The new Helios KWL® Generation.
Ventilation systems with heat recovery from 60 to 2600 m³/h.
KWL® from Helios.
Controlled ventilation.
With heat recovery.
### KWL®-ventilation units

- **Floor mounting “S”**
  - Central ventilation units with flow rates approx. 800, 1800, 2600 m³/h.
  - With highly efficient heat exchanger, EC-technology and tested according to passive-house standards.

- **Wall installing, Wall mounting „W“**
  - Wall installed unit for single rooms KWL EC 60
  - Helios easyControls and enthalpy heat exchanger
  - Wall mounted units with flow rates approx. 200, 300, 500 m³/h
  - Passive-house units with flow rates approx. 270, 370 m³/h

- **Ceiling mounting “D”**
  - Ceiling units in flat construction with flow rates approx. 220, 340, 700, 1400, 2000 m³/h.
  - Tested according to passive-house standards.

### KWL®-periphery

- **KWL®-additional equipment**
  - HygroBox for the active humidification
  - Ground-to-brine and ground-to-air heat exchanger

- **KWL®-distribution systems**
  - IsoPipe® for intake and exhaust air ducting
  - RenoPipe for the surface mounting in the house stock
  - FlexPipe® plus to be installed in, on or under concrete
  - Flat duct system to be installed below floor screed

- **KWL®-accessories**
  - Extract-, supply-, overflow-, attachment filter elements, cleaning kit, attenuators, shutters, air temperature control system, water heater batteries, etc.
The political measures set for the global climate will affect the construction industry over the next few years. The main aim is to reduce the amount of greenhouse gases by 40% before the year 2020. In these circumstances the demand for energy efficiency standards, for the establishment and renewal of buildings, increases further.

Improved energy efficiency leads to an airtight building shell. The higher efficiency requirements become apparent in the European and national legislation. Already the introduction of the Energy Saving Regulation (EnEV) 2009 as well as the renewable Energy HeatAct (EEWärmeG) brought a clear aggravation of the structural standard. Currently an amendment is planned with the EnEV in 2012/2013, which represents a further step towards the attainment of the legally required “Zero-Energy-House” in new and old buildings. Usually the increasing energetic requirements are realised by optimal insulating measures at the building shell – with the consequence that this becomes increasingly airtight.

DIN 1946-6 requires the proof of a ventilation concept. Due to the tight building shell the EnEV requires the guarantee of “the minimum air renewal necessary for the purpose of health”. Hence, for each new building or renovation project a ventilation concept is to be provided in accordance with DIN 1946-6. This is not least in reaction to the frequently insufficient ventilation of flats, the expensive structural damages accompanying this and the health-related burdens. If the proof of a ventilation concept has failed, high costs and lawsuits are unavoidable in the event of damage.

Controlled, mechanical ventilation is essential. Ventilation concepts for moisture protection and minimum air exchanges in thermal insulated buildings can be fulfilled only by controlled, mechanical ventilation. Opened windows would negate the desired heating cost saving from the energetic point of view. The proportion of ventilation heating losses through opened windows increases to over 50% of the total heating loss of a energy efficient building.

KWL® from Helios.
Energy saving for a healthy climate.
Today more important than ever.
A KWL®-unit from Helios for controlled ventilation with heat recovery guarantees the moisture protection according to DIN 1946-6, completely, permanently and independently of user behaviour. Beyond that the necessary minimum air exchange is automatically ensured round the clock.

Research proves that people living or working in inadequately ventilated buildings suffer from many ailments such as headache and allergies. On average, humans spend 90% of their lives in closed buildings. Therefore, it is of prime importance to provide healthier indoor air – free from odours and high humidity.

**Fresh air for humans and buildings.**
KWL® guarantees the maintenance of the building fabric and creates a healthy and comfortable climate in otherwise airtight and well insulated buildings around the clock.

Energy savings are achieved by improved insulating measures and through using heat recovery with KWL®. This leads to a further improvement of the energy efficiency. The heating costs are reduced by up to a third through heat recovery and the energy saving EC-fan technology.

Toxins stay outside, the used air is controlled and efficiently renewed. Taking out the moisture continuously avoids mildew, protects the building fabric and ensures, in the long term, the real estate value of the property.

KWL® from Helios provides pleasantly tempered, draught-free and clean air round-the-clock. It ensures a balanced, healthy comfort climate throughout the year.

**KWL® from Helios.**
Healthy, comfortable climate ... and you feel good.
The ventilation concept with added value.
KWL® from Helios.
All from a single source.

1 Ventilation unit with heat recovery
2 Ground-to-brine or ground-to-air heat exchanger
3 Insulated ducting system IsoPipe® for intake and exhaust air ducting
4 Air distribution system FlexPipe® plus for the extract and supply air flow
5 Accessories like attenuators, air intake and extract elements etc.
Apart from the main components what matters most is an integrated concept with a KWL®-unit. Perfectly harmonising all the elements leads to the best results. Helios offers an integrated and coordinated KWL®-system solution which thereby guarantees simple planning, safe assembly and the highest efficiency. The program covers KWL®-units with an air flow volume up to 2600 m³/h which are suitable for single-and multi-family houses as well for commercial and industrial applications. Various services like special KWL®-professional seminars and practice workshops as well as the almost self-explanatory software tool KWLeasyPlan make the layout, planning and installation even easier.

That’s the way it works.
Stale air with humidity, toxins and smells are extracted from the kitchen, bathroom and toilets via design valves to the heat exchanger in the ventilation unit. The outside air, which takes up the heat energy of 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 an earth 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.

KWLeasyPlan allows a fast and reliable layout of complete KWL®-systems with Helios system components in conformity with DIN 1946-6 and the creation of bill of quantities. Most conveniently under www.KWLeasyPlan.de, directly in the browser. Including storage and creation of print-ready version of your project.
# KWL®-ventilation units and periphery at a glance

<table>
<thead>
<tr>
<th>Ventilation units</th>
<th>Typical applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living space</td>
<td>One-family house</td>
</tr>
<tr>
<td>Wall installing, -mounting</td>
<td>KWL EC 60</td>
</tr>
<tr>
<td></td>
<td>KWL EC 200 W</td>
</tr>
<tr>
<td></td>
<td>KWL EC 200 W ET</td>
</tr>
<tr>
<td></td>
<td>KWL EC 270 W</td>
</tr>
<tr>
<td></td>
<td>KWL EC 270 W ET</td>
</tr>
<tr>
<td></td>
<td>KWL EC 300 W</td>
</tr>
<tr>
<td></td>
<td>KWL EC 300 W ET</td>
</tr>
<tr>
<td></td>
<td>KWL EC 370 W</td>
</tr>
<tr>
<td></td>
<td>KWL EC 370 W ET</td>
</tr>
<tr>
<td></td>
<td>KWL EC 500 W</td>
</tr>
<tr>
<td></td>
<td>KWL EC 500 W ET</td>
</tr>
<tr>
<td>Ceiling mounting</td>
<td>KWL EC 220 D</td>
</tr>
<tr>
<td></td>
<td>KWL EC 340 D</td>
</tr>
<tr>
<td></td>
<td>KWL EC 700 D</td>
</tr>
<tr>
<td></td>
<td>KWL EC 1400 D</td>
</tr>
<tr>
<td></td>
<td>KWL EC 2000 D</td>
</tr>
<tr>
<td>Floor mounting</td>
<td>KWL EC 800 S</td>
</tr>
<tr>
<td></td>
<td>KWL EC 1800 S</td>
</tr>
<tr>
<td></td>
<td>KWL EC 2600 S</td>
</tr>
<tr>
<td>Periphery</td>
<td>HygroBox</td>
</tr>
<tr>
<td></td>
<td>Undersoil heat exchanger</td>
</tr>
<tr>
<td></td>
<td>IsoPipe®</td>
</tr>
<tr>
<td></td>
<td>RenoPipe</td>
</tr>
<tr>
<td></td>
<td>FlexPipe®plus</td>
</tr>
<tr>
<td></td>
<td>Flat duct</td>
</tr>
</tbody>
</table>

**Notes:**
- ● indicates availability.
- ○ indicates not available.

**Easy Controls:**
- KWL EC 220 D
- KWL EC 340 D
- KWL EC 700 D
- KWL EC 1400 D
- KWL EC 2000 D

**Periphery Options:**
- HygroBox
- Undersoil heat exchanger
- IsoPipe®
- RenoPipe
- FlexPipe®plus
- Flat duct
KWL®-ventilation units and periphery at a glance

Application (Rated ventilation) / Maximum ventilation in m³/h

<table>
<thead>
<tr>
<th></th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
<th>500</th>
<th>750</th>
<th>1000</th>
<th>1250</th>
<th>1500</th>
<th>1750</th>
<th>2000</th>
<th>2500</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
<td><img src="image_url" alt="Diagram" /></td>
</tr>
</tbody>
</table>

Humidity recovery

Adapted for passive house

Page

10 14 14 14 16 16 16 16 18 18 18 18 20 20 22 22 24 26 28 30 32 34 36 38 40 42 44 48 50 52 57
Energy saving for a healthy climate.
For low-energy- and passive houses, multi-storey buildings and commercial use.

The new generation of KWL®-units from Helios
In new look and new performance range. With even better efficiencies, modular unit configuration and the revolutionary control concept Helios easyControls.

The compact wall units
KWL EC 200 to 500 W and the types KWL EC 220, 340 D for space-saving installation in ceilings are now standard equipped with Helios easyControls. Thus they set a new standard with operation of KWL®-units.

Central building control system interfaces as well as optional controls and air quality sensors offer additional opportunities. Design of the intelligent, modular unit allows individual configuration according to the project requirements.

The new KWL EC model „S“ for vertical, space-saving floor installation is available for air flow volumes from 800 to 2600 m³/h. Ideal for use as central units with heat recovery in commercial and industrial applications.

Certified according to the passive house standard and including special technology for constant volume or constant pressure control. Optionally available with integrated PWW-heater battery.

Helios KWL®-additional value
The universal, perfectly tailored Helios KWL®-system solutions guarantee a simple planning, secure installation and highest efficiency. Services like KWL®, special seminars and practice workshops as well as the almost self-explanatory online software tool KWLeasyPlan.de make the layout, planning and installation additionally easier. Request for information.
Model "D" Extremely flat ventilation unit from 200 to 2000 m³/h for space-saving ceiling installation. With highly efficient heat exchanger, EC-technology and passive house certificate. KWL EC 220, 340 D equipped with easyControls.

Model "S" With air flow rates from 800 to 2600 m³/h, for vertical floor installation. Ideal for use as central units with heat recovery in commercial and industrial applications. With highly efficient heat exchanger, EC-technology and passive house certificate.

Ideally coordinated accessories such as undersoil heat exchanger and the active humidification unit HygroBox for extension of the functions of the KWL®-entire system. Innovative air distribution systems for all types of installation and application. Design ventilation valves etc.
Compact wall unit with heat recovery for ventilation of single rooms.
KWL EC 60 is the proven solution for comfortable indoor climate and energy saving in single rooms. Ideal to bring existing buildings up to modern standards in the course of a renovation and to EnEV standard. KWL EC 60 supplies small and larger single rooms. For a medium-sized flat the installation of several units is recommended.

Installed in no time – ideal for renovation
KWL EC 60 is the optimal renovation solution, also for additional installation. The access to the outside air is simply made by a core drilling in the outer wall in which the wall sleeve is inserted. This can be done simply during the facade renovation. Two protection cover plates close the openings.

The installation of the elegantly designed external facia which is made from high grade-steel takes place with the final plastering works. During the interior work the unit is inserted into the wall sleeve and connected electrically. Only the elegant facia is seen inside the room. Therefore the KWL EC 60 blends in everywhere beautifully and the facia shields the view of the fan interior completely.

Aluminium plate heat exchanger with efficiency of more than 70%
Expensive heating energy is saved with KWL EC 60 and its efficient large heat transfer area aluminium plate heat exchanger with efficiency of more than 70%.

ECgreenVent® by Helios
Efficient energy-saving ventilation units with EC-technology including the Helios KWL EC 60 are given the GreenTec label. KWL EC 60 allows the demand ventilation with heat recovery of individual rooms; several units can be controlled independently. Regulating is not necessary.

Operating mode of the KWL EC 60 ventilation with heat recovery
Two highly efficient fans with energy-saving EC-motors move the supply and extract air. Smells and stale room air are extracted outside, fresh and preheated air is supplied into the room. The heat of the extracted air is recovered by the large heat transfer area aluminium plate heat exchanger and transferred through the plates to the incoming fresh external air, so both air flows remain separated.

Ordering and delivery
Coordinated with the assembly steps the following elements are packed separately and have to be ordered individually:
- First fix set, consisting of wall sleeve (length 349 mm), two protection cover plates and external facia made from high-grade steel.
- KWL 60 RS Ref.-No. 0708

Ventilation unit, optionally in Eco- or Pro-execution. See description on the right.

Similiries
- Heat exchanger
  - Large heat transfer area aluminium plate heat exchanger with efficiency of more than 70%.

Fans
Two highly efficient fans with energy-saving EC-motors move the supply and extract air with minimum power consumption.

Condensation spigot
Condensation is led directly to the outside via the external facia.

Air filter
- Two efficient air filters from micro structured electrostatically charged material of the class G4 in the supply and extract air stream guarantee the best air purity. A pollen filter (class F7) is available for the supply air as an accessory.

KWL EC 60 Eco
The energy saving solution with favourable price/performance ratio for all applications.

Ventilation unit Eco, consisting of indoor facia from high quality polymer with integrated 3-speed controller.

KWL EC 60 Eco Ref.-No. 9950

Speed control
Three-speed operation via controller, integrated in the indoor facia (can be positioned alternatively on top or bottom by 180° turn of facia). Disconnection via on/off switch on site.

Electrical connection
Via plug-in connector (incl. in delivery).

### Technical data

<table>
<thead>
<tr>
<th>Feature</th>
<th>KWL EC 60 Eco 1)</th>
<th>Ref.-No. 9950</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air flow volume on speed step</td>
<td>60</td>
<td>30</td>
</tr>
<tr>
<td>Supply/Extract V m³/h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound level dBA</td>
<td>30</td>
<td>22</td>
</tr>
<tr>
<td>Case breakthrough t₁₀₀ in 3 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power fan 2xW</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Noise protection Dn dBA</td>
<td>39-41</td>
<td></td>
</tr>
<tr>
<td>Voltage/Frequency</td>
<td>230 V, 1 ph., 50 Hz</td>
<td></td>
</tr>
<tr>
<td>Nominal current A</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Protection to IP</td>
<td>X4</td>
<td></td>
</tr>
<tr>
<td>Electric supply</td>
<td>NYM-J 3 x 1.5 mm²</td>
<td></td>
</tr>
<tr>
<td>Wiring diagram no.</td>
<td>949</td>
<td></td>
</tr>
<tr>
<td>Temperature operating range</td>
<td>–20 °C to + 40 °C</td>
<td></td>
</tr>
<tr>
<td>Weight approx. kg</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

1) The necessary first fix set (KWL 60 RS, Ref.-No. 0708) is to be ordered additionally (see details above).

---

**Elegant KWL EC 60 external facia made of high-grade steel.**
KWL EC 60 Pro / Pro FF
Fulfils even highest demands in comfort, with many useful functions.

- Ventilation unit Pro, consisting of indoor facia from high quality polymer and comfort controller (KWL-BCU, 1 pc incl. in delivery). See details on the right.
  
KWL EC 60 Pro No. 9951

- Ventilation unit Pro FF, like KWL EC 60 Pro, however with additional integrated humidity sensor for ventilation as needed. Adjustable humidity level.
  
KWL EC 60 Pro FF No. 9957

- Power control
The comfort controller with graphic display and user-friendly menu navigation (included in delivery) makes the following functions possible:
- Four-speed manual operation or with digital timer.
- Control via intelligent CO₂- and humidity sensors (accessories, in each case up to 4 controllers can be installed).

- Electrical connection
Via plug-in connector (incl. in delivery).

- Safety guard
for installation to outside facia, as protection against dirt deposits.
KWL 60 SG Ref.-No. 9978

- Shutter
Two shutters seal airtight to the outside when the unit is off (halliday or downtimes), one shutter seals individually with supply or extract air operation.

- Compensation ring
from high grade steel for outside wall, length 100 mm, with partition element. For wall thickness > 349 mm.
KWL 60 WV Ref.-No. 0884

- Noise protection Dₜₜ dB(A)
39-41

- Temperature operating range
– 20 °C to + 40 °C

- Weight approx. kg
12.5

- Electric supply NYM-J 3 x 1.5 mm²

- Protection to IP
X4

- Ref.-No. 0708
KWL 60 RS

- 2 pcs G4-filters
ELF-KWL 60/4/4, No. 9445

- 2 pcs F7-filters
ELF-KWL 60/7/7
No. 9446

- Replacement air filters

- Accessories for Pro..
Comfort controller (additional)
Display and function as described on the left. One piece KWL-BCU included in delivery. Up to 4 controllers can be connected. 3 m connecting cable included in delivery.

Dim. mm (WxHxD) for flush mounting 84 x 84 x 51
KWL-BCU Ref.-No. 9955

Dim. mm (WxHxD) for surface mounting 84 x 84 x 51
KWL-BCA No. 9956

- CO₂-sensor
Measures CO₂ concentration and transfers data to the ventilation unit to arrange for an optimal CO₂ level in all 4 speeds. 3 m connecting cable included in delivery. Up to 4 sensors can be plugged in. In this case, the sensor with the highest measurement is used for setting the unit.

Dim. mm (WxHxD) 95 x 97 x 30
KWL EC-CO₂ Ref.-No. 9988

- Connecting cable
For distances > 3 m, with 2 RJ 12 plugs. For connection between controller and KWL EC 60 Pro and/or between several ventilation units.

KWL-SL6/3 (length 3 m) No.9987
KWL-SL6/10 (length 10 m) No.9944
KWL-SL6/20 (length 20 m) No.9959

- Wye junction board
To connect further units or controllers and accessory components which are not included in delivery (each 1 piece required).
KWL-ALA Ref.-No. 9960

Ordering and delivery
Coordinated with the assembly steps the following elements are packed separately and have to be ordered individually:

- First fix set, as described on the left page.
KWL 60 RS No. 0708

- Ventilation unit, available in Eco or Pro. See description on the below.

- Similar accessories
Extension sleeve
length 111 mm, can be shortened to any length, with partition element. For wall thickness > 349 mm.
KWL 60 WV Ref.-No. 0884

- Accessories for Pro..
Comfort controller (additional)
Display and function as described on the left. One piece KWL-BCU included in delivery. Up to 4 controllers can be connected. 3 m connecting cable included in delivery.

- Dim. mm (WxHxD) for flush mounting 81 x 81 x 20
KWL-BCU Ref.-No. 9955

- Dim. mm (WxHxD) for surface mounting 84 x 84 x 51
KWL-BCA No. 9956

- CO₂-sensor
Measures CO₂ concentration and transfers data to the ventilation unit to arrange for an optimal CO₂ level in all 4 speeds. 3 m connecting cable included in delivery. Up to 4 sensors can be plugged in. In this case, the sensor with the highest measurement is used for setting the unit.

- Dim. mm (WxHxD) 95 x 97 x 30
KWL EC-CO₂ Ref.-No. 9988

- Connecting cable
For distances > 3 m, with 2 RJ 12 plugs. For connection between controller and KWL EC 60 Pro and/or between several ventilation units.

- KWL-SL6/3 (length 3 m) No.9987
KWL-SL6/10 (length 10 m) No.9944
KWL-SL6/20 (length 20 m) No.9959

- Wye junction board
To connect further units or controllers and accessory components which are not included in delivery (each 1 piece required).
KWL-ALA Ref.-No. 9960
Heat and humidity recovery for a comfortable climate.

KWL®-units with combined heat and humidity recovery by enthalpy exchanger provide for a comfortable, healthy room climate, without additional energy consumption and without use of an atmospheric humidifier.

Ideal room climate provides a healthy environment

In living quarters the relative room humidity should lie between 30 – 60%. With too low humidity mucous membranes, dry dust and electrostatic charges increase. These effects become apparent, in the cold season, if the outside air has a high saturation level so that when warming, the relative air humidity decreases inside the room. For example: With -5°C outside temperature and 21°C inside the room the humidity of originally 100% drops to less than 17%.

In this range it becomes uncomfortable.

Ventilation units with enthalpy heat exchanger recover, in addition to the heat, up to 65% of humidity from the extract air. This is used to warm the outside air, which flows into the living and reception rooms with a comfortable, healthy moisture content.

Operating mode of enthalpy heat exchanger

The water molecules of the extracted room air condense on contact with surfaces of the enthalpy heat exchanger. They move the water in a similar way to plants, through the membrane. At the membrane surface of the supply airside the water molecules are absorbed by dry outside air. A salt-crystalline layer on the membrane of the enthalpy heat exchanger guarantees hygiene and efficiency with the humidity transmission process. It ensures the water retains its molecular configuration to enter the supply air flow. Extract and supply air flows are hermetically separated from each other, so that an overall transfer of organic particles or odours is excluded.

Ventilation units with enthalpy heat exchanger offer convincing advantages:

- Energy saving heat recovery and humidity recovery in the cold season.
- Humidity recovery from the extract air up to 65%, depending on the interior air humidity.
- Additional humidifiers are unnecessary.

Helios KWL®-systems with enthalpy combine the advantages of heat recovery with those of a healthy interior air humidity in an optimal way. The energy stored in the molecules help retain an improved energetic total balance of the heat recovery in comparison to heat exchangers without enthalpy. Enthalpy heat exchangers from Helios thereby achieve heat recovery efficiencies of more than 100%.
New: KWL® control concept Helios easyControls

Helios easyControls revolutionises with integrated web server and LAN connection the ease of use of KWL®-units. The models equipped with easyControls as standard (see product pages) can be easily and fast integrated into the PC network and operated via the convenient interface in any web browser. Whether with PC or laptop, tablet or smartphone. At any time, in any room.

- Basic functions of the local Helios easyControls web server
  - Start-up assistant
  - Selection/setting of speed step
  - Setting of clock timer
  - Ventilation/Heating
  - Activation of intensive-/whisper-vacation mode
  - Selection of access rights
  - Locking controllers
  - Setting of CO₂-, VOC- and humidity control
  - Software-Updates (via Internet)
  - Display of filter change, Operating conditions/hours, error messages etc.

- Additional features of the Helios easyControls web portal
  - Password-protected access to the KWL ventilation system (e.g. via Smartphone or laptop)
  - Graphical temperature analysis
  - Remote maintenance (housing society or craftsman)
  - Storage of the last three configurations
  - Error message per e-Mail
  - Error history
  - Support by Helios service via Remote Access Control

- Highlights
  - Web browser operation whether from home or on the road, in the home network or via the Internet, from any terminals.
  - Including building control interface (integrated Modbus, KNX optional).

- Options
  - Automatic, demand responsive operation using CO₂-, mixed gas- (VOC) or humidity sensor.
  - Manual operation via comfort controller with graphic display or step switch.

- Location-independent access
  EasyControls provides direct access on the KWL-unit regardless of where you are. Whether from home or on the road via the Internet, active connection preserved. Authorised users, service engineers or housing societies can comfortably change unit settings or query status information via the Helios easyControls web portal at any time.

- Central building control systems
  The KWL-unit simply can be integrated into a network of the central building control system over the standard Modbus interface (TCP/IP) or an optionally available KNX module.

- Simply configured and quickly taken into operation
  During the operation the advantages of the comfortable interface for the system configuration and start-up are demonstrated. Even without a PC network: simply connect the KWL-unit via LAN cable to the laptop and open the menu of easyControls in the browser.

- Always up-to-date
  With Helios easyControls the ventilation unit updates itself simply and quickly over the Internet with the latest software.

- Demand-driven and energy-saving
  Using easyControls and optionally connected CO₂-, mixing gas- (VOC) or humidity sensor the KWL-unit provides automatically for an optimum living space climate and extracts the air pollution which originate, e.g., while cooking or showering reliably. This saves energy.

- Manual operation
  If no PC network available or is a manual access preferred, easyControls can be controlled via a comfort control with graphic display or a step switch.
Compact unit with heat recovery for central ventilation of houses and apartments. Equipped with Helios easyControls, the innovative control concept for easiest network connection and web browser operation. Optionally with highly efficient polymer- or enthalpy heat exchangers for additional humidity recovery. With energy-saving EC-motors.

- **Casing**
  - Made from galvanised steel, white powder coated, double walled, heat and noise insulated (12 mm) on all sides. Easy to install and maintain. The removable front panel allows full access.

- **Heat exchanger**
  - Due to its large surface area the exchanger provides an exceptionally high efficiency of up to 90 %.
  - Types “ET” are equipped with highly efficient enthalpy exchangers for additional humidity recovery. TÜV tested DIBt efficiency of up to 116 %.

- **Fans**
  - Two silent and energy saving centrifugal fans with energy saving EC-motors move the supply air and extract air. They are maintenance free and easy to remove for cleaning.

- **Ducting**
  - Crossover-free connection of intake-, exhaust-, extract- and supply air ducts with NW 125. Spigots with sealing lips for connection located on top of the unit.

- **Condensation outlet**
  - The condensation outlet is located at the bottom of the unit. Ball siphon included in delivery. To be connected to drain pipe by installer.

- **Air filter**
  - Supply of cleaned outside air using a G4 filter. Additionally a F7 pollen filter is available. Extract air passes through a G4 filter before entering the heat exchanger.

- **Summer operation**
  - Comes with automatic bypass function and exchanger cover plate as standard.

- **Frost protection of heat exchanger**
  - The standard frost monitoring automatically regulates the supply air flow and the optional built-in electric pre-heater battery (KWL-EVH 200 W, accessories).

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

- **EasyControls is prepared for:**
  - Connection to central building control systems via integrated Modbus interface or optional KNX module (KWL-KNX, accessories).

- **Electrical connection**
  - Fixed connection via a power cord 3 x 1.5 mm², approx. 2 m long with wire end ferrules. Control line for control elements, sensors, ModBus and LAN to be plugged in on the outside of the unit.

- **Accessories – functional description (details see on the right)**
  - KWL EC 200 W is individually expandable with the following accessories:
    - **Slide switch controller**
      - Three speed operation via slide switch.
      - Three freely definable operating levels within the entire family of performance curves.
      - Via the offset function, the extract fan can be operated with ± 20 % difference.
      - Control voltage directly at the controller measurable.

  - For the realisation of a further operation level, such as night mode, expandable option with clock timer (WSUP/WSUP-S, No. 9990/9977, accessories).

  - Light-emitting diode for optical display of the operating conditions, such as filter change, supply air temperature < +5 °C, errors and operation.

- **Comfort controller**
  - Comfort controller with graphic display and user-friendly menu navigation:
    - Start-up assistant.
    - Selection of speed level (auto/ manual, level 1-4).
    - Four freely definable operating levels within the entire family of performance curves.
    - Setting of weekly program Ventilation/Heating.
    - Setting of CO₂-, VOC- and humidity parameter.
    - Display of e.g. filter change, operating conditions, hours of operation and error messages.
    - Lock function.

- **KNX/EIB-module**
  - Allows the coupling of the ventilation unit with the central building control system via KNX/EIB.

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

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

- **Heater battery**
  - Helios easyControls can regulate via an extension module (KWL-EM, accessories) performance-related an electric (EHR with KWL LTK, accessories) or water heater battery (WHR with WHSH and KWL LTK, accessories). Temperature profiles are adjustable in the weekly program. Furthermore is a self-sufficient operation of the water heater battery via an air temperature control system (WHST 300 T38, accessories) possible, regardless of Helios easyControls.

**Notes**
- Helios easyControls the innovative KWL- control concept Page 13
- Humidity recovery by enthalpy heat exchanger Page 12
KWL EC 200 W

Slide switch controller
Three speed slide switch incl. operation display, for flush installation. Function see on the left. Up to 8 pcs. can be installed. Control line SL 4/3 (length = 3 m) included in delivery, other lengths (SL 4/.../... accessories) available for order. Dim. mm (W x H x D) 80 x 80 x 51

KWL-BE
Ref.-No. 4265
Casing for surface installation
Dim. mm (W x H x D) 80 x 80 x 37

KWL-APG
Ref.-No. 4270

Comfort controller
With graphic display, for flush installation. Function see on the left. Up to 8 pcs. can be installed. Control line SL 4/3 (length = 3 m) included in delivery, other lengths (SL 4/.../... accessories) available for order. Dim. mm (W x H x D) 80 x 80 x 37

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

KWL-APG
Ref.-No. 4270

Technical data

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref.-No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KWL EC 200 W R</td>
<td>4220</td>
<td>With polymer heat exchanger</td>
</tr>
<tr>
<td>KWL EC 200 W L</td>
<td>4222</td>
<td>With enthalpy heat exchanger</td>
</tr>
<tr>
<td>KWL EC 200 W ET R</td>
<td>4221</td>
<td>With polymer heat exchanger (suitable for KNX/EIB)</td>
</tr>
<tr>
<td>KWL EC 200 W ET L</td>
<td>4223</td>
<td>With enthalpy heat exchanger (suitable for KNX/EIB)</td>
</tr>
</tbody>
</table>

Air flow rate on speed step 1)
<table>
<thead>
<tr>
<th>Supply</th>
<th>Extract</th>
<th>Supply</th>
<th>Extract</th>
</tr>
</thead>
<tbody>
<tr>
<td>235 m³/h</td>
<td>18 m³/h</td>
<td>235 m³/h</td>
<td>18 m³/h</td>
</tr>
</tbody>
</table>

Sound level in dB(A) 5)
<table>
<thead>
<tr>
<th>Supply (sound power level)</th>
<th>Extract (sound power level)</th>
<th>Case breakthrough Lw, in 1 m</th>
<th>Power fan 2xW</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 dB(A)</td>
<td>28 dB(A)</td>
<td>45 dB(A)</td>
<td>28 dB(A)</td>
</tr>
<tr>
<td>45 dB(A)</td>
<td>28 dB(A)</td>
<td>45 dB(A)</td>
<td>28 dB(A)</td>
</tr>
<tr>
<td>43 dB(A)</td>
<td>&lt; 25 dB(A)</td>
<td>43 dB(A)</td>
<td>&lt; 25 dB(A)</td>
</tr>
<tr>
<td>49 dB(A)</td>
<td>6 dB(A)</td>
<td>49 dB(A)</td>
<td>6 dB(A)</td>
</tr>
</tbody>
</table>

Standy-losses:
< 1 W

Voltage/Frequency:
1 – 230 V, 50 Hz

Max. Amps A
- ventilation: 1.0
- pre-heater: 4.4
- max. total: 1.0 (5.4 incl. pre-heater, accessories)

Electric pre-heater kW
1.0 kW (accessories)

Summer Bypass
automatic (adjustable), with heat exchanger cover

Wiring diagram no.
1042

Temperature operation range
-20 °C to + 40 °C

Temperature installation location
+5 °C to + 40 °C

Weight approx. kg
41

1) Allow a volume reduction of about 10 % when using a F7 filter.
2) At 0 Pa, speed steps adjustable at will.
5) At 0 Pa, sound levels rise with increasing system pressure.

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

KWL-KNX
Ref.-No. 4275

CO2-, VOC-, humidity sensor
Measures CO2-, mixed gas- (VOC) concentration or relative humidity. Max. of 8 sensors each can be connected, control according to respective highest measured value. Incl. control line SL 4/3 (length = 3 m), other lengths (SL 4/... accessories) available for order. Dim. mm (W x H x D) 95 x 97 x 30

KWL-CO2
Ref.-No. 4272
KWL-FTF
Ref.-No. 4273
KWL-VOC
Ref.-No. 4274

Electric pre-heater battery
Electric pre-heating for simple, plug-in device installation. Allows the pre-heating of the intake air at very low outside temperatures (heat exchanger frost protection). Mandatory for passive houses. Power: 1000 W.

KWL-EVH 200 W
Ref.-No. 4224

Extension module
For controlling external shutters, undersoil heat exchangers and/or heater batteries.

Dim. mm (W x H x D) 210 x 210 x 100

KWL-EM
Ref.-No. 4269

Electric heater battery
For additional supply air heating.

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

Water heater battery
For additional supply air heating.

KWL-LTK (2 pcs required) No. 9644

Duct temperature sensor
Hydraulic unit
WHSH 1100 24V (0-10V) No. 8819

Air temperature control
WHST 300 T38
Ref.-No. 8817

Replacement air filters
- 2 pcs G4-filter
ELF-KWL 200/4/4 No. 0021
- 1 pc F7-filter
ELF-KWL 200/7 No. 0038

Other accessories
- Insulated duct system 48 on
- Air distribution systems 50 on
- Control lines, etc. 60 on
- Heater battery, control, grilles, ducting, roof terminations, extract air elements, design valves

Helios main catalogue
Passive-house compact unit heat recovery, EC technology, constant air flow regulation. Air flow rates up to approx. 270 m³/h

KWL EC 270 W

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

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

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

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

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

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

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

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

- **Electrical connection**
  - **Fixed connection via a power cord 3 x 1.5 mm², approx. 2 m long with wire end ferrules**. Control line for controls, sensors, ModBus and LAN to be plugged in on the outside of the unit.
  - **KNX/EIB-module**
    Allows the coupling of the ventilation unit with the central building control system via KNX/EIB.
  - **Air quality sensor**
    For the automatic operation and optimal air exchange are sensors available which measure the mixed gas, CO₂-concentration and the relative humidity.

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

- **Heater battery**
  Helios easyControls can regulate via an extension module (KWL-EM, accessories) performance-related an electric (EHR with KWL LTK, accessories) or water heater battery (WHR with WHSH and KWL LTK, accessories). Temperature profiles are adjustable in the weekly program. Furthermore is a self-sufficient operation of the water heater battery via an air temperature control system (WHST 300 T38, accessories) possible, regardless of Helios easyControls.

- **Notes**
  Helios easyControls the innovative KWL- control concept
  - **Humidity recovery by enthalphy heat exchanger**

- **Slide switch controller**
  - Three speed operation via slide switch.
  - Three freely definable operating levels within the entire family of performance curves.
  - Via the offset function, the extract fan can be operated with ± 20 % difference.
  - Control voltage directly at the control line for controls, sensors, ModBus and LAN.

- **Comfort controller**
  Comfort controller with graphic display and user friendly menu navigation:
  - Start-up assistant.
  - Selection of speed level (auto/manual, level 1-4).
  - Four freely definable operating levels within the entire family of performance curves.
  - Setting of weekly program ventilation/heating.
  - Setting of CO₂-, VOC- and humidity parameter.
  - Display of e.g. filter change, operating conditions, hours of operation and error messages.
  - Lock function.

- **EasyControls** is prepared for:
  - Connection to central building control systems via integrated Modbus interface or optional KNX module (KWL-KNX, accessories).

- **Dimensions in mm**

- **Setting of CO₂-, VOC- and humidity parameter.**
  Each family member of Helios easyControls is equipped with a CO₂ sensor which measures the concentration of the mixed gas. The Comfort controller then automatically regulates the supply air flow according to the current CO₂ level.

**EasyControls** is also available with an additional VOC sensor for the detection of volatile organic compounds in the indoor air. The VOC sensor measures the total concentration of VOCs, such as formaldehyde, and issues a signal if the concentration exceeds a certain limit. The Comfort controller then automatically regulates the supply air flow according to the current VOC level.

**Setting of humidity parameter.**
The Comfort controller is equipped with a humidity sensor which measures the relative humidity of the indoor air. The Comfort controller then automatically regulates the supply air flow according to the current humidity level. This ensures that the indoor air remains at a comfortable level of humidity, which can help to prevent problems such as condensation and mold growth.

**Comfort controller**
The Comfort controller is designed to be easy to use and provides a user-friendly menu navigation. It allows the user to select the desired operating mode, adjust the speed levels, and set the weekly program for ventilation/ heating.

**EasyControls** is also available with an expansion module (KWL-EM, accessories) which allows the coupling of the ventilation unit with the central building control system via KNX/EIB. This allows for easy access to the ventilation unit from anywhere in the building, either in the home network or on the road via internet.

**EasyControls** is also available with an extension module (KWL-EM, accessories) which allows the coupling of the ventilation unit with the central building control system via KNX/EIB. This allows for easy access to the ventilation unit from anywhere in the building, either in the home network or on the road via internet.

**EasyControls** is also available with an extension module (KWL-EM, accessories) which allows the coupling of the ventilation unit with the central building control system via KNX/EIB. This allows for easy access to the ventilation unit from anywhere in the building, either in the home network or on the road via internet.

**EasyControls** is also available with an extension module (KWL-EM, accessories) which allows the coupling of the ventilation unit with the central building control system via KNX/EIB. This allows for easy access to the ventilation unit from anywhere in the building, either in the home network or on the road via internet.
Technical data and accessories

Replacement air filters
- 2 pcs G4-filters
  - ELF-KWL 270/4/4
  - No. 9613
- 1 pc F7-filter
  - ELF-KWL 270/7
  - No. 9614
- 2 pcs G4-filters for bypass
  - ELF-KWL 270/4/4 BP
  - No. 9617
- 1 pc F7-filter for bypass
  - ELF-KWL 270/7 BP
  - No. 9618

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

- KWL-KNX
  - Ref.-No. 4275

CO₂-, VOC-, humidity sensor
Measures CO₂-, mixed gas- (VOC) concentration or relative humidity. Max. of 8 sensors each can be connected, control according to respective highest measured value. Incl. control line SL 4/3 (length = 3 m), other lengths (SL 4/.., accessories) available for order.

- KWL-CO₂
  - Ref.-No. 4272
- KWL-FTF
  - Ref.-No. 4273
- KWL-VOC
  - Ref.-No. 4274

Electric pre-heater battery
Allows the pre-heating of the intake air at very low outside temperatures (heat exchanger frost protection). Mandatory for passive houses. Power: 1200 W. Controllable via extension module (KWL-EM, see below). G4-filter is to pre-connected (LFBR 160 G4).

- EHR-R 1,2/160
  - Ref.-No. 9434
- LFBR 160 G4
  - Ref.-No. 8578

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

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

Duct temperature sensor

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

- KWL-LTK
  - (2 pcs required)
  - No. 9644

Water heater battery
For additional supply air heating.

- WHR 160
  - Ref.-No. 9481
- WHST 300 T38
  - Ref.-No. 8817

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

- KWL-ET 270
  - No. 5912

- KWL-ET 270 W ET R
  - No. 4229

- KWL-ET 270 W ET L
  - No. 4231

Air flow rate on speed step

<table>
<thead>
<tr>
<th>Type</th>
<th>KWL EC 270 W R</th>
<th>KWL EC 270 W L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply-/Extract air flow vol. m³/h</td>
<td>285</td>
<td>170</td>
</tr>
<tr>
<td>Power fan 2xW</td>
<td>68</td>
<td>19</td>
</tr>
</tbody>
</table>

- With polymer heat exchanger
  - Ref.-No. 4228
  - Ref.-No. 4230

- With enthalpy heat exchanger
  - Ref.-No. 4229
  - Ref.-No. 4231

Other accessories
- Undersoil heat exchanger
- Insulated duct system
- Air distribution systems
- Control lines, etc.
- Heater battery, -control, grilles, ducting, roof terminations, extract air elements, design valves
Compact unit with heat recovery for central ventilation of houses and apartments. Equipped with Helios easyControls, the innovative control concept for easiest network connection and web browser operation. Optionally with highly efficient polymer- or enthalpy heat exchangers for additional humidity recovery. With energy-saving EC-motors.

- **Casing**
  - Made from galvanised steel, white powder coated, double walled, heat and noise insulated (12 mm) on all sides. Easy to install and maintain. The removable front panel allows full access.

- **Heat exchanger**
  - Due to its large surface area the exchanger provides an exceptionally high efficiency of up to 90 %.
  - Types “ET” are equipped with highly efficient enthalpy exchangers for additional humidity recovery. TÜV tested DIBt efficiency of up to 116 %.

- **Fans**
  - Two silent and energy-saving centrifugal fans with energy saving EC-motors move the supply air and extract air.
  - They are maintenance free and easy to remove for cleaning.

- **Ducting**
  - Crossover-free connection of intake-, exhaust-, extract- and supply air ducts with NW 125. Splits with sealing lips for connection located on top of the unit.

- **Condensation outlet**
  - The condensation outlet is located at the bottom of the unit. Ball siphon included in delivery. To be connected to drain pipe by installer.

- **Air filter**
  - Supply of cleaned outside air using a G4 filter. Additionally a F7 pollen filter is available. Extract air passes through a G4 filter before entering the heat exchanger.

- **Summer operation**
  - Comes with automatic bypass function and exchanger cover plate as standard.

- **Frost protection of heat exchanger**
  - The standard frost monitoring automatically regulates the supply air flow and the optional built-in electric pre-heater battery (KWL-EVH 300 W, accessories).

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

  - EasyControls is prepared for:
    - Connection to central building control systems via integrated Modbus interface or optional KNX module (KWL-KNX, accessories).

- **Electrical connection**
  - Fixed connection via a power cord 3 x 1.5 mm², approx. 2 m long with wire end ferrules. Control line for control elements, sensors, ModBus and LAN to be plugged in on the outside of the unit.

- **Accessories – functional description**
  - Details see on the right.

  - **Slide switch controller**
    - Three speed operation via slide switch.
    - Three freely definable operating levels within the entire family of performance curves.
    - Via the offset function, the extract fan can be operated with ± 20 % difference.
    - Control voltage directly at the controller measurable.
    - For the realisation of a further operation level, such as night mode, expandable option with clock timer (WSUP/WSUP-S, No. 9990/9977, accessories).
    - Light-emitting diode for optical display of the operating conditions, such as filter change, supply air temperature < +5 °C, errors and operation.

  - **Comfort controller**
    - Comfort controller with graphic display and user-friendly menu navigation:
      - Start-up assistant.
      - Selection of speed level (auto/manual, level 1-4).
      - Four freely definable operating levels within the entire family of performance curves.
      - Setting of weekly program Ventilation/Heating.
      - Setting of CO₂-, VOC- and humidity parameter.
      - Display of e.g. filter change, operating conditions, hours of operation and error messages.
      - Lock function.

- **KNX/EIB-module**
  - Allows the coupling of the ventilation unit with the central building control system via KNX/EIB.

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

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

- **Heater battery**
  - Helios easyControls can regulate via an extension module (KWL-EM, accessories) performance-related an electric (EHK with KWL LTK, accessories) or water heater battery (WHR with WHSH and KWL LTK, accessories). Temperature profiles are adjustable in the weekly program. Furthermore is a self-sufficient operation of the water heater battery via an air temperature control display (WHST 300 T38, accessories) possible, regardless of Helios easyControls.

**Notes**

- Helios easyControls the innovative KWL- control concept
- Humidity recovery by enthalpy heat exchanger
KWL EC 300 W

**Technical data and accessories**

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

<table>
<thead>
<tr>
<th>Ref.-No.</th>
<th>KWL-KNX</th>
</tr>
</thead>
</table>

**CO₂-, VOC-, humidity sensor**
Measures CO₂, mixed gas (VOC) concentration or relative humidity. Max. of 8 sensors each can be connected, control according to respective highest measured value. Incl. control line SL 4/3 (length = 3 m), other lengths (SL 4/7, accessories) available for order.

<table>
<thead>
<tr>
<th>Dim. (W x H x D)</th>
<th>95 x 97 x 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>KWL-CO₂</td>
<td>Ref.-No. 4272</td>
</tr>
<tr>
<td>KWL-FTF</td>
<td>Ref.-No. 4273</td>
</tr>
<tr>
<td>KWL-VOC</td>
<td>Ref.-No. 4274</td>
</tr>
</tbody>
</table>

**Elecric pre-heater battery**
Electric pre-heating for simple, plug-in device installation. Allows the pre-heating of the intake air at very low outside temperatures (heat exchanger frost protection). Mandatory for passive houses. Power: 1000 W.

<table>
<thead>
<tr>
<th>Ref.-No.</th>
<th>KWL-EVH 300 W</th>
</tr>
</thead>
</table>

**Extension module**
For controlling external shutters, undersoil heat exchangers and/or heater batteries.

<table>
<thead>
<tr>
<th>Dim. (W x H x D)</th>
<th>210 x 210 x 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>KWL-EM</td>
<td>Ref.-No. 4269</td>
</tr>
</tbody>
</table>

**Water heater battery**
For additional supply air heating.

<table>
<thead>
<tr>
<th>WHR 125</th>
<th>Ref.-No. 9490</th>
</tr>
</thead>
</table>

**Duct temperature sensor**

<table>
<thead>
<tr>
<th>KWL-LTK</th>
<th>(1 pc required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ref.-No. 9644</td>
<td></td>
</tr>
</tbody>
</table>

**Hydraulic unit**

<table>
<thead>
<tr>
<th>WHSH 1100 24V(0-10V)</th>
<th>Ref.-No. 8819</th>
</tr>
</thead>
</table>

**Air temperature control**

<table>
<thead>
<tr>
<th>WHST 300 T38</th>
<th>Ref.-No. 8817</th>
</tr>
</thead>
</table>

**Replacement air filters**

- 2 pcs G4-filter
  - ELF-KWL 300/4/4 – No. 0021
- 1 pcs F7-filter
  - ELF-KWL 300/7 – No. 0038
- 2 pcs G4-filter, 1 pc F7-Filter
  - ELF-KWL 300/4/7 – No. 0020

**Note**
Enthalpy heat exchanger (accessories) for additional refitting:

| KWL-ET 300 | No. 0896 |

**Other accessories**

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

---

**Technical data**

<table>
<thead>
<tr>
<th>KWL EC 300 W W</th>
<th>KWL EC 300 W L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airflow rate</td>
<td>315</td>
</tr>
<tr>
<td>Supply-Extract airflow vol. m³/h</td>
<td>315</td>
</tr>
<tr>
<td>Sound levels dB(A)</td>
<td>51</td>
</tr>
<tr>
<td>Supply Sₚₚ (Sound power level)</td>
<td>51</td>
</tr>
<tr>
<td>Extract Sₚₑ (Sound power level)</td>
<td>51</td>
</tr>
<tr>
<td>Case breakout Lₚₑ in 1 m</td>
<td>45</td>
</tr>
<tr>
<td>Power t 2xW</td>
<td>100</td>
</tr>
</tbody>
</table>

**Slider switch controller**
Three speed slide switch incl. operation display, for flush installation. Function see on the left. Control line SL 6/3 (length = 3 m) included, other lengths (SL 6/7, accessories) available for order.

<table>
<thead>
<tr>
<th>Dim. (W x H x D)</th>
<th>80 x 80 x 51</th>
</tr>
</thead>
<tbody>
<tr>
<td>KWL-BE</td>
<td>Ref.-No. 4265</td>
</tr>
</tbody>
</table>

**Comfort controller**
With graphic display, for flush installation. Function see on the left. Up to 8 pcs. can be installed. Control line SL 4/3 (length = 3 m) included in delivery, other lengths (SL 4/7, accessories) available for order.

<table>
<thead>
<tr>
<th>Dim. (W x H x D)</th>
<th>80 x 80 x 51</th>
</tr>
</thead>
<tbody>
<tr>
<td>KWL-APG</td>
<td>Ref.-No. 4270</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Ref.-No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4270</td>
<td>KWL-APG</td>
</tr>
<tr>
<td>4263</td>
<td>KWL-BEC</td>
</tr>
<tr>
<td>4265</td>
<td>KWL-ET 300</td>
</tr>
<tr>
<td>4235</td>
<td>KWL EC 300 W L</td>
</tr>
<tr>
<td>4234</td>
<td>KWL EC 300 W W</td>
</tr>
</tbody>
</table>

---

**SNAP-PAH external fan filter**

- 1 pc F7-filter
  - ELF-KWL 300/4/4 – No. 0021
- 2 pcs G4-filter
  - ELF-KWL 300/7 – No. 0038
- 2 pcs G4-filter
  - ELF-KWL 300/4/7 – No. 0020

**CO₂ sensor**

- F7-filter
  - ELF-KWL 300/4/4 – No. 0021
- F7-filter
  - ELF-KWL 300/7 – No. 0038
- F7-filter
  - ELF-KWL 300/4/7 – No. 0020

---

**SNAP-PAH external fan filter**

- 1 pc F7-filter
  - ELF-KWL 300/4/4 – No. 0021
- 2 pcs G4-filter
  - ELF-KWL 300/7 – No. 0038
- 2 pcs G4-filter
  - ELF-KWL 300/4/7 – No. 0020

**SNAP-PAH external fan filter**

- 1 pc F7-filter
  - ELF-KWL 300/4/4 – No. 0021
- 2 pcs G4-filter
  - ELF-KWL 300/7 – No. 0038
- 2 pcs G4-filter
  - ELF-KWL 300/4/7 – No. 0020
Passive-house compact unit heat recovery, EC technology, constant air flow regulation. Air flow rates up to approx. 370 m³/h

KWL EC 370 W

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

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

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

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

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

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

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

- **Helios easyControls**
  The standard equipment with Helios easyControls allows the simple LAN integration of the KWL-unit into a PC network. The ventilation unit is operated comfortably via the Helios easy-Controls menu in the web browser, by PC/laptop in the LAN or by Tablet/Smartphone in the WLAN – whether in the home network or on the road via internet. Functionality, see page 13. EasyControls is prepared for:
  - Connection to central building control systems via integrated Modbus interface or optional KNX module (KWL-KNX, accessories).

- **Electrical connection**
  Fixed connection via a power cord 3 x 1.5 mm², approx. 2 m long with wire end ferrules. Control line for controls, sensors, ModBus and LAN to be plugged in on the outside of the unit.

- **Accessories – function description (details see on the right)**
  KWL EC 370 W is individually expandable with the following accessories:
  - Slide switch controller
    - Three speed operation via slide switch.
    - Three freely definable operating levels within the entire family of performance curves.
    - Via the offset function, the extract fan can be operated with ± 20 % difference.
    - Control voltage directly at the controller measurable.
    - For the realisation of a further operation level, such as night mode, expandable option with clock timer (WSUP/WSUP-S, No. 9990/9577, accessories).
    - Light-emitting diode for optical display of the operating conditions, such as filter change, supply air temperature, CO₂-concentration and the relative humidity.

- **Comfort controller**
  Comfort controller with graphic display and user friendly menu navigation:
  - Start-up assistant.
  - Selection of speed level (auto/manual, level 1-4).
  - Four freely definable operating levels within the entire family of performance curves.
  - Setting of weekly program (Ventilation/Heating).
  - Setting of CO₂-, VDC- and humidity parameter.
  - Display of e.g. filter change, operating conditions, hours of operation and error messages.
  - Lock function.

- **KNX/EIB-module**
  Allows the coupling of the ventilation unit with the central building control system via KNX/EIB.

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

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

- **Heater battery**
 Helios easyControls can regulate via an extension module (KWL-EM, accessories) performance-related an electric (EHR with KWL-LTK, accessories) or water heater battery (WHR with WHSH and KWL-LTK, accessories). Temperature profiles are adjustable in the weekly program. Furthermore is a self-sufficient operation of the water heater battery via an air temperature control system (WHST 300 T38, accessories) possible, regardless of Helios easyControls.

- **Notes**
  Helios easyControls the innovative KWL-...control concept

Humidity recovery by enthalpy heat exchanger Page 12
**Technical data and accessories**

**KWL EC 370 W**

**Technical data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref.-No.</th>
<th>Right-hand version</th>
<th>Left-hand version</th>
</tr>
</thead>
<tbody>
<tr>
<td>KWL EC 370 W R</td>
<td>4245</td>
<td>KWL EC 370 W R</td>
<td>4245</td>
</tr>
<tr>
<td>KWL EC 370 W L</td>
<td>4247</td>
<td>KWL EC 370 W L</td>
<td>4248</td>
</tr>
<tr>
<td>KWL EC 370 W ET R</td>
<td>4246</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KWL EC 370 W ET L</td>
<td>4248</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Power fans (2xW) 1)**

<table>
<thead>
<tr>
<th>Supply/Extract</th>
<th>71</th>
<th>56</th>
<th>51</th>
<th>71</th>
<th>56</th>
<th>51</th>
<th>71</th>
<th>56</th>
<th>51</th>
<th>71</th>
<th>56</th>
<th>51</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply (sound power level)</td>
<td>58</td>
<td>37</td>
<td>34</td>
<td>58</td>
<td>37</td>
<td>34</td>
<td>58</td>
<td>37</td>
<td>34</td>
<td>58</td>
<td>37</td>
<td>34</td>
</tr>
<tr>
<td>Extract (sound power level)</td>
<td>52</td>
<td>44</td>
<td>37</td>
<td>52</td>
<td>44</td>
<td>37</td>
<td>52</td>
<td>44</td>
<td>37</td>
<td>52</td>
<td>44</td>
<td>37</td>
</tr>
<tr>
<td>Standby-losses</td>
<td>&lt; 1 W</td>
<td>&lt; 1 W</td>
<td>&lt; 1 W</td>
<td>&lt; 1 W</td>
<td>&lt; 1 W</td>
<td>&lt; 1 W</td>
<td>&lt; 1 W</td>
<td>&lt; 1 W</td>
<td>&lt; 1 W</td>
<td>&lt; 1 W</td>
<td>&lt; 1 W</td>
<td>&lt; 1 W</td>
</tr>
</tbody>
</table>

**Summer Bypass**

Automatic, adjustable

**Wiring diagram no.**

1044

**Temperature operation range**

-20 °C to +40 °C

**Temperature installation location**

+5 to +40 °C

**Weight approx. kg**

52

---

**KWL/KNX-module**

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

**KWL-KNX**

Ref.-No. 4275

---

**CO₂-, VOC-, humidity sensor**

Measures CO₂, mixed gas (VOC) concentration or relative humidity. Max. of 8 sensors each can be connected, control according to respective highest measured value. Incl. control line SL 4/3 (length = 3 m), other lengths (SL 4/3, accessories) available for order.

**KWL-CO₂**

Ref.-No. 4272

**KWL-FTF**

Ref.-No. 4273

**KWL-VOC**

Ref.-No. 4274

---

**Comfort controller**

With graphic display, for flush installation. Function see on the left. Up to 8 pcs. can be installed. Control line SL 4/3 (length = 3 m) included in delivery, other lengths (SL 4/3, accessories) available for order.

**KWL-BEC**

Ref.-No. 4263

---

**Casing for surface installation**

**KWL-BE**

Ref.-No. 4265

**KWL-APG**

Ref.-No. 4270

---

**Other accessories**

**KWL®-periphery**

- Undersoil heat 44 on exchanger
- Insulated duct system 48 on
- Air distribution systems 50 on
- Control lines, etc. 60 on
- Heater battery, - control, grilles, ducting, roof terminations, extract air elements, design valves

**Helios main catalogue**
Compact unit with heat recovery for central ventilation of houses and apartments. Equipped with Helios easyControls, the innovative control concept for easiest network connection and web browser operation. Optionally with highly efficient polymer- or enthalpy heat exchangers for additional humidity recovery. With energy-saving EC-motors. Generally approved by DIBt, Z-61.3-226.

- Casing
  - Made from galvanised steel, white powder coated, double walled, heat and noise insulated (12 mm) on all sides. Easy to install and maintain. The removable front panel allows full access.

- Heat exchanger
  - Due to its large surface area the exchanger provides an exceptionally high efficiency of up to 90 %.
  - Types “ET” are equipped with highly efficient enthalpy or enthalpy heat exchangers for additional humidity recovery. TÜV tested DIBt efficiency of up to 116 %.

- Fans
  - Two silent and energy-saving centrifugal fans with energy saving EC-motors move the supply air and extract air. They are maintenance free and easy to remove for cleaning.

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

- Condensation outlet
  - The condensation outlet is located at the bottom of the unit. Ball siphon included in delivery. To be connected to drain pipe by installer.

- Air filter
  - Supply of cleaned outside air using a G4 filter. Additionally a F7 pollen filter is available. Extract air passes through a G4 filter before entering the heat exchanger.

- Summer operation
  - Comes with automatic bypass function and exchanger cover plate as standard.

- Frost protection of heat exchanger
  - The standard frost monitoring automatically regulates the supply air flow and the optional built-in electric pre-heater battery (KWL-EVH 500 W, accessories).

- Helios easyControls
  - The standard equipment with Helios easyControls allows the simple LAN integration of the KWL-unit into a PC network. The ventilation unit is operated comfortably via the Helios easy-Controls menu in the web browser, by PC/laptop in the LAN or by Tablet/Smartphone in the WLAN – whether in the home network or on the road via Internet. Functionality, see page 13.
  - EasyControls is prepared for:
    - Connection to central building control systems via integrated Modbus interface or optional KNX module (KWL-KNX, accessories).

- Electrical connection
  - Fixed connection via a power cord 3 x 1.5 mm², approx. 2 m long with wire end ferrules. Control line for control elements, sensors, ModBus and LAN to be plugged in on the outside of the unit.

- Accessories – functional description (details see on the right)
  - KWL 500 W is individually expandable with the following accessories:
    - Slide switch controller
      - Three speed operation via slide switch.
      - Three freely definable operating levels within the entire family of performance curves.
      - Via the offset function, the extract fan can be operated with ± 20 % difference.
      - Control voltage directly at the controller measurable.
      - For the realisation of a further operation level, such as night mode, expandable option with clock timer (WSUP/WSUP-S, No. 9990/9577, accessories).
      - Light-emitting diode for optical display of the operating conditions, such as filter change, supply air temperature < + 5 °C, errors and operation.

- Comfort controller
  - Comfort controller with graphic display and user-friendly menu navigation:
    - Start-up assistant.
    - Setting of weekly program (auto/manual, level 1-4).
    - Setting of speed level (auto/manual, level 1-4).
    - Four freely definable operating levels within the entire family of performance curves.
    - Setting of weekly program Ventilation/Heating.
    - Setting of CO2-, VOC- and humidity parameter.
  - Display of e.g. filter change, operating conditions, hours of operation and error messages.
  - Lock function.

- KNX/EIB-module
  - Allows the coupling of the ventilation unit with the central building control system via KNX/EIB.

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

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

- Heater battery
  - Helios easyControls can regulate via an extension module (KWL-EM, accessories) performance-related an electric (EHR with KWL LTK, accessories) or water heater battery (WHR with WHSH and KWL LTK, accessories). Temperature profiles are adjustable in the weekly program. Furthermore is a self-sufficient operation of the water heater battery via an air temperature control system (WHST 300 T38, accessories) possible, regardless of Helios easyControls.

Notes
  - Helios easyControls the innovative KWL®-control concept
  - Humidity recovery by enthalpy heat exchanger

Humidity recovery by enthalpy heat exchanger

Air flow rates up to 500 m³/h
KWL EC 500 W

**Technical data and accessories**

### KWL/ET 500

- **Type:** KWL-ET 500
- **Ref.-No.:** 0897
- **Wiring diagram no.:** 1045
- **Temperature operation range:** –20 °C to + 40 °C
- **Temperature installation location:** + 5 to + 40 °C
- **Weight approx.:** 66 kg

### CO₂-, VOC-, humidity sensor

- **Measures:** CO₂-, mixed gas - (VOC)
- **Concentration or relative humidity.**

### Electric pre-heater battery

- **For additional supply air heating.**
- **EHR-R 2/4/160**
- **Ref.-No.:** 9435

### Duct temperature sensor

- **KWL-LTK**
- **Ref.-No.:** 9435

### Water heater battery

- **KWL-LTK**
- **Ref.-No.:** 9435

### Comfort controller

- **With graphic display, for flush installation.**
- **Function see on the left.**
- **Controlation display, for flush installation.**

### Extension module

- **For controlling external shutters, undersoil heat exchangers and/or heater batteries.**
- **Dim. mm (W x H x D) 210x210x100**

### Water heater battery

- **KWL-LTK**
- **Ref.-No.:** 9435
  - **(2 pcs required)**

### Hydrualic unit

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

### Air temperature control

- **WHST 300 T38**
- **Ref.-No.:** 8817

### Other accessories

- **Page**
  - **KWL®-periphery**
  - **40 on**
  - **Undersoil heat**
  - **44 on**
  - **Exchanger**
  - **Insulated duct system**
  - **48 on**
  - **Air distribution systems**
  - **50 on**
  - **Control lines, etc.**
  - **60 on**
  - **Heater battery, -control, grilles, ducting, roof terminations**, etc.
  - **Helios main catalogue**

### Note

- **Replacement air filters**
  - **– 2 pcs G4-filter**
  - **ELF-KWL 500/4/4**
  - **No. 0039**
  - **– 1 pc F7-filter**
  - **ELF-KWL 500/7**
  - **No. 0042**

- **Enthapy heat exchanger (accessories) for additional refitting:**
  - **Type KWL-ET 500**
  - **No. 0897**

---

**Slide switch controller**

- **Three speed slide switch incl. operation display, for flush installation.**
- **Function see on the left.**

**Left-hand version**

- **KWL-APG**
- **Ref.-No.:** 4270

**Right-hand version**

- **KWL-APG**
- **Ref.-No.:** 4270

---

**CO₂-, VOC-, humidity sensor**

- **Measures CO₂-, mixed gas - (VOC)**
- **Concentration or relative humidity.**

**Max. of 8 sensors each can be connected, control according to respective highest measured value.**

**Incl. control line SL 4/3 (length = 3 m), other lengths (SL 4/.., accessories) available for order.**

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

**KWL-CO₂**
- **Ref.-No.:** 4272

**KWL-FTF**
- **Ref.-No.:** 4273

**KWL-VOC**
- **Ref.-No.:** 4274

---

**Duct connector**

- **Connector with sealing to connect unit to ducting.**

**RVBD 160**
- **No. 9641**

**RVBD 180/160**
- **No. 9689**

---

**Technical data**

<table>
<thead>
<tr>
<th>Function</th>
<th>Frequency</th>
<th>Hz</th>
<th>Type</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply</td>
<td>520</td>
<td>35</td>
<td>KWL EC 500 W R</td>
<td>4258</td>
</tr>
<tr>
<td>Extract</td>
<td>520</td>
<td>35</td>
<td>KWL EC 500 W L</td>
<td>4260</td>
</tr>
</tbody>
</table>

**Air flow rate on speed step**

<table>
<thead>
<tr>
<th>Function</th>
<th>Value</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply</td>
<td>520</td>
<td>4258</td>
</tr>
<tr>
<td>Extract</td>
<td>520</td>
<td>4260</td>
</tr>
</tbody>
</table>

**Sound levels dB(A)**

<table>
<thead>
<tr>
<th>Function</th>
<th>Value</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply, max. (sound power level)</td>
<td>56</td>
<td>4258</td>
</tr>
<tr>
<td>Extract, max. (sound power level)</td>
<td>54</td>
<td>4260</td>
</tr>
<tr>
<td>Case breakdown Lp, in 1 m</td>
<td>&lt; 25</td>
<td>4258</td>
</tr>
</tbody>
</table>

**Power tens. 2xV**

<table>
<thead>
<tr>
<th>Function</th>
<th>Value</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby-losses</td>
<td>&lt; 1 W</td>
<td>4258</td>
</tr>
<tr>
<td>Voltage/Frequency</td>
<td>1 – 230 V, 50 Hz</td>
<td>4260</td>
</tr>
<tr>
<td>Max. Amps</td>
<td>1.8</td>
<td>4258</td>
</tr>
<tr>
<td>– pre-heater</td>
<td>4.4</td>
<td>4260</td>
</tr>
<tr>
<td>– max. total</td>
<td>1.8 (0.2 incl. pre-heater, accessories)</td>
<td>4258</td>
</tr>
</tbody>
</table>

**Electric pre-heater kW**

<table>
<thead>
<tr>
<th>Function</th>
<th>Value</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 kW (accessories)</td>
<td></td>
<td>4258</td>
</tr>
</tbody>
</table>

**Summer Bypass**

<table>
<thead>
<tr>
<th>Function</th>
<th>Value</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic, adjustable, with heat exchanger cover</td>
<td></td>
<td>4260</td>
</tr>
</tbody>
</table>

---

**KNX/EIB-module**

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

**KWL-KNX**
- **Ref.-No.:** 4275
Compact ceiling unit with heat recovery
Air flow rates up to 220 m³/h

KWL EC 220 D

- Extremely flat ceiling units with heat recovery for central ventilation of multi-storey buildings and small single-family houses. Certified according to passive-house standards. Equipped with Helios easyControls, the innovative control concept for easiest network connection and web browser operation. With highly efficient polymer heat exchanger and energy-saving EC-motors.

- Casing
  Made from galvanized steel, white powder coated, double walled, heat and noise insulated (20 mm) on all sides. Easy to install and maintain. Removable side panel allows full access.

- Heat exchanger
  Due to its large surface area the polymer exchanger provides an exceptionally high efficiency of up to 90%.

- Fans
  Two silent and energy-saving centrifugal fans with energy saving EC-motors move the supply air and extract air. They are maintenance free and easy to remove for cleaning.

- Ducting
  Crossover-free connection of intake-, exhaust-, and supply air ducts with NW 125. Spigots for connection located on each side of the unit.

- Condensation outlet
  Condensation outlet is located on each side of the unit. Spigots for connection located on the left/right depending on the version. Ball siphon included in delivery. To be connected to the drain trap by installer.

- Air filter
  Supply of cleaned outside air using a G4 filter. Additionally a F7 pollen filter is available. Extract air passes through a G4 filter before entering the heat exchanger.

- Summer operation
  Comes with automatic bypass function and exchanger cover plate as standard.

- Frost protection of heat exchanger
  The standard frost monitoring automatically regulates the supply air flow and the optional built-in electric pre-heater battery (KWL-EHV 220 D, accessories).

- Helios easyControls
  The standard equipment with Helios easyControls allows the simple LAN integration of the KWL-unit into a PC network. The ventilation unit is operated comfortably via the Helios easyControls menu in the web browser, by PC/laptop in the LAN or by Tablet/Smartphone in the WLAN – whether in the home network or on the road via Internet. Functionality, see page 13. EasyControls is prepared for:
  - Air quality sensors for automatic, demand-driven ventilation (KWL-CAO₂, -FTF, -VOC, accessories).
  - Connection to central building control systems via integrated Modbus interface or optional KNX module (KWL-KNX, accessories).

- Accessory line for control elements, sensors, ModBus and LAN to be plugged in on the outside of the unit.

- Accessories – functional description (details see on the right)
  KWL EC 220 D is individually expandable with the following accessories:
  - Slide switch controller
    - Three speed operation via slide switch.
    - Three freely definable operating levels within the entire family of performance curves.
    - Via the offset function, the extract fan can be operated with ± 20 % difference.
    - Control voltage directly at the controller measurable.
    - For the realisation of a further operation level, such as night mode, expandable option with clock timer (WSUP/WSUP-S, No. 9990/6577, accessories).
    - Light-emitting diode for optical display of the operating conditions, such as filter change, supply air temperature < +5 °C, errors and operation.

- Comfort controller
  Comfort controller with graphic display and user-friendly menu navigation:
  - Start-up assistant.
  - Selection of speed level (auto/manual, level 1-4).
  - Four freely definable operating levels within the entire family of performance curves.
  - Setting of weekly program Ventilation/Heating.
  - Setting of CO₂-, VOC- and humidity parameter.
  - Display of e.g. filter change, operating conditions, hours of operation and error messages.
  - Lock function.

- KNX/EIB-module
  Allows the coupling of the ventilation unit with the central building control system via KNX/EIB.

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

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

- Heater battery
  Helios easyControls can regulate via an extension module (KWL-HEM, accessories) performance-related an electric (EHR with KWL LTK, accessories) or water heater battery (WHR with WHSH and KWL LTK, accessories). Temperature profiles are adjustable in the weekly program. Furthermore is a self-sufficient operation of the water heater battery via an air temperature control system (WHST 300 T38, accessories) possible, regardless of Helios easyControls.

- Notes
  Helios easyControls the innovative KWL®-control concept Page 13
  Humidity recovery by enthalpy heat exchanger Page 12
Technical data and accessories

KWL EC 220 D

**Weight approx. kg** 50

**Standby-losses** < 1 W

**Voltage/Frequency** 1 ~ 230 V, 50 Hz

**Max. Amps A** – ventilation 1.2

**– max. total 1.2 (5.6 incl. pre-heater, accessories)**

**Electric pre-heater kW** 1.0 kW (accessories)

**– pre-heater 4.4**

**Sound levels dB(A)**

- **Supply LWA (sound power level)** 77 ... 92
- **Extract LWA (sound power level)** 56 ... 67
- **Case breakout LPA in 1 m** 58 ... < 25

**Right-hand version KWL EC 220 D R**

**Left-hand version KWL EC 220 D L**

**Air flow rate on speed step**

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

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

**KXN/EIB-module**

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

**KWL-KNX** Ref.-No. 4275

**CO₂-, VOC-, humidity sensor**

Measures CO₂-, mixed gas- (VOC) concentration or relative humidity. Max. of 8 sensors each can be connected, control according to respective highest measured value. Incl. control line SL 4/3 (length = 3 m), other lengths (SL 4/..., accessories) available for order.

**KWL-CO₂** Ref.-No. 4272

**KWL-VOC** Ref.-No. 4274

**Electric pre-heater battery**

Electric pre-heating for simple, plug-in device installation. Allows the pre-heating of the intake air at very low outside temperatures (heat exchanger frost protection). Mandatory for passive houses. Power: 1000 W.

**KWL-EVH 220 D** Ref.-No. 9632

**Comfort controller**

With graphic display, for flush installation. Function see on the left. Up to 8 pcs. can be installed. Control line SL 4/3 (length = 3 m) included in delivery, other lengths (SL 4/..., accessories) available for order.

**KWL-APG** Ref.-No. 4263

**Casing for surface installation**

Dim. mm (W x H x D) 80 x 80 x 51

**KWL-APG** Ref.-No. 4270

**Slide switch controller**

Three speed slide switch incl. operation display, for flush installation. Function see on the left. Control line SL 6/3 (length = 3 m) included in delivery, other lengths (SL 6/..., accessories) available for order.

**KWL-BE** Ref.-No. 4265

**Casing for surface installation**

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

**KWL-BEC** Ref.-No. 4263

**Comfort controller**

With graphic display, for flush installation. Function see on the left. Up to 8 pcs. can be installed. Control line SL 4/3 (length = 3 m) included in delivery, other lengths (SL 4/..., accessories) available for order.

**KWL-APG** Ref.-No. 4270

**Comfort controller**

With graphic display, for flush installation. Function see on the left. Up to 8 pcs. can be installed. Control line SL 4/3 (length = 3 m) included in delivery, other lengths (SL 4/..., accessories) available for order.

**KWL-BEC** Ref.-No. 4263

Casing for surface installation

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

**KWL-APG** Ref.-No. 4270

**Comfort controller**

With graphic display, for flush installation. Function see on the left. Up to 8 pcs. can be installed. Control line SL 4/3 (length = 3 m) included in delivery, other lengths (SL 4/..., accessories) available for order.

**KWL-BEC** Ref.-No. 4263

Casing for surface installation

Dim. mm (W x H x D) 80 x 80 x 51

**KWL-APG** Ref.-No. 4270

**Technical data**

<table>
<thead>
<tr>
<th>Hospital</th>
<th>KWL EC 220 D R/L</th>
<th>For ceiling installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right-hand version</td>
<td>KWL EC 220 D R</td>
<td>Ref.-No. 4226</td>
</tr>
<tr>
<td>Left-hand version</td>
<td>KWL EC 220 D L</td>
<td>Ref.-No. 4227</td>
</tr>
<tr>
<td><strong>Air flow rate on speed step</strong></td>
<td>245</td>
<td>65</td>
</tr>
<tr>
<td><strong>Sound levels dB(A)</strong></td>
<td>77</td>
<td>56</td>
</tr>
<tr>
<td><strong>Supply LWA (sound power level)</strong></td>
<td>56</td>
<td>28</td>
</tr>
<tr>
<td><strong>Extract LWA (sound power level)</strong></td>
<td>58</td>
<td>&lt; 25</td>
</tr>
<tr>
<td><strong>Casing breakout LPA in 1 m</strong></td>
<td>58</td>
<td>&lt; 25</td>
</tr>
<tr>
<td><strong>Power fans 2xW</strong></td>
<td>50</td>
<td>5</td>
</tr>
<tr>
<td><strong>Sound levels dB(A)</strong></td>
<td>77</td>
<td>56</td>
</tr>
<tr>
<td><strong>Supply LWA (sound power level)</strong></td>
<td>56</td>
<td>28</td>
</tr>
<tr>
<td><strong>Extract LWA (sound power level)</strong></td>
<td>58</td>
<td>&lt; 25</td>
</tr>
<tr>
<td><strong>Casing breakout LPA in 1 m</strong></td>
<td>58</td>
<td>&lt; 25</td>
</tr>
<tr>
<td><strong>Power fans 2xW</strong></td>
<td>50</td>
<td>5</td>
</tr>
</tbody>
</table>

**Duct temperature sensor**

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

**Water heater battery**

For additional supply air heating.

**WHR 125** Ref.-No. 9490

**Duct temperature sensor**

**KWL-LTK** (2 pcs required) No. 9644

**Hydraulic unit**

**WHST 300 T38** Ref.-No. 8817

**Other accessories**

- 2 pcs G4-filter
- 1 pc F7-filter

Replacement air filters

**KWL®-periphery** 40 on

- Undersoil heat 44 on exchanger
- Insulated duct system 48 on
- Air distribution systems 50 on
- Control lines, et al. 60 on

- Helios main catalogue

- Underfloor heat
- Insulated duct system
- Air distribution systems
- Control lines, et al.

**KWL-LTK**

**Duct temperature sensor**

**KWL-LTK** (2 pcs required) No. 9644

**Hydraulic unit**

**WHST 300 T38** Ref.-No. 8817

**Other accessories**

- Replacement air filters
- 2 pcs G4-filter
- 1 pc F7-filter

**KWL-KNX** Ref.-No. 4275

**KWL-CO₂** Ref.-No. 4272

**KWL-VOC** Ref.-No. 4274

**K Signal**

- 4 V
- 7 V
- 9 V
- 10 V

- 6 V
- 8 V
- 10 V

**Other accessories Page**

- KWL®-periphery 40 on
- Undersoil heat 44 on exchanger
- Insulated duct system 48 on
- Air distribution systems 50 on
- Control lines, et al. 60 on

- Helios main catalogue

- Underfloor heat
- Insulated duct system
- Air distribution systems
- Control lines, et al.

**KWL-LTK**

**Duct temperature sensor**

**KWL-LTK** (2 pcs required) No. 9644

**Hydraulic unit**

**WHST 300 T38** Ref.-No. 8817

**Replacement air filters**

- 2 pcs G4-filter
- 1 pc F7-filter

**KWL®-periphery** 40 on

- Undersoil heat 44 on exchanger
- Insulated duct system 48 on
- Air distribution systems 50 on
- Control lines, et al. 60 on

- Helios main catalogue

- Underfloor heat
- Insulated duct system
- Air distribution systems
- Control lines, et al.
Compact ceiling unit with heat recovery
Air flow rates up to 340 m³/h

KWL EC 340 D

Extremely flat ceiling units with heat recovery for central ventilation of multi-storey buildings and small single-family houses. Equipped with Helios easyControls, the innovative control concept for easiest network connection and web browser operation. With highly efficient polymer heat exchanger and energy-saving EC-motors.

- **Casing**
  Made from galvanised steel, white powder coated, double walled, heat and noise insulated (20 mm) on all sides. Easy to install and maintain. The removable side panel allows full access.

- **Fans**
  Two silent and energy-saving centrifugal fans with energy saving EC-motors move the supply air and extract air. They are maintenance free and easy to remove for cleaning.

- **Ducting**
  Crossover-free connection of intake-, extract-, extract- and supply air ducts with NW 160. Spigots for connection located on each side of the unit.

- **Condensation outlet**
  Condensation outlet is located on the left/right depending on the version. Ball siphon included in delivery. To be connected to the drain trap by installer.

- **Air filter**
  Supply of cleaned outside air using a G4 filter. Additionally a F7 pollen filter is available. Extract air passes through a G4 filter before entering the heat exchanger.

- **Summer operation**
  Comes with automatic bypass function and exchanger cover plate as standard.

- **Frost protection of heat exchanger**
  The standard frost monitoring automatically regulates the supply air flow and the optional built-in electric pre-heater battery (KWL-EVH 340 D, accessories).

- **Helios easyControls**
  The standard equipment with Helios easyControls allows the simple LAN integration of the KWL-unit into a PC network. The ventilation unit is operated comfortably via the Helios easyControls menu in the web browser, by PC/laptop in the LAN or by Tablet/Smartphone in the WLAN – whether in the home net or on the road via Internet. Functionality, see page 13. EasyControls is prepared for:
  - Air quality sensors for automatic, demand-driven ventilation (KWL-CH₂O, -FTF, -VOC, accessories).
  - Connection to central building control systems via integrated Modbus interface or optional KNX module (KWL-KNX, accessories).

- **Electrical connection**
  Fixed connection via a power cord 3 x 1.5 mm², approx. 2 m long with wire end ferrules. Control line for control elements, sensors, ModBus and LAN to be plugged in on the outside of the unit.

- **Accessories – functional description (details see on the right)**

KWL EC 340 D is individually expandable with the following accessories:

- **Slide switch controller**
  - Three speed operation via slide switch.
  - Three freely definable operating levels within the entire family of performance curves.
  - Via the offset function, the extract fan can be operated with ± 20 % difference.
  - Control voltage directly at the controller measurable.
  - For the realization of a further operation level, such as night mode, expandable option with clock timer (WSUP-WSUP-S, No. 9990/9577, accessories).
  - Light-emitting diode for optical display of the operating conditions, such as filter change, supply air temperature < +5 °C, errors and operation.

- **Comfort controller**
  Comfort controller with graphic display and user-friendly menu navigation:
  - Start-up assistant.
  - Selection of speed level (auto/manual, level 1-4).
  - Four freely definable operating levels within the entire family of performance curves.
  - Setting of weekly program ventilation/heating.
  - Setting of CH₂O, VOC- and humidity parameter.
  - Display of e.g. filter change, operating conditions, hours of operation and error messages.
  - Lock function.

- **KNX/EIB-module**
  Allows the coupling of the ventilation unit with the central building control system via KNX/EIB.

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

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

- **Heater battery**
  Helios easyControls can regulate via an extension module (KWL-EM, accessories) performance-related an electric (EHR with KWL LTK, accessories) or water heater battery (WHR with WHSH and KWL LTK, accessories). Temperature profiles are adjustable in the weekly program. Furthermore is a self-sufficient operation of the water heater battery via an air temperature control system (WHST 300 T38, accessories) possible, regardless of Helios easyControls.

- **Notes**

Helios easyControls the innovative KWL- control concept Page 13
Humidity recovery by enthalpy heat exchanger Page 12
Technical data KWL EC 340 D R/L For ceiling installation

Right-hand version

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Hz</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1k</th>
<th>2k</th>
<th>4k</th>
<th>8k</th>
<th>dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply</td>
<td></td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>70</td>
<td>65</td>
<td>55</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Extract</td>
<td></td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>40</td>
<td>35</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Supply</td>
<td></td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>40</td>
<td>35</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Extract</td>
<td></td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>40</td>
<td>35</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

Sound levels dB(A) 2)

Supply  LWA (sound power level) 78 ... 27
Extract LWA (sound power level) 58 ... 26
case breakout LPA in 1 m 62 ... < 25

Air flow rate on speed step1)

Supply–Extract air flow vol. V·m³/h 380 ... 100

Power fans  2xW 80 ... 12

Temperature installation location + 5 to + 40 °C

Summer Bypass automatic (adjustable), with heat exchanger cover

Weight approx. kg 70

KWL/KNX  Ref.-No. 4275

CO₂-, VOC-, humidity sensor
Measures CO₂-, mixed gas- (VOC) concentration or relative humidity. Max. of 8 sensors each can be connected, control according to respective highest measured value. Incl. control line SL 4/3 (length = 3 m), other lengths (SL 4/.., accessories) available for order.

KWL-CO₂  Ref.-No. 4272
KWL-FTF  Ref.-No. 4273
KWL-VOC  Ref.-No. 4274

Electric pre-heater battery
Electric pre-heating for simple, plug-in device installation. Allows the pre-heating of the intake air at very low outside temperatures (heat exchanger frost protection). Mandatory for passive houses. Power: 1000 W.

KWL-EVH 340 D  Ref.-No. 4241

Extension module
For controlling external shutters, undersoil heat exchangers and/or heater batteries.

KWL-EM  Ref.-No. 4269

Elektric heater battery
For additional supply air heating.

KWL-FTF  Ref.-No. 9435

Duct temperature sensor

KWL-LTK (1 pc required)  No. 9644

Water heater battery
For additional supply air heating.

KWL-EM  Ref.-No. 9481

Duct temperature sensor

KWL-LTK (2 pcs required)  No. 9644

Hydraulic unit

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

Air temperature control

WHST 300 T38  Ref.-No. 8817

Replacement air filters

– 2 pcs G4-filter
– 1 pc F7-filter

KWL®-periphery 40 on
– Undersoil heat 44 on
– Insulated duct system 48 on
– Air distribution systems 50 on
– Control lines, et al. 60 on

Heater battery, -control, grilles, ducting, roof terminations, extract air elements, design valves

Helios main catalogue
Central ventilation units with heat recovery
Ceiling version for air flow rates up to approx. 700 m³/h

KWL EC 700 D

Dimensions in mm

Extremely flat ventilation unit with heat recovery for compact and space-saving ceiling installation. With wide range of application in apartments, commercial and industrial applications. Certified according to passive-house standards. With highly efficient aluminium heat exchanger and energy-saving EC-motors. In different comfort- and equipment versions.

- **Casing**
  Made from galvanised sheet steel. Heat and noise insulated with 30 mm thick mineral wool. Inspection openings for filter change at the underside of the unit which can be opened without tools. Ceiling installation is carried out with vibration absorbing mounting elements (included in delivery).

- **Heat exchanger**
  Large surface cross counterflow heat exchanger from aluminium with an efficiency up to 90 %. Easy to remove.

- **Fans**
  Two silently running EC-fans with backward curved impellers ensure highest efficiency. The special control system makes a constant air flow volume or constant pressure regulation possible.

- **Ducting**
  Installation-friendly connection of the ducting for intake, exhaust, extract and supply air using ducts with nominal diameter of 250 mm.

- **Condensation outlet**
  A separate condensation collector below the heat exchanger makes maintenance work easier. Condensation outlet is located next to terminal box. Ball siphon included in delivery. To be connected to drain pipe by installer.

- **Speed control**
  The comfort controller for surface mounting with touchscreen (included in delivery) and user-friendly menu navigation makes the following functions possible:
  - Operation directly via touchscreen.
  - Freely definable operating levels within the performance curve values.
  - Choice between constant air flow volume or constant pressure regulation.
  - Demand-driven ventilation using CO₂-, VOC (mixed gas) or humidity sensor.
  - Initial start-up (automatic determination of the system performance curve).
  - Control of external shutters.
  - Connection of a fire alarm contact.
  - Weekly or daily program.
  - Display of required filter change.
  - Pressure monitoring of filter pollution.
  - Display of current operating state, error messages.
  - Different access levels.
  Alternatively the ventilation unit can be controlled via ModBus (RS 485).

- **Frost protection of heat exchanger**
  A electric pre-heater battery heats the intake air when the temperature is too low. This prevents ice from building up in the heat exchanger and ensures optimal heat recovery during the complete heating period.

- **Heater battery** (KWL EC.. Pro WW)
  The integrated water heater battery provides a comfortable and energy-efficient heating of the supply air. The target temperature is set at the controller. For the control of the water heater battery the use of the hydraulic unit (WHSH 1100 24V (0-10V), accessories) is recommended.

- **Electrical connection**
  Easily accessible terminal box located on the side of the casing. Isolator switch, lockable via padlock, for maintenance work can be operated from the underside of the unit.

View from below
KWL EC 700 D

Technical data and accessories

**Comfort controller for surface mounting**
Functions as described on the left are selected comfortably over the innovative surface mounted controller which is included in delivery. User-friendly operation over self-describing graphic elements with plain text directly at the touch-screen. Control line SL 6/5 (length = 5 m) included in delivery, other lengths (SL 6/...), accessories available for order.

**Accessories for type .. WW Pro hydraulic unit**
Controls the flow of the water heater battery by means of three point valve actuator 24 V (0-10 V) and in this way the thermal output which is conveyed to the air. Delivery as complete unit, including flow-/return temperature display, circulation pump and flexible connecting pipes. WHSH 1100 24V (0-10V) No. 8819

**Accessories for all types CO₂-/VOC-/humidity sensor**
Measures CO₂-, mixed gas (VOC) concentration or relative humidity and controls the ventilation unit according to setpoint. Max. one sensor can be attached.

- **Dimensions in mm**

<table>
<thead>
<tr>
<th>Size</th>
<th>Width</th>
<th>Height</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
</tbody>
</table>

*Operational range according to Passive House Institute:*
- Basic ventilation area
- Rated ventilation area
- Intensive ventilation area

**Sound levels dB(A)**

<table>
<thead>
<tr>
<th>Frequency Hz</th>
<th>Total LWA Extract</th>
<th>LWA Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>53</td>
<td>68</td>
</tr>
<tr>
<td>250</td>
<td>46</td>
<td>64</td>
</tr>
<tr>
<td>500</td>
<td>47</td>
<td>63</td>
</tr>
<tr>
<td>1k</td>
<td>41</td>
<td>59</td>
</tr>
<tr>
<td>2k</td>
<td>35</td>
<td>53</td>
</tr>
<tr>
<td>4k</td>
<td>34</td>
<td>48</td>
</tr>
<tr>
<td>8k</td>
<td>39</td>
<td>39</td>
</tr>
</tbody>
</table>

**Figure relates to the operational range defined to PHI (Passive House Institute).**

**Air flow volume on speed step**

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref.-No.</th>
<th>KWL EC 700 D Pro</th>
<th>KWL EC 700 D Pro WW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air flow vol.</td>
<td>Ref.-No.</td>
<td>4171</td>
<td>4172</td>
</tr>
<tr>
<td>V m³/h</td>
<td></td>
<td>510</td>
<td>510</td>
</tr>
<tr>
<td></td>
<td></td>
<td>330</td>
<td>330</td>
</tr>
<tr>
<td></td>
<td></td>
<td>210</td>
<td>210</td>
</tr>
</tbody>
</table>

**Sound levels dB(A)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref.-No.</th>
<th>KWL EC 700 D Pro</th>
<th>KWL EC 700 D Pro WW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply LWA</td>
<td>Ref.-No.</td>
<td>68</td>
<td>68</td>
</tr>
<tr>
<td>(sound power</td>
<td></td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>level)</td>
<td></td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Extract LWA</td>
<td>Ref.-No.</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>(sound power</td>
<td></td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>level)</td>
<td></td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>Power fan 2 x W</td>
<td></td>
<td>110</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>38</td>
<td>38</td>
</tr>
</tbody>
</table>

**Voltage/Frequency**

- 230 V ~, 50 Hz
- 230 V ~, 50 Hz

**Max. Amps A**

- Pre-heater 2.6
- Maximum total 14.8

**Heat power/heater battery kW**

- 2.3 (at 60/40 °C) / 2.1 (at 50/40 °C) / 1.3 (at 40/30 °C)

**Electric pre-heater kW**

- 2.2

**Summer Bypass**

- Automatic

**Wiring Diagram no.**

- 1006
- 1006

**Temperature operation range**

- -20 °C to +40 °C
- -20 °C to +40 °C

**Weight approx. kg**

- 110
- 115

*Figures relate to the operational range defined to PHI (Passive House Institute).*

**Adapter piece - symmetrical**

Adapter piece from rectangular unit flange to circular ducting with 250 mm (incl. 4 screws).

**FM 250**

Flange ring from galvanised sheet steel for duct connection.

**FR 250**

Ref.-No. 1203

**Back draught shutter, motorised**

Prevents inflow of cold air when unit stopped. Automatic operation when fan is in use. Comes with built-on spring release motor (installed outside the airflow). To be installed in any position. Closing pressure adjustable according to fan power and mounting position.

**RVM 250**

Ref.-No. 2576

**Replacement air filters**

- 1 pc M5-filter (F5) No. 4189
- 1 pc F7-filter No. 4191

**Other accessories Pages**

- KWL®-periphery 40 on
- Air distribution systems 50 on
- Further overview, control lines 60 on

**Grilles, ducting, duct components, roof terminations, extract air elements, Helios main catalogue**

**KWL-CO₂**

Ref.-No. 4272

**KWL-FTF**

Ref.-No. 4273

**KWL-VOC**

Ref.-No. 4274

**Adapter piece – symmetrical**

Adapter piece from rectangular unit flange to circular ducting with 250 mm (incl. 4 screws).

**KWL-ÜS 700 D**

Ref.-No. 4206

**Flexible sleeve**

To reduce vibration transmission, incl. 2 worm drive clips.

**WHSH 1100 24V (0-10V)**

No. 8819
Central ventilation units with heat recovery  
Ceiling version for air flow rates up to approx. 1400 m³/h

**KWL EC 1400 D**

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

**Extremely flat ventilation unit with heat recovery for compact and space saving ceiling installation.** With a wide range of applications in apartments, commercial and industrial applications. Certified according to passive-house standards. With highly efficient aluminium heat exchanger and energy-saving EC-motors. In different comfort- and equipment versions.

**Casing**  
Made from galvanised sheet steel. Heat and noise insulated with 30 mm thick mineral wool. Inspection openings for filter change at the underside of the unit which can be opened without tools. Ceiling installation is carried out with vibration absorbing mounting elements (included in delivery).

**Heat exchanger**  
Large surface cross counterflow heat exchanger from aluminium with an efficiency up to 90%. Easy to remove.

**Fans**  
Two silent highly efficient EC-fans with backward curved impellers ensure highest efficiency. The special control system makes a constant air flow volume or constant pressure regulation possible.

**Ducting**  
Installation-friendly connection of the ducting for intake, exhaust, extract and supply air using ducts with nominal diameter of 315 mm.

**Condensation outlet**  
A separate condensation collector below the heat exchanger makes maintenance work easier. Condensation outlet is located next to terminal box. Ball siphon included in delivery. To be connected to drain pipe by installer.

**Air filter**  
Standard equipment: Supply of cleaned outside air using a F7 filter. Extract air passes through a F5 filter before entering the heat exchanger. All filters are pressure monitored and are easy to remove.

**Summer operation**  
Comes with automatic bypass function for maximum comfort as standard.

**Frost protection of heat exchanger**  
A electric pre-heater battery heats the intake air when the temperature is too low. This prevents ice from building up in the heat exchanger and ensures optimal heat recovery during the complete heating period.

**Speed control**  
The comfort controller for surface mounting with touchscreen (included in delivery) and user-friendly menu navigation makes the following functions possible:
- Operation directly via touchscreen.
- Freely definable operating levels within the performance curve values.
- Choice between constant air flow volume or constant pressure regulation.
- Demand-driven ventilation using CO₂-, VOC (mixed gas) or humidity sensor.
- Initial start-up (automatic determination of the system performance curve).
- Control of external shutters.
- Connection of a fire alarm contact.
- Weekly or daily program.
- Pressure monitoring of filter pollution.
- Display of required filter change, operating state, error messages.
- Different access levels.

Alternatively the ventilation unit can be controlled via ModBus (RS 485).

**Heater battery** (KWL EC.. Pro WW)  
The integrated water heater battery provides a comfortable and energy-efficient heating of the supply air. The target temperature simply is set at the controller.

For the control of the water heater battery the use of the hydraulic unit (WHSH 1100 24V (0-10V), accessories) is recommended.

**Ducting**  
Installation-friendly connection of the ducting for intake, exhaust, extract and supply air using ducts with nominal diameter of 315 mm.

**Speed control**  
The comfort controller for surface mounting with touchscreen (included in delivery) and user-friendly menu navigation makes the following functions possible:
- Operation directly via touchscreen.
- Freely definable operating levels within the performance curve values.
- Choice between constant air flow volume or constant pressure regulation.
- Demand-driven ventilation using CO₂-, VOC (mixed gas) or humidity sensor.
- Initial start-up (automatic determination of the system performance curve).
- Control of external shutters.
- Connection of a fire alarm contact.
- Weekly or daily program.
- Pressure monitoring of filter pollution.
- Display of required filter change, operating state, error messages.
- Different access levels.

Alternatively the ventilation unit can be controlled via ModBus (RS 485).

**Electrical connection**  
Easily accessible terminal box located on the side of the casing. Isolator switch, lockable via padlock, for maintenance work can be operated from the underside of the unit.
Comfort controller for surface mounting
Functions as described on the left are selected comfortably over the innovative surface mounted controller which is included in delivery. User-friendly operation over self-describing graphic elements with plain text directly at the touchscreen. Control line SL 6/5 (length = 5 m) included in delivery, other lengths (SL 6/.., accessories) available for order.

Accessories for type .. WW
Pro hydraulic unit
Controls the flow of the water heater battery by means of three point valve actuator 24 V (0-10 V) and in this way the thermal output which is conveyed to the air. Delivery as complete unit, including flow-/return temperature display, circulation pump and flexible connecting pipes.

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

Adapter piece - symmetrical
Adapter piece from rectangular unit flange to circular ducting with 315 mm incl. (4 screws).

KWL-ÜS 1400 D No. 4207
Flexible sleeve
To reduce vibration transmission, incl. 2 worm drive clips.

FM 315 Ref.-No. 1674
Flange ring from galvanised sheet steel for duct connection.

FR 315 Ref.-No. 1204

Back draught shutter, motorised
Prevents inflow of cold air when unit stopped. Automatic operation when fan is in use. Comes with built-on spring release motor (installed outside the airflow). To be installed in any position. Closing pressure adjustable according to fan power and mounting position.

RVM 315 Ref.-No. 2578

Other accessories
Pages
KWL®-periphery 40 on
– Air distribution systems 50 on
– Further overview, Control lines 60 on

Accessories-Details
Grilles, ducting, duct components, roof terminations, extract air elements, Helios main catalogue

Technical data

<table>
<thead>
<tr>
<th>KWL EC 1400 D</th>
<th>KWL EC 1400 D Pro</th>
<th>KWL EC 1400 D Pro WW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Ref.-No.</td>
<td>Type</td>
</tr>
<tr>
<td>Air flow volume on speed step 1)</td>
<td>KWL EC 1400 D Pro 4173</td>
<td>KWL EC 1400 D Pro WW 4174</td>
</tr>
<tr>
<td>Supply/Extract air flow vol. V·m³/h approx</td>
<td>1000 650 400</td>
<td>1000 650 400</td>
</tr>
<tr>
<td>Sound levels dB(A) 2)</td>
<td>Supply/Max. (sound power level)</td>
<td>80 71 60</td>
</tr>
<tr>
<td></td>
<td>Extract/Max. (sound power level)</td>
<td>60 51 39</td>
</tr>
<tr>
<td>Power fans 2 x W</td>
<td>225 140 80</td>
<td>225 140 80</td>
</tr>
<tr>
<td>Voltage/Frequency</td>
<td>3 N ~ 400 V, 50 Hz</td>
<td>3 N ~ 400 V, 50 Hz</td>
</tr>
<tr>
<td>– pre-heater</td>
<td>– / 6.5 / 6.5</td>
<td>– / 6.5 / 6.5</td>
</tr>
<tr>
<td>– max. total</td>
<td>6.2 / 6.5 / 6.5</td>
<td>6.2 / 6.5 / 6.5</td>
</tr>
<tr>
<td>Heat power/heater battery kW</td>
<td>–</td>
<td>4.7 (at 60/40 °C) / 4.2 (at 50/40 °C) / 2.7 (at 40/30 °C)</td>
</tr>
<tr>
<td>Electric pre-heater kW</td>
<td>4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Summer Bypass</td>
<td>automatic</td>
<td>automatic</td>
</tr>
<tr>
<td>Wiring diagram no.</td>
<td>1007</td>
<td>1007</td>
</tr>
<tr>
<td>Temperature operation range</td>
<td>– 20 °C to + 40 °C</td>
<td>– 20 °C to + 40 °C</td>
</tr>
<tr>
<td>Weight approx. kg</td>
<td>185</td>
<td>190</td>
</tr>
</tbody>
</table>

1) Figures relate to the operational range defined to PHI (Passive House Institute).
2) at 100 Pa.

KWL EC 1400 D Technical data and accessories

For ceiling installation

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Hz</th>
<th>Total</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1k</th>
<th>2k</th>
<th>4k</th>
<th>8k</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lmax.</td>
<td>Supply/Extract dB(A)</td>
<td>80</td>
<td>63</td>
<td>50</td>
<td>31</td>
<td>49</td>
<td>45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Operational range according to Passive House Institute:

- Basic ventilation area
- Ventilated ventilation area
- Intensive ventilation area

Replaced air filters

– 1 pc M5-filter (F5) ELF-KWL 1400 D/5 No. 4193
– 1 pc F7-filter ELF-KWL 1400 D/7 No. 4195

Replacement air filters

- 1 pc M5-filter (F5) ELF-KWL 1400 D/5 No. 4193
- 1 pc F7-filter ELF-KWL 1400 D/7 No. 4195

Accessories for all types

CO₂-/VOC-/humidity sensor
Measures CO₂-, mixed gas (VOC) concentration or relative humidity and controls the ventilation unit according to setpoint. Max. one sensor can be attached.

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

KWL-CO₂ Ref.-No. 4272
KWL-F7 Ref.-No. 4273
KWL-VOC Ref.-No. 4274

Adapter piece - symmetrical
Adapter piece from rectangular unit flange to circular ducting with 315 mm incl. (4 screws).

KWL-ÜS 1400 D No. 4207
Flexible sleeve
To reduce vibration transmission, incl. 2 worm drive clips.

FM 315 Ref.-No. 1674
Flange ring from galvanised sheet steel for duct connection.

FR 315 Ref.-No. 1204

Back draught shutter, motorised
Prevents inflow of cold air when unit stopped. Automatic operation when fan is in use. Comes with built-on spring release motor (installed outside the airflow). To be installed in any position. Closing pressure adjustable according to fan power and mounting position.

RVM 315 Ref.-No. 2578

Other accessories
Pages
KWL®-periphery 40 on
– Air distribution systems 50 on
– Further overview, Control lines 60 on

Accessories-Details
Grilles, ducting, duct components, roof terminations, extract air elements, Helios main catalogue

31
Central ventilation units with heat recovery
Ceiling version for air flow rates up to approx. 2000 m³/h

**KWL EC 2000 D**

**Extremely flat ventilation unit with heat recovery for compact and space-saving ceiling installation.** With wide range of applications in apartments, commercial and industrial applications. Certified according to passive-house standards. With highly efficient aluminium heat exchanger and energy-saving EC-motors. In different comfort- and equipment versions.

**Casing**
Made from galvanised sheet steel. Heat and noise insulated with 30 mm thick mineral wool. Inspection openings for filter change at the underside of the unit which can be opened without tools. Ceiling installation is carried out with vibration absorbing mounting elements (included in delivery).

**Heat exchanger**
Large surface cross counterflow heat exchanger from aluminium with an efficiency up to 90 %. Easy to remove.

**Fans**
Two silently efficient EC-fans with backward curved impellers ensure highest efficiency. The special control system makes a constant air flow volume or constant pressure regulation possible.

**Ducting**
Installation-friendly connection of the ducting for intake, exhaust, extract and supply air using ducts with nominal diameter of 400 mm.

**Condensation outlet**
A separate condensation collector below the heat exchanger makes maintenance work easier. Condensation outlet is located next to terminal box. Ball siphon included in delivery. To be connected to drain pipe by installer.

**Air filter**
Standard equipment: Supply of cleaned outside air using a F7 filter. Extract air passes through a F5 filter before entering the heat exchanger. All filters are pressure monitored and are easy to remove.

**Summer operation**
Comes with automatic bypass function for maximum comfort as standard.

**Frost protection of heat exchanger**
A electric pre-heater battery heats the intake air when the temperature is too low. This prevents ice from building up in the heat exchanger and ensures optimal heat recovery during the complete heating period.

**Speed control**
The comfort controller for surface mounting with touchscreen (included in delivery) and user-friendly menu navigation makes the following functions possible:
- Operation directly via touchscreen.
- Freely definable operating levels within the performance curve values.
- Choice between constant air flow volume or constant pressure regulation.
- Demand-driven ventilation using CO₂-, VOC (mixed gas) or humidity sensor.
- Initial start-up (automatic determination of the system performance curve).
- Control of external shutters.
- Connection of a fire alarm contact.
- Weekly or daily program.
- Pressure monitoring of filter pollution.
- Display of required filter change, operating state, error messages.
- Different access levels.
Alternatively the ventilation unit can be controlled via ModBus (RS 485).

**Heater battery**
(KWL EC.. Pro WW) The integrated water heater battery provides a comfortable and energy-efficient heating of the supply air. The target temperature simply is set at the controller. For the control of the water heater battery the use of the hydraulic unit (WHSH 1100 24V (0-10V), accessories) is recommended.

**Electrical connection**
Easily accessible terminal box located on the side of the casing. Isolator switch, lockable via padlock, for maintenance work can be operated from the underside of the unit.
KWL EC 2000 D

Technical data and accessories

Accessories for all types CO₂/-VOC/-humidity sensor
Measures CO₂-, mixed gas (VOC) concentration or relative humidity and controls the ventilation unit according to setpoint. Max. one sensor can be attached.

Dim. mm (W x H x D) 95 x 97 x 30
KWL-CO₂ Ref.-No. 4272
KWL-FTF Ref.-No. 4273
KWL-VOC Ref.-No. 4274

Adapter piece – symmetrical
Adapter piece from rectangular unit flange to circular ducting with 400 mm (incl. 4 screws).
KWL-ÜS 2000 D No. 4208
Flexible sleeve
To reduce vibration transmission, incl. 2 worm clips
FM 400 Ref.-No. 1876
Flange ring from galvanised sheet steel for duct connection.
FR 400 Ref.-No. 1206

Back draught shutter, motorised
Prevents inflow of cold air when unit stopped. Automatic operation when fan is in use. Comes with built-on spring release motor (installed outside the airflow). To be installed in any position. Closing pressure adjustable according to fan power and mounting position.
RVM 400 Ref.-No. 2580

Other accessories Pages
KWL®-periphery 40 on
– Air distribution systems 50 on
– Further overview, Control lines 60 on

Accessories-Details
Grilles, ducting, duct components, roof terminations, extract air elements, Helios main catalogue

Comfort controller for surface mounting
Functions as described on the left are selected comfortably over the innovative surface mounted controller which is included in delivery. User-friendly operation over self-describing graphic elements with plain text directly at the touch-screen. Control line SL 6/5 (length = 5 m) included in delivery, other lengths (SL 6/.., accessories) available for order.

Accessories for type .. WW
Pro hydraulic unit
Controls the flow of the water heater battery by means of three point valve actuator 24 V (0-10 V) and in this way the thermal output which is conveyed to the air. Delivery as complete unit, including flow-/return temperature display, circulation pump and flexible connecting pipes.
WHSH 1100 24V (0-10V) No. 8819

Replacement air filters
– 1 pc M5-filter (F5)
ELF-KWL 2000 D/5 No. 4197
– 1 pc F7-filter
ELF-KWL 2000 D/7 No. 4204

Technical data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td></td>
<td>With water heater battery Type</td>
<td>Ref.-No.</td>
</tr>
<tr>
<td>For ceiling installation</td>
<td>KWL EC 2000 D Pro</td>
<td>4175</td>
<td>KWL EC 2000 D Pro WW</td>
</tr>
<tr>
<td>Air flow volume on speed step</td>
<td>KWL EC 2000 D</td>
<td>KWL EC 2000 D</td>
<td></td>
</tr>
<tr>
<td>Supply/Extract air vol. V·m³/h approx.</td>
<td>1800</td>
<td>1800</td>
<td>1150</td>
</tr>
<tr>
<td>Supply Lₚₐₚₚ (sound power level)</td>
<td>77</td>
<td>77</td>
<td>67</td>
</tr>
<tr>
<td>Extract Lₚₐₚₚ (sound power level)</td>
<td>59</td>
<td>59</td>
<td>50</td>
</tr>
<tr>
<td>Powerfan 2 x W</td>
<td>395</td>
<td>395</td>
<td>245</td>
</tr>
<tr>
<td>Voltage/Frequency</td>
<td>3 N ~ 400 V, 50 Hz</td>
<td>3 N ~ 400 V, 50 Hz</td>
<td></td>
</tr>
<tr>
<td>– pre-heater</td>
<td>10.1 / 10.1 / 10.1</td>
<td>10.1 / 10.1 / 10.1</td>
<td></td>
</tr>
<tr>
<td>Heat power/heater battery kW</td>
<td>–</td>
<td>8.1 (at 60/40 °C) / 7.3 (at 50/40 °C) / 4.6 (at 40/30 °C)</td>
<td></td>
</tr>
<tr>
<td>Electric pre-heater kW</td>
<td>7.0</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>Summer Bypass</td>
<td>automatic</td>
<td>automatic</td>
<td></td>
</tr>
<tr>
<td>Wiring Diagram no.</td>
<td>1006</td>
<td>1006</td>
<td></td>
</tr>
<tr>
<td>Temperature operation range</td>
<td>–20 °C to + 40 °C</td>
<td>–20 °C to + 40 °C</td>
<td></td>
</tr>
<tr>
<td>Weight approx. kg</td>
<td>265</td>
<td>270</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1) Figures relate to the operational range defined to PHI (Passive House Institute).
2) at 100 Pa.
Central ventilation units with heat recovery for compact and space-saving floor installation (vertical). With wide range of application in apartments, commercial and industrial applications. Certified according to passive-house standards. With highly efficient aluminium heat exchanger and energy-saving EC-motors. Optional with built-in water heater battery.

**Casing**
Made from galvanized sheet steel. Heat and noise insulated with 50 mm thick mineral wool. Inspection openings for filter change at the two side doors which can be opened optionally without tool or using a socket wrench. Both sides panels are completely removable for free access of all elements. The unit is suitable for the vertical floor installation in the interior. Anti vibration mounts can be placed below (on site) to prevent the direct transmission of vibration and structure-borne noise on parts of the building.

**Heat exchanger**
Large surface cross counterflow heat exchanger from aluminium with an efficiency up to 90%. Easy to remove.

**Fans**
Two silent highly efficient EC-fans with backward curved impellers ensure highest efficiency. The special control system make a constant air flow volume or constant pressure regulation possible.

**Ducting**
Installation-friendly connection of the ducting for intake, exhaust, extract and supply air using ducts with nominal diameter of 250 mm. The unit can be installed either way round, so that intake- and exhaust air as well as extract- and supply air connections can be left or right.

**Condensation outlet**
The unit is equipped with a condensate tray made from high quality steel. The condensation outlet is located at the bottom. Ball siphon included in delivery. To be connected to drain pipe by installer.

**Air filter**
Standard equipment:
Supply of cleaned outside air using a F7 filter. Extract air passes through a F5 filter before entering the heat exchanger. All filters are pressure monitored and are easy to remove.

**Summer operation**
Comes with automatic bypass function for maximum comfort as standard.

**Frost protection of heat exchanger**
A electric pre-heater battery heats the intake air when the temperature is too low. This prevents ice from building up in the heat exchanger and ensures optimal heat recovery during the complete heating period.

**Speed control**
The comfort controller for surface mounting with touchscreen (included in delivery) and user-friendly menu navigation makes the following functions possible:
- Operation directly via touchscreen.
- Freely definable operating levels within the performance curve values.
- Choice between constant air flow volume or constant pressure regulation.
- Demand-driven ventilation using CO₂-, VOC (mixed gas) or humidity sensor.
- Central building control system via ModBus (RS 485).
- Initial start-up (automatic determination of the system performance curve).
- Control of external shutters.
- Connection of a fire alarm contact.
- Weekly or daily program.
- Pressure monitoring of filter pollution.
- Display of required filter change, operating state, error messages.
- Different access levels.

**Heater battery**
(KWL EC.. Pro WW)
The integrated water heater battery provides a comfortable and energy-efficient heating of the supply air. The target temperature simply is set at the controller. For the control of the water heater battery the use of the hydraulic unit (WHSH 1100 24V (0-10V), accessories) is recommended.
Comfort controller for surface mounting
Functions as described on the left are selected comfortably over the innovative surface mounted controller which is included in delivery. User-friendly operation over self-describing graphic elements with plain text directly at the touch-screen. Control line SL 6/5 (length = 5 m) included in delivery, other lengths (SL 6/...) are available for order.

Accessories for type .. WW
Pro hydraulic unit
Controls the flow of the water heater battery by means of three point valve actuator 24 V (0-10 V) and in this way the thermal output which is conveyed to the air. Delivery as complete unit, including flow-/return temperature display, circulation pump and flexible connecting pipes.

Replacement air filters
- 1 pc M5-filter (F5) ELF-KWL 800 S/5 No. 8333
- 1 pc F7-filter ELF-KWL 800 S/7 No. 8334

Adapter piece – symmetrical
Adapter piece from rectangular unit flange to circular ducting with 250 mm (incl. 4 screws).

Back draught shutter, motorised
Prevents inflow of cold air when unit stopped. Automatic operation when fan is in use. Comes with built-on spring release motor (installed outside the airflow). To be installed in any position. Closing pressure adjustable according to fan power and mounting position.

Other accessories
- Air distribution systems
- Further overview, Control lines
- Accessories-Details
  Grilles, ducting, duct components, roof terminations, extract air elements, Helios main catalogue

Technical data

<table>
<thead>
<tr>
<th>KWL EC 800 S Pro</th>
<th>KWL EC 800 S Pro WW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ref.-No.</td>
<td>8327</td>
</tr>
<tr>
<td>Air flow volume on speed step</td>
<td>600 490 325</td>
</tr>
<tr>
<td>Sound levels dB(A) at 620 m³/h and 105 Pa</td>
<td>Head LWA (Sound power level) 70</td>
</tr>
<tr>
<td></td>
<td>Extract LWA (Sound power level) 70</td>
</tr>
<tr>
<td></td>
<td>Noise breakdown LWA in 1 m 54</td>
</tr>
<tr>
<td></td>
<td>Power fan 2 x W 140 94 65</td>
</tr>
<tr>
<td>Standby-losses</td>
<td>&lt; 1 W</td>
</tr>
<tr>
<td>Voltage / Frequency</td>
<td>1 – 230 V, 50 Hz 1 – 230 V, 50 Hz</td>
</tr>
<tr>
<td>Max. Amps A – ventilation</td>
<td>2.5 2.5</td>
</tr>
<tr>
<td>– pre-heater</td>
<td>11 11</td>
</tr>
<tr>
<td>– max. total</td>
<td>13.5 13.5</td>
</tr>
<tr>
<td>Electric pre-heater kW</td>
<td>2.5 2.5</td>
</tr>
<tr>
<td>Heat power / heater battery kW</td>
<td>2.8 (at 60/40 /C) / 2.6 (at 50/40 /C) / 1.6 (at 40/30 /C)</td>
</tr>
<tr>
<td>Summer Bypass</td>
<td>automatic (adjustable), with heat exchanger cover</td>
</tr>
<tr>
<td>Wiring Diagram no.</td>
<td>1006 1006</td>
</tr>
<tr>
<td>Temperature operation range</td>
<td>– 20 °C to + 40 °C – 20 °C to + 40 °C</td>
</tr>
<tr>
<td>Temperature installation location</td>
<td>+ 5 °C to + 40 °C + 5 °C to + 40 °C</td>
</tr>
<tr>
<td>Weight approx. kg</td>
<td>172 175</td>
</tr>
</tbody>
</table>

1. Figures relate to the operational range defined to PHI (Passive House Institute).
Central ventilation units with heat recovery
Vertical version for air flow rates up to approx. 1800 m³/h

KWL EC 1800 S

Central ventilation units with heat recovery for compact and space-saving floor installation (vertical). With wide range of application in apartments, commercial and industrial applications. Certified according to passive-house standards. With highly efficient aluminium heat exchanger and energy-saving EC-motors. Optional with built-in water heater battery.

- Casing
  Made from galvanised sheet steel. Heat and noise insulated with 50 mm thick mineral wool. Inspection openings for filter change at the two side doors which can be opened optionally without tool or using a socket wrench. Both sides panels are completely removable for free access of all elements. The unit is suitable for the vertical floor installation in the interior. Anti vibration mounts can be placed below (on site) to prevent the direct transmission of vibration and structure-borne noise on parts of the building.

- Heat exchanger
  Large surface cross counterflow heat exchanger from aluminium with an efficiency up to 90 %. Easy to remove.

- Fans
  Two silent highly efficient EC-fans with backward curved impellers ensure highest efficiency. The special control system make a constant air flow volume or constant pressure regulation possible.

- Ducting
  Installation-friendly connection of the ducting for intake, exhaust, extract and supply air using ducts with nominal diameter of 400 mm. The unit can be installed either way round, so that intake- and exhaust air as well as extract- and supply air connections can be left or right.

- Condensation outlet
  The unit is equipped with a condensate tray made from high quality steel. The condensation outlet is located at the bottom. Ball siphon included in delivery. To be connected to drain pipe by installer.

- Air filter
  Standard equipment: Supply of cleaned outside air using a F7 filter. Extract air passes through a F5 filter before entering the heat exchanger. All filters are pressure monitored and are easy to remove.

- Summer operation
  Comes with automatic bypass function for maximum comfort as standard.

- Frost protection of heat exchanger
  A electric pre-heater battery heats the intake air when the temperature is too low. This prevents ice from building up in the heat exchanger and ensures optimal heat recovery during the complete heating period.

- Speed control
  The comfort controller for surface mounting with touchscreen (included in delivery) and user-friendly menu navigation makes the following functions possible:
  - Operation directly via touchscreen.
  - Freely definable operating levels within the performance curve values.
  - Choice between constant air flow volume or constant pressure regulation.
  - Demand-driven ventilation using CO₂-, VOC (mixed gas) or humidity sensor.
  - Central building control system via ModBus (RS 485).
  - Initial start-up (automatic determination of the system performance curve).
  - Control of external shutters.
  - Connection of a fire alarm contact.
  - Weekly or daily program.
  - Pressure monitoring of filter pollution.
  - Display of required filter change, operating state, error messages.
  - Different access levels.

- Heater battery (KWL EC-Pro WW)
  The integrated water heater battery provides a comfortable and energy-efficient heating of the supply air. The target temperature simply is set at the controller. For the control of the water heater battery the use of the hydraulic unit (WHSH 1100 24V (0-10V), accessories) is recommended.

- Electrical connection
  Easily accessible terminal box located on top of the casing. Isolator switch, lockable via padlock, for maintenance work can be operated from the top of the unit.
KWL EC 1800 S

Technical data and accessories

- **KWL EC 1800 S**
  - **Type**: Pro hydraulic unit
  - **Type**: WW

- **Operational range according to Passive House Institute**
  - **Basic ventilation area**
  - **Rated ventilation area**
  - **Intensive ventilation area**

**Accessories for type .. WW**

- **Pro hydraulic unit**
  - Controls the flow of the water heater battery by means of three point valve actuator 24 V (0-10 V) and in this way the thermal output which is conveyed to the air. Delivery as complete unit, including flow-/return temperature display, circulation pump and flexible connecting pipes. **WHSH 1100 24V(0-10V)**

- **Comfort controller for surface mounting**
  - Functions as described on the left are selected comfortably over the innovative surface mounted controller which is included in delivery. User-friendly operation over self-describing graphic elements with plain text directly at the touch-screen. Control line SL 6/5 (length = 5 m) included in delivery, other lengths (SL 6/.., accessories) available for order.

- **Accessories for all types CO₂-/VOC-/humidity sensor**
  - Measures CO₂-, mixed gas (VOC) concentration or relative humidity and controls the ventilation unit according to setpoint. Max. one sensor can be attached.
  - **Dimensions in mm**

- **Adapter piece – symmetrical**
  - Adapter piece from rectangular unit flange to circular ducting with 400 mm (incl. 4 screws).

- **KWL-ÜS 1800 S**
  - No. 8340
  - **Flexible sleeve**
  - To reduce vibration transmission, incl. 2 worm clips.

- **FM 400**
  - Ref.-No. 1076
  - **Flange ring**
  - From galvanised sheet steel for duct connection.

- **RVM 400**
  - Ref.-No. 2580
  - **Back draught shutter, motorised**
  - Prevents inflow of cold air when unit stopped. Automatic operation when fan is in use. Comes with built-on spring release motor (installed outside the airflow). To be installed in any position. Closing pressure adjustable according to fan power and mounting position.

- **Replacement air filters**
  - **1 pc M5-filter (F5)**
    - ELF-KWL 1800 S/5 No. 8335
  - **1 pc F7-filter**
    - ELF-KWL 1800 S/7 No. 8336

- **Other accessories**
  - Pages
    - KWLS®-periphery 40 on
    - Air distribution systems 50 on
    - Further overview, Control lines 60 on

- **Accessories-Details**
  - Grilles, ducting, duct components, roof terminations, extract air elements, Helios main catalogue

---

**Technical data**

<table>
<thead>
<tr>
<th>KWL EC 1800 S Type</th>
<th>Ref.-No.</th>
<th>KWLS®-periphery Pro ignition</th>
<th>Ref.-No.</th>
<th>KWLS®-periphery Pro WW</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air flow volume on speed step ¹</td>
<td>³</td>
<td>³</td>
<td>³</td>
<td>³</td>
<td>³</td>
</tr>
<tr>
<td>knots</td>
<td>1400</td>
<td>1070</td>
<td>810</td>
<td>1400</td>
<td>1070</td>
</tr>
<tr>
<td>Supply/Extract air flow vol. V·m³/h approx.</td>
<td>315</td>
<td>225</td>
<td>165</td>
<td>315</td>
<td>225</td>
</tr>
</tbody>
</table>
| ¹ | Figures relate to the operational range defined to PHI (Passive House Institute).

---

1) Figures relate to the operational range defined to PHI (Passive House Institute).
Central ventilation units with heat recovery
Vertical version for air flow rates up to approx. 2600 m³/h

KWL EC 2600 S

Central ventilation units with heat recovery for compact and space-saving floor installation (vertical). With wide range of application in apartments, commercial and industrial applications. Certified according to passive-house standards. With highly efficient aluminium heat exchanger and energy-saving EC-motors. Optional with built-in water heater battery.

- **Casing**
  Made from galvanised sheet steel. Heat and noise insulated with 50 mm thick mineral wool. Inspection openings for filter change at the two side doors which can be opened optionally without tool or using a socket wrench. Both sides panels are completely removable for free access of all elements. The unit is suitable for the vertical floor installation in the interior. Anti vibration mounts can be placed below (on site) to prevent the direct transmission of vibration and structure-borne noise on parts of the building.

- **Heat exchanger**
  Large surface cross counterflow heat exchanger from aluminium with an efficiency up to 90 %. Easy to remove.

- **Fans**
  Two silent highly efficient EC-fans with backward curved impellers ensure highest efficiency. The special control system make a constant air flow volume or constant pressure regulation possible.

- **Ducting**
  Installation-friendly connection of the ducting for intake, exhaust, extract and supply air using ducts with nominal diameter of 560 mm. The unit can be installed either way round, so that intake- and exhaust air as well as extract- and supply air connections can be left or right.

- **Condensation outlet**
  The unit is equipped with a condensate tray made from high quality steel. The condensation outlet is located at the bottom. Ball siphon included in delivery. To be connected to drain pipe by installer.

- **Air filter**
  Standard equipment: Supply of cleaned outside air using a F7 filter. Extract air passes through a F5 filter before entering the heat exchanger. All filters are pressure monitored and are easy to remove.

- **Summer operation**
  Comes with automatic bypass function for maximum comfort as standard.

- **Frost protection of heat exchanger**
  A electric pre-heater battery heats the intake air when the temperature is too low. This prevents ice from building up in the heat exchanger and ensures optimal heat recovery during the complete heating period.

- **Speed control**
  The comfort controller for surface mounting with touchscreen (included in delivery) and user-friendly menu navigation makes the following functions possible:
  - Operation directly via touchscreen.
  - Freely definable operating levels within the performance curve values.
  - Choice between constant air flow volume or constant pressure regulation.
  - Demand-driven ventilation using CO₂-, VOC (mixed gas) or humidity sensor.
  - Central building control system via ModBus (RS 485).
  - Initial start-up (automatic determination of the system performance curve).
  - Control of external shutters.
  - Connection of a fire alarm contact.
  - Weekly or daily program.
  - Pressure monitoring of filter pollution.
  - Display of required filter change, operating state, error messages.
  - Different access levels.

- **Heater battery** (KWL EC., Pro WW)
  The integrated water heater battery provides a comfortable and energy-efficient heating of the supply air. The target temperature simply is set at the controller. For the control of the water heater battery the use of the hydraulic unit (WHSH 1100 24V (0-10V), accessories) is recommended.

- **Electrical connection**
  Easily accessible terminal box located on top of the casing. Isolator switch, lockable via padlock, for maintenance work can be operated from the top of the unit.
**KWL EC 2600 S**

**Technical data and accessories**

### Technical data

**KWL EC 2600 S**

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref.-No.</th>
<th>KWL EC 2600 S Pro WW</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td></td>
<td><strong>Air flow volume on speed step</strong>&lt;sup&gt;1)&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td><strong>Sound levels dB(A)</strong></td>
<td></td>
<td>58</td>
<td>69</td>
</tr>
<tr>
<td><strong>Supply Lvak (sound power level)</strong></td>
<td></td>
<td>45</td>
<td>52</td>
</tr>
<tr>
<td><strong>Extract Lvak (sound power level)</strong></td>
<td></td>
<td>45</td>
<td>52</td>
</tr>
<tr>
<td><strong>Ap, max.</strong></td>
<td></td>
<td>1000</td>
<td>800</td>
</tr>
<tr>
<td><strong>Operational range according to Passive House Institute:</strong></td>
<td></td>
<td>Basic ventilation area</td>
<td>Rated ventilation area</td>
</tr>
</tbody>
</table>

#### Accessories for all types CO₂-/VOC-/humidity sensor

Measures CO₂-, mixed gas (VOC) concentration or relative humidity and controls the ventilation unit according to setpoint. Max. one sensor can be attached.

- **KWL-CO₂** Ref.-No. 4272
- **KWL-FTF** Ref.-No. 4273
- **KWL-VOC** Ref.-No. 4274

#### Adapter piece – symmetrical

Adapter piece from rectangular unit flange to circular ducting with 560 mm (incl. 4 screws).

- **KWL-ÜS 2600 S** No. 8341
- **Flexible sleeve**
  - To reduce vibration transmission, incl. 2 worm clips.
  - **FM 560** Ref.-No. 1079
  - **Flange ring** from galvanised sheet steel for duct connection.
  - **FR 560** Ref.-No. 1209

#### Back draught shutter, motorised

Prevents inflow of cold air when unit stopped. Automatic operation when fan is in use. Comes with built-on spring release motor (installed outside the airflow). To be installed in any position. Closing pressure adjustable according to fan power and mounting position.

- **RVM 560** Ref.-No. 2583

#### Replacement air filters

- **1 pc M5-filter (F5)**
  - ELF-KWL 2600 S/5 No. 8337
- **1 pc F7-filter**
  - ELF-KWL 2600 S/7 No. 8338

#### Other accessories

- **KWL®-periphery** Pages 40 on
- **Air distribution systems** Pages 50 on
- **Further overview, Control lines** Pages 60 on

#### Accessories-Details

- **Grilles, ducting, duct components,**
- **roof terminations,**
- **extract air elements,**
- **Helios main catalogue**

---

<sup>1</sup> Figures relate to the operational range defined to PHI (Passive House Institute).

---

**KWL EC 2600 S Pro WW**

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref.-No.</th>
<th>KWL EC 2600 S Pro WW</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td></td>
<td><strong>Air flow volume on speed step</strong>&lt;sup&gt;1)&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td><strong>Sound levels dB(A)</strong></td>
<td></td>
<td>58</td>
<td>69</td>
</tr>
<tr>
<td><strong>Supply Lvak (sound power level)</strong></td>
<td></td>
<td>45</td>
<td>52</td>
</tr>
<tr>
<td><strong>Extract Lvak (sound power level)</strong></td>
<td></td>
<td>45</td>
<td>52</td>
</tr>
<tr>
<td><strong>Ap, max.</strong></td>
<td></td>
<td>1000</td>
<td>800</td>
</tr>
<tr>
<td><strong>Operational range according to Passive House Institute:</strong></td>
<td></td>
<td>Basic ventilation area</td>
<td>Rated ventilation area</td>
</tr>
</tbody>
</table>

#### Comfort controller for surface mounting

Functions as described on the left are selected comfortably over the innovative surface mounted controller which is included in delivery. User-friendly operation over self-describing graphic elements with plain text directly at the touch-screen. Control line SL 6/5 (length = 5 m) included in delivery, other lengths (SL 6/...) (accessories) available for order.

#### Accessories for type .. WW

**Pro hydraulic unit**

Controls the flow of the water heater battery by means of three point valve actuator 24 V (0-10 V) and in this way the thermal output which is conveyed to the air. Delivery as complete unit, including flow-/return temperature display, circulation pump and flexible connecting pipes. WHSH 1100 24V (0-10V) No. 8199

---

<sup>1</sup> Figures relate to the operational range defined to PHI (Passive House Institute).
All from a single source“ for a perfect heat recovery system from Helios.

Just as important as the KWL® ventilation unit is the suitable system-periphery in the building. Perfectly adapted accessories, air distribution systems for extract-, supply-, intake and exhaust air as well as undersoil heat exchanger ensure the trouble-free and energy-saving operation of the heat recovery system from Helios.

The use of integrated overall solutions from a single source guarantees a smooth installation. The planning of complete KWL®-system is carried out quick and save in the online-software tool KWLeasy-Plan.de. Inclusive automatic creation of bill of quantities and proof of the ventilation concept.
Optional ground-to-brine or ground-to-earth heat exchanger increases the efficiency of the ventilation units with heat recovery. This saves even more energy in the winter and provides pleasant cooling on hot days.

The HygroBox ensures as active humidification unit for a healthy indoor climate throughout the year and avoids expensive damage to furniture, floor surfaces, etc.

IsoPipe® is the practical alternative to the spiral duct installation with additional thermal insulation. Already completely insulated IsoPipe® is perfect for intake- and exhaust air duct to the KWL® as well as for the supply- and extract air pipe in lofts, basements or cool areas. The insulated ducting system avoids condensation build-up and saves enormously assembly time.

For every type of installation the suitable solution. FlexPipe® plus combines the proven round pipe concept with oval components. In any form, for even more flexibility in planning and installation. RenoPipe is the perfect solution for the energetic renovation and is simply installed surface mounted to ceiling or wall. There are also flat duct systems made of galvanised sheet steel or plastic available in flat construction and rigid construction.

Multiple award-winning design valves, which unobtrusively integrate themselves into every room ambiance. Extract air elements, valves and overflow elements. Most diverse shutters, attenuators, air temperature control systems, heater batteries etc.

Versatile accessories complete the overall system solution from Helios in the range of central ventilation with heat recovery in a perfect way and guarantees the perfect functioning of the entire system.
Especially developed for ventilation systems in residential buildings and offices. The Helios HygroBox, designed to achieve automatically a healthy climate with ideal humidity throughout the year.

**Advantages**
- Constant room climate with ideal humidity level.
- Avoidance of expensive damage to furniture, wooden floor surfaces and antiques.
- Relief of allergy complaints and physical loads. Strengthening of the body’s defences by a shortening of the life span of bacteria and viruses.
- Reduction of fine dust and electrostatic loadings.

**Special HygroBox characteristics**
- Constant supply air humidity and temperature in all rooms.
- Principle of the natural evaporation prevents excessive humidity.
- Hygienic harmless by UVC disinfection.
- Fully automatic mode with automatic summer switch-off.
- Low-maintenance and easy installable.
- Low operating cost by use of the evaporation energy from the existing heating system.

**Functional principle**
The HygroBox is an active humidification unit for the integration into new or existing KWL®-ventilation systems with heat recovery. The fresh outside air is fed through the heat exchanger of the KWL®-unit and takes up the heat energy from the extracted air. The preheated air is supplied afterwards to the HygroBox, in which an active and automatic humidification takes place according to the natural evaporation principle. A rotor fitted with lamellas turns inside the unit continuously in a water bath and passes water molecules over the moistened lamella surface on to the warmed supply air. Regardless of the operating level of the KWL®-system as well as of outside influences of the weather the HygroBox keeps the preselected relative air humidity consistently and provides in such a way for a healthy climate with ideal humidity level.

**Delivery**
Compact unit, ready to plug in, including water hose and water filter.

**Heater battery**
The HygroBox is equipped with a water (type WW) or electric heater battery (type EH). The supply air is warmed up before humidification and provides in such a way for the required evaporation energy and pleasant temperature of the supply air.

**Summer operation**
With sufficiently high humidity level of the outside air (e.g. in the summer) the HygroBox switches automatically into the standby mode. In this condition no water is in the unit and the rotor stands still.
### Technical data

| Description | For connection of HygroBox to existing heating circuits. |
| Description | Consisting of: |
| Description | 1 pc circulation pump 230 V |
| Description | 2 pcs screw joints, R 1/2a/15 mm MS (brass) |
| Description | 1 pc three-way-mixing valve with servo motor 230 V, Rp1/2", DN 15, operating time 120 seconds |

#### Accessories

| Description | For KWL 250 WW.. |
| Description | for KWL 500 WW.. |

#### Accessories

| Description | Spare-UVC-tube and -osmosis-membrane (for all types) |
| Description | Helios HygroBox units are equipped with a continuous, automatically monitored UVC disinfection, which kills effectively all germs and bacteria. |
| Description | Additionally, the water in the evaporator tub is changed automatically dependent on water hardness and evaporation performance. |
| Description | The hygienic safety of the HygroBox is documented through an expert opinion and certified. |

#### Accessories

| Description | Spare-UVC-tube |
| Description | KWL-UVR |
| Description | KWL-OME |

#### Accessories

| Description | Spare-water-filter |
| Description | Spare-water-filter |

#### Accessories

| Description | Spare-water-filter |
| Description | KWL-WF |

#### Accessories

| Description | Low temperature heater battery |
| Description | for KWL-HB.. WW |

#### Accessories

| Description | Low temperature heater battery |
| Description | for KWL 250 WW.. |
| Description | for KWL 500 WW.. |

#### Accessories

| Description | Water filter |
| Description | Osmosis membrane |

#### Accessories

| Description | PUMP-MIXER-SET – KWL-PMA 250 |
| Description | Ref.-No. – 5629 |
| Description | For KWL 250 WW.. |
| Description | KWL-PMA 500 |
| Description | Ref.-No. – 5634 |
| Description | For KWL 500 WW.. |

### Technical data table

<table>
<thead>
<tr>
<th>Right-hand version (air intake on the right)</th>
<th>KWL HB 250 EH R</th>
<th>KWL HB 250 EH L</th>
<th>KWL HB 250 WW R</th>
<th>KWL HB 250 WW L</th>
<th>KWL HB 500 WW R</th>
<th>KWL HB 500 WW L</th>
</tr>
</thead>
<tbody>
<tr>
<td>KWL-NHR 250 Ref.-No. 5628</td>
<td>0963</td>
<td>0962</td>
<td>0923</td>
<td>0922</td>
<td>0961</td>
<td>0980</td>
</tr>
<tr>
<td>KWL-NHR 500 Ref.-No. 5633</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left-hand version (air intake on the left)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjustable relative supply air humidity in %</td>
<td>40-60</td>
<td>40-60</td>
<td>40-60</td>
<td>40-60</td>
<td>40-60</td>
<td>40-60</td>
</tr>
<tr>
<td>Air flow volume m³/h</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Power consumption max. W</td>
<td>1400</td>
<td>1400</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Heat power W</td>
<td>1300</td>
<td>2000</td>
<td>2000</td>
<td>4200</td>
<td>4200</td>
<td>4200</td>
</tr>
<tr>
<td>Voltage/Frequency</td>
<td>230 V, 1 ph., 50 Hz</td>
<td>230 V, 1 ph., 50 Hz</td>
<td>230 V, 1 ph., 50 Hz</td>
<td>230 V, 1 ph., 50 Hz</td>
<td>230 V, 1 ph., 50 Hz</td>
<td>230 V, 1 ph., 50 Hz</td>
</tr>
<tr>
<td>Water drain ø mm</td>
<td>40-50</td>
<td>40-50</td>
<td>40-50</td>
<td>40-50</td>
<td>40-50</td>
<td>40-50</td>
</tr>
</tbody>
</table>

### Accessories

| Description | Pump-Mixer-Set |
| Description | – |
| Description | KWL-PMA 250 |
| Description | KWL-PMA 500 |
| Description | – |
| Description | KWL-NHR 250 Ref.-No. 5628 |
| Description | KWL-NHR 500 Ref.-No. 5633 |
| Description | – |
| Description | KWL-UVR Ref.-No. 5631 |
| Description | KWL-OME Ref.-No. 5632 |

### Accessories

| Description | Electric heater battery |
| Description | For KWL units up to 250 m³/h |
| Description | – |
| Description | KWL-PMA 250 |
| Description | KWL-PMA 500 |

### Accessories

| Description | Water heater battery |
| Description | For KWL units up to 250 m³/h |
| Description | – |
| Description | KWL-UVR |
| Description | KWL-OME |

### Accessories

| Description | Water heater battery |
| Description | For KWL units up to 500 m³/h |
| Description | – |
| Description | KWL-UVR |
| Description | KWL-OME |

### Accessories

| Description | Low temperature heater battery |
| Description | for KWL-HB.. WW |
| Description | – |
| Description | KWL-NHR 250 Ref.-No. 5628 |
| Description | KWL-NHR 500 Ref.-No. 5633 |
| Description | – |
| Description | KWL-UVR Ref.-No. 5631 |
| Description | KWL-OME Ref.-No. 5632 |

### Accessories

| Description | Spare-water-filter |
| Description | – |
| Description | KWL-WF Ref.-No. 5630 |

### Note

| Description | The water filter in water supply line is to be exchanged generally every 6 months. The filter change is indicated by a suitable note on the display of the HygroBox. |
| Description | Please ask for separate flyer. Ref.-No. 86981 |

| Description | KWL®-HygroBox. 50-21: The formula for a healthy climate. |
| Description | Please ask for separate flyer. Ref.-No. 86981 |
The ground-to-brine heat exchanger substantially increases the efficiency of the ventilation units. SEWT saves even more energy and reduces costs of heating to a minimum. The optimal add-on for ventilation systems with heat recovery.

### Advantages
- Provides additional pre-heating during winter.
- Pleasant cooling on hot days.
- Comes as a complete kit with perfectly fitting components.

### Operation
SEWT uses the fact that the temperature below the ground is relatively constant over the year. The undersoil collector hose is laid 1.2 m deep. The hydraulic unit circulates the brine-liquid according to the temperature outside. The brine-liquid serves as heat transfer medium and delivers the heat to the supply air via the heat exchanger unit.

### Effects:
- **During winter** SEWT achieves a pre-heating of the cool outside air up to 14 K. This results in the intake air flowing into the ventilation unit with usually more than 0 °C and therefore prevents the heat exchanger from icing up. The benefits are a higher heat recovery factor and a higher supply air temperature. An additional heater battery is only needed on extremely cold days.
- **On hot summer days** the SEWT causes a reduction in temperature.
- **During transition periods** the circulation of the brine-liquid is provided by the hydraulic unit as a function of the outside temperature. Therefore the outside air always arrives at the ventilation unit energetically optimised. Saving energy and always provides comfortable room climate.

### Information on planning
- To ensure the highest possible heat transfer, the undersoil collector hose should be laid in at least 1.2 m depth as there is a constant temperature of about 8-12 °C throughout the year. The soil temperature increases the deeper the ducts are laid and becomes constant.
- To increase the heat exchange the hose should be laid directly under the soil in a sandbed. Furthermore, a minimum space of 0.5 m from one hose to the other should be observed for two parallel tubes.
- Alternatively to laying the hose horizontally in a zigzag arrangement under the soil a vertical bore hole can be used.

### Delivery
- According to the installation order on the building site and to ensure an optimised transport the SEWT is delivered as kit. The SEWT-kit ensures full functionality and perfect fitting accuracy. It consists of three delivery-sets as described on the right page.

### SEWT-kit
Ref.-No. 2564

### Basic scheme for the installation
The ducting should be done with Helios IsoPipe® to avoid condensation creation. Additionally insulated spiral ducting can be used alternatively.

#### Installation scheme
- Heat exchanger incl. filter
- Automatic air escape valve
- PE-HD-tube incl. screw connection
- Operation switch
- Connection heat exchanger and hydraulic unit, V*
- Outside thermostat
- Terminal box
- Membrane-pressure extension tank incl. wall bracket and quick non return valve
- Rain repellent grille (accessory)

V* = Pipework on site
**Brine-to-air heat exchanger**

- **Specification**
  - Highly efficient brine-to-air heat exchanger with fins made from aluminium to ensure the best transfer to the intake air. Connection pipes made of copper Ø 12 mm.
  - Double walled, completely insulated casing (20 mm insulation) made of steel, powder coated in grey. With mounting brackets for wall- and ceiling installation.
  - Ø 180 mm spigots with twin-seal rubber gaskets.
  - With integrated G 3 filter. Prevents dust, insects etc. from accessing the duct system.
  - Easy accessible panel can be opened without tools and allows simple access to the filter.
  - Air flow direction is variable as the filter can easily be placed for both directions.
  - Condensation outlet incl. condensation trap, Ø 1/2”.

- **Accessory**
  - Replacement air filters (SU = 3 pcs)
    - ELF-SEWT-F Ref.-No. 2568

---

**Hydraulic unit and control unit**

- **Specification**
  - Complete hydraulic-set with all components needed to connect the brine-to-air heat exchanger unit. Delivered as standard with control unit for automatic and manual operation.

---

**Undersoil hose set with screw connections and ethylene glycol**

- **Specification**
  - Flexible PE-HD undersoil hose (PE-HD = polyethylene high pressure hose), wall thickness 2.9 mm, outer-Ø 32 mm. Delivered as bundle with 100 running mtrs.
  - Especially designed for undersoil laying.
  - Screw connection set made from high class polymer (PP) to connect the undersoil hose to the hydraulic unit.

---

**Technical data thermostat**

- Current: 16 A (4 A ind.)
- Voltage: 230 V, 50/60 Hz
- Protection to: IP 54
- Wiring diagram no.: SS-906
- Temperature range (adjustable): 2 x 0 – 40 °C

**Technical data brine pump**

- Current max.: 0.2 A
- Voltage: 230 V, 50 Hz
- Power, 3 steps: 25, 35, 45 W
- Protection to: IP 44

---

**Technological heat exchanger unit with filter G3 in clean condition**

---

**Notes**

The SEWT-kit with the advantage of the package price ensures full functionality and perfect fitting accuracy:

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEWT-kit</td>
<td>2564</td>
</tr>
</tbody>
</table>

The single parts of the SEWT-kit can also be ordered separately:

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEWT-E</td>
<td>2567</td>
</tr>
<tr>
<td>SEWT-W</td>
<td>2565</td>
</tr>
<tr>
<td>SEWT-H</td>
<td>2566</td>
</tr>
</tbody>
</table>
The undersoil air heat exchanger LEWT substantially increases the efficiency of the ventilation units with heat recovery.

**Advantages**
- Provides additional pre-heating during winter without any further energy requirements.
- Prevents the heat exchanger from icing up.
- Pleasant cooling on hot days.
- Additional heating of the supply air is only necessary when outside temperature is very low.
- Comes as a complete kit with perfectly fitting components.

**Functional principle**
LEWT uses the fact that the temperature below the ground is relatively constant all year. The outside air is not taken in directly but passes through the undersoil collector duct installed in approx. 1.2 to 1.5 m deep; the total length should be at least 40 m.

**Effects:**
- **During winter** LEWT achieves a pre-heating of the cool outside air up to 14 K. This results in the intake air flowing into the ventilation unit at more than 0 °C usually and therefore prevents the heat exchanger from icing up. The benefits are a higher heat recovery factor and a higher supply air temperature. The heater battery is only needed on very cold days.
- **On hot summer days** the SEWT causes a reduction in temperature.
- **During transition periods** the intake is by either the air passing through the undersoil collector or the direct intake opening depending on the outside temperature detected by the sensor. The electric bypass shutter controls the air intake automatically.

**Information on planning**
- To ensure the highest possible heat transfer, the undersoil air collector duct should be laid in at least 1.2 m depth as there is a constant temperature of about 8 °C throughout the year. The soil temperature increases the deeper the ducts are laid and becomes constant.
- When installing it is important to consider that the condensation drain requires an incline of at least 2 %.
- To increase the heat exchange the duct should be laid directly under the soil in a sandbed. Furthermore, a space of 1 m from one duct to the other should be maintained when laying two ducts parallel.
- To keep the downstream pressure loss minimised a bending radius of at least 1 m is recommended.

**Basic scheme for the laying: Buildings with basements**
The undersoil collector reaches the building subsurface through a wall penetration.

**Basic scheme for the laying: Buildings without basements**
The undersoil collector reaches the building subsurface through the base plate. For revision purposes a drain is required by customer.
Undersoil collector duct and wall penetration LEWT-E+M

- Description
  - Flexible undersoil collector duct, ribbed on the outside, smooth inner surface to ensure a very low air resistance, Ø 200 mm.
  - Co-extruded compound duct made from physiological and toxicological harmless polyethylene (PE-HD). Developed specifically for undersoil laying.
  - Antibacterial and antistatic material with smooth surface.
  - Easy to clean.
  - 100 % odourless, quality-assured PE-HD exclude transmission of pollutants and evaporations.
  - The material PE-HD achieves a 2-times higher conductivity than PP with comparable wall thicknesses / duct cross sections. Even at 2.5 x better heat conduction performance a rises compared to PVC.
  - Supplied as set with 2 x 25 running meters including wall duct DN 200 from polyethylene (bonding surface), profile seals, connector and seals.
  - Undersoil collector, wall penetration and seals comply with IP 67, assuring accurate installation.

- Additional connector with two seals.
  - LEWT-MU Ref.-No. 2971

Outside-air-intake LEWT-A with filter

- Description
  - Outside-air-intake in modern and timeless stainless-steel design.
  - Fixation with support or bordering plate in dry construction or by setting in concrete.
  - With integrated cone air filter, class G3. Prevents dust and insects from accessing the duct system.
  - Cone filter can easily be released by hand for cleaning and changing.
  - The connection between the outside-air-intake and undersoil-duct is done by just clipping.
  - All parts are made of stainless steel.

- Accessories
  - Replacement air filter (SU = 3 pcs)
    - ELF-LEWT-A Ref.-No. 2975

Controller and duct form parts LEWT-S+F

- Description
  - Automatic controlling of the outside air intake via the undersoil collector duct or directly via the outside area as per the detected outside temperature.
  - Temperature range for direct intake can be adjusted individually.
  - Manual selection of the operation mode is possible.

- Contents
  - Bypass shutter NW 200 with servo motor 230 V; for vertical mounting above the cross piece.
  - Cross piece for connection with the wall penetration. Including port for cleaning, condensation collector, siphon and cover.
  - Rain enclosure RAG (without pic.) suitable as coverage of the direct air intake. Prevents rain and insects from entering.

- Control knob and thermostat for automatic and manual control of the bypass shutter. To be mounted in a weather-protected place on the north-side of the building at 1 mtr. height. Dimensions in mm W 200 x H 90 x D 70

- Control box with double switch. Modes:
  - Thermostat mode, automatic
  - Undersoil heat, manual
  - Outside air, manual
  - Dimensions in mm W 110 x H 180 x D 100

Technical data thermostat

| Current | 16 A (4 A ind.) |
| Voltage | 230 V 50/60 Hz |
| Protection to | IP 54 |
| Wiring diagram no. | SS-798.1 |
| Temperature range (adjustable) | 2 x 0 – 40 °C |

Technical data servo motor

| Voltage | 230 V 50/60 Hz |
| Power | 1.5 W |
| Protection to | IP 54 |

Notes

The single parts of the LEWT-kit can also be ordered separately:

- Type | Ref.-No.
- LEWT-E+M | 2991
- LEWT-S+F | 2990
- LEWT-A | 2992
Insulated ducting system IsoPipe® IP
For intake and exhaust ducting

The innovative alternative to spiral ducting that must be insulated additionally to avoid condensation.

The insulated duct system IsoPipe®
- avoids condensation build-up,
- is provided with a smooth, sound absorbing inner surface and is easy to clean,
- saves assembly time,
- is the perfect solution for intake and extract ducting.

Specifications

All parts are completely insulated and are made of water-vapour-light and antistatic EPE. Suitable for air flow temperatures from −25 to +80 °C. λ = 0.04 W/mK, d = 16 mm.

Laying-conception and installation
IsoPipe® is especially applicable for intake and exhaust ducting in basements and cold surroundings.

Suitable for air flow volumes up to 500 m³/h.

IsoPipe® is impact resistant, very lightweight and can easily be shortened to the required length with a knife.

Specifications

All parts are completely insulated and are made of water-vapour-light and antistatic EPE. Suitable for air flow temperatures from −25 to +80 °C. λ = 0.04 W/mK, d = 16 mm.

Laying-conception and installation
IsoPipe® is especially applicable for intake and exhaust ducting in basements and cold surroundings.

Suitable for air flow volumes up to 500 m³/h.

IsoPipe® is impact resistant, very lightweight and can easily be shortened to the required length with a knife.

Specifications

All parts are completely insulated and are made of water-vapour-light and antistatic EPE. Suitable for air flow temperatures from −25 to +80 °C. λ = 0.04 W/mK, d = 16 mm.

Laying-conception and installation
IsoPipe® is especially applicable for intake and exhaust ducting in basements and cold surroundings.

Suitable for air flow volumes up to 500 m³/h.

IsoPipe® is impact resistant, very lightweight and can easily be shortened to the required length with a knife.

Specifications

All parts are completely insulated and are made of water-vapour-light and antistatic EPE. Suitable for air flow temperatures from −25 to +80 °C. λ = 0.04 W/mK, d = 16 mm.

Laying-conception and installation
IsoPipe® is especially applicable for intake and exhaust ducting in basements and cold surroundings.

Suitable for air flow volumes up to 500 m³/h.

IsoPipe® is impact resistant, very lightweight and can easily be shortened to the required length with a knife.

Specifications

All parts are completely insulated and are made of water-vapour-light and antistatic EPE. Suitable for air flow temperatures from −25 to +80 °C. λ = 0.04 W/mK, d = 16 mm.
Insulated ducting system IsoPipe® IP
For intake and exhaust ducting

Sticky tape / Casing clamp

Duct piece to unit connection

Duct piece to distribution box

Duct piece to KWL®-HygroBox and undersoil heat exchanger

Facade panels

Roof terminations

<table>
<thead>
<tr>
<th>IsoPipe®</th>
<th>ø 125 mm</th>
<th>ø 160 mm</th>
<th>ø 180 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Ref.-No.</td>
<td>Dim. in mm</td>
<td>Type</td>
</tr>
<tr>
<td>Sticky tape insulated, 50 x 3 mm, 15 ltd. m</td>
<td>IP-KLB 9643</td>
<td>—</td>
<td>IP-KLB 9643</td>
</tr>
<tr>
<td>Casing clamp</td>
<td>IP-S 125 9395 157</td>
<td>—</td>
<td>IP-S 160 9392 192</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IsoPipe®</th>
<th>ø 125 mm</th>
<th>ø 160 mm</th>
<th>ø 180 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Ref.-No.</td>
<td>Dim. in mm</td>
<td>Type</td>
</tr>
<tr>
<td>Connector with seal to connect to KWL®-unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– with socket nom. dia. 125</td>
<td>RVBD 125 9640 125 —</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>– with socket nom. dia. 160</td>
<td>— —</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>All duct pieces made from galvanised steel.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IsoPipe®</th>
<th>ø 125 mm</th>
<th>ø 160 mm</th>
<th>ø 180 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Ref.-No.</td>
<td>Dim. in mm</td>
<td>Type</td>
</tr>
<tr>
<td>Duct piece to connect to distribution box</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– with spigot nom. dia. 125</td>
<td>Direct duct connection</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>All duct pieces made from galvanised steel.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IsoPipe®</th>
<th>ø 125 mm</th>
<th>ø 160 mm</th>
<th>ø 180 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Ref.-No.</td>
<td>Dim. in mm</td>
<td>Type</td>
</tr>
<tr>
<td>Duct piece to connect to KWL®-HygroBox</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KWL HB 250, spigot nom.dia.160</td>
<td>IP-ARZ 160/125 9358 125 160</td>
<td>Direct duct connection</td>
<td>—</td>
</tr>
<tr>
<td>KWL HB 900, spigot nom.dia.250</td>
<td>—</td>
<td>—</td>
<td>IP-ARZ 250/160 9590 160 250</td>
</tr>
<tr>
<td>to undersoil heat exchanger</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– LEWT, spigot nom. dia. 200</td>
<td>—</td>
<td>—</td>
<td>IP-ARZ 200/160 9546 160 200</td>
</tr>
<tr>
<td>– SEWT, spigot nom. dia. 180</td>
<td>—</td>
<td>—</td>
<td>IP-AIP-ARZ 180/125 9550 125 180</td>
</tr>
<tr>
<td>All duct pieces made from galvanised steel.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IsoPipe®</th>
<th>ø 125 mm</th>
<th>ø 160 mm</th>
<th>ø 180 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Ref.-No.</td>
<td>Dim. in mm</td>
<td>Type</td>
</tr>
<tr>
<td>Facade combination panel*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– for intake air IP-FBA 3125 230 200 78</td>
<td>IP-FBA 160 261 249 97</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>– for exhaust air IP-FBF 3125 230 157 200 78</td>
<td>IP-FBF 160 261 249 97</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>All facade panels made of high-grade steel.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IsoPipe®</th>
<th>ø 125 mm</th>
<th>ø 160 mm</th>
<th>ø 180 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Ref.-No.</td>
<td>Dim. in mm</td>
<td>Type</td>
</tr>
<tr>
<td>Roof termination, consisting of outlet and plate*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Roof outlet black</td>
<td>IP-DHS 125 3541 157 160</td>
<td>IP-DHS 160 3542 192 210</td>
<td>IP-DHS 180 3542 210 210</td>
</tr>
<tr>
<td>– inclusive ducting red</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>– Weathering plate for IP-UDPS 125 3545 ø 25°– 45°</td>
<td>IP-UDPS 125 3545 ø 25°– 45°</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Pitched roofs, with leaded</td>
<td>—</td>
<td>—</td>
<td>IP-125 3545 ø 30°– 40°</td>
</tr>
<tr>
<td>Sheet</td>
<td>—</td>
<td>—</td>
<td>IP-180/45 3546 ø 40°– 50°</td>
</tr>
<tr>
<td>– Weathering plate flat roof</td>
<td>IP-FDP 125 3544 158</td>
<td>IP-FDP 160 3545 203</td>
<td>IP-FDP 180 3545 203</td>
</tr>
</tbody>
</table>

* Please order roof outlets and roof pantiles each separately.
Air distribution system RenoPipe RP for the housing stock
For surface mounted wall or ceiling installation

The clever solution especially developed for energy-saving renovation: RenoPipe combines the ventilation ducts and aesthetic covers in one unit.

- Fast, easy installation even in inhabited buildings.
- Mounting does not require reworking using dry construction techniques.
- The material need is reduced to a minimum.
- Economically by few components and no need of extracted air outlets.

Mounting
- The RenoPipe fittings can be individually shortened with a precision saw.
- Surface mounting to the ceiling or wall; simply click the long connectors into the fixing clamps included in the contents of delivery.

Features and advantages
- Components made from highly compressed EPS in white, which can be painted over.
- Fast surface mounting, without time-consuming cover suspensions and dry construction works.

Air distribution system, mounting
- The used air of the kitchen and bathrooms is collected directly in the sound insulated combination distribution box. No need of extracted air outlets and separate attenuators.
- Rubber lip-seals provide airtight connection of the complete RenoPipe System.

Duct SU = 4 pcs*
Duct piece with smooth, square profile. Inside diameter DN 100, length 1 m.
RP-K Ref.-No. 3061

Duct with stucco profile
SU = 4 pcs*
Like above, but with visually attractive stucco profile.
RP-SK Ref.-No. 3065

T-section SU = 4 pcs*
Compact T-piece with smooth, square profile. Inside diameter DN 100/100/100.
RP-T Ref.-No. 3062

T-section with stucco profile
SU = 4 pcs*
Like above, but with visually attractive stucco profile.
RP-ST Ref.-No. 3066

Inner angle SU = 2 pcs*
90°-interior angle piece in compact cube form with smooth, square profile. Inside diameter DN 100.
RP-IW Ref.-No. 3067

Inner angle with section
SU = 2 pcs*
Like above, but with visually attractive stucco profile.
RP-ISW Ref.-No. 3077

Outer angle SU = 2 pcs*
90°-exterior angle piece in compact cube form with smooth, square profile. Inside diameter DN 100.
RP-AW Ref.-No. 3076

Outer angle with section
SU = 2 pcs*
Like above, but with visually attractive stucco profile.
RP-SAW Ref.-No. 3078

* Supplied in packaging units.
Air distribution system RenoPipe RP for the housing stock
For surface mounted wall or ceiling installation

**Ventilation valve**

- **Design ventilation valve**
  Design ventilation valve for extract air operation, DN 100, adjustable. With concealed opening and integrated filter.
  - DLV 100  Ref.-No. 3039

- **Replacement air filters**
  SU = 5 pcs*
  - ELF-DLV 100  Ref.-No. 3042

**Cutting guide**

- **Cutting guide**
  Practical cutting guide, beech multiplex 15 mm, for easy cutting duct piece to length.
  - RP-SH  Ref.-No. 3036

**Precision saw**

- **Precision saw**
  Special hand slitting saw for slight cuts.
  - RP-FS  Ref.-No. 3044

**Facade combination panel**

- **Facade combination panel**
  For connection of outside and exhaust air. Universally applicable; outside air alternatively left, right or below. Perfectly designed from high grade steel. Connection DN 125.
  - IP-FKB 125  Ref.-No. 2889

**Wall casing**

- **Wall casing**
  DN 100 from PVC, including mounting template for easy wall penetration.
  - RP-WH  Ref.-No. 3035

**Final- and inspection lid**

- **Final and inspection lid**
  DN 100 from high quality polymer, with rubber lip-seal. For installation at duct piece.
  - RP-RD  Ref.-No. 3037

**Seal**

- **Lip seals**
  SU = 10 pcs*
  DN 100 from EPDM.
  - RP-LD  Ref.-No. 3033

**Note**

„RenoPipe. The invisible air distribution system for renovations.“ Please ask for separate flyer.

Ref.-No. 86 643
Flexible ducting system FlexPipe® plus

Round 75 mm Ø in combination with Oval 51x114 mm

FlexPipe® plus is the further development of the successful air distribution system FlexPipe® and unites round and oval pipe as of now in a clever system package with all conceivable round-oval-combinations.

The new oval pipe has the identical hydraulic cross-section and pressure loss like the round pipe as well as a point-symmetric design. This leads to 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 condition, therefore any changes between round and oval pipe by means of adapters are possible. This along the line as well as from the distribution box away. This offers greatest possible freedom during planning and installation.
- The ideal, cost-effective option can be selected at any time. The space-saving oval pipe is mainly used when low structure heights are required.
- The round-oval-compatibility leads to a low parts variety. Stockpiling and consultation are strongly simplified. The installation is almost intuitively carried out.
- The point-symmetric oval design allows the laying from the horizontal line into vertical without the use of adapter pieces to the position correction.

Note

FlexPipe ducting system with outer-Ø: 63 mm, inner: 52 mm for air flow volume up to 20 m³/h
see page 56

FlexPipe® plus contains two design types which are arbitrarily combinable:

- FRS.. 75, round:
  Outer-Ø: 75 mm, inner: 63 mm for air flow vol. up to 30 m³/h.
  For laying into concrete.
  High resilience (St, > 8 kN/m²).
  Bending radius horizontal and vertical 150 mm.

- FRS.. 51, oval:
  51 x 114 mm, for air flow volume up to 30 m³/h, ideal for space-saving laying e.g. on the unfinished floor or in the wall.
  Bending radius horizontal 300 mm, vertical 200 mm.

Laying, handling, initiation

- Easiest planning thanks to identical pipe cross-sections and pressure losses.
- Fast to install through star-shaped laying.
- Conventional handling due to the light weight.
- Fast initiation as the adjustments are reduced to a minimum.
- Constant air distribution.
- Easy to clean, hygienically perfect.

Duct characteristics and advantages

- The round and oval pipe consists of quality-assured PE-HD made of new raw material.
- The outside is ribbed where as the inner surface is absolutely smooth and antistaticity coated.
  This minimizes the pressure losses and prevents flow-generated noise and dirt deposits.
- The extreme horizontal and vertical bending elasticity of both pipe geometries reduces the number of required fittings to a minimum.
- Due to the point-symmetric design the laying of the oval pipe is vertically up- or downwards from the horizontal line possible without adapter pieces.

Laying-conception/installation

- Fixing brackets on all parts for secure fixing to floor, wall, or ceiling.
- Unlockable fixing clips guarantee the fast and no-pull-out pipe mounting on all joints.
- By sound absorbing distribution boxes additional cross-talk sound attenuators are omitted.
- Precise sealing system on all fittings for leakage-free air transportation.
- Many different components ensure the perfect solution for nearly every request. There are ceiling outlets available for all kind of valves with ND 125 as well as wall and floor outlets, delivered with grilles as standard. They each have two parallel pipe connections for the low pressure loss airflow of the required air flow volumes to DIN 1946-6.

Note

FlexPipe ducting system with outer-Ø: 63 mm, inner: 52 mm for air flow volume up to 20 m³/h
see page 56
**FlexPipe® duct round**

- **Type**: FRS-R 75
  - **Ref.**: 2913
  - **Dim. in mm**: 75
  - **Outer-d**: 63

Hygiene-duct cap
- **Ref.**: SU
- **No.**: 10 pcs

Flexible round pipe from PE-HD, ideal for the laying into the concrete ceiling. Incl. two hygiene-duct caps, in addition can be ordered separately.

**Cap, seal ring, clip**

- **Type**: Spigot cap with sealing
  - **Ref.**: FRS-VOS 75
  - **Dim. in mm**: 3855
  - **No.**: 1 pc

- **Type**: Seal ring
  - **Ref.**: FRS-DR 75
  - **Dim. in mm**: 2916
  - **No.**: 10 pcs

- **Type**: Clip, unlockable
  - **Ref.**: FRS-FK
  - **Dim. in mm**: 3854
  - **No.**: 10 pcs

Connection sleeve

- **Type**: Connection sleeve for round pipe FRS-R 75 with interlocking protection on both sides, from polyethylene.
  - **Ref.**: FRS-VM 75
  - **Dim. in mm**: 2914

Elbow 90°

- **Type**: Elbow 90°
  - **Ref.**: FRS-B 75
  - **Dim. in mm**: 2994

Elbow horizontal / vertical

- **Type**: Horizontal or vertical elbow 90°. With integrated fixing brackets, incl. pipe fixing clips (4 pcs). Made from impact-resistant polypropylene.
  - **Ref.**: FRS-BH 51
  - **Dim. in mm**: 3863

- **Ref.**: FRS-BV 51
  - **Dim. in mm**: 3859

Adaptor straight / vertical

- **Type**: Horizontal and vertical adapter from round pipe FRS-R 75 to oval pipe FRS-R 51. With integrated fixing brackets, incl. pipe fixing clips (4 pcs). Made from impact-resistant polypropylene.
  - **Ref.**: FRS-ÜG 51-75
  - **Dim. in mm**: 3861

- **Ref.**: FRS-ÜV 51-75
  - **Dim. in mm**: 3850

Any combination of round and oval pipe

- With FlexPipe® plus from Helios you decide for one system and have – depending on the object requirement – the perfect solution in the access.
- The only 51 mm super flat oval pipe is then used, when low construction height is required. The approved round pipe is offered for the direct laying into the concrete ceiling.
- Thanks to identical hydraulic cross-sections and pressure losses of the two pipes and due to well-conceived system components you can combine round and oval as required. This along the line as well as from the distribution box away.

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

The distribution boxes can be equipped with round and oval single spigots as well as combined.
1) Cap with integrated sealing FRS-VDS 75, Ref.-No. 3855 and -VD 125, Ref.-No. 3865.

2) Cap with integrated sealing FRS-VDS 51, Ref.-No. 3856 and -VD 125, Ref.-No. 3865.

Choosing the Helios basic site package, saves money as you will benefit from the package price.

– time because everything you need is already included.

Choosing the Helios basic site package, saves money as you will benefit from the package price.

– time because everything you need is already included.
Multi-distribution box 4+1

Type | Ref. | ø NW | No. | mm
--- | --- | --- | --- | ---
FRS-MVK 4+1-75/125 | 3843 | 125 | 3843 | 125

For universal installation on the concrete ceiling. With height-adjustable mounting brackets. Pipe connection nom. dia. 125 is horizontally or vertically possible as an option. 10 connections for up to 5 flexible pipes FRS-R 75. With sound absorbing lining and large inspection opening.

Distribution box 10-fold

Type | Ref. | ø NW | No. | mm
--- | --- | --- | --- | ---
FRS-VK 10-51/125 | 3847 | 125 | 3847 | 125

20 connection possibilities for up to 10 flexible pipes FRS-R 75. Optional mounting as straight-through, 90° distributor or combined. Combined installation with oval single spigots possible (FRS-ES 51, Ref.-No. 3851, see below). With sound absorbing lining and large inspection opening.

Distribution box 10-fold

Type | Ref. | ø NW | No. | mm
--- | --- | --- | --- | ---
FRS-VK 10-75/180 | 3848 | 180 | 3848 | 180

30 connection possibilities for up to 15 flexible pipes FRS-R 75. Optional mounting as straight-through, 90° distributor or combined. Combined installation with oval single spigots possible (FRS-ES 51, Ref.-No. 3851, see below). With sound absorbing lining and large inspection opening.

Flat distribution box 6-fold

Type | Ref. | ø NW | No. | mm
--- | --- | --- | --- | ---
FRS-FVK 6-75/125 | 3845 | 125 | 3845 | 125

To connect up to 6 flexible pipes FRS-R 75. Mounting as straight-through distributor. Combined installation with oval single spigots possible (FRS-ES 51, Ref.-No. 3851, see below). With sound absorbing lining and large inspection opening.

Distribution box 6-fold

Type | Ref. | ø NW | No. | mm
--- | --- | --- | --- | ---
FRS-VK 6-75/125 | 3846 | 125 | 3846 | 125

12 connection possibilities for up to 6 flexible pipes FRS-R 75. Optional mounting as straight-through, 90° distributor or combined. Combined installation with oval single spigots possible (FRS-ES 51, Ref.-No. 3851, see below). With sound absorbing lining and large inspection opening.

Compact distribution box

Type | Ref. | ø NW | No. | mm
--- | --- | --- | --- | ---
FRS-KVK 6-75/125 | 3873 | 125 | 3873 | 125

*Supply air connection optionally on the left or right. Compact distribution box, perfect next to adjacent exhaust air rooms. 2 x DN 100 for extraction with extract air valves DLV (see accessories). Supply air distribution via connection of up to 6 flexible ducts FRS-R 75.

Distribution box 15-fold

Type | Ref. | ø NW | No. | mm
--- | --- | --- | --- | ---
FRS-VK 15-75/180 | 3846 | 180 | 3846 | 180

30 connection possibilities for up to 15 flexible pipes FRS-R 75. Optional mounting as straight-through, 90° distributor or combined. Combined installation with oval single spigots possible (FRS-ES 51, Ref.-No. 3851, see below). With sound absorbing lining and large inspection opening.

New: The ingenious FlexPipe® plus distribution concept

1. Helios offers the right solution for every installation situation:
   - The distribution boxes are variably applicable: Optional as straight-through or 90° distributor, for wall or ceiling installation.
   - The multi-distribution boxes optimally are suitable as storey distributors. They can be installed in or on the raw concrete ceiling with an inspection opening from above or below.
   - With a height of only 160 mm the flat distribution box fits even in the smallest spaces, e.g. in suspended ceilings.
   - The compact distribution box is an extract air collector and supply air distributor at the same time and is used when kitchens and bathrooms border directly on each other.

2. Flexible to the last detail
   - All distribution boxes are supplied with tight clasping bayonet catch caps, which are applicable (leakage-free) with one move of the hand.
   - Depending on architectural situation a combined installation of the distribution boxes with round and oval single spigots is possible. Moreover the spigots can be ordered individually (see below). The maximum possible number of oval single spigots (FRS-ES 51, Ref.-No. 3851) is to be requested if necessary.
   - Included in delivery: Fixing clips for the no pull out pipe mounting at the spigots as well as bayonet cap catch caps with integrated seal rings for non occupied distribution box openings.

Single spigot, cap

Type | Ref. | SU | No.
--- | --- | --- | ---
FRS-ES 75 | 3852 | 1 pc
Single spigot, 114 x 51 mm | 3851 | 1 pc
Bayonet catch cap

Type | Ref. | SU | No.
--- | --- | --- | ---
FRS-VDB | 3853 | 1 pc

Additional single spigots to connect round pipe FRS-R 75 and/or oval pipe FRS-R 51 to distribution box. By means of bayonet catch cap simply and variably positionable. Seals tightly, intuive pipe fixing clips (2 pcs.), made from impact-resistant polypropylene. Bayonet catch cap for the single spigot holes at the distribution box.

 Included 2 pcs caps.
 2) Included 4 pcs caps.
The flexible ducting system FlexPipe® is directly laid into or on the concrete.
- Simple to plan and easy to install through star shaped laying.
- Convenient handling due to the lightweight.
- Fast initiation, constant air distribution.
- Easy to clean.

### FlexPipe® duct round

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. - Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRS-R 63</td>
<td>9207 63 52</td>
</tr>
</tbody>
</table>

### Distribution box 6-63, 12-63

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. - NW</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRS-VK 6-63/125</td>
<td>9395 125</td>
</tr>
<tr>
<td>FRS-VK 12-63/160</td>
<td>9336 160</td>
</tr>
</tbody>
</table>

To connect up to 6 or 12 flexible ducts FRS-R 63. As the box is noise-absorbing it is also suitable as silencer element. Choice of manifold position with 12-63, the cover of the access opening. Therefore the distribution box can be used for vertical and horizontal positioning.

### Distribution box 18-63

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. - NW</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRS-VK 18-63/180</td>
<td>9364 180</td>
</tr>
</tbody>
</table>

To connect up to 18 flexible ducts FRS-R 63. As the box is noise-absorbing it is also suitable as silencer element. The connecting plate with the pipe spigots is interchangeable with the inspection door and can be shifted by 90°. Therefore the box can be used for vertical and horizontal positioning.

### Floor outlet with grille

#### Floor outlet with grille

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. -</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRS-B 63</td>
<td>9348</td>
</tr>
</tbody>
</table>

Elbow 90° for bend radius < 2 x duct outer diameter.

### Grille with box

#### Grille with box, straight

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. -</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRS-WBS 2-63</td>
<td>9995</td>
</tr>
</tbody>
</table>

Grille with elbow box consisting of:
- elbow box with sliding type fitting
- grille white (FK-WA 200 W), 250x113 mm

### Sleeve, cap, seal ring

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. - SU</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRS-VM 63</td>
<td>9329</td>
</tr>
<tr>
<td>FRS-VD 63</td>
<td>9330 10 pcs</td>
</tr>
<tr>
<td>FRS-DR 63</td>
<td>9331 10 pcs</td>
</tr>
</tbody>
</table>

Note: At each joint section (pipe/pipe, pipe/fitting), a sealing ring (for IP 66) must be used. Please order corresponding number separately. Coating with a lubricant recommended for the assembly.

### Characteristics and advantages

- The pipe consists of quality-assured PE-HD made of new raw material and is treated to be non-porous, odourless and antistatic.
- The outside is ribbed where as the inner surface is absolutely smooth and antistatically coated. This provides substantial advantages:
  - very low air flow resistance and high sound absorption

- minimal dirt deposits
- easy to clean

### Laying

- The FlexPipe® polymer pipe has a high resilience (SR 24 > 8 kN/m²) and can simply be laid directly into, on or under the concrete ceiling in the desired course due to the high flexibility.
- Air- and watertight connection is simply made by use of the FRS seal rings

### Coating with a lubricant recommended for the assembly.

### Available in two sizes and designs

- **FRS.. 63**
  - Outer-Ø: 63 mm, inner-Ø: 52 mm for air flow vol. up to 20 m³/h.
  - FlexPipe® plus
  - Outer-Ø: 75 mm, inner-Ø: 63 mm for air flow vol. up to 30 m³/h.

Can be combined with oval pipe FRS-R51 and oval components, see page 52 on.

### Floor outlet with grille

- **Floor outlet with grille 2)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. -</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRS-DKV 2-63/125</td>
<td>9430</td>
</tr>
</tbody>
</table>

Ceiling outlet incl. cover to avoid soil in the system during construction work. For intake and extract valves nom. dia. 125 (accessories, see page 60)

### Ceiling outlet 2) for valves DN 125

<table>
<thead>
<tr>
<th>Type</th>
<th>Ref. -</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRS-DKV 2-63/125</td>
<td>9430</td>
</tr>
</tbody>
</table>

Ceiling outlet incl. cover to avoid soil in the system during construction work. For intake and extract valves nom. dia. 125 (accessories, see page 60)
Flat polymer duct system F

- **Laying**
  - Easy and fast laying due to the low weight.
  - Joining of sections of all kinds allows numerous possibilities.
  - Space-saving and universal.
  - Previously used for renovation of existing buildings and prefabricated houses.

- **Characteristics**
  - All sections of white, antistatic polymer. Hardly inflammable B1, DIN 4102. Max. temperature +50 °C. Max. outside dimension: 218.5 x 55.5 mm.

- **Duct-concept and mounting**
  - Specially shaped duct alignment starting at either the unit or the distributor air intakes/outlets of the rooms. Branch connection ensured by T-pieces.
  - Cross-section surface for air flow volume of up to 150 m³/h.
  - The connections of the formed parts are built as slip-in sleeves; duct connection is done by outside-connection sleeves.
  - Requires air-tight connection achieved by using duct tape (accessories).
  - Fixation of the pieces using FB.

---

**Flat duct w/o sleeve, length 1 m**

- **FOM**
  - Ref.-No. 0624

**90°-bend vertical**

- **FBV 90**
  - Ref.-No. 0630

**End piece with connection from ø to**

- **FE 100**
  - Ref.-No. 0621
- **FE 125**
  - Ref.-No. 0622

**End piece with connection from ø to**

- **FU 90/100**
  - Ref.-No. 0627
- **FU 90/125**
  - Ref.-No. 0638

**Connection from ø to**

- **FUE 100**
  - Ref.-No. 0626
- **FUE 125**
  - Ref.-No. 0639

**Flat duct connector**

- **FV**
  - Ref.-No. 0625

**Mounting bracket**

- **FB**
  - Ref.-No. 0626

**Strip**

- **KLB**
  - Ref.-No. 0619
  - PVC-strip, width 50 mm, reel with 20 mtr. length.
Flat duct system FK made from galvanised steel
To be installed below floor screed

Flat duct system FK

Underfloor-system made of galvanised steel; especially developed for room ventilation. The optimum solution for hidden air ducts, therefore perfectly suitable for new buildings.

- Characteristics
  - All parts made of galvanised steel, noncorrosive and non flammable.

- Available in two sizes
  - FK.. 150 x 50 mm for air flow volume up to 90 m³/h.
  - FK.. 200 x 50 mm for air flow volume up to 140 m³/h.

<table>
<thead>
<tr>
<th>Flat duct</th>
<th>Type</th>
<th>Ref.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 50 mm</td>
<td>FK 150</td>
<td>2905</td>
<td>150 50 1500</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td>FK 200</td>
<td>2906</td>
<td>200 50 1500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flat duct connector</th>
<th>Type</th>
<th>Ref.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 50 mm</td>
<td>FK-V 150</td>
<td>2941</td>
<td>153 53 200</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td>FK-V 200</td>
<td>2942</td>
<td>203 53 200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mounting bracket</th>
<th>Type</th>
<th>Ref.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 50 mm</td>
<td>FK-B 150</td>
<td>2907</td>
<td>151 52 30</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td>FK-B 200</td>
<td>2908</td>
<td>201 52 30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elbow, horizontal 45°</th>
<th>Type</th>
<th>Ref.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 50 mm</td>
<td>FK-BH 150/45</td>
<td>2910</td>
<td>153 53 45°</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td>FK-BV 200/45</td>
<td>2911</td>
<td>203 53 45°</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elbow, horizontal 90°</th>
<th>Type</th>
<th>Ref.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 50 mm</td>
<td>FK-BH 150/90</td>
<td>2919</td>
<td>153 103 90°</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td>FK-BV 200/90</td>
<td>2920</td>
<td>203 103 90°</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elbow, vertical 45°</th>
<th>Type</th>
<th>Ref.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 50 mm</td>
<td>FK-BH 150/45</td>
<td>2917</td>
<td>153 73 45°</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td>FK-BV 200/45</td>
<td>2918</td>
<td>203 73 45°</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elbow, vertical 90°</th>
<th>Type</th>
<th>Ref.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 50 mm</td>
<td>FK-BH 150/90</td>
<td>2927</td>
<td>153 153 90°</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td>FK-Y 200/150/150</td>
<td>2929</td>
<td>153 153 203</td>
</tr>
</tbody>
</table>

Ducts conception and mounting
- Flat design and rigid construction allow a trouble-free laying below the floor screed. The substantial range of fittings allows nearly every course of the ducting.
- Connection via external connectors. Fittings with sockets (35 mm insertion). Therefore, the absolutely smooth inner surface ensures low air flow resistance and no barriers for dirt. However, disinfection is possible, if desired.
- The junction box for the supply air and extract air routing is installed on each floor which simplifies the duct routing.
- Special flat sound absorbers can be installed within the duct route to protect (e. g. bedrooms) from noise (FK-SD).

<table>
<thead>
<tr>
<th>Y-Branch</th>
<th>Type</th>
<th>Ref.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 50 mm</td>
<td>FK-Y 150/150/150</td>
<td>2927</td>
<td>153 153 153</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td>FK-Y 200/150/150</td>
<td>2929</td>
<td>153 153 203</td>
</tr>
</tbody>
</table>
Flat duct system FK made from galvanised steel
To be installed below floor screed

<table>
<thead>
<tr>
<th>T-piece</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>FK-T 150/150/150</td>
<td>2921</td>
<td>153</td>
<td>153</td>
</tr>
<tr>
<td>FK-T 200/200/200</td>
<td>2923</td>
<td>153</td>
<td>153</td>
</tr>
<tr>
<td>FK-T 150/200/150</td>
<td>2928</td>
<td>153</td>
<td>203</td>
</tr>
<tr>
<td>FK-T 200/200/200</td>
<td>2923</td>
<td>203</td>
<td>153</td>
</tr>
<tr>
<td>FK-T 150/200/200</td>
<td>2924</td>
<td>153</td>
<td>203</td>
</tr>
<tr>
<td>FK-T 200/200/200</td>
<td>2922</td>
<td>203</td>
<td>203</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adaptor</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>150 x 50 mm</td>
<td></td>
<td></td>
<td>153</td>
</tr>
<tr>
<td>FK-Ü 75/150</td>
<td></td>
<td></td>
<td>2948</td>
</tr>
<tr>
<td>FK-Ü 100/150</td>
<td></td>
<td></td>
<td>2996</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FK-Ü 100/200</td>
<td></td>
<td></td>
<td>2997</td>
</tr>
<tr>
<td>FK-Ü 125/200</td>
<td></td>
<td></td>
<td>2998</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reducer</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>FK-RS 200/150</td>
<td>2932</td>
<td>260</td>
<td>53</td>
</tr>
<tr>
<td>FK-RA 200/150</td>
<td>2933</td>
<td>260</td>
<td>53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>End piece – spiral duct</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>D</td>
</tr>
<tr>
<td>150 x 50 mm</td>
<td></td>
<td></td>
<td>99</td>
</tr>
<tr>
<td>FK-ER 150/100</td>
<td>2934</td>
<td>124</td>
<td>200</td>
</tr>
<tr>
<td>FK-ER 150/125</td>
<td>2935</td>
<td>124</td>
<td>200</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td></td>
<td></td>
<td>159</td>
</tr>
<tr>
<td>FK-ER 200/160</td>
<td>2936</td>
<td>159</td>
<td>220</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adaptor</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td></td>
<td></td>
<td>203</td>
</tr>
<tr>
<td>FK-WA 200 W</td>
<td>9350</td>
<td>white</td>
<td>250</td>
</tr>
<tr>
<td>FK-WA 200 AL</td>
<td>9351</td>
<td>alu</td>
<td>250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reducer</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>FK-RS 200/150</td>
<td>2932</td>
<td>260</td>
<td>53</td>
</tr>
<tr>
<td>FK-RA 200/150</td>
<td>2933</td>
<td>260</td>
<td>53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>End piece – valve</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>D</td>
</tr>
<tr>
<td>150 x 50 mm</td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>FK-EV 150/100</td>
<td>2937</td>
<td>127</td>
<td>200</td>
</tr>
<tr>
<td>FK-EV 150/125</td>
<td>2938</td>
<td>127</td>
<td>200</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>FK-EV 200/100</td>
<td>2939</td>
<td>127</td>
<td>200</td>
</tr>
<tr>
<td>FK-EV 200/125</td>
<td>2940</td>
<td>127</td>
<td>200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attenuator</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 50 mm</td>
<td></td>
<td></td>
<td>153</td>
</tr>
<tr>
<td>FK-SD 150</td>
<td>2945</td>
<td>153</td>
<td>53</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td></td>
<td></td>
<td>203</td>
</tr>
<tr>
<td>FK-SD 200</td>
<td>2946</td>
<td>203</td>
<td>53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>End piece with duct connector</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>D</td>
</tr>
<tr>
<td>150 x 50 mm</td>
<td></td>
<td></td>
<td>99</td>
</tr>
<tr>
<td>FK-ER 150/100</td>
<td>2934</td>
<td>124</td>
<td>200</td>
</tr>
<tr>
<td>FK-ER 150/125</td>
<td>2935</td>
<td>124</td>
<td>200</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td></td>
<td></td>
<td>159</td>
</tr>
<tr>
<td>FK-ER 200/160</td>
<td>2936</td>
<td>159</td>
<td>220</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attenuator</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 x 50 mm</td>
<td></td>
<td></td>
<td>153</td>
</tr>
<tr>
<td>FK-SD 150</td>
<td>2945</td>
<td>153</td>
<td>53</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td></td>
<td></td>
<td>203</td>
</tr>
<tr>
<td>FK-SD 200</td>
<td>2946</td>
<td>203</td>
<td>53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>End piece with valve connector</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>D</td>
</tr>
<tr>
<td>150 x 50 mm</td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>FK-EV 150/100</td>
<td>2937</td>
<td>127</td>
<td>200</td>
</tr>
<tr>
<td>FK-EV 150/125</td>
<td>2938</td>
<td>127</td>
<td>200</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>FK-EV 200/100</td>
<td>2939</td>
<td>127</td>
<td>200</td>
</tr>
<tr>
<td>FK-EV 200/125</td>
<td>2940</td>
<td>127</td>
<td>200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junction box</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>4 spigots 150 x 50 (2 fixed, 2 loose)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 spigot 200 x 50 plus 1 revision shutter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional spigots for pass junction box</td>
<td>FK-ZS</td>
<td>2947</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access opening piece</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>150 x 50 mm</td>
<td></td>
<td></td>
<td>153</td>
</tr>
<tr>
<td>FK-RZ 150</td>
<td>2930</td>
<td>153</td>
<td>53</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td></td>
<td></td>
<td>203</td>
</tr>
<tr>
<td>FK-RZ 200</td>
<td>2931</td>
<td>203</td>
<td>53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junction box</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>150 x 50 mm</td>
<td></td>
<td></td>
<td>153</td>
</tr>
<tr>
<td>FK-ED 150</td>
<td>2987</td>
<td>scope of delivery FK-VK</td>
<td></td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td></td>
<td></td>
<td>203</td>
</tr>
<tr>
<td>FK-ED 200</td>
<td>2947</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>End cover</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>150 x 50 mm</td>
<td></td>
<td></td>
<td>153</td>
</tr>
<tr>
<td>FK-RZ 150</td>
<td>2930</td>
<td>153</td>
<td>53</td>
</tr>
<tr>
<td>200 x 50 mm</td>
<td></td>
<td></td>
<td>203</td>
</tr>
<tr>
<td>FK-RZ 200</td>
<td>2931</td>
<td>203</td>
<td>53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sealing strip</th>
<th>Type</th>
<th>Ref.- No.</th>
<th>Dim. in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Textile sealing strip</td>
<td>FK-VK</td>
<td>2987</td>
<td></td>
</tr>
<tr>
<td>Cold shrinking strip aluminium</td>
<td>KSB</td>
<td>9343</td>
<td>50 mm width, 15 mtrs</td>
</tr>
<tr>
<td>Cold shrinking strip</td>
<td>KSB AL</td>
<td>9344</td>
<td>50 mm width, 15 mtrs</td>
</tr>
<tr>
<td>Strip</td>
<td>KLB</td>
<td>6519</td>
<td>50 mm width, 20 mtrs</td>
</tr>
</tbody>
</table>

E can be adapted from 105-130 mm.
Accessories for KWL®-units
Design valves, valves, air intake elements

Extract air elements

Design valves and valves
For air extract with higher and lower air flow speeds and/or resistances, with compact and attractively designed facia and integrated filter.

Extract air elements

Supply air valves

Design valves and valves
For air supply with higher and lower air flow speeds and/or resistances. Type DLV 125 with compact and attractively designed facia and integrated filter.

Supply air valves

Attachment filter element VFE

Attachment filter element VFE covering air extract elements AE.. or valves. Prevents fat and dust deposits on extract elements, valves and connected ducting system. Casing made from galvanised steel, white, powder coated. Filter made from aluminium with 324 cm² filter surface and aluminium frame.

Attachment filter element VFE

Door grilles

Discreet, non vision door transfer grille made from impact resistant polymer, to be installed into doors.

Door grilles

Control line

Ribbon cable, on both sides with plugs RJ12 for slide switch controller KWL BE. On both sides with plugs RJ10 for comfort controller KWL Bec, CO₂-, mixing gas (VOC), humidity sensor, KNX/EIB module or the extension module. For full details of accessory components see product pages KWL-units.

Control line

<table>
<thead>
<tr>
<th>ø 80</th>
<th>ø 100</th>
<th>ø 125</th>
<th>ø 160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Ref.-No.</td>
<td>Type</td>
<td>Ref.-No.</td>
</tr>
<tr>
<td>Design valve DLV for extraction</td>
<td>DLV 100 3039</td>
<td>DLV 125 3049</td>
<td></td>
</tr>
<tr>
<td>Elf-DLV 100</td>
<td>Elf-DLV 125</td>
<td>3042 3058</td>
<td></td>
</tr>
<tr>
<td>Polymer valve KTVA</td>
<td>KTVA 75/80 0940</td>
<td>KTVA 100 0941</td>
<td>KTVA 125 0942</td>
</tr>
<tr>
<td>Metall valve for extraction (especially for areas, in which inflammable components are not prescribed)</td>
<td>MTVA 75/80 8868</td>
<td>MTVA 100 8869</td>
<td>MTVA 125 8870</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ø 80</th>
<th>ø 100</th>
<th>ø 125</th>
<th>ø 160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Ref.-No.</td>
<td>Type</td>
<td>Ref.-No.</td>
</tr>
<tr>
<td>Design valve DLV.. for supply</td>
<td>LGK 80 0259</td>
<td>DLVZ 100 3040</td>
<td>DLV 125 3049</td>
</tr>
<tr>
<td>Elf-DLV 125</td>
<td>Elf-DLV 125</td>
<td>3058 3068</td>
<td></td>
</tr>
<tr>
<td>Polymer valve KTZV</td>
<td>KTZV 75/80 2762</td>
<td>KTZV 100 2736</td>
<td>KTZV 125 2737</td>
</tr>
<tr>
<td>Metall valve for supply (especially for areas, in which inflammable components are not prescribed)</td>
<td>MTZV 75/80 9683</td>
<td>MTZV 100 9684</td>
<td>MTZV 125 9685</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ø 100</th>
<th>ø 125</th>
<th>ø 160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Ref.-No.</td>
<td>Type</td>
</tr>
<tr>
<td>VFE 70</td>
<td>Ref.-No. 2552</td>
<td></td>
</tr>
<tr>
<td>VFE 90</td>
<td>Ref.-No. 2553</td>
<td></td>
</tr>
<tr>
<td>Elf/VFE</td>
<td>Ref.-No. 2554</td>
<td></td>
</tr>
<tr>
<td>Replacement air filters, SU = 2 pcs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ø 160</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>VFE 70</td>
</tr>
<tr>
<td>VFE 90</td>
</tr>
<tr>
<td>Elf/VFE</td>
</tr>
<tr>
<td>Replacement air filters, SU = 2 pcs</td>
</tr>
</tbody>
</table>

| Other lengths on request. |

Control line

For KWL-BE
(Ribbon cable on both sides with RJ12 plugs)

<table>
<thead>
<tr>
<th>Cable length*</th>
<th>Type</th>
<th>Ref.-No.</th>
<th>Type</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 mtrs</td>
<td>KWL-SL 6/3</td>
<td>9987</td>
<td>KWL-SL 4/3</td>
<td>4404</td>
</tr>
<tr>
<td>5 mtrs</td>
<td>KWL-SL 8/5</td>
<td>9988</td>
<td>KWL-SL 4/5</td>
<td>4405</td>
</tr>
<tr>
<td>10 mtrs</td>
<td>KWL-SL 8/10</td>
<td>9444</td>
<td>KWL-SL 4/10</td>
<td>4411</td>
</tr>
<tr>
<td>20 mtrs</td>
<td>KWL-SL 8/20</td>
<td>9969</td>
<td>KWL-SL 4/20</td>
<td>4413</td>
</tr>
</tbody>
</table>

For KWL-BEC-CO₂-, VOC, FTF, -KNX, -EM
(Ribbon cable on both sides with RJ10 plugs)

<table>
<thead>
<tr>
<th>Cable length*</th>
<th>Type</th>
<th>Ref.-No.</th>
<th>Type</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 mtrs</td>
<td>KWL-SL 6/3</td>
<td>9987</td>
<td>KWL-SL 4/3</td>
<td>4404</td>
</tr>
<tr>
<td>5 mtrs</td>
<td>KWL-SL 8/5</td>
<td>9988</td>
<td>KWL-SL 4/5</td>
<td>4405</td>
</tr>
<tr>
<td>10 mtrs</td>
<td>KWL-SL 8/10</td>
<td>9444</td>
<td>KWL-SL 4/10</td>
<td>4411</td>
</tr>
<tr>
<td>20 mtrs</td>
<td>KWL-SL 8/20</td>
<td>9969</td>
<td>KWL-SL 4/20</td>
<td>4413</td>
</tr>
</tbody>
</table>

* Other lengths on request.

Control line

For KWL-BEC
(Ribbon cable on both sides with RJ10 plugs)

<table>
<thead>
<tr>
<th>Cable length*</th>
<th>Type</th>
<th>Ref.-No.</th>
<th>Type</th>
<th>Ref.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 mtrs</td>
<td>KWL-SL 6/3</td>
<td>9987</td>
<td>KWL-SL 4/3</td>
<td>4404</td>
</tr>
<tr>
<td>5 mtrs</td>
<td>KWL-SL 8/5</td>
<td>9988</td>
<td>KWL-SL 4/5</td>
<td>4405</td>
</tr>
<tr>
<td>10 mtrs</td>
<td>KWL-SL 8/10</td>
<td>9444</td>
<td>KWL-SL 4/10</td>
<td>4411</td>
</tr>
<tr>
<td>20 mtrs</td>
<td>KWL-SL 8/20</td>
<td>9969</td>
<td>KWL-SL 4/20</td>
<td>4413</td>
</tr>
</tbody>
</table>

* Other lengths on request.
The above values apply for an intake temperature of 0 °C and flow/return water temperature: 1) 90/70 °C, 2) 60/40 °C.

Water heater battery

Accessories details
Dimensions, further technical information as well as other sizes:
- Water heater batteries and temperature control systems, grilles, ducts, duct components, roof terminations, extract air elements, attachment filter elements, valves

Helios main catalogue