

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



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 16.

■ 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

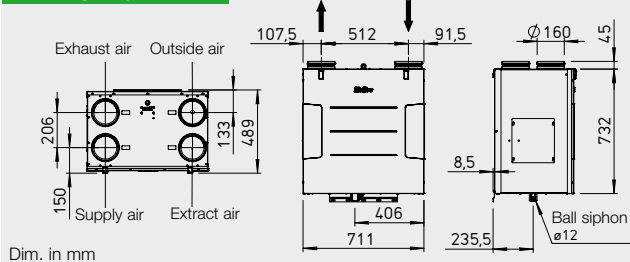
The standard frost monitoring automatically regulates the supply air flow and the external preheater battery (KWL-EHR-R 1,2/160, accessories). It is controlled by the extension module (KWL-EM, accessories). An air filter is to be pre-connected to the pre-heater battery in G4 execution (accessories).

■ Helios easyControls

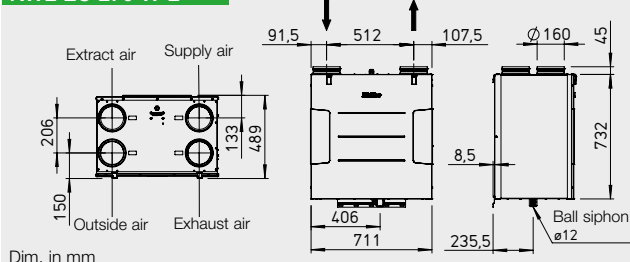
The standard equipment with Helios easyControls allows the simple LAN integration of the KWL® unit into a PC network. The ventilation unit is operated comfortably via the Helios easyControls menu in the web browser, by PC/laptop in the LAN or by Tablet/Smartphone in the WLAN – whether in the home network or on the road via Internet. Functionality, see page 13. Helios 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).

KWL EC 270 W R



KWL EC 270 W L



■ 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 200 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. 09990/09577, 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:
- Commissioning 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 parameters.
 - 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, undersoil heat exchangers 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).

□ Auxiliary heater

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

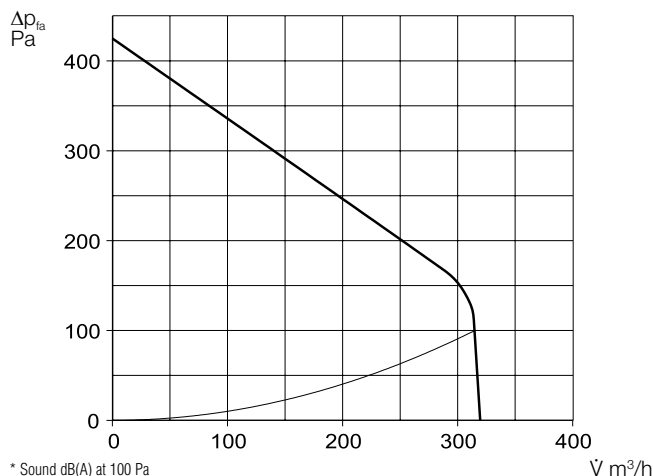
Page 13

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 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} Emission	dB(A)	43	30	35	41	36	33	29	25



Slide switch controller

Type KWL-BE Ref. no. 04265

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

Casing for surface installation

Type KWL-APG Ref. no. 04270

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



Comfort controller

Type KWL-BEC Ref. no. 4263

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

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 polymer 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		
Air flow volume on step¹⁾	3	2	1	3	2	1
Supply/extract air V m³/h	285	170	110	285	170	110
Sound dB(A)²⁾						
Supply air L _{WA} (sound power level)	63	52	46	63	52	46
Extract air L _{WA} (sound power level)	49	38	32	49	38	32
Emission L _{PA} in 1 m	43	32	27	43	32	27
Fan power consumption 2xW ¹⁾	68	19	10	68	19	10
Voltage/Frequency	1~, 230 V, 50 Hz					
Rat. cur. A – ventilation	1.0					
Summer bypass	automatic (adjustable)					
Wiring Diagram no.	1044					
Temperature operation range	–20 °C to +40 °C					
Set-up temp.	+5 °C to +40 °C					
Weight approx. kg	49					

¹⁾ At 0 Pa, optional speed steps adjustable.

²⁾ At 100 Pa, sound levels increase with increasing system pressure.

KNX/EIB module

Type KWL-KNX Ref. no. 04275

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

Adapter board

Type KWL-RJ10 KL No. 04277

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

Room sensor

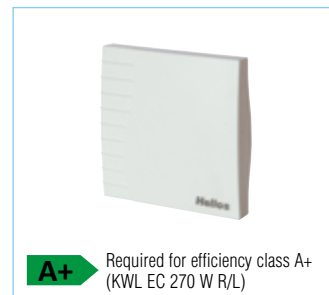
Type KWL-CO₂ Ref. no. 04272

Type KWL-FTF Ref. no. 04273

Type KWL-VOC Ref. no. 04274

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



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

Electric pre-heater battery

EHR-R 1,2/160 Ref. no. 09434

LFBR 160 G4 Ref. no. 08578

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).



Extension module

Type KWL-EM Ref. no. 04269

For controlling external shutters and/or heater batteries.

Incl. temperature sensor KWL-LTK and control line KWL-SL 4/3.

Dim. mm (WxHxD) 210x210x100



Electric heater battery

For additional supply air heating.

EHR-R 2,4/160 Ref. no. 09435

Duct temperature sensor

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

Water heater battery

For additional supply air heating.

Type WHR 160 Ref. no. 09481

Duct temperature sensor

KWL-LTK (2 pcs. required) No. 09644

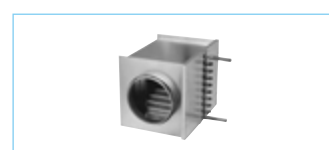
Hydraulic unit

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

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 08817



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

Other accessories	Page
KWL® peripherals	46 ff.
– Undersoil heat exch.	52 ff.
– Insulated duct system	56 f.
– Air distribution systems	60 ff.
– Control lines, etc.	70 f.
Heater battery, control, grilles, ducting, roof terminations, extract air elements, design valves	
Main Helios Catalogue	

Replacement air filter
– 2 pcs. G4 filter
ELF-KWL 270/4/4 No. 09613
– 1 pc. F7 filter
ELF-KWL 270/7 No. 09614
– 2 pcs. G4 filter for bypass
ELF-KWL 270/4/4 BP No. 09617
– 1 pc. F7 filter for bypass
ELF-KWL 270/7 BP No. 09618

KWL EC 370 W



Efficiency class

A

KWL EC 370 W R/L and 370 W ET R/L



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 16.

■ 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

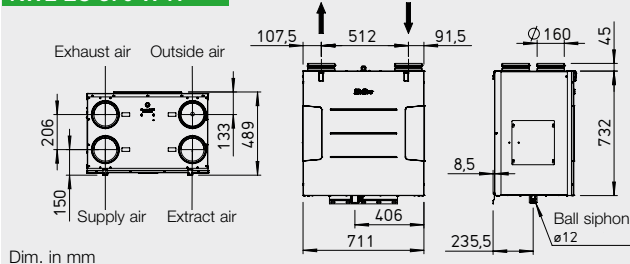
The standard frost monitoring automatically regulates the supply air flow and the external preheater battery (KWL-EHR-R 1,2/160, accessories). It is controlled by the extension module (KWL-EM, accessories). An air filter is to be pre-connected to the pre-heater battery in G4 execution (accessories).

■ Helios easyControls

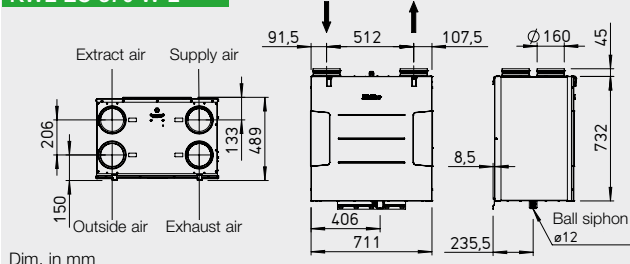
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- Manual control elements (KWL-BE, -BEC, accessories).
- Air quality sensors for automatic, demand-driven ventilation (KWL-CO₂, -FTF, -VOC, accessories).
- Connection to central building control systems via integrated Modbus interface or optional KNX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

KWL EC 370 W R



KWL EC 370 W L



■ 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 370 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. 09990/09577, 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:
- Commissioning 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 parameters.
- 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, undersoil heat exchangers 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).

□ Auxiliary heater

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.

■ Note

Helios easyControls
The innovative KWL®-control concept

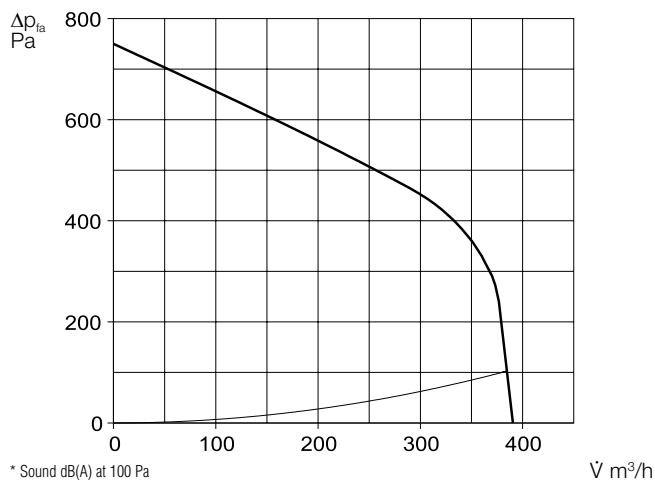
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Humidity recovery
by enthalpy heat exchanger

Page 12

KWL EC 370 W

Frequency *	Hz	Total	125	250	500	1k	2k	4k	8k
L _{WA} Extract air	dB(A)	56	41	53	52	38	40	33	23
L _{WA} Supply air	dB(A)	70	60	64	66	63	64	59	53
L _{PA} Emission	dB(A)	51	43	44	44	44	43	39	34



Slide switch controller

Type KWL-BE Ref. no. 04265

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

Casing for surface installation

Type KWL-APG Ref. no. 04270

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



Comfort controller

Type KWL-BEC Ref. no. 4263

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

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 polymer heat exchanger			With enthalpy heat exchanger		
	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
Right-hand version	KWL EC 370 W R	04245	KWL EC 370 W ET R	04246		
Left-hand version	KWL EC 370 W L	04247	KWL EC 370 W ET L	04248		
Air flow volume on step¹⁾						
Supply/extract air V m³/h	350	200	140	350	200	140
Sound dB(A)²⁾						
Supply air L _{WA} (sound power level)	71	58	52	71	58	52
Extract air L _{WA} (sound power level)	56	44	37	56	44	37
Emission L _{PA} in 1 m	51	41	34	51	41	34
Fan power consumption 2xW ¹⁾	111	25	14	111	25	14
Voltage/Frequency	1~, 230 V, 50 Hz					
Rat. cur. A – ventilation	2.2					
Summer bypass	automatic (adjustable)					
Wiring Diagram no.	1044					
Temperature operation range	–20 °C to +40 °C					
Set-up temp.	+5 °C to +40 °C					
Weight approx. kg	52					

¹⁾ At 0 Pa, optional speed steps adjustable.

²⁾ At 100 Pa, sound levels increase with increasing system pressure.

KNX/EIB module

Type KWL-KNX Ref. no. 04275

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

Adapter board

Type KWL-RJ10 KL No. 04277

Adapter from ribbon cable to wires or cables. 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

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



Electric pre-heater battery

EHR-R 1,2/160 Ref. no. 09434

LFBR 160 G4 Ref. no. 08578

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).



Extension module

Type KWL-EM Ref. no. 04269

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

Dim. mm (WxHxD) 210x210x100



Electric heater battery

For additional supply air heating.

EHR-R 2,4/160 Ref. no. 09435

Duct temperature sensor

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

Water heater battery

For additional supply air heating.

Type WHR 160 Ref. no. 09481

Duct temperature sensor

KWL-LTK (2 pcs. required) No. 09644

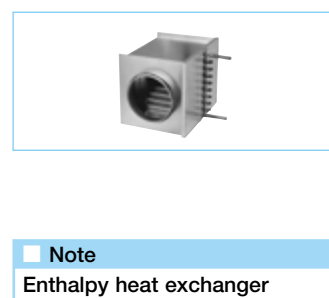
Hydraulic unit

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

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 08817



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

Other accessories	Page
KWL® peripherals	46 ff.
– Undersoil heat exch.	52 ff.
– Insulated duct system	56 f.
– Air distribution systems	60 ff.
– Control lines, etc.	70 f.
Heater battery, control, grilles, ducting, roof terminations, extract air elements, design valves	
Main Helios Catalogue	

Replacement air filter
– 2 pcs. G4 filter
ELF-KWL 270/4/4 No. 09613
– 1 pc. F7 filter
ELF-KWL 270/7 No. 09614
– 2 pcs. G4 filter for bypass
ELF-KWL 270/4/4 BP No. 09617
– 1 pc. F7 filter for bypass
ELF-KWL 270/7 BP No. 09618