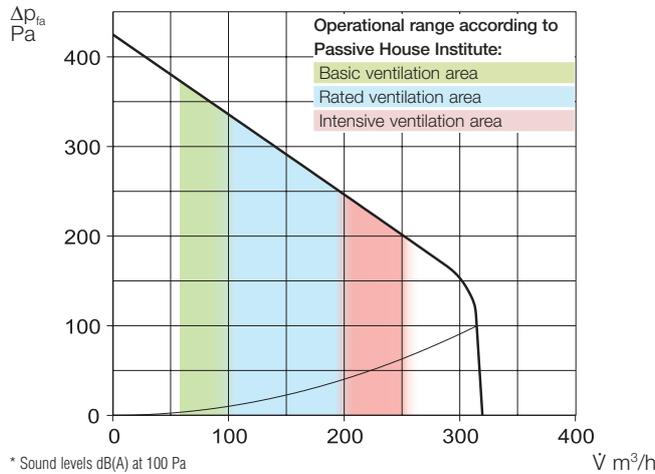
Extension module
For the connection of accessories, such as shutters, undersoil heat exchanger for preheating of the outdoor air or a heater battery (optional water or electric heater battery with maximum 2.6 kW, 230 V, 50 Hz).

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 WHSH 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	Page 13
Humidity recovery by enthalpy heat exchanger	Page 12

KWL EC 270 W

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



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
KWL-BE Ref.-No. 4265

Casing for surface installation

Dim. mm (W x H x D) 80 x 80 x 51
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
KWL-BEC Ref.-No. 4263

Casing for surface installation

Dim. mm (W x H x D) 80 x 80 x 51
KWL-APG Ref.-No. 4270



Technical data	With polymer heat exchanger			With enthalpy heat exchanger		
	Type	Ref.-No.	Type	Ref.-No.	Type	Ref.-No.
Right-hand version	KWL EC 270 W R	4228	KWL EC 270 W ET R	4229		
Left-hand version	KWL EC 270 W L	4230	KWL EC 270 W ET L	4231		
Air flow rate on speed step¹⁾	3	2	1	3	2	1
Supply-/Extract air flow vol. V m ³ /h	285	170	110	285	170	110
Sound levels dB(A)²⁾						
Supply L _{WA} (sound power level)	63	52	46	63	52	46
Extract L _{WA} (sound power level)	49	38	32	49	38	32
Case breakout L _{PA} in 1 m	43	32	27	43	32	27
Power fan 2xW ¹⁾	68	19	10	68	19	10
Standby-losses	< 1 W					
Voltage/Frequency	1 ~ 230 V, 50 Hz					
Max. Amps A – ventilation	1.0					
Summer Bypass	automatic (adjustable)					
Wiring diagram no.	1044					
Temperature operation range	–20 °C to +40 °C					
Temperature installation location	+5 to +40 °C					
Weight approx. kg	49					

¹⁾ At 0 Pa, speed steps adjustable at will.

²⁾ 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).

KWL-KNX Ref.-No. 4275



CO₂-, VOC-, humidity 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

KWL-CO₂ Ref.-No. 4272

KWL-FTF Ref.-No. 4273

KWL-VOC Ref.-No. 4274



Electric pre-heater battery

Allows the pre-heating of the intake air at very low outside temperatures (heat exchanger frost protection). Mandatory for passive houses. Power: 1200 W.

Controllable via extension module (KWL-EM, see below). G4-filter is to pre-connected (LFBR 160 G4).

EHR-R 1,2/160 Ref.-No. 9434

LFBR 160 G4 Ref.-No. 8578



Extension module

For controlling undersoil heat exchangers, pre-heater- or heater batteries and external shutters.

Dim. mm (WxHxD) 210x210x100

KWL-EM Ref.-No. 4269



Elektric heater battery

For additional supply air heating.

EHR-R 2,4/160 Ref.-No. 9435

Duct temperature sensor

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

Water heater battery

For additional supply air heating.

WHR 160 Ref.-No. 9481

Duct temperature sensor

KWL-LTK (2 pcs required) No. 9644

Hydraulic unit

WHSH 1100 24V(0-10V)No. 8819

Air temperature control

WHST 300 T38 Ref.-No. 8817



Note

Enthalpy heat exchanger (accessories) for additional refitting:
KWL-ET 270 No. 5912

Replacement air filters

– 2 pcs G4-filters
ELF-KWL 270/4/4 No. 9613

– 1 pc F7-filter
ELF-KWL 270/7 No. 9614

– 2 pcs G4-filters for bypass
ELF-KWL 270/4/4 BP No. 9617

– 1 pc F7-filter for bypass
ELF-KWL 270/7 BP No. 9618

Other accessories Page

KWL®-periphery	40 on
– Undersoil heat exchanger	44 on
– Insulated duct system	48 on
– Air distribution systems	50 on
– Control lines, et al.	60 on
Heater battery, -control, grilles, ducting, roof terminations, extract air elements, design valves	

Helios main catalogue