KWL® Catalogue 6.0

KWL® Ventilation Systems

for your feel-good climate.

Helios

Even
larger.*

Even
more.*

Even
simpler.*

Series XC

Series RH

Series XH

* We are pleased to introduce our new compact heat recovery units AIR1:
The **largest ventilation units** with heat recovery ever built by Helios.
For **more areas of application**. And an **ingeniously simple configuration**.
Experience the new dimension of energy-efficient compact ventilation units with us.

www.HeliosAIR1.com

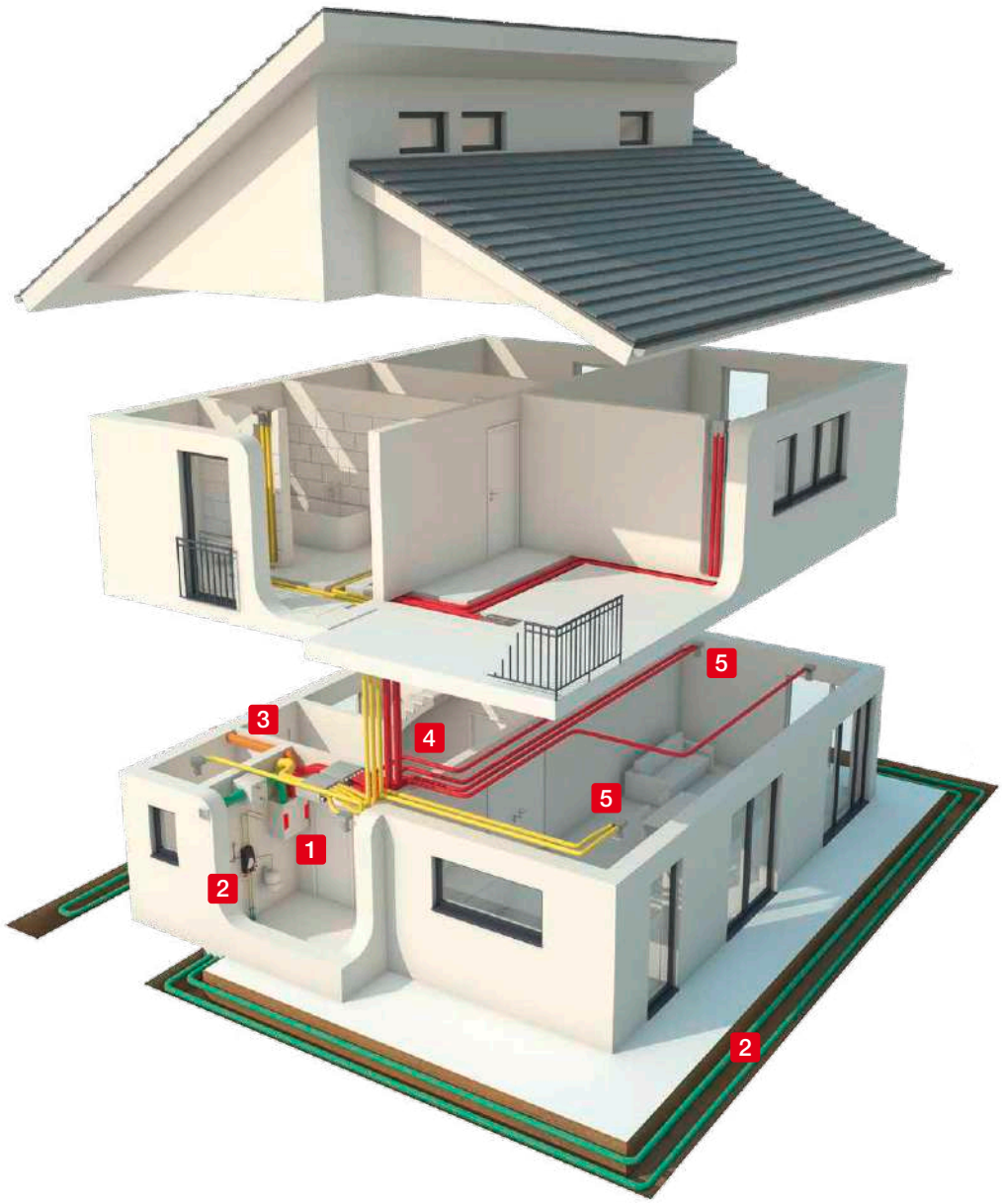
Helios KWL®.

Information.

The Units.

The peripherals.

Everything from
a single source.



1 Ventilation unit with heat recovery

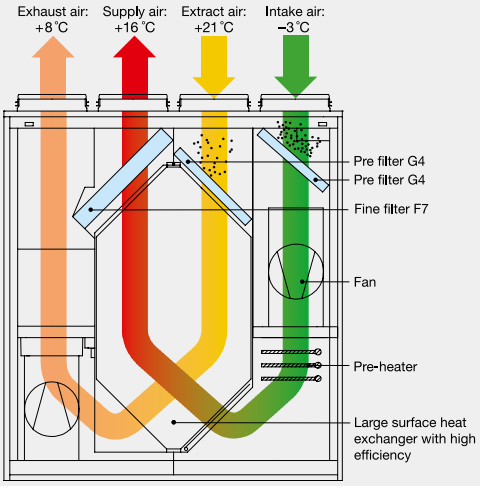
2 Ground-to-brine/air heat exchanger

3 Insulated ducting system IsoPipe® for intake and exhaust ducting

4 Air distribution system FlexPipe®*plus* for extract and supply air

5 Accessories like silencers, air intake and extract elements, etc.

Perfectly
tuned to each other.



Functional principle
KWL® heat exchanger

= Extract air = Outside/Intake air
= Exhaust air = Supply air

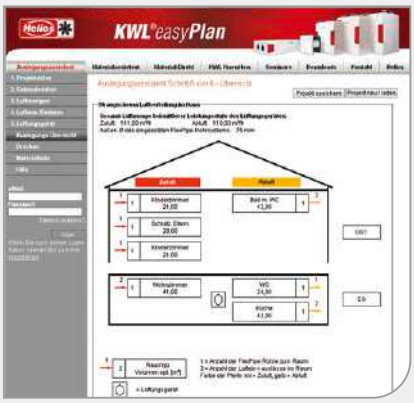
In addition to reliable individual components, with KWL® systems (KWL®=balanced domestic ventilation with heat recovery) it is a matter of an integrated overall concept. Perfectly harmonised elements lead to the best results. Helios offers integrated, coordinated KWL® system solutions and thereby guarantees simple planning, safe assembly and the highest efficiency.

The range includes KWL® units with an air flow volume up to 2600 m³/h for use in single family homes and apartment buildings, as well as for commercial and industrial applications. Various services, such as special KWL® professional seminars and practical workshops, as well as the almost self-explanatory software tool KWL®easyPlan simplify the design, planning and installation.

How it works:
Extract air with humidity, toxins and odours is extracted from kitchens, bathrooms and toilets via design award-winning valves to the heat exchanger in the ventilation unit. The outside air, which absorbs the heat energy from the extract air with a tested efficiency of up to 90 %, flows through this and is hermetically separated at the same time.
This process can be optimised by connecting a ground heat exchanger.
The air then flows through supply air valves or air inlets into the living rooms and bedrooms and creates a healthy and comfortable climate around the clock. Transfer elements ensure air circulation within the property. The exhaust air is released outside by passing through a roof or wall outlet.

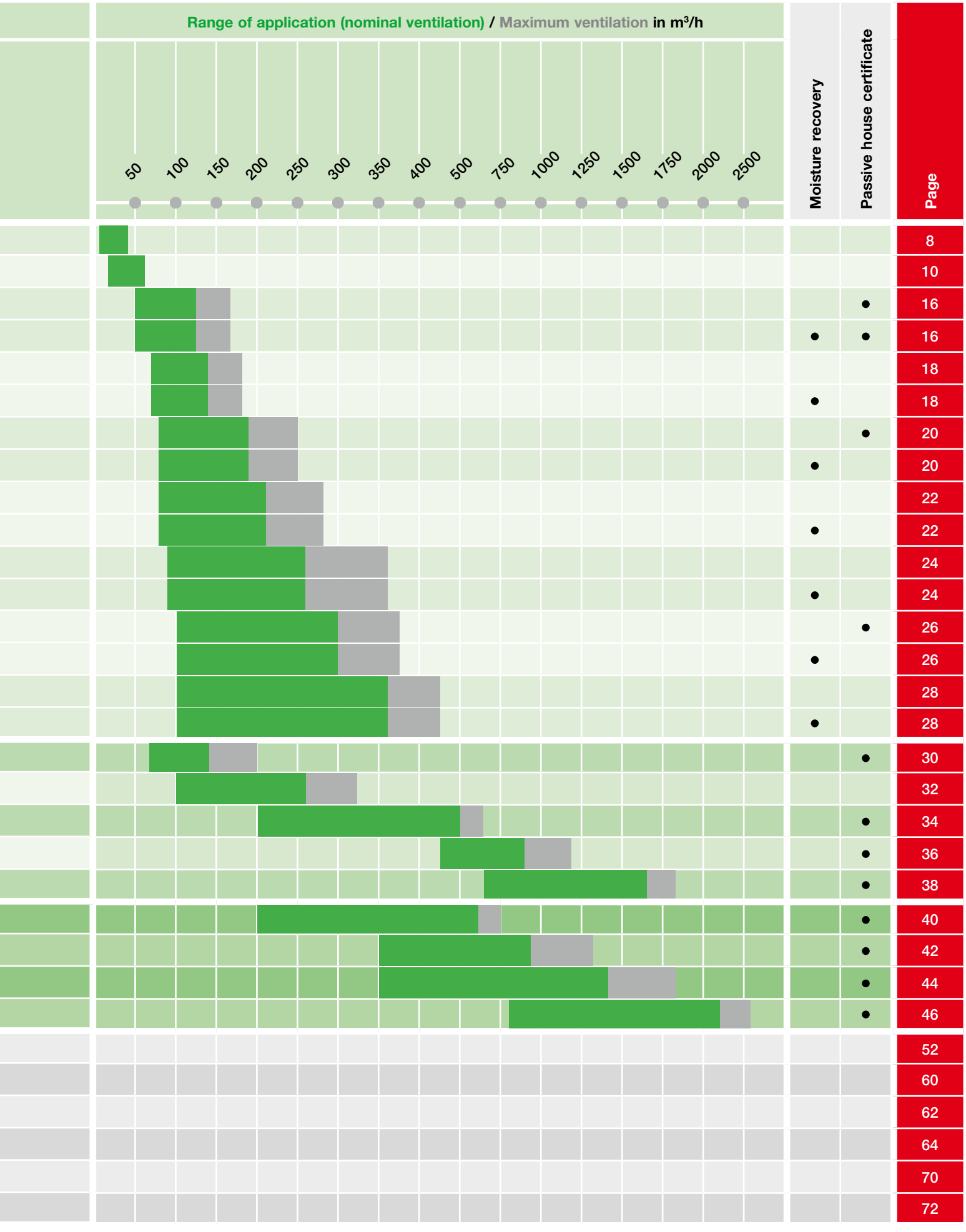
**Simple planning
at the click of a mouse.**

KWL®easyPlan enables the fast and reliable planning of complete KWL® systems with Helios system components, the creation of bills of quantities and proofs of ventilation concepts in conformity with DIN 1946-6. Most conveniently at **www.KWLeasyPlan.de,** directly in the browser. Includes the storage and creation of print-ready versions of your project.



				Typical areas of application						
				Living area	Single family house	Apartment building – central apartment	Apartment building – central building	Commercial / municipal buildings	Maximum energy efficiency class*	
Ventilation units	Wall installation / wall mounting		KWL EC 45-160	●					A+	
			KWL EC 60	●					A	
			KWL EC 170 W		●	●			A+	
			KWL EC 170 W ET		●	●			A	
			KWL EC 200 W		●	●			A	
			KWL EC 200 W ET		●	●			A	
			KWL EC 270 W		●	●			A+	
			KWL EC 270 W ET		●	●			A	
			KWL EC 300 W		●	●			A	
			KWL EC 300 W ET		●	●			A	
			KWL EC 360 W		●	●			A+	
			KWL EC 360 W ET		●	●			A	
			KWL EC 370 W		●	●			A	
			KWL EC 370 W ET		●	●			A	
			KWL EC 500 W		●	●		●	A	
			KWL EC 500 W ET		●	●		●	A	
	Ceiling installation		KWL EC 220 D		●	●			A+	
			KWL EC 340 D		●	●			A+	
			KWL EC 700 D				●	●		
			KWL EC 1400 D				●	●		
			KWL EC 2000 D				●	●		
	Floor installation		KWL EC 800 S				●	●		
			KWL EC 1200 S				●	●		
			KWL EC 1800 S				●	●		
			KWL EC 2600 S				●	●		
Peripherals			FlexPipe®*plus*		●	●	●			
			IsoPipe®		●	●				
			RenoPipe			●				
			Flat duct		●					
			HygroBox		●	●				
			Ground heat exchanger		●	●				

* See KWL® unit product pages for details.


Range of application (nominal ventilation) / Maximum ventilation in m³/h
50
100
150
200
250
300
350
400
500
750
1000
1250
1500
1750
2000
2500
Moisture recovery
Passive house certificate
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Decentralised domestic ventilation with heat recovery.

Controlled domestic ventilation with heat recovery (KWL®) fully ensures ventilation pursuant to DIN 1946-6 and thus guarantees that not only the indoor environment, but also the energy balance sheet benefit from the ventilation technology measures.

In this respect, a decentralised ventilation system with heat recovery offers major advantages, especially in renovation, as it is an economical and simple solution for single rooms.

The focus is on two main points:
On the one hand, high efficiency is a prerequisite for the economical operation of the units and, on the other hand, the individual ventilation units must form a complete system in perfect coordination with each other.

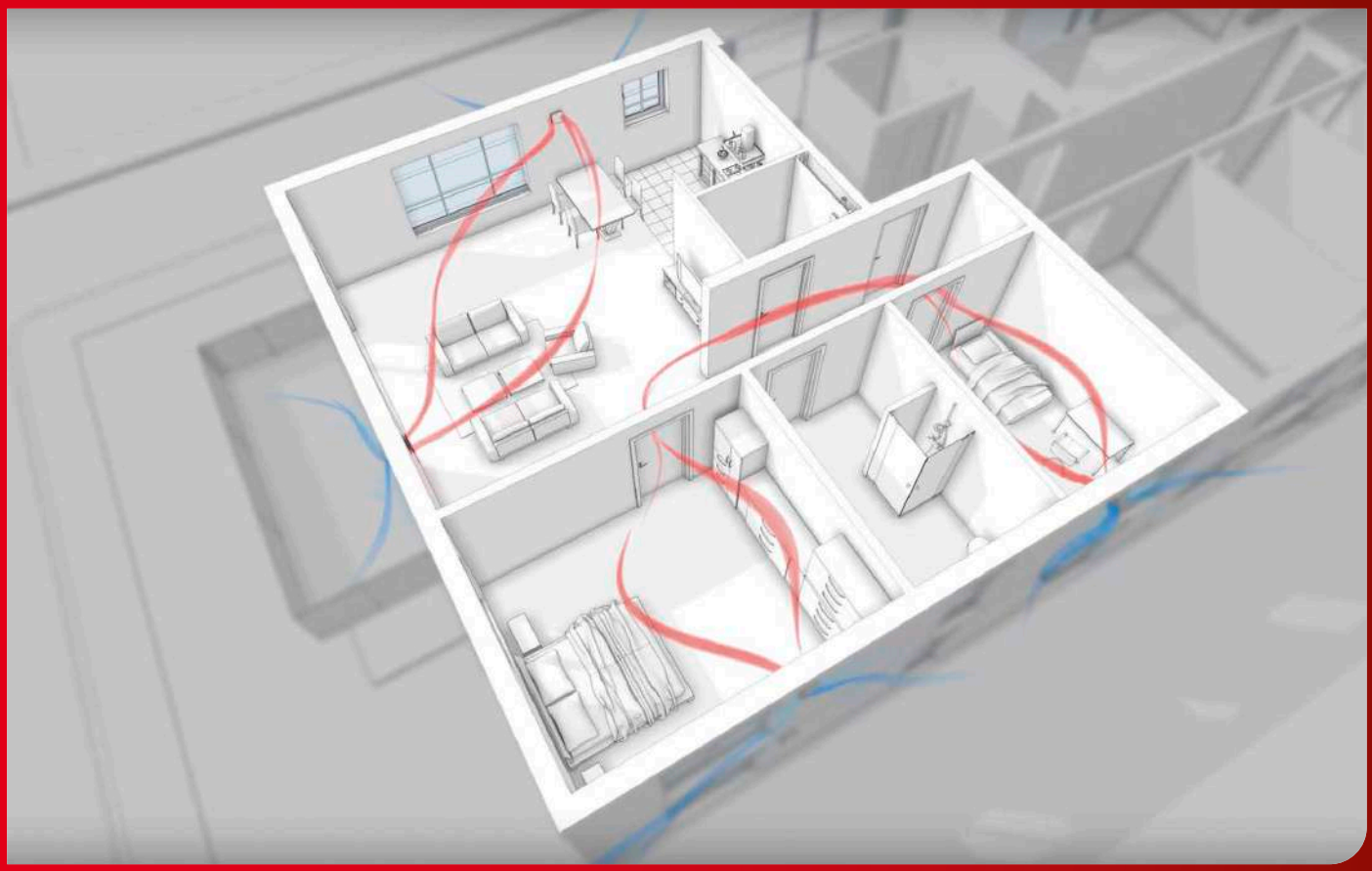
The decentralised ventilation units with heat recovery from Helios are among the best in their class in both categories.
Thanks to the quick and simple installation, they provide an economical solution for the supply and extract ventilation of single rooms. Residents can sit back, relax and take a deep breath of fresh air!

BEST OF SHK AWARD · INDUSTRIE PREIS 2016 BEST OF · PLUS X AWARD 2016 · DESIGN AWARD 2016 · GERMAN DESIGN AWARD SPECIAL 2016

KWL*easy***Plan***.de*

PLAY

Learn about the many possibilities offered by EcoVent Verso KWL EC 45-160 now on our YouTube channel.



EcoVent Verso KWL EC 45-160

With a ceramic heat exchanger, flow straightener and EC fan.
For flush wall mounting in single rooms, ideal if space is limited.

8f

EcoVent KWL EC 60

With a large-scale aluminium plate heat exchanger and two EC fans.
For flush wall mounting in single rooms - the optimal renovation solution.

10f

Selection matrix

4f

Wall installation unit with heat recovery for single rooms, with air flow rates up to approx. 45 m³/h

KWL EC 45-160

Efficiency class

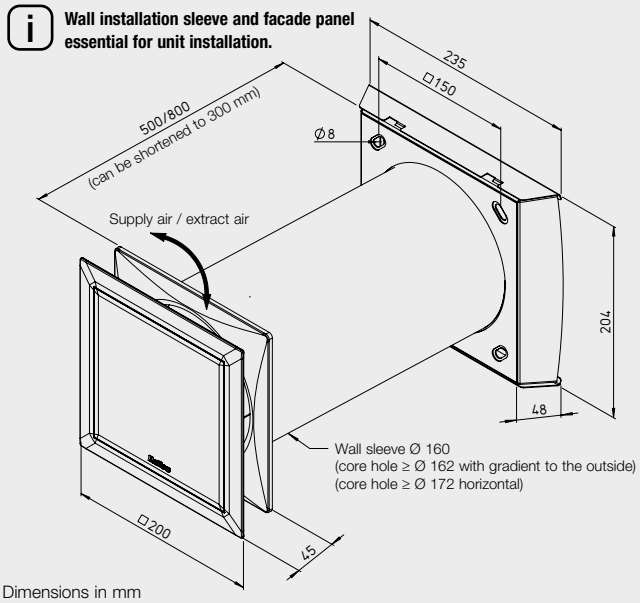
A+ KWL EC 45-160 with additional room sensor

A KWL EC 45-160

GERMAN DESIGN AWARD SPECIAL 2016

PLUS X AWARD 2016 achieved for: High Quality, Functionality, Ecology

Wall installation sleeve and facade panel essential for unit installation.



Dimensions in mm

KWL EC 45-160 belongs to the category of switching ventilation units with heat recovery.
DIBt-approved (general technical approval), Z-51.3-417.
It is intended for installation in the external building wall.
The passage of air is from the outside of the wall through a stainless steel panel. A closable plastic panel on the inner side of the wall, which has integrated sound insulation and a fibre fleece air filter (class G3[6]), is used for this purpose.
The KWL EC 45-160 has an EC axial fan which operates in reversing cycles. In this respect, the supply air phases, where the intake air flows into the building, continuously alternate with the extract air phases, which are characterised by the extraction of indoor air from the building.

The heat recovery is regenerative using a ceramic heat exchanger. During extract air operation, this absorbs heat from the indoor air (storage charge) to transfer it to the incoming intake air (storage discharge) in the subsequent supply air cycle. Heat recovery efficiency up to 88 % (according to current DIBt test procedure).
There is an insect screen on the outside of the ceramic heat exchanger in order to protect against course dirt.
In order to maintain balanced ventilation operation, at least 2 units are required for a residential unit, which operate out of phase in terms of operating phases (supply air/extract air). Depending on the total air requirement of the residential unit, more than 2 units are normally installed, whose individual volume flows are automatically coordinated using the central control unit.

Highlights KWL EC 45-160

- Economical, quiet EC axial fan.
- Elegant and timeless design.
- Tool-free, simple installation and dismantling of components.
- Integrated sound insulation.
- Integrated G3[6] air filter, easily accessible and changeable without tools.
- Simple, intuitive operation via two keys.
- LED display for operating mode and current ventilation level.
- Up to 8 controllable units.
- 5 ventilation levels: 14, 24, 32, 37, 45 m³/h.
- 4 operating modes: Heat recovery (= reversing operation), cross ventilation and supply air/extract air mode.
- Possibility of external activation from standby, cross ventilation, supply air mode or party mode (maximum ventilation level) by evaluating an external, potential-free contact.
- Intelligent integration of e.g. demand-controlled extract air fans via an extension module (accessories).
- Filter change indicator.
- Programming via PC.

Control

The central control unit with control element enables the controlling of up to 8 units.
5 ventilation levels and 4 operating modes can be set on the control element:
Heat recovery (= reversing operation), cross ventilation and supply air/extract air mode.
The user is reminded to replace the filter by flashing LEDs on the control element after a preset time period.

GUI user interface

It is possible to connect the control element to a PC or laptop via the USB interface with Helios software.
This makes it easy and convenient to access the control settings.

□ Thus, the commissioning and entry of required values (e.g. filter replacement interval or minimum ventilation level) within a very short time.
All specified setting options can be changed quickly via the programme interface with the user-friendly assistance of appropriate help texts.

□ The configuration settings can be stored directly on the PC or laptop and reloaded into the control system, if required.
The installation costs in a larger building can be reduced to a minimum.
If several identical ventilation systems are installed, the required configuration is carried out once for a ventilation system and it can then be transferred to any number of control elements.
Controller and software can be secured with a PIN.

Replacement air filter

– 2 pcs. G3 filter[6]
ELF-KWL 45-160/3/3 No. 09366

Sound insulation element

Sound insulation element for use in the soffit channel, fire protection class B1.
KWL 45 SEL No. 04170

Sound insulation element for use in the wall sleeve, fire protection class B1.
KWL 45-160 SE Nr. 09362

Technical data

Unit[1]	KWL EC 45-160[1]				Ref. no. 09361
Flow rate at level	❺	❹	❸	❷	❶
supply air/extract air V m³/h	45	37	32	24	14
Sound pressure L_{PA} dB(A) at 3 m	34	29	27	21	14
Sound power L_{WA}	52	47	45	39	32
Standard sound level diff. $D_{n,e,w}$ dB[2]	Facade panel 44 / Soffit 47				
Power consumption W	4.5	3.4	2.8	2.1	1.6
Heat recovery efficiency[3]	up to 88 %				
Operating voltage mains adapter	Input 230 V~, 50/60 Hz / Output 12 V⎓				
Rated current mA	42	32	27	21	17
El. supply line mains adapter[4]	NYM-O 2 x 1.5 mm²				
El. supply line power supply control[4]	NYM-O 2 x 1.5 mm²				
El. supply line to fan[5]	J-Y (ST) Y 3 x 0.8 mm				
Protection class III, protection cat.	IP 20				
Wiring diagram no.	1091 / 1093				
Temperature operating range	– 12 °C to + 40 °C				
Weight (unit + inner panel) approx. kg	2.8				

[1] The required wall installation sleeve and facade panel must be ordered separately.
[2] Test value. [3] According to latest DIBt test procedure. [4] Use of NYM-J 3 x 1.5 mm² is permitted.
[5] Use of J-Y (ST) Y 2 x 2 x 0.8 mm is permitted. [6] G3 = ISO coarse 50%.

■ **Unit with inner panel**
KWL EC 45-160 No. 09361
Consists of design inner panel with filter, ceramic heat exchanger, flow straightener, insect screen, EC axial fan with protection grille, removal tool (cord) and EPP half shell base.

☐ **Installation package soffit***
KWL 45-160 LE-RP No. 08160
With wall sleeve and plaster protective cover.
Made of EPP, fire protection class B1.

☐ **Wall installation sleeve**
Length 500 mm
KWL 45-160 WH No. 09319

Length 800 mm
KWL 45-160 WH-L No. 09320
Ø 160 mm, plastic, incl. condensate wedge and 2 covers.

☐ **Soffit grille**
Made of stainless steel
KWL 45 LG No. 04167
External grille with integrated condensate drain and seal.
Dim. mm (H x W) 324 x 74

With additional coating
KWL 45 LG-B No. 04168
For use in environments with severe air pollution or high salt concentration in the air (near the coast).
With white coating
KWL 45 LG-W No. 04169

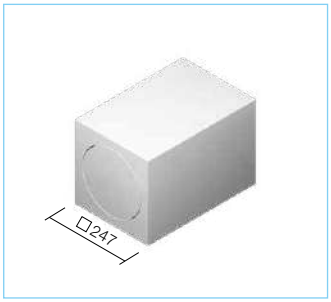
☐ **Facade panel**
Made of stainless steel
KWL 45-160 FB-E No. 09321

With additional coating
KWL 45-160 FB-B No. 09322
For use in environments with severe air pollution or high salt concentration in the air (near the coast).
With white coating
KWL 45-160 FB-W No. 09323

☐ **Insect screen**
KWL 45 ISL No. 03004
Made of stainless steel.
For installation package soffit (KWL 45-160 LE-RP).
Suitable for retrofitting.
Dim. mm (H x W) 203 x 48

☐ **Facade panel DEEP**
Made of stainless steel
KWL 45-160 FBT-E No. 09324
For installation in external wall thicknesses from 250 – 300 mm.

With additional coating
KWL 45-160 FBT-B No. 09326
For use in environments with severe air pollution or high salt concentration in the air (near the coast).
With white coating
KWL 45-160 FBT-W No. 09340



☐ **Wall stone**
Length 365 mm
KWL 45-160 WS No. 09302

Length 490 mm
KWL 45-160 WS-L No. 09306
Installation aid for brickwork.
Made of EPS, fire protection class B1.
Replaces the otherwise necessary core hole drilling.

☐ **Control set UP**
KWL 45 STS-UP No. 03006
Casing for surface installation
KWL-APG No. 04270
Consists of control element KWL 45 BEU and switching power supply KWL 45 SNU for installation in flush-mounted box. Allows the connection of up to 6 units. In case of more than 6 units, an additional KWL 45 SNU is required. Max. 8 units per control element.

☐ **Switching power supply UP**
KWL 45 SNU No. 03008
For extending the control set KWL 45 STS-UP from 6 to 8 units.
Input 230 V AC, 50/60 Hz. output 12 V DC / 1.9 A for flush-mounted installation in insulated wall.
Output voltage according to SELV protection class 3.

☐ **Extension module**
KWL 45 EM No. 03012
For the combined operation of an extract air system, e.g. according to DIN 18017, pt. 3 with KWL EC 45-160 (combined ventilation).

☐ **Room sensor**
HY 3 No. 01359
With internal scale
HY 3 SI No. 01360
Electromechanical humidity controller for connection to the external contact of the control element. For surface installation. Function type can be adjusted using Helios software or control element.
Attention: Parallel use with KWL-EM is not possible.

☐ **Control set HS**
KWL 45 STS-HS No. 03007
Consists of control element KWL 45 BEU and switching power supply KWL 45 SNH for top-hat rail (2 pcs). Allows the connection of up to 4 units. In case of more than 4 units, an additional KWL 45 SNH is required. Max. 8 units per control element.

☐ **Switching power supply HS**
KWL 45 SNH No. 03001
For extending the control set KWL 45 STS-HS from 4 to 8 units.
Input 230 V AC, 50/60 Hz.
Output 12 V DC / 1.5 A for installation in distribution box (2 pcs). Output voltage according to SELV protection class 3.

☐ **Reference**
A flush-mounted box (depth 61 mm) is required for the control element KWL 45 BEU and for each installed switching power supply KWL 45 SNU.
Control element (w/o adapter)
KWL 45 BEU No. 03041

***** The element must always be overinsulated. It is not suitable for insulation thicknesses ≤ 10 cm and must not be installed in this case.

Compact wall installation unit with heat recovery for the supply and extract ventilation of individual rooms. KWL EC 60 is a convincing solution for a comfortable indoor climate and energy savings in individual rooms. Ideal for bringing existing building structures up to the legally required EnEV standard during renovation. KWL EC 60 ventilates small and large individual rooms. The installation of multiple units is recommended for a medium-sized residential unit.

Ideal for renovation due to simple installation

KWL EC 60 is the optimal renovation solution, even for retrofitted installations. The intake air connection is simply through a core hole in the external wall, in which the wall sleeve is inserted.
This simply takes place during the facade renovation. The openings are closed by two building protection covers. The elegant stainless steel outer facade is installed upon completion of plastering. The desired unit is inserted into the wall sleeve and electrically connected in the course of the interior work. Only the elegant facade can be seen on the room side, the front of which is completely closed. Thus, the KWL EC 60 blends discreetly into any room environment and bothersome dirt deposits on ventilation grilles are a thing of the past.

Aluminium plate heat exchanger with a heat recovery efficiency of over 70 %

The KWL EC 60 saves expensive heating energy due to the efficient and large-dimensioned aluminium plate heat exchanger with a heat recovery efficiency of over 70 %.

ECgreenVent® by Helios

Particularly energy-saving ventilation units with EC technology, such as Helios KWL EC 60, are marked with the ECgreenVent® label. KWL EC 60 allows the demand-dependent supply and extract ventilation of individual rooms with heat recovery; multiple units can be independently controlled. Adjustment is not necessary.

Functionality of the KWL EC 60 ventilation with heat recovery

Two highly efficient direct current EC fans ensure a uniform air exchange. Contaminants, odours and the stale room air is moved outside, and fresh, preheated air is supplied to the room.
The heat is transferred from the stale extract air to the fresh supply air in the large aluminium plate heat exchanger, whereby both airflows remain separate.

Elegant facade panel made of stainless steel.

* *The external components, such as facade panel, spacer frames and protection grille, are made of high-quality stainless steel.*
Alternatively available in coated version (types -B) for use in environments with severe air pollution or high salt concentration in the air (near the coast).

KWL EC 60

Efficiency class

A — KWL EC 60 Pro with additional room sensor
KWL EC 60 Pro FF

B — KWL EC 60 Eco / Pro

DESIGN PLUS powered by: ISH

■ **Delivery / scope of order**
Designed for the installation steps, the following elements can be ordered separately:

☐ **Installation kit**

KWL 60 RS	No. 00708
KWL 60 RS-B	No. 01961

Consists of wall sleeve (349 mm long), two building protection covers, outer facade and deflector plate made of stainless steel (type RS-B with additional coating*).

☐ **Unit optionally available in Eco or Pro version.**

■ **Common features**

■ **Heat exchanger**

☐ Large aluminium plate heat exchanger with a heat recovery efficiency of over 70 %.

■ **Air delivery**
Two highly efficient direct current EC fans ensure a uniform air exchange.

■ **Condensate drain**
Condensate is drained outside directly via the deflector plate on the external cover.

■ **Air filters**

☐ Two efficient air filters (class G4[3]) in the supply air and extract airflow guarantee the best air purity. An F7 pollen filter[4] on the supply air side is optional.

■ **KWL EC 60 Eco**
The economical solution with a favourable price / performance ratio for all applications.

☐ **Unit Eco**

KWL EC 60 Eco	No. 09950

Consists of inner facade made of high-quality plastic with an integrated, three-step control element.

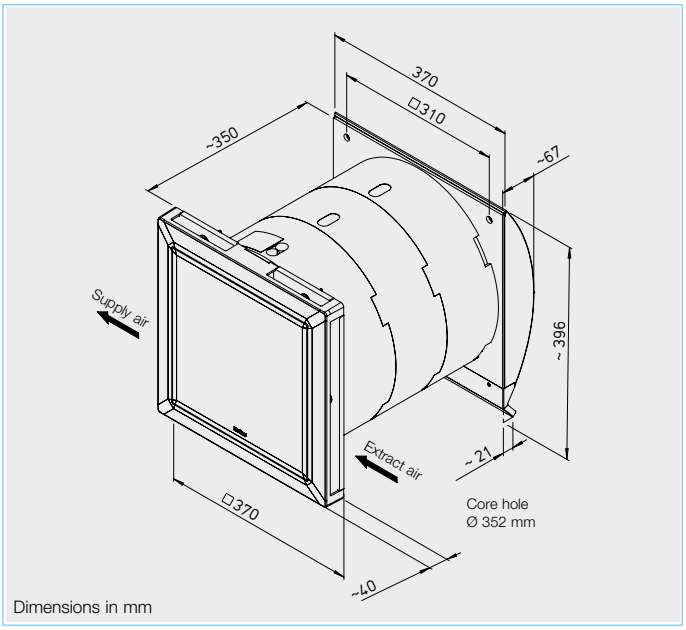
■ **Power control**
Three-step operation via the control element integrated in the inner facade (can be placed at the top or bottom by rotating the facade 180°).
0 position via on-site off-switch.

■ **Electrical connection**
Via screwless terminals.

Technical data

Unit[1]	**KWL EC 60 Eco**[1]	Ref. no. 09950	
Flow rate at level[2] supply air/extract air V m³/h	❸ 60	❷ 30	❶ 17
Noise dB(A) radiation L_{PA} at 3 m	30	22	18
Power consumption Fans 2xW	4	2	1
Standard sound level diff. $D_{n,e,w}$ dB	39 – 41		
Voltage/Frequency	230 V~, 50 Hz		
Rated current A	0.05		
Protection category IP	X4		
Electrical supply line	NYM-J 3 x 1.5 mm²		
Wiring diagram no.	949		
Temperature operating range	– 20 °C to + 40 °C		
Weight approx. kg	6.5		

[1] The required installation kit (types KWL 60 RS) must be ordered separately (see above for details).
[2] Volume reduction of approx. 10 % when using pollen filters.
[3] G4 = ISO coarse 60%. [4] F7 = ISO ePM2.5 65%.



Dimensions in mm

KWL EC 60 Pro / Pro FF
Meets even the highest comfort requirements with many useful functions.

☐ **Unit Pro**
KWL EC 60 Pro No. 09951
Consists of inner facade made of high-quality plastic and comfort control element (KWL-BCU, 1 pc. included in delivery). See right for details.

☐ **Unit Pro FF**
KWL EC 60 Pro FF No. 09957
Like KWL EC 60 Pro, but with additional integrated humidity sensor for demand-dependent ventilation. The humidity values can be adjusted.

■ **Power control**
The comfort control element with graphic display and user-friendly menu navigation, which is included in the delivery, enables the following functions:
– Four-step manual operation or with digital weekly timer.
– Control via intelligent CO_2 sensors (accessories, connection of up to 4 pcs. possible.)
– Supply air/extract air operation individually switchable.
– Party mode, intensive ventilation.
– Indication of necessary filter replacement, operating status, operating hours, error messages.
☐ Multiple units can be controlled via one control element.
☐ Multiple control elements can be connected to one unit.

■ **Shutters**
In case of absence (holiday) or standstill periods, two airtight shutters will close outwards or one airtight shutter will close in case of supply air or extract air operation.

■ **Electrical connection**
Via plug-in coupling (included in delivery.)

Technical data				
Unit[1] – incl. humidity sensor	**KWL EC 60 Pro**[1] Ref. no. 09951 **KWL EC 60 Pro FF**[1] Ref. no. 09957			
Flow rate at level[2] Supply/extract air V m³/h	❹ 60	❸ 45	❷ 30	❶ 17
Noise dB(A) Radiation L_{PA} at 3 m	30	29	22	18
Power consumption Fans 2xW	4	3	2	1
Standard sound level diff. $D_{n,e,w}$ dB	39 – 41			
Voltage/Frequency	230 V~, 50 Hz			
Rated current A	0.06			
Protection category IP	X4			
Electrical supply line	NYM-J 3 x 1.5 mm²			
Wiring diagram no.	950			
Temperature operating range	– 20 °C to + 40 °C			
Weight approx. kg	6.5			

[1] The required installation kit (types KWL 60 RS) must be ordered separately (see above for details).
[2] Volume reduction of approx. 10 % when using pollen filters.

■ **Delivery / scope of order**
Designed for the installation steps, the following elements can be ordered separately:
☐ **Installation kit**
Type KWL 60 RS No. 00708
Type KWL 60 RS-B No. 01961
As described on the left.

☐ **Unit optionally available in Eco or Pro version.**

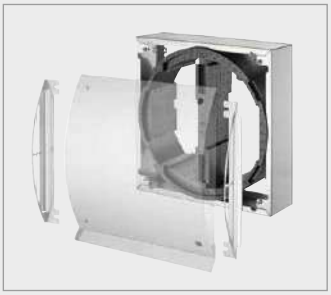
Installation kit essential for unit installation.

☐ **Replacement air filter**
– 2 pcs. G4 filter[3]
ELF-KWL 60/4/4 No. 09445
– 2 pcs. F7 filter[4]
ELF-KWL 60/7/7 No. 09446

■ **Common accessories**
Wall sleeve extension
Type KWL 60 WV No. 00884
For wall thicknesses from 349 to 571 mm. Can be optionally shortened or connected, 111 mm long, with separator.

Sound insulation set
Type KWL 60 SDS No. 03059
Consists of sound insulation frame and matting, white, 100 mm deep. Noise reduction up to 6 dB.

Spacer frame
Type KWL 60 DR No. 00888
Type KWL 60 DR-B No. 01962
External stainless steel frame, 100 mm deep, with separator. For wall thicknesses from 249 to 349 mm.

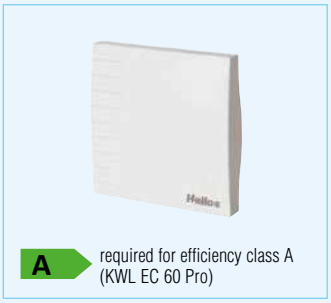


Protection grille
Type KWL 60 SG No. 09978
Type KWL 60 SG-B No. 09976
Made of stainless steel (2 pcs.), for side attachment to outer facade.

■ **Accessories for KWL EC 60 Pro**
Control element (additional)
KWL-BCU (flush-m.) No. 09955
Dim. mm (WxHxD) 80x80x37
Display and function as described on the left. 1 KWL-BCU included in delivery. Connection of up to 4 pcs. possible. Delivery incl. 3 m connection cable.

KWL-BCA (surface) No. 09956
Dim. mm (WxHxD) 83x83x51
Casing for surface installation
KWL-APG No. 04270
Dim. mm (WxHxD) 83x83x41

Room sensor
KWL EC-CO_2 No. 09988
For detecting the CO_2 concentration in the room air. Controls the ventilation unit in all 4 levels so that the CO_2 content remains below the respective setpoint.
Delivery incl. 3 m connection cable. Up to 4 pcs. can be connected. When using multiple sensors, control according to the highest measured value.
Dim. mm (WxHxD) 95 x 97 x 30



A required for efficiency class A (KWL EC 60 Pro)

Connection cable
KWL-SL 6/5 (5 m) No. 09980
KWL-SL 6/10 (10 m) No. 09444
KWL-SL 6/20 (20 m) No. 09959
For distances > 3 m, with 2 RJ 12 plugs. For connection between control element and KWL EC 60 Pro or between multiple units.

Connection cable branch
Type KWL-ALA No. 09960
For the connection of additional units or control elements and accessory components (1 pc. always required) which are not included in the delivery.

[3] G4 = ISO coarse 60%. [4] F7 = ISO ePM2.5 65%.

Central domestic ventilation **with heat recovery.**

A central KWL® system with heat recovery from Helios fully ensures continuous ventilation for humidity protection pursuant to DIN 1946-6, regardless of user behaviour.

The required minimum air exchange is also automatically ensured around the clock.

How it works:
The KWL® system heat exchanger continuously absorbs the heat from the stale room air and transfers it to the fresh intake air, which creates a healthy comfortable atmosphere in all rooms as preheated and filtered supply air.
The heat recovery and particularly energy-saving EC fan technology reduces heating costs by up to a third.

Pollutants stay outside and contaminated room air is efficiently exchanged in a controlled manner.

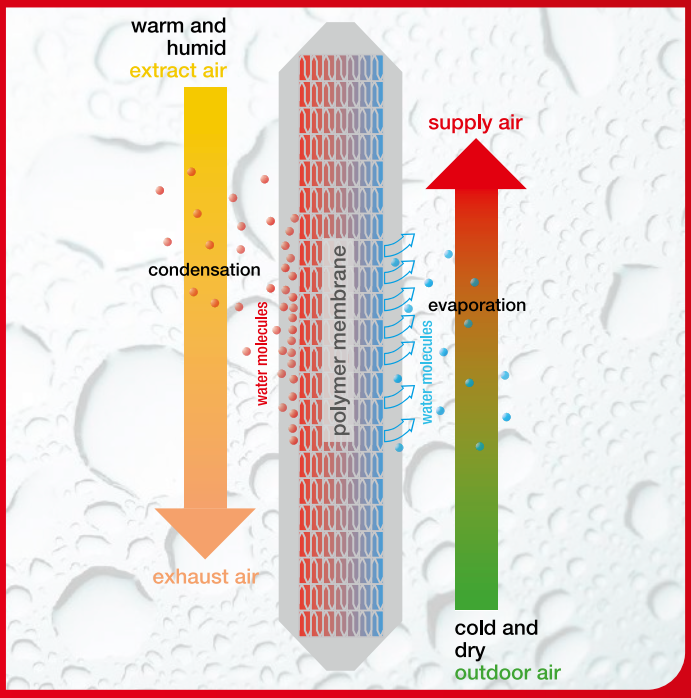
Helios KWL® added value.
The universal, perfectly matched Helios KWL® system solutions guarantee simple planning, secure installation and maximum efficiency.

Services such as KWL® specialist seminars, practical workshops and the almost self-explanatory online software tool **KWLeasyPlan.de** also facilitate the design, planning and Installation. Please request further info!

Enthalpy heat exchanger – ideal room air humidity, optimal climate.

KWL® units with combined heat and humidity recovery by enthalpy exchanger provide for a comfortable, healthy room climate.

The relative room humidity in living areas should lie between 35 – 60 %.
If the humidity is too low, mucous membranes will dry out, and electrostatic charges and dust levels in the air will build up.
If the used air with a high absolute moisture content is replaced by fresh but dry air with a smaller absolute moisture content, the humidity in the room will decrease noticeably.



Ventilation units with enthalpy heat exchangers offer convincing advantages:

- Twofold benefit through energy-saving heat recovery and hygienic humidity recovery in the cold season.
- Humidity recovery from the extract air up to 70 %, depending on the indoor air humidity.
- Additional humidifiers are not necessary.

How the enthalpy heat exchanger works:

The water molecules in the extracted room air condense on contact with the surfaces of the enthalpy heat exchanger. They move through the membrane in a similar way to water movement in plants (osmosis).

The water molecules are absorbed by the dry outside air on the membrane surface on the supply air side.
A coated polymer-membrane on the enthalpy heat exchanger guarantees hygiene and efficiency in the humidity transmission process.

It ensures that the water retains its molecular configuration and does not enter the supply air flow as droplets. The extract and supply air flows are hermetically separated from each other, so that the transfer of organic particles or odours is excluded.

Wall installation “W”

Series “W”
Compact wall units from 170 to 500 m³/h. KWL EC 170 W, 270 W and 370 W with passive house certificates.

All models equipped with easyControls as standard and optional enthalpy exchanger.

ECgreen Vent 16ff

Ceiling mounting “D”

Series “D”
Ultra-flat units from 220 to 2000 m³/h for space-saving ceiling installation.

With ultra-efficient heat exchanger, EC technology and passive house certificate.
KWL EC 220 D and 340 D with easyControls as standard.

ECgreen Vent 30ff

Stand mounting “S”

Series “S”
With ventilation system performances from 800 to 2600 m³/h, for standing floor installation.

Ideal as central systems in residential, commercial and industrial applications. With ultra-efficient heat exchanger, EC technology and passive house certificate.

ECgreen Vent 40ff

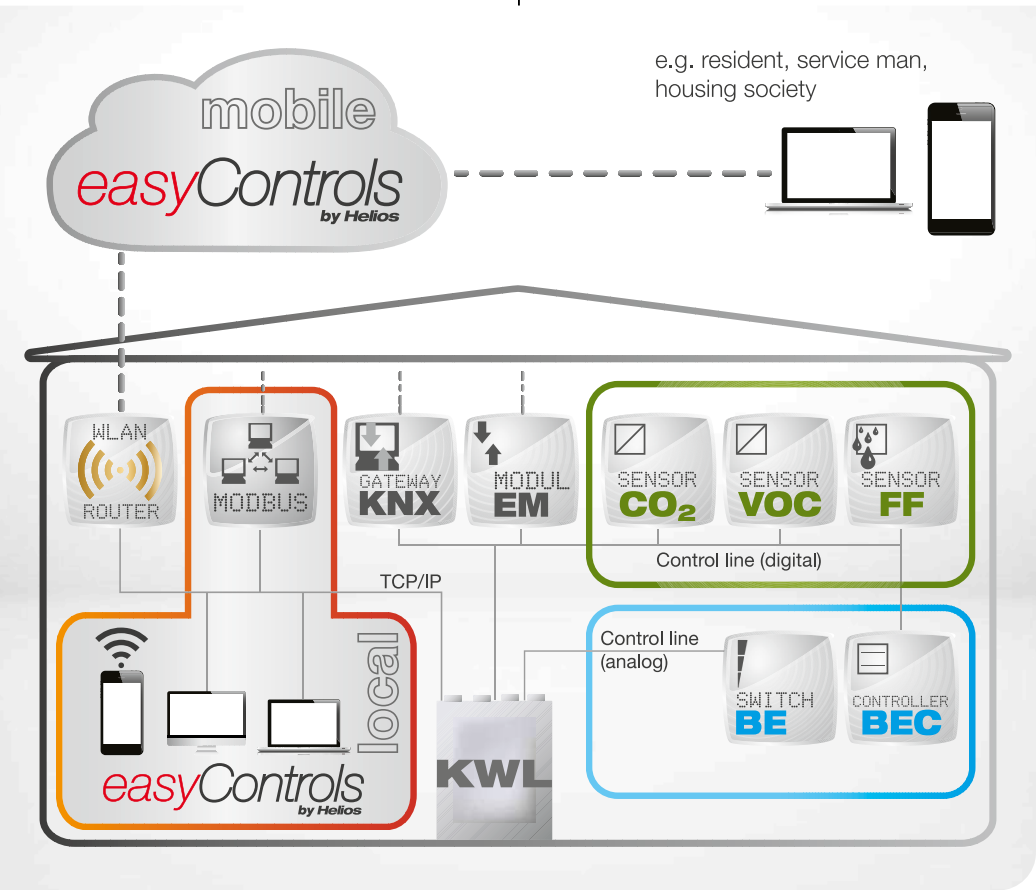
Selection matrix

4f

Peripherals

50ff

Helios easyControls.
Your control concept for smart and comfortable domestic ventilation.



Helios easyControls revolutionises the user-friendliness of KWL® units with an integrated web server and LAN connection.

The unit types equipped with easyControls as standard (see product pages) can be integrated into a PC network quickly and easily and controlled via the convenient interface in any web browser.

Whether it is a PC or laptop, tablet or smartphone. At any time and in any room.

Helios easyControls – the functions at a glance:

- **Location-independent access**
  Helios easyControls allows direct access to the KWL® ventilation unit, regardless of where you are.
  Whether you are at home or on the go via the internet, an active connection is required. Authorised users, service technicians or housing associations can conveniently change unit settings or request status information at any time via the easyControls web portal.

- **Building control system**
  The KWL® units can be easily integrated in a building control system network via the standard Modbus interface (TCP/IP) or an optional KNX module.

- **Easy to configure and quick to commission**
  Like with the controls, the benefits of the convenient interface are also evident in the system configuration and initial commissioning.

Even without a PC network:
Simply connect the KWL® unit to a laptop via LAN cable and open the easyControls menu in the browser.

- **Always up-to-date**
  With Helios easyControls, the ventilation unit updates with the latest firmware quickly and easily via the internet.

- **Demand-controlled and energy-saving**
  With the aid of easyControls and the demand-controlled humidity sensor and/or optionally connected CO2, mixed gas (VOC) or humidity room sensors, the KWL® unit automatically ensures an optimal indoor environment and reliably removes air contamination caused by e.g. cooking or showering. This saves energy.

- **Manual operation**
  If there is no available PC network or if manual access is preferred, easyControls can be controlled via a comfort control element with graphic display or a step switch.

NEW at Helios

Easily control the Helios KWL® units with “Alexa”:

From now on, all KWL® ventilation units with the easyControls control concept can be easily controlled using Amazon's digital voice assistant “Alexa”.

Almost all basic easyControls control functions can be simply voice-activated without any special knowledge via a number of simple commands.

The “Alexa” skill:

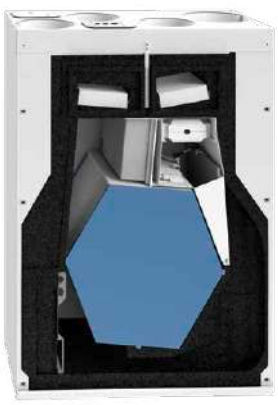
- Change the ventilation levels easily.
- Air quality detection possible at any time.
- Activate/deactivate party mode.
- ... and much more.

▶ www.easyControls.net

Apple App Store (iPhone)

Google Play Store (Android Smartphone)

KWL EC 170 W



Efficiency class

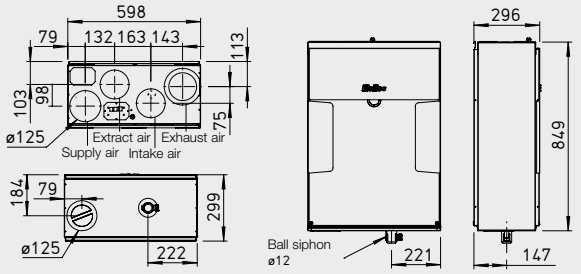
A+ KWL EC 170 W with additional room sensor

A KWL EC 170 W

easyControls by Helios

KWL EC 170 W

Dimensions in mm



CERTIFIED COMPONENT Passive House Institute

Compact unit with heat recovery for the central supply and extract ventilation of residential units up to 110 m². 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.

■ **Casing**
Universal casing concept: Intake air left/right, supply air top or bottom, suitable for plasterboard installation.
Made of galvanised steel sheet with sound and heat insulation, powder-coated in white. The intake air connection can be installed on the left or right. Maintenance-friendly access to all unit components through removeable front panels. Delivery state: Intake air right.
☐ Suitable revision solution for drywall construction on request.

■ **Heat exchanger**
☐ Large cross counterflow heat exchanger made of plastic, heat recovery efficiency of over 90 %.
☐ Type "ET" are equipped with highly efficient enthalpy heat exchangers for additional moisture recovery.

■ **Fans**
Two low-noise high-performance centrifugal fans with energy-saving EC motors ensure the air supply and extraction. Maintenance-free, easily removeable 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 intake air supply via G4 filter [4]; an F7 pollen filter [5] is also optionally available. The heat exchanger requires a G4 filter [4] on the extract air side. Simple maintenance possible 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 170 W, 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 14 for functionality.
Helios easyControls is prepared for:
– Manual control elements KWL-BE, KWL-BEC, access.).
– 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**
KWL EC 170 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 temperature < +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 CO_2, VOC and humidity parameters.
– Indication of e.g. filter replacement, 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.

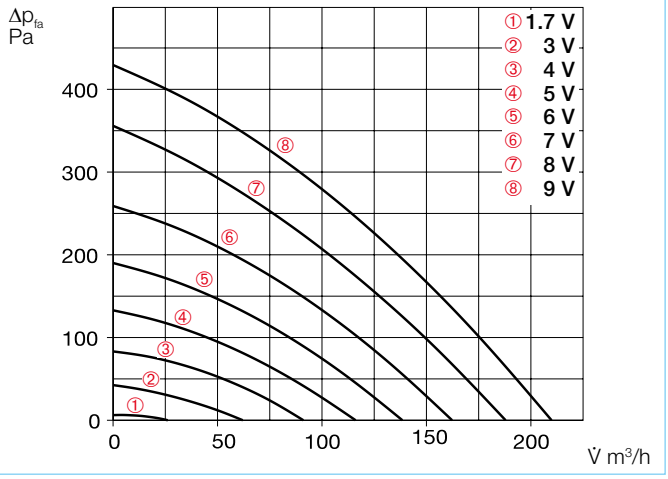
☐ **Room sensors**
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

☐ **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.

KWL EC 170 W

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	59	45	49	54	51	42	33	27
L_{WA}	Supply air	dB(A)	66	52	56	62	60	57	54	47
L_{PA}	Radiation	dB(A)	46	24	34	43	40	36	34	20



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 **Type**				Ref. No.	With enthalpy heat exchanger **Type**				Ref. No.
	KWL EC 170 W				00912	**KWL EC 170 W ET**				00917
Flow rate at level [1) 2)]	❾	❼	❺	❸	❶	❾	❼	❺	❸	❶
Supply air/extract air V̇ m³/h	210	187	138	91	26	210	189	138	86	17
Noise dB(A) [3)]										
Supply air L_{WA} (sound power)	66	64	58	54	33	66	64	58	54	33
Extract air L_{WA} (sound power)	59	57	49	46	30	59	57	49	46	30
Radiation L_{PA} at 1 m	46	44	37	29	<25	46	44	37	29	<25
Power consumption fans 2xW [1)]	36	28	15	8	4	34	27	15	8	4
Voltage/Frequency	1~, 230 V, 50 Hz									
Rated current A – Ventilation	0.7									
– Preheating	4.4									
– max. total	0.7 (5.1 incl. preheater, accessories)									
Electric preheater kW	1.0 kW (accessories)									
Summer bypass	automatic (adjustable), with cover									
Wiring diagram no.	1045									
Temperature operating range	–20 °C to +45 °C									
Installation temperature	+5 °C to +45 °C (90 % rel. humidity, non-condensing)									
Weight approx. kg	36					39				

1) At 0 Pa, performance levels adjustable. 2) Volume reduction of approx. 10 % when using pollen filter.
3) At 100 Pa, noise data increases with increasing system pressure. 4) G4 = ISO coarse 65%. 5) F7 = ISO ePM1 50%.

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-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, 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+

Electric preheater
KWL-EVH 170 W No. 00936
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
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 1.2/125 Ref. No. 09433
Duct temperature sensor
KWL-LTK (1 pc. required) No. 09644

Warm water post-heat. element
For additional supply air heating.
Type WHR 125 Ref. No. 09480
Duct temperature sensor
KWL-LTK (2 pcs. required) No. 09644
Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Alternative:
Air temperature control
WHST 300 T38 Ref. No. 08817

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

Replacement air filter
– 2 pcs. G4 filter [4)]
ELF-KWL 170/4/4 No. 00951
– 1 pc. F7 filter [5)]
ELF-KWL 170/7 No. 00965

Reference
Enthalpy heat exchanger (accessories) for retrofitting:
Type KWL-ET 170 No. 00976

Other accessories

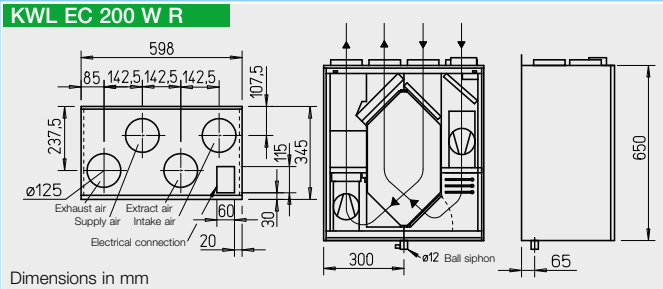
KWL EC 200 W

KWL EC 200 W R with accessories
(Pollen filter, KWL-EVH 200 W)

Efficiency class

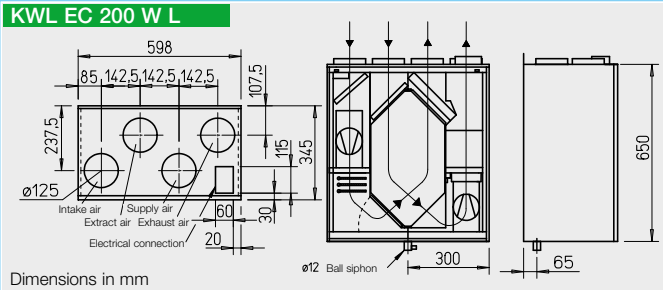
A KWL EC 200 W R/L and 200 W ET R/L

KWL EC 200 W R



Dimensions in mm

KWL EC 200 W L



Dimensions in mm

Compact unit with heat recovery for the central supply and extract ventilation of residential buildings and apartments. 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.

■ **Casing**
Made of galvanised steel sheet, powder-coated in white, double-walled, with 12 mm heat and sound insulation on all sides. Installation-friendly and maintenance-friendly. All elements are easily accessible through removeable front panels.

■ **Heat exchanger**
☐ Large cross counterflow heat exchanger made of plastic, heat recovery efficiency of up to 90 %.
☐ Types "ET" are equipped with highly efficient enthalpy heat exchangers for additional moisture recovery.

■ **Fans**
Two low-noise high-performance centrifugal fans with energy-saving EC motors ensure the air supply and extraction. Maintenance-free, easily removeable 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 intake air supply via G4 filter[4]; an F7 pollen filter[5] or activated carbon filter[6] is also optionally available. The heat exchanger requires a G4 filter[4] on the extract air side.

■ **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 200 W, 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 14 for functionality. Helios easyControls is prepared for:
– Manual control elements (KWL-BE, KWL-BEC, accessories).
– Air quality sensors for extended, demand-controlled ventilation (KWL-CO_2, 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 200 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 temperature < +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 CO_2, VOC and humidity parameters.
– Indication of e.g. filter replacement, 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, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

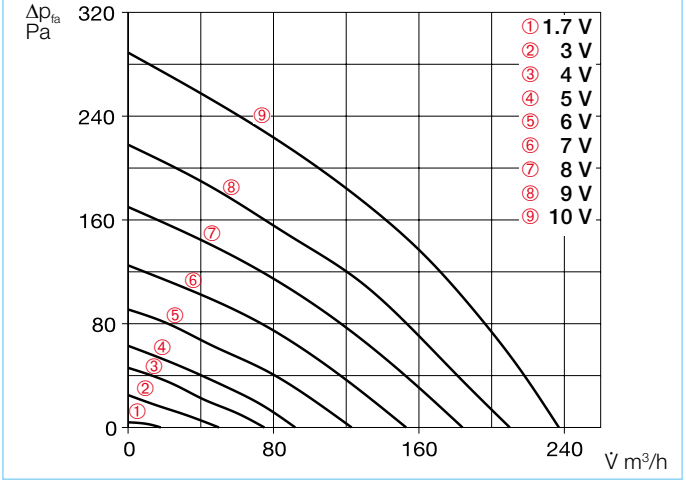
☐ **Extension module**
For the connection of accessories such as shutters, ground heat exchangers for intake air preheating or post-heating (optional warm water or electric heating element with max. 2.6 kW, 230 V, 50 Hz).

☐ **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 14
Moisture recovery through enthalpy heat exchangers	Page 13

KWL EC 200 W

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	45	36	33	32	37	30	25	17
L_{WA}	Supply air	dB(A)	45	36	33	32	37	30	25	17
L_{PA}	Radiation	dB(A)	43	37	37	38	40	36	28	19



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 **Type**	Ref. No.	With enthalpy heat exchanger **Type**	Ref. No.
Right-hand version	**KWL EC 200 W R**	04220	**KWL EC 200 W ET R**	04221
Left-hand version	**KWL EC 200 W L**	04222	**KWL EC 200 W ET L**	04223
Flow rate at level [1) 2)]	❾ ❼ ❺ ❸ ❶		❾ ❼ ❺ ❸ ❶	
Supply air/extract air V̇ m³/h	235 180 120 75 20		235 180 120 75 20	
Noise dB(A) [3)]				
Supply air L_{WA} (sound power)	45 40 34 29 28		45 40 34 29 28	
Extract air L_{WA} (sound power)	45 40 33 29 28		45 40 33 29 28	
Radiation L_{PA} at 1 m	43 38 30 < 25 < 25		43 38 30 < 25 < 25	
Power consumption fans 2xW [1)]	49 26 15 9 6		49 26 15 9 6	
Voltage/Frequency	1~, 230 V, 50 Hz			
Rated current A – Ventilation	1.2			
– Preheating	4.4			
– max. total	1.2 (5.6 incl. preheater, accessories)			
Electric preheater kW	1.0 kW (accessories)			
Summer bypass	automatic (adjustable), with heat exchanger cover			
Wiring diagram no.	1042			
Temperature operating range	– 20 °C to + 40 °C			
Installation temperature	+ 5 °C to + 45 °C (90 % rel. humidity, non-condensing)			
Weight approx. kg	37		41	

[1)] At 0 Pa, performance levels adjustable. [2)] Volume reduction of approx. 10 % when using pollen filter.
[3)] At 100 Pa, noise data increases with increasing system pressure. [4)] G4 = ISO coarse 65%. [5)] F7 = ISO ePM1 50%. [6)] AK = ISO ePM2.5 60%.

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-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, 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

Electric preheater
KWL-EVH 200 W No. 04224
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
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 1.2/125 Ref. No. 09433
Duct temperature sensor
KWL-LTK (1 pc. required) No. 09644

Warm water post-heat. element
For additional supply air heating.
Type WHR 125 Ref. No. 09480
Duct temperature sensor
KWL-LTK (2 pcs. required)No. 09644
Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Alternative:
Air temperature control
WHST 300 T38 Ref. No. 08817

Replacement air filter

– 2 pcs. G4 filter [4)]
ELF-KWL 200/4/4 No. 00021
– 1 pc. F7 filter [5)]
ELF-KWL 200/7 No. 00038
– 1 pc. activated carbon filter [6)]
ELF-KWL 200 AK No. 04198

Reference

Enthalpy heat exchanger (accessories) for retrofitting:
Type KWL-ET 200 No. 00896

Duct connector

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

Other accessories

Compact passive house unit with heat recovery and constant volume flow control. Air flow rates up to approx. 270 m³/h

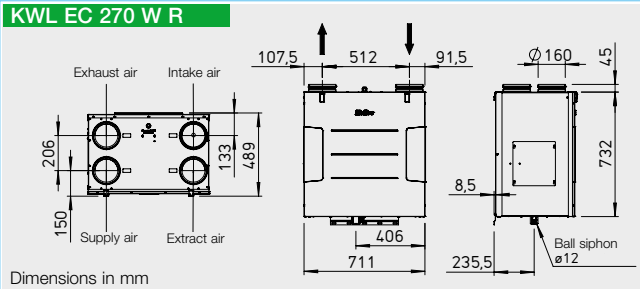
KWL EC 270 W

Efficiency class

A+ KWL EC 270 W R/L with additional room sensor

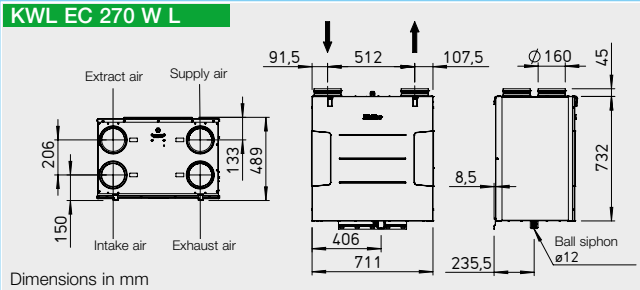
A KWL EC 270 W R/L and 270 W ET R/L

KWL EC 270 W R



Dimensions in mm

KWL EC 270 W L



Dimensions in mm

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 removeable front panels.

■ Heat exchanger
■ Condensate connection
■ Summer operation

See description on page 18.

■ 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 filter[3], an F7 pollen filter[4] (generally required for passive houses) is also optionally available. The heat exchanger requires a G4 filter[3] on the extract air side. A G4 bypass filter[3] is included as standard, optional F7[4].

■ 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 filter[5] must be installed upstream of the preheating element (LFBR 160 G4[5], 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 14 for functionality.
Helios easyControls is prepared for:

- Manual control elements (KWL-BE, KWL-BEC, accessories).
- Air quality sensors for extended, demand-controlled ventilation (KWL-CO_2, 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 CO_2, VOC and humidity parameters.
- Indication of e.g. filter replacement, 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, CO_2 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).

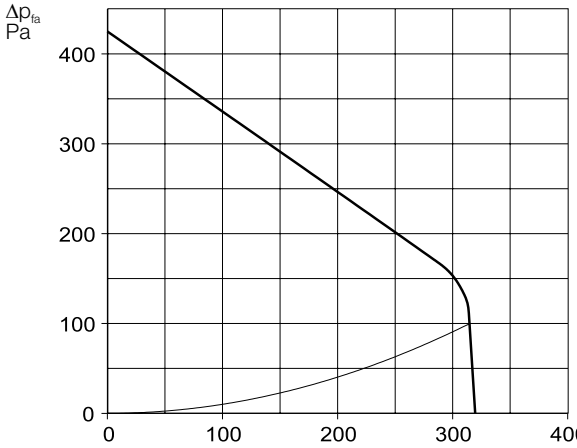
□ Post-heating

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 14
Moisture recovery through enthalpy heat exchangers	Page 13

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 **Type**		Ref. No.	With enthalpy heat exchanger **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 level [1]	❸	❷	❶	❸	❷	❶
Supply air/extract air V̇ m³/h	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-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, 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 G4 [5] 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 filter [5] must be fitted upstream (LFBR 160 G4 [5]).

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

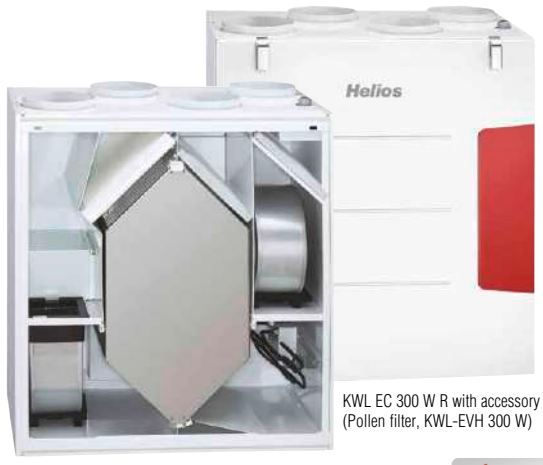
Electric post-heating element
For additional supply air heating.
EHR-R 2.4/160 Ref. No. 09435
Duct temperature sensor
KWL-LTK (1 pc. required) No. 09644
Warm water post-heat. element
For additional supply air heating.
Type WHR 160 Ref. No. 09481
Duct temperature sensor
KWL-LTK (1 pc. required) No. 09644
Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Alternative:
Air temperature control
WHST 300 T38 Ref. No. 08817

Other accessories	Page
KWL® peripherals	50 ff.
– Ground heat exchanger	72 ff.
– Insulated duct system	60 f.
– Air distribution systems	62 ff.
– Control lines, etc.	66 f.
Heating element, control	
Ventilation grilles, ducts, roof outlets	
Extract air elements, Design ventilation valves	

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

Replacement air filter
– 2 pcs. G4 filter [3]
ELF-KWL 270/4/4 No. 09613
– 1 pc. F7 filter [4]
ELF-KWL 270/7 No. 09614
– 2 pcs. G4 filter [3] **for bypass**
ELF-KWL 270/4/4 BP No. 09617
– 1 pc. F7 filter [4] **for bypass**
ELF-KWL 270/7 BP No. 09618

KWL EC 300 W

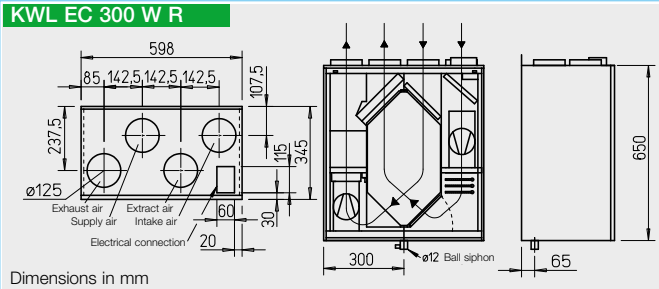


KWL EC 300 W R with accessory (Pollen filter, KWL-EVH 300 W)

Efficiency class

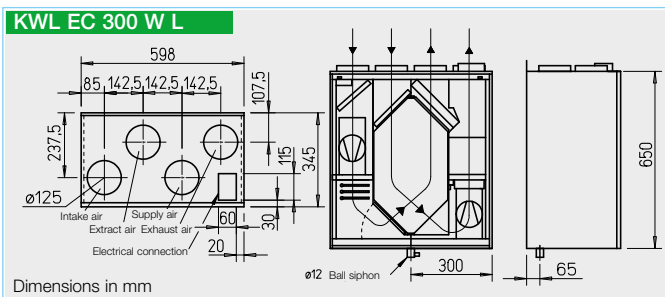
A KWL EC 300 W R/L and 300 W ET R/L

KWL EC 300 W R



Dimensions in mm

KWL EC 300 W L



Dimensions in mm

Compact unit with heat recovery for the central supply and extract ventilation of residential buildings and apartments. 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.

■ **Casing**
Made of galvanised steel sheet, powder-coated in white, double-walled, with 12 mm heat and sound insulation on all sides. Installation-friendly and maintenance-friendly. All elements are easily accessible through removeable front panels.

■ **Heat exchanger**
☐ Large cross counterflow heat exchanger made of plastic, heat recovery efficiency of up to 90 %.
☐ Types "ET" are equipped with highly efficient enthalpy heat exchangers for additional moisture recovery.

■ **Fans**
Two low-noise high-performance centrifugal fans with energy-saving EC motors ensure the air supply and extraction. Maintenance-free, easily removeable 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 intake air supply via G4 filter[4]; an F7 pollen filter[5] or activated carbon filter[6] is also optionally available. The heat exchanger requires a G4 filter[4] on the extract air side.

■ **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 300 W, 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 14 for functionality. Helios easyControls is prepared for:
– Manual control elements (KWL-BE, KWL-BEC, accessories).
– Air quality sensors for extended, demand-controlled ventilation (KWL-CO_2, 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 300 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 CO_2, VOC and humidity parameters.
– Indication of e.g. filter replacement, 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, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

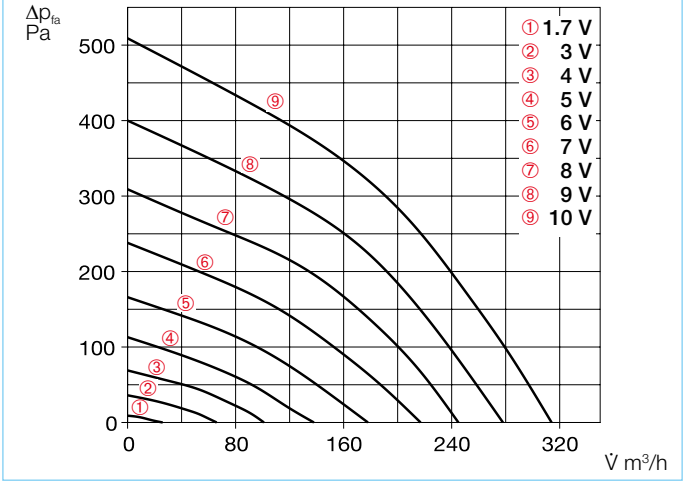
☐ **Extension module**
For the connection of accessories such as shutters, ground heat exchangers for intake air preheating or post-heating (optional warm water or electric heating element with max. 2.6 kW, 230 V, 50 Hz).

☐ **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 14
Moisture recovery through enthalpy heat exchangers	Page 13

KWL EC 300 W

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	51	43	40	42	38	37	30	20
L_{WA}	Supply air	dB(A)	51	44	41	41	37	37	29	18
L_{PA}	Radiation	dB(A)	45	40	40	42	42	41	34	24



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 **Type**				Ref. No.	With enthalpy heat exchanger **Type**				Ref. No.
Right-hand version	**KWL EC 300 W R**				04232	**KWL EC 300 W ET R**				04233
Left-hand version	**KWL EC 300 W L**				04234	**KWL EC 300 W ET L**				04235
Flow rate at level [1) 2)]	❾	❼	❺	❸	❶	❾	❼	❺	❸	❶
Supply air/extract air V̇ m³/h	315	240	180	100	26	315	240	180	100	26
Noise dB(A) [3)]										
Supply air L_{WA} (sound power)	51	46	39	32	27	51	46	39	32	27
Extract air L_{WA} (sound power)	51	46	39	32	26	51	46	39	32	26
Radiation L_{PA} at 1 m	45	41	34	28	< 25	45	41	34	28	< 25
Power consumption fans 2xW [1)]	100	57	28	12	6	100	57	28	12	6
Voltage/Frequency	1~, 230 V, 50 Hz									
Rated current A – Ventilation	2.0									
– Preheating	4.4									
– max. total	2.0 (6.4 incl. preheating, accessories)									
Electric preheater kW	1.0 kW (accessories)									
Summer bypass	automatic (adjustable), with heat exchanger cover									
Wiring diagram no.	1042									
Temperature operating range	– 20 °C to + 40 °C									
Installation temperature	+ 5 °C to + 45 °C (90 % rel. humidity, non-condensing)									
Weight approx. kg	37					41				

[1)] At 0 Pa, performance levels adjustable. [2)] Volume reduction of approx. 10 % when using pollen filter.
[3)] At 100 Pa, noise data increases with increasing system pressure. [4)] G4 = ISO coarse 75%. [5)] F7 = ISO ePM1 50%. [6)] AK = ISO ePM2.5 60%.

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-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, 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

Electric preheater
KWL-EVH 300 W No. 04224
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
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 1.2/125 Ref. No. 09433
Duct temperature sensor
KWL-LTK (1 pc. required) No. 09644

Warm water post-heat. element
For additional supply air heating.
Type WHR 125 Ref. No. 09480
Duct temperature sensor
KWL-LTK (2 pcs. required)No. 09644
Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Alternative:
Air temperature control
WHST 300 T38 Ref. No. 08817

Replacement air filter
– 2 pcs. G4 filter [4)]
ELF-KWL 300/4/4 No. 00021
– 1 pc. F7 filter [5)]
ELF-KWL 300/7 No. 00038
– 1 pc. activated carbon filter [6)]
ELF-KWL 300 AK No. 04198

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

Reference
Enthalpy heat exchanger (accessories) for retrofitting:
Type KWL-ET 300 No. 00896

Compact wall units with heat recovery
Air flow rates up to approx. 360 m³/h

KWL EC 360 W

Efficiency class

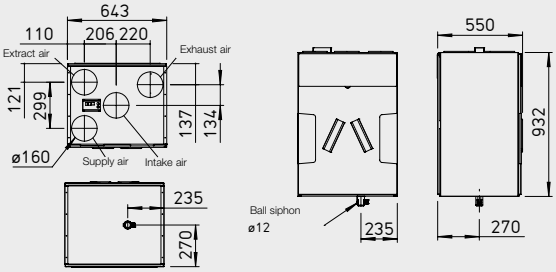
A+ KWL EC 360 W with additional room sensor

A KWL EC 360 W

easyControls by Helios

KWL EC 360 W

Dimensions in mm



Compact unit with heat recovery for the central supply and extract ventilation of residential buildings and apartments. 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.

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

■ **Heat exchanger**
☐ Large cross counterflow heat exchanger made of plastic, heat recovery efficiency of over 90 %.
☐ Types “ET” are equipped with highly efficient enthalpy heat exchangers for additional moisture recovery.

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

■ **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 intake air supply via G4 filter[4]; an F7 pollen filter[5] or activated carbon filter[6] is also optionally available. The heat exchanger requires a G4 filter[4] on the extract air side. Simple filter maintenance possible 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 W, 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 – through a home network or on the go via the internet. Range of functions see p. 14 f. Helios easyControls is prepared for:
– Manual control elements (KWL-BE, -BEC, accessories).
– Air quality sensors for extended, demand-controlled ventilation (KWL-CO_2, -FTF, -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, approx. 2 m 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 360 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 temperature < +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 CO_2-, VOC- and humidity parameters.
– Indication of e.g. filter replacement, 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.

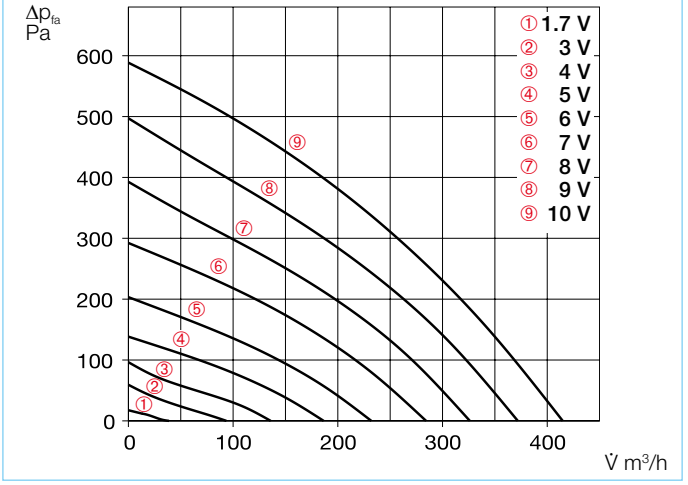
☐ **Room sensors**
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

☐ **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.

KWL EC 360 W

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	54	43	50	48	40	35	26	21
L_{WA}	Supply air	dB(A)	64	52	61	57	53	49	36	26
L_{PA}	Radiation	dB(A)	39	24	36	35	27	28	22	14



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 **Type**	Ref. No.	With enthalpy heat exchanger **Type**	Ref. No.
	KWL EC 360 W	07349	**KWL EC 360 W ET**	07348
Flow rate at level[1) 2)] Supply air/extract air V̇ m³/h	❾ ... ❶ 410 ... n/a		❾ ... ❶ 410 ... n/a	
Noise dB(A)[3)]				
Supply air L_{WA} (sound power)	64 ... n/a		64 ... n/a	
Extract air L_{WA} (sound power)	54 ... n/a		54 ... n/a	
Radiation L_{PA} at 1 m	39 ... n/a		39 ... n/a	
Power consumption fans 2xW[1)]	58		58	
Voltage/Frequency	1~, 230 V, 50 Hz			
Rated current A – Ventilation	0.5			
– Preheating	6.3			
– max. total	0.5 (6.8 incl. pre-heater, accessories)			
Electric preheater kW	1.5 kW (accessories)			
Summer bypass	automatic (adjustable), with heat exchanger cover			
Wiring diagram no.	1042			
Temperature operating range	–20 °C to +45 °C			
Installation temperature	+5 °C to +45 °C (90% rel. humidity, non-condensing)			
Weight approx. kg	72		70	

[1)] At 0 Pa, performance levels adjustable. [2)] Volume reduction of approx. 10% when using pollen filter.
[3)] At 100 Pa, noise data increases with increasing system pressure. [4)] G4 = ISO coarse 65%. [5)] F7 = ISO ePM1 50%. [6)] AK = ISO ePM2.5 60%.

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-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, 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

Electric preheater
KWL-EVH 360 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.

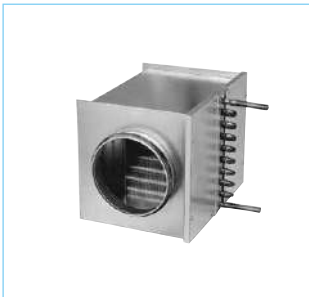
Extension module
Type KWL-EM Ref. No. 04269
For controlling external shutters and/or post-heating elements. Includes temp. sensor KWL-LTK and control line KWL-SL 4/3.
Dim. mm (WxHxD) 210x210x100

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 (2 pcs. required.) No. 09644
Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Alternative:
Air temperature control
WHST 300 T38 Ref. No. 08817

Replacement air filter
– 2 pcs. G4 filter[4)]
ELF-KWL 360/4/4 No. 07371
– 1 pc. F7 filter[5)]
ELF-KWL 360/7 No. 07375
– 1 pc. activated carbon filter[6)]
ELF-KWL 360 AK No. 08129

A+ required for efficiency class A+



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

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

Compact passive house unit with heat recovery and constant volume flow control. Air flow rates up to approx. 370 m³/h

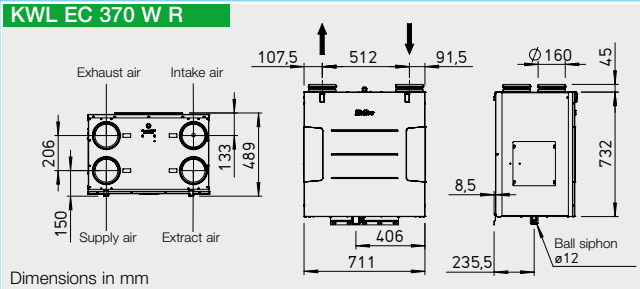
KWL EC 370 W

Efficiency class

A

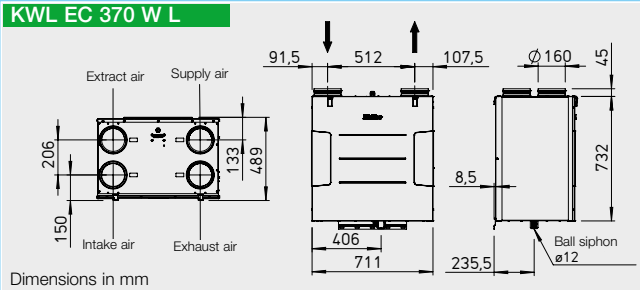
KWL EC 370 W R/L and 370 W ET R/L

KWL EC 370 W R



Dimensions in mm

KWL EC 370 W L



Dimensions in mm

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 removeable front panels.

■ Heat exchanger
■ Condensate connection
■ Summer operation
See description on page 18.

■ 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 filter [3], an F7 pollen filter [4] (generally required for passive houses) is also optionally available.
The heat exchanger requires a G4 filter [3] on the extract air side. A G4 bypass filter [3] is included as standard, optional F7 [4].

■ 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 filter [5] must be installed upstream of the preheating element (LFBR 160 G4 [5], 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 14 for functionality.
Helios easyControls is prepared for:
- Manual control elements (KWL-BE, KWL-BEC, accessories).
- Air quality sensors for extended, demand-controlled ventilation (KWL-CO_2, 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 370 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 CO_2, VOC and humidity parameters.
- Indication of e.g. filter replacement, 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, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

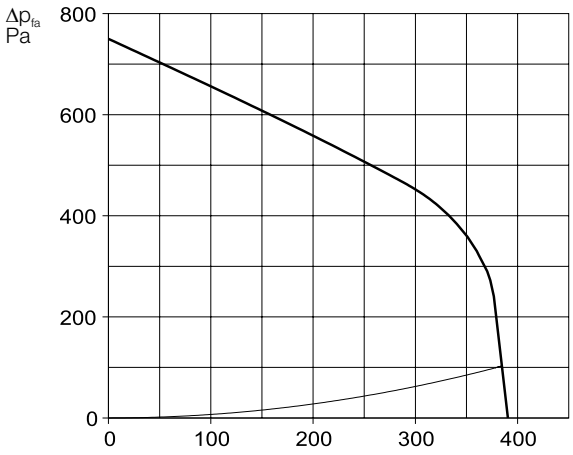
□ Extension module
For the connection of accessories such as shutters, ground heat exchangers for intake air preheating or post-heating (optional warm water or electric heating element with max. 2.6 kW, 230 V, 50 Hz).

□ 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 14
Moisture recovery through enthalpy heat exchangers	Page 13

KWL EC 370 W

Frequency*		Hz	Tot.	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}	Radiation	dB(A)	51	43	44	44	44	43	39	34



* 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 **Type**		Ref. No.	With enthalpy heat exchanger **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
Flow rate at level [1]	❸	❷	❶	❸	❷	❶
Supply air/extract air V̇ m³/h	350	200	140	350	200	140
Noise dB(A) [2]						
Supply air L_{WA} (sound power)	71	58	52	71	58	52
Extract air L_{WA} (sound power)	56	44	37	56	44	37
Radiation L_{PA} at 1 m	51	41	34	51	41	34
Power consumption fans 2xW [1]	111	25	14	111	25	14
Voltage/Frequency	1~, 230 V, 50 Hz					
Rated current A – Ventilation	2.2					
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	52					

[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.

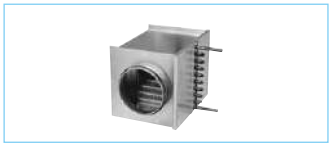
Room sensor
Type KWL-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. Max. 8 pcs. can be connected, control according to highest measured value. Includes control line KWL-SL 4/3 (3 m long), see Accessories for other lengths (SL 4/..).
Dim. mm (W x H x D) 95 x 97 x 30

Electric preheating element
EHR-R 1.2/160 Ref. No. 09434
LFBR 160 G4 [5] 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 filter [5] must be fitted upstream (LFBR 160 G4 [5]).

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 (2 pcs. required) No. 09644
Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Alternative:
Air temperature control
WHST 300 T38 Ref. No. 08817



Other accessories	**Page**
KWL® peripherals	50 ff.
– Ground heat exchanger	72 ff.
– Insulated duct system	60 f.
– Air distribution systems	62 ff.
– Control lines, etc.	66 f.
Heating element, control	
Ventilation grilles, ducts, roof outlets	
Extract air elements, Design ventilation valves	

Reference
Enthalpy heat exchanger (accessories) for retrofitting:
Type KWL-ET 370 No. 05912

Replacement air filter
– 2 pcs. G4 filter [3]
ELF-KWL 370/4/4 No. 09613
– 1 pc. F7 filter [4]
ELF-KWL 370/7 No. 09614
– 2 pcs. G4 filter [3] **for bypass**
ELF-KWL 370/4/4 BP No. 09617
– 1 pc. F7 filter [4] **for bypass**
ELF-KWL 370/7 BP No. 09618

Compact wall units with heat recovery
Air flow rates up to approx. 500 m³/h

KWL EC 500 W

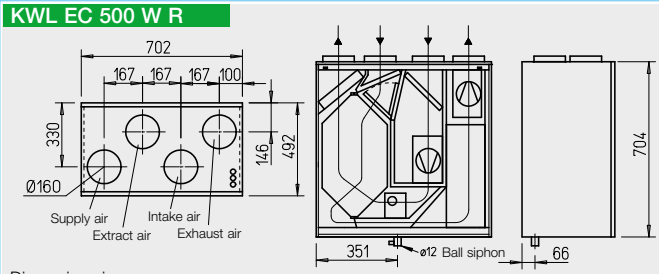
KWL EC 500 W R with accessory (Pollen filter, KWL-EVH 500 W)

Efficiency class

A

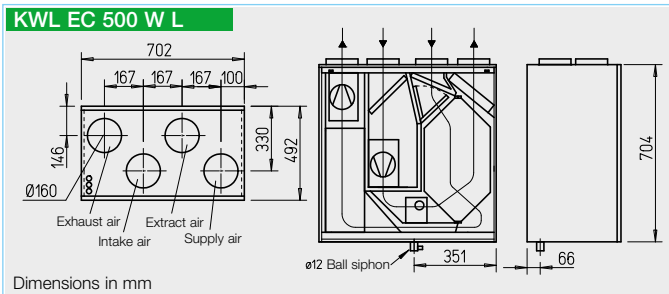
KWL EC 500 W R/L and 500 W ET R/L

KWL EC 500 W R



Dimensions in mm

KWL EC 500 W L



Dimensions in mm

Compact unit with heat recovery for the central supply and extract ventilation of residential buildings and apartments. 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.

■ **Casing**
Made of galvanised steel sheet, powder-coated in white, double-walled, with 12 mm heat and sound insulation on all sides. Installation-friendly and maintenance-friendly. All elements are easily accessible through removeable front panels.

■ **Heat exchanger**
☐ Large cross counterflow heat exchanger made of plastic, heat recovery efficiency of up to 90 %.
☐ Types "ET" are equipped with highly efficient enthalpy heat exchangers for additional moisture recovery.

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

■ **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 intake air supply via G4 filter[4]; an F7 pollen filter[5] or activated carbon filter[6] is also optionally available. The heat exchanger requires a G4 filter[4] on the extract air side.

■ **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 500 W, 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 14 for functionality. Helios easyControls is prepared for:
– Manual control elements (KWL-BE, KWL-BEC, accessories).
– Air quality sensors for extended, demand-controlled ventilation (KWL-CO_2, 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 500 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 temperature < +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 CO_2, VOC and humidity parameters.
– Indication of e.g. filter replacement, 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, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

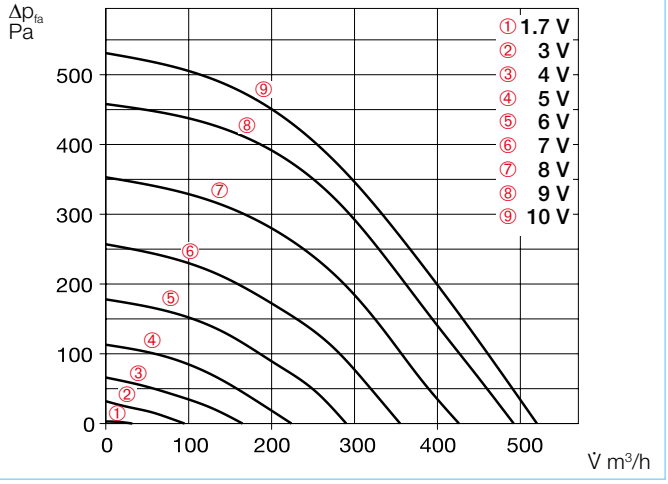
☐ **Extension module**
For the connection of accessories such as shutters, ground heat exchangers for intake air preheating or post-heating (optional warm water or electric heating element with max. 2.6 kW, 230 V, 50 Hz).

☐ **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 14
Moisture recovery through enthalpy heat exchangers	Page 13

KWL EC 500 W

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	54	44	45	39	41	40	33	26
L_{WA}	Supply air	dB(A)	56	49	44	46	40	43	33	20
L_{PA}	Radiation	dB(A)	47	40	47	44	43	41	37	26



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 Type	Ref. No.	With enthalpy heat exchanger Type	Ref. No.
Right-hand version	**KWL EC 500 W R**	04258	**KWL EC 500 W ET R**	04259
Left-hand version	**KWL EC 500 W L**	04260	**KWL EC 500 W ET L**	04261
Flow rate at level [1) 2)]	❾ ❼ ❺ ❸ ❶		❾ ❼ ❺ ❸ ❶	
Supply air/extract air V̇ m³/h	500 430 290 170 32		500 430 290 170 32	
Noise dB(A) [3)]				
Supply air L_{WA} (sound power)	56 52 44 33 27		56 52 44 33 27	
Extract air L_{WA} (sound power)	54 50 42 32 28		54 50 42 32 28	
Radiation L_{PA} at 1 m	47 43 36 26 < 25		47 43 36 26 < 25	
Power consumption fans 2xW [1)]	172 114 46 17 7		172 114 46 17 7	
Voltage/Frequency	1~, 230 V, 50 Hz			
Rated current A – Ventilation	2.5			
– Preheating	4.4			
– max. total	2.5 (6,9 incl. preheater, accessories)			
Electric preheater kW	1.0 kW (accessories)			
Summer bypass	automatic (adjustable), with heat exchanger cover			
Wiring diagram no.	1045			
Temperature operating range	– 20 °C to + 40 °C			
Installation temperature	+ 5 °C to + 45 °C (90 % rel. humidity, non-condensing)			
Weight approx. kg	58		66	

1) At 0 Pa, performance levels adjustable. 2) Volume reduction of approx. 10 % when using pollen filter. 3) At 100 Pa, noise data increases with increasing system pressure.
4) G4 = ISO coarse 75%. 5) F7 = ISO ePM1 50%. 6) AK = ISO ePM2.5 60%. 7) For a duct diameter of 160 mm. 8) For a duct diameter of 180 mm.

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-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, 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

Electric preheater
KWL-EVH 500 W No. 04262
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
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 (2 pcs. required) No. 09644

Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Alternative:

Air temperature control
WHST 300 T38 Ref. No. 08817

Replacement air filter
– 2 pcs. G4 filter [4)]
ELF-KWL 500/4/4 No. 00039
– 1 pc. F7 filter [5)]
ELF-KWL 500/7 No. 00042
– 1 pc. activated carbon filter [6)]
ELF-KWL 500 AK No. 04199

Reference
Enthalpy heat exchanger (accessories) for retrofitting:
Type KWL-ET 500 No. 00897

Duct connector
Connector with seal for unit connection to duct system.
RVBD 160 K [7)] No. 03415
RVBD 180/160 [8)] No. 09589

Other accessories

KWL EC 220 D

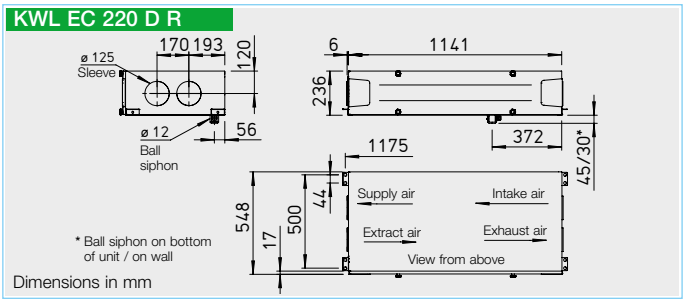
Efficiency class

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

A KWL EC 220 D R/L

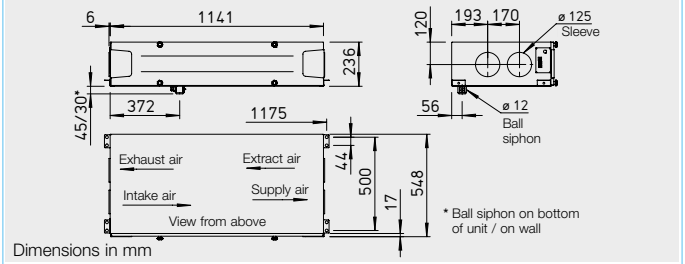
easyControls by Helios

KWL EC 220 D R



Dimensions in mm

KWL EC 220 D L



Dimensions in mm

ZERTIFIZIERTE KOMPONENTE Passivhaus Institut

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, 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 removeable 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 removeable 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 intake air supply via G4 filter [4]; an F7 pollen filter [5] or activated carbon filter [6] is also optionally available. The heat exchanger requires a G4 filter [4] on the extract air side.

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).

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 14 for functionality.
Helios easyControls is prepared for:
- Manual control elements (KWL-BE, KWL-BEC, accessories).
- Air quality sensors for extended, demand-controlled ventilation (KWL-CO_2, 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 220 D can be expanded with these 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 CO_2, VOC and humidity parameters.
- Indication of e.g. filter replacement, 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, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

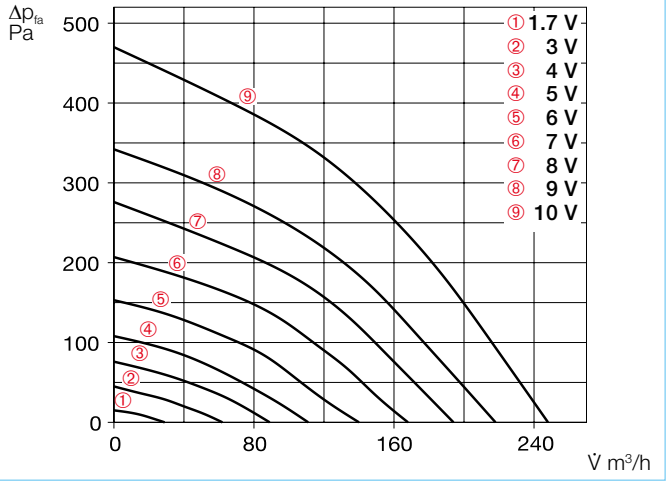
☐ **Extension module**
For the connection of accessories such as shutters, ground heat exchangers for intake air preheating or post-heating (optional warm water or electric heating element with max. 2.6 kW, 230 V, 50 Hz).

☐ **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 temp. control (WHST 300 T38, accessories) is also possible, independently of Helios easyControls.

☐ **Reference**
Helios easyControls The innovative KWL®-control concept Page 14

KWL EC 220 D

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	56	29	42	50	42	37	26	16
L_{WA}	Supply air	dB(A)	77	46	55	72	67	62	57	44
L_{PA}	Radiation	dB(A)	58	32	51	59	54	47	40	28



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

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-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, 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+

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
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 1.2/125 Ref.No. 09433

Duct temperature sensor
KWL-LTK (1 pc. required) No. 09644

Warm water post-heat. element
For additional supply air heating.
Type WHR 125 Ref. No. 09480

Duct temperature sensor
KWL-LTK (2 pcs.required) No. 09644

Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Alternative:

Air temperature control
WHST 300 T38 Ref. No. 08817

Technical data	KWL EC 220 D R/L	For ceiling installation			
Right-hand version	**KWL EC 220 D R**	Ref. No. 04226			
Left-hand version	**KWL EC 220 D L**	Ref. No. 04227			
Flow rate at level [1) 2)]	❾	❼	❺	❸	❶
Supply air/Extract air V̇ m³/h	245	190	140	90	30
Noise dB(A) [3)]					
Supply air L_{WA} (sound power)	77	69	61	51	33
Extract air L_{WA} (sound power)	56	50	43	36	28
Radiation L_{PA} at 1 m	58	53	45	35	< 25
Power consumption fans 2xW[1)]	50	28	16	9	5
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.	1043				
Temperature operating range	– 20 °C to + 40 °C				
Installation temperature	+ 5 °C to + 45 °C (90 % rel. humidity, non-condensing)				
Weight approx. kg	47				

1) At 0 Pa, performance levels adjustable. 2) Volume reduction of approx. 10 % when using pollen filter.
3) At 100 Pa, noise data increases with increasing system pressure. 4) G4 = ISO coarse 75%. 5) F7 = ISO ePM1 50%. 6) AK = ISO ePM2.5 60%.

Replacement air filter
– 2 pcs. G4 filter [4)]
ELF-KWL 220 D/4/4 No. 09638
– 1 pc. F7 filter [5)]
ELF-KWL 220 D/7 No. 09639
– 1 pc. activated carbon filter [6)]
ELF-KWL 220 AK No. 03050

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

Other accessories

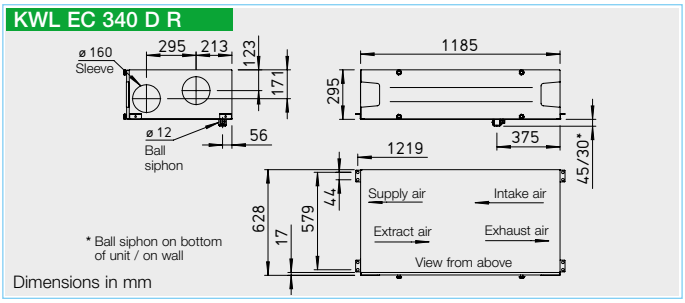
KWL EC 340 D

Efficiency class

A+ KWL EC 340 D R/L with additional room sensor

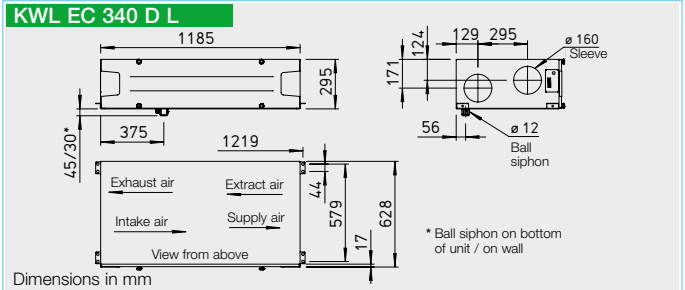
A KWL EC 340 D R/L

KWL EC 340 D R



Dimensions in mm

KWL EC 340 D L



Dimensions in mm

Ultra-flat ceiling units with heat recovery for the central supply and extract ventilation of apartments and small single family houses. Equipped with Helios easyControls, 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 removeable 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 removeable for cleaning, if required.

■ 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 intake air supply via G4 filter [4]; an F7 pollen filter [5] or activated carbon filter [6] is also optionally available. The heat exchanger requires a G4 filter [4] on the extract air side.

■ 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 340 D, 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 14 for functionality.
Helios easyControls is prepared for:
- Manual control elements (KWL-BE, KWL-BEC, accessories).
- Air quality sensors for extended, demand-controlled ventilation (KWL-CO_2, 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 340 D can be expanded with these 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 temperature < +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 CO_2, VOC and humidity parameters.
- Indication of e.g. filter replacement, 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, CO_2 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).

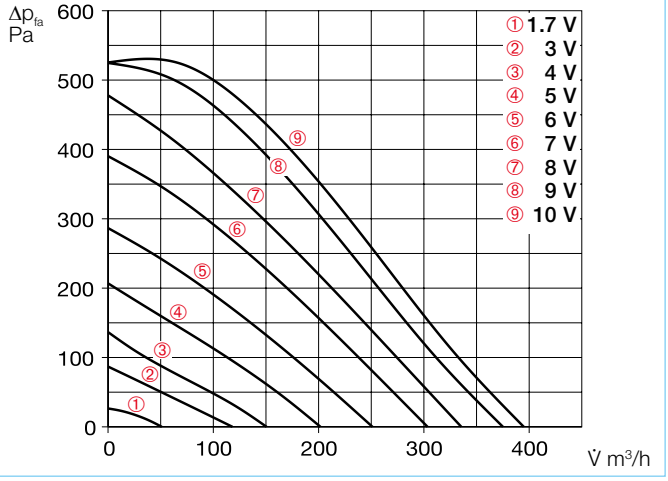
□ Post-heating
Depending on performance, Helios easyControls can control an electric (EHR with KWL-LTK, accessories) or warm water post-heating element (WHR with WHSH and KWL-LTK, accessories) via an extension module (KWL-EM, accessories). Temperature profiles can be adjusted in the weekly programme.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

□ Reference

Helios easyControls The innovative KWL®-control concept Page 14

KWL EC 340 D

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	63	43	56	62	53	49	34	19
L_{WA}	Supply air	dB(A)	83	57	72	82	74	68	57	44
L_{PA}	Radiation	dB(A)	59	36	47	56	51	42	28	20



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

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-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, 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+

Electric preheater
KWL-EVH 340 D No. 04241
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: 1280 W.

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 (2 pcs. requir.) No. 09644

Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Alternative:

Air temperature control
WHST 300 T38 Ref. No. 08817

Technical data	KWL EC 340 D R/L	For ceiling installation			
Right-hand version	**KWL EC 340 D R**	Ref. no. 04237			
Left-hand version	**KWL EC 340 D L**	Ref. no. 04238			
Flow rate at level [1) 2)]	❾	❼	❺	❸	❶
Supply air/Extract air V̇ m³/h	390	325	240	150	60
Noise dB(A) [3)]					
Supply air L_{WA} (sound power)	83	77	67	55	31
Extract air L_{WA} (sound power)	63	58	53	41	< 25
Radiation L_{PA} at 1 m	59	55	48	38	< 25
Power consumption fans 2xW [1)]	93	55	28	13	6
Voltage/Frequency	1~, 230 V, 50 Hz				
Rated current A – Ventilation	1.2				
– Preheating	5.6				
– max. total	1.2 (6.8 incl. preheater, accessories)				
Electric preheater kW	1.3 kW (accessories)				
Summer bypass	automatic (adjustable), with heat exchanger cover				
Wiring diagram no.	1043				
Temperature operating range	– 20 °C to + 40 °C				
Installation temperature	+ 5 °C to + 45 °C (90 % rel. humidity, non-condensing)				
Weight approx. kg	77				

1) At 0 Pa, performance levels adjustable. 2) Volume reduction of approx. 10 % when using pollen filter.
3) At 100 Pa, noise data increases with increasing system pressure. 4) G4 = ISO coarse 75%. 5) F7 = ISO ePM1 50%. 6) AK = ISO ePM2.5 60%.

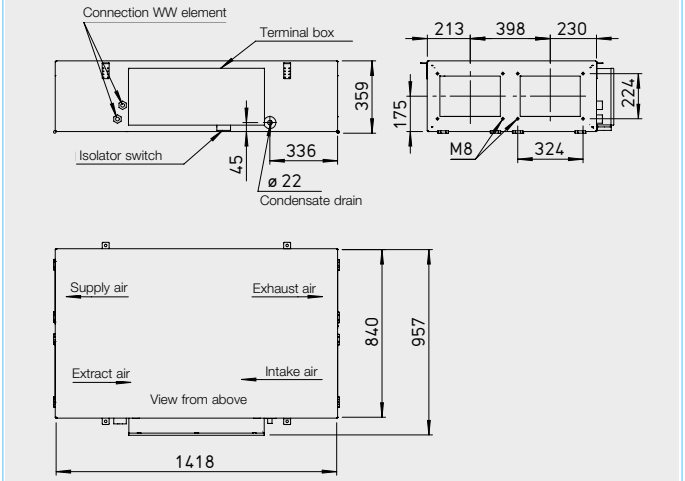
Replacement air filter
– 2 pcs. G4 filter [4)]
ELF-KWL 340 D/4/4 No. 04239
– 1 pc. F7 filter [5)]
ELF-KWL 340 D/7 No. 04240
– 1 pc. activated carbon filter [6)]
ELF-KWL 340 AK No. 03051

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

Other accessories

KWL EC 700 D

KWL EC 700 D



Dimensions in mm

ZERTIFIZIERTE KOMPONENTE
Passivhaus Institut

Ultra-flat ventilation units with heat recovery for compact and space-saving ceiling installation.
With a wide range of residential, commercial and industrial applications. Independently certified hygiene properties and energy efficiency according to VDI 6022 and the passive house standard. Unit construction and unit components fulfil the general hygiene requirements according to VDI 6022.
Available in various comfort and equipment variants.

Casing
Double-walled, made of galvanised steel sheet, with 30 mm heat and sound insulation on all sides. The inspection openings for filter replacement are accessible at the bottom of the unit without tools.
Ceiling installation via vibration-damping fastening elements included in the delivery.

Heat exchanger
Large cross counterflow heat exchanger made of aluminium with heat recovery efficiency of up to 90 %. Dismantling possible in just a few simple steps.

Fans
Two low-noise high-performance EC fans with backward-curved impellers guarantee maximum energy efficiency. The special control technology enables constant volume control or constant pressure control.

Ducts
Installation-friendly connection of intake, exhaust, extract and supply air through pipe or duct system NW 250 mm.

Condensate connection
A separate condensate tray below the heat exchanger facilitates maintenance work on the unit. Drain connectors on the side next to the terminal box. Ball siphon included in delivery. On-site connection to drain pipe.

Air filter
Standard equipment:
Clean intake air supply via F7 filter[4]. The heat exchanger requires a M5 filter[3] on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

Summer operation
Standard equipment with automatic bypass function for maximum comfort.

Heat exchanger anti-icing protection
An electric preheating element heats the intake air at very low outdoor temperatures. Thus, it prevents the heat exchanger from icing up and guarantees its safe functioning and optimal heat recovery during the entire heating period.

Power control
The comfort control element with graphic display and user-friendly menu navigation, which is included in the delivery, enables the following functions:
- Control directly via touchscreen.
- Freely definable operating points within the entire range of the characteristic curve.
- Selection between constant volume control or constant pressure control.
- Demand-oriented ventilation using CO_2, VOC (mixed gas) or humidity sensor.
- Initial commissioning (automatic determination of the system characteristic curve).
- Control of external shutters.
- Connection of a fire alarm contact.
- Weekly or daily programme.
- Pressure monitoring of filter contamination.
- Indication of necessary filter replacement, operating status, error messages.
- Different access levels. The ventilation unit is alternatively controllable via ModBus (RS 485, TCP / IP).

Electrical connection
Easily accessible terminal box on the side of the casing.
The isolator/main switch can be controlled from below the unit for maintenance work and it can be locked with a padlock to prevent unauthorised access.

Post-heating
Type KWL EC Pro WW
The integrated warm water heating element guarantees the convenient and energy-efficient post-heating of supply air. The setpoint temperature is simply set in the control element.
The hydraulic unit (Type WHSH HE 24 V (0-10 V), accessories) is recommended for controlling the warm water heat exchanger.

Reference
The ventilation unit design according to VDI 6022 requires the use of VDI 6022-compliant air filters.
The use of original replacement air filters is therefore mandatory.

Replacement air filter
– 1 pc. M5 filter[3]
ELF-KWL 700 D/5 VDI No. 04189
– 1 pc. F7 filter[4]
ELF-KWL 700 D/7 VDI No. 04191

Other accessories	Page
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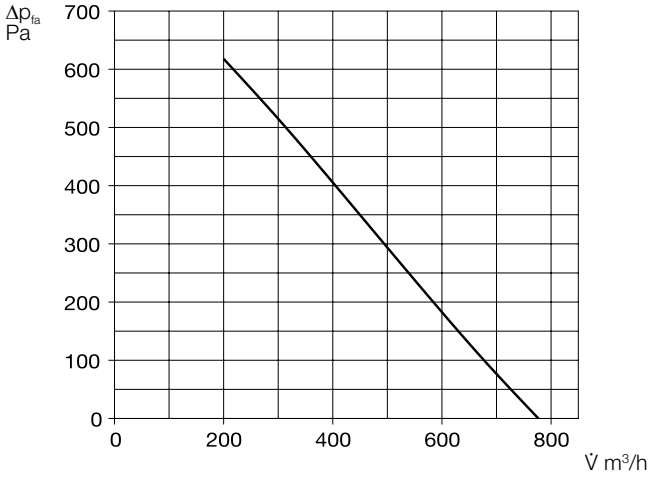
Accessory details
Ventilation grilles, ducts, fittings,
roof outlets
Extract air elements

KWL EC 700 D

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	53	46	49	47	41	40	34	23
L_{WA}	Supply air	dB(A)	68	54	65	63	59	53	48	39
L_{PA}	Radiation	dB(A)	47	26	34	35	35	29	22	8



Included in delivery

Surface comfort control element
User-friendly control via self-explanatory graphic elements with clear text directly on the touchscreen. Control line (10 metres) included in delivery, other lengths available (ALB EC-SK, accessories).
Dim. mm (W x H x D) 115 x 80 x 25

Accessories for Type Pro WW

Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Controls the flow of the PWW heating element using a three-way valve actuator 24 V (0-10 V) and thus the heat output transferred to the air. Delivered as a complete unit, incl. VL-/RL temperature display, circulating pump and flexible connection hoses.

Accessories for all types

Room sensor – Air quality
Type KWL-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity and controlling the ventilation unit according to the set value. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 95 x 97 x 30

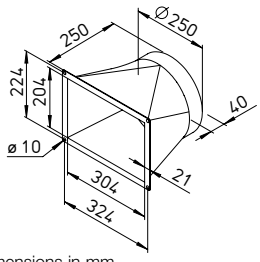
Room sensor – Temperature
Type TFR-ALB/KWL No. 07277
For measuring the room temperature and controlling the ventilation unit according to the set value.
Incl. 20 m control line. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 80 x 80 x 25

Transition piece – Symmetrical
Type KWL-ÜS 700 D No. 04206
From unit flange to round duct systems.

Flexible connecting sleeve
Type FM 250 Ref. No. 01672
For acoustic decoupling, incl. 2 pcs. hose clamps.

Duct shutter, motorised
Type RVM 250 Ref. No. 02576
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position, closing force adjustable corresponding to fan power and installation position.

Angle flange ring
Type FR 250 Ref. No. 01203
Made of galvanised steel sheet, for duct connection.



Dimensions in mm

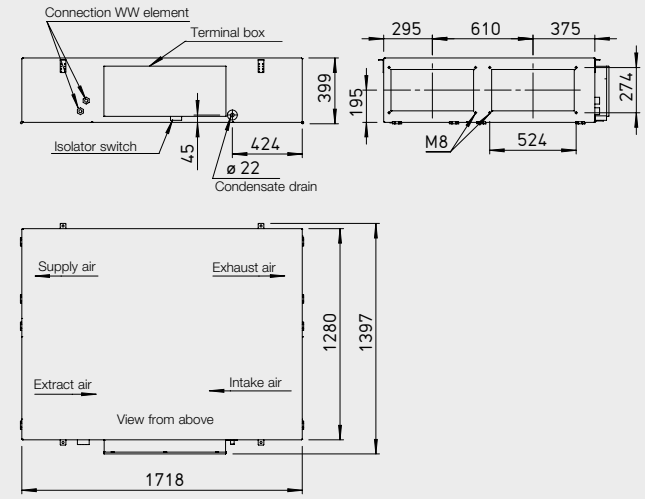
Technical data						
	KWL EC 700 D				**KWL EC 700 D** With warm water post-heater	
	Type			Ref. No.	**Type**	Ref. No.
For ceiling installation	**KWL EC 700 D Pro**			04171	**KWL EC 700 D Pro WW**	04172
Flow rate at level [1]	❸	❷	❶		❸ ❷ ❶	
Supply air/extract air V̇ m³/h approx.	510	330	210		510 330 210	
Noise dB(A) [2]						
Supply air L_{WA} (sound power)	68	64	55		68 64 55	
Extract air L_{WA} (sound power)	53	47	37		53 47 37	
Radiation L_{PA} at 1 m	47	n/a	n/a		47 n/a n/a	
Power consumption fans 2 x W	110	60	38		110 60 38	
Voltage/Frequency	230 V~, 50 Hz				230 V~, 50 Hz	
Rated current A – Ventilation	2.3				2.3	
– Preheating	12.0				12.0	
– max. total	14.3				14.3	
Heat output/Postheater kW	—				2.3 (at 60/40 °C) / 2.1 (at 50/40 °C) / 1.3 (at 40/30 °C)	
Electric preheater kW	2.6				2.6	
Summer bypass	automatic				automatic	
Wiring diagram no.	1370				1370	
Temperature operating range	–20 °C to +40 °C				–20 °C to +40 °C	
Connection PWW heating element	—				IG 1/2"	
Weight approx. kg	110				115	

[1] Values based on operating ranges defined according to PHI (Passive House Institute). [2] At 100 Pa. [3] M5 = ISO ePM10 50%. [4] F7 = ISO ePM1 55%.

Central ventilation units with heat recovery
Ceiling version with air flow rates up to approx. 1400 m³/h

KWL EC 1400 D

KWL EC 1400 D



Dimensions in mm

Ultra-flat ventilation units with heat recovery for compact and space-saving ceiling installation.
With a wide range of residential, commercial and industrial applications. Independently certified hygiene properties and energy efficiency according to VDI 6022 and the passive house standard. Unit construction and unit components fulfil the general hygiene requirements according to VDI 6022.
Available in various comfort and equipment variants.

Casing
Double-walled, made of galvanised steel sheet, with 30 mm heat and sound insulation on all sides. The inspection openings for filter replacement are accessible at the bottom of the unit without tools.
Ceiling installation via vibration-damping fastening elements included in the delivery.

Heat exchanger
Large cross counterflow heat exchanger made of aluminium with heat recovery efficiency of up to 90 %. Dismantling possible in just a few simple steps.

Fans
Two low-noise high-performance EC fans with backward-curved impellers guarantee maximum energy efficiency. The special control technology enables constant volume control or constant pressure control.

Ducts
Installation-friendly connection of intake, exhaust, extract and supply air through pipe or duct system NW 315 mm.

Condensate connection
A separate condensate tray below the heat exchanger facilitates maintenance work on the unit. Drain connectors on the side next to the terminal box. Ball siphon included in delivery. On-site connection to drain pipe.

Air filter
Standard equipment:
Clean intake air supply via F7 filter [4]. The heat exchanger requires a M5 filter [3] on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

Summer operation
Standard equipment with automatic bypass function for maximum comfort.

Heat exchanger anti-icing protection
An electric preheating element heats the intake air at very low outdoor temperatures. Thus, it prevents the heat exchanger from icing up and guarantees its safe functioning and optimal heat recovery during the entire heating period.

Power control
The comfort control element with graphic display and user-friendly menu navigation, which is included in the delivery, enables the following functions:
- Control directly via touchscreen.
- Freely definable operating points within the entire range of the characteristic curve.
- Selection between constant volume control or constant pressure control.
- Demand-oriented ventilation using CO_2, VOC (mixed gas) or humidity sensor.
- Initial commissioning (automatic determination of the system characteristic curve).
- Control of external shutters.
- Connection of a fire alarm contact.
- Weekly or daily programme.
- Pressure monitoring of filter contamination.
- Indication of necessary filter replacement, operating status, error messages.
- Different access levels. The ventilation unit is alternatively controllable via ModBus (RS 485, TCP / IP).

Electrical connection
Easily accessible terminal box on the side of the casing.
The isolator/main switch can be controlled from below the unit for maintenance work and it can be locked with a padlock to prevent unauthorised access.

Post-heating
Type KWL EC Pro WW
The integrated warm water heating element guarantees the convenient and energy-efficient post-heating of supply air. The setpoint temperature is simply set in the control element.
The hydraulic unit (Type WHSH HE 24 V (0-10 V), accessories) is recommended for controlling the warm water heat exchanger.

Reference
The ventilation unit design according to VDI 6022 requires the use of VDI 6022-compliant air filters.
The use of original replacement air filters is therefore mandatory.

Replacement air filter
– 1 pc. M5 filter [3]
ELF-KWL 1400 D/5 VDI No. 04193
– 1 pc. F7 filter [4]
ELF-KWL 1400 D/7 VDI No. 04195

Other accessories

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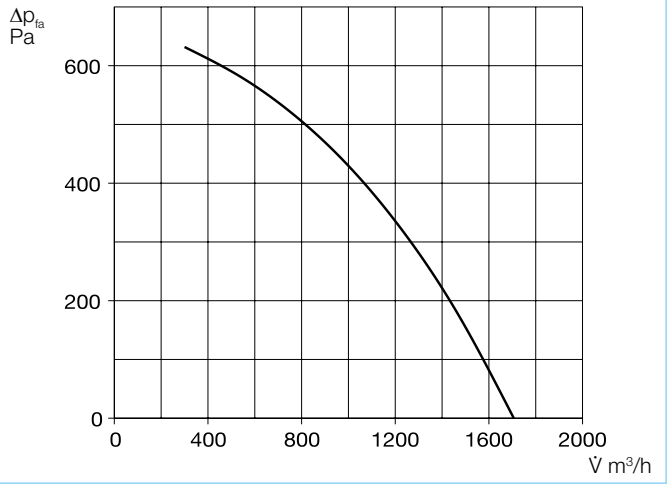
Accessory details
Ventilation grilles, ducts, fittings,
roof outlets
Extract air elements

KWL EC 1400 D

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	60	51	53	53	50	51	49	45
L_{WA}	Supply air	dB(A)	80	63	68	71	71	75	71	70
L_{PA}	Radiation	dB(A)	53	34	43	40	41	38	26	15



Included in delivery

Surface comfort control element
User-friendly control via self-explanatory graphic elements with clear text directly on the touchscreen. Control line (10 metres) included in delivery, other lengths available (ALB EC-SK, accessories).
Dim. mm (W x H x D) 115 x 80 x 25

Accessories for Type Pro WW Hydraulic unit

WHSH HE 24 V (0-10 V) No. 08318
Controls the flow of the PWW heating element using a three-way valve actuator 24 V (0-10 V) and thus the heat output transferred to the air. Delivered as a complete unit, incl. VL-/RL temperature display, circulating pump and flexible connection hoses.

Accessories for all types

Room sensor – Air quality
Type KWL-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity and controlling the ventilation unit according to the set value. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 95 x 97 x 30

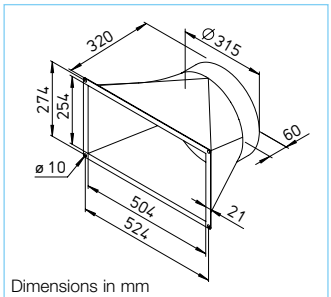
Room sensor – Temperature
Type TFR-ALB/KWL No. 07277
For measuring the room temperature and controlling the ventilation unit according to the set value.
Incl. 20 m control line. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 80 x 80 x 25

Transition piece – Symmetrical
Type KWL-ÜS 1400 D No. 04207
From unit flange to round duct systems.

Flexible connecting sleeve
Type FM 315 Ref. No. 01674
For acoustic decoupling, incl. 2 pcs. hose clamps.

Duct shutter, motorised
Type RVM 315 Ref. No. 02578
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position, closing force adjustable corresponding to fan power and installation position.

Angle flange ring
Type FR 315 Ref. No. 01204
Made of galvanised steel sheet, for duct connection.



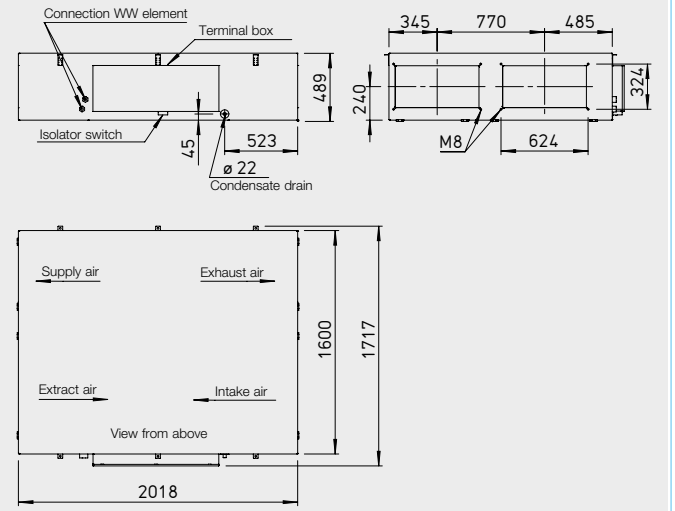
Dimensions in mm

Technical data					
	KWL EC 1400 D			**KWL EC 1400 D** With warm water postheater	
	Type		Ref. No.	**Type**	Ref. No.
For ceiling installation	**KWL EC 1400 D Pro**		04173	**KWL EC 1400 D Pro WW**	04174
Flow rate at level [1]	❸	❷	❶	❸	❷ ❶
Supply air/extract air V̇ m³/h approx.	1000	650	400	1000	650 400
Noise dB(A) [2]					
Supply air L_{WA} (sound power)	80	71	60	80	71 60
Extract air L_{WA} (sound power)	60	51	39	60	51 39
Radiation L_{PA} at 1 m	53	n/a	n/a	53	n/a n/a
Power consumption fans 2 x W	225	140	80	225	140 80
Voltage/Frequency	3N~, 400 V, 50 Hz			3N~, 400 V, 50 Hz	
Rated current A – Ventilation	6.0 / – / –			6.0 / – / –	
– Preheating	– / 11.4 / 11.4			– / 11.4 / 11.4	
– max. total	6.0 / 11.4 / 11.4			6.0 / 11.4 / 11.4	
Heat output/Postheater kW	—			4.7 (at 60/40 °C) / 4.2 (at 50/40 °C) / 2.7 (at 40/30 °C)	
Electric preheater kW	4.1			4.1	
Summer bypass	automatic			automatic	
Wiring diagram no.	1370			1370	
Temperature operating range	– 20 °C to + 40 °C			– 20 °C to + 40 °C	
Connection PWW heating element	—			IG 1/2"	
Weight approx. kg	185			190	

[1] Values based on operating ranges defined according to PHI (Passive House Institute). [2] At 215 Pa. [3] M5 = ISO ePM10 50%. [4] F7 = ISO ePM1 55%.

KWL EC 2000 D

KWL EC 2000 D



Dimensions in mm

Ultra-flat ventilation units with heat recovery for compact and space-saving ceiling installation.
With a wide range of residential, commercial and industrial applications. Independently certified hygiene properties and energy efficiency according to VDI 6022 and the passive house standard. Unit construction and unit components fulfil the general hygiene requirements according to VDI 6022.
Available in various comfort and equipment variants.

Casing
Double-walled, made of galvanised steel sheet, with 30 mm heat and sound insulation on all sides. The inspection openings for filter replacement are accessible at the bottom of the unit without tools.
Ceiling installation via vibration-damping fastening elements included in the delivery.

Heat exchanger
Large cross counterflow heat exchanger made of aluminium with heat recovery efficiency of up to 90 %. Dismantling possible in just a few simple steps.

Fans
Two low-noise high-performance EC fans with backward-curved impellers guarantee maximum energy efficiency. The special control technology enables constant volume control or constant pressure control.

Ducts
Installation-friendly connection of intake, exhaust, extract and supply air through pipe or duct system NW 400 mm.

Condensate connection
A separate condensate tray below the heat exchanger facilitates maintenance work on the unit. Drain connectors on the side next to the terminal box. Ball siphon included in delivery. On-site connection to drain pipe.

Air filter
Standard equipment:
Clean intake air supply via F7 filter [4]. The heat exchanger requires a M5 filter [3] on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

Summer operation
Standard equipment with automatic bypass function for maximum comfort.

Heat exchanger anti-icing protection
An electric preheating element heats the intake air at very low outdoor temperatures. Thus, it prevents the heat exchanger from icing up and guarantees its safe functioning and optimal heat recovery during the entire heating period.

Power control
The comfort control element with graphic display and user-friendly menu navigation, which is included in the delivery, enables the following functions:
- Control directly via touchscreen.
- Freely definable operating points within the entire range of the characteristic curve.
- Selection between constant volume control or constant pressure control.
- Demand-oriented ventilation using CO_2, VOC (mixed gas) or humidity sensor.
- Initial commissioning (automatic determination of the system characteristic curve).
- Control of external shutters.
- Connection of a fire alarm contact.
- Weekly or daily programme.
- Pressure monitoring of filter contamination.
- Indication of necessary filter replacement, operating status, error messages.
- Different access levels. The ventilation unit is alternatively controllable via ModBus (RS 485, TCP / IP).

Electrical connection
Easily accessible terminal box on the side of the casing.
The isolator/main switch can be controlled from below the unit for maintenance work and it can be locked with a padlock to prevent unauthorised access.

Post-heating
Type KWL EC Pro WW
The integrated warm water heating element guarantees the convenient and energy-efficient post-heating of supply air. The setpoint temperature is simply set in the control element.
The hydraulic unit (Type WHSH HE 24 V (0-10 V), accessories) is recommended for controlling the warm water heat exchanger.

Reference
The ventilation unit design according to VDI 6022 requires the use of VDI 6022-compliant air filters.
The use of original replacement air filters is therefore mandatory.

Replacement air filter
– 1 pc. M5 filter [3]
ELF-KWL 2000 D/5 VDI No. 04197
– 1 pc. F7 filter [4]
ELF-KWL 2000 D/7 VDI No. 04204

Other accessories

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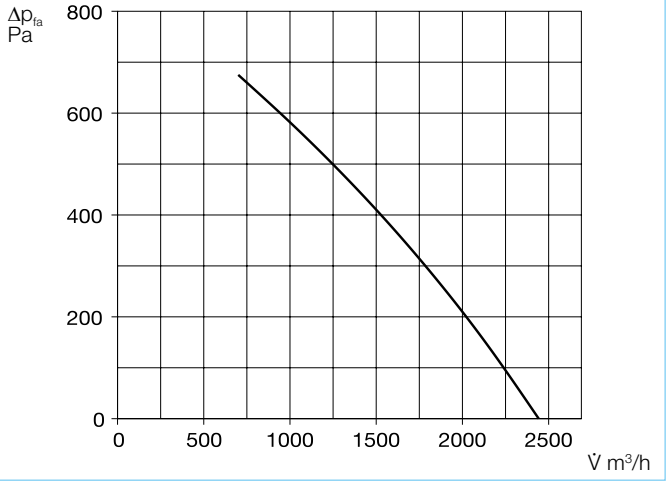
Accessory details
Ventilation grilles, ducts, fittings,
roof outlets
Extract air elements

KWL EC 2000 D

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	59	56	52	48	49	47	45	40
L_{WA}	Supply air	dB(A)	77	66	68	67	72	69	69	64
L_{PA}	Radiation	dB(A)	56	34	36	38	41	42	28	15



Included in delivery

Surface comfort control element
User-friendly control via self-explanatory graphic elements with clear text directly on the touchscreen. Control line (10 metres) included in delivery, other lengths available (ALB EC-SK, accessories).
Dim. mm (W x H x D) 115 x 80 x 25

Accessories for Type Pro WW Hydraulic unit

WHSH HE 24 V (0-10 V) No. 08318
Controls the flow of the PWW heating element using a three-way valve actuator 24 V (0-10 V) and thus the heat output transferred to the air. Delivered as a complete unit, incl. VL-/RL temperature display, circulating pump and flexible connection hoses.

Accessories for all types

Room sensor – Air quality
Type KWL-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity and controlling the ventilation unit according to the set value. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 95 x 97 x 30

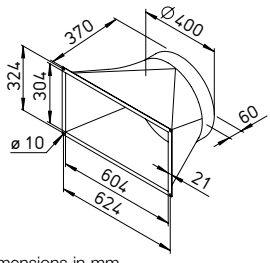
Room sensor – Temperature
Type TFR-ALB/KWL No. 07277
For measuring the room temperature and controlling the ventilation unit according to the set value.
Incl. 20 m control line. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 80 x 80 x 25

Transition piece – Symmetrical
Type KWL-ÜS 2000 D No. 04208
From unit flange to round duct systems.

Flexible connecting sleeve
Type FM 400 Ref. No. 01676
For acoustic decoupling, incl. 2 pcs. hose clamps.

Duct shutter, motorised
Type RVM 400 Ref. No. 02580
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position, closing force adjustable corresponding to fan power and installation position.

Angle flange ring
Type FR 400 Ref. No. 01206
Made of galvanised steel sheet, for duct connection.



Dimensions in mm

Technical data							
	KWL EC 2000 D				**KWL EC 2000 D** With warm water postheater			
	Type			Ref. No.	**Type**			Ref. No.
For ceiling installation	**KWL EC 2000 D Pro**			04175	**KWL EC 2000 D Pro WW**			04176
Flow rate at level [1] Supply air/extract air V̇ m³/h approx.	❸ 1800	❷ 1150	❶ 720		❸ 1800	❷ 1150	❶ 720	
Noise dB(A) [2]								
Supply air L_{WA} (sound power)	77	67	57		77	67	57	
Extract air L_{WA} (sound power)	59	50	40		59	50	40	
Radiation L_{PA} at 1 m	56	n/a	n/a		56	n/a	n/a	
Power consumption fans 2 x W	395	245	150		395	245	150	
Voltage/Frequency	3N~, 400 V, 50 Hz				3N~, 400 V, 50 Hz			
Rated current A – Ventilation	6.0 / – / –				6.0 / – / –			
– Preheating	10.0 / 11.0 / 11.0				10.0 / 11.0 / 11.0			
– max. total	16.0 / 11.0 / 11.0				16.0 / 11.0 / 11.0			
Heat output/Postheater kW	—				8.1 (at 60/40 °C) / 7.3 (at 50/40 °C) / 4.6 (at 40/30 °C)			
Electric preheater kW	6.6				6.6			
Summer bypass	automatic				automatic			
Wiring diagram no.	1370				1370			
Temperature operating range	–20 °C to +40 °C				–20 °C to +40 °C			
Connection PWW heating element	—				IG 1/2"			
Weight approx. kg	265				270			

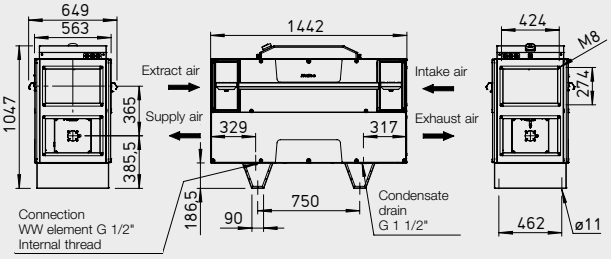
[1] Values based on operating ranges defined according to PHI (Passive House Institute). [2] At 250 Pa. [3] M5 = ISO ePM10 50%. [4] F7 = ISO ePM1 55%.

KWL EC 800 S

KWL EC 800 S with base cover (accessories)

KWL EC 800 S

Dimensions in mm



Central units with heat recovery for compact and space-saving floor installation (floor standing). With a wide range of residential, commercial and industrial applications. Independently certified hygiene properties and energy efficiency according to VDI 6022 and the passive house standard. Unit construction and unit components fulfil the general hygiene requirements according to VDI 6022.
Optionally available with integrated warm water heating element.

Casing
Double-walled, made of galvanised steel sheet, with 30 mm heat and sound insulation on all sides.
Inspection openings for filter replacement fastened to both side panels with screws.
Both side walls can be completely dismantled for free access to all components.
The unit is suitable for floor installation (standing) indoors.
Vibration dampers can be underlaid (on-site) to prevent the direct transmission of vibrations and structure-borne noise to building parts.

Heat exchanger
Large cross counterflow heat exchanger made of aluminium with heat recovery efficiency of up to 90 %. Dismantling possible in just a few simple steps.

Fans
Two low-noise high-performance EC fans with backward-curved impellers guarantee maximum energy efficiency. The special control technology enables constant volume control or constant pressure control.

Ducts
Installation-friendly connection of intake, exhaust, extract and supply air through pipe or duct system NW 250 mm. The floor-standing unit can be rotated 180° for installation so that intake air and exhaust air as well as extract air and supply air connections can be on the left or right sides.

Condensate connection
The unit contains a stainless steel condensate tray with a condensate drain below. Ball siphon included in delivery. On-site connection to drain pipe.

Air filter
Standard equipment:
Clean intake air supply via F7 filter [3]. The heat exchanger requires a M5 filter [2] on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

Summer operation
Standard equipment with automatic bypass function for maximum comfort.

Heat exchanger anti-icing protection
An electric preheating element heats the intake air at very low outdoor temperatures. Thus, it prevents the heat exchanger from icing up and guarantees its safe functioning and optimal heat recovery during the entire heating period.

Power control
The comfort control element with graphic display and user-friendly menu navigation, which is included in the delivery, enables the following functions:
- Control directly via touchscreen.
- Freely definable operating points within the entire range of the characteristic curve.
- Selection between constant volume control or constant pressure control.
- Demand-oriented ventilation using CO_2, VOC (mixed gas) or humidity sensor.
- Building control system via ModBus (RS 485, TCP / IP).
- Initial commissioning (automatic determination of the system characteristic curve).
- Control of external shutters.
- Connection of a fire alarm contact.
- Weekly or daily programme.
- Pressure monitoring of filter contamination.
- Indication of necessary filter replacement, operating status, error messages.
- Different access levels.

Electrical connection
Easily accessible terminal box on top of the casing.
The isolator/main switch can be controlled from below the unit for maintenance work and it can be locked with a padlock to prevent unauthorised access.

Post-heating Type KWL EC Pro WW
The integrated warm water heating element guarantees the convenient and energy-efficient post-heating of supply air. The setpoint temperature is simply set in the control element.
The hydraulic unit (Type WHSH HE 24 V (0-10 V), accessories) is recommended for controlling the warm water heat exchanger.

Reference
The ventilation unit design according to VDI 6022 requires the use of VDI 6022-compliant air filters.
The use of original replacement air filters is therefore mandatory.

Replacement air filter
– 1 pc. M5 filter [2]
ELF-KWL 800 S/5 VDI No. 08256
– 1 pc. F7 filter [3]
ELF-KWL 800 S/7 VDI No. 08257

Other accessories	Page
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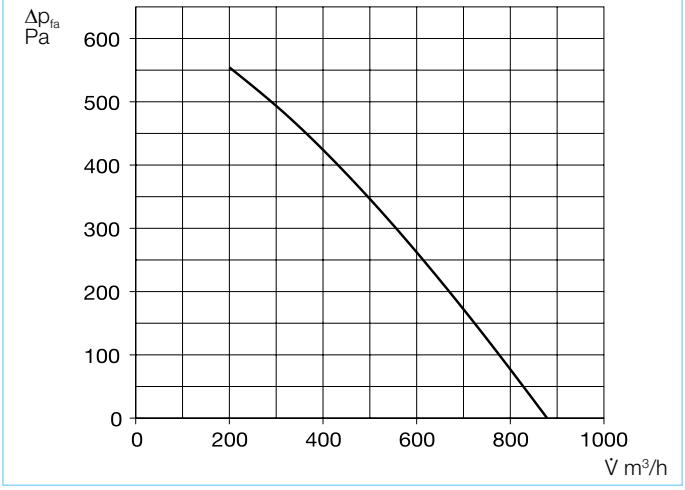
Accessory details
Ventilation grilles, ducts, fittings,
roof outlets
Extract air elements

KWL EC 800 S

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	70	65	68	54	49	43	35	34
L_{WA}	Supply air	dB(A)	78	76	73	67	63	63	55	55
L_{PA}	Radiation	dB(A)	54	50	50	42	42	41	31	25



Included in delivery

Surface comfort control element
User-friendly control via self-explanatory graphic elements with clear text directly on the touchscreen. Control line (10 metres) included in delivery, other lengths available (ALB EC-SK, accessories).
Dim. mm (W x H x D) 115 x 80 x 25

Accessories for Type Pro WW

Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Controls the flow of the PWW heating element using a three-way valve actuator 24 V (0-10 V) and thus the heat output transferred to the air. Delivered as a complete unit, incl. VL-/RL temperature display, circulating pump and flexible connection hoses.

Accessories for all types

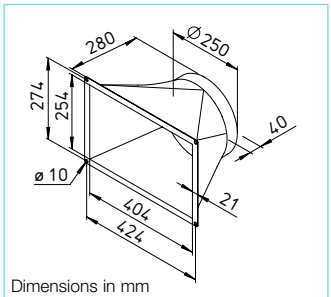
Room sensor – Air quality
Type KWL-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity and controlling the ventilation unit according to the set value. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 95 x 97 x 30

Room sensor – Temperature
Type TFR-ALB/KWL No. 07277
For measuring the room temperature and controlling the ventilation unit according to the set value.
Incl. 20 m control line. Max. total of one sensor can be connected.
Dim. mm (W x H x D) 80 x 80 x 25

Transition piece – Symmetrical
Type KWL-ÜS 800 S No. 08339
From unit flange to round duct systems.

Flexible connecting sleeve
Type FM 250 Ref. No. 01672
For acoustic decoupling, incl. 2 pcs. hose clamps.

Duct shutter, motorised
Type RVM 250 Ref. No. 02576
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position, closing force adjustable corresponding to fan power and installation position.



Dimensions in mm

Angle flange ring
Type FR 250 Ref. No. 01203
Made of galvanised steel sheet, for duct connection.

Base cover
Type KWL-SB 800 S No. 09315
Made of galvanised steel sheet.

Technical data						
For floor-standing installation	**KWL EC 800 S** **KWL EC 800 S Pro**			Ref. No. 08327	**KWL EC 800 S** **KWL EC 800 S Pro WW**	Ref. No. 08328
Flow rate at level [1]	❸	❷	❶		❸	❷	❶
Supply air/extract air V̇ m³/h approx.	600	490	325		600	490	325
Noise dB(A) at 620 m³/h and 195 Pa							
Supply air L_{WA} (sound power)	78	n/a	n/a		78	n/a	n/a
Extract air L_{WA} (sound power)	70	n/a	n/a		70	n/a	n/a
Radiation L_{PA} at 1 m	54	n/a	n/a		54	n/a	n/a
Power consumption fans 2 x W	140	94	65		140	94	65
Standby power consumption	< 1 W				< 1 W		
Voltage / Frequency	1~, 230 V, 50 Hz				1~, 230 V, 50 Hz		
Rated current A – Ventilation	3.0				3.0		
– Preheating	11.0				11.0		
– max. total	14.0				14.0		
Electric preheater kW	2.4				2.4		
Heat output / post-heating element kW	—				2.8 (at 60/40 °C) / 2.6 (at 50/40 °C) / 1.6 (at 40/30 °C)		
Summer bypass	automatic (adjustable), with heat exchanger cover				automatic (adjustable), with heat exchanger cover		
Wiring diagram no.	1370				1370		
Temperature operating range	– 20 °C to + 40 °C				– 20 °C to + 40 °C		
Installation temperature	+ 5 °C to + 40 °C				+ 5 °C to + 40 °C		
Connection PWW heating element	—				IG 1/2"		
Weight approx. kg	172				175		

[1] Values based on operating ranges defined according to PHI (Passive House Institute). [2] M5 = ISO ePM10 50%. [3] F7 = ISO ePM1 55%.

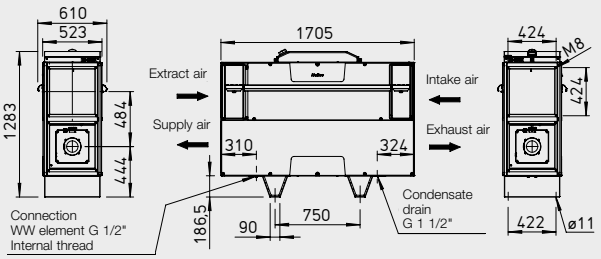
Central ventilation units with heat recovery, Floor-standing version with air flow rates up to approx. 1300 m³/h

KWL EC 1200 S

KWL EC 1200 S with base cover (accessories)

KWL EC 1200 S

Dimensions in mm



Central units with heat recovery for compact and space-saving floor installation (floor standing). With a wide range of residential, commercial and industrial applications. Independently certified hygiene properties and energy efficiency according to VDI 6022 and the passive house standard. Unit construction and unit components fulfil the general hygiene requirements according to VDI 6022.
Optionally available with integrated warm water heating element.

Casing
Double-walled, made of galvanised steel sheet, with 30 mm heat and sound insulation on all sides.
Inspection openings for filter replacement fastened to both side panels with screws.
Both side walls can be completely dismantled for free access to all components.
The unit is suitable for floor installation (standing) indoors.
Vibration dampers can be underlaid (on-site) to prevent the direct transmission of vibrations and structure-borne noise to building parts.

Heat exchanger
Large cross counterflow heat exchanger made of aluminium with heat recovery efficiency of up to 90 %. Dismantling possible in just a few simple steps.

Fans
Two low-noise high-performance EC fans with backward-curved impellers guarantee maximum energy efficiency. The special control technology enables constant volume control or constant pressure control.

Ducts
Installation-friendly connection of intake, exhaust, extract and supply air through pipe or duct system NW 355 mm. The floor-standing unit can be rotated 180° for installation so that intake air and exhaust air as well as extract air and supply air connections can be on the left or right sides.

Condensate connection
The unit contains a stainless steel condensate tray with a condensate drain below. Ball siphon included in delivery. On-site connection to drain pipe.

Air filter
Standard equipment:
Clean intake air supply via F7 filter [3]. The heat exchanger requires a M5 filter [2] on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

Summer operation
Standard equipment with automatic bypass function for maximum comfort.

Heat exchanger anti-icing protection
An electric preheating element heats the intake air at very low outdoor temperatures. Thus, it prevents the heat exchanger from icing up and guarantees its safe functioning and optimal heat recovery during the entire heating period.

Power control
The comfort control element with graphic display and user-friendly menu navigation, which is included in the delivery, enables the following functions:
- Control directly via touchscreen.
- Freely definable operating points within the entire range of the characteristic curve.
- Selection between constant volume control or constant pressure control.
- Demand-oriented ventilation using CO_2, VOC (mixed gas) or humidity sensor.
- Building control system via ModBus (RS 485, TCP / IP).
- Initial commissioning (automatic determination of the system characteristic curve).
- Control of external shutters.
- Connection of a fire alarm contact.
- Weekly or daily programme.
- Pressure monitoring of filter contamination.
- Indication of necessary filter replacement, operating status, error messages.
- Different access levels.

Electrical connection
Easily accessible terminal box on top of the casing.
The isolator/main switch can be controlled from below the unit for maintenance work and it can be locked with a padlock to prevent unauthorised access.

Post-heating Type KWL EC Pro WW
The integrated warm water heating element guarantees the convenient and energy-efficient post-heating of supply air. The setpoint temperature is simply set in the control element.
The hydraulic unit (Type WHSH HE 24 V (0-10 V), accessories) is recommended for controlling the warm water heat exchanger.

Reference
The ventilation unit design according to VDI 6022 requires the use of VDI 6022-compliant air filters.
The use of original replacement air filters is therefore mandatory.

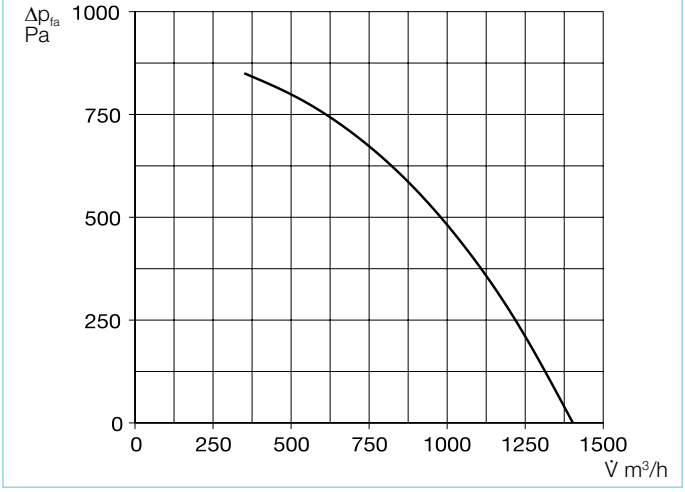
Replacement air filter
– 1 pc. M5 filter [2]
ELF-KWL 1200 S/5 VDI No. 08347
– 1 pc. F7 filter [3]
ELF-KWL 1200 S/7 VDI No. 08348

Other accessories

Accessory details
Ventilation grilles, ducts, fittings,
roof outlets
Extract air elements

KWL EC 1200 S

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	70	65	68	54	49	43	35	34
L_{WA}	Supply air	dB(A)	78	76	73	67	63	63	55	55
L_{PA}	Radiation	dB(A)	54	50	50	42	42	41	31	25



Included in delivery

Surface comfort control element
User-friendly control via self-explanatory graphic elements with clear text directly on the touchscreen. Control line (10 metres) included in delivery, other lengths available (ALB EC-SK, accessories).
Dim. mm (W x H x D) 115 x 80 x 25

Accessories for Type Pro WW

Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Controls the flow of the PWW heating element using a three-way valve actuator 24 V (0-10 V) and thus the heat output transferred to the air. Delivered as a complete unit, incl. VL-/RL temperature display, circulating pump and flexible connection hoses.

Accessories for all types

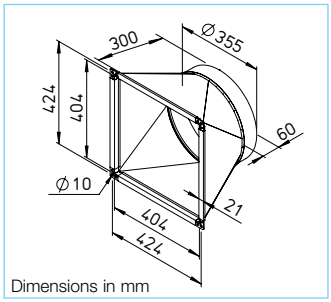
Room sensor – Air quality
Type KWL-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity and controlling the ventilation unit according to the set value. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 95 x 97 x 30

Room sensor – Temperature
Type TFR-ALB/KWL No. 07277
For measuring the room temperature and controlling the ventilation unit according to the set value.
Incl. 20 m control line. Max. total of one sensor can be connected.
Dim. mm (W x H x D) 80 x 80 x 25

Transition piece – Symmetrical
Type KWL-ÜS 1200 S No. 08349
From unit flange to round duct systems.

Flexible connecting sleeve
Type FM 355 Ref. No. 01675
For acoustic decoupling, incl. 2 pcs. hose clamps.

Duct shutter,motorised
Type RVM 355 Ref. No. 02579
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position, closing force adjustable corresponding to fan power and installation position.



Dimensions in mm

Angle flange ring
Type FR 355 Ref. No. 01205
Made of galvanised steel sheet, for duct connection.

Base cover
Type KWL-SB 1200 S No. 09316
Made of galvanised steel sheet.

Technical data				
For floor-standing installation	**KWL EC 1200 S** **KWL EC 1200 S Pro**	Ref. No. 08345	**KWL EC 1200 S** **KWL EC 1200 S Pro WW**	Ref. No. 08346
Flow rate at level [1]	❷	❶	❷	❶
Supply air/extract air V̇ m³/h approx.	1300	350	1300	350
Noise dB(A) at 1300 m³/h and 75 Pa				
Supply air L_{WA} (sound power)	78	n/a	78	n/a
Extract air L_{WA} (sound power)	70	n/a	70	n/a
Radiation L_{PA} at 1 m	54	n/a	54	n/a
Power consumption fans 2 x W	375	80	375	80
Standby power consumption	< 1 W		< 1 W	
Voltage / Frequency	3N~, 400 V, 50 Hz		3N~, 400 V, 50 Hz	
Rated current A – Ventilation	5.0 / – / –		5.0 / – / –	
– Preheating	– / 12.1 / 12.1		– / 12.1 / 12.1	
– max. total	5.0 / 12.1 / 12.1		5.0 / 12.1 / 12.1	
Electric preheater kW	4.2		4.2	
Heat output / post-heating element kW	—		2.8 (at 60/40 °C) / 2.6 (at 50/40 °C) / 1.6 (at 40/30 °C)	
Summer bypass	automatic (adjustable), with heat exchanger cover		automatic (adjustable), with heat exchanger cover	
Wiring diagram no.	1370		1370	
Temperature operating range	– 20 °C to + 40 °C		– 20 °C to + 40 °C	
Installation temperature	+ 5 °C to + 40 °C		+ 5 °C to + 40 °C	
Connection PWW heating element	—		IG 1/2"	
Weight approx. kg	250		256	

[1] Values based on operating ranges defined according to PHI (Passive House Institute). [2] M5 = ISO ePM10 50%. [3] F7 = ISO ePM1 55%.

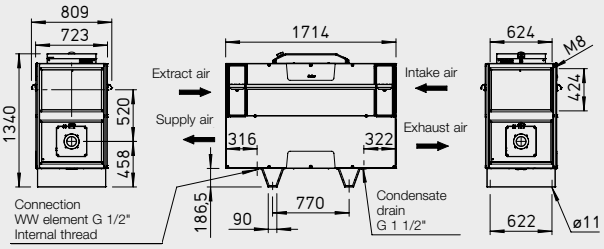
Central ventilation units with heat recovery, Floor-standing version with air flow rates up to approx. 1800 m³/h

KWL EC 1800 S

KWL EC 1800 S with base cover (accessories)

KWL EC 1800 S

Dimensions in mm



Central units with heat recovery for compact and space-saving floor installation (floor standing). With a wide range of residential, commercial and industrial applications.
Independently certified hygiene properties and energy efficiency according to VDI 6022 and the passive house standard. Unit construction and unit components fulfil the general hygiene requirements according to VDI 6022.
Optionally available with integrated warm water heating element.

Casing

Double-walled, made of galvanised steel sheet, with 30 mm heat and sound insulation on all sides.
Inspection openings for filter replacement fastened to both side panels with screws.
Both side walls can be completely dismantled for free access to all components.
The unit is suitable for floor installation (standing) indoors.
Vibration dampers can be underlaid (on-site) to prevent the direct transmission of vibrations and structure-borne noise to building parts.

Heat exchanger

Large cross counterflow heat exchanger made of aluminium with heat recovery efficiency of up to 90 %. Dismantling possible in just a few simple steps.

Fans

Two low-noise high-performance EC fans with backward-curved impellers guarantee maximum energy efficiency. The special control technology enables constant volume control or constant pressure control.

Ducts

Installation-friendly connection of intake, exhaust, extract and supply air through pipe or duct system NW 400 mm. The floor-standing unit can be rotated 180° for installation so that intake air and exhaust air as well as extract air and supply air connections can be on the left or right sides.

Condensate connection

The unit contains a stainless steel condensate tray with a condensate drain below. Ball siphon included in delivery. On-site connection to drain pipe.

Air filter

Standard equipment:
Clean intake air supply via F7 filter [3]. The heat exchanger requires a M5 filter [2] on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

Summer operation

Standard equipment with automatic bypass function for maximum comfort.

Heat exchanger anti-icing protection

An electric preheating element heats the intake air at very low outdoor temperatures. Thus, it prevents the heat exchanger from icing up and guarantees its safe functioning and optimal heat recovery during the entire heating period.

Power control

The comfort control element with graphic display and user-friendly menu navigation, which is included in the delivery, enables the following functions:
- Control directly via touchscreen.
- Freely definable operating points within the entire range of the characteristic curve.
- Selection between constant volume control or constant pressure control.
- Demand-oriented ventilation using CO_2, VOC (mixed gas) or humidity sensor.
- Building control system via ModBus (RS 485, TCP / IP).
- Initial commissioning (automatic determination of the system characteristic curve).
- Control of external shutters.
- Connection of a fire alarm contact.
- Weekly or daily programme.
- Pressure monitoring of filter contamination.
- Indication of necessary filter replacement, operating status, error messages.
- Different access levels.

Electrical connection

Easily accessible terminal box on top of the casing.
The isolator/main switch can be controlled from below the unit for maintenance work and it can be locked with a padlock to prevent unauthorised access.

Post-heating Type KWL EC Pro WW

The integrated warm water heating element guarantees the convenient and energy-efficient post-heating of supply air. The setpoint temperature is simply set in the control element.
The hydraulic unit (Type WHSH HE 24 V (0-10 V), accessories) is recommended for controlling the warm water heat exchanger.

Reference

The ventilation unit design according to VDI 6022 requires the use of VDI 6022-compliant air filters.
The use of original replacement air filters is therefore mandatory.

Replacement air filter

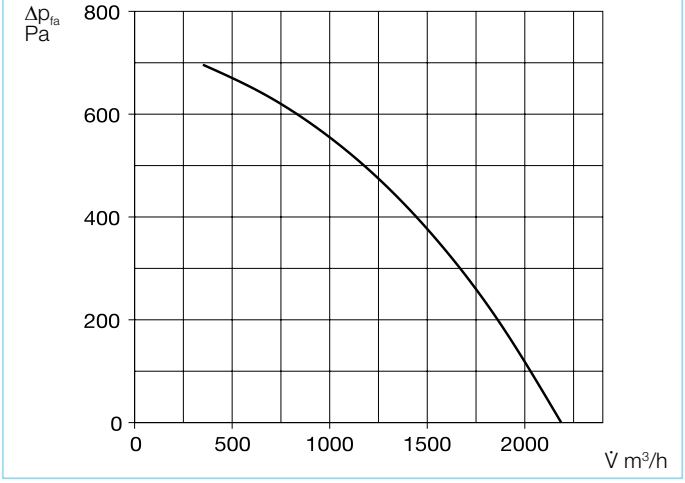
– 1 pc. M5 filter [2]
ELF-KWL 1800 S/5 VDI No. 08258
– 1 pc. F7 filter [3]
ELF-KWL 1800 S/7 VDI No. 08259

Other accessories

Accessory details
Ventilation grilles, ducts, fittings,
roof outlets
Extract air elements

KWL EC 1800 S

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	61	54	58	51	52	49	38	14
L_{WA}	Supply air	dB(A)	72	61	66	63	65	64	56	56
L_{PA}	Radiation	dB(A)	52	35	47	43	47	47	37	28



Included in delivery

Surface comfort control element
User-friendly control via self-explanatory graphic elements with clear text directly on the touchscreen. Control line (10 metres) included in delivery, other lengths available (ALB EC-SK, accessories).
Dim. mm (W x H x D) 115 x 80 x 25

Accessories for Type Pro WW

Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Controls the flow of the PWW heating element using a three-way valve actuator 24 V (0-10 V) and thus the heat output transferred to the air. Delivered as a complete unit, incl. VL-/RL temperature display, circulating pump and flexible connection hoses.

Accessories for all types

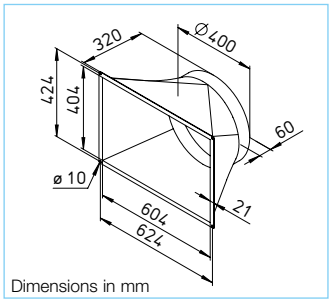
Room sensor – Air quality
Type KWL-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity and controlling the ventilation unit according to the set value. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 95 x 97 x 30

Room sensor – Temperature
Type TFR-ALB/KWL No. 07277
For measuring the room temperature and controlling the ventilation unit according to the set value.
Incl. 20 m control line. Max. total of one sensor can be connected.
Dim. mm (W x H x D) 80 x 80 x 25

Transition piece – Symmetrical
Type KWL-ÜS 1800 S No. 08340
From unit flange to round duct systems.

Flexible connecting sleeve
Type FM 400 Ref. No. 01676
For acoustic decoupling, incl. 2 pcs. hose clamps.

Duct shutter, motorised
Type RVM 400 Ref. No. 02580
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position, closing force adjustable corresponding to fan power and installation position.



Dimensions in mm

Angle flange ring
Type FR 400 Ref. No. 01206
Made of galvanised steel sheet, for duct connection.

Base cover
Type KWL-SB 1800 S No. 09317
Made of galvanised steel sheet.

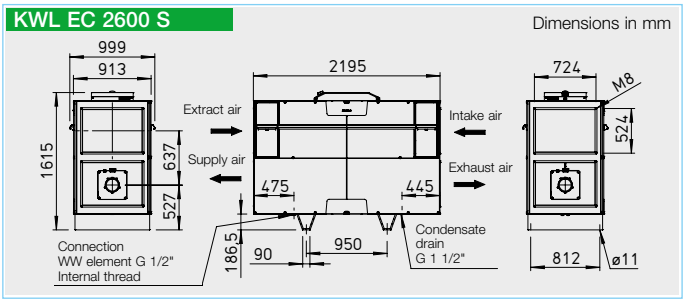
Technical data						
For floor-standing installation	**KWL EC 1800 S KWL EC 1800 S Pro**			Ref. No. 08329	**KWL EC 1800 S KWL EC 1800 S Pro WW**	Ref. No. 08330
Flow rate at level [1]	❸	❷	❶		❸	❷	❶
Supply air/extract air V̇ m³/h approx.	1400	1070	810		1400	1070	810
Noise dB(A) at 1400 m³/h and 245 Pa							
Supply air L_{WA} (sound power)	72	n/a	n/a		72	n/a	n/a
Extract air L_{WA} (sound power)	61	n/a	n/a		61	n/a	n/a
Radiation L_{PA} at 1 m	52	n/a	n/a		52	n/a	n/a
Power consumption fans 2 x W	315	225	165		315	225	165
Standby power consumption	< 1 W				< 1 W		
Voltage / Frequency	3N~, 400 V, 50 Hz				3N~, 400 V, 50 Hz		
Rated current A – Ventilation	3.9 / – / –				3.9 / – / –		
– Preheating	6.6 / 6.6 / 6.6				6.6 / 6.6 / 6.6		
– max. total	10.5 / 6.6 / 6.6				10.5 / 6.6 / 6.6		
Electric preheater kW	4.5				4.5		
Heat output / post-heating element kW	—				5.2 (at 60/40 °C) / 4.9 (at 50/40 °C) / 3.0 (at 40/30 °C)		
Summer bypass	automatic (adjustable), with heat exchanger cover				automatic (adjustable), with heat exchanger cover		
Wiring diagram no.	1370				1370		
Temperature operating range	– 20 °C to + 40 °C				– 20 °C to + 40 °C		
Installation temperature	+ 5 °C to + 40 °C				+ 5 °C to + 40 °C		
Connection PWW heating element	—				IG 1/2"		
Weight approx. kg	290				295		

[1] Values based on operating ranges defined according to PHI (Passive House Institute). [2] M5 = ISO ePM10 50%. [3] F7 = ISO ePM1 55%.

Central ventilation units with heat recovery, Floor-standing version with air flow rates up to approx. 2600 m³/h

KWL EC 2600 S

KWL EC 2600 S with base cover (accessories)



Central units with heat recovery for compact and space-saving floor installation (floor standing). With a wide range of residential, commercial and industrial applications.
Independently certified hygiene properties and energy efficiency according to VDI 6022 and the passive house standard. Unit construction and unit components fulfil the general hygiene requirements according to VDI 6022.
Optionally available with integrated warm water heating element.

Casing
Double-walled, made of galvanised steel sheet, with 30 mm heat and sound insulation on all sides.
Inspection openings for filter replacement fastened to both side panels with screws.
Both side walls can be completely dismantled for free access to all components.
The unit is suitable for floor installation (standing) indoors.
Vibration dampers can be underlaid (on-site) to prevent the direct transmission of vibrations and structure-borne noise to building parts.

Heat exchanger
Large cross counterflow heat exchanger made of aluminium with heat recovery efficiency of up to 90 %. Dismantling possible in just a few simple steps.

Fans
Two low-noise high-performance EC fans with backward-curved impellers guarantee maximum energy efficiency. The special control technology enables constant volume control or constant pressure control.

Ducts
Installation-friendly connection of intake, exhaust, extract and supply air through pipe or duct system NW 560 mm. The floor-standing unit can be rotated 180° for installation so that intake air and exhaust air as well as extract air and supply air connections can be on the left or right sides.

Condensate connection
The unit contains a stainless steel condensate tray with a condensate drain below. Ball siphon included in delivery. On-site connection to drain pipe.

Air filter
Standard equipment:
Clean intake air supply via F7 filter [3]. The heat exchanger requires a M5 filter [2] on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

Summer operation
Standard equipment with automatic bypass function for maximum comfort.

Heat exchanger anti-icing protection
An electric preheating element heats the intake air at very low outdoor temperatures. Thus, it prevents the heat exchanger from icing up and guarantees its safe functioning and optimal heat recovery during the entire heating period.

Power control
The comfort control element with graphic display and user-friendly menu navigation, which is included in the delivery, enables the following functions:
- Control directly via touchscreen.
- Freely definable operating points within the entire range of the characteristic curve.
- Selection between constant volume control or constant pressure control.
- Demand-oriented ventilation using CO_2, VOC (mixed gas) or humidity sensor.
- Building control system via ModBus (RS 485, TCP / IP).
- Initial commissioning (automatic determination of the system characteristic curve).
- Control of external shutters.
- Connection of a fire alarm contact.
- Weekly or daily programme.
- Pressure monitoring of filter contamination.
- Indication of necessary filter replacement, operating status, error messages.
- Different access levels.

Electrical connection
Easily accessible terminal box on top of the casing.
The isolator/main switch can be controlled from below the unit for maintenance work and it can be locked with a padlock to prevent unauthorised access.

Post-heating Type KWL EC Pro WW
The integrated warm water heating element guarantees the convenient and energy-efficient post-heating of supply air. The setpoint temperature is simply set in the control element.
The hydraulic unit (Type WHSH HE 24 V (0-10 V), accessories) is recommended for controlling the warm water heat exchanger.

Reference
The ventilation unit design according to VDI 6022 requires the use of VDI 6022-compliant air filters.
The use of original replacement air filters is therefore mandatory.

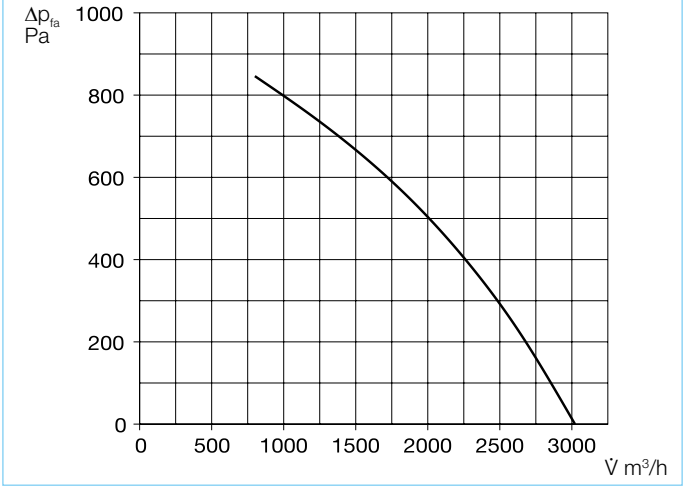
Replacement air filter
– 1 pc. M5 filter [2]
ELF-KWL 2600 S/5 VDI No. 08308
– 1 pc. F7 filter [3]
ELF-KWL 2600 S/7 VDI No. 08325

Other accessories	Page
KWL® peripherals	50 ff.
– Air distribution systems	62 ff.
– Further overview, control lines	66 f.

Accessory details
Ventilation grilles, ducts, fittings,
roof outlets
Extract air elements

KWL EC 2600 S

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	62	52	58	56	54	49	43	27
L_{WA}	Supply air	dB(A)	77	67	69	69	72	67	60	51
L_{PA}	Radiation	dB(A)	52	37	48	46	46	43	36	23



Included in delivery

Surface comfort control element
User-friendly control via self-explanatory graphic elements with clear text directly on the touchscreen. Control line (10 metres) included in delivery, other lengths available (ALB EC-SK, accessories).
Dim. mm (W x H x D) 115 x 80 x 25

Accessories for Type Pro WW

Hydraulic unit
WHSH HE 24 V (0-10 V) No. 08318
Controls the flow of the PWW heating element using a three-way valve actuator 24 V (0-10 V) and thus the heat output transferred to the air. Delivered as a complete unit, incl. VL-/RL temperature display, circulating pump and flexible connection hoses.

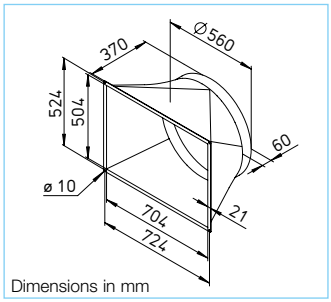
Accessories for all types

Room sensor – Air quality
Type KWL-CO_2 Ref. No. 04272
Type KWL-FTF Ref. No. 04273
Type KWL-VOC Ref. No. 04274
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity and controlling the ventilation unit according to the set value. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 95 x 97 x 30

Room sensor – Temperature
Type TFR-ALB/KWL No. 07277
For measuring the room temperature and controlling the ventilation unit according to the set value.
Incl. 20 m control line. Max. total of one sensor can be connected.
Dim. mm (W x H x D) 80 x 80 x 25

Transition piece – Symmetrical
Type KWL-ÜS 2600 S No. 08341
From unit flange to round duct systems.

Flexible connecting sleeve
Type FM 560 Ref. No. 01679
For acoustic decoupling, incl. 2 pcs. hose clamps.



Dimensions in mm

Duct shutter,motorised
Type RVM 560 Ref. No. 02583
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position, closing force adjustable corresponding to fan power and installation position.

Angle flange ring
Type FR 560 Ref. No. 01209
Made of galvanised steel sheet, for duct connection.

Base cover
Type KWL-SB 2600 S No. 09318
Made of galvanised steel sheet.

Technical data						
For floor-standing installation	**KWL EC 2600 S** **KWL EC 2600 S Pro**			Ref. No. 08331	**KWL EC 2600 S** **KWL EC 2600 S Pro WW**	Ref. No. 08332
Flow rate at level [1]	❸	❷	❶		❸	❷	❶
Supply air/extract air V̇ m³/h approx.	2065	1450	840		2065	1450	840
Sound dB(A) at 2100 m³/h and 275 Pa							
Supply air L_{WA} (sound power)	77	n/a	n/a		77	n/a	n/a
Extract air L_{WA} (sound power)	62	n/a	n/a		62	n/a	n/a
Radiation L_{PA} at 1 m	52	n/a	n/a		52	n/a	n/a
Power consumption fans 2 x W	450	295	175		450	295	175
Standby power consumption	< 1 W				< 1 W		
Voltage / Frequency	3N~, 400 V, 50 Hz				3N~, 400 V, 50 Hz		
Rated current A – Ventilation	2.3 / 2.3 / 2.3				2.3 / 2.3 / 2.3		
– Preheating	10.05 / 10.05 / 10.05				10.05 / 10.05 / 10.05		
– max. total	12.35 / 12.35 / 12.35				12.35 / 12.35 / 12.35		
Electric preheater kW	6.8				6.8		
Heat output / post-heating element kW	—				9.3 (at 60/40 °C) / 8.5 (at 50/40 °C) / 5.3 (at 40/30 °C)		
Summer bypass	automatic (adjustable), with heat exchanger cover				automatic (adjustable), with heat exchanger cover		
Wiring diagram no.	1370				1370		
Temperature operating range	– 20 °C to + 40 °C				– 20 °C to + 40 °C		
Installation temperature	+ 5 °C to + 40 °C				+ 5 °C to + 40 °C		
Connection PWW heating element	—				IG 1/2"		
Weight approx. kg	490				500		

[1] Values based on operating ranges defined according to PHI (Passive House Institute). [2] M5 = ISO ePM10 50%. [3] F7 = ISO ePM1 55%.

Helios AIR1®

Great solutions. From Helios.

PLUS X AWARD
2019 achieved for:
High Quality
Ease of Use
Functionality
www.plusxaward.com

If you have big plans, you will find exactly the right solution for energy-efficient ventilation with heat recovery at Helios.

The Helios AIR1 product range offers various technical variants in 3 series:
For ceiling or floor standing installation, with highly efficient cross counterflow or rotary heat exchangers for use inside or outside.

In this respect, no less than 22 models in a flow rate range from 500 to 15,000 m3/h guarantee a suitable selection for virtually all areas of application and performance classes.The wide range of accessories with various heating and cooling options, multiple air quality sensors and a multi-level filter concept includes more than 100 configuration options.

AIR1Select, the intuitive online software, provides the necessary overview for the simple and quick selection of your individual ventilation solution.

Request the AIR1 catalogue
Ref. no. 37 524

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Reaching your goal with AIR1Select.

With Helios AIR1, you can choose the perfect solution for your application from more than 100 configuration options.

In order to assist you with the selection, we have developed AIR1Select – an online configuration tool specifically for Helios AIR1 ventilation units.

AIR1Select allows the configuration of your ventilation unit with a few, self-explanatory inputs. You can save, export and retrieve your results at any time.

Simply run AIR1Select in your internet browser at:
www.AIR1Select.com

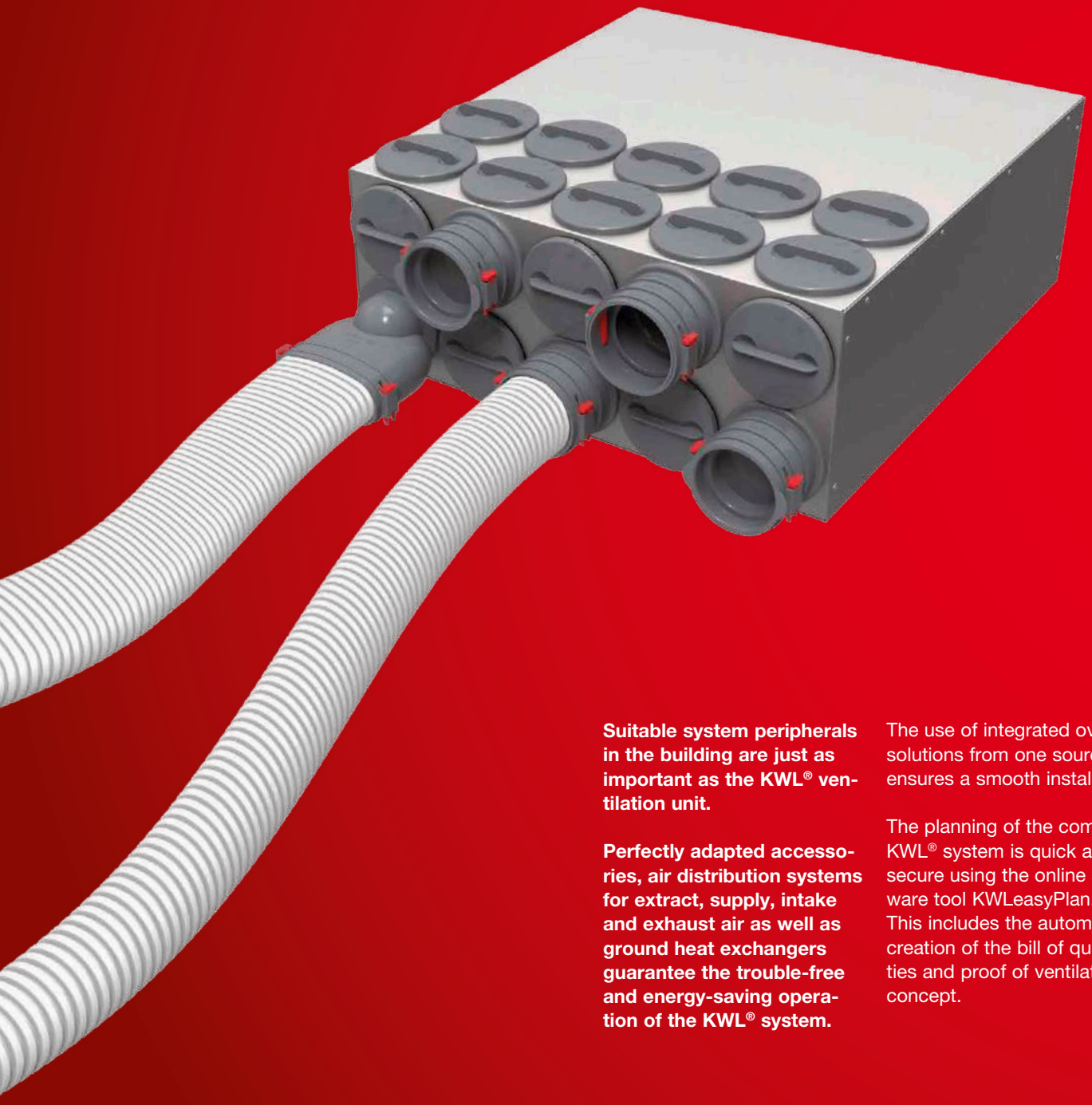
Intuitive and powerful

- Cloud-based online software – Always up to date and available everywhere.
- Modern operating concept for perfect results in a short space of time.
- Comprehensive range of matching accessory components.

Everything from one source

- Detailed calculation results and diagrams.
- Project-specific material lists.
- Specification texts and CAD/BIM data for your Helios AIR1 unit and the selected accessories.

Everything from one source.
For the perfect functioning of the KWL® system.



Suitable system peripherals in the building are just as important as the KWL® ventilation unit.

Perfectly adapted accessories, air distribution systems for extract, supply, intake and exhaust air as well as ground heat exchangers guarantee the trouble-free and energy-saving operation of the KWL® system.

The use of integrated overall solutions from one source ensures a smooth installation.

The planning of the complete KWL® system is quick and secure using the online software tool KWLeasyPlan.de. This includes the automatic creation of the bill of quantities and proof of ventilation concept.

Accessories

66f

Flexible duct system FlexPipe®

The right solution for every type of installation. FlexPipe®plus combines the proven round duct concept with oval components.

This makes the planning and installation of complete ventilation systems with heat recovery much easier and DIN-compliant.

FlexPipe®plus provides the greatest possible flexibility with low parts diversity.

52ff

Duct system IsoPipe® and air distribution system RenoPipe

IsoPipe® is the practical alternative to spiral duct installation with subsequent thermal insulation. Since it is already fully insulated, IsoPipe® is ideally suitable for intake air and exhaust air ducting as well as supply air and extract air ducting in basements or low-temperature zones.

RenoPipe is the perfect solution for energy-saving renovations and it is simply surface-mounted to the ceiling or wall.

60ff

KWL® MultiZoneBox

When combined with a central building KWL® unit from Helios, the MultiZoneBox ensures demand-oriented ventilation in multi-floor buildings.

Supply/extract air-side volume flow control, sound insulation, air distribution and intelligent system control – the KWL® MultiZoneBox combines all seven components in one unit.

68f

KWL® HygroBox and ground heat exchanger

As an active humidification unit, the **HygroBox** ensures a health room air humidity throughout the year and prevents expensive damage to furniture, floor coverings, etc.

Optional **ground-to-brine or ground-to-air heat exchangers** guarantee that the intake air is always energy-optimised when it flows into the ventilation unit.
This saves even more energy in winter and results in intake air temperature reduction in summer.

70ff

FlexPipe® round and oval ducting system. Arbitrarily combinable.

FlexPipe®plus is the further development of the successful FlexPipe® air distribution system and it combines round and oval ducts in one smart system package with all conceivable round-oval combinations.

The oval duct has the identical hydraulic cross-section and pressure loss as the round duct as well as a point-symmetric design.
This results in unique advantages:
- No matter if it's planning and layout or installation and adjustment or maintenance, round and oval pipe behave completely identical.
- Depending on the structural circumstances, the optional change between round and oval ducts is possible using adapters, both in line and away from the distribution box. This provides the greatest possible planning and installation freedom.
- The ideal, economical option can be selected at any time. The space-saving oval duct is mainly used if low installation heights are required.
- The round-oval compatibility results in low parts diversity. The stocking and consultation processes are greatly simplified. The installation is almost intuitive.
- The point-symmetric oval design allows installation from horizontal to vertical without the use of adapters for position correction.

Reference

FlexPipe round duct system with ext. Ø 63 mm, int. 52 mm for volume flows up to 20 m³/h
See page 58

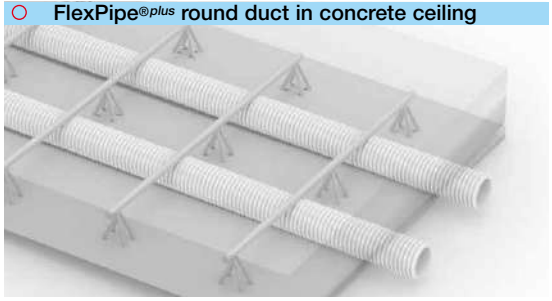
■ **FlexPipe®plus is available in two designs which can be combined as required:**
- ☐ FRS 75, round: External Ø: 75 mm, internal: 63 mm for volume flows up to 30 m³/h. For installation in concrete ceilings. High ring strength (STIS ≥ 10 kN/m² according to DIN EN 9969). Bending radius horizontal and vertical 150 mm.
- ☐ FRS 51, oval: 51 x 114 mm, for volume flows up to 30 m³/h, ideal for space-saving installation e.g. on unfinished floors or in walls. Bending radius horizontal 300 mm, vertical 200 mm.

■ **Installation, handling, commissioning**
- ☐ Ultra-simple planning thanks to identical duct cross-sections and pressure losses.
- ☐ Quick installation due to radial, flexible endless installation from the roll.
- ☐ Construction site-compliant handling due to its low weight.
- ☐ Quick commissioning due to minimal adjustment effort.
- ☐ Uniform air distribution.
- ☐ Hygienically optimal and easy to clean.

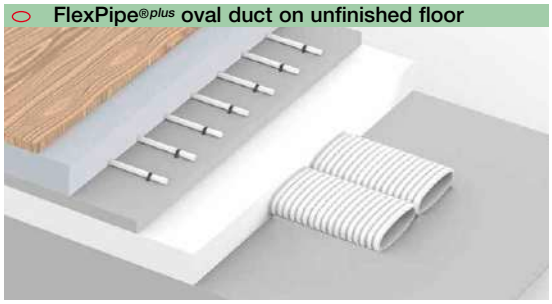
■ **Duct properties and advantages**
- ☐ Special round and oval ventilation duct made of hygienically safe PE-HD new material.
- ☐ Two-layer design – externally corrugated and internally smooth and antistatic. This minimises the pressure losses and prevents flow noises and dirt deposits.
- ☐ The extreme horizontal and vertical bending elasticity of both duct geometries minimises the number of necessary moulded parts.
- ☐ The point-symmetric design allows the installation of the oval duct from horizontal to vertical, upwards or downwards, without the use of adapters.

■ **Duct concept, installation**
- ☐ Mounting clips on all moulded parts for secure fixation to floors, walls or ceilings.
- ☐ Detachable mounting brackets guarantee quick, tear-proof duct fixation to all connection points.
- ☐ No additional cross talk silencer due to sound-insulating distribution box.
- ☐ Precision-fit seal system on all moulded parts for leak-free air transportation.
- ☐ Aerodynamically optimised ceiling and floor boxes as well as wall outlets are available for the use of room-side inlet and outlet elements at the duct ends. These have two parallel duct connections for delivering the volume flows required according to DIN 1946-6 with low pressure loss.

○ **FlexPipe®plus round duct in concrete ceiling**

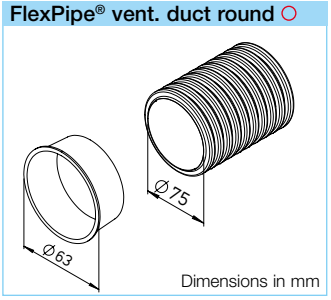


⬭ **FlexPipe®plus oval duct on unfinished floor**



○⬭ **FlexPipe®plus allows any round-oval combination**

FlexPipe® vent. duct round ○

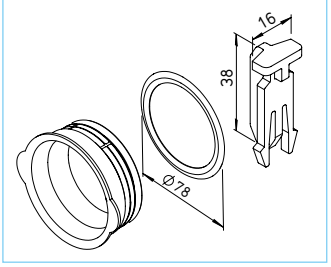


Dimensions in mm

FlexPipe® vent. duct (bundle = 50 lin. m)			
Type	Ref.	Dim. in mm	
Ø 75 mm	no.	Ext. Ø	Int. Ø
FRS-R 75 ○	02913	75	63
Hygiene duct shutter cover			Unit
FRS-VD 75 ○	02915		10 pcs.

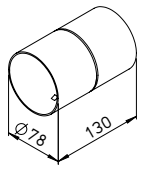
Flexible round duct made of PE-HD, ideal for installation in concrete ceiling.
Includes two hygiene duct shutter covers, can also be ordered separately.

Cover, seal ring, bracket ○



Connector cover / seal ring / bracket		
Type	Ref.	Unit
Ø 75 mm	no.	
Connector shutter cover with seal ring		
FRS-VDS 75 ○	03855	1 pc.
Seal ring		
FRS-DR 75 ○	02916	10 pcs.
Bracket, detachable		
FRS-FK ○ ⬭	03854	10 pcs.

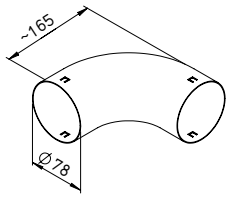
Connecting sleeve ○



Connecting sleeve	
Type	Ref.
Ø 75 mm	no.
FRS-VM 75 ○	02914

Connecting sleeve for round duct FRS-R 75 with tear-off protection on both sides, made of polyethylene.

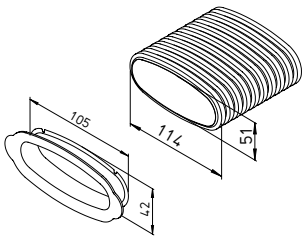
Short bend 90° ○



Short bend 90°	
Type	Ref.
Ø 75 mm	no.
FRS-B 75 ○	02994

Short bend 90° for bending radii < 2 x round duct external diameter. Horizontal and vertical application with tear-off protection on both sides.
Made of galvanised steel sheet.

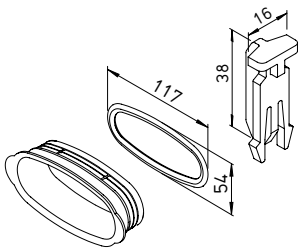
FlexPipe® vent. duct oval ⬭



FlexPipe® vent. duct (bundle = 20 lin. m)			
Type	Ref.	Dim. in mm	
114 x 51 mm	no.	Width	Height
FRS-R 51 ⬭	03850	114	51
Hygiene duct shutter cover			Unit
FRS-VD 51 ⬭	03866		10 pcs.

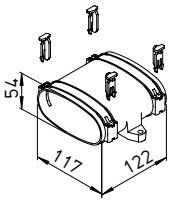
Flexible oval duct made of PE-HD, for space-saving installation on unfinished floors, installation in walls or suspended ceilings. Includes two hygiene duct shutter covers, can also be ordered separately.

Cover, seal ring, bracket ⬭



Connector cover / seal ring / bracket		
Type	Ref.	Unit
114 x 51 mm	no.	
Connector shutter cover with seal ring		
FRS-VDS 51 ⬭	03856	1 pc.
Seal ring		
FRS-DR 51 ⬭	03864	10 pcs.
Bracket, detachable		
FRS-FK ○ ⬭	03854	10 pcs.

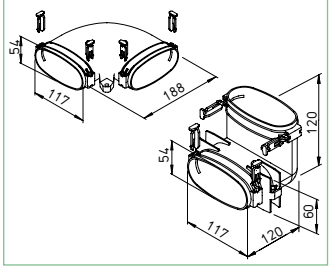
Connecting sleeve ⬭



Connecting sleeve	
Type	Ref.
114 x 51 mm	no.
FRS-VM 51 ⬭	03862

Connecting sleeve for oval duct FRS-R 51.
With integrated fastening tabs, includes duct mounting brackets (4 pcs.).
Made of impact-resistant polypropylene.

Bend horizontal / vertical ⬭



Bend horizontal / vertical	
Type	Ref.
114 x 51 mm	no.
FRS-BH 51 ⬭	03863
FRS-BV 51 ⬭	03859

Horizontal or vertical bend 90°.
With integrated fastening tabs, includes duct mounting brackets (4 pcs.).
Made of impact-resistant polypropylene.

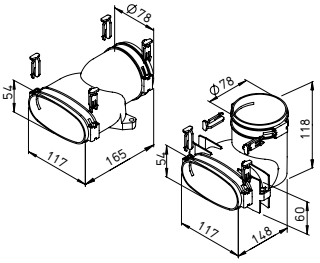
■ Optional possibility to combine round and oval ducts

☐ With FlexPipe® *plus* from Helios, you rely on <u>one</u> system and you have the ideal solution at your fingertips at all times, depending on building requirements.
☐ The ultra-flat (only 51 mm) oval duct is used if low installation heights are required. The proven duct lends itself for direct embedding in concrete ceilings.
☐ Thanks to the identical hydraulic cross-sections and pressure losses of the two ducts and due to well-conceived system components, round and oval ducts can be combined in any way – both in line and away from the distribution box.

Vertical and horizontal adapters allow any round/oval, oval/oval and round/round combination.

The distribution boxes can be equipped with round and oval single connectors and mixed connectors.

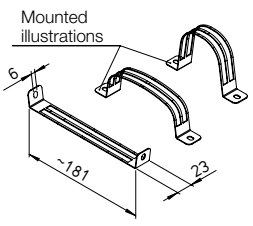
Adapter straight / vertical ○ ⬭



Adapter straight / vertical	
Type Ø 75 mm / 114 x 51 mm	Ref. no.
Adapter straight	
FRS-ÜG 51-75 ○ ⬭	03861
Adapter vertical	
FRS-ÜV 51-75 ○ ⬭	03860

Horizontal and vertical adapter from round duct FRS-R 75 to oval duct FRS-R 51.
With integrated fastening tabs, includes duct mounting brackets (4 pcs.).
Made of impact-resistant polypropylene.

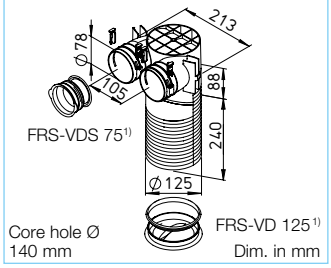
Mounting clip ○ ⬭



Mounting clip		
Type	Ref.	Unit
Ø 75 mm / 114 x 51 mm	no.	
FRS-BS ○ ⬭	03869	10 pcs.

Mounting clip for round duct FRS-R 75 and oval duct FRS-R 51.
For non-slip duct fixation.
Made of galvanised steel sheet.

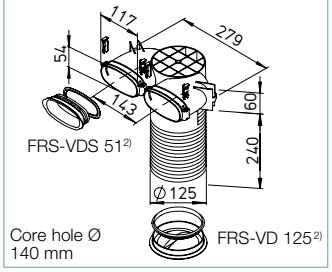
Ceiling / wall box ○



Ceiling / wall box	
Type Ø 75 mm	Ref. no.
FRS-DWK 2-75/125 ○	03857
Extension for ceilings > 240 mm	
FRS-VV 125 ○ ⬭	03906

Ceiling / wall box for max. 2 round ducts FRS-R 75. For connection of supply / extract air valves DN 125. Height marks can be shortened to fit. Per 1 pc. connector blind cover DN 75, DN 125.¹⁾ Integr. mounting clips, duct mounting brackets (4 pcs.), made of impact-resistant polypropylene.

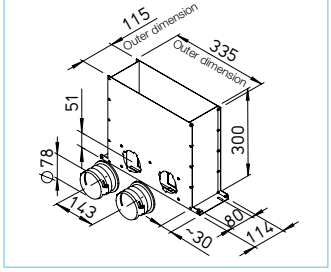
Ceiling / wall box ⬭



Ceiling / wall box	
Type 114 x 51 mm	Ref. no.
FRS-DWK 2-51/125 ⬭	03858
Extension for ceilings > 240 mm	
FRS-VV 125 ○ ⬭	03906

Ceiling / wall box for max. 2 oval ducts FRS-R 51. For connection of supply / extract air valves DN 125. Height marks can be shortened to fit. Per 1 pc. connector blind cover 51 mm, DN 125.²⁾ Integr. mounting clips, duct mounting brackets (4 pcs.), made of impact-resistant polypropylene.

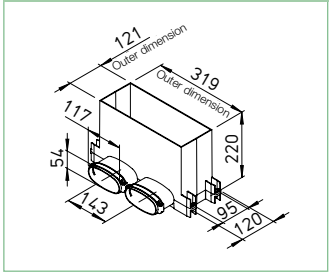
Multi-floor box ○



Multi-floor box	
Type Ø 75 mm	Ref. no.
FRS-MBK 2-75 ○	03872

Multi-floor box for connection of max. 2 round ducts FRS-R 75. Suitable for embedding in concrete ceiling, consists of:
– Floor box with air volume control insert in robust sheet metal design
– 2 pcs. connectors (round) and 1 pc. connector cover with seal (round)

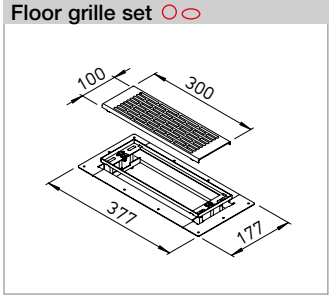
Wall / floor box ⬭



Wall / floor box	
Type 114 x 51 mm	Ref. no.
FRS-WBK 2-51 ⬭	03877

Wall / floor box for connection of max. 2 oval ducts FRS-R 51. Installation in walls or on unfinished floor, consists of:
– Plastic box made of impact-resistant polypropylene with air volume control insert. For use with FRS-WGS or FRS-BGS. 1 pc. connector cover with seal (oval).

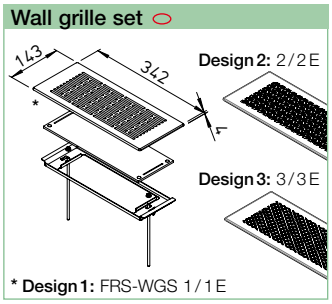
Floor grille set ○ ⬭



Floor grille set	
Type	Ref. no.
FRS-BGS 1 ○ ⬭	03878

Floor grille set made of stainless steel for multi-floor box FRS-MBK 2-75 and wall / floor box FRS-WBK 2-51, consists of:
– Grille frame with height adjustment for barrier-free installation in the floor covering
– Anti-puncture design floor grille
– Insert filter (replacement filter mats ELF-BGS, Ref. no. 03914, unit = 2 pcs.)

Wall grille set ⬭

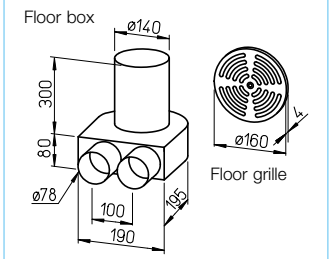


* **Design 1:** FRS-WGS 1/1E

Wall grille set		
Type	Ref. no.	
FRS-WGS 1 ⬭	03881	White
FRS-WGS 2 ⬭	03882	White
FRS-WGS 3 ⬭	03883	White
FRS-WGS 1 E ⬭	03886	Stainl. steel
FRS-WGS 2 E ⬭	03892	Stainl. steel
FRS-WGS 3 E ⬭	03904	Stainl. steel

Wall grille set with installation frame and insert filter for FRS-WBK 2-51. See p. 57 for grille designs.

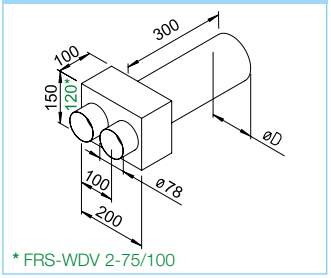
Floor box set ○



Floor box set	
Type Ø 75 mm	Ref. no.
FRS-BKGS 2-75 ○	09992

Floor box set consists of:
– 1 pc. floor box for grille connection DN 160
– 1 pc. floor grille made of brushed stainless steel with adjustable volume flow
– 1 pc. cover

Wall outlet ○

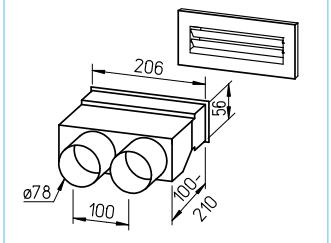


* FRS-WDV 2-75/100

Wall outlet for valve connection		
Type Ø 75 mm	Ref. no.	Ø D mm
FRS-WDV 2-75/100 ○	09621	100
FRS-WDV 2-75/125 ○	09622	125

Wall outlet incl. plaster / formwork lid and cover (1 pc.). For connection of supply air or extract air valves DN 100 or DN 125.

Wall outlet set ○



Wall outlet set, straight	
Type Ø 75 mm	Ref. no.
FRS-WDS 2-75 ○	09994

Wall outlet set consists of:
– Wall outlet with sliding connector
– Wall outlet white (FK-WA 200 W), 250 x 103 mm
– 1 pc. cover

Basic set package ○

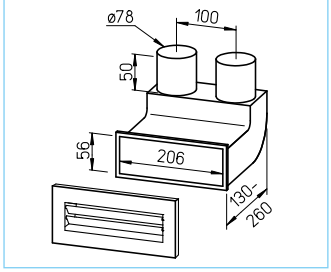
Basic set package		
Type	Ref. no.	Ø D mm
FRS-RP 75 ○	09397	75

FlexPipe® basic set package consists of:

– 3 pcs. FRS-R 75	(Ref. no. 02913)
– 2 pcs. FRS-VK 10-75/160	(Ref. no. 03847)
– 8 pcs. FRS-DWK 2-75/125	(Ref. no. 03857)
– 7 pcs. FRS-B 75	(Ref. no. 02994)
– 7 pcs. FRS-VM 75	(Ref. no. 02914)
– 4 units FRS-DR 75	(Ref. no. 02916)
– 1 units FRS-VD 75	(Ref. no. 02915)
– 1 pcs. cold shrink tape KSB	(Ref. no. 09343)

By choosing the Helios basic set package, you can save
– money due to the discounted package price.
– time, because everything is included to get started right away. There is no need for time consuming, annoying additional trips because little things are missing.

Angle bend set ○



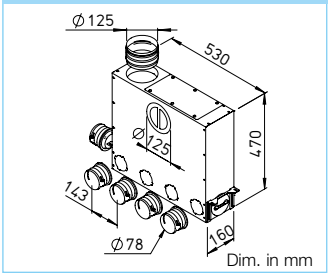
Angle bend set, 90°	
Type Ø 75 mm	Ref. no.
FRS-WBS 2-75 ○	09996

Angle bend set consists of:
– Angle bend with sliding connector
– Wall outlet white (FK-WA 200 W), 250 x 103 mm
– 1 pc. cover

¹⁾ Cover with integrated seal FRS-VDS 75, Ref. no. 03855 and -VD 125, Ref. no. 03865. Cover can be used for the connector or duct connection opening on distribution box.

²⁾ Cover with integrated seal FRS-VDS 51, Ref. no. 03856 and -VD 125, Ref. no. 03865. Can also be used as cover for the connector or duct connection opening on distribution box.

Multi-distribution box 4+1x ○



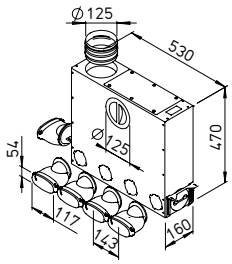
Dim. in mm

Multi-distribution box [1]

Type Ø 75 mm	Ref. no.	Ø NW mm
FRS-MVK 4+1-75/125 ○	03843	125

For universal installation in/on unfinished concrete flooring. With height-adjustable mounting brackets. Duct connection DN 125 optionally horizontal or vertical. 10 connection options for up to 5 ventilation ducts FRS-R 75. With sound-absorbing cladding and large inspection opening.

Multi-distribution box 4+1x ⬭



Multi-distribution box [1]

Type 114 x 51 mm	Ref. no.	Ø NW mm
FRS-MVK 4+1-51/125 ⬭	03841	125

For universal installation on unfinished concrete flooring. With height-adjustable mounting brackets. Duct connection DN 125 optionally horizontal or vertical. 10 connection options for up to 5 oval ventilation ducts FRS-R 51.
With sound-absorbing cladding and large inspection opening.

Multi-distribution box 5+2x ○

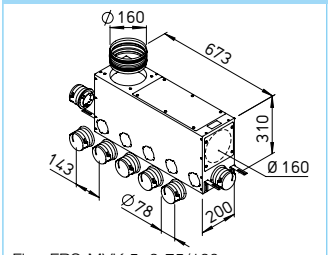


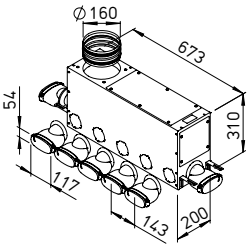
Fig.: FRS-MVK 5+2-75/160

Multi-distribution box [1]

Type Ø 75 mm	No.	Ø NW mm
FRS-MVK 5+2-75/160 ○	03836	160
FRS-MVK 5+2-75/160 H ○	03835	160

For universal installation in/on unfinished concrete flooring. With height-adjustable mounting brackets. Duct connection DN 160 optionally horizontal or vertical. Type FRS-MVK 5+2-75/160 H with 380 mm casing height and 3 x duct connection DN 160. 12 connection options for up to 7 ventilation ducts FRS-R 75.

Multi-distribution box 5+2x ⬭

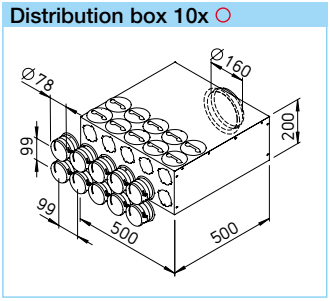


Multi-distribution box [1]

Type 114 x 51 mm	Ref. no.	Ø NW mm
FRS-MVK 5+2-51/160 ⬭	03838	160

For universal installation on unfinished concrete flooring or as floor distributor. With height-adjustable mounting brackets. Duct connection DN 160 optionally horizontal or vertical.
12 connection options for up to 7 oval ventilation ducts FRS-R 51. With sound-absorbing cladding and large inspection opening.

Distribution box 10x ○

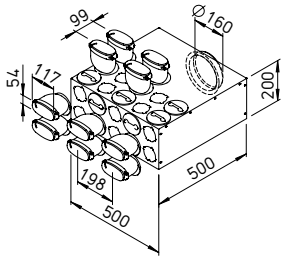


Distribution box 10-75 [2]

Type Ø 75 mm	Ref. no.	Ø NW mm
FRS-VK 10-75/160 ○	03847	160

20 connection options for up to 10 ventilation ducts FRS-R 75. Can be installed as straight distributor, 90° distributor or combined.
Mixed setup with oval connectors possible (Type FRS-ES 51, Ref. no. 03851).
With sound-absorbing cladding and large inspection opening.

Distribution box 10x ⬭

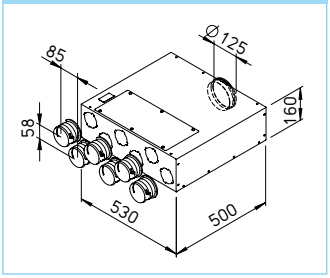


Distribution box 10-51 [2]

Type 114 x 51 mm	Ref. no.	Ø NW mm
FRS-VK 10-51/160 ⬭	03849	160

20 connection options for up to 10 oval ventilation ducts FRS-R 51. Can be installed as straight distributor, 90° distributor or combined.
Mixed setup with round connectors possible (Type FRS-ES 75, Ref. no. 03852).
With sound-absorbing cladding and large inspection opening.

Flat distribution box 6x ○

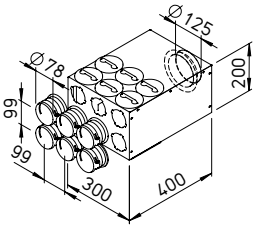


Distribution box 6-75, flat design [1]

Type Ø 75 mm	Ref. no.	Ø NW mm
FRS-FVK 6-75/125 ○	03845	125

For connection of up to 6 ventilation ducts FRS-R 75. Installation as straight distributor.
Mixed setup with oval connectors possible (Type FRS-ES 51, Ref. no. 03851).
With sound-absorbing cladding and large inspection opening.

Distribution box 6x ○

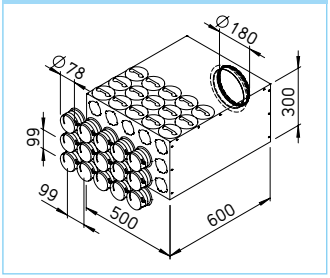


Distribution box 6-75 [1]

Type Ø 75 mm	Ref. no.	Ø NW mm
FRS-VK 6-75/125 ○	03846	125

12 connection options for up to 6 ventilation ducts FRS-R 75. Can be installed as straight distributor, 90° distributor or combined.
Mixed setup with oval connectors possible (Type FRS-ES 51, Ref. no. 03851).
With sound-absorbing cladding and large inspection opening.

Distribution box 15x ○



Distribution box 15-75 [2]

Type Ø 75 mm	Ref. no.	Ø NW mm
FRS-VK 15-75/180 ○	03848	180

30 connection options for up to 15 ventilation ducts FRS-R 75. Can be installed as straight distributor, 90° distributor or combined.
Mixed setup with oval connectors possible (Type FRS-ES 51, Ref. no. 03851).
With sound-absorbing cladding and large inspection opening.

Combination distribution box ○

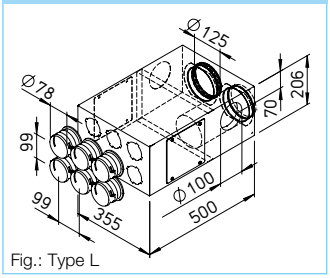


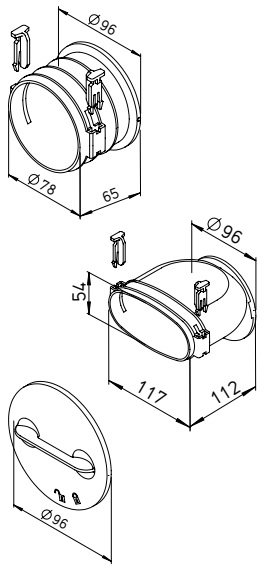
Fig.: Type L

Combination distribution box [1]

Type Ø 75 mm	Ref. no.	Ø NW mm
FRS-KVK 6-75/125 L* ○	03873	125
FRS-KVK 6-75/125 R* ○	03874	125

* Supply air connection on left or right. Compact distribution box, ideal for adjoining extract air rooms. 2 x DN 100 for direct insertion of extract air valves DLV (see accessories).
Supply air distribution via connection of up to 6 ventilation ducts FRS-R 75.

Connector, cover ○ ⬭



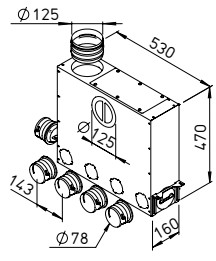
Connector, bayonet cap

Type	Ref. no.	Unit
Connector, Ø 75 mm		
FRS-ES 75 ○	03852	1 pc.
Connector, 114 x 51 mm		
FRS-ES 51 ⬭	03851	1 pc.
Bayonet cap		
FRS-VDB ○ ⬭	03853	1 pc.

Additional connectors for connection of round ventilation duct FRS-R 75 or oval ventilation duct FRS-R 51 to distribution box. Easy and variable positioning using bayonet closure. Tight-closing, includes duct mounting brackets (2 pcs.), made of impact-resistant polypropylene.
Bayonet cap for the connector openings on the distribution box.

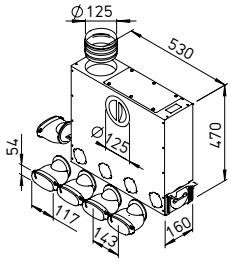
[1] incl. 2 pcs. connector cover.
[2] incl. 4 pcs. connector cover.

Multi-distribution box 4+1x ○



Type Ø 75 mm	No.	Ø NW mm
FRS-MVK 4+1-75/125 ○	03843	125

Multi-distribution box 4+1x ⬭



Type 114 x 51 mm	No.	Ø NW mm
FRS-MVK 4+1-51/125 ⬭	03841	125

Frequency	Insertion loss	Cross-talk loss
Hz	dB	dB
125	23.5	30.6
250	24.2	25.3
500	19.3	18.3
1000	28.7	25.3
2000	30.8	39.0
4000	36.6	42.9
8000	38.3	40.8

Multi-distribution box 5+2x ○

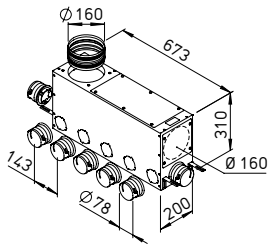
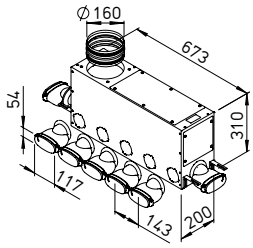


Abb.: FRS-MVK 5+2-75/160

Type Ø 75 mm	No.	Ø NW mm
FRS-MVK 5+2-75/160 ○	03836	160
FRS-MVK 5+2-75/160 H ○	03835	160

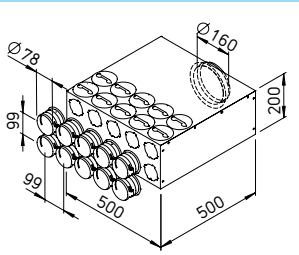
Multi-distribution box 5+2x ⬭



Type 114 x 51 mm	No.	Ø NW mm
FRS-MVK 5+2-51/160 ⬭	03838	160

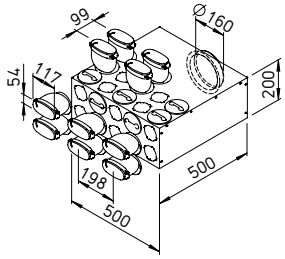
Frequency	Insertion loss	Cross-talk loss
Hz	dB	dB
125	21.0	28.8
250	16.5	24.7
500	24.6	28.0
1000	36.3	34.4
2000	35.2	40.2
4000	43.8	45.0
8000	46.1	41.1

Distribution box 10x ○



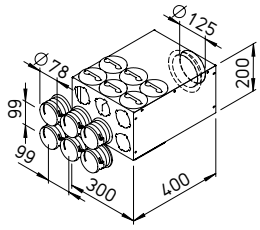
Type Ø 75 mm	No.	Ø NW mm
FRS-VK 10-75/160 ○	03847	160

Distribution box 10x ⬭



Type 114 x 51 mm	No.	Ø NW mm
FRS-VK 10-51/160 ⬭	03849	160

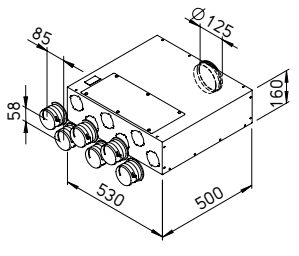
Distribution box 6x ○



Type Ø 75 mm	No.	Ø NW mm
FRS-VK 6-75/125 ○	03846	125

Frequency	Insertion loss	Cross-talk loss
Hz	dB	dB
125	23.0	34.3
250	21.8	33.1
500	36.2	27.4
1000	29.4	26.9
2000	28.9	38.7
4000	34.4	44.2
8000	36.1	44.0

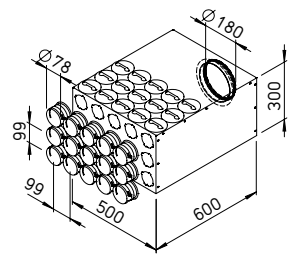
Flat distribution box 6x ○



Type Ø 75 mm	No.	Ø NW mm
FRS-FVK 6-75/125 ○	03845	125

Frequency	Insertion loss	Cross-talk loss
Hz	dB	dB
125	22.6	27.4
250	21.3	21.4
500	27.7	20.4
1000	28.8	20.2
2000	30.6	33.6
4000	42.6	40.1
8000	43.2	40.2

Distribution box 15x ○

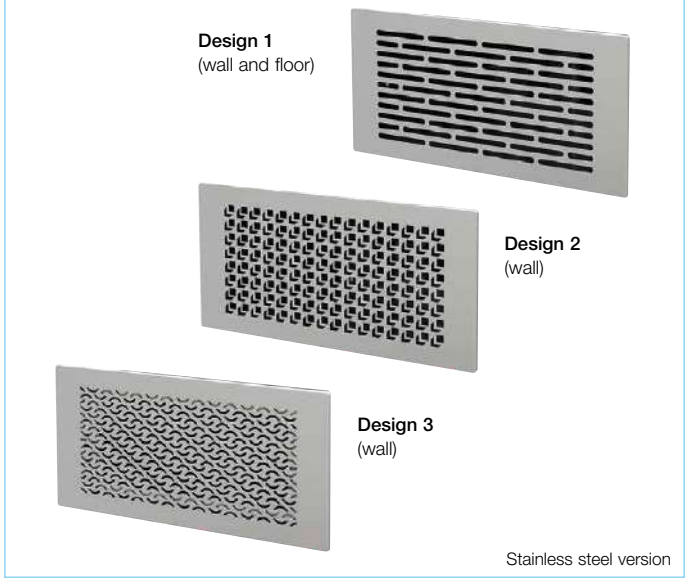


Type Ø 75 mm	No.	Ø NW mm
FRS-VK 15-75/180 ○	03848	180

Frequency	Insertion loss	Cross-talk loss
Hz	dB	dB
125	26.8	30.9
250	19.4	30.2
500	28.4	25.3
1000	25.4	29.0
2000	30.8	39.8
4000	34.7	49.1
8000	34.9	53.0

Measured in accordance with DIN EN ISO 7235 and DIN EN ISO 11820.

Design grilles for walls and floors



The elegant wall grilles in three high-quality designs (stainless steel or signal white coating) blend perfectly into any room atmosphere and guarantee the pleasant draught-free flow of supply air.

■ **Description Wall grille set**
Grille for wall / floor box FRS-WBK 2-51.
☐ Set consists of:
Metal wall grille with installation frame and insert filter.

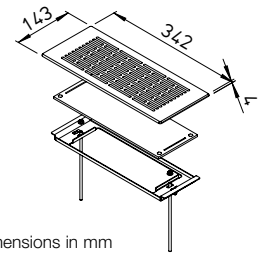
■ **Surfaces / Colours**
☐ Powder coating in white:
FRS-WGS 1, FRS-WGS 2 and FRS-WGS 3.
☐ High-quality stainless steel:
FRS-WGS 1 E, FRS-WGS 2 E and FRS-WGS 3 E.

Floor grille set for floor level installation. Three-dimensional adjustable compensation mechanism for adapting the grille to different floor covering heights or for alignment to a wall or window.

■ **Description Floor grille set**
Grille for multi-floor box FRS-MBK 2-75 and wall / floor box FRS-WBK 2-51.
☐ Set consists of:
Grille frame, design floor grille and insert filter.

■ **Surfaces/ Colours**
☐ High-quality stainless steel:
FRS-BGS 1.

Wall grille set / Design 1 ⬭



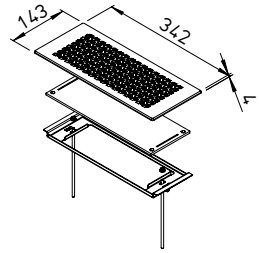
Dimensions in mm

Wall grille set		
Type	Ref. no.	
FRS-WGS 1 ⬭	03881	White
FRS-WGS 1 E ⬭	03886	Stainl. steel

Replacement filter mat for insert filter:
Type ELF-WGS, Ref. no. 03915, unit = 2 pcs.

■ **Wall grille set FRS-WGS 1 E**
with additional wall / floor box FRS-WBK 2-51.

Wall grille set / Design 2 ⬭

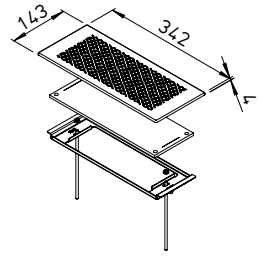


Wall grille set		
Type	Ref. no.	
FRS-WGS 2 ⬭	03882	White
FRS-WGS 2 E ⬭	03892	Stainl. steel

Replacement filter mat for insert filter:
Type ELF-WGS, Ref. no. 03915, unit = 2 pcs.

■ **Wall grille set FRS-WGS 2 E**
with additional wall / floor box FRS-WBK 2-51.

Wall grille set / Design 3 ⬭

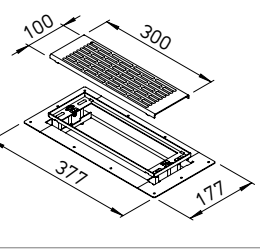


Wall grille set		
Type	Ref. no.	
FRS-WGS 3 ⬭	03883	White
FRS-WGS 3 E ⬭	03904	Stainl. steel

Replacement filter mat for insert filter:
Type ELF-WGS, Ref. no. 03915, unit = 2 pcs.

■ **Wall grille set FRS-WGS 3 E**
with additional wall / floor box FRS-WBK 2-51.

Floor grille set ⬭⬭



Floor grille set		
Type	Ref. no.	
FRS-BGS 1 ⬭⬭	03878	Stainl. steel

Replacement filter mat for insert filter:
Type ELF-BGS, Ref. no. 03914, unit = 2 pcs.

■ **Floor grille set FRS-BGS 1**
with additional wall / floor box FRS-WBK 2-51.
Also suitable for multi-floor box FRS-MBK 2-75.

FlexPipe® is embedded directly in concrete or on/under ceilings,
- **Simple planning and quick installation due to star-shaped, flexible continuous installation from the roll.**
- **Construction site-compliant handling due to low weight.**
- **Quick commissioning, uniform air distribution.**
- **Easy to clean.**

Available in two sizes and designs

☐ FlexPipe® FRS 63
External Ø: 63 mm, internal: 52 mm for vol. flows up to 20 m³/h.

☐ FlexPipe®*plus*
External Ø: 75 mm, internal: 63 mm for vol. flows up to 30 m³/h. Can be combined with oval duct FRS-R 51 and oval components, see page 52 ff.

Properties and advantages

☐ Special ventilation duct made of hygienically safe PE-HD new material, odourless.
☐ The two-layer design (externally corrugated and internally smooth and antistatically treated) guarantees:
- Low flow resistances and high sound insulation.
- Minimal dirt deposits.
- Easy to clean.

Installation

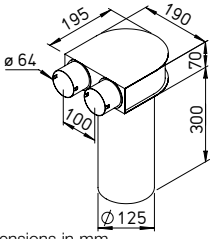
☐ The FlexPipe® plastic corrugated pipe has high ring strength (S_{R24} > 8 kN/m²) and it can be installed directly in, on or under concrete ceilings due to its high flexibility in the desired system.
☐ Airtight and watertight connection simply through the use of FRS seal rings.

FlexPipe® vent. duct round

FlexPipe® vent. duct (bundle = 50 lin. m)

Type	Ref.	Dim. in mm	
Ø 63 mm	no.	Ext. Ø	Int. Ø
FRS-R 63	09327	63	52

Ceiling box



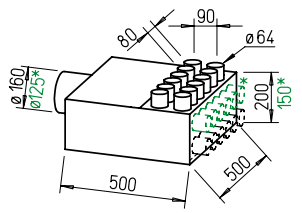
Dimensions in mm

Ceiling box [2] for valve connection DN 125

Type	Ref.
Ø 63 mm	no.
FRS-DKV 2-63/125	09430

Ceiling box incl. plaster/formwork lid. For connection of supply or extract air valves DN 125 (accessories, see page 66).

Distribution box 6-63, 12-63



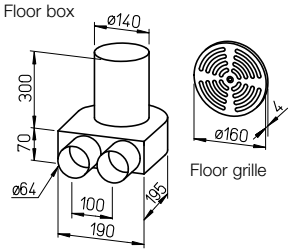
* FRS-VK 6-63/125

Distribution box 6-63, 12-63 [1]

Type	Ref.	Ø NW
Ø 63 mm	no.	mm
FRS-VK 6-63/125	09355	125
FRS-VK 12-63/160	09336	160

For connection of up to 6 or 12 ventilation ducts FRS-R 63, with sound-absorbing cladding.
The connector plate can be replaced with the inspection opening and rotated 90° for type 12-63.

Floor box set

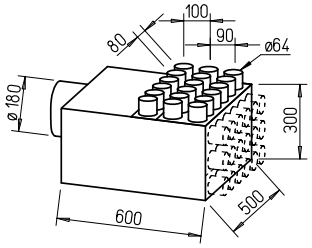


Floor box set [2]

Type	Ref.
Ø 63 mm	no.
FRS-BKGS 2-63	09991

Floor box set consists of:
– 1 pc. floor box for grille connection DN 160
– 1 pc. floor grille made of brushed stainless steel with adjustable volume flow.

Distribution box 18-63

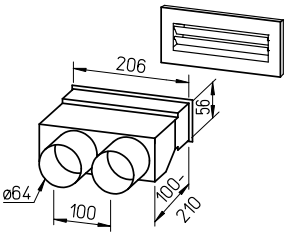


Distribution box 18-63 [1]

Type	Ref.	Ø NW
Ø 63 mm	no.	mm
FRS-VK 18-63/180	09364	180

For connection of up to 18 ventilation ducts FRS-R 63, with sound-absorbing cladding.
The connector plate with the connectors can be replaced with the inspection opening and rotated 90°. This allows installation as a straight or 90° distributor.

Wall outlet set

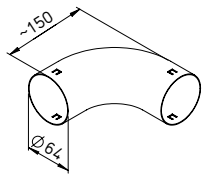


Wall outlet set, straight [2]

Type	Ref.
Ø 63 mm	no.
FRS-WDS 2-63	09993

Wall outlet set consists of:
– Wall outlet with sliding connector
– Wall outlet white (FK-WA 200 W), 250 x 103 mm

Short bend 90°

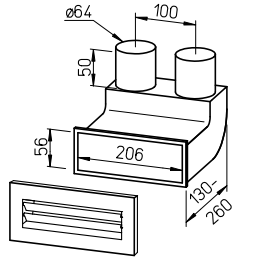


Short bend 90°

Type	Ref.
Ø 63 mm	no.
FRS-B 63	09348

Short bend 90° for bending radius < 2 x external duct diameter.

Angle bend set

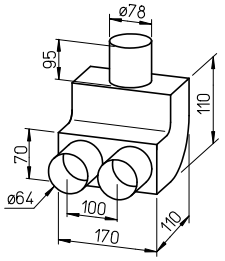


Angle bend set, 90° [2]

Type	Ref.
Ø 63 mm	no.
FRS-WBS 2-63	09995

Angle bend set consists of:
– Angle bend with sliding connector
– Wall outlet white (FK-WA 200 W), 250 x 103 mm

Short bend 90°

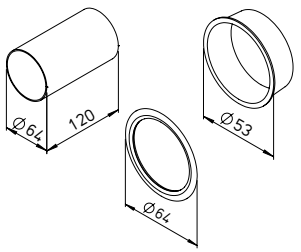


Short bend 90°

Type	Ref.
Ø 63 mm	no.
FRS-B 75/2-63	09341

Short bend 90° as transition from 1 x 75 mm to 2 hoses with 63 mm.

Sleeve, cover, seal ring



Sleeve / cover / seal ring

Type		Ref.	Unit
Ø 63 mm		no.	
FRS-VM 63	Sleeve	09329	
FRS-VD 63	Cover	09330	10 pcs.
FRS-DR 63	Seal ring	09331	10 pcs.

Note: A seal ring (for IP 66) must be used at every connection point (duct/duct, duct/moulded part). Please order corresponding number separately. Coating with lubricant is recommended for installation.

[1] incl. 6 pcs. cover.
[2] incl. 1 pcs. cover.

IsoPipe® facade panels


IP-FKB


IP-FBF


IP-FBA

IsoPipe® facade panels made of stainless steel for connection to intake air and exhaust air ducts.

■ **Properties**
All IsoPipe® facade panels are made of high-quality stainless steel.
Also available in coated version (types B) for use in environments with severe air pollution or high salt concentration in the air (near the coast).

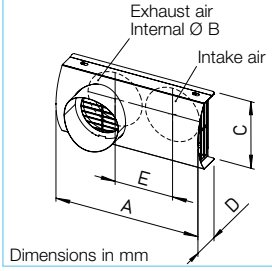
■ **Application and installation**

☐ **Facade combination panel IP-FKB**
Designed for the compact installation of IsoPipe® intake air and exhaust air ducts with just one facade panel. Universally applicable for horizontal or vertical installation.
Exhaust connectors can be positioned on the right, left or top.

☐ **Exhaust air facade panel IP-FBF**
For the IsoPipe® duct system. Horizontal installation position. The exhaust air is discharged directly and horizontally through the duct connectors.

☐ **Intake air facade panel IP-FBA**
For the IsoPipe® duct system. Horizontal installation position. The intake air is taken in through the side on both sides.

IP-FKB

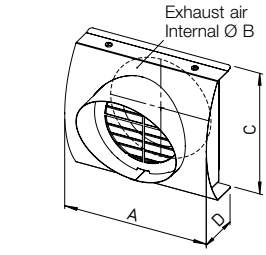


Dimensions in mm

IsoPipe®	Ø 125 mm					Ø 160 mm					Ø 180 mm				
Facade combination panel	**Type**	Ref. no.				**Type**	Ref. no.				**Type**	Ref. no.			
– Stainless steel	**IP-FKB 125**	02689				**IP-FKB 160**	02694				**IP-FKB 180**	02695			
	Dim. in mm	A	Ø B	C	D	E	Dim. in mm	A	Ø B	C	D	E	Dim. in mm	A	Ø B	C	D	E
		420	157	200	100	170		480	192	240	118	210		520	212	290	150	230
– Stainless steel, with additional coating	**IP-FKB 125 B**	02661					**IP-FKB 160 B**	02662					**IP-FKB 180 B**	02663				
	Dim. in mm	A	Ø B	C	D	E	Dim. in mm	A	Ø B	C	D	E	Dim. in mm	A	Ø B	C	D	E
		420	157	200	100	170		480	192	240	118	210		520	212	290	150	230

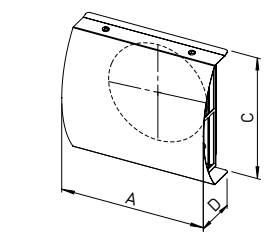
Exhaust air outlet on the right, left or top.

IP-FBF



IsoPipe®	Ø 125 mm					Ø 160 mm					Ø 180 mm				
Facade panel	**Type**	Ref. no.				**Type**	Ref. no.				**Type**	Ref. no.			
– Stainl. steel, for exh. air	**IP-FBF 125**	03126				**IP-FBF 160**	03128				**IP-FBF 180**	03131			
	Dim. in mm	A	Ø B	C	D		Dim. in mm	A	Ø B	C	D		Dim. in mm	A	Ø B	C	D	
		230	157	200	78			265	192	240	97			285	212	260	126	
– Stainl. steel, for exh. air, with additional coating	**IP-FBF 125 B**	02901					**IP-FBF 160 B**	02902					**IP-FBF 180 B**	02903				
	Dim. in mm	A	Ø B	C	D		Dim. in mm	A	Ø B	C	D		Dim. in mm	A	Ø B	C	D	
		230	157	200	78			265	192	240	97			285	212	260	126	

IP-FBA



IsoPipe®	Ø 125 mm				Ø 160 mm				Ø 180 mm			
Facade panel	**Type**	Ref. no.			**Type**	Ref. no.			**Type**	Ref. no.		
– Stainl. steel, for intake air	**IP-FBA 125**	03125			**IP-FBA 160**	03127			**IP-FBA 180**	03130		
	Dim. in mm	A	C	D	Dim. in mm	A	C	D	Dim. in mm	A	C	D
		230	200	78		265	240	97		285	260	126
– Stainl. steel, for intake air, with additional coating	**IP-FBA 125 B**	02664			**IP-FBA 160 B**	02665			**IP-FBA 180 B**	02666		
	Dim. in mm	A	C	D	Dim. in mm	A	C	D	Dim. in mm	A	C	D
		230	200	78		265	240	97		285	260	126

■ **Installation**

☐ Types IP-FKB are universally applicable for horizontal or vertical installation. Exhaust air outlet on the right, left or top.
The adjacent figure shows horizontal installation in an external wall.

☐ Types IP-FBF and IP-FBA for horizontal installation.

Insulated duct system IsoPipe®

The innovative alternative to spiral duct installation with subsequent thermal insulation.

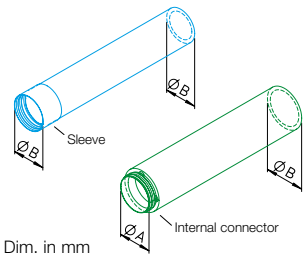
The insulated round duct system IsoPipe®
- **prevents condensation,**
- **has a smooth, sound-absorbing inner surface and is easy to clean,**
- **saves an enormous amount of installation time,**
- **is the ideal solution for intake air and exhaust air ducting.**

Installation
- ☐ All IsoPipe® moulded parts, bends, wall outlets and roof outlets are precisely matched to each other and simply plugged into each other. IsoPipe® is quick to install: Compared to the use of insulated spiral duct, the result is work time savings of up to 70 %.

Properties
All pipe parts are fully insulated and consist of vapour-tight, antistatic EPE. Flame retardant according to fire class B1. Air flow temperature from –25 to +80 °C.
λ = 0.04 W/mK, d = 16 mm.

Duct concept and installation
- ☐ IsoPipe® is especially suitable for intake air and exhaust air ducting or supply air and extract air ducting in the basement or low-temperature zone of a KWL® system.
- ☐ Can be used for volume flows up to 500 m³/h.
- ☐ IsoPipe® is shock-proof, particularly lightweight and it can easily be shortened to the desired length with a knife.

IsoPipe® duct

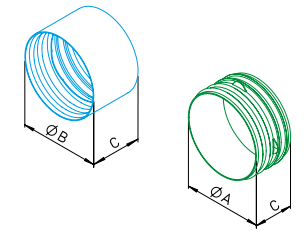


Dim. in mm

IsoPipe®	Ø 125 mm				Ø 160 mm				Ø 180 mm			
		Ref.	Dim. in mm			Ref.	Dim. in mm			Ref.	Dim. in mm	
	Type	no.	Ø A	Ø B	Type	no.	Ø A	Ø B	Type	no.	Ø A	Ø B
Duct with sleeve	IP 125/2000[1]	09406	—	157	—	—			—	—		
Duct with internal connector	—	—			IP 160/2000[2]	09447	160	192	IP 180/2000[3]	09448	180	212

[1] Unit = 8 x 2 m
[2] Unit = 6 x 2 m
[3] Unit = 4 x 2 m

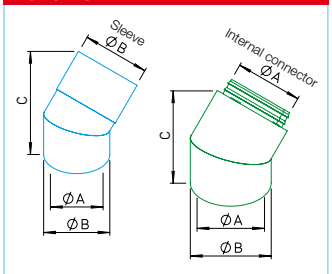
Sleeve / Internal connector



IsoPipe®	Ø 125 mm					Ø 160 mm					Ø 180 mm				
		Ref.	Dim. in mm				Ref.	Dim. in mm				Ref.	Dim. in mm		
	Type	no.	Ø A	Ø B	C	Type	no.	Ø A	Ø B	C	Type	no.	Ø A	Ø B	C
Connecting sleeve	IP-MU 125	09394	—	157	104	—	—				—	—			
Internal connector	—	—				IP-IV 160	09453	160	—	80	IP-IV 180	09454	180	—	80

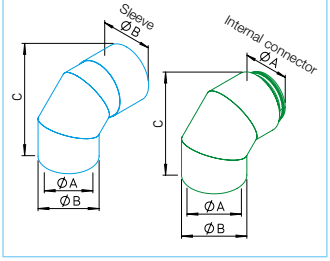
Made of plastic.

Bend 45°



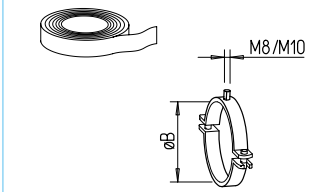
IsoPipe®	Ø 125 mm					Ø 160 mm					Ø 180 mm				
		Ref.	Dim. in mm				Ref.	Dim. in mm				Ref.	Dim. in mm		
	Type	no.	Ø A	Ø B	C	Type	no.	Ø A	Ø B	C	Type	no.	Ø A	Ø B	C
Bend 45° with sleeve	IP-B 125/45	09399	125	157	255	—	—				—	—			
Bend 45° with int. connector	—	—				IP-B 160/45	09449	160	192	242	IP-B 180/45	09450	180	212	256

Bend 90°



IsoPipe®	Ø 125 mm					Ø 160 mm					Ø 180 mm				
		Ref.	Dim. in mm				Ref.	Dim. in mm				Ref.	Dim. in mm		
	Type	no.	Ø A	Ø B	C	Type	no.	Ø A	Ø B	C	Type	no.	Ø A	Ø B	C
Bend 90° with sleeve	IP-B 125/90	09398	125	157	239	—	—				—	—			
Bend 90° with int. connector	—	—				IP-B 160/90	09451	160	192	272	IP-B 180/90	09452	180	212	292

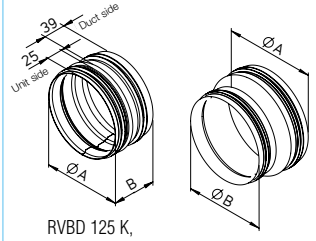
Tape / Pipe clamp



Dimensions in mm

IsoPipe®	Ø 125 mm			Ø 160 mm			Ø 180 mm		
	Type	Ref. no.	Dim. in mm Ø B	Type	Ref. no.	Dim. in mm Ø B	Type	Ref. no.	Dim. in mm Ø B
Tape, insulated, 50 x 3 mm, 15 lin. m	**IP-KLB**	09643		**IP-KLB**	09643		**IP-KLB**	09643	
Pipe clamp	**IP-S 125**	09395	157	**IP-S 160**	09392	192	**IP-S 180**	09421	212

Fittings for unit connection

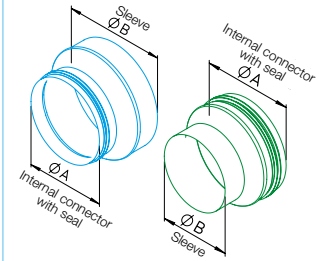


RVBD 125 K, RVBD 160 K — RVBD 180/160

IsoPipe®	Ø 125 mm				Ø 160 mm				Ø 180 mm			
Connector with seal for connection to KWL® units	Type	Ref. no.	Dim. in mm Ø A	B	Type	Ref. no.	Dim. in mm Ø A	B	Type	Ref. no.	Dim. in mm Ø A	Ø B
– with sleeve DN 125	**RVBD 125 K**[1]	03414	125	70	—	—			—	—		
– with sleeve DN 160	—	—			**RVBD 160 K**[2]	03415	160	70	**RVBD 180/160**[2]	09589	180	160

All fittings made of galvanised steel sheet.
[1] Compatible with KWL EC 170 W, KWL EC 200 W, KWL EC 300 W and KWL EC 220 D.
[2] Compatible with KWL EC 500 W and KWL EC 340 D.

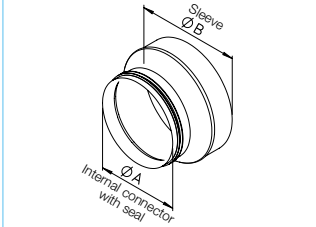
Fittings for distribution box



IsoPipe®	Ø 125 mm				Ø 160 mm				Ø 180 mm			
Fitting for connection to distribution boxes	Type	Ref. no.	Dim. in mm Ø A	Ø B	Type	Ref. no.	Dim. in mm Ø A	Ø B	Type	Ref. no.	Dim. in mm Ø A	Ø B
– with connector DN 125	Direct duct connection				**IP-ARZ 125/160**	09458	160	125	—	—		
– with connector DN 160	**IP-ARZ 160/125**	09358	125	160	Direct duct connection				**IP-ARZ 160/180**	09459	180	160
– with connector DN 180	**IP-ARZ 180/125**	09360	125	180	**IP-ARZ 180/160**	09455	160	180	Direct duct connection			

All fittings made of galvanised steel sheet.

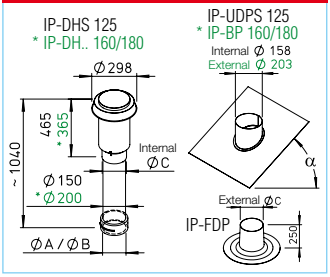
Fittings for KWL® HygroBox and ground heat exchanger



IsoPipe®	Ø 125 mm				Ø 160 mm				Ø 180 mm			
Fitting for connection to KWL® HygroBox	Type	Ref. no.	Dim. in mm Ø A	Ø B	Type	Ref. no.	Dim. in mm Ø A	Ø B	Type	Ref. no.	Dim. in mm Ø A	Ø B
– KWL HB 250, connec. DN 160	**IP-ARZ 160/125**	09358	125	160	Direct duct connection				—	—		
– KWL HB 500, connec. DN 250	—	—			**IP-ARZ 250/160**	09590	160	250	**IP-ARZ 250/180**	09591	180	250
to ground heat exchanger												
– LEWT, connector DN 200	**IP-ARZ 200/125**	09359	125	200	**IP-ARZ 200/160**	09456	160	200	**IP-ARZ 200/180**	09457	180	200
– SEWT, connector DN 180	**IP-ARZ 180/125**	09360	125	180	**IP-ARZ 180/160**	09455	160	180	Direct duct connection			

All fittings made of galvanised steel sheet.

Roof outlets



IsoPipe®	Ø 125 mm				Ø 160 mm				Ø 180 mm			
Roof outlet, consisting of hood and pan tile*	Type	Ref. no.	Dim. in mm Ø B	Ø C	Type	Ref. no.	Dim. in mm Ø B	Ø C	Type	Ref. no.	Dim. in mm Ø A	Ø C
– Roof hood black	**IP-DHS 125**	03541	157	160	**IP-DHS 160**	03542	192	210	**IP-DHS 180**	03542	180	210
including duct red	—	—			**IP-DHR 160**	03543	192	210	**IP-DHR 180**	03543	180	210
– Roof pan tile for pitched	**IP-UDPS 125**	03546	α 25°– 45°		**IP-BP 160/25**	09384	α 20°– 30°		**IP-BP 180/25**	09384	α 20°– 30°	
roofs, with lead edge	—	—			**IP-BP 160/35**	09385	α 30°– 40°		**IP-BP 180/35**	09385	α 30°– 40°	
	—	—			**IP-BP 160/45**	09386	α 40°– 50°		**IP-BP 180/45**	09386	α 40°– 50°	
– Roof pan tile for flat roof	**IP-FDP 125**	03544	—	158	**IP-FDP 160**	03545	—	203	**IP-FDP 180**	03545	—	203

* Please order roof hoods and pan tiles separately.

Silencer

IsoPipe®	Ø 125 mm		Ø 160 mm		Ø 180 mm	
Flexible duct silencer, made of aluminium duct	Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
Length approx. 1 m, elastic	**SDE 125**	00789	**SDE 160**	00790	**SDE 180**	00499

Type	Insulation mm	Insertion loss dB at Hz 125	250	500	1000	2000	4000	8000
SDE 125	50	32	42	45	46	50	42	41
SDE 160	50	23	40	43	46	46	31	29
SDE 180	50	20	39	43	47	46	28	29

Air distribution system RenoPipe

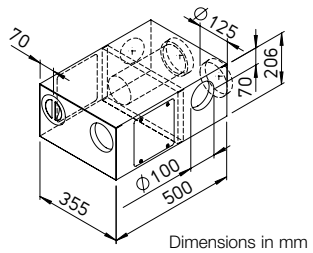
The smart solution, specifically developed for energy-saving renovation: RenoPipe combines ducting and ventilation duct cladding in one component.
- **Quick, easy installation, even in occupied buildings.**
- **Installation without rework possible in drywall construction.**
- **Minimisation of material usage and costs.**
- **Cost-effective due to few components and elimination of exhaust air piping.**

Installation
- The RP moulded parts can be easily shortened to the desired length with a fine-toothed saw.
- Visible installation in ceilings or walls by clicking the long connector into the mounting brackets included in the delivery.
- Free cuts in the duct compensate for unevenness, miter cuts are unnecessary due to precision-fit moulded parts. Fastening elements with longitudinal, lateral and height compensation guarantee a precise fit.

Properties and advantages
- Coatable components made of smooth, high-density EPS in white.
- Quick visible installation, without elaborate ceiling suspensions and drywall construction work.

Duct concept, installation
- The extract air from the adjoining extract air rooms is collected directly in the sound-insulated combination distributor. There is no extract air piping or separate silencers.
- Asymmetric lip seals ensure the leak tightness of the entire RenoPipe system.

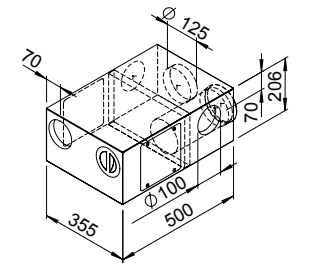
Combination distributor



Dimensions in mm

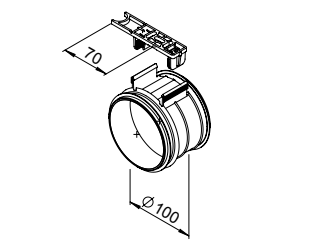
Combination distribution box, supply air right
Compact distributor made of galvanised steel sheet with sound-absorbing lining of inner sides. Properties: Extract air collector, supply air distributor with sound insulation function. Unit connection 2 x DN 125, 2 x DN 100 for extract air, 2 x DN 100 for supply air. Incl. inspection opening and cover.
RP-KVK 3-100/125 R No. 03048

Combination distributor



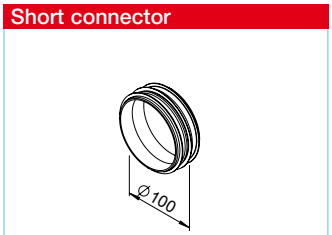
Combination distribution box, supply air left
Compact distributor made of galvanised steel sheet with sound-absorbing lining of inner sides. Properties: Extract air collector, supply air distributor with sound insulation function. Unit connection 2 x DN 125, 2 x DN 100 for extract air, 2 x DN 100 for supply air. Incl. inspection opening and cover.
RP-KVK 3-100/125 L No. 03038

Long connector set



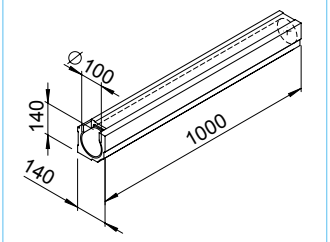
Long connector set
Consists of a connecting sleeve DN 100 made of impact-resistant polypropylene and two lip seals for airtight connection of the duct. Includes mounting bracket for simple click installation of the duct.
RP-LV Ref. no. 03029

Short connector



Short connector
Connecting sleeve DN 100 made of impact-resistant polypropylene. Includes lip seals for airtight connection of RenoPipe EPS moulded parts and wall sleeve.
RP-KV Ref. no. 03030

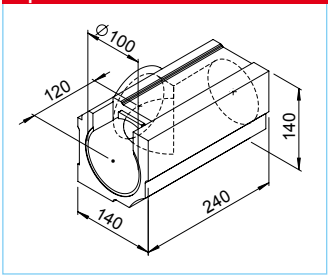
Duct piece



Duct Unit = 4 pcs.*
Duct with smooth, square profile. Internal diameter DN 100, length 1 m.
RP-K Ref. no. 03061

Duct with stucco profile Unit = 4 pcs.*
Like above but with visually appealing stucco profile.
RP-SK Ref. no. 03065

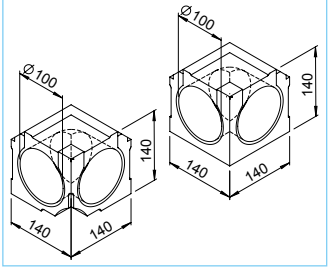
T-piece



T-piece Unit = 4 pcs.*
Compact T-piece with smooth, square profile. Internal diameter DN 100/100/100.
RP-T Ref. no. 03062

T-piece with stucco Unit = 4 pcs.*
Like above but with visually appealing stucco profile.
RP-ST Ref. no. 03066

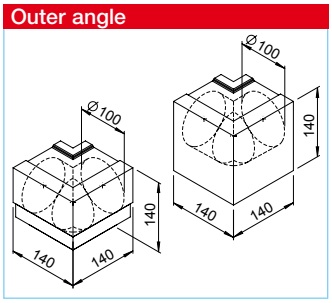
Inner angle



Inner angle Unit = 2 pcs.*
90° inner angle with smooth, square profile. Internal diameter DN 100.
RP-IW Ref. no. 03075

Inner angle with stucco Unit = 2 pcs.*
Like above but with visually appealing stucco profile.
RP-SIW Ref. no. 03077

Outer angle

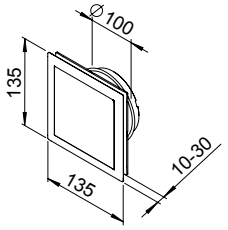


Outer angle Unit = 2 pcs.*
90° outer angle with smooth, square profile. Internal diameter DN 100.
RP-AW Ref. no. 03076

Outer angle with stucco Unit = 2 pcs.*
Like above but with visually appealing stucco profile.
RP-SAW Ref. no. 03078

* Delivered in packaging units.

Ventilation valve

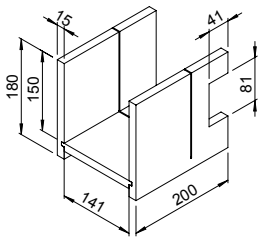


Dimensions in mm

Design ventilation valve
Design ventilation valve for extract air operation, DN 100, adjustable. With closed front and integrated filter.
DLV 100 Ref. no. 03039

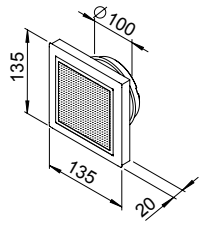
Replacement air filter Unit = 5 pcs.*
ELF-DLV 100 Ref. no. 03042

Cutting aid



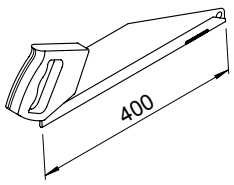
Cutting aid
Stable cutting aid, beech multiplex 15 mm, for easy cutting of duct to length.
RP-SH Ref. no. 03036

Ventilation valve



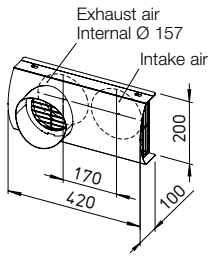
Design ventilation valve, for supply air
Design ventilation valve for supply air operation, DN 100.
DLVZ 100 Ref. no. 03040

Fine-toothed saw



Fine-toothed saw
Special fine-toothed handsaw for precise cuts.
RP-FS Ref. no. 03044

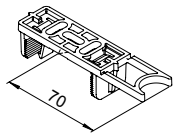
Facade combination panel



Facade combination panel
For intake air and exhaust air ducts. Universally applicable. Elegant, made of high-quality stainless steel. Connection DN 125.
IP-FKB 125 Ref. no. 02689

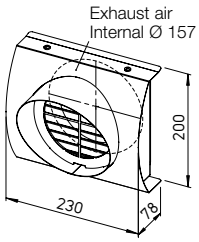
With additional coating for use in environments with severe air pollution or high salt concentration in the air.
IP-FKB 125 B Ref. no. 02661

Bracket



Mounting bracket Unit = 5 pcs.*
Made of high-quality, impact-resistant plastic.
RP-BK Ref. no. 03031

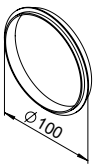
Exhaust air panel



Exhaust air panel
Elegant, made of high-quality stainless steel.
Connection DN 125.
IP-FBF 125 Ref. no. 03126

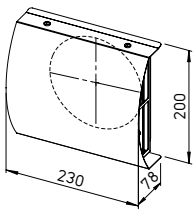
With additional coating for use in environments with severe air pollution or high salt concentration in the air.
IP-FBF 125 B Ref. no. 02901

Seal



Lip seal Unit = 10 pcs.*
DN 100 made of EPDM.
RP-LD Ref. no. 03033

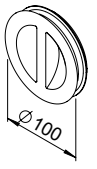
Intake air panel



Intake air panel
Elegant, made of high-quality stainless steel.
Connection DN 125.
IP-FBA 125 Ref. no. 03125

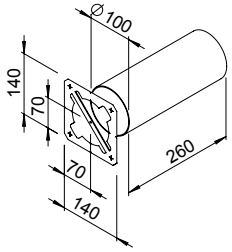
With additional coating for use in environments with severe air pollution or high salt concentration in the air.
IP-FBA 125 B Ref. no. 02664

End / inspection cover



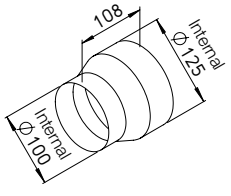
End / inspection cover
DN 100 made of high-quality plastic, with lip seal. For attachment to am duct end piece.
RP-RD Ref. no. 03037

Wall sleeve



Wall sleeve
DN 100 made of PVC, incl. mounting template for simple wall outlet.
RP-WH Ref. no. 03035

Reducer



Reducer
Made of galvanised steel sheet.
RP-RZ 125/100 Ref. no. 03017

* Delivered in packaging units.

Flat duct system FK

Underfloor duct system made of galvanised steel sheet, specifically developed for domestic ventilation. The optimal solution for concealed air ducts; ideal for air distribution in new buildings.

Properties

- All components made of galvanised steel sheet, corrosion-resistant and non-flammable.

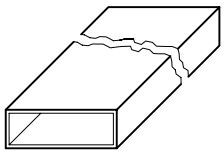
Available in two sizes

- FK 150 x 50 mm for volume flows up to 90 m³/h.
- FK 200 x 50 mm for volume flows up to 140 m³/h.

Duct concept and installation

- Flat design and rigid construction allow easy installation in unfinished flooring.
- Connection using external connector. Moulded parts with integrated sleeve (insertion depth approx. 35 mm). The smooth internal walls result in low flow resistances and do not create obstacles for dirt deposits. Cleaning (disinfection) is still possible.
- The distribution box, which must be installed per floor for extract and supply air delivery, simplifies the duct layout.
- Flat silencers (FK-SD) can be installed in the duct system to protect noise-sensitive rooms, e.g. bedrooms.

Flat duct

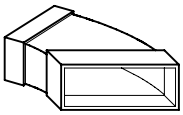


Dimensions in mm

Flat duct

Type	Ref. no.	Dim. in mm Width	Height	Length
150 x 50 mm				
FK 150	02905	150	50	1500
200 x 50 mm				
FK 200	02906	200	50	1500

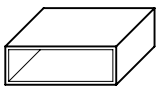
Bend, horizontal 45°



Bend, horizontal 45°

Type	Ref. no.	Dim. in mm Width	Height	Radius
150 x 50 mm				
FK-BH 150/45	02910	153	53	45°
200 x 50 mm				
FK-BH 200/45	02912	203	53	45°

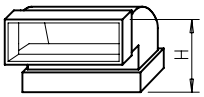
Connector



Connector

Type	Ref. no.	Dim. in mm Width	Height	Length
150 x 50 mm				
FK-V 150	02941	153	53	200
200 x 50 mm				
FK-V 200	02942	203	53	200

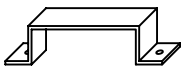
Bend, vertical 90°



Bend, vertical 90°

Type	Ref. no.	Dim. in mm Width	Height	Radius
150 x 50 mm				
FK-BV 150/90	02919	153	103	90°
200 x 50 mm				
FK-BV 200/90	02920	203	103	90°

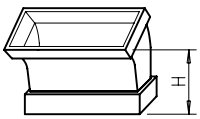
Mounting bracket



Mounting bracket

Type	Ref. no.	Dim. in mm Width	Height	Length
150 x 50 mm				
FK-B 150	02907	151	52	30
200 x 50 mm				
FK-B 200	02908	201	52	30

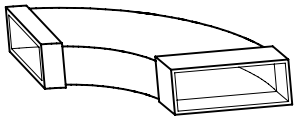
Bend, vertical 45°



Bend, vertical 45°

Type	Ref. no.	Dim. in mm Width	Height	Radius
150 x 50 mm				
FK-BV 150/45	02917	153	73	45°
200 x 50 mm				
FK-BV 200/45	02918	203	73	45°

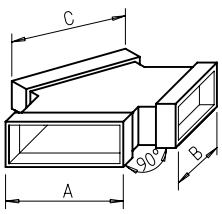
Bend, horizontal 90°



Bend, horizontal 90°

Type	Ref. no.	Dim. in mm Width	Height	Radius
150 x 50 mm				
FK-BH 150/90	02909	153	53	90°
200 x 50 mm				
FK-BH 200/90	02911	203	53	90°

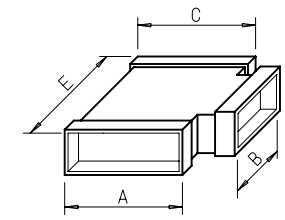
Y-branch



Y-branch

Type	Ref. no.	Dim. in mm A	B	C
150 x 50 mm				
FK-Y 150/150/150	02927	153	153	153
200 x 50 mm				
FK-Y 200/150/150	02929	153	153	203

T-piece

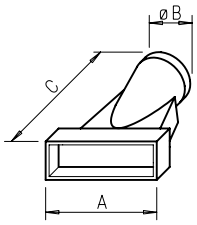


Dimensions in mm

T-piece

Type	Ref. no.	Dim. in mm A	B	C	E
FK-T 150/150/150	02921	153	153	153	250
FK-T 150/150/200	02923	153	153	203	390
FK-T 150/200/150	02926	153	203	153	300
FK-T 200/150/200	02925	203	153	203	250
FK-T 150/200/200	02924	153	203	203	440
FK-T 200/200/200	02922	203	203	203	300

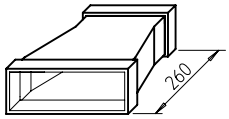
Transition piece



Transition piece

Type	Ref. no.	Dim. in mm A	Ø B	C
150 x 50 mm				
FK-Ü 75/150	02948	153	78	260
FK-Ü 100/150	02996	153	103	260
200 x 50 mm				
FK-Ü 100/200	02997	203	103	260
FK-Ü 125/200	02998	203	128	260

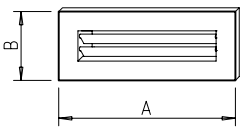
Reducers



Reducers

Type	Ref. no.	Dim. in mm Length	Height
Reducer symmetrical			
FK-RS 200/150	02932	260	53
Reducer asymmetrical			
FK-RA 200/150	02933	260	53

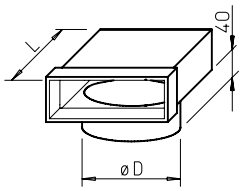
Outlet



Ceiling / wall outlet

Type	Ref. no.	Colour	Dim. in mm A	B
200 x 50 mm				
FK-WA 200 W	09350	White	250	103
FK-WA 200 AL	09351	Alum.	250	103

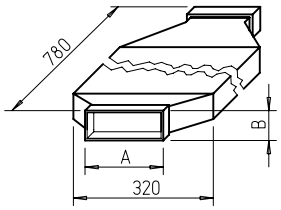
End piece – Spiral duct



End piece with connection for spiral duct

Type	Ref. no.	Dim. in mm Ø D	L
150 x 50 mm			
FK-ER 150/100	02934	99	200
FK-ER 150/125	02935	124	200
200 x 50 mm			
FK-ER 200/160	02936	159	220

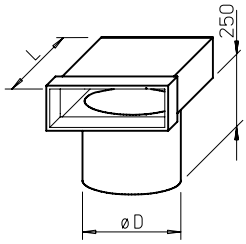
Silencer



Silencer

Type	Ref. no.	Dim. in mm A	B
150 x 50 mm			
FK-SD 150	02945	153	53
200 x 50 mm			
FK-SD 200	02946	203	53

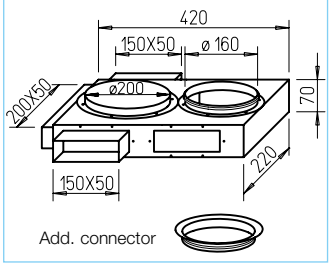
End piece – Valve



End piece with connection for disc valve

Type	Ref. no.	Dim. in mm Ø D	L
150 x 50 mm			
FK-EV 150/100	02937	102	200
FK-EV 150/125	02938	127	200
200 x 50 mm			
FK-EV 200/100	02939	102	200
FK-EV 200/125	02940	127	200

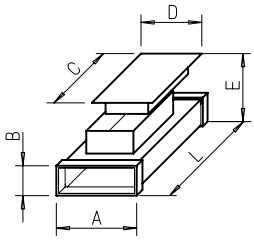
Distribution box



Distribution box

Type	Ref. no.
FK-VK	02987
Delivery FK-VK	
4 connectors 150 x 50 (2 enclosed loose),	
1 connectors 200 x 50 and 1 inspection panel.	
Add. connectors for straight distributor	
FK-ZS	02947

Inspection piece

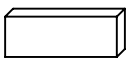


Inspection piece

Type	Ref. no.	Dim. in mm A	B	C	D	L
150 x 50 mm						
FK-RZ 150	02930	153	53	347	137	500
200 x 50 mm						
FK-RZ 200	02931	203	53	347	137	500

Dim. E can vary from 105-130 mm.

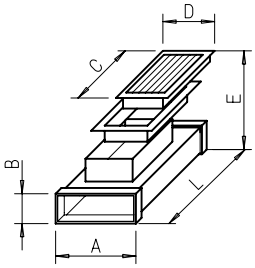
End cover



End cover

Type	Ref. no.
150 x 50 mm	
FK-ED 150	02943
200 x 50 mm	
FK-ED 200	02944

Floor grille

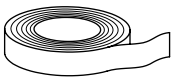


Aluminium floor grille with inst. casing

Type	Ref. no.	Dim. in mm A	B	C	D	L
150 x 50 mm						
FK-BA 150	02986	153	53	348	152	500

Dim. E can vary from 112-152 mm.

Sealing tape



Sealing tape/Tape

Type	Ref. no.	
Cold shrink tape		
KSB	09343	50 mm wide, 15 lin. m
Aluminium cold shrink tape		
KSB ALU	09344	50 mm wide, 15 lin. m
Tape		
KLB	00619	50 mm wide, 20 lin. m

Extract air elements

Design ventilation valves and disc valves
For extract air delivery at high and low flow rates or resistances.
DLV with visually closed front design and integrated filter.

Ø 80		Ø 100		Ø 125		Ø 160	
Type	**Ref. no.**	**Type**	**Ref. no.**	**Type**	**Ref. no.**	**Type**	**Ref. no.**
Design ventilation valve DLV [1] for extract air							
		DLV 100	03039	**DLV 125**	03049		
		ELF-DLV 100 [2]	03042	**ELF-DLV 125 [2]**	03058		
Plastic disc valve KTVA							
KTVA 75/80	00940	**KTVA 100**	00941	**KTVA 125**	00942	**KTVA 160**	00943
Metal disc valve for extract air (for areas where non-flammable components are compulsory)							
MTVA 75/80	08868	**MTVA 100**	08869	**MTVA 125**	08870	**MTVA 160**	08871

[1] With integrated filter. [2] Replacement air filter for DLV, unit = 5 pcs.

Supply air elements

Design ventilation valves and disc valves
For supply air delivery at high and low flow rates or resistances.
DLV 125 with visually closed front design and integrated filter.

Ø 80		Ø 100		Ø 125		Ø 160	
Type	**Ref. no.**	**Type**	**Ref. no.**	**Type**	**Ref. no.**	**Type**	**Ref. no.**
Ventilation grille LGK, Design ventilation valve DLV for supply air							
LGK 80	00259	**DLVZ 100**	03040	**DLV 125**	03049		
				ELF-DLV 125 [1]	03058		
Plastic disc valve KTVZ							
KTVZ 80	02762	**KTVZ 100**	02736	**KTVZ 125**	02737	**KTVZ 160**	02738
Metal disc valve for supply air (for areas where non-flammable components are compulsory)							
MTVZ 75/80	09603	**MTVZ 100**	09604	**MTVZ 125**	09605	**MTVZ 160**	09606

[1] Replacement air filter for DLV 125, unit = 5 pcs.

Supply air-extract air valve ZAV

Supply air-extract air valve ZAV
Elegant plastic valve for wall and ceiling installation.
Can be used as a wall element with open front grille.
Ceiling installation with closed front grille.
Flexible application as supply air valve or extract air valve.

Ø 80		Ø 100		Ø 125		Ø 160	
Type	**Ref. no.**	**Type**	**Ref. no.**	**Type**	**Ref. no.**	**Type**	**Ref. no.**
Plastic valve for supply and extract air ZAV							
ZAV 80	03079			**ZAV 125**	03080		

Attachment filter element VFE

Attachment filter element VFE
For installation in front of disc valves for greasy, contaminated room air. Prevents grease and dirt deposits.
Casing made of galvanised steel sheet, white, plastic powder-coated. Filter made of dimensionally stable aluminium filter fabric with 324 cm² free filter surface and aluminium frame.

Type VFE 70	Ref. no. 02552
Type VFE 90	Ref. no. 02553
Type ELF/VFE	Ref. no. 02554

Replacement air filter, unit = 2 pcs.

Control lines

Control lines
Flat ribbon cable, with RJ12 connectors at both ends for control element KWL-BE. With RJ10 connectors at both ends for KWL-BEC, the CO_2, mixed gas (VOC) se and humidity sensors, KWL-EM or the KNX/EIB module. 8-pin AWG24 twisted pair cable for the control element for types KWL EC 700 D to KWL EC 2600 S.

	For KWL-BE (Flat ribbon cable, with RJ12 connectors both ends)		**For KWL-BEC, -CO_2, -VOC, -FTF, -KNX, -EM** (Flat ribbon cable, with RJ10 connectors both ends)		**For control element KWL EC 700 – 2600** (8-pin AWG24 twisted pair cable)	
Cable length	**Type**	**Ref. no.**	**Type**	**Ref. no.**	**Type**	**Ref. no.**
3 metres	**KWL-SL 6/3**	09987	**KWL-SL 4/3**	04404	—	—
5 metres	**KWL-SL 6/5**	09980	**KWL-SL 4/5**	04405	—	—
10 metres	**KWL-SL 6/10**	09444	**KWL-SL 4/10**	04411	—	—
20 metres	**KWL-SL 6/20**	09959	**KWL-SL 4/20**	04413	**ALB EC-SK 20**	06816
40 metres	—	—	—	—	**ALB EC-SK 40**	06817

Adapter board

Adapter board
Adapter from flat ribbon cable to stranded wire or cable. For connection of KNX module and RJ10 control line. See KWL® unit product pages for description of KNX module.
Type KWL-RJ10 KL No. 04277

Other accessories

Accessory details

Dimensions, further technical information and other sizes:

Warm water heating elements and temp. control systems
Ventilation grilles, ducts, moulded parts, roof outlets

Extract air elements, attachment filter elements
Disc valves

Shutters

Silencer

Ø 100	Ø 125	Ø 160	Ø 200	Ø 250	Ø 315	Ø 355	Ø 400
Flexible connecting sleeve – For acoustic decoupling, incl. 2 pcs. hose clamps							
FM 100 01681	**FM 125** 01682	**FM 160** 01684	**FM 200** 01670	**FM 250** 01672	**FM 315** 01674	**FM 355** 01675	**FM 400** 01676
Duct shutters – Self-actuating or **motorised, installed in pipeline, casing made of galvanised steel sheet or *plastic							
RSKK* 100 05106	**RSKK* 125** 05107	**RSK 160** 05669	**RSK 200** 05074	**RSK 250** 05673	**RSK 315** 05674	**RSK 355** 05650	**RSK 400** 05651
				RVM 250** 02576	**RVM** 315** 02578	**RVM** 355** 02579	**RVM** 400** 02580
KAK 100 04097	**KAK 125** 04098	**KAK 160** 04099	**KAK 200** 04100	**Cold smoke shutter**			
Flexible cross talk silencer FSD [1], **duct silencer RSD** [1] – Galvanised steel sheet					**Duct silencer SDE** see page 61		
FSD 100 00676	**FSD 125** 00677	**FSD 160** 00678	**FSD 200** 00679	**FSD 250** 00680	**FSD 315** 00681	**FSD 355** 00682	**FSD 400** 00683
—	—	—	—	**RSD 250** 08739	**RSD 315** 08745	**RSD 355** 08748	**RSD 400** 08751

[1] See product page for average insulation dimension.

Warm water heating element

Type	Ref. no.	Compatible with duct	Air-side data: Heat output		Air-side data: Δ T air		Air-side data: at V̇	Water-side data[1]: Pressure loss	Water-side data[1]: with water volume	Weight	Compatible temperature control system: Type	Ref. no.
		Ø mm	kW[1]	kW[2]	K[1]	K[2]	m³/h	Δp_w kPa	l/h	approx. kg		
WHR 100	09479	100	1.9	0.9	35	17	150	1	84	3.2	**WHST 300 T50**	08820
WHR 125	09480	125	2.6	1.1	29	13	250	2	115	3.2	**WHST 300 T50**	08820
WHR 160	09481	160	5.5	3.1	38	22	400	11	245	4.9	**WHST 300 T50**	08820
WHR 200	09482	200	7.2	4.1	33	19	600	17	317	4.9	**WHST 300 T50**	08820
WHR 250	09483	250	10.7	6.0	37	21	800	8	470	6.9	**WHSH HE 24 V**	08318
WHR 315	09484	315	18.3	10.4	36.2	21	1400	9	810	9.0	**WHSH HE 24 V**	08318
WHR 400	09524	400	26.2	15.0	36	21	2000	11	1060	12.5	**WHSH HE 24 V**	08318

Door ventilation grilles

Door ventilation grilles
Unobtrusive, sight screening ventilation grille made of break-resistant plastic for installation in door leaf.

See product page for detailed description.

Type LTGW Ref. no. 00246
Made of plastic, white.

Type LTGB Ref. no. 00247
Made of plastic, brown.

Cleaning set

Cleaning set for air distribution systems FlexPipe® and RenoPipe.
The universal cleaning set KWL-RS is ideally suitable for cleaning the FlexPipe® duct systems (DN 75, DN 63) and the RenoPipe air distribution system (DN 100). Application is possible either by pushing (for short distances) or pulling. In case of longer duct sections or narrow bends, the round nylon brush is simply pulled in the direction of the distribution box, where the 90° bend is used for the intake connection. This is used to easily remove the dust loosened by the round nylon brush with a commercially available vacuum cleaner.

Delivered in a practical transport bag.
Delivery: Per 1 pc.
- Reel with flexible GFK wire (20 linear m.)
- Round brushes DN 63, 75, 100
- 90° bend and seal for intake connection DN 56
- Adapter DN 56/40, DN 56/32.

Type KWL-RS Ref. no. 02797

Air temperature control

Air temperature control for KWL® units with PWW post-heater.
For air heating control of the PWW post-heater integrated in KWL WW types. Consists of thermostat with remote adjustment and remote sensor. Simple, cost-effective and quick-to-install solution.
Temperature range 8 – 38 °C.

WHST 300 T38 Ref. no. 08817

Air temperature control

Air temperature control for warm water heating element WHR. Ideal for use as supply air heater.
Consists of thermostat incl. duct temperature sensor (with 2 m capillary tube) and valve. Provides a constant supply air temperature. Simple, cost-effective and quick-to-install solution.
Temperature range 20 – 50 °C.

WHST 300 T50 Ref. no. 08820

Hydraulic unit

Hydraulic unit
Controls the flow of the PWW heating element using a three-way valve actuator 24 V (0-10 V) and thus the heat output transferred to the air. Delivered as a complete unit, incl. VL-/RL temperature display, circulating pump and flexible connection hoses.

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

Weekly timer

Weekly timer
Digital timer with LCD display for autom. control of op. mode, programmable for every weekday. Surface and flush-mounted install.
Dim. mm (WxHxD) 84 x 84 x 40
Type WSUP Ref. no. 09990

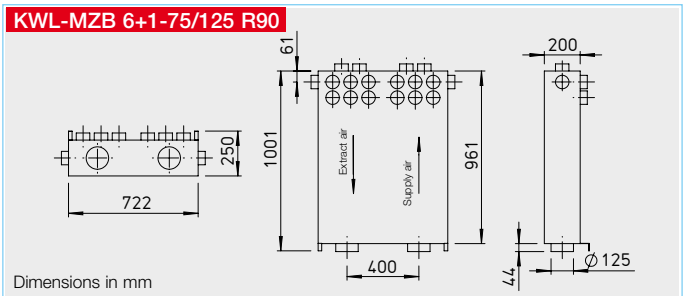
For switch cabinet installation (2 space units required).
Dim. mm ((WxHxD) 36 x 90 x 63
Type WSUP-S Ref. no. 09577

WHR: The values apply for supply air temp. 0 °C and flow/return temperatures: [1] 90/70 °C, [2] 60/40 °C.

KWL-MZB 6+1-75/125 R90 and KWL-MZB 6+1-75/125 L90

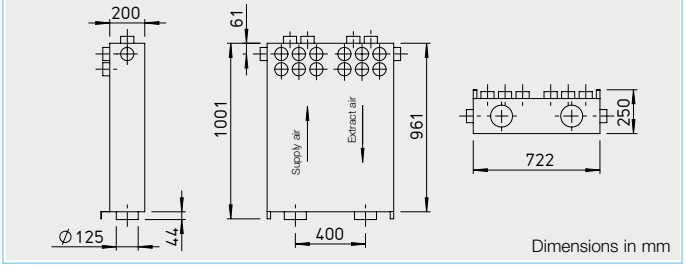
Compact unit for connection of supply and extract air DN 125 and 2 x 7 connectors DN 75 with supply air on right or left side.

KWL-MZB 6+1-75/125 R90



Dimensions in mm

KWL-MZB 6+1-75/125 L90



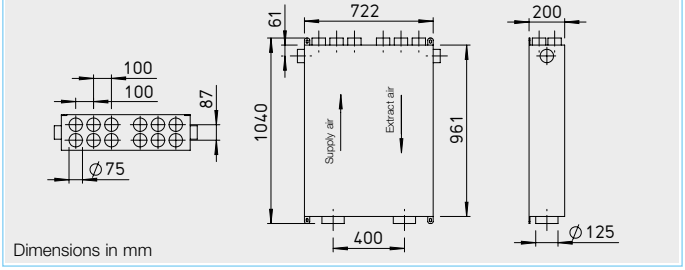
Dimensions in mm

KWL-MZB 6+1-75/125 and KWL-MZB 125/125

Compact unit for the connection of supply and extract air DN 125 and 2 x 7 connectors DN 75.

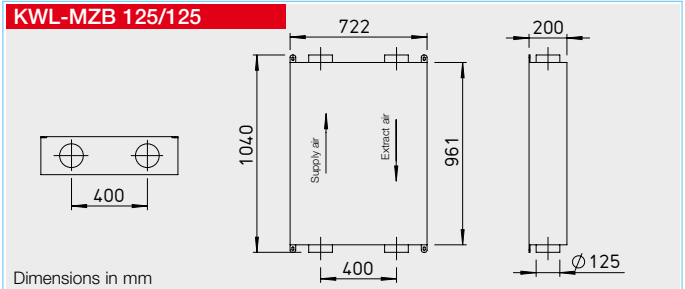
Box with one connection each for supply and extract air on each side DN 125.

KWL-MZB 6+1-75/125



Dimensions in mm

KWL-MZB 125/125



Dimensions in mm

Volume flow control, sound insulation, air distribution and system control – solve seven problems at once with the new KWL® MultiZoneBox.
When combined with a central building KWL® unit, the MultiZoneBox ensures the silent, demand-oriented supply and extract ventilation of residential and commercial units.

Advantages

- The installation and commissioning are particularly simple and safe.
- Spiral ducts can also be connected just as easily as the flexible plastic duct system FlexPipe®*plus*.
- Reliable air distribution for almost all areas of application.
- Practical advantages include freedom from maintenance, maximum functional reliability and whisper-quiet operation.
- When multiple KWL® MultiZoneBoxes are used to ventilate a large unit, e.g. a doctor's surgery, different zones can be supplied with varying air volumes independently and according to demand.
- Whether the ventilation system is installed in the basement or on the roof, indoors or outdoors.
- the KWL® MultiZoneBox always ensures an ideal air distribution.

Special features

- Large sound insulation elements guarantee silent operation.
- The optional room air sensor makes the MultiZoneBox a complete demand-controlled ventilation unit.
- Only one single, compact box is installed.
- Expendable parts and wear parts were dispensed with completely in the design of the KWL® MultiZoneBox.
- Revolutionary technology safely guarantees the predefined volume flow.

Functional principle

Thanks to the intuitive PC software, the commissioning of the KWL® MultiZoneBox is convenient and fast:

- Start software > enter air volumes > done!
  There is no need for elaborate, time-consuming pressure differential measurements.
- A variety of other configuration options are available, if required.
- Once set, the defined parameters can be stored on a computer and transferred to other boxes.

The box in the network

All boxes can be combined to form a network and operated centrally (using a central controller, KWL-ZR, accessories):
The KWL® MultiZoneBox software allows the central commissioning of all boxes in the network. Optionally on-site or via the internet.

The ultimate solution

This technology is used to constantly coordinate the performance of the central ventilation unit with the changing conditions for each KWL® MultiZoneBox. The unit supplies the exact air volume individually required for every moment. This reduces energy consumption without comprising on comfort.

KWL-MZB-BE

Control element ECO
KWL-MZB-BE No. 04213

Description
- Manual 4-step operation or automatic mode. For flush-mounted installation.
- Dimensions (W x H x D) 80 x 80 x 10 mm.
- 4-step with LED, flush-mounted version.

KWL-MZB-BET

Control element Touch
KWL-MZB-BET No. 04214

Description
- Touch display made of glass for controlling the boxes.
- Dimensions (W x H x D) 110 x 93 x 19 mm.
- 3.9 inch display including temperature sensor, flush-mounted version.

KWL-MZB-ZR

Central controller
KWL-MZB-ZR No. 04215

Description
- Central control, configuration and management of all connected boxes.
- Networking of up to 256 boxes.
- Fan optimiser function.
- Suitable switching power supply: KWL 45 SNH, No. 03001.

KWL-MZB-AP

Connection plate
KWL-MZB-AP No. 04217

Description
- For installation in concrete ceilings.
- Dimensions (W x H x D) 776 x 50 x 255 mm.
- 2 x 6 connectors DN 75.
- For direct box connection to the duct system in the ceiling.

KWL-MZB-RH7

Pipe support
KWL-MZB-RH7 No. 04236

Description
- Pipe supports for two-sided connection of FlexPipe®plus.
- Set consists of 2 connection plates each with 7 supports.

KWL-MZB-RH13

Pipe support
KWL-MZB-RH13 No. 04249

Description
- Pipe supports for one-sided connection of FlexPipe®plus.
- Consists of 1 connection plate with 13 supports.

KWL-MZB-VOC-F

Combi-sensor
KWL-MZB-VOC-F No. 04216

Description
- Combi-sensor (air humidity and VOC)for installation in MZB.
- VOC-humidity sensor.
- Installation in KWL® MultiZoneBox.

KWL-MZB-F

Humidity sensor
KWL-MZB-F No. 04250

Description
- Air humidity sensor for installation in KWL® MultiZoneBox.

Technical data MultiZoneBox

Type	Ref. no.	Type	Ref. no.
KWL-MZB 6+1-75/125 R90	04050	**KWL-MZB 6+1-75/125***	04052
KWL-MZB 6+1-75/125 L90	04051	**KWL-MZB 125/125***	04053
Range of application			40 – 220 m³/h
Measurement accuracy			+/-10 m³/h
Voltage / Frequency			1~, 230 V, 50 Hz
Max. power consumption			6 Watt
Protection category			IP 40
Weight			25 kg

* Supply air and extract air flow directions freely selectable.
Individual type details at www.HeliosSelect.de.

Reference
Suitable revision solution for drywall construction on request.

KWL-MZB-VSAP

Connection set
KWL-MZB-VSAP No. 04219

Description
- For ceiling installation with connection plate. Set with 12 connectors and mounting bracket.
- Includes 12 connectors for connection plate.

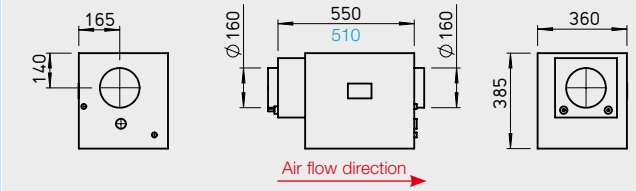
KWL-MZB-KSS

Plastic connectors DN 75
KWL-MZB-KSS No. 04253

Description
- Set consists of 2 pcs., for the optional, side connection of a ventilation duct DN 75 to KWL-MZB 125/125 (Ref. no. 04053), included in delivery for boxes 04050, 04051, 04052.

KWL HB ..

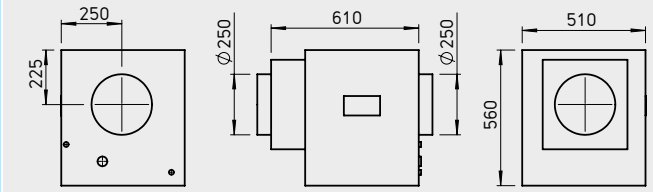
KWL HB 250 .. L



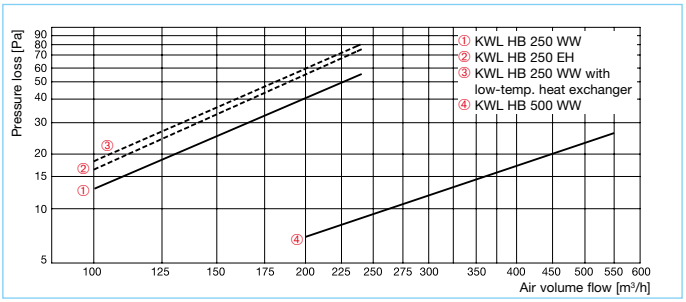
Dimensions in mm

KWL HB 250 WW L, KWL HB 250 EH L

KWL HB 500 WW L



Dimensions in mm



Designed specifically for ventilation systems in residential buildings and offices, the Helios HygroBox automatically guarantees a healthy feel-good atmosphere with ideal air humidity throughout the year.

Advantages

- Constant indoor climate with ideal moisture content.
- Prevention of expensive damage to furniture, wooden floor coverings and antiques.
- Alleviation of allergy symptoms and health impacts. Strengthening of the immune system by reducing the lifetime of bacteria and viruses.
- Reduction of fine dust and electrostatic charges.

Special HygroBox features

- Constant supply air humidity and temperature in all rooms.
- The principle of natural evaporation prevents excessive humidification.
- Hygienically safe due to UVC disinfection.
- Fully automated operation with automatic summer deactivation.
- Low-maintenance and easy to install.
- Low operating costs through the use of evaporation energy from the existing heating system.

Functional principle

The HygroBox is an active humidification unit for integration in new or existing KWL® ventilation units with heat recovery. The fresh intake air flows through the KWL® unit heat exchanger and absorbs the thermal energy from the extract air. This preheated air is then delivered to the HygroBox, where active and automatic humidification takes place according to the principle of natural evaporation. A bladed rotor rotates continuously in a water bath inside the unit and releases water molecules into the preheated supply air via the wetted blade surface. Regardless of the KWL® unit operating level and external weather influences, the HygroBox constantly maintains the preselected relative air humidity and thus guarantees a healthy feel-good atmosphere with ideal moisture content.

Delivery

Delivered as a plug-in compact unit including water supply hoses and water filter.

Heating element

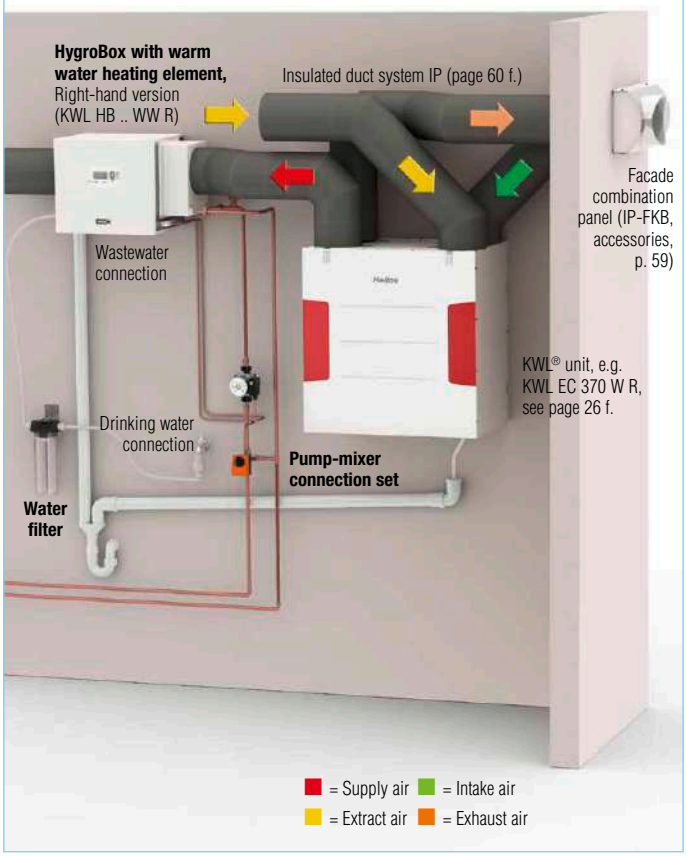
☐ The HygroBox is equipped with a warm water (WW types) or electric heating element (EH types). This heats the supply air before humidification and thereby guarantees the required evaporation energy and pleasant supply air temperature.

☐ With regard to heating systems with low flow temperature (e.g. heat pumps), a low-temperature heating element (type KWL-NHR, accessories, see right page) must be connected downstream of the HygroBox.

Summer operation

☐ The HydroBox automatically switches to standby mode when the moisture content of the intake air is sufficiently high (e.g. in summer). In this state, there is no water in the unit and the remains at a standstill.

Schematic diagram KWL HB .. WW R



KWL-NHR

Low-temperature heating element (for KWL HB .. WW)

■ Description

☐ The additional installation of a post-heating element on the HygroBox air outlet is recommended in combination with low-temperature heaters to compensate for the evaporative cooling.

☐ The external temperature sensor, which is included in the delivery of the post-heating element, must be installed in the supply air duct at a distance of approx. 50 cm behind the post-heating element.

■ Accessories
Low-temperature post-heating element

– for KWL HB 250 WW
Type KWL-NHR 250 No. 05628

– for KWL HB 500 WW
Type KWL-NHR 500 No. 05633

KWL-PMA

Pump-mixer connection set (for KWL HB .. WW)

■ Description

☐ For connection of the HygroBox to existing heating circuits.

☐ Consists of:
– 1 pc. circulating pump 230 V
– 2 pc. screw fittings, R 1/2a/15 mm MS (brass)
– 1 pc. 3-way mixer valve with actuator 230 V, Rp1/2", DN 15, runtime 120 seconds.

■ Accessories
Pump-mixer connection set

– for KWL HB 250 WW
Type KWL-PMA 250 No. 05629

– for KWL HB 500 WW
Type KWL-PMA 500 No. 05634

KWL-UVR, KWL-OME

Replacement UVC ducts and osmosis membrane (for all types)

■ Description

☐ Helios HygroBoxes are equipped with a constant, automatically monitored UVC disinfection system which effectively kills all germs and bacteria.

☐ In addition, the water in the evaporator tray is automatically changed depending on the water hardness and evaporation performance.

☐ A reverse osmosis unit protects the unit against limescale deposits.

☐ The hygienic safety of the HygroBox is documented and certified by experts.

■ Accessories
Replacement UVC ducts
Type KWL-UVR Ref. no. 05631

Replacement osmosis membrane
Type KWL-OME Ref. no. 05632

KWL-WF

Replacement water filter (for all types)

☐ As a general rule, the water filter in the water supply pipe must be replaced every 6 months. The filter replacement is indicated on the HygroBox display.

■ Accessories
Replacement water filter
Unit = 1 pc. filter cartridge (without casing, without hoses)
Type KWL-WF Ref. no. 05630

Technical data

	With electric heating element For KWL® units up to 250 m³/h flow rate		With warm water heating element For KWL® units up to 250 m³/h flow rate		For KWL® units up to 500 m³/h flow rate	
	Type	Ref. no.	**Type**	Ref. no.	**Type**	Ref. no.
Right-hand version (air outlet right)	**KWL HB 250 EH R**	00963	**KWL HB 250 WW R**	00923	**KWL HB 500 WW R**	00981
Left-hand version (air outlet left)	**KWL HB 250 EH L**	00962	**KWL HB 250 WW L**	00922	**KWL HB 500 WW L**	00980
Adjustable relative supply air humidity in %	40-60		40-60		40-60	
Adjustable supply air temperature °C	15-25		15-25		15-25	
Air volume flow m³/h	250		250		500	
Power consumption max. W	1400		100		100	
Heat output W	1300		2000		4200	
Voltage/Frequency	230 V~, 50 Hz		230 V~, 50 Hz		230 V~, 50 Hz	
Water connection	3/4"		3/4"		3/4"	
Water drain Ø mm	40-50		40-50		40-50	
Weight (empty weight/operating weight) approx. kg	25/28		25/28		46/61	
Accessories						
Pump-mixer connection set	—		**KWL-PMA 250**		**KWL-PMA 500**	
Ref. no.	—		05629		05634	
Low-temperature post-heating element	—		**KWL-NHR 250**		**KWL-NHR 500**	
Ref. no.	—		05628		05633	
UVC ducts	**KWL-UVR**		**KWL-UVR**		**KWL-UVR**	
Ref. no.	05631		05631		05631	
Water filter	**KWL-WF**		**KWL-WF**		**KWL-WF**	
Ref. no.	05630		05630		05630	
Osmosis membrane	**KWL-OME**		**KWL-OME**		**KWL-OME**	
Ref. no.	05632		05632		05632	

SEWT kit

The ground-to-brine heat exchanger SEWT significantly increases the efficiency of ventilation units with heat recovery! SEWT saves even more energy and minimises heating costs. The optimal addition for ventilation units with heat recovery.

Advantages

- Additional preheating and prevention of icing during the cold season.
- Pleasant "natural cooling" on hot days.
- Complete kit with coordinated components.

Functional principle

The ground-to-brine heat exchanger SEWT utilises the ground temperature which is relatively constant throughout the year. The ground collector pipe is installed is laid in the ground at a depth of approx. 1.2 m. The hydraulic unit ensures the circulation of the brine depending on the outdoor temperature.
The brine serves as a heat transfer medium and releases the heat to the supply air through the heat exchanger module.

This results in the following:

☐ During the cold season
The preheating of cold intake air of up to 14 K.
Thus, the intake air is normally at a temperature above 0 °C when it reaches the ventilation unit with heat recovery (anti-icing operation). This results in a higher supply air temperature and a positive effect on the total energy balance. Post-heating is only necessary in case of very low outdoor temperatures.

☐ On hot summer days
The ground-to-brine heat exchanger reduces the intake air temperature.

☐ During the transitional period
The brine is circulated depending on the outdoor temperature measured via the thermostats. The intake air is always energetically optimised when it reaches the ventilation unit, which additionally saves energy – the indoor climate is always comfortable.

Planning information

☐ In order to maximise the heat transfer, the ground collector pipe should be laid at a depth of at least 1.2 m, since the temperature there is constantly approx. 8–12 °C throughout the year. The ground temperature increases and stabilises with installation depth.

☐ In order to increase the heat transfer, the pipe should be laid directly in the ground in a sand bed. Furthermore, if ground collector pipes are laid in parallel, the distance should not be less than 0.5 m (from pipe to pipe).

☐ There is also the option of probe drilling as an alternative to surface laying.

Delivery

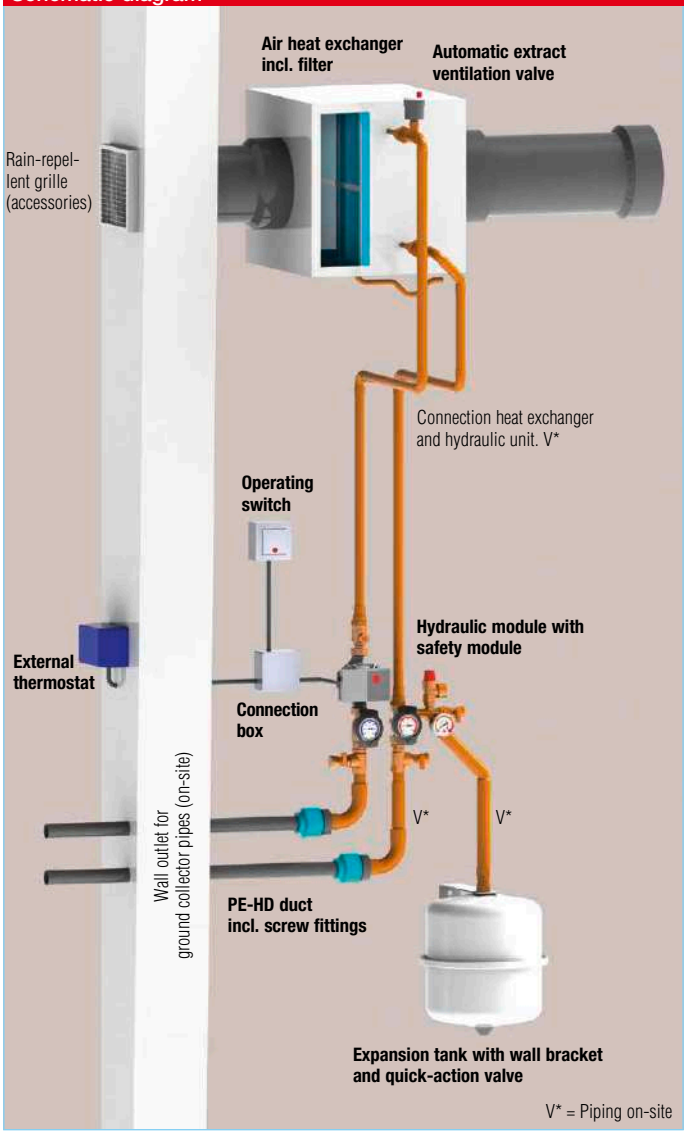
☐ The ground-to-brine heat exchanger SEWT is delivered as a kit corresponding to the course of processing on-site and for optimised transportation.
The complete set guarantees the absolute precision fit and functional reliability, because all individual components are matched to each other. The kit consists of three sets, which are described on the adjacent page.

SEWT kit Ref. no. 02564

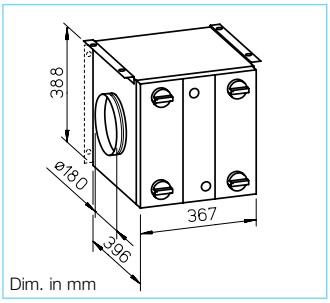
Pictorial schematic

The pre-insulated duct system IsoPipe® should be used to prevent condensation.
Alternative: Spiral duct with additional insulation.

Schematic diagram



SEWT-W



Heat exchanger module

■ Description

- ☐ Highly efficient ground-to-brine heat exchanger unit with aluminium blades for optimal heat transfer to the intake air. Connection duct Ø 12 mm made of copper.
- ☐ Double-walled, fully insulated casing made of steel sheet (20 mm insulation, white powder-coated. With mounting bracket for wall or ceiling mounting.
- ☐ Connector Ø 180 mm with double lip seal.
- ☐ Variable air flow direction through convertible air filter.
- ☐ With integrated air filter, class G4*. Prevents the ingress of dirt, insects, etc.
- ☐ Inspection panels are easy to open without tools for quick and easy access to the filter.
- ☐ Condensate drain connector incl. siphon, Ø 1/2".

■ Accessories

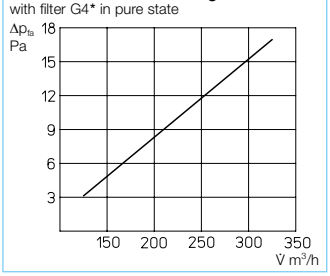
Replacement air filter class G4*
Unit = 3 pcs.

Type ELF-SEWT-F	No. 02568

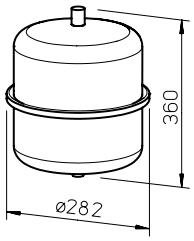
* G4 = ISO coarse 75%.

■ Technical data SEWT-W

Pressure loss Heat exchanger module
with filter G4* in pure state



SEWT-H



Hydraulic module and control

■ Description

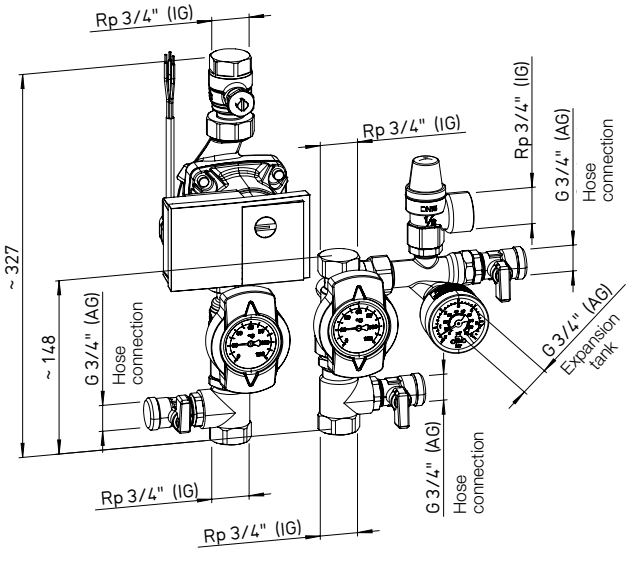
- ☐ Complete hydraulic kit with all components necessary for the connection of the ground-to-brine heat exchanger system and the corresponding control unit for automatic or manual system operation.

■ Delivery

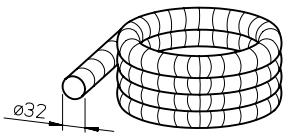
- ☐ Brine pump unit (230 V) incl. safety module.
- ☐ Flow and return temperature display.
- ☐ Automatic quick-vent valve with non-return valve.
- ☐ Membrane pressure expansion tank – 12 litre, connection 3/4", incl. wall bracket and quick-action valve.
- ☐ Thermostat module with 2 setpoints for automatic control of the brine circuit in summer / winter operation.

- ☐ Switch unit for switching between automatic (thermostatic operation) and manual control of the brine circuit (incl. separate connection box – no Fig.)

Technical data Thermostat	
Load capacity	16 A (4 A ind.)
Voltage	230 V, 50/60 Hz
Protection category	IP 54
Wiring diagram no.	906
Temperature range (adjust.)	2 x 0 – 40 °C
Technical data Hydraulic module	
Current consumption max.	0.44 A
Voltage	230 V, 50 Hz
Power consumption	3 – 45 W
Protection category	IP 44



SEWT-E



Ground installation set with screw fittings and 20 l ethylene glycol.

■ Description

- ☐ Flexible PE-HD ground collector pipe (PE-HD = polyethylene high-pressure pipe), wall thickness 2.9 mm, external Ø 32 mm. Delivered in 100 metre bundle.
- ☐ Specifically designed for ground installation.
- ☐ Screw fitting set made of high-quality polypropylene (PP) for connection of the ground collector pipe to the hydraulic unit.
- ☐ The screw fitting set (32-1") has an active seal system.
- ☐ 20 l canister of ethylene glycol, free from amines and nitrites. Sufficient for completely filling the duct system with a 25 % glycol-water mixture.

☐ Reference

The SEWT kit offers functional reliability and accuracy of fit in addition to the package price saving:

Type	**Ref. no.**
SEWT kit	02564

The individual components of the SEWT kit are to be ordered separately:

Type	**Ref. no.**
SEWT-W	02565
SEWT-H	02566
SEWT-E	02567

LEWT kit

The ground-to-air heat exchanger LEWT further optimises the efficiency of ventilation units with heat recovery.

Advantages

- Additional preheating during the cold season without any additional energy requirements.
- Prevention of icing of the heat exchanger.
- Pleasant cooling on hot days.
- Additional post-heating of supply air is only necessary in case of very low outdoor temperatures.
- Complete kit with coordinated components.

Functional principle

The ground-to-air heat exchanger LEWT utilises the fact that the ground temperature remains relatively constant throughout the year. The intake air is drawn through an upstream ground collector pipe. This can be installed in an existing construction pit at a depth of approx. 1.2 to 1.5 m; the total pipe length should be at least 40 m.

This results in the following:

☐ <u>During the cold season</u>
The preheating of cold intake air of up to 14 K. Thus, the intake air is normally at a temperature above 0 °C when it reaches the ventilation unit with heat recovery (anti-icing operation). This results in an increased heat recovery rate and a higher supply air temperature. Post-heating is only necessary in case of very low outdoor temperatures.

☐ <u>On hot summer days</u>
The ground-to-air heat exchanger reduces the intake air temperature.

☐ <u>During the transitional period</u>
Intake either through the ground collector or direct intake opening. This is dependent on the outdoor temperature measured via the thermostats.
The electric bypass shutter automatically controls the ideal intake volume.
The intake air is always energetically optimised when it reaches the ventilation unit, which additionally saves energy – the indoor climate is always comfortable.

Delivery

☐ The ground-to-air heat exchanger LEWT is delivered as a kit corresponding to the course of processing on-site and for optimised transportation. It consists of three sets, which are described on the adjacent page.

☐ The individual components are perfectly matched to each other and form a system.
This guarantees simple, quick and precise installation as well as high functional reliability.

LEWT kit	Ref. no. 02977

Planning information

☐ In order to maximise the heat transfer, the ground collector pipe should be laid at a depth of at least 1.2 m, since the temperature there is constantly approx. 8 °C throughout the year. The ground temperature increases and stabilises with installation depth.

☐ During installation, it should be ensured that there is a gradient of at least 2% for the condensate drain.

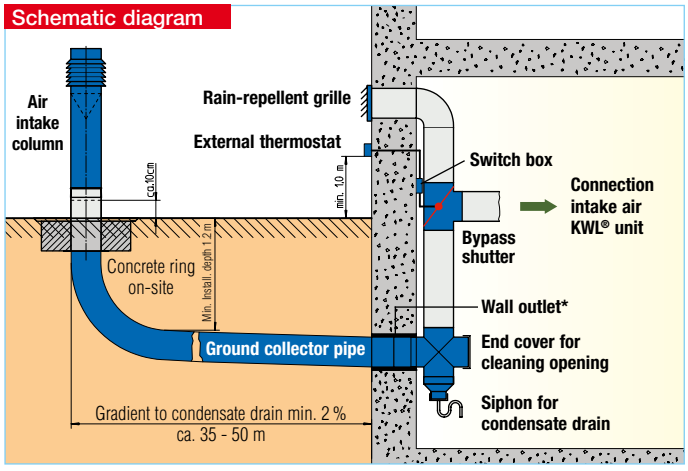
☐ In order to increase the heat transfer, the pipe should be laid directly in the ground in a sand bed. Furthermore, if ground collector pipes are laid in parallel, the distance should not be less than 1 m (from pipe to pipe).

☐ A minimum bend radius of 1 m is recommended to minimise the air-side pressure loss.

Pictorial schematic for installation in buildings with basements

The ground collector pipe enters the building via an underground wall outlet.

Schematic diagram

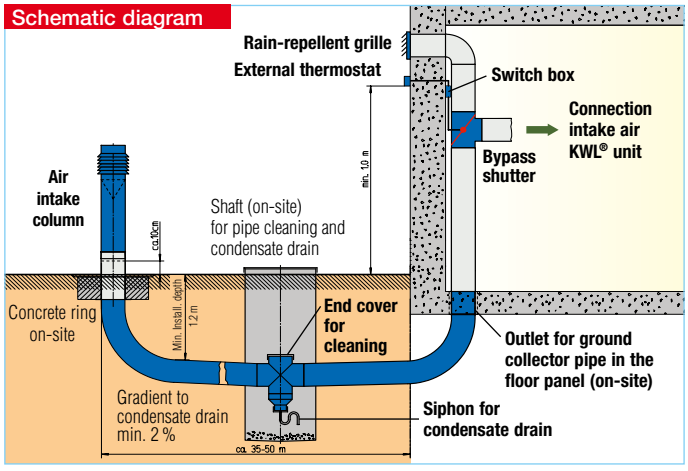


*not suitable for pressing water.

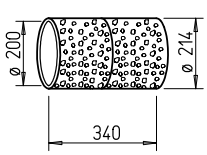
Pictorial schematic for installation in buildings without basements

The ground collector pipe is placed in the building via the floor panel.
A shaft must be provided on-site for inspection purposes.

Schematic diagram



LEWT-E+M



Dimensions in mm

Ground collector pipe and wall outlet LEWT-E+M

■ Description

☐ Flexible, externally corrugated and internally smooth ground collector pipe with low air resistance; external Ø 200 mm.

☐ Coextruded composite pipe made of physiologically and toxicologically safe polyethylene (PE-HD). Antibacterial, antistatic inner wall. Specifically developed as a ventilation duct for ground installation.

☐ Easy to clean, fulfils DIN 1946-6 (VDI 6022).

☐ 100 % odourless, assured top quality level excludes the transmission of harmful substances and vapours.

☐ The PE-HD material achieves double the conductivity of PP with comparable wall thicknesses / pipe cross-sections. In comparison to PVC, the heat conductivity is two and a half times better.

☐ Delivered in bundle with 2 x 25 liner metres. Includes wall outlet DN 200 made of polypropylene (sanded), profile seal rings, connecting sleeve and seals.

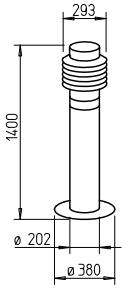
☐ Ground collector pipe, wall outlet and profile seal rings comply with protection category IP 67 when processed according to instructions.

■ Additional connecting sleeve

Includes 2 pcs. seal rings.

LEWT-MU Ref. no. 02971

LEWT-A



Air intake column LEWT-A with filter

■ Description

☐ Air intake column in modern design and aesthetic stainless steel look for supply air intake.

☐ Simple plug-in connection between the intake column and ground collector pipe.

☐ Fixation with support plate or bordering plate (on-site) in drywall construction or set in concrete.

☐ All parts made of stainless steel.

☐ With integrated cone air filter, class G3*. Prevents the ingress of dirt, insects and contaminants.

☐ Cone filter must be removed by hand for cleaning and replacement after removing the blade head.

■ Accessories

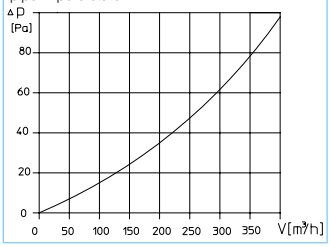
Replacement air filter class G3*

Unit = 3 pcs.

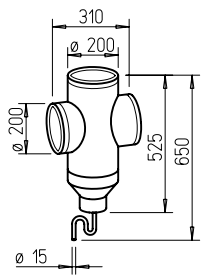
ELF-LEWT-A Ref. no. 02975

* G3 = ISO coarse 45%.

Pressure loss Air intake column
with filter G3* and 40 metre ground collector pipe in pure state



LEWT-S+F



Control and moulded duct parts LEWT-S+F

■ Description

☐ Automatic control of air intake via the ground collector pipe or directly from the outdoor area depending on the outdoor temperature measured by the thermostat.

☐ Temperature range for direct intake individually adjustable at thermostat.

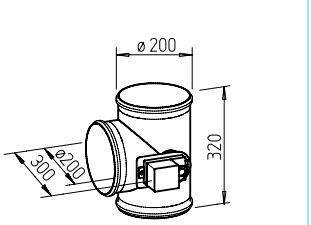
☐ The desired operating mode can be manually selected.

■ Delivery

☐ Bypass shutter NW 200 with actuator 230 V; for vertical installation using the crosspiece.

☐ Crosspiece for connection to the wall outlet.
Includes cleaning opening, condensate collector, siphon and end cover.

☐ Rain-repellent grille RAG (no Fig.) as wall cover for direct intake opening.
Prevents the ingress of rain, small animals and insects into the intake air duct.



☐ Setpoint adjuster and thermostat for automatic and manual bypass shutter control.
For attachment in weatherproof location in the outdoor area on the north side of the building at a height of approx. 1 m.

Dim. in mm B 200 x H 90 x T 70

☐ Switch box with double toggle switch for following operating modes:
– Thermostatic operation, automatic
– Ground heat, manual
– Intake air, manual

Dim. in mm W 110 x H 180 x D 100

Technical data Thermostat	
Load capacity	16 A (4 A ind.)
Voltage	230 V, 50/60 Hz
Protection category	IP 54
Wiring diagram no.	798.1
Temperature range (adjust.)	2 x 0 – 40 °C
Technical data Actuator	
Voltage	230 V, 50/60 Hz
Power consumption	1.5 W
Protection category	IP 54

☐ Reference

The individual components of the LEWT kit are to be ordered separately:

Type	Ref. no.
LEWT-E+M	02991
LEWT-S+F	02990
LEWT-A	02992
LEWT crosspiece	02967

Controlled ventilation.
With heat recovery.

The energy efficiency label for residential ventilation units - the most important information at a glance.
According to the current EU Eco-Design directives, residential ventilation units must save at least as much primary energy as they consume since January 2016.
The energy efficiency label from the household appliances sector was also simultaneously introduced for ventilation units.
But beware! Not all ventilation units automatically get such a label!

Residential ventilation units with a typical range of application in single-family houses or apartments and a volume flow rate up to 250 m³/h must have an energy efficiency label.

The typical range of application (residential or commercial) is decisive for ventilation units **from 250 to 1000 m³/h**, thus an efficiency label will not always be found.

According to the directive, an energy efficiency label is not permissible **over an air volume flow rate of 1000 m³/h**.
Ventilation units without heat recovery (so-called one-way ventilation systems) with a power consumption lower than 30 Watts per airflow are also excluded from labelling. These ventilation units are normally used for the extract ventilation of bathrooms or toilets.
The product-technical information and efficiency specifications are provided with the ventilation units on standardised product data sheets.

The energy efficiency label at a glance.
The assessment of the new energy label is based on efficiency classes A+ (best class) to G (worst class). The SEC value (specific energy consumption) serves as the starting point for these so-called classes.
This value is calculated from the difference between the annual energy consumption and the saved energy. Thus, the class G symbolises the “energy efficiency” of classic window ventilation with a SEC value of 0 (saves no energy, but also consumes no electricity) in relation to heat losses.
In contrast to this “manual ventilation”, the highest efficiency class A+ involves a primary energy saving of more than 42 kilowatt hours per square metre and year. This value indicates the energy saving enabled by the ventilation unit in comparison to window ventilation with the same air quality.
In general terms, it can also therefore be said that the higher this negative value, the more energy efficient the unit.
In a tightened second step, only units which save more energy than the electricity they consume may be sold since 2018.
The SEC value also simultaneously takes the offsetting of electricity consumed for the operation of fans and controls into account and offsets this against the achieved saving of heat energy.

Furthermore, the new energy efficiency label also indicates how quietly or loudly the ventilation unit operates and the maximum cubic metres of air it can supply per hour.

Interesting information about the product data sheet.
The manufacturer is obliged to provide the customer with a product data sheet for each ventilation unit that comes under the new EU Eco-Design directive.
Depending on the area of application (residential or commercial), the product data sheet content will vary.
However, the same standardised requirements will apply for all manufacturers within an area of application (e.g. residential).

Demand-based control for increased efficiency.
In addition to the previously relevant performance data such as the heat recovery or power consumption of the fans, the operating mode also influences the determination of efficiency class. In this respect, it is necessary to distinguish between manual operation using a controller and demand-based operation via sensors. For example, this ensures that the controlled domestic ventilation switches to a higher stage on the basis of predefined parameters, if necessary, but then switches back to the initial operation as soon as the original condition has been reached. This ensures that the ventilation system does not run unnecessarily at a higher stage and thus consume a lot of electricity. Accordingly, ventilation units, which are operated with additional sensors, are assigned to better energy efficiency classes.

Play it safe with Helios products!
The entry into force of the Eco-Design directive was the first step to secure a minimum efficiency standard for ventilation units.
The product requirements were once again tightened in a second step from 2018.
Of course, Helios products meet the latest standards in from the Eco-Design directive.

TIP:
The energy efficiency label and the product data sheet prescribed by the new EU Eco-Design directive can be found in our online database for all Helios products: www.HeliosSelect.de

Notes

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