WTW woonhuisventilatie

Helios
PIONAIRS
SINCE 1923

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Als het om lucht gaat.

AUERHAAN
KLIMAATTECHNIEK

Ventilation systems with heat recovery

The compact wall units KWL 170 W to KWL 500 W and the ultra-flat ceiling units KWL 220 D and KWL 340 D are equipped with Helios easyControls 3.0 as standard.

Thanks to the integrated web server and LAN connection, the ventilation units can be integrated into a PC network and conveniently controlled via a user interface in a web browser on a laptop or smartphone – even when on the move via the internet.

Building control system interfaces, optional control elements and air quality sensors provide additional possibilities.
The smart, modular unit concept allows individual configuration according to the building requirements.

The KWL EC series "S" for standing, space-saving floor installation, is available with air flow rates from 800 to 2600 m^3/h.
Ideal for use as central units with heat recovery in residential, commercial and industrial applications.

Certified according to the passive house standard and including special control technology for constant volume control or constant pressure control. Optionally available with integrated pump warm water heating element.

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

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

kwl® ZERTIFIZIERTE KOMPONENTE Passivhaus Institut easy Controls 3.0 GERMAN DESIGN AWARD SPECIAL 2016 **KWL***easy***Plan***.de*

Central domestic ventilation with heat recovery

Wall installation

KWL EC 45-160,
KWL EC 60
for flush-mounted wall installation in single rooms, ideal for renovations.

EC 98ff

KWL Yoga

Three compact unit sizes for airflows up to 400, 700 or 1,000 m³/h and in 6 different equipment options.

EC 140ff

Selection matrix

94f

Enthalpy heat exchangers

103ff

easyControls 3.0

104ff

Central ventilation units

Wall installation, wall mounting “W”

Series “W”
Compact wall units from 170 to 500 m³/h. KWL 170 W, 360 W with passive house certificates. All models come with easyControls 3.0 as standard and enthalpy heat exchangers as an option.

EC 108ff

Ceiling installation “D”

Series “D”
Ultra-flat units from 220 to 2000 m³/h for space-saving ceiling installation. Units come with high-efficiency heat exchangers, EC technology and passive house certificates. KWL EC 220, 340 D come with easyControls 3.0 as standard.

EC 122ff

Floor-standing installation “S”

Series “S”
With air flow rates from 800 to 2600 m³/h, for standing floor installation. Ideal as central units in residential, commercial and industrial applications. Units come with high-efficiency heat exchangers, EC technology and passive house certificates.

EC 132ff

Peripherals

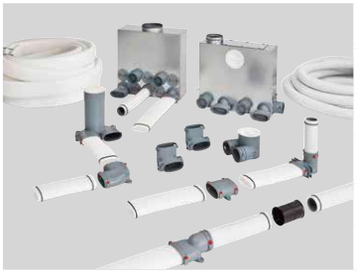
Ideally matched additional equipment, such as ground heat exchangers and the active humidifying unit HygroBox for the functional expansion of the entire KWL system.

Innovative air distribution systems for all installation types and areas of application. Design ventilation valves, etc.

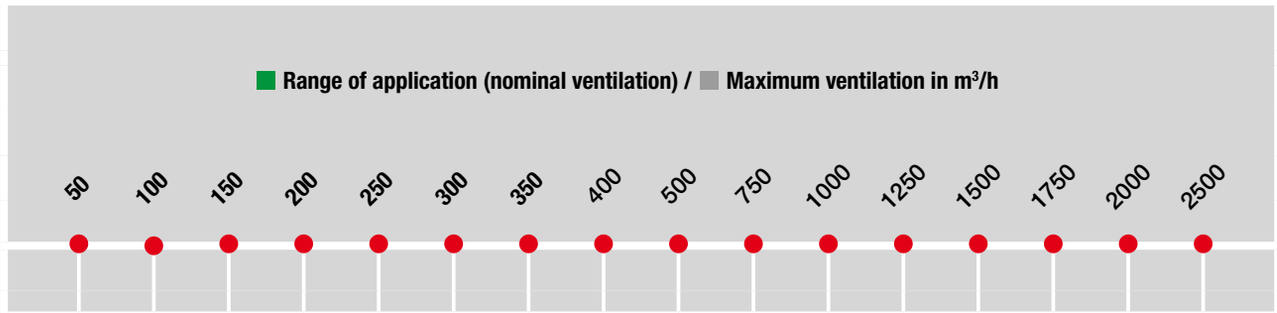
150ff

YouTube

KWL® ventilation units and peripherals at a glance

	Type	Installation: Wall mounting / wall	Installation: Ceiling	Installation: Floor	Decentralised / Central	Typical areas of application: Living room	Typical areas of application: Single family house	Typical areas of application: Apartment building – apartment central	Typical areas of application: Apartment building – building central	Typical areas of application: Commercial / municipal buildings	Maximum energy efficiency class*	Moisture recovery	With passive house certificate
	KWL EC 45-160	■			D	■	■	■			A+		
	KWL EC 60	■			D	■	■	■			A		
	KWL 170 W	■			C		■	■			A+		■
	KWL 170 W ET	■			C		■	■			A	■	■
	KWL 200 W	■			C		■	■			A		
	KWL 200 W ET	■			C		■	■			A	■	
	KWL 250 W	■			C		■	■			A+		
	KWL 250 W ET	■			C		■	■			A	■	
	KWL 300 W	■			C		■	■			A		
	KWL 300 W ET	■			C		■	■			A	■	
	KWL 360 W	■			C		■	■			A+		■
	KWL 360 W ET	■			C		■	■			A	■	■
	KWL 470 W	■			C		■	■		■	A+		
	KWL 470 W ET	■			C		■	■		■	A	■	
	KWL 500 W	■			C		■	■		■	A		
	KWL 500 W ET	■			C		■	■		■	A	■	
	KWL 220 D		■		C		■	■			A+		■
	KWL 340 D		■		C		■	■			A+		
	KWL EC 700 D		■		C				■	■			■
	KWL EC 1400 D		■		C				■	■			■
	KWL EC 2000 D		■		C				■	■			■
	KWL EC 800 S			■	C				■	■			■
	KWL EC 1200 S			■	C				■	■			■
	KWL EC 1800 S			■	C				■	■			■
	KWL EC 2600 S			■	C				■	■			■
	KWL YOGA Style 400		■		D					■			
	KWL YOGA Style 700		■		D					■			
	KWL YOGA Style 1000		■		D					■			
	**flex***pipe*plus						■	■	■				
	IsoPipe						■	■					
	reno*pipe*							■					
	Flat duct						■						
	KWL HygroBox						■	■					
	Ground heat exchanger						■	■					

* See KWL® unit product pages for details.



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Decentralised domestic ventilation **with heat recovery.**

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

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

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

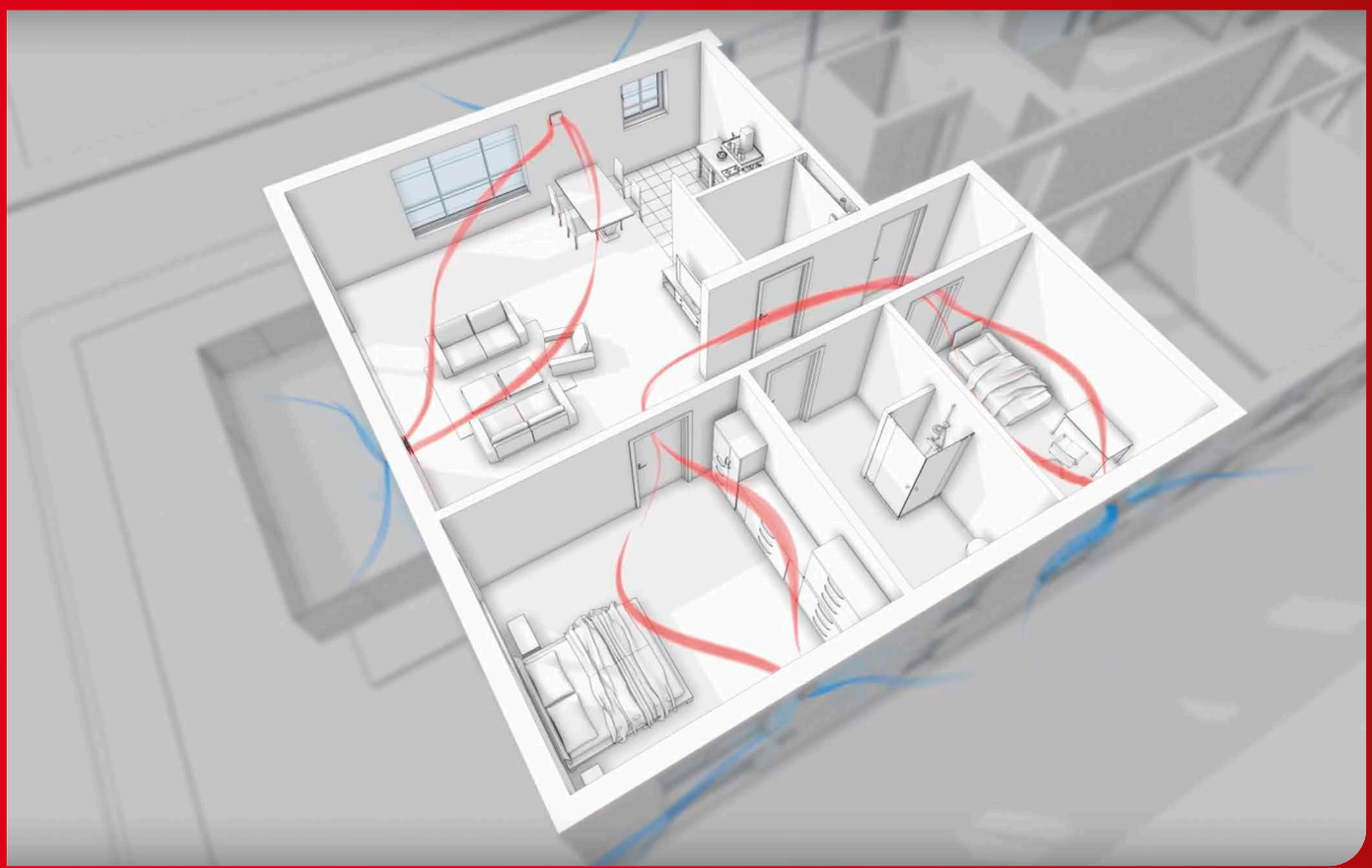
The decentralised ventilation units with heat recovery from Helios are among the best in their class in both categories.
Thanks to the quick and simple installation, they provide an economical solution for the supply and extract ventilation of single rooms. Residents can sit back, relax and take a deep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

BEST OF SHK AWARD · INDUSTRIE PREIS 2016 BEST OF · PLUS X AWARD 2016 Anbieterkompetenz für High Quality Funktionalität Ökologie · iF DESIGN AWARD 2016 · GERMAN DESIGN AWARD SPECIAL 2016

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

PLAY

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



EcoVent Verso KWL EC 45-160

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

EC 98f

EcoVent KWL EC 60

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

EC 100f

Selection matrix

94f

YouTube

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

KWL EC 45-160

Efficiency class

A+ KWL EC 45-160 with additional room sensor

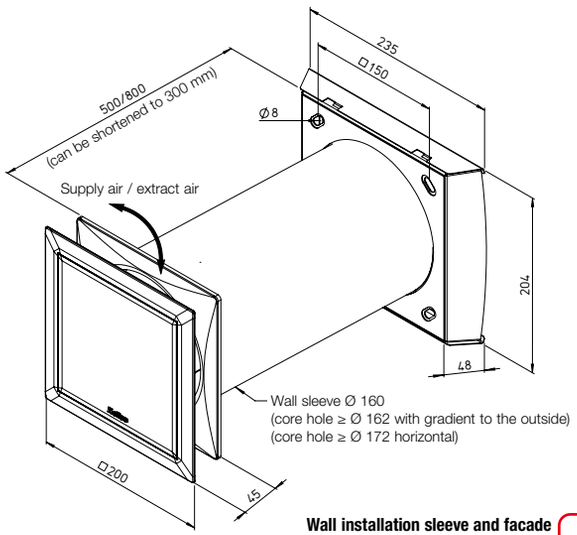
A KWL EC 45-160

BEST OF SHK AWARD

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

EC

Dimensions KWL EC 45-160



Dimensions in mm

Wall installation sleeve and facade panel essential for unit installation.

KWL EC 45-160 belongs to the category of switching ventilation units with heat recovery.
DIBt-approved (general technical approval), Z-51.3-417.
It is intended for installation in the external building wall.
The passage of air is from the outside of the wall through a stainless steel panel. A closable plastic panel on the inner side of the wall, which has integrated sound insulation and a fibre fleece air filter (class ISO Coarse 50 % (G3)), is used for this purpose.
The KWL EC 45-160 has an EC axial fan which operates in reversing cycles. In this respect, the supply air phases, where the intake air flows into the building, continuously alternate with the extract air phases, which are characterised by the extraction of indoor air from the building.

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

Highlights KWL EC 45-160

- ▢ Economical, quiet EC axial fan.
- ▢ Elegant and timeless design.
- ▢ Tool-free, simple installation and dismantling of components.
- ▢ Integrated sound insulation.
- ▢ Integrated ISO Coarse 50 % (G3) air filter, easily accessible and changeable without tools.
- ▢ Simple, intuitive operation via two keys.
- ▢ LED display for operating mode and current ventilation level.
- ▢ Up to 8 controllable units.
- ▢ 5 ventilation levels: 14, 24, 32, 37, 45 m³/h.
- ▢ 4 operating modes: Heat recovery (= reversing operation), cross ventilation and supply air/extract air mode.
- ▢ Possibility of external activation from standby, cross ventilation, supply air mode or party mode (maximum ventilation level) by evaluating an external, potential-free contact.
- ▢ Intelligent integration of e.g. demand-controlled extract air fans via an extension module (accessories).
- ▢ Filter change indicator.
- ▢ Programming via PC.

Control

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

GUI user interface

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

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

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

Replacement air filter

– 2 pcs. ISO Coarse 50 % (G3)
ELF-KWL 45-160/3/3 No. 09366

Sound insulation element

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

Sound insulation element for use in the wall sleeve, fire protection class B1.
KWL 45-160 SE No. 09362

Technical data

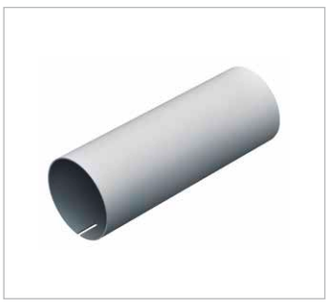
Unit[1]	KWL EC 45-160[1]				Ref. no. 09361
Flow rate at level supply air/extract air V̇ m³/h	❺ 45	❹ 37	❸ 32	❷ 24	❶ 14
Sound pressure L_{PA} dB(A) at 3 m	34	29	27	21	14
Sound power L_{WA}	52	47	45	39	32
Standard sound level diff. $D_{n,e,w}$ dB[2]	Facade panel 44 / Soffit				
Power consumption W	4.5	3.4	2.8	2.1	1.6
Heat recovery efficiency[3]	up to 88 %				
Operating voltage mains adapter	Input 230 V~, 50/60 Hz / Output 12 V⎓				
Rated current mA	42	32	27	21	17
El. supply line mains adapter[4]	NYM-O 2 x 1.5 mm²				
El. supply line power supply control[4]	NYM-O 2 x 1.5 mm²				
El. supply line to fan[5]	J-Y (ST) Y 3 x 0.8 mm				
Protection class III, protection cat.	IP20				
Wiring diagram no.	1091 / 1093				
Temperature operating range	– 12 °C to + 40 °C				
Weight (unit+inner panel) approx. kg	2.8				

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

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

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

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



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

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

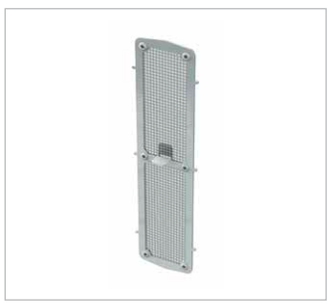
With additional coating
KWL 45-160 FB-B No. 09322
For use in environments with severe air pollution or high salt concentration in the air (near the coast).
With white coating
KWL 45-160 FB-W No. 09323

Soffit grille

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

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

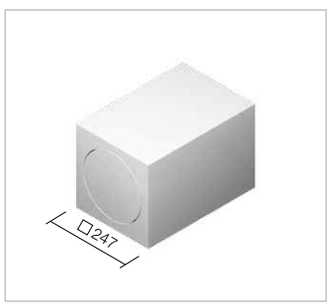
With white coating
KWL 45 LG-W No. 04169



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

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

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



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

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

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

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

Casing for surface installation
KWL-APG No. 04270

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

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

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

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

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

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

Wall installation unit with heat recovery for single rooms, with air flow rates up to approx. 60 m³/h

KWL EC 60

Efficiency class

A — KWL EC 60 Pro with additional room sensor

KWL EC 60 Pro FF

B — KWL EC 60 Eco / Pro

EC

Installation example KWL EC 60

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

Ideal for renovation due to simple installation

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

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

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

ECgreenVent by Helios

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

Functionality of the KWL EC 60 ventilation with heat recovery

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

Delivery / scope of order

Designed for the installation steps, the following elements can be ordered separately:

- ☐ **Installation kit**

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

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

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

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

Common features Eco and Pro

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

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

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

Air filters
☐ Two efficient air filters (class ISO coarse 60 % (G4)) in the supply air and extract airflow guarantee the best air purity. An ISO $ePM_{2.5}$ 65 % (F7) pollen filter on the supply air side is optional.

ECO

KWL EC 60 Eco

The economical solution with a favourable price / performance ratio for all applications.

Unit Eco

KWL EC 60 Eco	No. 09950

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

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

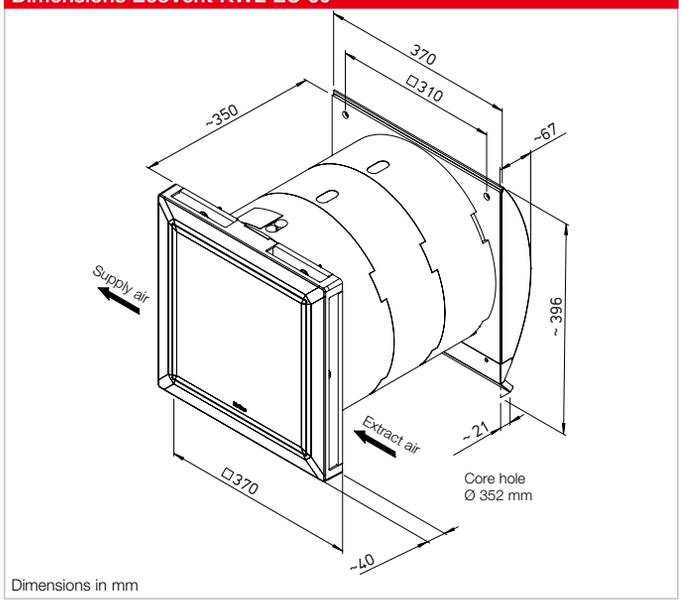
Electrical connection
Via screwless terminals.

Technical Data

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

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

Dimensions EcoVent KWL EC 60



Dimensions in mm

PRO

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

Unit Pro

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

Unit Pro FF

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

Power control

The comfort control element with graphic display and user-friendly menu navigation, which is included in the delivery, enables the following functions:

- ☐ Four-step manual operation or with digital weekly timer.
- ☐ Control via intelligent CO_2 sensors (accessories, connection of up to 4 pcs. possible.)
- ☐ Supply air/extract air operation individually switchable.
- ☐ Party mode, intensive ventilation.
- ☐ Indication of necessary filter replacement, operating status, operating hours, error messages.
- ☐ Multiple units can be controlled via one control element.
- ☐ Multiple control elements can be connected to one unit.

Shutters

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

Electrical connection

Via plug-in coupling (included in delivery.)

Technical data

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

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

Delivery / scope of order

Designed for the installation steps, the following elements can be ordered separately:

☐ **Installation kit**

KWL 60 RS No. 00708
KWL 60 RS-B No. 01961
As described on the left.

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

Common accessories

Wall sleeve extension

KWL 60 WV No. 00884
For wall thicknesses from 349 to 571 mm. Can be optionally shortened or connected, 111 mm long, with separator.

Sound insulation set

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

Spacer frame

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

Protection grille

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

Installation kit essential for unit installation.

Replacement air filter

– 2 pcs. ISO coarse 60 % filter
ELF-KWL 60/4/4 No. 09445
– 2 pcs. ISO ePM$_{2.5}$ 65 % filter
ELF-KWL 60/7/7 No. 09446

PRO

Accessories for KWL EC 60 Pro

Control element (additional)

KWL-BCU (unterputz) No. 09955
Dim. mm (WxHxD) 80x80x37
Display and function as described on the left. 1 KWL-BCU included in delivery. Connection of up to 4 pcs. possible. Delivery incl. 3 m connection cable.

KWL-BCA (surface) No. 09956
Dim. mm (WxHxD) 83x83x51

Casing for surface installation

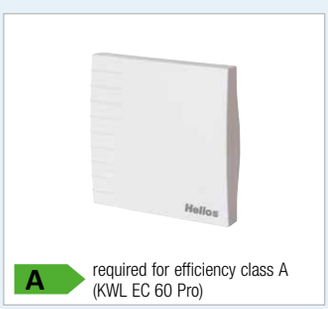
KWL-APG No. 04270
Dim. mm (WxHxD) 83x83x41

Room sensor

KWL EC-CO2 No. 09988
For detecting the CO_2 concentration in the room air. Controls the ventilation unit in all 4 levels so that the CO_2 content remains below the respective setpoint. Delivery incl. 3 m connection cable. Up to 4 pcs. can be connected. When using multiple sensors, control according to the highest measured value.
Dim. mm (WxHxD) 95 x 97 x 30

Connection cable

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



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

Connection cable branch

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

Central domestic ventilation **with heat recovery.**

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

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

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

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

CERTIFIED COMPONENT Passive House Institute

easy Controls 3.0

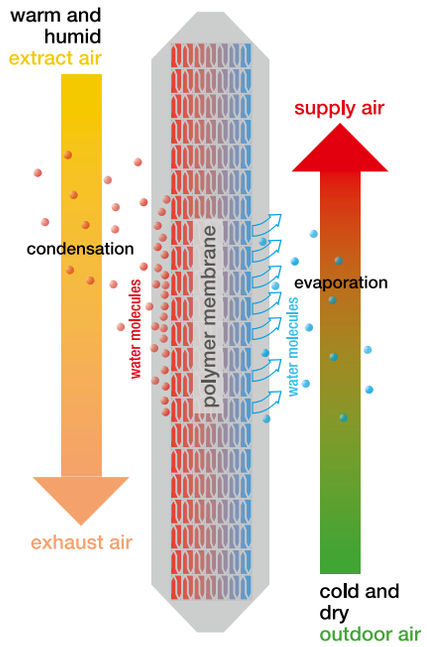
GERMAN DESIGN AWARD SPECIAL 2016

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

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

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

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



Ventilation units with enthalpy heat exchangers offer convincing advantages:

- Twofold benefit through energy-saving heat recovery and hygienic humidity recovery in the cold season.
- Humidity recovery from the extract air up to 70 %, depending on the indoor air humidity.

How the enthalpy heat exchanger works:

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

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

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

■ Wall installation “W”

Series “W”
Compact wall units up to 500 m³/h.

All models equipped with easyControls 3.0 as standard and optional enthalpy exchanger.

easyControls 3.0

EC 108ff

■ Ceiling installation “D”

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

With ultra-efficient heat exchanger, EC technology and passive house certificate:
KWL EC 220 D and 340 D with easyControls 3.0 as standard.

easyControls 3.0

EC 122ff

■ Standing installation “S”

Series “S”
With air outputs up to 2600 m³/h, for floor-standing installation.

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

EC 132ff

■ Selection matrix

94f

■ Peripherals

150ff

Smart, intuitive and individual.

Helios KWL® with easyControls 3.0

Your needs – our solution:
With Helios easyControls 3.0, you can not only expect a new control generation, but also a new range with optimal flow rate capacity for unlimited applications and maximum energy efficiency.

The **new, intuitive control concept easyControls 3.0** can be easily adapted to the individual needs of residents and it can be manually controlled via the control element, internal web server or from any location via the Cloud as required. It‘s that simple!

Highlights:

- Smart touch control element in black and white, compatible with almost every switch range.
- Customised ventilation: adjustable weekly programme or fully automatically via room air quality sensors.
- Unit access via PC or Smartphone – also on the move via the new easyControls 3.0 Cloud.

This sets a new standard for a smart, modern control system. Or simply put: Helios easyControls 3.0.

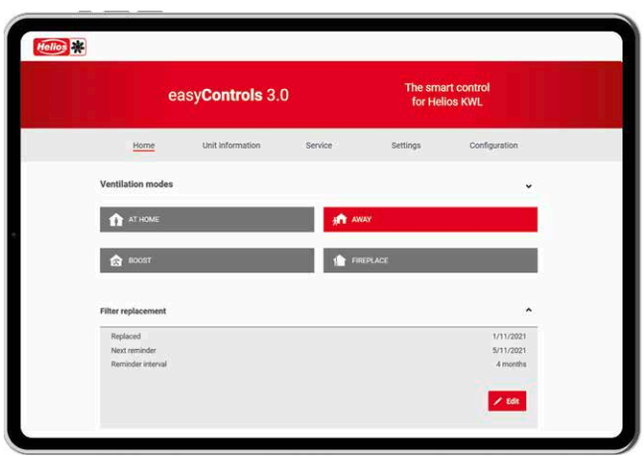
Modern and intuitive: The new touch control element:

The ventilation unit can be adapted to individual paces of life by creating a weekly programme and by selecting from four different ventilation profiles.

The dark mode always ensures the best readability – even at night thanks to its illuminated screen.

The control element can be integrated in common switch ranges and fits perfectly in any living environment.

The status of the selected ventilation profile, temperature and sensor values as well as filter replacement notifications can be viewed at any time.



Smart ventilation, simple control system

- Location-independent control of the KWL system via the integrated web server or with the easy-Controls Cloud, as required.
- Individual access rights through selectable profiles.
- Assistant-supported, fast commissioning.
- Practical and cost-effective remote maintenance when servicing.
- Smart integration in the existing building control system (KNX).

Customised ventilation for individual comfort

- The establishment of a personal weekly programme is possible.
- Individual configuration of up to four ventilation programmes.
- Compact overview of current status.

Functional principle

The control system with unlimited possibilities: Helios easyControls 3.0.

Controllable anywhere and at any time, whether at home or on the move.

Building control system

- ModBus interface (integrated)
- KNX-EIB module (optional)

Demand-controlled ventilation with sensors

- FTF rel. humidity (1x integrated)
- CO_2
- VOC mixed gas

Manual control elements

- Modern touch control element
- Discreet 3-level slide switch

Maximum flexibility in selecting the control elements

If no PC networks are available, or if manual access is preferred, easyControls 3.0 can be controlled via a modern touch control element or a discreet slide switch.

- Touch control element in white or black
- 3-level switch in white

Fully automated ventilation with comfort room sensors in 3 versions

- Relative humidity sensor
- VOC sensor
- CO_2 sensor

Easy integration in the building control system

The KWL units can be easily integrated in a building control system network via the standard Modbus interface (RTU) or an optional KNX module.

Extension module for further comfort options

To control post-heating (either hot water or electric heating register) for additional supply air heating, e.g. in a passive house.

KWL 170 W

Efficiency class

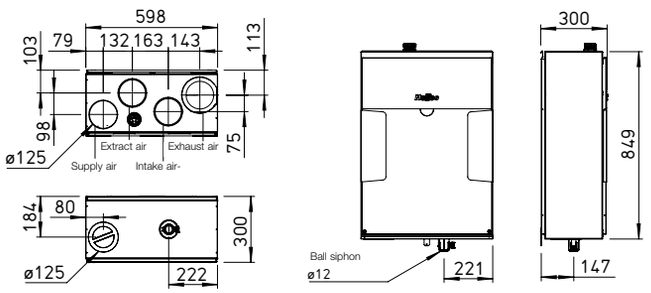
A+ KWL 170 W
with additional room sensor

A KWL 170 W

easy Controls 3.0

EC

Dimensions KWL 170 W



Dimensions in mm

CERTIFIED COMPONENT Passive House Institute

Compact unit with heat recovery for the central supply and extract ventilation of residential units up to 110 m². Perfectly prepared for modern communication and operation with the new Helios easyControls 3.0 control system incl. integrated network connection.
Equipped with EC fans for low energy consumption and highly efficient plastic or enthalpy heat exchangers for additional moisture recovery.

Casing
Universal casing concept: Intake air left/right, supply air top or bottom, suitable for plasterboard installation.
Outside made of galvanised steel sheet in white, internal components made of highly thermal insulating EPP. The intake air connection can be installed on the left or right. Maintenance-friendly access to all unit components through removeable front panels. Delivery state: Intake air on the right.
- ☐ Suitable inspection solution for drywall construction upon request.

Heat exchanger
- ☐ Large cross counterflow heat exchanger made of plastic, heat recovery efficiency up to 90 %.
- ☐ Type “ET” is equipped with highly efficient enthalpy heat exchanger for additional moisture recovery.

Fans
Two low-noise high-performance centrifugal fans with energy-saving EC motors ensure the air supply and extraction.

Ducts
Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 125 mm using duct connectors (RVBD 125 K, accessories).

Condensate connection
Condensate drain at the bottom; ball siphon included in delivery. On-site connection to drain pipe.

Air filter
Clean outdoor air supply via ISO Coarse 65 % (G4) filter and 2nd filter stage via optional ISO ePM_1 50 % (F7) or activated carbon filter. Extract air side equipped with an ISO Coarse 65 % (G4) filter in front of the heat exchanger. Easy filter maintenance without opening the unit.

Summer operation
Equipped with automatic bypass function and heat exchanger cover as standard.

Heat exchanger anti-icing protection
The standard frost monitoring system automatically controls the supply air flow volume and the optionally installed electrical preheater (KWL-EVH 170 W, accessories).

Control system
EasyControls 3.0 is the new, modern control system for all KWL compact units from Helios. The standard LAN interface allows the simple integration of the KWL unit in a network and the integration in Helios Cloud. The unit is optionally controlled via an external control element, on PC/laptop, tablet and Smartphone via the integrated web browser or on the move via the Cloud. See page 104 for functionality. Helios easyControls 3.0 is prepared for:
- ☐ The control elements KWL-BE ECO and KWL-BE Touch (optional accessories).
- ☐ The humidity sensor integrated as standard and other optionally available external air quality sensors (KWL-CO2, -FTF, -VOC, accessories) enable automatic, demand-controlled ventilation.
- ☐ Connection to building control system via integrated Modbus interface or optional KNX module (KWL-KNX Connect, accessories).

Electrical connection
Fixed connection via a mains connection cable 3 x 1.5 mm², approx. 2 m with wire end ferrules.

Accessories – Functional description (see right for details)
KWL 170 W can be individually expanded with the following accessories:

☐ Control element ECO
- Three ventilation profiles selectable via slide switch.
- Control voltage can be measured directly on the control element.
- Weekly timer (WSUP / WSUP-S, no. 09990 / 09577, accessories) can also be added to implement a further operating level, e.g. night mode.
- LED for visual indication of operating statuses, e.g. filter replacement and faults.

☐ Control element Touch
Touch control element with graphic display and user-friendly menu navigation:
- Commissioning assistant.
- Selection of four ventilation profiles.
- Adjustment of an individual weekly programme.
- Adjustment of parameters for room sensors.
- Indication of e.g. filter replacement, operating statuses and error messages.
- Different access authorisations and child lock.
- Other functions (see operating instructions).

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

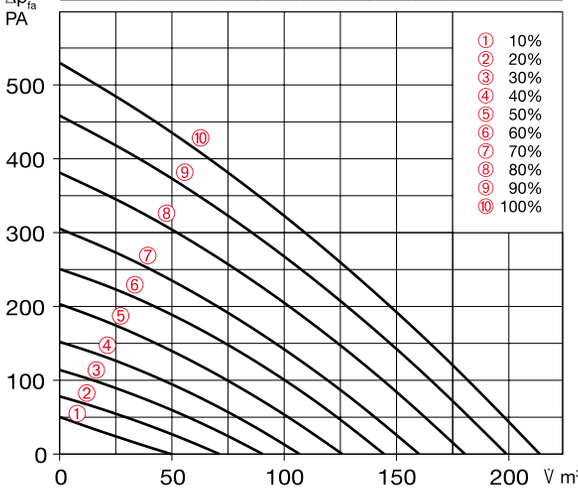
☐ Room sensors
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

☐ Post-heating
Helios easyControls 3.0 can be used with an electric post-heating element (EHR with KWL-LTK, accessories). The autonomous operation of the warm water heating element can be controlled via an air temperature control (WHS HE, accessories) independently from Helios easyControls 3.0.

References	Page
Helios easyControls 3.0 The innovative KWL control concept	104 f.
Moisture recovery through enthalpy heat exchangers	103

Performance curves KWL 170 W

Frequency*		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	48	39	42	43	42	34	25	20
L_{WA}	Supply air	dB(A)	58	46	50	52	53	50	46	34
L_{PA} at 1 m	Radiation	dB(A)	36	17	29	30	30	27	22	12



*Sound information relate to Vref. according to ERP data sheet.

Slide switch control element

KWL BE ECO Ref. no. 20246

Three-step slide switch including operation indicator, for flush-mounted installation. Function see left.
Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

KWL APG Ref. no. 04270

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

Touch control element

KWL BE Touch bl (black) Ref. no. 20244
KWL BE Touch wh (white) Ref. no. 20245

With graphic display, for flush-mounted installation. Function see left. Connection of up to 6 pcs. possible (additional power supply unit may be required). Can be integrated in common switch ranges with the dimensions mm (W x H x D) 55 x 55 x 35, Dim. with frame mm (W x H x D) 88 x 88 x 35

Casing for surface installation

KWL APG Touch bl No. 40178
KWL APG Touch wh No. 40177

Dim mm (W x H x D) 85 x 85 x 25

Control line cable

KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180

Control line cables in 5 or 10 meters, suitable for KWL-BE ECO / Touch as well as room sensor.

Technical data	With plastic heat exchanger Type					Ref. no.	With enthalpy heat exchanger Type					Ref. no.
	KWL 170 W					40043	KWL 170 W ET					40044
Flow rate at level [1) 2)]	❿	❽	❻	❹	❷		❿	❽	❻	❹	❷	
Supply air/extract air V̇ m³/h	214	180	145	107	71		211	179	142	107	69	
Power consumption fans 2xW [1)]	37	25	15	9	6		37	24	15	9	6	
Voltage/Frequency	1~, 230 V, 50 Hz											
Rated current A – ventilation	0.7											
– preheating	4.4											
– max. total	0.7 (5.1 incl. preheater, accessories)											
Electric preheater kW	1.0 kW (accessories)											
Summer bypass	automatic (adjustable), with heat exchanger cover											
Wiring diagram no.	1433											
Temperature operating range	–20 °C to +40 °C											
Installation temperature	+5 °C to +40 °C (90% rel. humidity, non-condensin)											
Weight approx. kg	36						39					

[1)] At 0 Pa, performance levels adjustable. [2)] Volume reduction by approx. 10% when using pollen filter.

KNX/EIB module

KWL-KNX Connect No. 20253

For integrating the ventilation unit in a KNX system. For switch cabinet installation (1 space unit required).

Room sensors

KWL-CO2 eC Ref. no. 20248
KWL-FTF eC Ref. no. 20249
KWL-VOC eC Ref. no. 20247

For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. Please note the maximum number of sensors, additional power supply unit may be required.
Dim. mm (W x H x D) 98 x 98 x 33

Electric preheater

KWL-EVH 170 W No. 00936

Electrical preheater for simple, plug-in unit installation. For preheating the intake air at very low outdoor temperatures (heat exchanger anti-icing protection). Mandatory for passive houses. Output: 1000 W.

Extension module

KWL-EM eC Ref. no. 40155

For controlling external post-heating elements.
Dim. mm (W x H x D) 210 x 210 x 100

Motion detector

BWM Ref. no. 08323

Motion detector for detecting the presence of persons in the room. Surface-mounted wall installation (cable entry at top or bottom) or installation in flush-mounted box Ø 55 mm (cable entry at back).

Electric post-heating element

For additional supply air heating.

EHR-R 1.2/125 Ref. no. 09433

Rectangular duct temp. sensor

KWL-LTK eC (1 pc. req.) No. 40156

Warm water post-heating element

For additional supply air heating.

WHR 125 Ref. no. 09480

Rectangular duct temp. sensor

KWL-LTK eC (2 pc. req.) No. 40156

Hydraulic unit

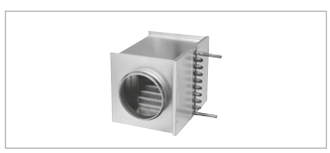
WHSH HE 24 V (0-10 V) No. 08318

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 08817

A+ required for efficiency class A+



Circular duct connector

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

Replacement air filters

– 2 pcs. ISO Coarse 65% (G4)
ELF-KWL 170/4/4 No. 00951
– 1 pc. ISO ePM$_1$ 50% (F7)
ELF-KWL 170/7 No. 00965

Reference

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

Other accessories

KWL 200 W

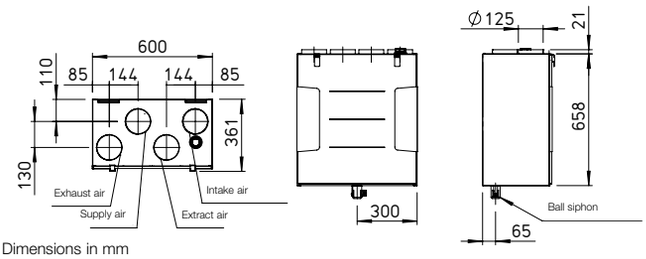
KWL 200 W R with accessories (pollen filter, KWL-EVH 200 W)

Efficiency class

A

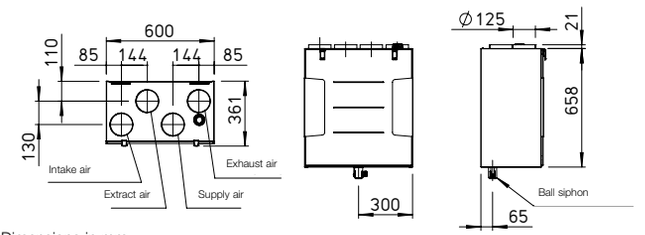
KWL 200 W R/L and 200 W ET R/L

Dimensions KWL 200 W R



Dimensions in mm

Dimensions KWL 200 W L



Dimensions in mm

Compact unit with heat recovery for the central supply and extract ventilation of residential buildings and apartments. Perfectly prepared for modern communication and operation with the new Helios easyControls 3.0 control system incl. integrated network connection.
Equipped with EC fans for low energy consumption and highly efficient plastic or enthalpy heat exchangers for additional moisture recovery.

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

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

■ **Fans**
Two low-noise high-performance centrifugal fans with energy-saving EC motors ensure the air supply and extraction.

■ **Ducts**
Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 125 mm using duct connectors (RVBD 125 K, accessories).

■ **Condensate connection**
Condensate drain at the bottom; ball siphon included in delivery. On-site connection to drain pipe.

■ **Air filter**
Clean outdoor air supply via ISO Coarse 75 % (G4) filter and 2nd filter stage via optional ISO ePM$_1$ 50 % (F7) or activated carbon filter. Extract air side equipped with an ISO Coarse 75 % (G4) filter in front of the heat exchanger.

■ **Summer operation**
Equipped with automatic bypass function and heat exchanger cover as standard.

■ **Heat exchanger anti-icing protection**
The standard frost monitoring system automatically controls the supply air flow volume and the optionally installed electrical preheater (KWL-EVH 200 W, accessories).

■ **Control system**
EasyControls 3.0 is the new, modern control system for all KWL compact units from Helios. The standard LAN interface allows the simple integration of the KWL unit in a network and the integration in Helios Cloud. The unit is optionally controlled via an external control element, on PC/laptop, tablet and Smartphone via the integrated web browser or on the move via the Cloud. See page 104 for functionality. Helios easyControls 3.0 is prepared for:
□ The control elements KWL-BE ECO and KWL-BE Touch (optional accessories)
□ The humidity sensor integrated as standard and other optionally available external air quality sensors (KWL-CO2, -FTF, -VOC, accessories) enable automatic, demand-controlled ventilation.
□ Connection to building control system via integrated Modbus interface or optional KNX module (KWL-KNX Connect, accessories).

■ **Electrical connection**
Fixed connection via a mains connection cable 3 x 1.5 mm², approx. 2 m with wire end ferrules.

■ **Accessories – Functional description (see right for details)**
KWL 200 W can be individually expanded with the following accessories:

□ **Control element ECO**
– Three ventilation profiles selectable via slide switch.
– Control voltage can be measured directly on the control element.
– Weekly timer (WSUP / WSUP-S, no. 09990 / 09577, accessories) can also be added to implement a further operating level, e.g. night mode.
– LED for visual indication of operating statuses, e.g. filter replacement and faults.

□ **Control element Touch**
Touch control element with graphic display and user-friendly menu navigation:
– Commissioning assistant.
– Selection of four ventilation profiles.
– Adjustment of an individual weekly programme.
– Adjustment of parameters for room sensors.
– Indication of e.g. filter replacement, operating statuses and error messages.
– Different access authorisations and child lock.
– Other functions (see operating instructions).

□ **KNX/EIB module**
For connecting the ventilation unit to the building control system via the KNX Connect module.

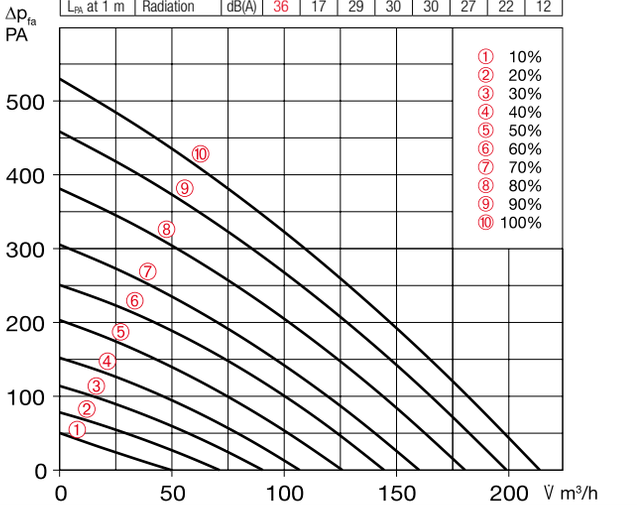
□ **Room sensors**
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

□ **Post-heating**
Helios easyControls 3.0 can be used with an electric post-heating element (EHR with KWL-LTK, accessories). The autonomous operation of the warm water heating element can be controlled via an air temperature control (WHS HE, accessories) independently from Helios easyControls 3.0.

■ References	Page
Helios easyControls 3.0 The innovative KWL control concept	104 f.
Moisture recovery through enthalpy heat exchangers	103

Performance curves KWL 200 W

Frequency*		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	48	39	42	43	42	34	25	20
L_{WA}	Supply air	dB(A)	58	46	50	52	53	50	46	34
L_{PA} at 1 m	Radiation	dB(A)	36	17	29	30	30	27	22	12



*Sound information relate to Vref. according to ERP data sheet.

Slide switch control element

KWL BE ECO Ref. no. 20246

Three-step slide switch including operation indicator, for flush-mounted installation. Function see left.
Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

KWL APG Ref. no. 04270

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

Touch control element

KWL BE Touch bl (black) Ref. no. 20244
KWL BE Touch wh (white) Ref. no. 20245

With graphic display, for flush-mounted installation. Function see left. Connection of up to 6 pcs. possible (additional power supply unit may be required). Can be integrated in common switch ranges with the dim. mm (W x H x D) 55 x 55 x 35, Dim. with frame mm (W x H x D) 88 x 88 x 35

Casing for surface installation

KWL APG Touch bl No. 40178
KWL APG Touch wh No. 40177

Dim mm (W x H x D) 85 x 85 x 25

Control line cable

KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180

Control line cables in 5 or 10 meters, suitable for KWL-BE ECO / Touch as well as room sensor.

Technical data	With plastic heat exchanger Type	Ref. no.	With enthalpy heat exchanger Type	Ref. no.
Right-hand version	KWL 200 W R	40045	KWL 200 W ET R	40047
Left-hand version	KWL 200 W L	40046	KWL 200 W ET L	40048

Flow rate at level [1] [2]	❿	❽	❻	❹	❷	❿	❽	❻	❹	❷
Supply air/extract air V̇ m³/h	215	175	129	71	46	190	151	111	73	39
Power consumption fans 2xW [1]	40	26	16	8	5	40	26	16	8	5
Voltage/Frequency	1~, 230 V, 50 Hz									
Rated current A – ventilation	1.2									
– preheating	4.4									
– max. total	1.2 (5.6 incl. preheater, accessories)									
Electric preheater kW	1.0 kW (accessories)									
Summer bypass	automatic (adjustable), with heat exchanger cover									
Wiring diagram no.	1433									
Temperature operating range	–20 °C to +40 °C									
Installation temperature	+5 °C to +40 °C (90% rel. humidity, non-condensing)									
Weight approx. kg	37					41				

[1] At 0 Pa, performance levels adjustable. [2] Volume reduction by approx. 10% when using pollen filter.
[3] AK = Activated carbon filter

KNX/EIB module

KWL-KNX Connect No. 20253

For integrating the ventilation unit in a KNX system. For switch cabinet installation (1 space unit required).

Room sensors

KWL-CO2 eC Ref. no. 20248
KWL-FTF eC Ref. no. 20249
KWL-VOC eC Ref. no. 20247

For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. Please note the maximum number of sensors, additional power supply unit may be required.
Dim. mm (W x H x D) 98 x 98 x 33

Electric preheater

KWL-EVH 200 W No. 04224

Electrical preheater for simple, plug-in unit installation. For preheating the intake air at very low outdoor temperatures (heat exchanger anti-icing protection). Mandatory for passive houses. Output: 1000 W.

Extension module

KWL-EM eC Ref. no. 40155

For controlling external post-heating elements.
Dim. mm (W x H x D) 210 x 210 x 100

Motion detector

BWM Ref. no. 08323

Motion detector for detecting the presence of persons in the room. Surface-mounted wall installation (cable entry at top or bottom) or installation in flush-mounted box Ø 55 mm (cable entry at back).

Electric post-heating element

For additional supply air heating.

EHR-R 1.2/125 Ref. no. 09433

Rectangular duct temp. sensor

KWL-LTK eC (1 pc. req.) No. 40156

Warm water post-heating element

For additional supply air heating.

WHR 125 Ref. no. 09480

Rectangular duct temp. sensor

KWL-LTK eC (2 pc. req.) No. 40156

Hydraulic unit

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

Alternative:

Air temperature control

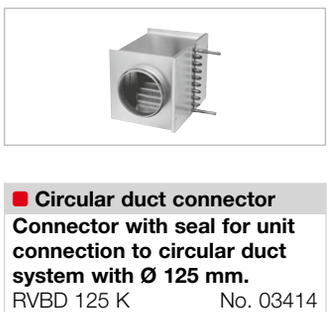
WHST 300 T38 Ref. no. 08817

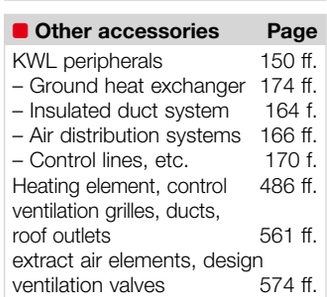
Replacement air filters

– 2 pcs. ISO Coarse 75% (G4)
ELF-KWL 200/4/4 No. 00021
– 1 pc. ISO ePM$_1$ 50% (F7)
ELF-KWL 200/7 No. 00038
– 1 pc. ISO ePM$_{2.5}$ 60% (AK)[3]
ELF-KWL 200 AK No. 04198

Reference

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





Circular duct connector

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

Other accessories

KWL 250 W

Efficiency class

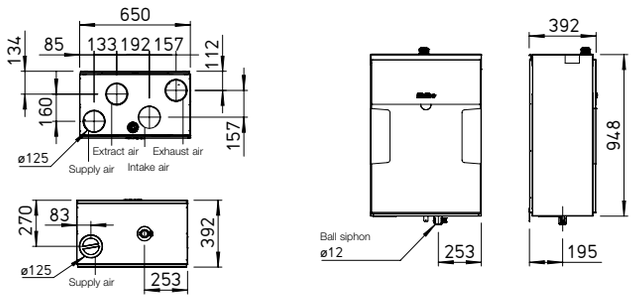
A+ KWL 250 W with additional room sensor

A KWL 250 W

easy Controls 3.0

EC

Dimensions KWL 250 W



Dimensions in mm

Compact unit with heat recovery for the central supply and extract ventilation of residential units up to 190 m². Perfectly prepared for modern communication and operation with the new Helios easyControls 3.0 control system incl. integrated network connection.
Equipped with EC fans for low energy consumption and highly efficient plastic or enthalpy heat exchangers for additional moisture recovery.

■ **Casing**
Universal casing concept: Intake air left/right, supply air top or bottom.
Outside made of galvanised steel sheet in white, internal components made of highly thermal insulating EPP. The intake air connection can be installed on the left or right. Maintenance-friendly access to all unit components through removeable front panels. Delivery state: Intake air on the right.

■ **Heat exchanger**
□ Large cross counterflow heat exchanger made of plastic, heat recovery efficiency up to 90 %.
□ Type “ET” is equipped with highly efficient enthalpy heat exchanger for additional moisture recovery.

■ **Fans**
Two low-noise high-performance centrifugal fans with energy-saving EC motors ensure the air supply and extraction.

■ **Ducts**
Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 125 mm using duct connectors (RVBD 125 K, accessories).

■ **Condensate connection**
Condensate drain at the bottom; ball siphon included in delivery. On-site connection to drain pipe.

■ **Air filter**
Clean outdoor air supply via ISO Coarse 65 % (G4) filter and 2nd filter stage via optional ISO ePM$_1$ 50 % (F7) or activated carbon filter. Extract air side equipped with an ISO Coarse 65 % (G4) filter in front of the heat exchanger. Easy filter maintenance without opening the unit.

■ **Summer operation**
Equipped with automatic bypass function and heat exchanger cover as standard.

■ **Heat exchanger anti-icing protection**
The standard frost monitoring system automatically controls the supply air flow volume and the optionally installed electrical preheater (KWL-EVH 250 W, accessories).

■ **Control system**
EasyControls 3.0 is the new, modern control system for all KWL compact units from Helios. The standard LAN interface allows the simple integration of the KWL unit in a network and the integration in Helios Cloud. The unit is optionally controlled via an external control element, on PC/laptop, tablet and Smartphone via the integrated web browser or on the move via the Cloud. See page 104 for functionality. Helios easyControls 3.0 is prepared for:
□ The control elements KWL-BE ECO and KWL-BE Touch (optional accessories)
□ The humidity sensor integrated as standard and other optionally available external air quality sensors (KWL-CO2, -FTF, -VOC, accessories) enable automatic, demand-controlled ventilation.
□ Connection to building control system via integrated Modbus interface or optional KNX module (KWL-KNX Connect, accessories).

■ **Electrical connection**
Fixed connection via a mains connection cable 3 x 1.5 mm², approx. 2 m with wire end ferrules.

■ **Accessories – Functional description (see right for details)**
KWL 250 W can be individually expanded with the following accessories:
□ **Control element ECO**
– Three ventilation profiles selectable via slide switch.
– Control voltage can be measured directly on the control element.
– Weekly timer (WSUP / WSUP-S, no. 09990 / 09577, accessories) can also be added to implement a further operating level, e.g. night mode.
– LED for visual indication of operating statuses, e.g. filter replacement and faults.

□ **Control element Touch**
Touch control element with graphic display and user-friendly menu navigation:
– Commissioning assistant.
– Selection of four ventilation profiles.
– Adjustment of an individual weekly programme.
– Adjustment of parameters for room sensors.
– Indication of e.g. filter replacement, operating statuses and error messages.
– Different access authorisations and child lock.
– Other functions (see operating instructions).

□ **KNX/EIB module**
For connecting the ventilation unit to the building control system via the KNX Connect module.

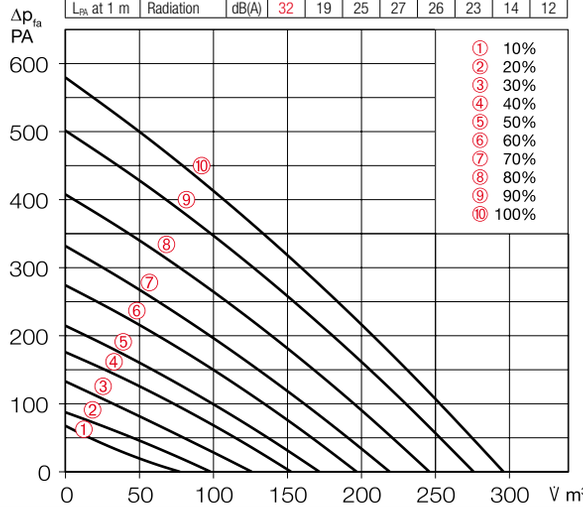
□ **Room sensors**
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

□ **Post-heating**
Helios easyControls 3.0 can be used with an electric post-heating element (EHR with KWL-LTK, accessories). The autonomous operation of the warm water heating element can be controlled via an air temperature control (WHS HE, accessories) independently from Helios easyControls 3.0.

■ References	Page
Helios easyControls 3.0 The innovative KWL control concept	104 f.
Moisture recovery through enthalpy heat exchangers	103

Performance curves KWL 250 W

Frequency*		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	45	35	42	40	33	27	19	20
L_{WA}	Supply air	dB(A)	59	45	58	52	50	46	35	28
L_{PA} at 1 m	Radiation	dB(A)	32	19	25	27	26	23	14	12



*Sound information relate to Vref. according to ERP data sheet.

Slide switch control element

KWL BE ECO Ref. no. 20246

Three-step slide switch including operation indicator, for flush-mounted installation. Function see left.
Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

KWL APG Ref. no. 04270

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

Touch control element

KWL BE Touch bl (black) Ref. no. 20244
KWL BE Touch wh (white) Ref. no. 20245

With graphic display, for flush-mounted installation. Function see left. Connection of up to 6 pcs. possible (additional power supply unit may be required). Can be integrated in common switch ranges with the dimensions mm (W x H x D) 55 x 55 x 35, Dim. with frame mm (W x H x D) 88 x 88 x 35

Casing for surface installation

KWL APG Touch bl No. 40178
KWL APG Touch wh No. 40177

Dim mm (W x H x D) 85 x 85 x 25

Control line cable

KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180

Control line cables in 5 or 10 meters, suitable for KWL-BE ECO / Touch as well as room sensor.

Technical data	With plastic heat exchanger Type					Ref. no.	With enthalpy heat exchanger Type					Ref. no.
	KWL 250 W					40149	KWL 250 W ET					40150
Flow rate at level [1) 2)]	⑩	⑧	⑥	④	②		⑩	⑧	⑥	④	②	
Supply air/extract air V̇ m³/h	296	246	197	153	98		302	246	197	154	103	
Power consumption fans 2xW [1)]	51	33	20	13	7		52	32	22	13	8	
Voltage/Frequency	1~, 230 V, 50 Hz											
Rated current A – ventilation	1,5											
– preheating	4,4											
– max. total	1.5 (5.9 incl. preheater, accessories)											
Electric preheater kW	1.0 kW (accessories)											
Summer bypass	automatic (adjustable), with heat exchanger cover											
Wiring diagram no.	1433											
Temperature operating range	–20 °C to +40 °C											
Installation temperature	+5 °C to +40 °C (90% rel. humidity, non-condensing)											
Weight approx. kg	43						47					

[1)] At 0 Pa, performance levels adjustable. [2)] Volume reduction by approx. 10% when using pollen filter.

KNX/EIB module

KWL-KNX Connect No. 20253

For integrating the ventilation unit in a KNX system. For switch cabinet installation (1 space unit required).

Room sensors

KWL-CO2 eC Ref. no. 20248
KWL-FTF eC Ref. no. 20249
KWL-VOC eC Ref. no. 20247

For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. Please note the maximum number of sensors, additional power supply unit may be required.
Dim. mm (W x H x D) 98 x 98 x 33

Electric preheater

KWL-EVH 250 W No. 40157

Electrical preheater for simple, plug-in unit installation. For preheating the intake air at very low outdoor temperatures (heat exchanger anti-icing protection). Mandatory for passive houses. Output: 1000 W.

Extension module

KWL-EM eC Ref. no. 40155

For controlling external post-heating elements.
Dim. mm (W x H x D) 210 x 210 x 100

Motion detector

BWM Ref. no. 08323

Motion detector for detecting the presence of persons in the room. Surface-mounted wall installation (cable entry at top or bottom) or installation in flush-mounted box Ø 55 mm (cable entry at back).

Electric post-heating element

For additional supply air heating.

EHR-R 1.2/125 Ref. no. 09433

Rectangular duct temp. sensor

KWL-LTK eC (1 pc. req.) No. 40156

Warm water post-heating element

For additional supply air heating.

WHR 125 Ref. no. 09480

Rectangular duct temp. sensor

KWL-LTK eC (2 pc. req.) No. 40156

Hydraulic unit

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

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 08817

Replacement air filters

– 2 pcs. ISO Coarse 65% (G4)
ELF-KWL 250/2xCoarse65%
Ref. no. 40151

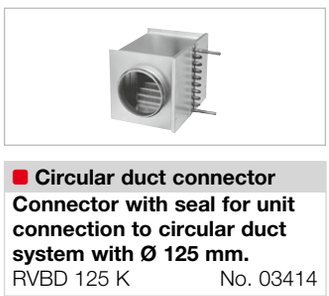
– 1 pc. ISO ePM$_1$ 50% (F7)
ELF-KWL 250/ePM1 50%
Ref. no. 40152

– 1 pc. Activated carbon filter
ELF-KWL 250 AK No. 40153

Reference

Enthalpy heat exchanger (accessories) for retrofitting:
KWL-ET 250 Nr. 40159

A+ required for efficiency class A+



Circular duct connector

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

Other accessories

KWL 300 W

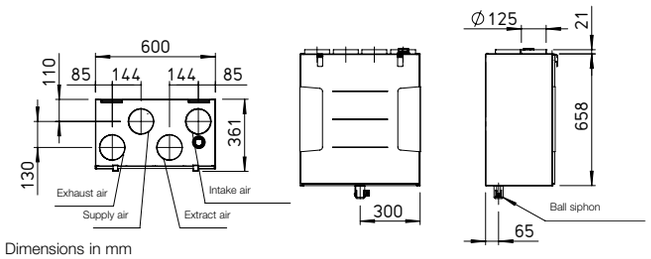
KWL 300 W R with accessories (pollen filter, KWL-EVH 300 W)

Efficiency class

A

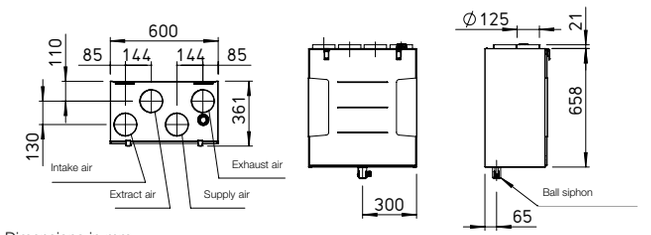
KWL 300 W R/L and 300 W ET R/L

Dimensions KWL 300 W R



Dimensions in mm

Dimensions KWL 300 W L



Dimensions in mm

Compact units with heat recovery for the central supply and extract ventilation of residential buildings and apartments. Perfectly prepared for modern communication and operation with the new Helios easyControls 3.0 control system incl. integrated network connection.
Equipped with EC fans for low energy consumption and highly efficient plastic or enthalpy heat exchangers for additional moisture recovery.

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

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

■ **Fans**
Two low-noise high-performance centrifugal fans with energy-saving EC motors ensure the air supply and extraction.

■ **Ducts**
Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 125 mm using duct connectors (RVBD 125 K, accessories).

■ **Condensate connection**
Condensate drain at the bottom; ball siphon included in delivery. On-site connection to drain pipe.

■ **Air filter**
Clean outdoor air supply via ISO Coarse 75 % (G4) filter and 2nd filter stage via optional ISO ePM$_1$ 50 % (F7) or activated carbon filter. Extract air side equipped with an ISO Coarse 75 % (G4) filter in front of the heat exchanger.

■ **Summer operation**
Equipped with automatic bypass function and heat exchanger cover as standard.

■ **Heat exchanger anti-icing protection**
The standard frost monitoring system automatically controls the supply air flow volume and the optionally installed electrical preheater (KWL-EVH 300 W, accessories).

■ **Control system**
EasyControls 3.0 is the new, modern control system for all KWL compact units from Helios. The standard LAN interface allows the simple integration of the KWL unit in a network and the integration in Helios Cloud. The unit is optionally controlled via an external control element, on PC/laptop, tablet and Smartphone via the integrated web browser or on the move via the Cloud. See page 104 for functionality. Helios easyControls 3.0 is prepared for:
□ The control elements KWL-BE ECO and KWL-BE Touch (optional accessories)
□ The humidity sensor integrated as standard and other optionally available external air quality sensors (KWL-CO2, -FTF, -VOC, accessories) enable automatic, demand-controlled ventilation.
□ Connection to building control system via integrated Modbus interface or optional KNX module (KWL-KNX Connect, accessories).

■ **Electrical connection**
Fixed connection via a mains connection cable 3 x 1.5 mm², approx. 2 m with wire end ferrules.

■ **Accessories – Functional description (see right for details)**
KWL 300 W can be individually expanded with the following accessories:

□ **Control element ECO**
– Three ventilation profiles selectable via slide switch.
– Control voltage can be measured directly on the control element.
– Weekly timer (WSUP / WSUP-S, no. 09990 / 09577, accessories) can also be added to implement a further operating level, e.g. night mode.
– LED for visual indication of operating statuses, e.g. filter replacement and faults.

□ **Control element Touch**
Touch control element with graphic display and user-friendly menu navigation:
– Commissioning assistant.
– Selection of four ventilation profiles.
– Adjustment of an individual weekly programme.
– Adjustment of parameters for room sensors.
– Indication of e.g. filter replacement, operating statuses and error messages.
– Different access authorisations and child lock.
– Other functions (see operating instructions).

□ **KNX/EIB module**
For connecting the ventilation unit to the building control system via the KNX Connect module.

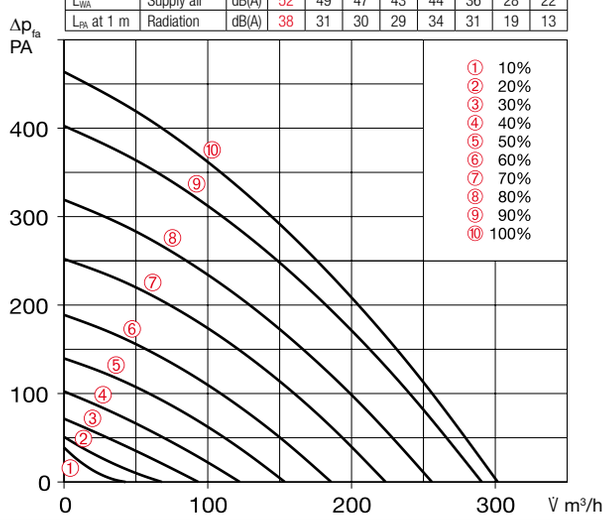
□ **Room sensors**
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

□ **Post-heating**
Helios easyControls 3.0 can be used with an electric post-heating element (EHR with KWL-LTK, accessories). The autonomous operation of the warm water heating element can be controlled via an air temperature control (WHS HE, accessories) independently from Helios easyControls 3.0.

■ References	Page
Helios easyControls 3.0 The innovative KWL control concept	104 f.
Moisture recovery through enthalpy heat exchangers	103

Performance curves KWL 300 W

Frequency*		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	53	51	48	41	41	37	27	21
L_{WA}	Supply air	dB(A)	52	49	47	43	44	36	28	22
L_{PA} at 1 m	Radiation	dB(A)	38	31	30	29	34	31	19	13



*Sound information relate to Vref. according to ERP data sheet.

Slide switch control element

KWL BE ECO Ref. no. 20246

Three-step slide switch including operation indicator, for flush-mounted installation. Function see left.
Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

KWL APG Ref. no. 04270

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

Touch control element

KWL BE Touch bl (black) Ref. no. 20244
KWL BE Touch wh (white) Ref. no. 20245

With graphic display, for flush-mounted installation. Function see left. Connection of up to 6 pcs. possible (additional power supply unit may be required). Can be integrated in common switch ranges with the dimensions mm (W x H x D) 55 x 55 x 35, Dim. with frame mm (W x H x D) 88 x 88 x 35

Casing for surface installation

KWL APG Touch bl No. 40178
KWL APG Touch wh No. 40177

Dim mm (W x H x D) 85 x 85 x 25

Control line cable

KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180

Control line cables in 5 or 10 meters, suitable for KWL-BE ECO / Touch as well as room sensor.

KNX/EIB module

KWL-KNX Connect No. 20253

For integrating the ventilation unit in a KNX system. For switch cabinet installation (1 space unit required).

Room sensors

KWL-CO2 eC Ref. no. 20248
KWL-FTF eC Ref. no. 20249
KWL-VOC eC Ref. no. 20247

For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. Please note the maximum number of sensors, additional power supply unit may be required.
Dim. mm (W x H x D) 98 x 98 x 33

Electric preheater

KWL-EVH 300 W No. 04224

Electrical preheater for simple, plug-in unit installation. For preheating the intake air at very low outdoor temperatures (heat exchanger anti-icing protection). Mandatory for passive houses. Output: 1000 W.

Extension module

KWL-EM eC Ref. no. 40155

For controlling external post-heating elements.
Dim. mm (W x H x D) 210 x 210 x 100

Motion detector

BWM Ref. no. 08323

Motion detector for detecting the presence of persons in the room. Surface-mounted wall installation (cable entry at top or bottom) or installation in flush-mounted box Ø 55 mm (cable entry at back).

Electric post-heating element

For additional supply air heating.

EHR-R 1.2/125 Ref. no. 09433

Rectangular duct temp. sensor

KWL-LTK eC (1 pc. req.) No. 40156

Warm water post-heating element

For additional supply air heating.

WHR 125 Ref. no. 09480

Rectangular duct temp. sensor

KWL-LTK eC (2 pc. req.) No. 40156

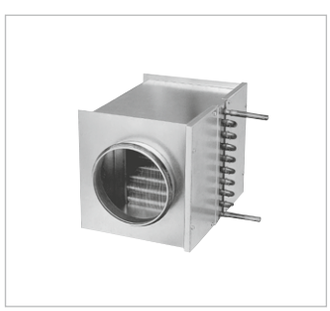
Hydraulic unit

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

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 08817



Technical data	With plastic heat exchanger Type	Ref. no.	With enthalpy heat exchanger Type	Ref. no.
Right-hand version	**KWL 300 W R**	40049	**KWL 300 W ET R**	40051
Left-hand version	**KWL 300 W L**	40050	**KWL 300 W ET L**	40052

Flow rate at level [1) 2)]	❿	❽	❻	❹	❷	❿	❽	❻	❹	❷
Supply air/extract air V̇ m³/h	302	255	186	122	68	271	216	161	107	56
Power consumption fans 2xW [1)]	84	54	27	13	6	86	54	27	13	7
Voltage/Frequency	1~, 230 V, 50 Hz									
Rated current A – ventilation	2.0									
– preheating	4.4									
– max. total	2.0 (6.4 incl. preheater, accessories)									
Electric preheater kW	1.0 kW (accessories)									
Summer bypass	automatic (adjustable), with heat exchanger cover									
Wiring diagram no.	1433									
Temperature operating range	–20 °C to +40 °C									
Installation temperature	+5 °C to +40 °C (90% rel. humidity, non-condensing)									
Weight approx. kg	37					41				

[1)] At 0 Pa, performance levels adjustable. [2)] Volume reduction by approx. 10% when using pollen filter.
[3)] AK = Activated carbon filter

Replacement air filters

– 2 pcs. ISO Coarse 75% (G4)
ELF-KWL 300/4/4 No. 00021
– 1 pc. ISO ePM$_1$ 50% (F7)
ELF-KWL 300/7 No. 00038
– 1 pc. ISO ePM$_{2.5}$ 60% (AK)[3)]
ELF-KWL 300 AK No. 04198

Circular duct connector

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

Reference

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

KWL 360 W

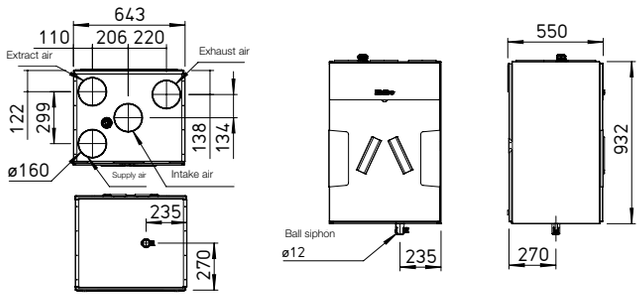
Efficiency class

A+ KWL 360 W

easy Controls 3.0

EC

Dimensions KWL 360 W



Dimensions in mm

Compact unit with heat recovery for the central supply and extract ventilation of residential buildings and apartments. Perfectly prepared for modern communication and operation with the new Helios easyControls 3.0 control system incl. integrated network connection.
Equipped with EC fans for low energy consumption and highly efficient plastic or enthalpy heat exchangers for additional moisture recovery.

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

■ **Heat exchanger**
☐ Large cross counterflow heat exchanger made of plastic, heat recovery efficiency up to 90 %.
☐ Type “ET” is equipped with highly efficient enthalpy heat exchanger for additional moisture recovery.

■ **Fans**
Two low-noise high-performance centrifugal fans with energy-saving EC motors ensure the air supply and extraction.

■ **Ducts**
Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 160 mm using duct connectors (RVBD 160 K, accessories).

■ **Condensate connection**
Condensate drain at the bottom; ball siphon included in delivery. On-site connection to drain pipe.

■ **Air filter**
Clean outdoor air supply via ISO Coarse 65 % (G4) filter and 2nd filter stage via optional ISO ePM_1 50 % (F7) or activated carbon filter. Extract air side equipped with an ISO Coarse 65 % (G4) filter in front of the heat exchanger. Easy filter maintenance without opening the unit.

■ **Summer operation**
Equipped with automatic bypass function and heat exchanger cover as standard.

■ **Heat exchanger anti-icing protection**
The standard frost monitoring system automatically controls the supply air flow volume and the optionally installed electrical preheater (KWL-EVH 360/470 W, accessories).

■ **Control system**
EasyControls 3.0 is the new, modern control system for all KWL compact units from Helios. The standard LAN interface allows the simple integration of the KWL unit in a network and the integration in Helios Cloud. The unit is optionally controlled via an external control element, on PC/laptop, tablet and Smartphone via the integrated web browser or on the move via the Cloud. See page 104 for functionality. Helios easyControls 3.0 is prepared for:
☐ The control elements KWL-BE ECO and KWL-BE Touch (optional accessories)
☐ The humidity sensor integrated as standard and other optionally available external air quality sensors (KWL-CO2, -FTF, -VOC, accessories) enable automatic, demand-controlled ventilation.
☐ Connection to building control system via integrated Modbus interface or optional KNX module (KWL-KNX Connect, accessories).

■ **Electrical connection**
Fixed connection via a mains connection cable 3 x 1.5 mm², approx. 2 m with wire end ferrules.

■ **Accessories – Functional description (see right for details**
KWL 360 W can be individually expanded with the following accessories:
☐ **Control element ECO**
– Three ventilation profiles selectable via slide switch.
– Control voltage can be measured directly on the control element.
– Weekly timer (WSUP / WSUP-S, no. 09990 / 09577, accessories) can also be added to implement a further operating level, e.g. night mode.
– LED for visual indication of operating statuses, e.g. filter replacement and faults.

☐ **Control element Touch**
Touch control element with graphic display and user-friendly menu navigation:
– Commissioning assistant.
– Selection of four ventilation profiles.
– Adjustment of an individual weekly programme.
– Adjustment of parameters for room sensors.
– Indication of e.g. filter replacement, operating statuses and error messages.
– Different access authorisations and child lock.
– Other functions (see operating instructions).

☐ **KNX/EIB module**
For connecting the ventilation unit to the building control system via the KNX Connect module.

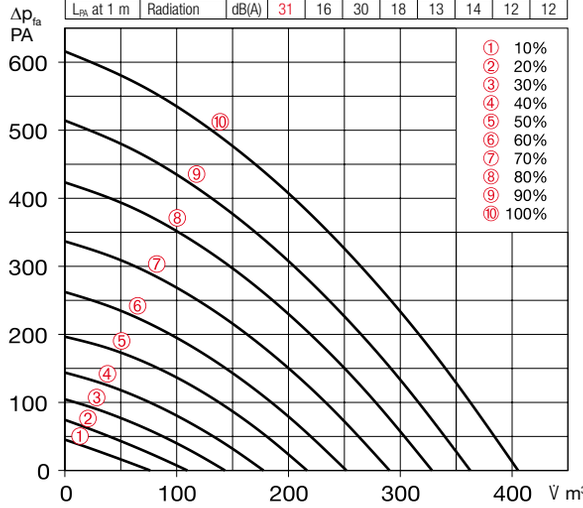
☐ **Room sensors**
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

☐ **Post-heating**
Helios easyControls 3.0 can be used with an electric post-heating element (EHR with KWL-LTK, accessories). The autonomous operation of the warm water heating element can be controlled via an air temperature control (WHS HE, accessories) independently from Helios easyControls 3.0.

■ References	Page
Helios easyControls 3.0 The innovative KWL control concept	104 f.
Moisture recovery through enthalpy heat exchangers	103

Performance curves KWL 360 W

Frequency*		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	49	39	48	35	28	20	18	20
L_{WA}	Supply air	dB(A)	58	40	56	50	47	42	27	21
L_{PA} at 1 m	Radiation	dB(A)	31	16	30	18	13	14	12	12



*Sound information relate to Vref. according to ERP data sheet.

Slide switch control element

KWL BE ECO Ref. no. 20246

Three-step slide switch including operation indicator, for flush-mounted installation. Function see left.
Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

KWL APG Ref. no. 04270

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

Touch control element

KWL BE Touch bl (black) Ref. no. 20244
KWL BE Touch wh (white) Ref. no. 20245

With graphic display, for flush-mounted installation. Function see left. Connection of up to 6 pcs. possible (additional power supply unit may be required). Can be integrated in common switch ranges with the dimensions mm (W x H x D) 55 x 55 x 35, Dim. with frame mm (W x H x D) 88 x 88 x 35

Casing for surface installation

KWL APG Touch bl No. 40178
KWL APG Touch wh No. 40177

Dim mm (W x H x D) 85 x 85 x 25

Control line cable

KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180

Control line cables in 5 or 10 meters, suitable for KWL-BE ECO / Touch as well as room sensor.

Technical data	With plastic heat exchanger Type					Ref. no.	With enthalpy heat exchanger Type					Ref. no.
	KWL 360 W					40061	KWL 360 W ET					40062
Flow rate at level [1) 2)]	❿	❽	❻	❹	❷		❿	❽	❻	❹	❷	
Supply air/extract air V̇ m³/h	405	328	252	178	110		403	332	264	192	121	
Power consumption fans 2xW [1)]	51	30	17	10	6		45	28	16	9	5	
Voltage/Frequency	1~, 230 V, 50 Hz											
Rated current A – ventilation	0.5											
– preheating	6.3											
– max. total	0.5 (6.8 incl. preheater, accessories)											
Electric preheater kW	1.5 kW (accessories)											
Summer bypass	automatic (adjustable), with heat exchanger cover											
Wiring diagram no.	1433											
Temperature operating range	–20 °C to +40 °C											
Installation temperature	+5 °C to +40 °C (90% rel. humidity, non-condensing)											
Weight approx. kg	72						70					

[1)] At 0 Pa, performance levels adjustable. [2)] Volume reduction by approx. 10% when using pollen filter.

KNX/EIB module

KWL-KNX Connect No. 20253

For integrating the ventilation unit in a KNX system. For switch cabinet installation (1 space unit required).

Room sensors

KWL-CO2 eC Ref. no. 20248
KWL-FTF eC Ref. no. 20249
KWL-VOC eC Ref. no. 20247

For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. Please note the maximum number of sensors, additional power supply unit may be required.
Dim. mm (W x H x D) 98 x 98 x 33

Electric preheater

KWL-EVH 360/470 W No. 07360

Electrical preheater for simple, plug-in unit installation. For preheating the intake air at very low outdoor temperatures (heat exchanger anti-icing protection). Mandatory for passive houses. Output: 1500 W.

Extension module

KWL-EM eC Ref. no. 40155

For controlling external post-heating elements.
Dim. mm (W x H x D) 210 x 210 x 100

Motion detector

BWM Ref. no. 08323

Motion detector for detecting the presence of persons in the room. Surface-mounted wall installation (cable entry at top or bottom) or installation in flush-mounted box Ø 55 mm (cable entry at back).

Electric post-heating element

For additional supply air heating.

EHR-R 2.4/160 Ref. no. 09435

Rectangular duct temp. sensor

KWL-LTK eC (1 pc. req.) No. 40156

Warm water post-heating element

For additional supply air heating.

WHR 160 Ref. no. 09481

Rectangular duct temp. sensor

KWL-LTK eC (2 pc. req.) No. 40156

Hydraulic unit

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

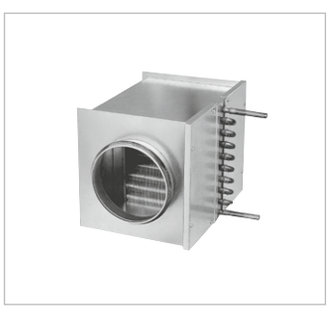
Alternative:

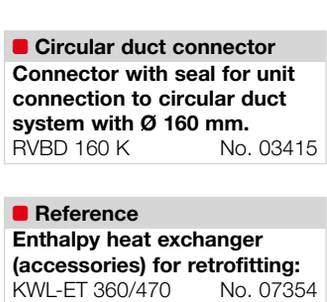
Air temperature control

WHST 300 T38 Ref. no. 08817

Replacement air filters

– 2 pcs. ISO Coarse 65% (G4)
ELF-KWL 360/470/4/4 No. 07371
– 1 pc. ISO ePM₁ 50% (F7)
ELF-KWL 360/470/7 No. 07375
– 1 pc. Activated carbon filter
ELF-KWL 360/470 AK No. 08129





Circular duct connector

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

Reference

Enthalpy heat exchanger (accessories) for retrofitting:
KWL-ET 360/470 No. 07354

KWL® with heat recovery

KWL 470 W

Efficiency class

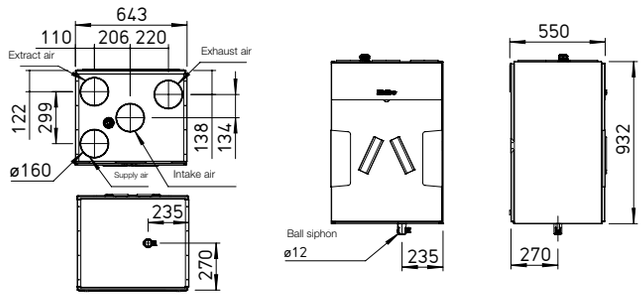
A+ KWL 470 W with additional room sensor

A KWL 470 W

easy Controls 3.0

EC

Dimensions KWL 470 W



Dimensions in mm

Compact unit with heat recovery for the central supply and extract ventilation of residential buildings and apartments. Perfectly prepared for modern communication and operation with the new Helios easyControls 3.0 control system incl. integrated network connection.
Equipped with EC fans for low energy consumption and highly efficient plastic or enthalpy heat exchangers for additional moisture recovery.

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

■ **Heat exchanger**
□ Large cross counterflow heat exchanger made of plastic, heat recovery efficiency up to 90 %.
□ Type “ET” is equipped with highly efficient enthalpy heat exchanger for additional moisture recovery.

■ **Fans**
Two low-noise high-performance centrifugal fans with energy-saving EC motors ensure the air supply and extraction.

■ **Ducts**
Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 160 mm using duct connectors (RVBD 160 K, accessories).

■ **Condensate connection**
Condensate drain at the bottom; ball siphon included in delivery. On-site connection to drain pipe.

■ **Air filter**
Clean outdoor air supply via ISO Coarse 65 % (G4) filter and 2nd filter stage via optional ISO ePM_1 50 % (F7) or activated carbon filter. Extract air side equipped with an ISO Coarse 65 % (G4) filter in front of the heat exchanger. Easy filter maintenance without opening the unit.

■ **Summer operation**
Equipped with automatic bypass function and heat exchanger cover as standard.

■ **Heat exchanger anti-icing protection**
The standard frost monitoring system automatically controls the supply air flow volume and the optionally installed electrical preheater (KWL-EVH 360/470 W, accessories).

■ **Control system**
EasyControls 3.0 is the new, modern control system for all KWL compact units from Helios. The standard LAN interface allows the simple integration of the KWL unit in a network and the integration in Helios Cloud. The unit is optionally controlled via an external control element, on PC/laptop, tablet and Smartphone via the integrated web browser or on the move via the Cloud. See page 104 for functionality. Helios easyControls 3.0 is prepared for:
□ The control elements KWL-BE ECO and KWL-BE Touch (optional accessories)
□ The humidity sensor integrated as standard and other optionally available external air quality sensors (KWL-CO2, -FTF, -VOC, accessories) enable automatic, demand-controlled ventilation.
□ Connection to building control system via integrated Modbus interface or optional KNX module (KWL-KNX Connect, accessories).

■ **Electrical connection**
Fixed connection via a mains connection cable 3 x 1.5 mm², approx. 2 m with wire end ferrules.

■ **Accessories – Functional description (see right for details)**
KWL 470 W can be individually expanded with the following accessories:
□ **Control element ECO**
– Three ventilation profiles selectable via slide switch.
– Control voltage can be measured directly on the control element.
– Weekly timer (WSUP / WSUP-S, no. 09990 / 09577, accessories) can also be added to implement a further operating level, e.g. night mode.
– LED for visual indication of operating statuses, e.g. filter replacement and faults.

□ **Control element Touch**
Touch control element with graphic display and user-friendly menu navigation:
– Commissioning assistant.
– Selection of four ventilation profiles.
– Adjustment of an individual weekly programme.
– Adjustment of parameters for room sensors.
– Indication of e.g. filter replacement, operating statuses and error messages.
– Different access authorisations and child lock.
– Other functions (see operating instructions).

□ **KNX/EIB module**
For connecting the ventilation unit to the building control system via the KNX Connect module.

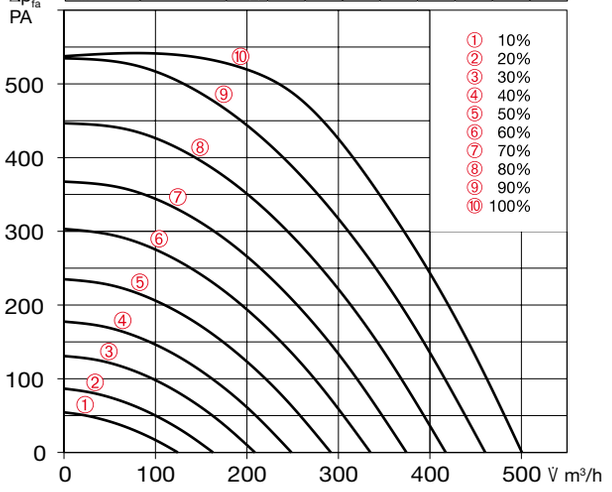
□ **Room sensors**
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

□ **Post-heating**
Helios easyControls 3.0 can be used with an electric post-heating element (EHR with KWL-LTK, accessories). The autonomous operation of the warm water heating element can be controlled via an air temperature control (WHS HE, accessories) independently from Helios easyControls 3.0.

■ References	Page
Helios easyControls 3.0 The innovative KWL control concept	104 f.
Moisture recovery through enthalpy heat exchangers	103

Performance curves KWL 470 W

Frequency*		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	54	41	54	42	38	34	22	22
L_{WA}	Supply air	dB(A)	58	43	54	52	50	45	32	22
L_{PA} at 1 m	Radiation	dB(A)	35	19	34	24	19	20	16	12



*Sound information relate to Vref. according to ERP data sheet.

Slide switch control element

KWL BE ECO Ref. no. 20246

Three-step slide switch including operation indicator, for flush-mounted installation. Function see left.
Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

KWL APG Ref. no. 04270

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

Touch control element

KWL BE Touch bl (black) Ref. no. 20244
KWL BE Touch wh (white) Ref. no. 20245

With graphic display, for flush-mounted installation. Function see left. Connection of up to 6 pcs. possible (additional power supply unit may be required). Can be integrated in common switch ranges with the dimensions mm (W x H x D) 55 x 55 x 35, Dim. with frame mm (W x H x D) 88 x 88 x 35

Casing for surface installation

KWL APG Touch bl No. 40178
KWL APG Touch wh No. 40177

Dim mm (W x H x D) 85 x 85 x 25

Control line cable

KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180

Control line cables in 5 or 10 meters, suitable for KWL-BE ECO / Touch as well as room sensor.

Technical data	With plastic heat exchanger Type					Ref. no.	With enthalpy heat exchanger Type					Ref. no.
	KWL 470 W					40409	KWL 470 W ET					40410
Flow rate at level [1) 2)]	❿	❽	❻	❹	❷		❿	❽	❻	❹	❷	
Supply air/extract air V̇ m³/h	501	417	335	249	163		501	420	338	253	171	
Power consumption fans 2xW [1)]	85	53	31	16	8		87	54	31	16	8	
Voltage/Frequency	1~, 230 V, 50 Hz											
Rated current A – ventilation	1.4											
– preheating	6.3											
– max. total	1.4 (7.7 incl. preheater, accessories)											
Electric preheater kW	1.5 kW (accessories)											
Summer bypass	automatic (adjustable), with heat exchanger cover											
Wiring diagram no.	1433											
Temperature operating range	–20 °C to +40 °C											
Installation temperature	+5 °C to +40 °C (90% rel. humidity, non-condensing)											
Weight approx. kg	72						70					

[1)] At 0 Pa, performance levels adjustable. [2)] Volume reduction by approx. 10% when using pollen filter.

KNX/EIB module

KWL-KNX Connect No. 20253

For integrating the ventilation unit in a KNX system. For switch cabinet installation (1 space unit required).

Room sensors

KWL-CO2 eC Ref. no. 20248
KWL-FTF eC Ref. no. 20249
KWL-VOC eC Ref. no. 20247

For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. Please note the maximum number of sensors, additional power supply unit may be required.
Dim. mm (W x H x D) 98 x 98 x 33

Electric preheater

KWL-EVH 360/470 W No. 07360

Electrical preheater for simple, plug-in unit installation. For preheating the intake air at very low outdoor temperatures (heat exchanger anti-icing protection). Mandatory for passive houses. Output: 1500 W.

Extension module

KWL-EM eC Ref. no. 40155

For controlling external post-heating elements.
Dim. mm (W x H x D) 210 x 210 x 100

Motion detector

BWM Ref. no. 08323

Motion detector for detecting the presence of persons in the room. Surface-mounted wall installation (cable entry at top or bottom) or installation in flush-mounted box Ø 55 mm (cable entry at back).

Electric post-heating element

For additional supply air heating.

EHR-R 2.4/160 Ref. no. 09435

Rectangular duct temp. sensor

KWL-LTK eC (1 pc. req.) No. 40156

Warm water post-heating element

For additional supply air heating.

WHR 160 Ref. no. 09481

Rectangular duct temp. sensor

KWL-LTK eC (2 pc. req.) No. 40156

Hydraulic unit

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

Alternative:

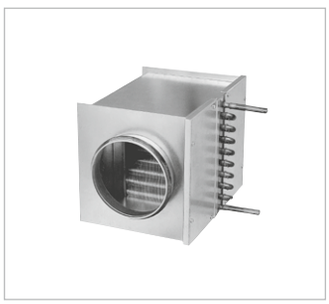
Air temperature control

WHST 300 T38 Ref. no. 08817

Replacement air filters

– 2 pcs. ISO Coarse 65% (G4)
ELF-KWL 360/470/4/4 No. 07371
– 1 pc. ISO ePM₁ 50% (F7)
ELF-KWL 360/470/7 No. 07375
– 1 pc. Activated carbon filter
ELF-KWL 360/470 AK No. 08129

A+ required for efficiency class A+



Circular duct connector

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

Reference

Enthalpy heat exchanger (accessories) for retrofitting:
KWL-ET 360/470 No. 07354

KWL 500 W

KWL 500 W R with accessories (pollen filter, KWL-EVH 500 W)

Efficiency class

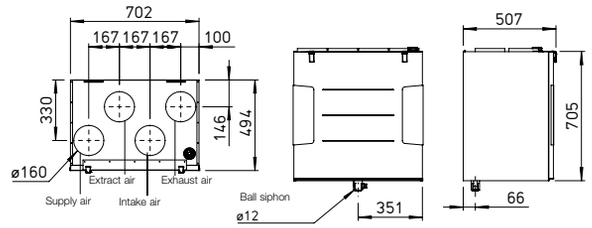
A

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

easy Controls 3.0

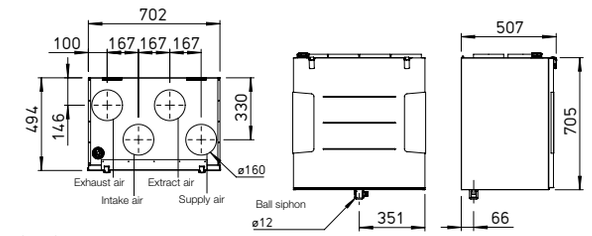
EC

Dimensions KWL 500 W R



Dimensions in mm

Dimensions KWL 500 W L



Dimensions in mm

Compact unit with heat recovery for the central supply and extract ventilation of residential buildings and apartments. Perfectly prepared for modern communication and operation with the new Helios easyControls 3.0 control system incl. integrated network connection.
Equipped with EC fans for low energy consumption and highly efficient plastic or enthalpy heat exchangers for additional moisture recovery.

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

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

■ **Fans**
Two low-noise high-performance centrifugal fans with energy-saving EC motors ensure the air supply and extraction.

■ **Ducts**
Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 160 mm using duct connectors (RVBD 160 K, accessories).

■ **Condensate connection**
Condensate drain at the bottom; ball siphon included in delivery. On-site connection to drain pipe.

■ **Air filter**
Clean outdoor air supply via ISO Coarse 75 % (G4) filter and 2nd filter stage via optional ISO ePM$_1$ 50 % (F7) or activated carbon filter. Extract air side equipped with an ISO Coarse 75 % (G4) filter in front of the heat exchanger.

■ **Summer operation**
Equipped with automatic bypass function and heat exchanger cover as standard.

■ **Heat exchanger anti-icing protection**
The standard frost monitoring system automatically controls the supply air flow volume and the optionally installed electrical preheater (KWL-EVH 500 W, accessories).

■ **Control system**
EasyControls 3.0 is the new, modern control system for all KWL compact units from Helios. The standard LAN interface allows the simple integration of the KWL unit in a network and the integration in Helios Cloud. The unit is optionally controlled via an external control element, on PC/laptop, tablet and Smartphone via the integrated web browser or on the move via the Cloud. See page 104 for functionality. Helios easyControls 3.0 is prepared for:
□ The control elements KWL-BE ECO and KWL-BE Touch (optional accessories)
□ The humidity sensor integrated as standard and other optionally available external air quality sensors (KWL-CO2, -FTF, -VOC, accessories) enable automatic, demand-controlled ventilation.
□ Connection to building control system via integrated Modbus interface or optional KNX module (KWL-KNX Connect, accessories).

■ **Electrical connection**
Fixed connection via a mains connection cable 3 x 1.5 mm², approx. 2 m with wire end ferrules.

■ **Accessories – Functional description (see right for details)**
KWL EC 500 W can be individually expanded with the following accessories:

□ **Control element ECO**
– Three ventilation profiles selectable via slide switch.
– Control voltage can be measured directly on the control element.
– Weekly timer (WSUP / WSUP-S, no. 09990 / 09577, accessories) can also be added to implement a further operating level, e.g. night mode.
– LED for visual indication of operating statuses, e.g. filter replacement and faults.

□ **Control element Touch**
Touch control element with graphic display and user-friendly menu navigation:
– Commissioning assistant.
– Selection of four ventilation profiles.
– Adjustment of an individual weekly programme.
– Adjustment of parameters for room sensors.
– Indication of e.g. filter replacement, operating statuses and error messages.
– Different access authorisations and child lock.
– Other functions (see operating instructions).

□ **KNX/EIB module**
For connecting the ventilation unit to the building control system via the KNX Connect module.

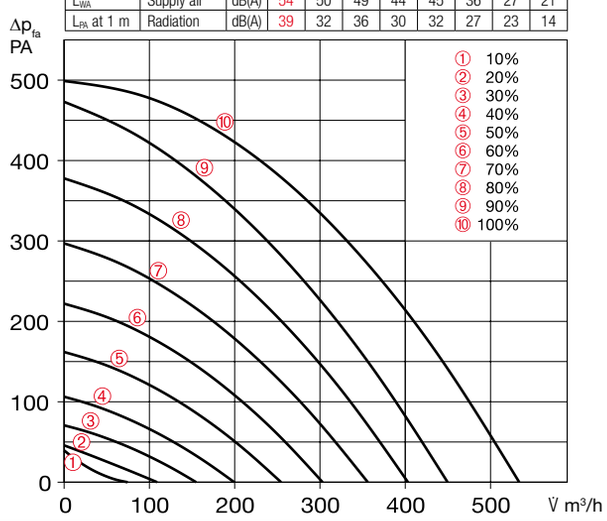
□ **Room sensors**
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

□ **Post-heating**
Helios easyControls 3.0 can be used with an electric post-heating element (EHR with KWL-LTK, accessories). The autonomous operation of the warm water heating element can be controlled via an air temperature control (WHS HE, accessories) independently from Helios easyControls 3.0.

■ References	Page
Helios easyControls 3.0 The innovative KWL control concept	104 f.
Moisture recovery through enthalpy heat exchangers	103

Performance curves KWL 500 W

Frequency*		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	53	49	50	41	43	34	26	21
L_{WA}	Supply air	dB(A)	54	50	49	44	45	36	27	21
L_{PA} at 1 m	Radiation	dB(A)	39	32	36	30	32	27	23	14



*Sound information relate to Vref. according to ERP data sheet.

Slide switch control element

KWL BE ECO Ref. no. 20246

Three-step slide switch including operation indicator, for flush-mounted installation. Function see left.
Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

KWL APG Ref. no. 04270

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

Touch control element

KWL BE Touch bl (black) Ref. no. 20244
KWL BE Touch wh (white) Ref. no. 20245

With graphic display, for flush-mounted installation. Function see left. Connection of up to 6 pcs. possible (additional power supply unit may be required). Can be integrated in common switch ranges with the dimensions mm (W x H x D) 55 x 55 x 35, Dim. with frame mm (W x H x D) 88 x 88 x 35

Casing for surface installation

KWL APG Touch bl No. 40178
KWL APG Touch wh No. 40177

Dim mm (W x H x D) 85 x 85 x 25

Control line cable

KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180

Control line cables in 5 or 10 meters, suitable for KWL-BE ECO / Touch as well as room sensor.

KNX/EIB module

KWL-KNX Connect No. 20253

For integrating the ventilation unit in a KNX system. For switch cabinet installation (1 space unit required).

Room sensors

KWL-CO2 eC Ref. no. 20248
KWL-FTF eC Ref. no. 20249
KWL-VOC eC Ref. no. 20247

For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. Please note the maximum number of sensors, additional power supply unit may be required.
Dim. mm (W x H x D) 98 x 98 x 33

Electric preheater

KWL-EVH 500 W No. 04262

Electrical preheater for simple, plug-in unit installation. For preheating the intake air at very low outdoor temperatures (heat exchanger anti-icing protection). Mandatory for passive houses. Output: 1000 W.

Extension module

KWL-EM eC Ref. no. 40155

For controlling external post-heating elements.
Dim. mm (W x H x D) 210 x 210 x 100

Motion detector

BWM Ref. no. 08323

Motion detector for detecting the presence of persons in the room. Surface-mounted wall installation (cable entry at top or bottom) or installation in flush-mounted box Ø 55 mm (cable entry at back).

Electric post-heating element

For additional supply air heating.

EHR-R 2.4/160 Ref. no. 09435

Rectangular duct temp. sensor

KWL-LTK eC (1 pc. req.) No. 40156

Warm water post-heating element

For additional supply air heating.

WHR 160 Ref. no. 09481

Rectangular duct temp. sensor

KWL-LTK eC (2 pc. req.) No. 40156

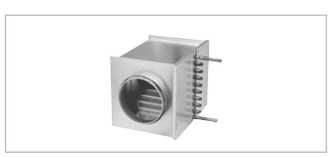
Hydraulic unit

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

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 08817



Technical data	With plastic heat exchanger Type	Ref. no.	With enthalpy heat exchanger Type	Ref. no.
Right-hand version	KWL 500 W R	40053	KWL 500 W ET R	40055
Left-hand version	KWL 500 W L	40054	KWL 500 W ET L	40056

Flow rate at level [1) 2)]	❿	❽	❻	❹	❷	❿	❽	❻	❹	❷
Supply air/extract air V̇ m³/h	534	403	303	200	109	506	387	295	190	103
Power consumption fans 2xW [1)]	150	82	41	16	7	152	83	41	17	7
Voltage/Frequency	1~, 230 V, 50 Hz									
Rated current A – ventilation	2.5									
– preheating	4.4									
– max. total	2.5 (6.9 incl. preheater, accessories)									
Electric preheater kW	1.0 kW (accessories)									
Summer bypass	automatic (adjustable), with heat exchanger cover									
Wiring diagram no.	1433									
Temperature operating range	–20 °C to +40 °C									
Installation temperature	+5 °C to +40 °C (90% rel. humidity, non-condensing)									
Weight approx. kg	58					66				

1) At 0 Pa, performance levels adjustable. 2) Volume reduction by approx. 10% when using pollen filter.
3) AK = Activated carbon filter 4) For a duct diameter of 160 mm. 5) For a duct diameter of 180 mm.

Replacement air filters

– 2 pcs. ISO Coarse 75% (G4)
ELF-KWL 500/4/4 No. 00039
– 1 pc. ISO ePM$_1$ 50% (F7)
ELF-KWL 500/7 No. 00042
– 1 pc. ISO ePM$_{2.5}$ 60% (AK)[3)]
ELF-KWL 500 AK No. 04199

Reference

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

Circular duct connector

Connector with seal for unit connection to circular duct system.
RVBD 160 K[4)] No. 03415
RVBD 180/160[5)] No. 09589

Other accessories

KWL 220 D

Efficiency class

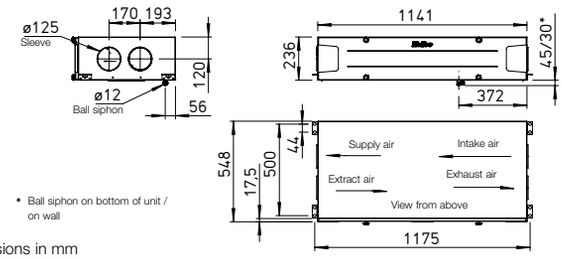
A+ KWL 220 D R/L with additional room sensor

A KWL 220 D R/L

easy Controls 3.0

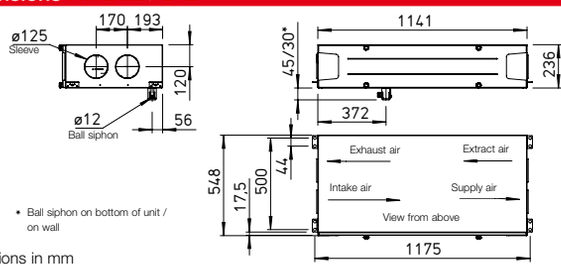
EC

Dimensions KWL 220 D R



Dimensions in mm

Dimensions KWL 220 D L



Dimensions in mm

CERTIFIED COMPONENT Passive House Institute

Ultra-flat ceiling units with heat recovery for the central supply and extract ventilation of apartments and small single family houses. Certified according to the passive house standard. Equipped with Helios easyControls 3.0, the innovative control concept for simple network connection and web browser control. Units come with highly efficient plastic heat exchangers and energy-efficient EC motors.

■ **Casing**
Made of galvanised steel sheet, inner and front panels powder-coated in white, double-walled, with 20 mm heat and sound insulation on all sides. Installation-friendly and maintenance-friendly. All elements are easily accessible through removeable side panels.

■ **Heat exchanger**
Large cross counterflow heat exchanger made of plastic, heat recovery efficiency of up to 90 %.

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

■ **Ducts**
Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 125 mm using duct connectors (RVBD 125 K, accessories).

■ **Condensate connection**
Condensate drain at the bottom; ball siphon included in delivery. On-site connection to drain pipe.

■ **Air filter**
Clean outdoor air supply via ISO Coarse 75 % (G4) filter and 2nd filter stage via optional ISO ePM$_1$ 50 % (F7) or activated carbon filter. Extract air side equipped with an ISO Coarse 75 % (G4) filter in front of the heat exchanger.

■ **Summer operation**
Equipped with automatic bypass function and heat exchanger cover as standard.

■ **Heat exchanger anti-icing protection**
The standard frost monitoring system automatically controls the supply air flow volume and the optionally installed electrical preheater (KWL-EVH 220 D, accessories).

■ **Control system**
EasyControls 3.0 is the new, modern control system for all KWL compact units from Helios. The standard LAN interface allows the simple integration of the KWL unit in a network and the integration in Helios Cloud. The unit is optionally controlled via an external control element, on PC/laptop, tablet and Smartphone via the integrated web browser or on the move via the Cloud. See page 104 f. Helios easyControls 3.0 is prepared for:
▢ The control elements KWL-BE ECO and KWL-BE Touch (optional accessories)
▢ The humidity sensor integrated as standard and other optionally available external air quality sensors (KWL-CO2, -FTF, -VOC, accessories) enable automatic, demand-controlled ventilation.
▢ Connection to building control system via integrated Modbus interface or optional KNX module (KWL-KNX Connect, accessories).

■ **Electrical connection**
Fixed connection via a mains connection cable 3 x 1.5 mm², approx. 2 m with wire end ferrules.

■ **Accessories – Functional description (see right for details)**
KWL EC 220 D can be individually expanded with the following accessories:

▢ **Control element ECO**
– Three ventilation profiles selectable via slide switch.
– Control voltage can be measured directly on the control element.
– Weekly timer (WSUP / WSUP-S, no. 09990 / 09577, accessories) can also be added to implement a further operating level, e.g. night mode.
– LED for visual indication of operating statuses, e.g. filter replacement and faults.

▢ **Control element Touch**
Touch control element with graphic display and user-friendly menu navigation:
– Commissioning assistant.
– Selection of four ventilation profiles.
– Adjustment of an individual weekly programme.
– Adjustment of parameters for room sensors.
– Indication of e.g. filter replacement, operating statuses and error messages.
– Different access authorisations and child lock.
– Other functions (see operating instructions).

▢ **KNX/EIB module**
For connecting the ventilation unit to the building control system via the KNX Connect module.

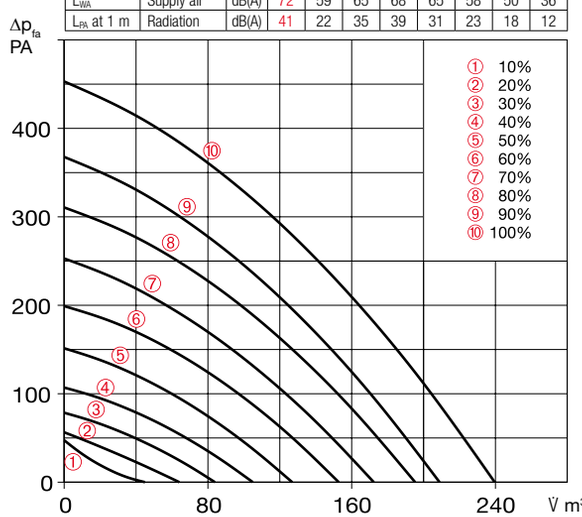
▢ **Room sensors**
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

▢ **Post-heating**
Helios easyControls 3.0 can be used with an electric post-heating element (EHR with KWL-LTK, accessories). The autonomous operation of the warm water heating element can be controlled via an air temperature control (WHS HE, accessories) independently from Helios easyControls 3.0.

■ References	Page
Helios easyControls 3.0 The innovative KWL control concept	104 f.

Performance curves KWL 220 D

Frequency*		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	57	48	53	53	45	39	27	20
L_{WA}	Supply air	dB(A)	72	59	65	68	65	58	50	36
L_{PA} at 1 m	Radiation	dB(A)	41	22	35	39	31	23	18	12



*Sound information relate to Vref. according to ERP data sheet.

Slide switch control element

KWL BE ECO Ref. no. 20246

Three-step slide switch including operation indicator, for flush-mounted installation. Function see left.
Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

KWL APG Ref. no. 04270

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

Touch control element

KWL BE Touch bl (black) Ref. no. 20244
KWL BE Touch wh (white) Ref. no. 20245

With graphic display, for flush-mounted installation. Function see left. Connection of up to 6 pcs. possible (additional power supply unit may be required). Can be integrated in common switch ranges with the dimensions mm (W x H x D) 55 x 55 x 35, Dim. with frame mm (W x H x D) 88 x 88 x 35

Casing for surface installation

KWL APG Touch bl No. 40178
KWL APG Touch wh No. 40177

Dim mm (W x H x D) 85 x 85 x 25

Control line cable

KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180

Control line cables in 5 or 10 meters, suitable for KWL-BE ECO / Touch as well as room sensor.

KNX/EIB module

KWL-KNX Connect No. 20253

For integrating the ventilation unit in a KNX system. For switch cabinet installation (1 space unit required).

Room sensors

KWL-CO2 eC Ref. no. 20248
KWL-FTF eC Ref. no. 20249
KWL-VOC eC Ref. no. 20247

For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. Please note the maximum number of sensors, additional power supply unit may be required.
Dim. mm (W x H x D) 98 x 98 x 33

Electric preheater

KWL-EVH 220 D No. 09636

Electrical preheater for simple, plug-in unit installation. For preheating the intake air at very low outdoor temperatures (heat exchanger anti-icing protection). Mandatory for passive houses. Output: 1000 W.

Extension module

KWL-EM eC Ref. no. 40155

For controlling external post-heating elements.
Dim. mm (W x H x D) 210 x 210 x 100

Motion detector

BWM Ref. no. 08323

Motion detector for detecting the presence of persons in the room. Surface-mounted wall installation (cable entry at top or bottom) or installation in flush-mounted box Ø 55 mm (cable entry at back).

Electric post-heating element

For additional supply air heating.

EHR-R 1.2/125 Ref. no. 09433

Rectangular duct temp. sensor

KWL-LTK eC (1 pc. req.) No. 40156

Warm water post-heating element

For additional supply air heating.

WHR 125 Ref. no. 09480

Rectangular duct temp. sensor

KWL-LTK eC (2 pc. req.) No. 40156

Hydraulic unit

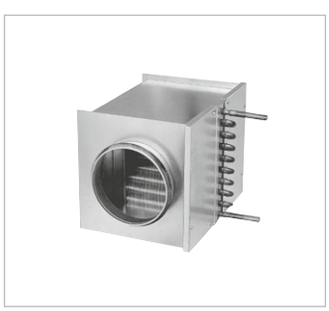
WHSH HE 24 V (0-10 V) No. 08318

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 08817

A+ required for efficiency class A+



Technical data	KWL 220 D R/L	For ceiling installation			
Right-hand version	**KWL 220 D R**	Ref. no. 40057			
Left-hand version	**KWL 220 D L**	Ref. no. 40058			
Flow rate at level [1) 2)]	❿	❽	❻	❹	❷
Supply air/extract air V̇ m³/h	240	195	153	105	64
Power consumption fans 2xW [1)]	47	30	18	10	6
Voltage/Frequency	1~, 230 V, 50 Hz				
Rated current A – ventilation	0.8				
– preheating	4.4				
– max. total	0.8 (5.2 incl. preheater, accessories)				
Electric preheater kW	1.0 kW (accessories)				
Summer bypass	automatic (adjustable), with heat exchanger cover				
Wiring diagram no.	1433				
Temperature operating range	–20 °C to +40 °C				
Installation temperature	+5 °C to +40 °C (90% rel. humidity, non-condensing)				
Weight approx. kg	47				

[1)] At 0 Pa, performance levels adjustable. [2)] Volume reduction by approx. 10% when using pollen filter.
[3)] AK = Activated carbon filter

Replacement air filters

– 2 pcs. ISO Coarse 75% (G4)
ELF-KWL 220 D/4/4 No. 09638
– 1 pc. ISO ePM$_1$ 50% (F7)
ELF-KWL 220 D/7 No. 09639
– 1 pc. ISO ePM$_{2.5}$ 60% (AK)[3)]
ELF-KWL 220 AK No. 03050

Circular duct connector

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

Other accessories

KWL 340 D

Efficiency class

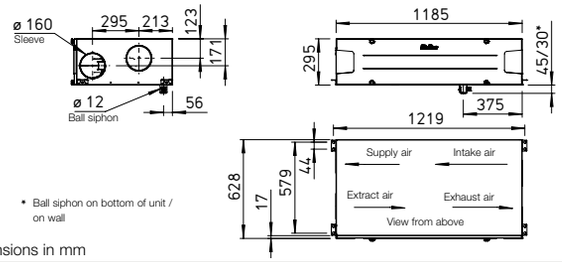
A+ KWL 340 D R/L with additional room sensor

A KWL 340 D R/L

easy Controls 3.0

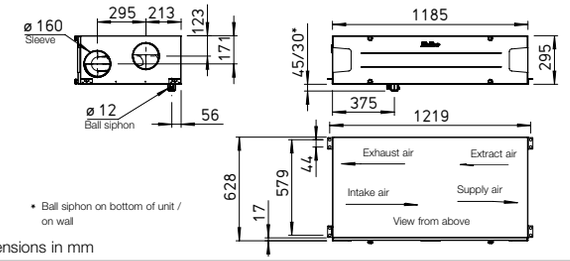
EC

Dimensions KWL 340 D R



Dimensions in mm

Dimensions KWL 340 D L



Dimensions in mm

Ultra-flat ceiling units with heat recovery for the central supply and extract ventilation of apartments and small single family houses. Equipped with Helios easyControls 3.0, the innovative control concept for simple network connection and web browser control. Units come with highly efficient plastic heat exchangers and energy-efficient EC motors.

Casing
Made of galvanised steel sheet, inner and front panels powder-coated in white, double-walled, with 20 mm heat and sound insulation on all sides. Installation-friendly and maintenance-friendly. All elements are easily accessible through removeable side panels.

Heat exchanger
Large cross counterflow heat exchanger made of plastic, heat recovery efficiency of up to 90 %.

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

Ducts
Installation-friendly connection of intake, exhaust, extract and supply air through ducts with NW 160 mm using duct connectors (RVBD 160 K, accessories).

Condensate connection
Condensate drain at the bottom; ball siphon included in delivery. On-site connection to drain pipe.

Air filter
Clean outdoor air supply via ISO Coarse 75 % (G4) filter and 2nd filter stage via optional ISO ePM$_1$ 50 % (F7) or activated carbon filter. Extract air side equipped with an ISO Coarse 75 % (G4) filter in front of the heat exchanger.

Summer operation
Equipped with automatic bypass function and heat exchanger cover as standard.

Heat exchanger anti-icing protection
The standard frost monitoring system automatically controls the supply air flow volume and the optionally installed electrical preheater (KWL-EVH 340 D, accessories).

Control system
EasyControls 3.0 is the new, modern control system for all KWL compact units from Helios. The standard LAN interface allows the simple integration of the KWL unit in a network and the integration in Helios Cloud. The unit is optionally controlled via an external control element, on PC/laptop, tablet and Smartphone via the integrated web browser or on the move via the Cloud. See page 104 f. Helios easyControls 3.0 is prepared for:
- ☐ The control elements KWL-BE ECO and KWL-BE Touch (optional accessories)
- ☐ The humidity sensor integrated as standard and other optionally available external air quality sensors (KWL-CO2, -FTF, -VOC, accessories) enable automatic, demand-controlled ventilation.
- ☐ Connection to building control system via integrated Modbus interface or optional KNX module (KWL-KNX Connect, accessories).

Electrical connection
Fixed connection via a mains connection cable 3 x 1.5 mm², approx. 2 m with wire end ferrules.

Accessories – Functional description (see right for details)
KWL EC 340 D can be individually expanded with the following accessories:

☐ **Control element ECO**
- Three ventilation profiles selectable via slide switch.
- Control voltage can be measured directly on the control element.
- Weekly timer (WSUP / WSUP-S, no. 09990 / 09577, accessories) can also be added to implement a further operating level, e.g. night mode.
- LED for visual indication of operating statuses, e.g. filter replacement and faults.

☐ **Control element Touch**
Touch control element with graphic display and user-friendly menu navigation:
- Commissioning assistant.
- Selection of four ventilation profiles.
- Adjustment of an individual weekly programme.
- Adjustment of parameters for room sensors.
- Indication of e.g. filter replacement, operating statuses and error messages.
- Different access authorisations and child lock.
- Other functions (see operating instructions).

☐ **KNX/EIB module**
For connecting the ventilation unit to the building control system via the KNX Connect module.

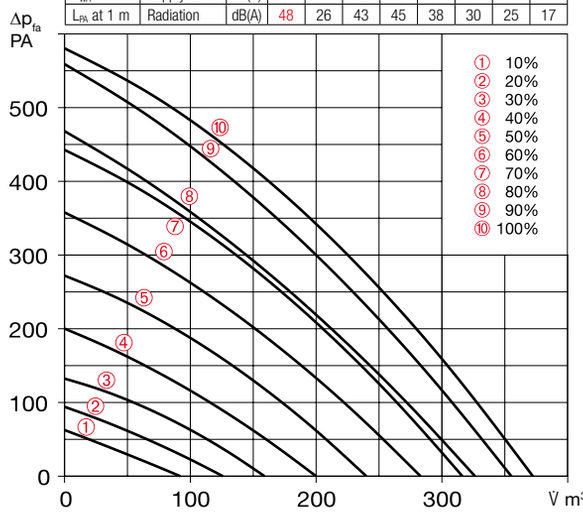
☐ **Room sensors**
Room sensors, which measure the mixed gas, CO_2 concentration or relative room air humidity, are available for automatic operation and optimal air exchange.

☐ **Post-heating**
Helios easyControls 3.0 can be used with an electric post-heating element (EHR with KWL-LTK, accessories). The autonomous operation of the warm water heating element can be controlled via an air temperature control (WHS HE, accessories) independently from Helios easyControls 3.0.

References	Page
Helios easyControls 3.0 The innovative KWL control concept	104 f.

Performance curves KWL 340 D

Frequency*		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	58	50	55	52	47	43	29	22
L_{WA}	Supply air	dB(A)	75	64	72	70	67	61	50	44
L_{PA} at 1 m	Radiation	dB(A)	48	26	43	45	38	30	25	17



*Sound information relate to Vref. according to ERP data sheet.

Slide switch control element

KWL BE ECO Ref. no. 20246

Three-step slide switch including operation indicator, for flush-mounted installation. Function see left.
Dim. mm (W x H x D) 80 x 80 x 37

Casing for surface installation

KWL APG Ref. no. 04270

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

Touch control element

KWL BE Touch bl (black) Ref. no. 20244
KWL BE Touch wh (white) Ref. no. 20245

With graphic display, for flush-mounted installation. Function see left. Connection of up to 6 pcs. possible (additional power supply unit may be required). Can be integrated in common switch ranges with the dimensions mm (W x H x D) 55 x 55 x 35, Dim. with frame mm (W x H x D) 88 x 88 x 35

Casing for surface installation

KWL APG Touch bl No. 40178
KWL APG Touch wh No. 40177

Dim mm (W x H x D) 85 x 85 x 25

Control line cable

KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180

Control line cables in 5 or 10 meters, suitable for KWL-BE ECO / Touch as well as room sensor.

Technical data	KWL 340 D R/L	For ceiling installation			
Right-hand version	**KWL 340 D R**	Ref. no. 40059			
Left-hand version	**KWL 340 D L**	Ref. no. 40060			
Flow rate at level [1) 2)]	❿	❽	❻	❹	❷
Supply air/extract air V̇ m³/h	372	326	283	200	126
Power consumption fans 2xW [1)]	79	56	40	20	10
Voltage/Frequency	1~, 230 V, 50 Hz				
Rated current A – ventilation	1.2				
– preheating	5.6				
– max. total	1.2 (6.8 incl. preheater, accessories)				
Electric preheater kW	1.3 kW (accessories)				
Summer bypass	automatic (adjustable), with heat exchanger cover				
Wiring diagram no.	1433				
Temperature operating range	–20 °C to +40 °C				
Installation temperature	+5 °C to +40 °C (90% rel. humidity, non-condensing)				
Weight approx. kg	77				

1) At 0 Pa, performance levels adjustable. 2) Volume reduction by approx. 10% when using pollen filter.
3) AK = Activated carbon filter

KNX/EIB module

KWL-KNX Connect No. 20253

For integrating the ventilation unit in a KNX system. For switch cabinet installation (1 space unit required).

Room sensors

KWL-CO2 eC Ref. no. 20248
KWL-FTF eC Ref. no. 20249
KWL-VOC eC Ref. no. 20247

For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. Please note the maximum number of sensors, additional power supply unit may be required.
Dim. mm (W x H x D) 98 x 98 x 33

Electric preheater

KWL-EVH 340 D No. 04241

Electrical preheater for simple, plug-in unit installation. For preheating the intake air at very low outdoor temperatures (heat exchanger anti-icing protection). Mandatory for passive houses. Output: 1280 W.

Extension module

KWL-EM eC Ref. no. 40155

For controlling external post-heating elements.
Dim. mm (W x H x D) 210 x 210 x 100

Motion detector

BWM Ref. no. 08323

Motion detector for detecting the presence of persons in the room. Surface-mounted wall installation (cable entry at top or bottom) or installation in flush-mounted box Ø 55 mm (cable entry at back).

Electric post-heating element

For additional supply air heating.

EHR-R 2.4/160 Ref. no. 09435

Rectangular duct temp. sensor

KWL-LTK eC (1 pc. req.) No. 40156

Warm water post-heating element

For additional supply air heating.

WHR 160 Ref. no. 09481

Rectangular duct temp. sensor

KWL-LTK eC (2 pc. req.) No. 40156

Hydraulic unit

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

Alternative:

Air temperature control

WHST 300 T38 Ref. no. 08817

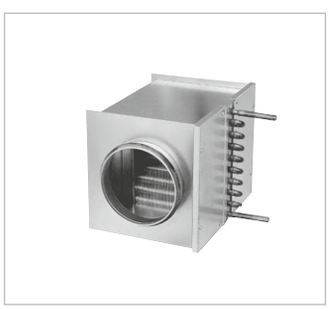
Replacement air filters

– 2 pcs. ISO Coarse 75% (G4)
ELF-KWL 340 D/4/4 No. 04239
– 1 pc. ISO ePM$_1$ 50% (F7)
ELF-KWL 340 D/7 No. 04240
– 1 pc. ISO ePM$_{2.5}$ 60% (AK)[3)]
ELF-KWL 340 AK No. 03051

Circular duct connector

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

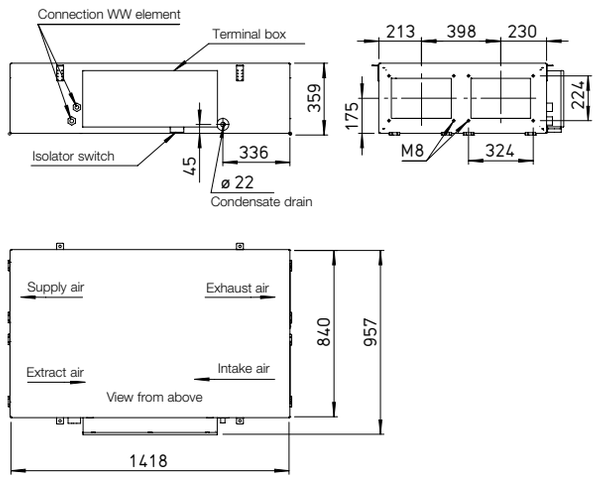
A+ required for efficiency class A+



Other accessories	Page
KWL peripherals	150 ff.
– Ground heat exchanger	174 ff.
– Insulated duct system	164 f.
– Air distribution systems	166 ff.
– Control lines, etc.	170 f.
Heating element, control	486 ff.
ventilation grilles, ducts, roof outlets	561 ff.
extract air elements, design ventilation valves	574 ff.

KWL EC 700 D

Dimensions KWL EC 700 D



Dimensions in mm

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

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

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

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

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

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

Air filter
Standard equipment:
Clean intake air supply via ISO ePM_1 55% filter (F7).
The heat exchanger requires a ISO ePM_{10} 50% filter (M5) on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

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

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

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

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

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

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

Replacement air filter
– 1 pc. ISO ePM_{10} 50 % (M5)
ELF-KWL 700 D/5 VDI No.04189
– 1 pc. ISO ePM_1 55 % (F7)
ELF-KWL 700 D/7 VDI No.04191

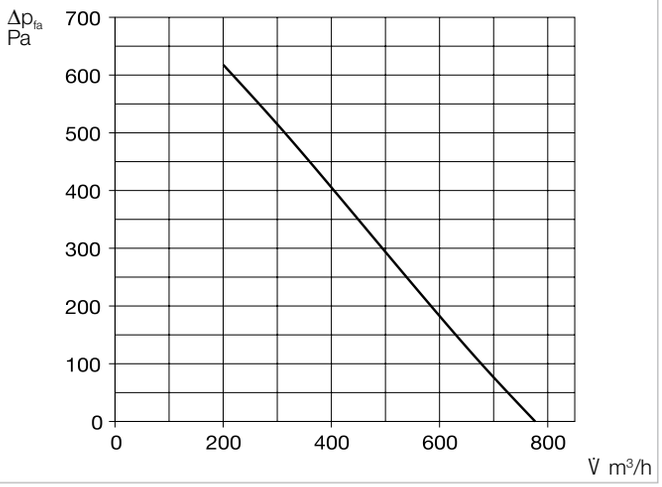
Other accessories	Page
KWL peripherals	150 ff.
– Air distribution systems	166 ff.
– Further overview, control lines	170 f.

Accessory details

Ventilation grilles, ducts, fittings	
roof outlets	561 ff.
extract air elements	574 ff.

Performance curve KWL EC 700 D

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	53	46	49	47	41	40	34	23
L_{WA}	Supply air	dB(A)	68	54	65	63	59	53	48	39
L_{PA} at 1 m	Radiation	dB(A)	47	33	41	43	41	35	29	14



Included in delivery:

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

Control element with connection cable (10 m) included in the scope of delivery.
Dim. mm (WxHxD) 115 x 80 x 25

Accessories for Type Pro WW

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

Accessories for all types

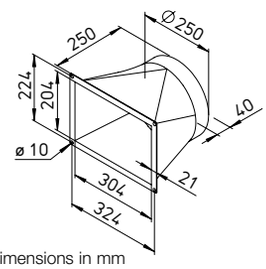
Room sensor – Air quality
AIR1/KWL-VOC 0-10V No. 20250
AIR1/KWL-CO2 0-10V No. 20251
AIR1/KWL-FTF 0-10V No. 20252
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. A maximum of one sensor can be connected.
Dim. mm (W x H x D) 85 x 85 x 27

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

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

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

Duct shutter, motorised
RVM 250 No. 02576
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position.



Dimensions in mm

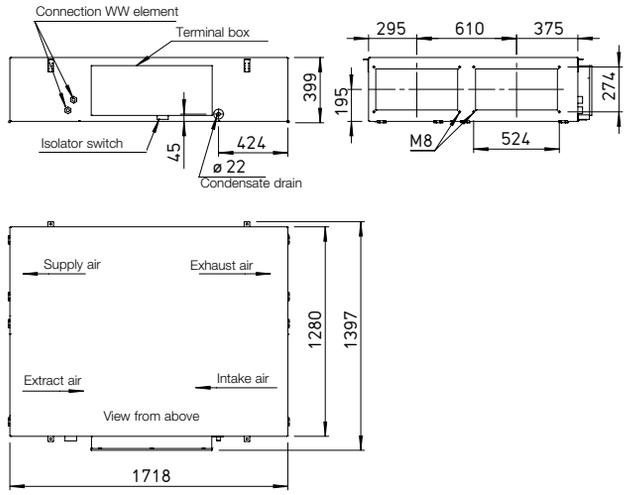
Angle flange ring
FR 250 No. 01203
Made of galvanised steel sheet, for duct connection.

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

[1] Values based on operating ranges defined according to PHI (Passive House Institute). [2] At 100 Pa.

KWL EC 1400 D

Dimensions KWL EC 1400 D



Dimensions in mm

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

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

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

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

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

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

Air filter
Standard equipment:
Clean intake air supply via ISO ePM_1 55% filter (F7).
The heat exchanger requires a ISO ePM_{10} 50% filter (M5) on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

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

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

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

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

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

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

Replacement air filter
– 1 pc. ISO ePM_{10} 50 % (M5)
ELF-KWL 1400 D/5 VDI No.04193
– 1 pc. ISO ePM_1 55 % (F7)
ELF-KWL 1400 D/7 VDI No.04195

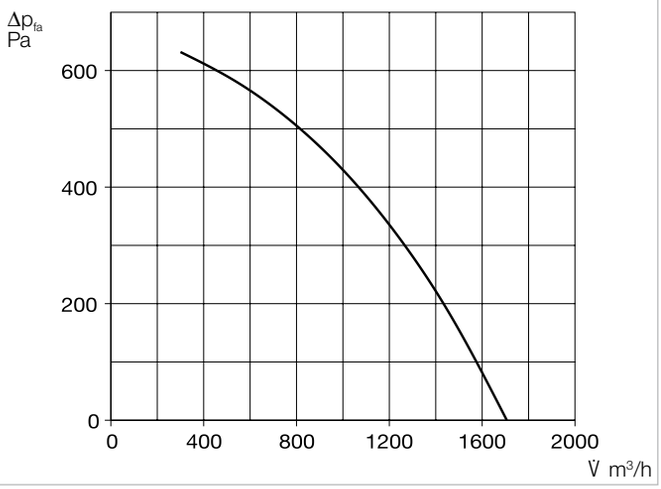
Other accessories	Page
KWL peripherals	150 ff.
– Air distribution systems	166 ff.
– Further overview, control lines	170 f.

Accessory details

Ventilation grilles, ducts, fittings	
roof outlets	561 ff.
extract air elements	574 ff.

Performance curve KWL EC 1400 D

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	60	51	53	53	50	51	49	45
L_{WA}	Supply air	dB(A)	80	63	68	71	71	75	71	70
L_{PA} at 1 m	Radiation	dB(A)	53	42	48	48	47	43	33	21



Included in delivery:

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

Control element with connection cable (10 m) included in the scope of delivery.
Dim. mm (WxHxD) 115 x 80 x 25

Accessories for Type Pro WW

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

Accessories for all types

Room sensor – Air quality
AIR1/KWL-VOC 0-10V No. 20250
AIR1/KWL-CO2 0-10V No. 20251
AIR1/KWL-FTF 0-10V No. 20252
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. A maximum of one sensor can be connected.
Dim. mm (W x H x D) 85 x 85 x 27

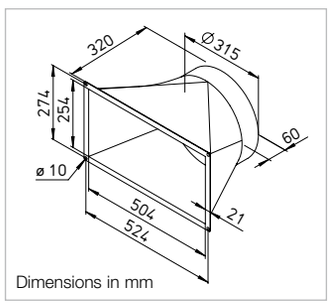
Room sensor – Temperature
TFR-ALB/KWL No. 07277
For measuring the room temperature and controlling the ventilation unit according to the set value. Incl. 20 m control line. Maximum total of one sensor can be connected.
Dim. mm (W x H x D) 80 x 80 x 25

Transition piece – Symmetrical
KWL-ÜS 1400 D No. 04207
For acoustic decoupling, incl. 2 pcs. hose clamps.

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

Duct shutter, motorised
RVM 315 No. 02578
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position.

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



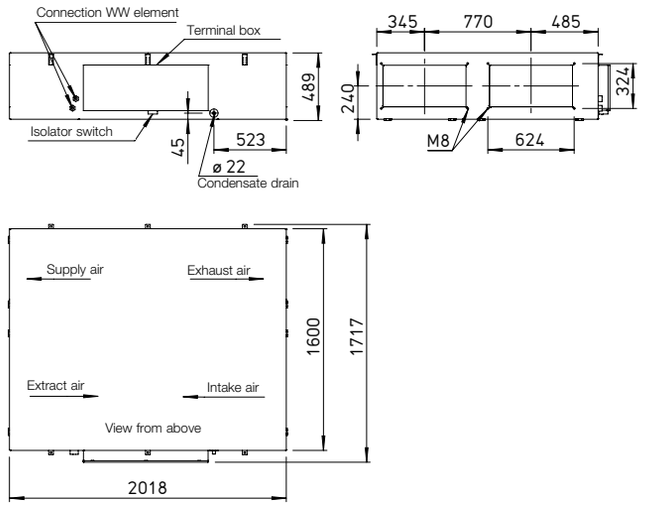
Dimensions in mm

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

[1] Values based on operating ranges defined according to PHI (Passive House Institute). [2] At 215 Pa.

KWL EC 2000 D

Dimensions KWL EC 2000 D



Dimensions in mm

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

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

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

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

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

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

Air filter
Standard equipment:
Clean intake air supply via ISO ePM_1 55% filter (F7).
The heat exchanger requires a ISO ePM_{10} 50% filter (M5) on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

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

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

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

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

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

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

Replacement air filter
– 1 pc. ISO ePM_{10} 50 % (M5)
ELF-KWL 2000 D/5 VDI No. 04197

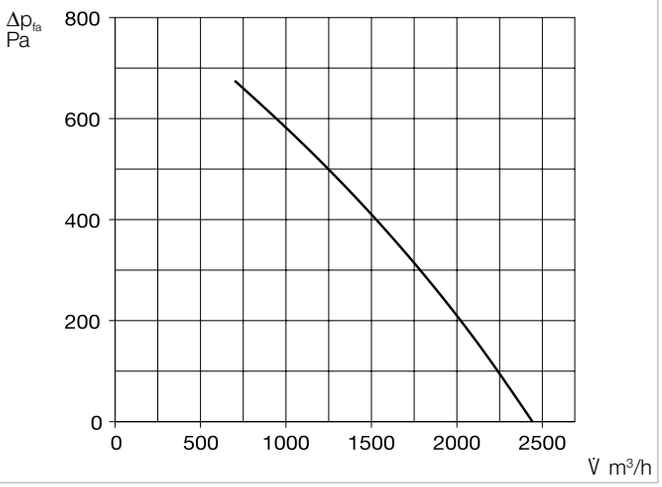
– 1 pc. ISO ePM_1 55 % (F7)
ELF-KWL 2000 D/7 VDI No. 04204

Other accessories

Accessory details

Performance curve KWL EC 2000 D

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	59	56	52	48	49	47	45	40
L_{WA}	Supply air	dB(A)	77	66	68	67	72	69	69	64
L_{PA} at 1 m	Radiation	dB(A)	50	46	42	43	44	38	31	21



Included in delivery:

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

Control element with connection cable (10 m) included in the scope of delivery.
Dim. mm (WxHxD) 115 x 80 x 25

Accessories for Type Pro WW

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

Accessories for all types

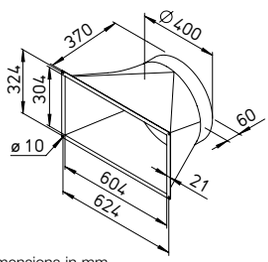
Room sensor – Air quality
AIR1/KWL-VOC 0-10V No. 20250
AIR1/KWL-CO2 0-10V No. 20251
AIR1/KWL-FTF 0-10V No. 20252
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. A maximum of one sensor can be connected.
Dim. mm (W x H x D) 85 x 85 x 27

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

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

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

Duct shutter, motorised
RVM 400 No. 02580
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position.



Dimensions in mm

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

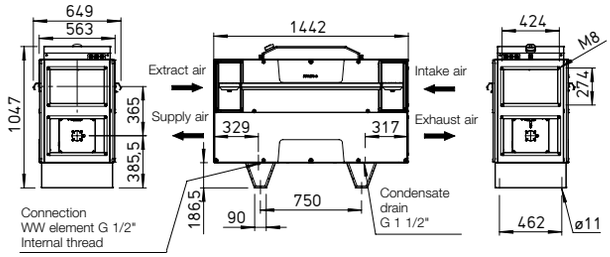
Technical data	**KWL EC 2000 D**			**KWL EC 2000 D,** with warm water post-heater		
For ceiling installation	**Type** **KWL EC 2000 D Pro**		Ref. no. 04175	**Type** **KWL EC 2000 D Pro WW**		Ref. no. 04176
Flow rate at level[1]	❸	❷	❶	❸	❷	❶
Supply air/extract air V̇ m³/h approx.	1800	1150	720	1800	1150	720
Noise dB(A)[2]						
Supply air L_{WA} (sound power)	77	67	57	77	67	57
Extract air L_{WA} (sound power)	59	50	40	59	50	40
Radiation L_{PA} at 1 m	50	n/a	n/a	50	n/a	n/a
Power consumption fans 2 x W	395	245	150	395	245	150
Voltage/Frequency	3N~, 400 V, 50 Hz			3N~, 400 V, 50 Hz		
Rated current A – Ventilation	6.0 / – / –			6,0 / – / –		
– Preheating	10.0 / 11.0 / 11.0			10.0 / 11.0 / 11.0		
– max. total	16.0 / 11.0 / 11.0			16.0 / 11.0 / 11.0		
Heat output/Postheater kW	–			8.1 (at 60/40 °C) / 7,3 (at 50/40 °C) / 4.6 (at 40/30 °C)		
Electric preheater kW	6.6			6.6		
Summer bypass	automatic			automatic		
Wiring diagram no.	1370			1370		
Temperature operating range	–20 °C to +40 °C			–20 °C to +40 °C		
Connection PWW heating element	–			IG 1/2"		
Weight approx. kg	265			270		

[1] Values based on operating ranges defined according to PHI (Passive House Institute). [2] At 250 Pa.

KWL EC 800 S

KWL EC 800 S with base cover (accessories)

Dimensions KWL EC 800 S



Dimensions in mm

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

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

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

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

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

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

Air filter
Standard equipment:
Clean intake air supply via ISO ePM_1 55% filter (F7).
The heat exchanger requires a ISO ePM_{10} 50% filter (M5) on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

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

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

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

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

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

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

Replacement air filter
– 1 pc. ISO ePM_{10} 50 % filter
ELF-KWL 800 S/5 VDI No. 08256

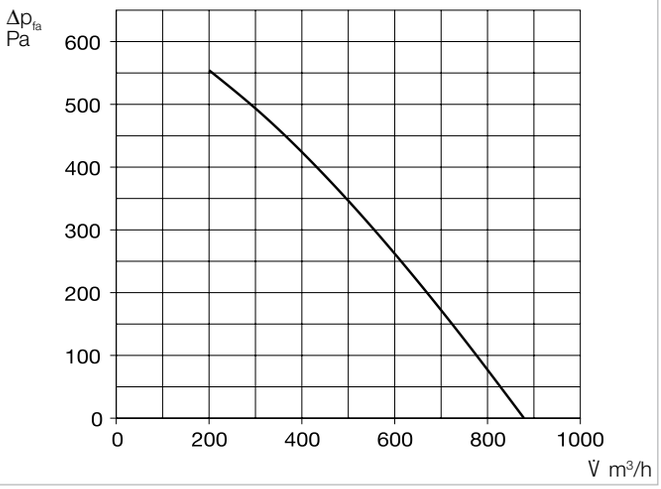
– 1 pc. ISO ePM_1 55 % filter
ELF-KWL 800 S/7 VDI No. 08257

Other accessories

Accessory details

Performance curve KWL EC 800 S

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



Included in delivery:

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

Control element with connection cable (10 m) included in the scope of delivery.
Dim. mm (WxHxD) 115 x 80 x 25

Accessories for Type Pro WW

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

Accessories for all types

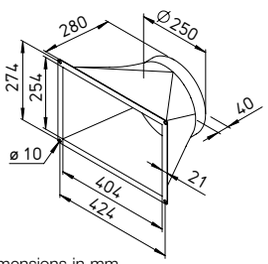
Room sensor – Air quality
AIR1/KWL-VOC 0-10V No. 20250
AIR1/KWL-CO2 0-10V No. 20251
AIR1/KWL-FTF 0-10V No. 20252
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. A maximum of one sensor can be connected.
Dim. mm (W x H x D) 85 x 85 x 27

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

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

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

Duct shutter, motorised
RVM 250 No. 02576
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position.



Dimensions in mm

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

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

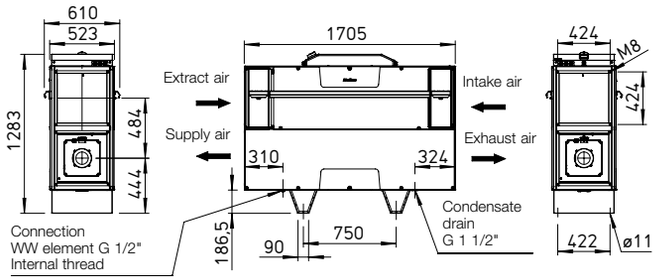
Technical data	**KWL EC 800 S**			**KWL EC 800 S,** with warm water post-heater		
For floor-standing installation	**Type** **KWL EC 800 S Pro**		Ref. no. 08327	**Type** **KWL EC 800 S Pro WW**		Ref. no. 08328
Flow rate at level[1]	❸	❷	❶	❸	❷	❶
Supply air/extract air V̇ m³/h approx.	600	490	325	600	490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

[1] Values based on operating ranges defined according to PHI (Passive House Institute).

KWL EC 1200 S

KWL EC 1200 S with base cover (accessories)

Dimensions KWL EC 1200 S



Dimensions in mm

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

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

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

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

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

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

Air filter
Standard equipment:
Clean intake air supply via ISO ePM_1 55% filter (F7).
The heat exchanger requires a ISO ePM_{10} 50% filter (M5) on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

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

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

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

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

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

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

Replacement air filter
– 1 pc. ISO ePM_{10} 50 % (M5)
ELF-KWL 1200 S/5 VDI No.08347
– 1 pc. ISO ePM_1 55 % (F7)
ELF-KWL 1200 S/7 VDI No.08348

Other accessories

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KWL peripherals	150 ff.
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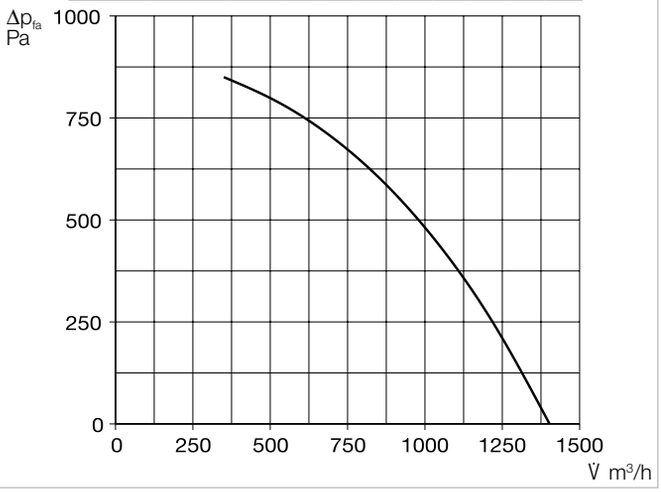
Accessory details

Ventilation grilles, ducts, fittings	
roof outlets	561 ff.
extract air elements	574 ff.

Performance curve KWL EC 1200 S

Frequency		Hz	Tot.	125	250	500	1k	2k	4k	8k
L_{WA}	Extract air	dB(A)	62	46	55	60	53	53	42	32
L_{WA}	Supply air	dB(A)	76	53	63	71	69	73	66	62
L_{PA} at 1 m	Radiation	dB(A)	53	40	47	48	49	47	37	30



Included in delivery:

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

Control element with connection cable (10 m) included in the scope of delivery.
Dim. mm (WxHxD) 115 x 80 x 25

Accessories for Type Pro WW

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

Accessories for all types

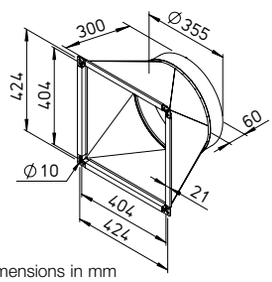
Room sensor – Air quality
AIR1/KWL-VOC 0-10V No. 20250
AIR1/KWL-CO2 0-10V No. 20251
AIR1/KWL-FTF 0-10V No. 20252
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. A maximum of one sensor can be connected.
Dim. mm (W x H x D) 85 x 85 x 27

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

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

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

Duct shutter,motorised
RVM 355 No. 02579
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position.



Dimensions in mm

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

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

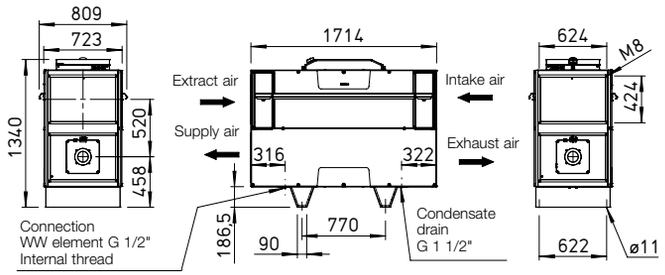
Technical data	**KWL EC 1200 S**		**KWL EC 1200 S,** with warm water post-heater	
For floor-standing installation	**Type** **KWL EC 1200 S Pro** Ref. no. 08345		**Type** **KWL EC 1200 S Pro WW** Ref. no. 08346	
Flow rate at level[1]	❷	❶	❷	❶
Supply air/extract V̇ m³/h approx.	1300	350	1300	350
Noise dB(A) at 1300 m³/h and 75 Pa				
Supply air L_{WA} (sound power)	76	n/a	76	n/a
Extract air L_{WA} (sound power)	62	n/a	62	n/a
Radiation L_{PA} at 1 m	53	n/a	53	n/a
Power consumption fans 2xW	375	80	375	80
Standby power consumption	< 1 W		< 1 W	
Voltage/Frequency	3N~, 400 V, 50 Hz		3N~, 400 V, 50 Hz	
Rated current A – Ventilation	5.0 / – / –		5.0 / – / –	
– Preheating	– / 12.1 / 12.1		– / 12.1 / 12.1	
– max. total	5.0 / 12.1 / 12.1		5.0 / 12.1 / 12.1	
Electric preheater kW	4.2		4.2	
Heat output/post-heating element kW	–		2.8 (at 60/40 °C) / 2.6 (at 50/40 °C) / 1.6 (at 40/30 °C)	
Summer bypass	automatic (adjustable), with heat exchanger cover		automatic (adjustable), with heat exchanger cover	
Wiring diagram no.	1370		1370	
Temperature operating range	–20 °C to +40 °C		–20 °C to +40 °C	
Installation temperature	+5 °C to +40 °C		+5 °C to +40 °C	
Connection PWW heating element	–		IG 1/2"	
Weight approx. kg	250		256	

[1] Values based on operating ranges defined according to PHI (Passive House Institute).

KWL EC 1800 S

KWL EC 1800 S with base cover (accessories)

Dimensions KWL EC 1800 S



Dimensions in mm

CERTIFIED COMPONENT Passive House Institute

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

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

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

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

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

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

Air filter
Standard equipment:
Clean intake air supply via ISO ePM_1 55% filter (F7).
The heat exchanger requires a ISO ePM_{10} 50% filter (M5) on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

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

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

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

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

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

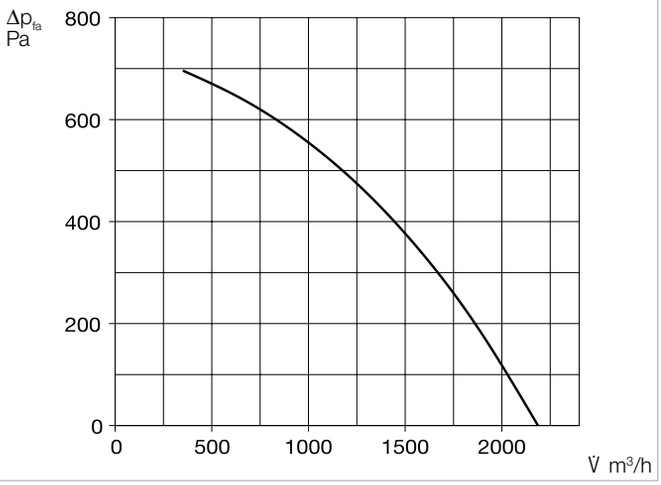
Reference
The ventilation unit design according to VDI 6022 requires the use of VDI 6022-compliant air filters.
The use of original replacement air filters is therefore mandatory.

Replacement air filter
– 1 pc. ISO ePM_{10} 50 % (M5)
ELF-KWL 1800 S/5 VDI No.08258
– 1 pc. ISO ePM_1 55 % (F7)
ELF-KWL 1800 S/7 VDI No.08259

Other accessories

Performance curve KWL EC 1800 S

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



Included in delivery:

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

Control element with connection cable (10 m) included in the scope of delivery.
Dim. mm (WxHxD) 115 x 80 x 25

Accessories for Type Pro WW

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

Accessories for all types

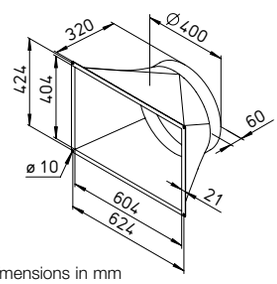
Room sensor – Air quality
AIR1/KWL-VOC 0-10V No. 20250
AIR1/KWL-CO2 0-10V No. 20251
AIR1/KWL-FTF 0-10V No. 20252
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. A maximum of one sensor can be connected.
Dim. mm (W x H x D) 85 x 85 x 27

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

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

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

Duct shutter, motorised
RVM 400 No. 02580
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position.



Dimensions in mm

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

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

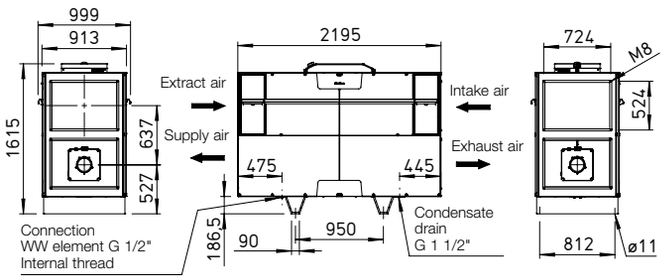
Technical data	**KWL EC 1800 S**			**KWL EC 1800 S,** with warm water post-heater		
For floor-standing installation	**Type** **KWL EC 1800 S Pro**		Ref. no. 08329	**Type** **KWL EC 1800 S Pro WW**		Ref. no. 08330
Flow rate at level[1]	❸	❷	❶	❸	❷	❶
Supply air/extract V̇ m³/h approx.	1400	1070	810	1400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

[1] Values based on operating ranges defined according to PHI (Passive House Institute).

KWL EC 2600 S

KWL EC 2600 S with base cover (accessories)

Dimensions KWL EC 2600 S



Dimensions in mm

CERTIFIED COMPONENT Passive House Institute

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

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

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

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

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

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

Air filter
Standard equipment:
Clean intake air supply via ISO ePM_1 55% filter (F7).
The heat exchanger requires a ISO ePM_{10} 50% filter (M5) on the extract air side.
All filters are pressure-controlled and exchangeable in just a few simple steps.

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

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

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

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

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

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

Replacement air filter
– 1 pc. ISO ePM_{10} 50 % (M5)
ELF-KWL 2600 S/5 VDI No.08308
– 1 pc. ISO ePM_1 55 % (F7)
ELF-KWL 2600 S/7 VDI No.08325

Other accessories

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KWL peripherals	150 ff.
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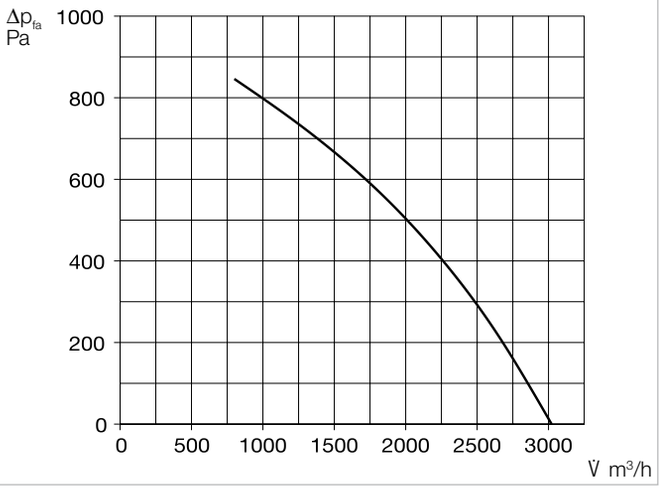
Accessory details

Ventilation grilles, ducts, fittings	
roof outlets	561 ff.
extract air elements	574 ff.

Performance curve KWL EC 2600 S

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



Included in delivery:

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

Control element with connection cable (10 m) included in the scope of delivery.
Dim. mm (WxHxD) 115 x 80 x 25

Accessories for Type Pro WW

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

Accessories for all types

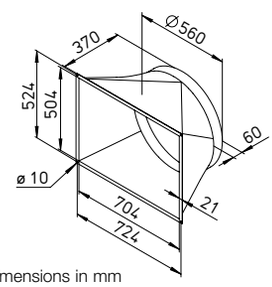
Room sensor – Air quality
AIR1/KWL-VOC 0-10V No. 20250
AIR1/KWL-CO2 0-10V No. 20251
AIR1/KWL-FTF 0-10V No. 20252
For measuring the CO_2, mixed gas (VOC) concentration or relative room air humidity. A maximum of one sensor can be connected.
Dim. mm (W x H x D) 85 x 85 x 27

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

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

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

Duct shutter, motorised
RVM 560 No. 02583
Prevents cold draughts when the unit is at a standstill. Automatic function through fan operation, with mounted spring return motor (outside of air flow). Installation in any position.



Dimensions in mm

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

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

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

[1] Values based on operating ranges defined according to PHI (Passive House Institute).

Relaxed ventilation with KWL® YOGA.

Are your buildings fit for the future? Whether at school or in public buildings, at work or in leisure time – our new, decentralised ventilation units with heat recovery KWL Yoga make it easy to achieve the best indoor air quality.

The extremely compact design and simple installation without an air distribution system also make KWL Yoga perfect for renovation projects. Three available unit sizes for flow rates up to 400, 700 and 1000 m^3/h and various equipment versions are only some of the highlights of KWL Yoga.

All advantages at a glance:

- Practical: Simple **maintenance** through freely accessible inspection flaps on the underside of the unit.
- Flexible: Three available unit sizes for flow rates up to **400, 700 and 1000 m³/h.**
- Diverse: Ideal for use in **schools, offices and public facilities.**
- Guaranteed: **Best air quality** with low CO_2 concentration promotes receptiveness and performance.
- Customised: 6 different **equipment options.**
- **Note:** From Q3/2023 also available with **enthalpy heat exchanger**.

KWL Yoga Style

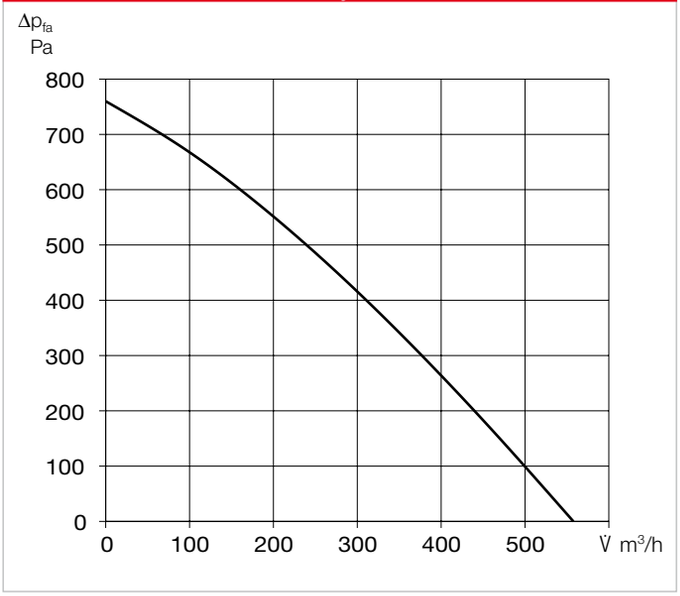
Compact wall units from 400 to 1000 m³/h.

EC 142ff

KWL YOGA Style 400
Air flow rates up to approx. 400 m³/h

KWL YOGA Style 400

Performance curve KWL YOGA Style 400



Decentralised compact ventilation units with heat recovery for the supply and extract ventilation of individual rooms, such as classrooms, recreation rooms, offices, commercial units, medical practices and many more. Equipped with highly-efficient aluminium heat exchangers and energy-saving EC motors. Automatic shutters for intake and exhaust prevent cold draughts when the fans are deactivated. The flow-optimised supply air grille allows draught-free ventilation, even in large rooms, through the optimal use of the Coanda effect. Includes a touch control element for easy operation and configuration of unit functions.

Casing
Made of galvanised steel sheet, the casing parts are painted white/powder-coated. The double-walled unit casing is equipped with 40 mm thermal and sound insulation on all sides. Easy installation and maintenance due to large inspection panel.

Installation
Ceiling installation is carried out using the vibration-damping fastening elements included in the scope of delivery. Alternatively, combined wall-ceiling installation is possible with the wall bracket set (Ref. no. 40067).

Heat exchanger
Large aluminium cross counterflow heat exchanger with up to 90 % heat recovery efficiency. Dismantling is possible in a few steps.
Note: From Q3/2023 also available with enthalpy heat exchanger

Fans
Two low-noise, high-performance EC fans with backward curved impellers for maximum energy efficiency.

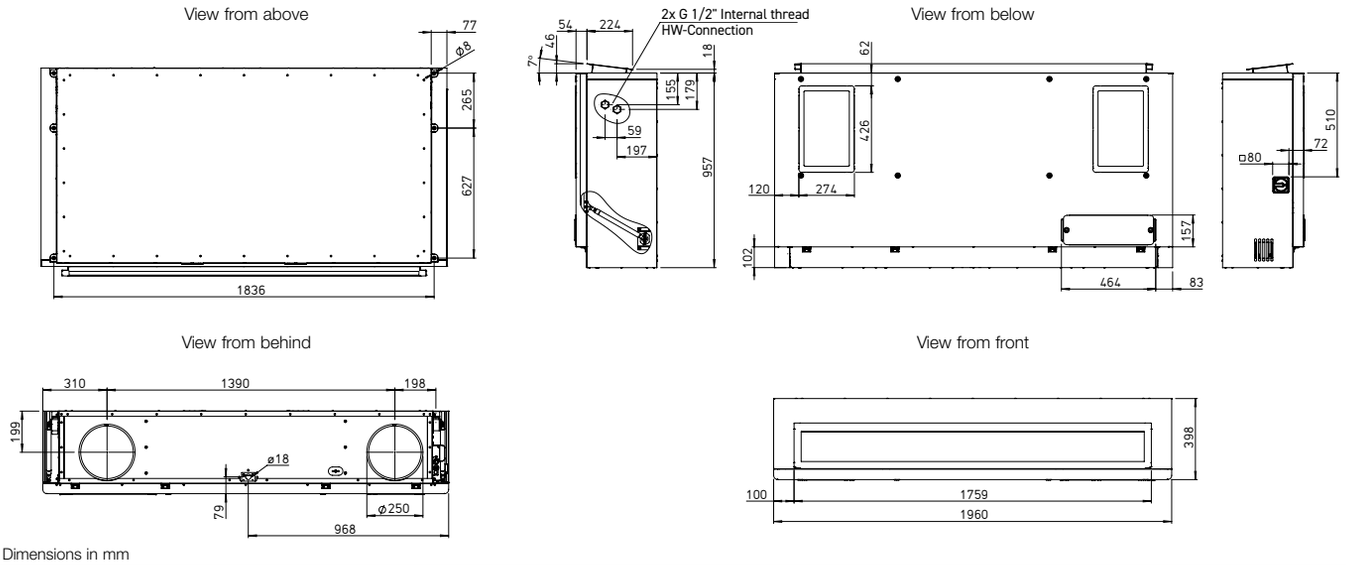
Sensor system
Integrated CO_2 sensor system. Alternatively, this can be replaced by an external sensor (VOC, CO_2 or humidity) positioned in the room. KWL Yoga can also be controlled with a motion sensor (combination not possible!) instead of the sensors.

Air flow
Supply air on front side, two extract air openings on the underside of the unit. Intake and exhaust air connectors are equipped with spring-loaded shutters.

Condensate connection
Condensate connection horizontal (wall side), optionally via ball siphon in surface-mounted or flush-mounted design or via condensate pump.

	Without electrical preheater/ without electrical after-heater	Without electrical preheater/ with electrical after-heater	Without electrical preheater/ with warm water after-heater	With electrical preheater/ without after-heater	With electrical preheater/with electrical after-heater	
	KWL YOGA Style 400 Ref. no. 40008	**KWL YOGA Style 400 EN** Ref. no. 40010	**KWL YOGA Style 400 WW** Ref. no. 40012	**KWL YOGA Style 400 EV** Ref. no. 40014	**KWL YOGA Style 400 EV/EN** Ref. no. 40016	
Intake/exhaust air connector diameter	250	250	250	250	250	
Air volume V̇ m³/h (Min. - Max.)	150 - 560	150 - 560	150 - 560	150 - 560	150 - 560	
Radiation L_{PA} dB(A) in 1 m / 3 m (at 0 Pa)						
– 150 m³/h	26 / 20	26 / 20	26 / 20	26 / 20	26 / 20	
– 200 m³/h	28 / 22	28 / 22	28 / 22	28 / 22	28 / 22	
– 300 m³/h	31 / 25	31 / 25	31 / 25	31 / 25	31 / 25	
– 560 m³/h	38 / 32	38 / 32	38 / 32	38 / 32	38 / 32	
Maximum power consumption W						
– fans	2 x 170	2 x 170	2 x 170	2 x 170	2 x 170	
– el. preheater / after-heater	–– / ––	–– / 1500	–– / ––	1500 / ––	1500 / 1500	
– total (incl. control)	350	1850	350	1850	3350	
Rated current A						
– fans	2 x 1.20	2 x 1.20	2 x 1.20	2 x 1.20	2 x 1.20	
– el. preheater / after-heater	–– / ––	–– / 6.53	–– / ––	6.53 / ––	6.53 / 6.53	
– total (incl. control)	2.45	8.98	2.45	8.98	15.51	
Voltage / frequency	1~, 230 V, 50 Hz	1~, 230 V, 50 Hz	1~, 230 V, 50 Hz	1~, 230 V, 50 Hz	1~, 230 V, 50 Hz	
Protection category IP	20	20	20	20	20	
Temperature operating range °C	-10 to+40	-10 to+40	-10 to+40	-20 to+40	-20 to+40	
Installation temperature °C	+5 to+40	+5 to+40	+5 to+40	+5 to+40	+5 to+40	
Weight approx. kg	167	169	169	169	171	
Wiring diagram no.	1500	1500	1500	1500	1500	

Dimensions KWL YOGA Style 400



Dimensions in mm

Air filter, VDI-certified

Clean intake air flow via ISO ePM_1 60 % filter (F7). Two filters for extract air: ISO Coarse 60 % (G4); optionally available: ISO ePM_{10} 60 % (M5).

Summer operation

Equipped with automatic bypass function (bypassing the heat exchanger to use the cool night air for controlling the room temperature) as standard.

Heat exchanger frost protection

The standard frost monitoring automatically regulates the supply air flow and the built-in electrical preheater, depending on the selected equipment.

	With electrical preheater/ with warm water after-heater
	KWL YOGA Style 400 EV/WW Ref. no. 40018
	250
	150 - 560
	26 / 20 28 / 22 31 / 25 38 / 32
	2 x 170 1500 / –– 1850
	2 x 1.20 6.53 / –– 8.98
	1~, 230 V, 50 Hz
	20
	-20 to+40
	+5 to+40
	171
	1500

After-heater

Unit variants with integrated post-heating (warm water or electrical after-heater) ensure the comfortable and energy-efficient post-heating of supply air. The target supply air temperature is set on the control element. The use of hydraulic unit type WHSH HE 24 V (0-10V), (accessories) is recommended for controlling the warm water heating element.

Power control

The included comfort control element with touch functionality and easy menu navigation provide the following functions:

- ☐ Demand-oriented ventilation, optionally with CO_2, VOC, or humidity sensor (1 sensor can be connected).
- ☐ Initial commissioning (automatic determination of system characteristic curve).
- ☐ Fire alarm contact connection.
- ☐ Weekly or daily programme.
- ☐ Automatic bypass (summer operation: use of cool night air).
- ☐ Pressure monitoring of filter contamination.
- ☐ Displays required filter replacement.
- ☐ 5 password-protected function levels can be configured.
- ☐ Control via central building control system possible (ModBus RTU and ModBus TCP, BACnet)
- ☐ Including control line cable (10 m)

Electrical connection

After removing the left side panel, the connection box is easily accessible on the outside of the casing. The isolator/main switch is located on the outside of the unit for easy maintenance. It can be locked using a padlock to prevent unauthorised access.

Sensors

Infrared motion sensor for detecting the presence of people in the room.
BWM Ref. no. 08323

CO_2 sensor for measuring the CO_2 concentration.
AIR1/KWL-VOC 0-10V No. 20250

VOC sensor for measuring the mixed gas concentration (VOC).
AIR1/KWL-CO2 0-10V No. 20251

Humidity-temperature sensor for measuring the relative air humidity.
AIR1/KWL-FTF 0-10V No. 20252

Control line cable
KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180
Control line cables in 5 or 10 meters for sensors.

Installation accessories

Flush-mounted/wall-mounted siphon
KWL-KS WE Ref. no. 40064

Ball-tube siphon
KWL-KS Ref. no. 40065

Condensate submersible pump
KWL-KP-I Ref. no. 40472

Wall bracket console set for combined wall-ceiling installation.
KWL YOGA-WH Ref. no. 40067

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

Facade grille, circular
FGR 250 Ref. no. 40181

Filter, VDI-certified

Spare air filter (extract air)*
ISO Coarse 60 % (G4). Unit = 1 pc.
ELF-KWL YOGA 400/VDI/Coarse 60% Ref. no. 40687

Spare air filter (extract air)*
ISO ePM_{10} 60 % (M5). Unit = 1 pc.
ELF-KWL YOGA 400/VDI/ePM10 60% Ref. no. 40690

Spare air filter (intake air)
ISO ePM_1 60 % (F7). Unit = 1 pc.
ELF-KWL YOGA 400/VDI/ePM1 60% Ref. no. 40693

*2 extract air filters are required per unit.

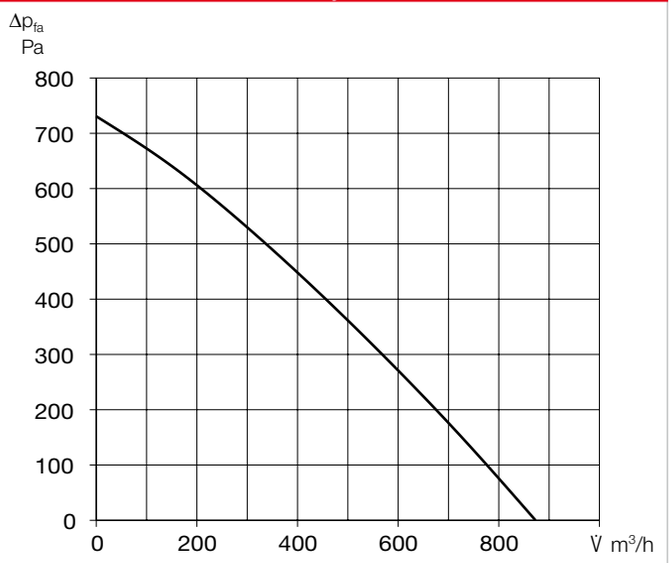
Attention: For spare air filters of older unit generations (orders before March 2023): Please contact us at export@heliosventilatoren.de

Important note

Further information on accessories can be found on page 148.

KWL YOGA Style 700

Performance curve KWL YOGA Style 700



Decentralised compact ventilation units with heat recovery for the supply and extract ventilation of individual rooms, such as classrooms, recreation rooms, offices, commercial units, medical practices and many more. Equipped with highly-efficient aluminium heat exchangers and energy-saving EC motors. Automatic shutters for intake and exhaust prevent cold draughts when the fans are deactivated. The flow-optimised supply air grille allows draught-free ventilation, even in large rooms, through the optimal use of the Coanda effect. Includes a touch control element for easy operation and configuration of unit functions.

Casing
Made of galvanised steel sheet, the casing parts are painted white/powder-coated. The double-walled unit casing is equipped with 40 mm thermal and sound insulation on all sides. Easy installation and maintenance due to large inspection panel.

Installation
Ceiling installation is carried out using the vibration-damping fastening elements included in the scope of delivery. Alternatively, combined wall-ceiling installation is possible with the wall bracket set (Ref. no. 40067).

Heat exchanger
Large aluminium cross counterflow heat exchanger with up to 90 % heat recovery efficiency. Dismantling is possible in a few steps.
Note: From Q3/2023 also available with enthalpy heat exchanger

Fans
Two low-noise, high-performance EC fans with backward curved impellers for maximum energy efficiency.

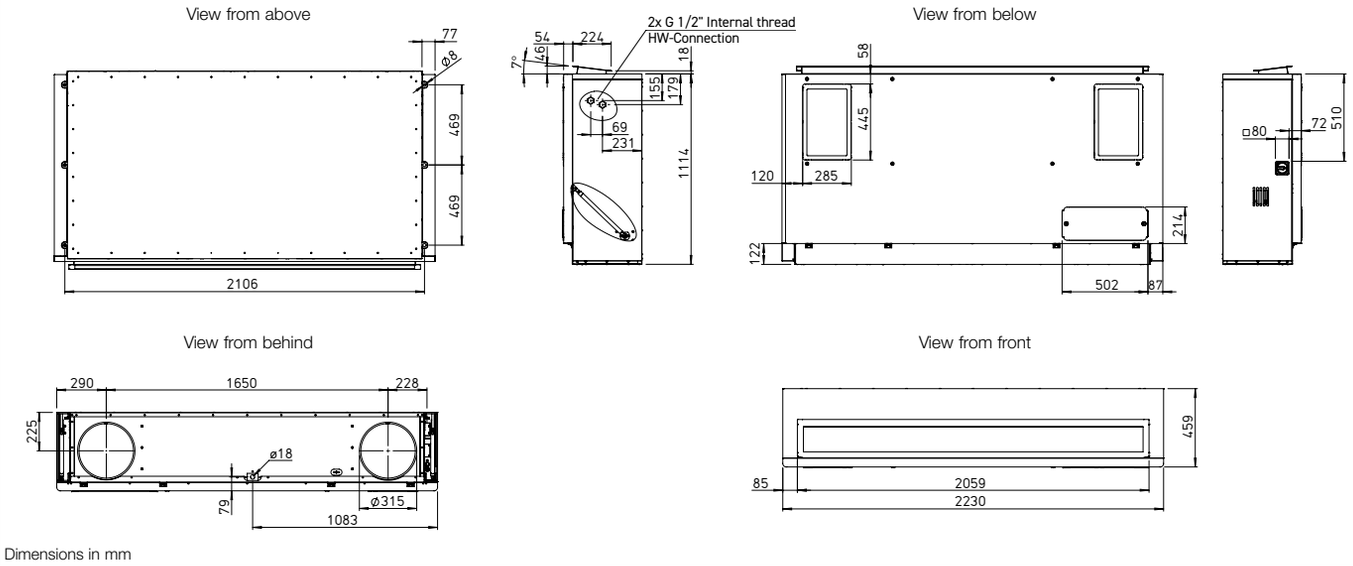
Sensor system
Integrated CO_2 sensor system. Alternatively, this can be replaced by an external sensor (VOC, CO_2 or humidity) positioned in the room. KWL Yoga can also be controlled with a motion sensor (combination not possible!) instead of the sensors.

Air flow
Supply air on front side, two extract air openings on the underside of the unit. Intake and exhaust air connectors are equipped with spring-loaded shutters.

Condensate connection
Condensate connection horizontal (wall side), optionally via ball siphon in surface-mounted or flush-mounted design or via condensate pump.

	Without electrical preheater/ without electrical after-heater	Without electrical preheater/ with electrical after-heater	Without electrical preheater/ with warm water after-heater	With electrical preheater/ without after-heater	With electrical preheater/with electrical after-heater	
	KWL YOGA Style 700 Ref. no. 40020	**KWL YOGA Style 700 EN** Ref. no. 40022	**KWL YOGA Style 700 WW** Ref. no. 40024	**KWL YOGA Style 700 EV** Ref. no. 40026	**KWL YOGA Style 700 EV/EN** Ref. no. 40028	
Intake/exhaust air connector diameter	315	315	315	315	315	
Air volume V̇ m³/h (Min. - Max.)	340 - 870	340 - 870	340 - 870	340 - 870	340 - 870	
Radiation L_{pA} dB(A) in 1 m / 3 m (at 0 Pa)						
– 340 m³/h	23 / 17	23 / 17	23 / 17	23 / 17	23 / 17	
– 500 m³/h	28 / 22	28 / 22	28 / 22	28 / 22	28 / 22	
– 700 m³/h	33 / 27	33 / 27	33 / 27	33 / 27	33 / 27	
– 870 m³/h	35 / 29	35 / 29	35 / 29	35 / 29	35 / 29	
Maximum power consumption W						
– fans	2 x 170	2 x 170	2 x 170	2 x 170	2 x 170	
– el. preheater / after-heater	–– / ––	–– / 2000	–– / ––	2000 / ––	2000 / 2000	
– total (incl. control)	350	2350	350	2350	4350	
Rated current A						
– fans	2 x 1.20	2 x 1.20	2 x 1.20	2 x 1.20	2 x 1.20	
– el. preheater / after-heater	–– / ––	–– / 8.7	–– / ––	8.7 / ––	8.7 / 8.7	
– total (incl. control)	2.45	11.15	2.45	11.15	19.85	
Voltage / frequency	1~, 230 V, 50 Hz	1~, 230 V, 50 Hz	1~, 230 V, 50 Hz	1~, 230 V, 50 Hz	3~, 400 V, 50 Hz	
Protection category IP	20	20	20	20	20	
Temperature operating range °C	-10 to +40	-10 to +40	-10 to +40	-20 to +40	-20 to +40	
Installation temperature °C	+5 to +40	+5 to +40	+5 to +40	+5 to +40	+5 to +40	
Weight approx. kg	200	202	202	202	204	
Wiring diagram no.	1500	1500	1500	1500	1500	

Dimensions KWL YOGA Style 700



Dimensions in mm

Air filter, VDI-certified

Clean intake air flow via ISO ePM_1 60 % filter (F7). Two filters for extract air: ISO Coarse 60 % (G4); optionally available: ISO ePM_{10} 60 % (M5).

Summer operation

Equipped with automatic bypass function (bypassing the heat exchanger to use the cool night air for controlling the room temperature) as standard.

Heat exchanger frost protection

The standard frost monitoring automatically regulates the supply air flow and the built-in electrical preheater, depending on the selected equipment.

	With electrical preheater/ with warm water after-heater
	KWL YOGA Style 700 EV/WW Ref. no. 40030
	315
	340 - 870
	23 / 17 28 / 22 33 / 27 35 / 29
	2 x 170 2000 / –– 2350
	2 x 1.20 8.7 / –– 11.15
	1~, 230 V, 50 Hz
	20
	-20 to +40
	+5 to +40
	204
	1500

After-heater

Unit variants with integrated post-heating (warm water or electrical after-heater) ensure the comfortable and energy-efficient post-heating of supply air. The target supply air temperature is set on the control element. The use of hydraulic unit type WHSH HE 24 V (0-10V), (accessories) is recommended for controlling the warm water heating element.

Power control

The included comfort control element with touch functionality and easy menu navigation provide the following functions:

- ▢ Demand-oriented ventilation, optionally with CO_2, VOC, or humidity sensor (1 sensor can be connected).
- ▢ Initial commissioning (automatic determination of system characteristic curve).
- ▢ Fire alarm contact connection.
- ▢ Weekly or daily programme.
- ▢ Automatic bypass (summer operation: use of cool night air).
- ▢ Pressure monitoring of filter contamination.
- ▢ Displays required filter replacement.
- ▢ 5 password-protected function levels can be configured.
- ▢ Control via central building control system possible (ModBus RTU and ModBus TCP, BACnet)
- ▢ Including control line cable (10 m)

Electrical connection

After removing the left side panel, the connection box is easily accessible on the outside of the casing. The isolator/main switch is located on the outside of the unit for easy maintenance. It can be locked using a padlock to prevent unauthorised access.

Sensors

Infrared motion sensor for detecting the presence of people in the room.
BWM Ref. no. 08323

CO_2 sensor for measuring the CO_2 concentration.
AIR1/KWL-VOC 0-10V No. 20250

VOC sensor for measuring the mixed gas concentration (VOC).
AIR1/KWL-CO2 0-10V No. 20251

Humidity-temperature sensor for measuring the relative air humidity.
AIR1/KWL-FTF 0-10V No. 20252

Control line cable
KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180
Control line cables in 5 or 10 meters for sensors.

Installation accessories

Flush-mounted/wall-mounted siphon
KWL-KS WE Ref. no. 40064

Ball-tube siphon
KWL-KS Ref. no. 40065

Condensate submersible pump
KWL-KP-I Ref. no. 40472

Wall bracket console set for combined wall-ceiling installation.
KWL YOGA-WH Ref. no. 40067

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

Facade grille, circular
FGR 315 Ref. no. 40182

Filter, VDI-certified

Spare air filter (extract air)*
ISO Coarse 60 % (G4). Unit = 1 pc.
ELF-KWL YOGA 700/VDI/Coarse 60% Ref. no. 40688

Spare air filter (extract air)*
ISO ePM_{10} 60 % (M5). Unit = 1 pc.
ELF-KWL YOGA 700/VDI/ePM10 60% Ref. no. 40691

Spare air filter (intake air)
ISO ePM_1 60 % (F7). Unit = 1 pc.
ELF-KWL YOGA 700/VDI/ePM1 60% Ref. no. 40694

*2 extract air filters are required per unit.

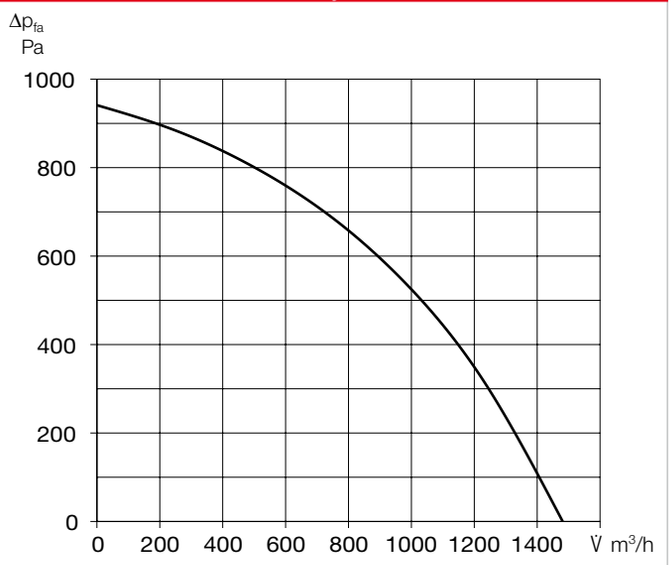
Attention: For spare air filters of older unit generations (orders before March 2023): Please contact us at export@heliosventilatoren.de

Important note

Further information on accessories can be found on page 148.

KWL YOGA Style 1000

Performance curve KWL YOGA Style 1000



Decentralised compact ventilation units with heat recovery for the supply and extract ventilation of individual rooms, such as classrooms, recreation rooms, offices, commercial units, medical practices and many more. Equipped with highly-efficient aluminium heat exchangers and energy-saving EC motors. Automatic shutters for intake and exhaust prevent cold draughts when the fans are deactivated. The flow-optimised supply air grille allows draught-free ventilation, even in large rooms, through the optimal use of the Coanda effect. Includes a touch control element for easy operation and configuration of unit functions.

Casing
Made of galvanised steel sheet, the casing parts are painted white/ powder-coated. The double-walled unit casing is equipped with 40 mm thermal and sound insulation on all sides. Easy installation and maintenance due to large inspection panel.

Installation
Ceiling installation is carried out using the vibration-damping fastening elements included in the scope of delivery. Alternatively, combined wall-ceiling installation is possible with the wall bracket set (Ref. no. 40067).

Heat exchanger
Large aluminium cross counterflow heat exchanger with up to 90 % heat recovery efficiency. Dismantling is possible in a few steps.
Note: From Q3/2023 also available with enthalpy heat exchanger.

Fans
Two low-noise, high-performance EC fans with backward curved impellers for maximum energy efficiency.

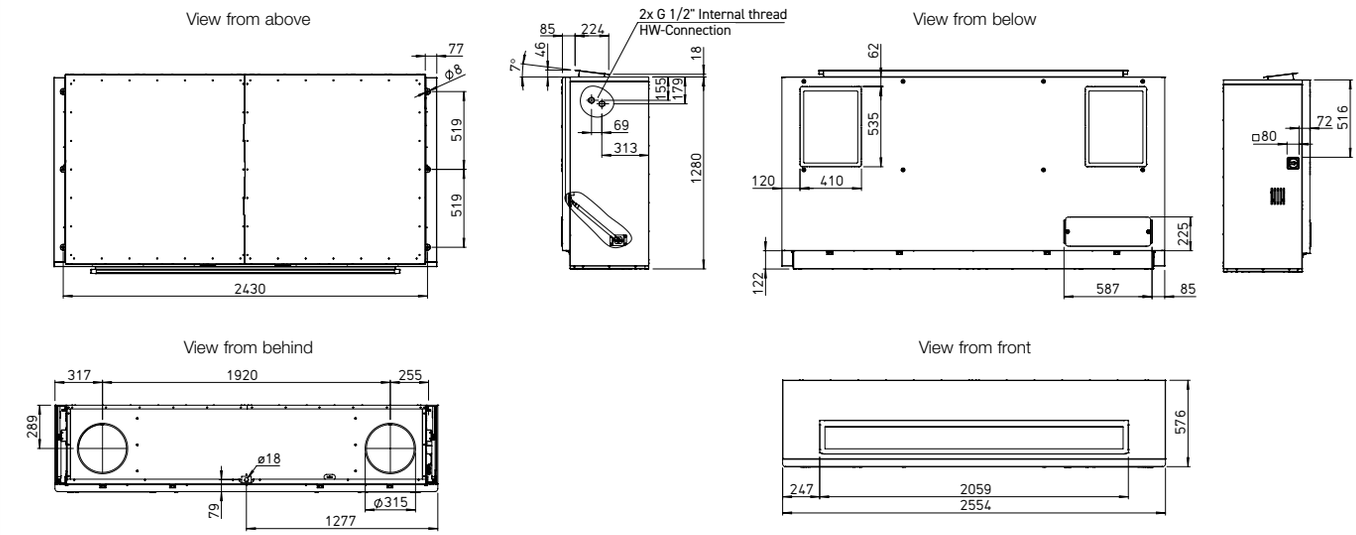
Sensor system
Integrated CO_2 sensor system. Alternatively, this can be replaced by an external sensor (VOC, CO_2 or humidity) positioned in the room. KWL Yoga can also be controlled with a motion sensor (combination not possible!) instead of the sensors.

Air flow
Supply air on front side, two extract air openings on the underside of the unit. Intake and exhaust air connectors are equipped with spring-loaded shutters.

Condensate connection
Condensate connection horizontal (wall side), optionally via ball siphon in surface-mounted or flush-mounted design or via condensate pump.

	Without electrical preheater/ without electrical after-heater	Without electrical preheater/ with electrical after-heater	Without electrical preheater/ with warm water after-heater	With electrical preheater/ without after-heater	With electrical preheater/with electrical after-heater	
	KWL YOGA Style 1000 Ref. no. 40032	**KWL YOGA Style 1000 EN** Ref. no. 40034	**KWL YOGA Style 1000 WW** Ref. no. 40036	**KWL YOGA Style 1000 EV** Ref. no. 40203	**KWL YOGA Style 1000 EV/EN** Ref. no. 40040	
Intake/exhaust air connector diameter	315	315	315	315	315	
Air volume V̇ m³/h (Min. - Max.)	410 - 1480	410 - 1480	410 - 1480	410 - 1480	410 - 1480	
Radiation L_{pA} dB(A) in 1 m / 3 m (at 0 Pa)						
– 410 m³/h	24 / 18	24 / 18	24 / 18	24 / 18	24 / 18	
– 800 m³/h	30 / 24	30 / 24	30 / 24	30 / 24	30 / 24	
– 1000 m³/h	34 / 28	34 / 28	34 / 28	34 / 28	34 / 28	
– 1480 m³/h	42 / 36	42 / 36	42 / 36	42 / 36	42 / 36	
Maximum power consumption W						
– fans	2 x 280	2 x 280	2 x 280	2 x 280	2 x 280	
– el. preheater / after-heater	–– / ––	–– / 3000	–– / ––	2000 / ––	3000 / 3000	
– total (incl. control)	570	3570	570	2570	6570	
Rated current A						
– fans	2 x 1.27	2 x 1.27	2 x 1.27	2 x 1.27	2 x 1.27	
– el. preheater / after-heater	–– / ––	–– / 4,3	–– / ––	8,7 / ––	4.3 / 4.3	
– total (incl. control)	2.59	6.89	2.59	11.29	11.19	
Voltage / frequency	1~, 230 V, 50 Hz	3~, 400 V, 50 Hz	1~, 230 V, 50 Hz	1~, 230 V, 50 Hz	3~, 400 V, 50 Hz	
Protection category IP	20	20	20	20	20	
Temperature operating range °C	-10 to +40	-10 to +40	-10 to +40	-17 to +40	-20 to +40	
Installation temperature °C	+5 to +40	+5 to +40	+5 to +40	+5 to +40	+5 to +40	
Weight approx. kg	267	270	270	270	273	
Wiring diagram no.	1500	1500	1500	1500	1500	

Dimensions WL YOGA Style 1000



Dimensions in mm

Air filter, VDI-certified
Clean intake air flow via ISO ePM_1 60 % filter (F7). Two filters for extract air: ISO Coarse 60 % (G4); optionally available: ISO ePM_{10} 60 % (M5).

Summer operation
Equipped with automatic bypass function (bypassing the heat exchanger to use the cool night air for controlling the room temperature) as standard.

Heat exchanger frost protection
The standard frost monitoring automatically regulates the supply air flow and the built-in electrical preheater, depending on the selected equipment.

	With electrical preheater/ with warm water after-heater
	KWL YOGA Style 1000 EV/WW Ref. no. 40205
	315
	410 - 1480
	24 / 18 30 / 24 34 / 28 42 / 36
	2 x 280 2000 / –– 2570
	2 x 1.27 8.7 / –– 11.29
	1~, 230 V, 50 Hz
	20
	-17 to +40
	+5 to +40
	273
	1500

After-heater
Unit variants with integrated post-heating (warm water or electrical after-heater) ensure the comfortable and energy-efficient post-heating of supply air. The target supply air temperature is set on the control element. The use of hydraulic unit type WHSH HE 24 V (0-10V), (accessories) is recommended for controlling the warm water heating element.

Power control
The included comfort control element with touch functionality and easy menu navigation provide the following functions:
- ☐ Demand-oriented ventilation, optionally with CO_2, VOC, or humidity sensor (1 sensor can be connected).
- ☐ Initial commissioning (automatic determination of system characteristic curve).
- ☐ Fire alarm contact connection.
- ☐ Weekly or daily programme.
- ☐ Automatic bypass (summer operation: use of cool night air).
- ☐ Pressure monitoring of filter contamination.
- ☐ Displays required filter replacement.
- ☐ 5 password-protected function levels can be configured.
- ☐ Control via central building control system possible (ModBus RTU and ModBus TCP, BACnet)
- ☐ Including control line cable (10 m)

Electrical connection
After removing the left side panel, the connection box is easily accessible on the outside of the casing. The isolator/main switch is located on the outside of the unit for easy maintenance. It can be locked using a padlock to prevent unauthorised access.

Sensors

Infrared motion sensor for detecting the presence of people in the room.
BWM Ref. no. 08323

CO_2 sensor for measuring the CO_2 concentration.
AIR1/KWL-VOC 0-10V No. 20250

VOC sensor for measuring the mixed gas concentration (VOC).
AIR1/KWL-CO2 0-10V No. 20251

Humidity-temperature sensor for measuring the relative air humidity.
AIR1/KWL-FTF 0-10V No. 20252

Control line cable
KWL-SL eC 5m Ref. no. 40179
KWL-SL eC 10m Ref. no. 40180
Control line cables in 5 or 10 meters for sensors.

Installation accessories

Flush-mounted/wall-mounted siphon
KWL-KS WE Ref. no. 40064

Ball-tube siphon
KWL-KS Ref. no. 40065

Condensate submersible pump
KWL-KP-I Ref. no. 40472

Wall bracket console set for combined wall-ceiling installation.
KWL YOGA-WH Ref. no. 40067

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

Facade grille, circular
FGR 315 Ref. no. 40182

Filter, VDI-certified

Spare air filter (extract air)*
ISO Coarse 60 % (G4). Unit = 1 pc.
ELF-KWL YOGA 1000/VDI/Coarse 60% Ref. no. 40689

Spare air filter (extract air)*
ISO ePM_{10} 60 % (M5). Unit = 1 pc.
ELF-KWL YOGA 1000/VDI/ePM10 60% Ref. no. 40692

Spare air filter (intake air)
ISO ePM_1 60 % (F7). Unit = 1 pc.
ELF-KWL YOGA 1000/VDI/ePM1 60% Ref. no. 40695

*2 extract air filters are required per unit.

Attention: For spare air filters of older unit generations (orders before March 2023): Please contact us at export@heliosventilatoren.de

Important note
Further information on accessories can be found on page 148.

KWL-KS WE

Flush-mounted/wall-mounted siphon

Flush-mounted condensate siphon for ventilation units, for odourless discharge of condensate in the sewage system. Desiccation-safe and cleanable by removing siphon cartridge. Incl. plug-in seal (rubber) for Ø 20 – 32 mm. Vertical outlet connector DN32. Structural protection can be cut to installation depth. Incl. odour barrier, pursuant to EN 681, DIN 19541.

Technical data	**KWL-KS WE** Ref. no. 40064
Material	Polypropylene (PP) and ABS
Drainage capacity l/s	0.15
Min. - max. duct length (feed) in m	0.2 – 3.5
Minimum installation depth in mm	60
Condensate line connection	External Ø 20 – 32 mm / Internal Ø 18 mm
Dimensions (L x W x H) in mm	110 x 110 x 60
Weight approx. kg	0.25

KWL-KS

Ball-tube siphon

Ball-tube siphon for ventilation units, for odourless discharge of condensate in the sewage system. Desiccation-safe. Incl. plug-in seal (rubber) for Ø 9 – 29 mm. Horizontal outlet connector DN40.

Technical data	**KWL-KS** Ref. no. 40065
Material	Polypropylene (PP)
Drainage capacity l/s	0.6
Drain connection	DN40

KWL-KP-I

Condensate submersible pump

Condensate pump for unit-integrated use in ventilation units, if the condensate connection with a downward slope to a waste water pipe is not possible. The submersible pump is placed directly in the condensate pan. The maximum flow rate is 12 l/h at 0 m delivery height. 9 l/h at 5 m delivery head. Protection class: IP68. Incl. alarm circuit.

KWL-KP-I Ref. no. 40472

WHSH HE 24 V (0-10V)

Hydraulic unit

Controls the water temperature of the PWW heater element by means of three point valve actuator 24 V (0-10 V) and thus the thermal output which is conveyed to the air. Delivered as complete unit, incl. flow/return temperature display, circulation pump and flexible connecting pipes.

WHSH HE 24V (0-10V) Ref. no. 08318

KWL Yoga-WH

Wall bracket

Console set for combined wall-ceiling installation of KWL Yoga units. Set consists of 2 pcs. Material: steel sheet, powder-coated. Colour: white, RAL 9016.

KWL YOGA-WH Ref. no. 40067

AIR1/KWL-VOC 0-10V / -CO2 0-10V / -FTF 0-10V

Room sensor

For measuring the CO_2, mixed gas (VOC) concentration or relative humidity. Dim. mm (W x H x D) 85 x 85 x 27

VOC sensor for measuring the mixed gas concentration (VOC).

AIR1/KWL-VOC 0-10V	Ref. no. 20250

CO_2 sensor for measuring the CO_2 concentration.

AIR1/KWL-CO2 0-10V	Ref. no. 20251

Humidity-temperature sensor for measuring the relative air humidity.

AIR1/KWL-FTF 0-10V	Ref. no. 20252

BWM

Infrared motion sensor

Motion sensor for detecting the presence of people in the room. Wall installation (surface mounted) (cable entry at top or bottom) or installation in flush-mounted box Ø 55 mm (cable entry at back).

Technical data	**BWM** Ref. no. 08323
Material casing	ABS plastic, white (similar RAL 9010)
Protection class	III
Protection category	IP30
Electrical connection	0.14 – 1.5 mm² (screw terminals)
Dimensions in mm (W x H x D)	85 x 85 x 27

FGR

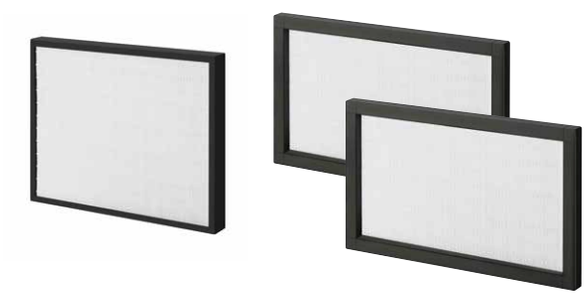
Facade grille, circular

For flush covering of ventilation openings on the facade. Can be used for circular outdoor and exhaust air ducts. Two holes in the pipe spigot allow secure fastening with screws, to be provided by customer.
Solid aluminium construction. Fixed blades with stainless steel wire mesh behind, mesh size 10 x 10 mm.

FGR 250	Ref. no. 40181
FGR 315	Ref. no. 40182

For more information, see page 567.

ELF-KWL YOGA



Intake air filter — Extract air filter*

Filter, VDI-certified

Spare air filter (extract air)* ISO Coarse 60 % (G4). Unit = 1 pc.

ELF-KWL YOGA 400/VDI/Coarse 60%	Ref. no. 40687
ELF-KWL YOGA 700/VDI/Coarse 60%	Ref. no. 40688
ELF-KWL YOGA 1000/VDI/Coarse 60%	Ref. no. 40689

Spare air filter (extract air)* ISO ePM_{10} 60 % (M5). Unit = 1 pc.

ELF-KWL YOGA 400/VDI/ePM10 60%	Ref. no. 40690
ELF-KWL YOGA 700/VDI/ePM10 60%	Ref. no. 40691
ELF-KWL YOGA 1000/VDI/ePM10 60%	Ref. no. 40692

Spare air filter (intake air) ISO ePM_1 60 % (F7). Unit = 1 pc.

ELF-KWL YOGA 400/VDI/ePM1 60%	Ref. no. 40693
ELF-KWL YOGA 700/VDI/ePM1 60%	Ref. no. 40694
ELF-KWL YOGA 1000/VDI/ePM1 60%	Ref. no. 40695

* 2 extract air filters are required per unit.

Attention: For spare air filters of older unit generations (orders before March 2023): Please contact us at export@heliosventilatoren.de