Dantherm®
CLIMATE SOLUTIONS

2023

ENERGY-EFFICIENT SOLUTIONS

FOR RESIDENTIAL VENTILATION

DANTHERMGROUP

DANTHERMGROUP

About the Dantherm Group

Dantherm Group is a European leader in portable and installed climate control solutions for a wide range of industries and uses. Based on the heritage of the variety of brands we own, our climate control experts build and manufacture hundreds of thousands of exceptional heating, cooling, dehumidification, air cleaning and ventilation units in our own factories in Europe every year. All of them are designed to create healthy and comfortable climate surroundings in a sustainable, energy-efficient and cost-effective way.

Why partner with us

- European design quality
- Experts in climate control
- Extensive range of solutions

INDEX

WHY CHOOSE OUR RESIDENTIAL VENTILATION PRODUCTS?

CHOOSING THE BEST SOLUTION

Unique Dantherm products for residential ventilation for your home.

RESIDENTIAL VENTILATION SOLUTIONS

Balanced whole-house mechanical ventilation with heat recovery for private homes.

REMOTE CONTROL POSSIBLE

Dantherm residential ventilation units can be controlled using the Dantherm APP.

STAY COOL IN THE SUMMER

The automatic free-cooling features lets in cool night air on hot days to help maintain a comfortable temperature throughout the day.

KEEP HUMIDITY UNDER CONTROL

Optional enthalpy heat exchangers reuse heat and keep indoor air at the optimal humidity level summer and winter.

VERSATILE INSTALLATION OPTIONS

Designed for installation in standard cabinets, on walls or in ceilings, our range of units can be used for private homes and apartment buildings of any size.

REDUCE OPERATING COSTS

We focus on developing energy saving units.

CREATING A HEALTHY ENVIRONMENT

All Dantherm units use automatic demand-controlled ventilation that constantly monitors and measures the moisture content in the extracted air and then adjusts fan speed accordingly.

PROTECT THE ENVIRONMENT

Our development teams focus on reducing the carbon foot print by making our products as environmentally friendly as possible.

TECHNICAL SUPPORT AND AFTER-SALES CARE

Network of service agents and accredited technicians available from Dantherm Group Denmark, UK and Italy and through local distributors.

INTRODUCTION

A good indoor climate is inseparable from the ventilation of the home. Ventilation adds fresh air and removes the humidity released by residents through exhaling, doing laundry, cooking, bathing and more.

A typical family of four people generates around 10 litres of water vapour a day, so the home is subjected to a considerable amount of humidity if its ventilation is not able to replace the damp air with fresh air from outside. If the air change is inadequate, moisture accumulates in the home, increasing the risk of condensation building up on cold surfaces, which can lead to mould.

As we continue to build houses more and more airtight to keep in the heat, the need for mechanical ventilation increases. The natural ventilation through leaks and cracks in the building envelope is so minimal in modern buildings that it is necessary to use mechanical ventilation in order to comply with building regulation requirements on the supply of fresh outdoor air and to ensure a pleasant indoor climate.

Dantherm provides the ideal ventilation solution for private family houses, social housing, and private sector apartment blocks be they new-build or renovation projects.

INTRODUCTION

VENTILATION WITH HEAT RECOVERY

High efficiency, low power consumption and low-noise balanced ventilation solutions.

Highly efficient heat exchangers and fans

Dantherm manufactures highly efficient alu heat exchangers – lightweight counter-flow heat exchangers in aluminium that deliver up to 86% efficiency at a minimal pressure loss. We also use plastic exchangers, with thermal efficiency of up to 96%. The ventilation units come with energy-efficient EC fan motors that help reduce energy consumption.

Enthalpy helps in all seasons of the year

Dantherm's enthalpy ventilation units offer a number of unique advantages compared to other types of counter-flow heat exchangers. By transferring humidity from the extract air to the supply air, the enthalpy exchanger prevents drying out of the indoor climate during the winter. In the summer, it removes humidity from the supply air. This way, the enthalpy exchanger maintains an optimal indoor air humidity (40-60%) throughout the year, thereby avoiding drying out and humidity issues. Moreover, the enthalpy exchanger significantly reduces energy consumption because it recovers heat and humidity very efficiently.

Fans

Dantherm's units are equipped with the latest EC (Electromagnetic Commutation) fan motor technology, so they are fitted with modern motors and fan rotors offering the very best in air technology and electrical efficiency. Thanks to the EC technology the bearings are the only moving parts to produce resistance, and therefore the lifetime of these fans is approximately ten years. The fans are connected to the controller of the fan unit and powered by 230V, and the stepless fan speed is controlled by a 0-10 volt signal.

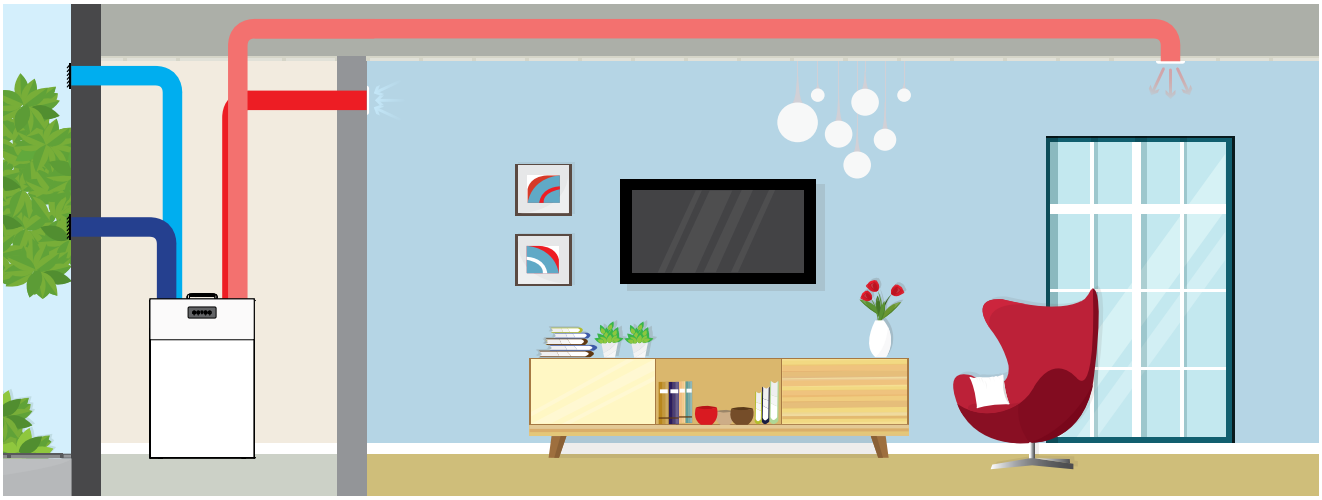
Healthy and comfortable indoor climate

Why choose Dantherm Residential Ventilation?

- Danish design and quality since 1958
- Vast experience within residential ventilation
- Energy-efficient solutions
- Units for mounting on walls, attics, ceilings, and suspended ceilings
- Versatile unit configuration with L/R switch
- Smartphone App available
- Automatic free cooling
- Easy installation and user-friendly operation
- Trained and experienced service team

Frost protection

The intelligent control system prevents the heat exchanger from icing up. Frost protection is automatically activated at low outdoor temperatures. In areas where the outdoor temperature is frequently lower than minus 3°C, preheating coils are recommended to heat the outdoor air before it enters the heat exchanger.



INTRODUCTION

VENTILATION WITH HEAT RECOVERY

Automatic and manual free cooling

Dantherm residential ventilation units have an inbuilt automatic bypass function to obtain 100% free cooling with outdoor air. The bypass opens and closes automatically depending on the extract air temperature readings and settings. Moreover, a manual bypass function can be activated whenever required, allowing the fresh outdoor air to move through the unit without passing through the heat exchanger. It is activated with one of the control interfaces – the built-in control panel, wireless remote control, wired control, the Dantherm App, or the Dantherm PC Tool. At outdoor temperatures below 9°C, the bypass is blocked due to the risk of condensation.

Optional demand-controlled ventilation

The units deliver a comfortable indoor climate in all conditions at a minimal power consumption by means of automatic demand-controlled ventilation. This is obtained through the application of a humidity sensor, a VOC sensor and/or a CO_2 sensor. The humidity sensor (RH%) continuously monitors extract air humidity and adjusts the fan speed accordingly. The VOC sensor continuously monitors the level of artificial or natural organic chemicals of the extract air and adjusts the air flow level accordingly. Once installed in a room and connected to the HAC accessory control unit, the CO_2 sensor continuously monitors the CO_2 level and adjusts the air change accordingly.

Filters

All Dantherm residential ventilation units are fitted with G4 filters as standard for both supply air and extract air. This filter will meet the majority of air cleaning needs. F7 pollen and dust filters are available as optional accessories. F7 filters will ensure that allergens do not enter the house through the ventilation system.

VOC air quality demand sensor

The units can be fitted with a VOC air quality sensor. This sensor will continuously monitor the level of artificial as well as natural organic fumes in the air.

Examples of included fumes:

- Natural fumes, e.g. formaldehyde from building materials
- Chemical fumes from sprays, e.g. hair spray or perfumes
- Indoor pollution e.g. from smoking and printing with laser printer
- Fumes from fire-retardant substances in carpets, paint and furniture

Using the VOC sensor in demand mode will result in the correct level of ventilation with the lowest possible power consumption. If a wireless remote control or App is connected, the actual VOC level will be shown in the display using a 3 level icon.

RH% demand sensor

The residential ventilation units are fitted with a humidity sensor (RH%). This sensor will continuously monitor the humidity of the extract air and adjust the air flow level accordingly. This operation is named demand mode. If a wireless remote control is connected, the level will be shown in the display using a 3 level icon. Using demand mode will result in the correct level of ventilation at the lowest possible electrical power consumption. If both VOC and RH% sensors are fitted, the ventilation level is determined by the highest demand from just any one of the sensors.

Leakage protection

All the Dantherm units have the best class of protection for external and internal leakages, according to EN 13141-7 <2% (Class A1).

Maintenance

Dantherm residential ventilation units are virtually maintenance-free. We recommend filters to be changed twice a year to maintain optimum performance. An alarm will indicate when the filters need to be replaced with new ones. Apart from changing the filters and cleaning the outside of the unit, any other form of service has to be carried out by qualified personnel.

INTRODUCTION

VENTILATION WITH HEAT RECOVERY

The intelligent control system of the HCV systems ensures that the heat exchanger does not ice up.

Frost protection is activated if the exhaust air temperature falls below 2°C, which will usually occur when the outdoor air temperature falls below approximately -3°C. The system reduces the volume of supply air to maintain the final exhaust temperature to a minimum of 2°C, therefore keeping the heat exchanger frost free. When it is even colder, the supply air volume will be turned off for short intervals of up to 30 minutes (this is for temperatures lower than -20°C for more than 4 minutes). This is essential for the maintenance and functionality of the unit.

In areas where the outdoor temperatures are often lower than -6°C, you can easily mount preheating to continue to ensure a balanced and reliable solution.

DANTHERM USES 3 TYPES OF COUNTER-FLOW HEAT EXCHANGERS

Aluminium exchangers	Characterised by low pressure loss, good sound reduction and high air output.
Plastic exchangers	Similar to aluminium exchangers, but tend to have better thermal efficiency.
Enthalpy heat exchangers	A special polymer membrane capable of transferring up to 65% of the humidity

Aluminium and plastic heat exchanger

Sensible energy (heat) is recovered from the extract air and transferred to the fresh supply air.

Enthalpy heat exchanger

Sensible energy (heat) and latent energy (humidity) is recovered from the extract air and transferred to the fresh supply air.

ENTHALPY HEAT EXCHANGERS

Enthalpy heat exchangers pass both heat and moisture from one airstream to the other. This keeps humidity within a building at a consistent, comfortable level throughout the year.

Conventional HRV heat exchangers are based on the condensation of water on the walls inside of the exchanger. This is designed to increase the efficiency of the exchanger, but means that condensate is left behind. In contrast, an enthalpy heat exchanger is made from a special polymer membrane. This material allows moisture to penetrate it, unlike the aluminium or plastic used in a traditional heat exchanger. Therefore, an enthalpy heat exchanger allows both heat and moisture to be passed from one airstream to the other. This means that the humidity within a building is kept at a consistent, comfortable level, removing the risk of excessive dryness.

The benefits of enthalpy

First and foremost, by allowing for efficient humidity recovery, an enthalpy heat exchanger avoids any of the consequences typically associated with low humidity. These include damage to wooden fixtures and furniture, wall cracks and also health issues like chapped lips, itchy eyes, headache or flaky skin. Instead, relative humidity will be maintained at a comfortable, pleasant level, protecting the health and wellbeing of both residents and buildings.

With an enthalpy heat exchanger, because moisture passes through the polymer membrane and across airstreams, very little (if any) condensate will be left behind. This means that the heat exchanger will be at no risk of freezing.. This greatly reduced risk of freezing ensures that enthalpy heat exchangers are noticeably more efficient during the colder months of the year. In the winter, the thermal efficiency of an ERV unit greatly outmatches a conventional HRV unit. In addition, the enthalpy heat exchangers in Dantherm units can function down to -5ºC, without any preheating. This guarantees balanced ventilation for the main part of the year without preheating, which in turn reduces residents' heating and electricity bills.

The advanced polymer membrane used in these enthalpy heat exchangers blocks the transfer of any odours or contaminants between airstreams, without compromising the transfer of heat and humidity. This removes the risk of bacteria or viruses in the stale air inside the building being recycled back into the supply air. Furthermore, the membrane contains built-in antimicrobial technology, making it resistant to both mould and bacteria. This ensures our enthalpy heat exchangers are extremely hygienic, and no danger to the residents who benefit from the ventilation unit.

WALL-MOUNTED

10

ENERGY-EFFICIENT VENTILATION SOLUTIONS FOR:
HOMES, APARTMENTS, NEW-BUILDS AND RENOVATIONS

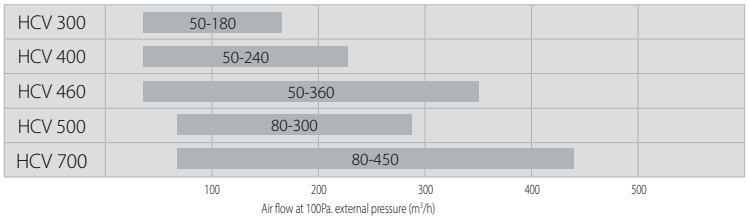
QUICK GUIDE

	 HCV 300	 HCV 400$_{P1}$ HCV 400$_{P2}$ HCV 400$_{E1}$	 HCV 460$_{P2}$ HCV 460$_{E1}$	 HCV 500	 HCV 700
INSTALLATION					
 WALL-MOUNTED	●	●	●	●	●
 ATTIC-MOUNTED					
 CEILING					

WALL-MOUNTED UNITS

HCV RANGE

For a quick selection of the product range, you can use the selection chart below. The selection chart shows the air volumes at 100Pa pressure loss.



Overview

The HCV 300-400-460-500-700 residential ventilation units are primarily designed for villas and apartments. They meet ventilation requirements of houses up to 450m^2 or more, depending on national requirements and the actual pressure loss in the installation.

The units are supplied as packaged basic ventilation units complete with built-in control panel, and are delivered with all parts necessary for wall installation. A wide range of additional accessories are available.

The residential ventilation units are fitted with highly efficient counter-flow heat exchangers, which are optimised to a high efficiency level, thus achieving a low power consumption (SPI value) for the entire unit.

Model range

The HCV 300 unit is perfect for concealed installation instead of in a 60 x 60cm cupboard module, e.g. in a modern utility room environment, where everything is hidden behind doors. All ducts are connected to the top of the unit. On the HCV 300 and HCV 400, it is also possible to connect the supply duct to the base if ducts are to run beneath the floor.

HCV 400 and HCV 460 fit into a standard 60 x 60cm cupboard module.

HCV 500 and HCV 700 are ideal for free wall installation with minimum 700mm space. A standard wall rail is supplied with all units.

Dantherm® CLIMATE SOLUTIONS

HCV RANGE

Features

All units are equipped with easy-access filter slots behind the upper front cover. The control panel with LED light indicators is located in an opening in the front cover.

Cabinet

The HCV insulation is made of expanded polystyrene (EPS) components with a minimum wall thickness of 32mm. This allows the units to be placed in rooms with temperatures as low as +12°C.

The outer surface is made of 0.8mm Aluzinc powder-coated sheet metal and painted in RAL 9016. The HCV series complies with European fire safety requirements as specified in EN 13501 class E.

The leakage rate of the unit (internal and external) is <2% as specified in EN13141-7 leakage class A1.

Function

The unit ventilates residential homes by extracting the inside humid air, and replacing it with fresh outside air, which has been heated with the heat energy of the extracted air. This reduces energy consumption.

The air volume can be controlled by:

- Selecting a fixed fan speed from 0-4
- Demand mode, in which a built in RH sensor continuously adjusts the fan speed depending on any immediate demand, determined by the humidity of the extracted air
- Week timer program – the fan speed will increase or decrease according to an hourly time schedule, or specific demand

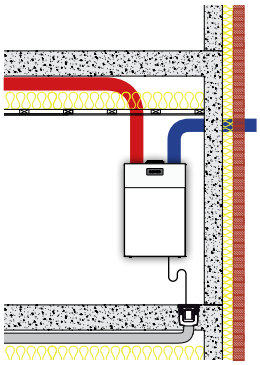
When very humid inside air is extracted, the humidity will condensate inside the heat exchanger and be collected by the embedded drip tray. This water is drained from the unit through the enclosed hose and then disposed of in the nearest drainage.

Installation

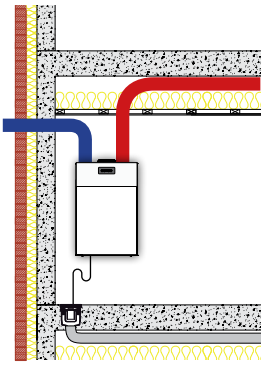
After installation of the unit, ducts and condensate hose, the unit needs to be calibrated to the specific environment. Measurements of air volumes are carried out via built-in air pressure spigots. Appropriate initial adjustments are performed directly on the control panel or with Dantherm PC Tool.

An air flow diagram is present on the front cover, showing the pressure and air volumes the installer must use to calibrate the two air flows (see example opposite).

LEFT SETUP (A)



RIGHT SETUP (B)



Maintenance

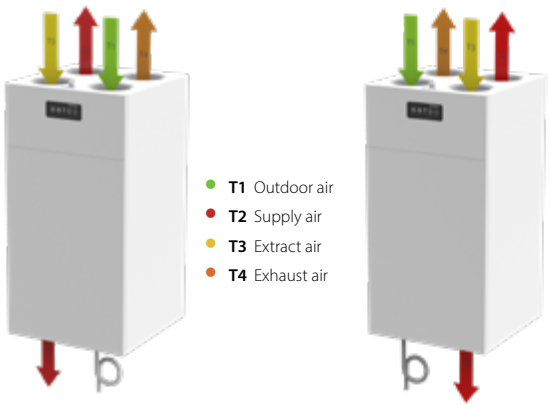
In general, the only regular maintenance required by the HCV residential ventilation units is to check/change the air filters twice a year when the alarm is triggered (flashing LED and acoustic alarm).

The user changes the filter by opening the filter cover, changing the filters and resetting the filter timer on the built-in control panel.

Apart from changing the air filters and cleaning the outside of the unit, any other form of service will have to be carried out by qualified personnel.

Local Dantherm partners are always available with support to solve any problem that might arise with the unit.

Removing the front cover gives access to all types of service and repair.



WALL-MOUNTED UNITS

HCV 300

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- Reduced power consumption at times with low ventilation demands
- Summer mode in which supply fan is stopped and any open window will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features„ via an inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- High-efficiency heat recovery
- EC fan motors with extremely low energy consumption (low SPI)
- Highly customisable units with options to add a high variety of internal as well as external accessories
- HCV 300 models take up less space than a 60 x 60cm cupboard and are perfect for concealed installation
- Ducts can be connected to the top of the unit, with the option to connect the supply duct to the base if ducts are to run beneath the floor

The HCV 300 is a highly efficient residential ventilation unit for houses, villas, and apartments. It comes as a packaged basic ventilation unit complete with built-in control panel, and is delivered with all parts necessary for wall installation. The HCV 300 is also perfect for concealed installation.

The unit is available in a variant without filter lid and with an Aluzinc surface. Delivered four units on a pallet at a time, it minimises the use of packaging in consideration of the environment.

Third part tests and certifications

Code	Description
DIBt	Certified by the German Institute of Construction Technology
ErP	Compliant with EU regulations for Eco-design
EPB	Listed in the database for Energy Performance of Buildings in Belgium
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

HCV 300

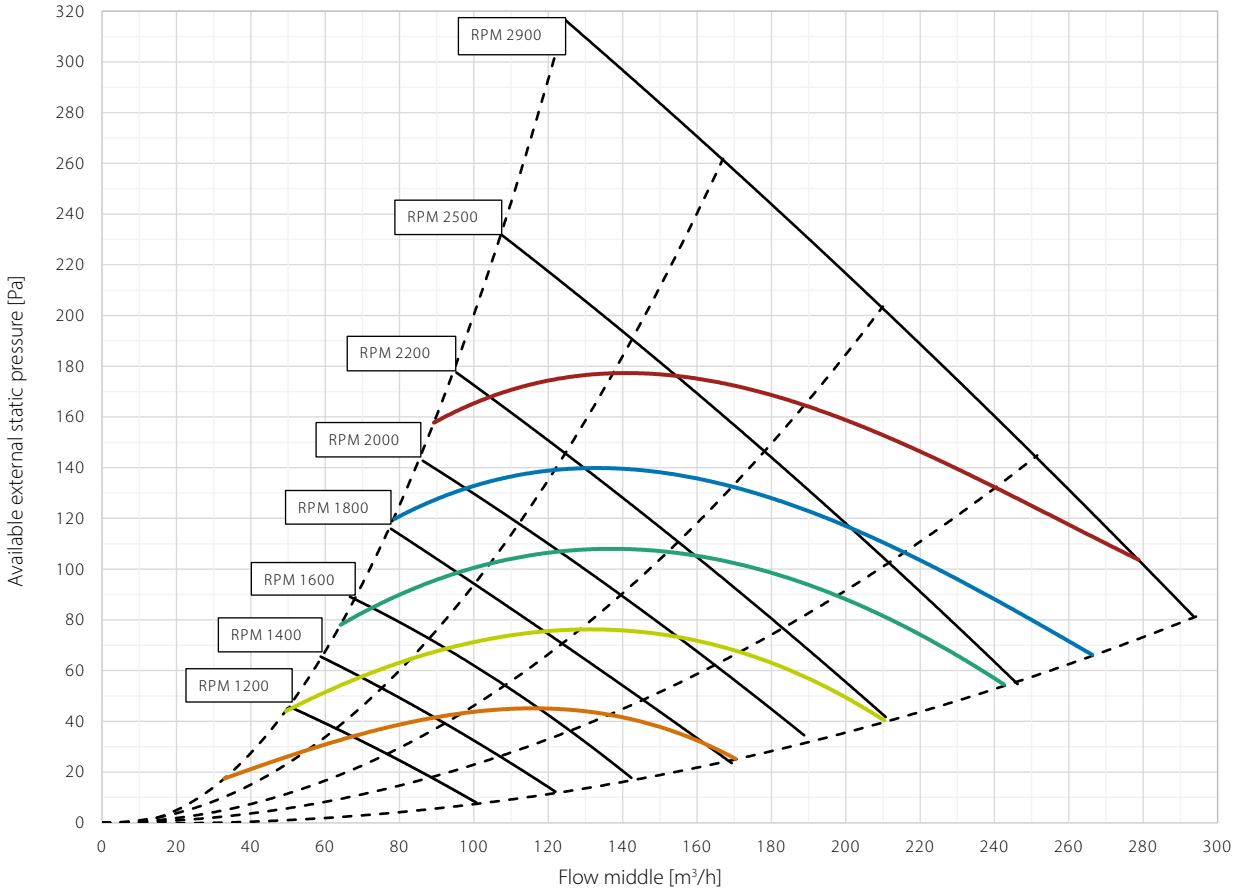
TECHNICAL DATA

Specifications	Units		HCV 300
Max. flow at 100Pa	V100Pa	m^3/h	280
Max. rated flow at 100Pa	Vmax.rated	m^3/h	180
Recommended operating range	V	m^3/h	50 - 180
EN 13141-7 reference flow	50Pa	m^3/h	126
Performance			
Thermal efficiency in accordance with EN13141-7	η_{SUP}	%	86
Specific power consumption in accordance with EN13141-7	SFP	$W/m^3/h$	0.28
Leakage (external and internal) in accordance with EN13141-7	-	%	<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779	-	-	G4 (optional on supply: F7)
Installation surrounding temperature	t_{SURR}	°C	+12 to +50
Outdoor temperature without preheater installed	t_{ODA}	°C	-12* to +50
Outdoor temperature with preheater installed	t_{ODA}	°C	-20 to +50
Maximum absolute humidity in extract air	x	g/kg	10
Cabinet			
Exterior dimensions without wall brackets	w x d x h	mm	600 x 430 x 1000
Spigots/duct connections	Ø	mm	125 – female
Weight		kg	36
Heat conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transition figures – polystyrene insulation	U	W/m^2K	<1
Fire classification of the polystyrene insulation	class	-	DIN 4102-1 class B2 EN 13501 class E
Drainage hose	Ø/length	"/m	¾ / 1
Cabinet colour	RAL	-	9016
Electrical			
Voltage	U	V	230
Maximum power consumption without/with preheater	P	W	170/870
Frequency	f	Hz	50
Protection class	-	-	IP21

** The use of the preheating coil is recommended at outdoor temperatures below -3°C to ensure balanced ventilation.*

HCV 300

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

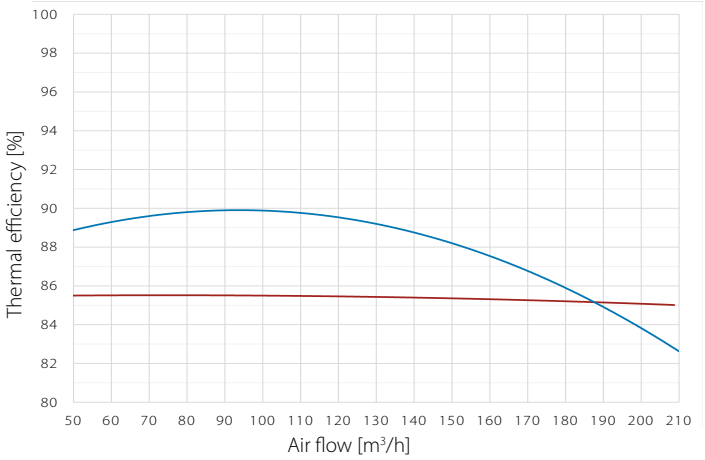
* SFP/SPI/SEL includes power consumption of both fans and the control

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 85% RH; extract air: 20°C, 38% RH
- Thermal efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 80% RH; extract air: 20°C, 60% RH

All values at balanced flow



Dantherm CLIMATE SOLUTIONS

HCV 300

SOUNDS POWER LEVEL (LW) - DUCTS

		[dB(A)]								
RPM	Duct	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1000	supply/exhaust	22.2	23.7	26.3	26.3	23.1	12.7	6.6	18.4	31
	extract/outdoor	23.8	32.1	34.4	38.6	27.9	20.9	9.7	13.0	41
1200	supply/exhaust	24.5	27.3	31.3	30.8	28.5	20.3	20.3	21.9	36
	extract/outdoor	26.4	36.8	38.2	42.3	32.1	27.1	17.7	16.7	45
1400	supply/exhaust	27.3	30.1	35.1	35.6	32.8	26.8	21.4	22.4	40
	extract/outdoor	29.2	38.3	41.5	45.6	35.5	31.6	22.3	21.8	48
1600	supply/exhaust	29.5	31.0	38.9	38.5	35.8	30.1	22.8	22.8	43
	extract/outdoor	32.1	38.5	44.7	49.2	38.6	35.5	26.4	22.0	51
1800	supply/exhaust	31.7	33.0	42.3	41.3	38.7	33.1	23.9	23.2	46
	extract/outdoor	34.1	39.6	48.2	51.4	41.3	38.5	30.0	22.2	54
2000	supply/exhaust	33.8	34.9	47.4	43.6	41.5	35.9	25.3	23.6	50
	extract/outdoor	36.0	41.4	56.1	53.0	43.4	40.8	32.8	22.4	58
2200	supply/exhaust	36.2	36.5	49.3	45.5	44.1	38.6	28.1	24.3	52
	extract/outdoor	38.3	43.4	56.2	54.6	45.7	43.2	35.6	22.7	59
2500	supply/exhaust	39.1	38.9	52.4	48.9	47.2	41.8	31.1	24.7	55
	extract/outdoor	42.2	47.8	57.6	57.4	47.2	44.0	36.4	22.8	61
2900	supply/exhaust	41.6	41.8	55.1	53.4	51.1	45.4	35.7	27.3	59
	extract/outdoor	44.8	50.7	61.0	61.9	51.2	47.8	41.3	25.2	65

SOUND PRESSURE LEVEL (LP) – CABINET

1m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1000	5.8	13.6	16.6	22.2	16.6	9.3	7.9	2.9	24
1200	6.4	13.5	20.1	22.4	19.5	11.8	8.3	4.0	26
1400	7.0	17.0	23.8	26.3	24.8	17.9	10.5	4.0	30
1600	8.2	19.4	29.6	28.6	27.0	21.4	20.9	13.7	34
1800	9.2	20.0	34.2	31.5	30.3	25.3	21.1	13.8	38
2000	9.9	21.0	34.6	33.6	32.3	27.5	21.3	6.7	39
2200	10.4	22.1	34.2	35.9	34.4	30.2	21.5	10.2	40
2500	12.6	24.8	36.7	39.1	37.6	33.1	24.2	14.7	43
2900	15.7	27.6	38.3	42.4	40.7	36.8	28.7	20.2	46

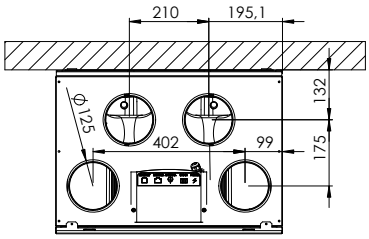
2m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1000	5.5	10.1	4.2	22.1	16.5	9.0	7.5	1.6	24
1200	4.2	10.3	13.4	23.2	18.7	11.3	7.9	1.6	25
1400	5.1	13.0	16.6	24.8	21.0	14.0	8.3	2.9	27
1600	5.8	13.9	21.4	28.0	24.6	21.4	20.7	13.5	31
1800	6.4	16.3	29.2	31.0	27.6	24.0	20.7	13.7	35
2000	6.5	17.3	29.3	33.3	30.4	25.3	21.2	13.8	37
2200	8.5	19.2	30.3	35.8	32.1	27.7	21.3	14.0	39
2500	12.2	22.7	31.5	38.5	35.5	30.9	22.3	14.2	41
2900	15.1	25.2	35.2	42.1	38.6	34.7	26.4	17.7	45

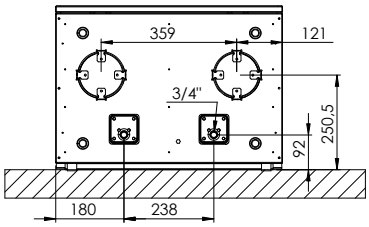
HCV 300

DIMENSIONS

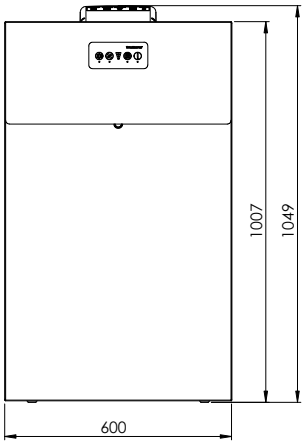
On the HCV 300 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor.

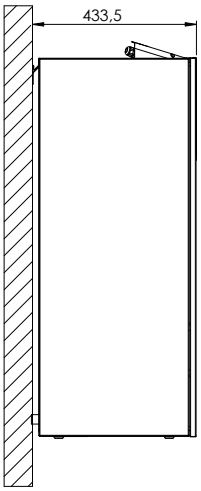


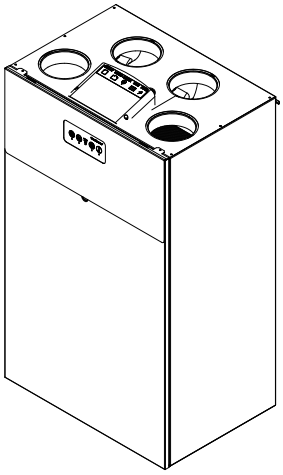
Top view



Bottom view







REVIT

Revit files are available for free on request. Contact your local supplier or Dantherm for access.

DUCT CONNECTIONS

2 set-up in 1 unit, easy change on site

(A) LEFT SET-UP
Factory set-up

- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

(B) RIGHT SET-UP Optional -
easy change on site

On the HCV 300 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor

Dantherm CLIMATE SOLUTIONS

WALL-MOUNTED UNITS

HCV 400P1

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- Summer mode in which the supply fan is stopped and any open window will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- High-efficiency heat recovery
- EC fan motors with extremely low-energy consumption (low SPI)
- Easy-to-install and commission solution with built-in air pressure spigots for easy calibration
- Highly customisable units with the option to add a high variety of internal as well as external accessories
- Ducts can be connected to the top of the unit, with the option to connect the supply duct to the base if ducts are to run beneath the floor
- The HCV 400 takes up only as little space as a 60 x 60cm cupboard

The HCV 400P1 is a highly efficient residential ventilation unit for houses, villas, and apartments. It comes supplied as a packaged basic ventilation unit complete with built-in control panel, and is delivered with all parts necessary for wall installation. All HCV 400 units fit perfectly in a 60 x 60cm cupboard.

The unit is available in a variant without filter lid and with an Aluzinc surface. Delivered four units on a pallet at a time, it minimises the use of packaging in consideration of the environment.

Third party testing and certification

Code	Description
PHI	Passivhaus certified
PCDB listed SAP App. Q	Listed in the UK database for balanced whole-house mechanical ventilation with heat recovery
ErP	Compliant with EU regulations for Eco-design
EPB	Listed in the database for Energy Performance of Buildings in Belgium
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

HCV 400$_{P1}$

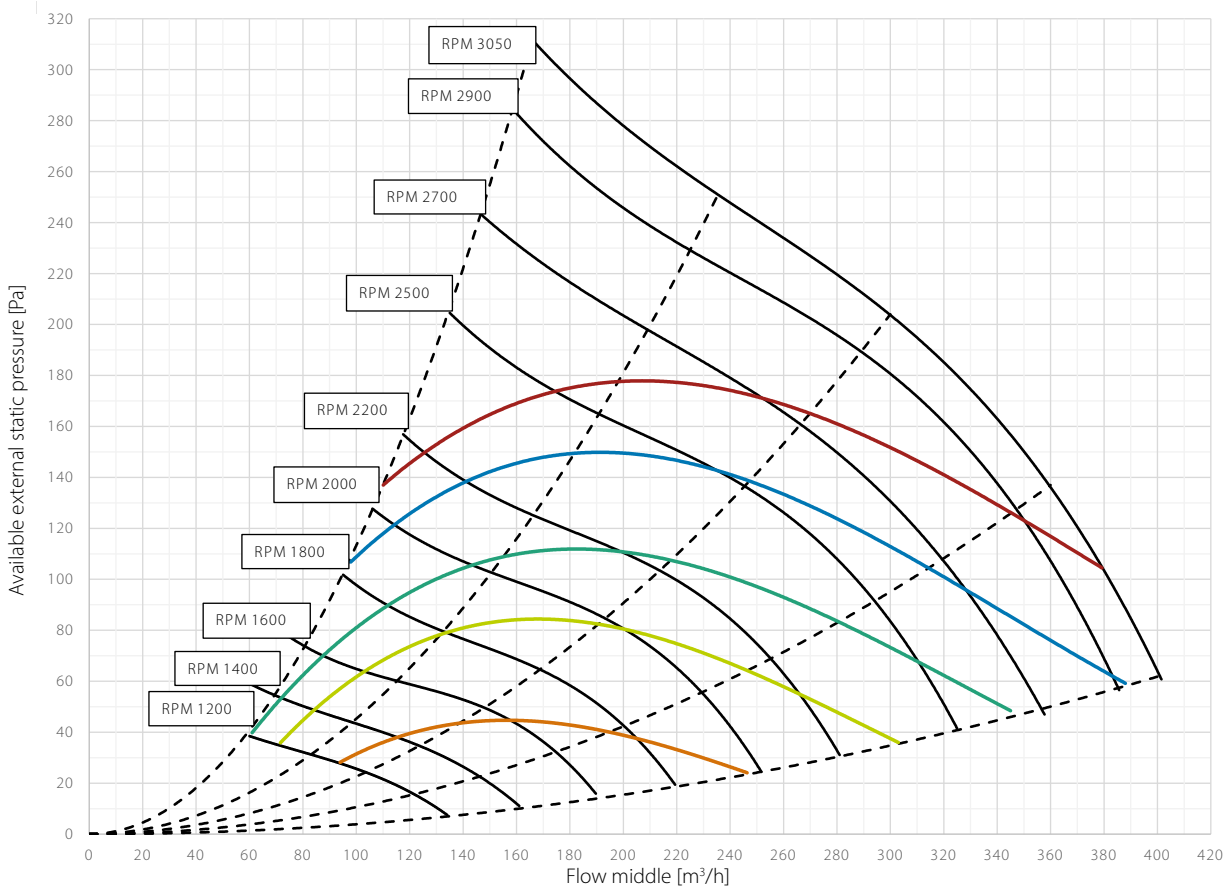
TECHNICAL DATA

Specifications	Units		HCV 400$_{P1}$
Max. flow	V100Pa	m³/h	380
Max. rated flow	Vmax.rated	m³/h	250
Recommended operating range	V	m³/h	50 - 250
EN 13141-7 reference flow at 50Pa	V_{ref}	m³/h	175
Performance			
Thermal efficiency in accordance with EN13141-7	η_{SUP}	%	92
Specific power consumption in accordance with EN13141-7	SEL/SYI	W(m³/h)	0.23
Leakage (external and internal) in accordance with EN13141-7	-	%	<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779	-	-	G4 (optional on supply: F7)
Installation ambient temperature	t_{SURR}	°C	+12 to +50
Outdoor temperature range without preheater installed	t_{ODA}	°C	-12* to +50
Outdoor temperature range with preheater installed	t_{ODA}	°C	-20 to +50
Maximum absolute humidity in extract air	x	g/kg	10
Cabinet			
Dimensions (without wall bracket)	w x d x h	mm	540 x 549 x 1050
Spigots/duct connections	Ø	mm	160 – female
Weight		kg	39
Thermal conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transition figures – polystyrene insulation	U	W/m²K	<1
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Drainage hose	Ø/length	"/m	¾ / 1
Cabinet colour	RAL	-	9016
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	170/1,570
Frequency	f	Hz	50
Protection class	-	-	IP21

** The use of the preheating coil is recommended at outdoor temperature below -3°C to ensure balanced operation.*

HCV 400P1

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

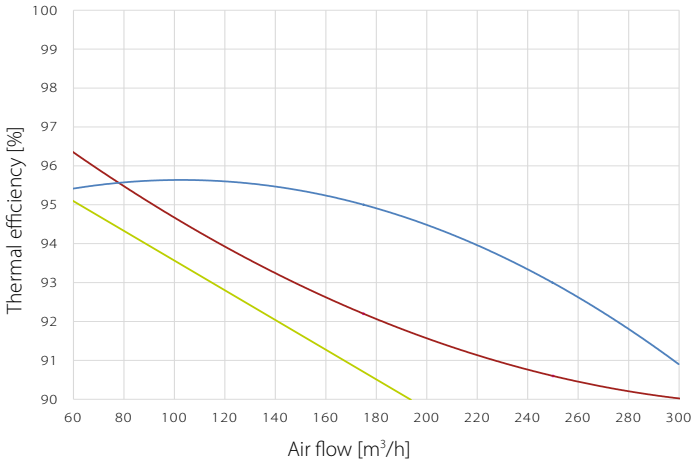
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 88% RH; extract air: 20°C, 37% RH
- Thermal efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 84% RH; extract air: 20°C, 60% RH
- Thermal efficiency acc. PassivHaus Institut
  Operational conditions: outdoor air: 4°C, 85% RH; extract air: 21°C, 32% RH

All values at balanced flow



SOUND POWER LEVEL (Lw) – DUCTS

		[dB(A)]								
RPM	Duct	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	supply/exhaust	27.9	29.4	30.7	29.7	26.3	23.1	17.5	23.3	36
	extract/outdoor	28.0	38.1	38.1	37.5	30.6	29.4	15.5	13.7	43
1400	supply/exhaust	30.6	30.6	34.8	33.7	29.9	26.8	19.1	23.4	39
	extract/outdoor	30.6	39.3	41.2	41.2	33.7	33.5	20.2	16.4	46
1600	supply/exhaust	32.4	31.2	38.4	37.2	32.9	30.5	20.9	23.8	42
	extract/outdoor	33.3	39.4	46.1	44.8	37.0	37.2	25.1	17.7	50
1800	supply/exhaust	34.6	33.3	44.2	40.7	35.8	33.5	22.9	23.8	47
	extract/outdoor	34.7	40.8	49.1	47.3	39.2	39.2	28.6	18.8	52
2000	supply/exhaust	35.8	34.0	48.8	43.6	38.5	36.2	24.9	24.1	51
	extract/outdoor	36.8	41.9	53.7	48.8	42.0	41.9	31.9	19.6	56
2200	supply/exhaust	37.6	35.0	50.6	46.3	41.0	38.7	28.2	24.8	53
	extract/outdoor	38.4	43.0	55.2	50.1	44.0	43.8	34.3	24.3	57
2500	supply/exhaust	40.5	36.8	53.5	48.5	44.4	41.9	31.3	25.4	55
	extract/outdoor	41.3	45.4	58.6	53.9	47.5	47.1	38.2	31.0	60
2700	supply/exhaust	41.9	38.9	54.4	50.2	46.4	43.7	33.7	27.7	57
	extract/outdoor	42.8	47.2	60.7	57.7	49.6	48.9	40.4	33.6	63
2900	supply/exhaust	43.4	40.3	54.4	52.5	48.7	45.5	35.7	29.2	58
	extract/outdoor	44.4	48.8	60.1	61.7	51.7	50.6	42.0	35.5	65

SOUND PRESSURE LEVEL (L_P) – CABINET

1m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	-	-	12.9	19.5	21.5	21.9	18.0	10.3	27
1400	-	5.7	18.5	23.8	23.5	23.5	18.5	10.6	29
1600	-	6.0	22.1	26.9	26.3	27.6	18.8	11.0	32
1800	-	6.9	25.3	29.4	28.2	28.3	20.6	12.0	34
2000	-	7.6	27.8	31.2	30.7	30.5	22.6	14.3	36
2200	-	8.0	31.3	33.3	32.6	32.8	24.8	17.4	39
2600	-	10.5	31.3	38.2	37.0	36.9	29.7	22.8	43
3000	-	13.1	31.4	43.1	40.2	40.0	33.0	26.1	47
3400	-	16.7	33.8	49.7	44.5	43.3	36.5	29.8	52

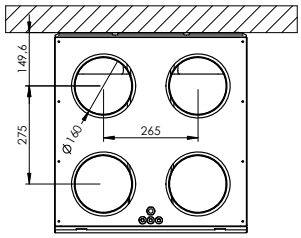
2m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	-	-	8.7	18.6	21.5	21.9	18.0	10.3	27
1400	-	-	12.7	22.1	22.8	22.8	18.5	10.6	28
1600	-	-	16.9	25.3	25.5	24.9	18.8	11.0	31
1800	-	2.1	20.0	28.6	27.2	26.4	20.6	12.0	33
2000	-	3.5	22.9	30.9	29.4	28.5	21.7	13.6	35
2200	-	5.0	26.4	32.6	31.4	30.1	23.2	15.3	37
2600	-	8.1	27.3	37.2	36.3	33.8	27.1	19.9	41
3000	-	11.0	30.0	43.1	39.1	37.2	30.7	23.6	46
3400	-	14.0	30.9	49.7	42.7	41.6	34.1	27.1	51

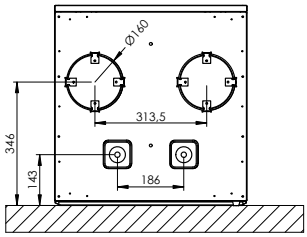
HCV 400P1

DIMENSIONS

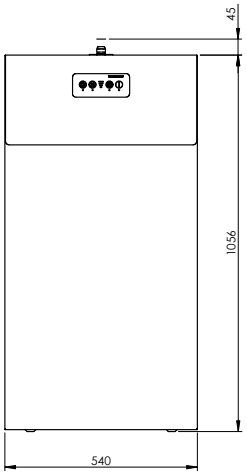
On the HCV 400 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor.

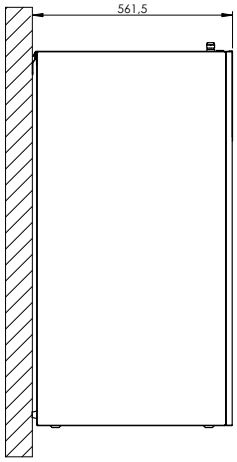


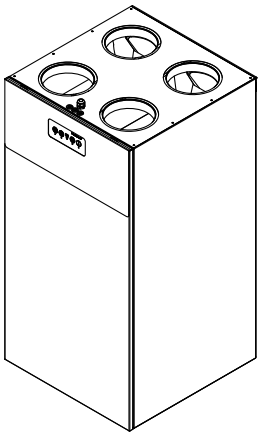
Top view



Bottom view







REVIT

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DUCT CONNECTIONS

2 set-up in 1 unit, easy change on site

(A) LEFT SET-UP
Factory set-up

- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

(B) RIGHT SET-UP Optional -
easy change on site

On the HCV 400 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor

Dantherm CLIMATE SOLUTIONS

WALL-MOUNTED UNITS

HCV 400P2

The HCV 400 P2 is a highly efficient residential ventilation unit for houses, villas, and apartments. It comes supplied as a packaged basic ventilation unit complete with built-in control panel, and is delivered with all parts necessary for wall installation. All HCV 400 units fit perfectly in a 60 x 60cm cupboard.

The unit is available in a variant without filter lid and with an Aluzinc surface. Delivered four units on a pallet at a time, it minimises the use of packaging in consideration of the environment.

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- Summer mode in which the supply fan is stopped and any open window will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- High-efficiency heat recovery
- EC fan motors with extremely low-energy consumption (low SPI)
- Easy-to-install and commission solution with built -in air pressure spigots for easy calibration
- Highly customisable units with the option to add a high variety of internal as well as external accessories
- Ducts can be connected to the top of the unit, with the option to connect the supply duct to the base if ducts are to run beneath the floor
- The HCV 400 takes up only as little space as a 60 x 60cm cupboard

Third party testing and certifications

Code	Description
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

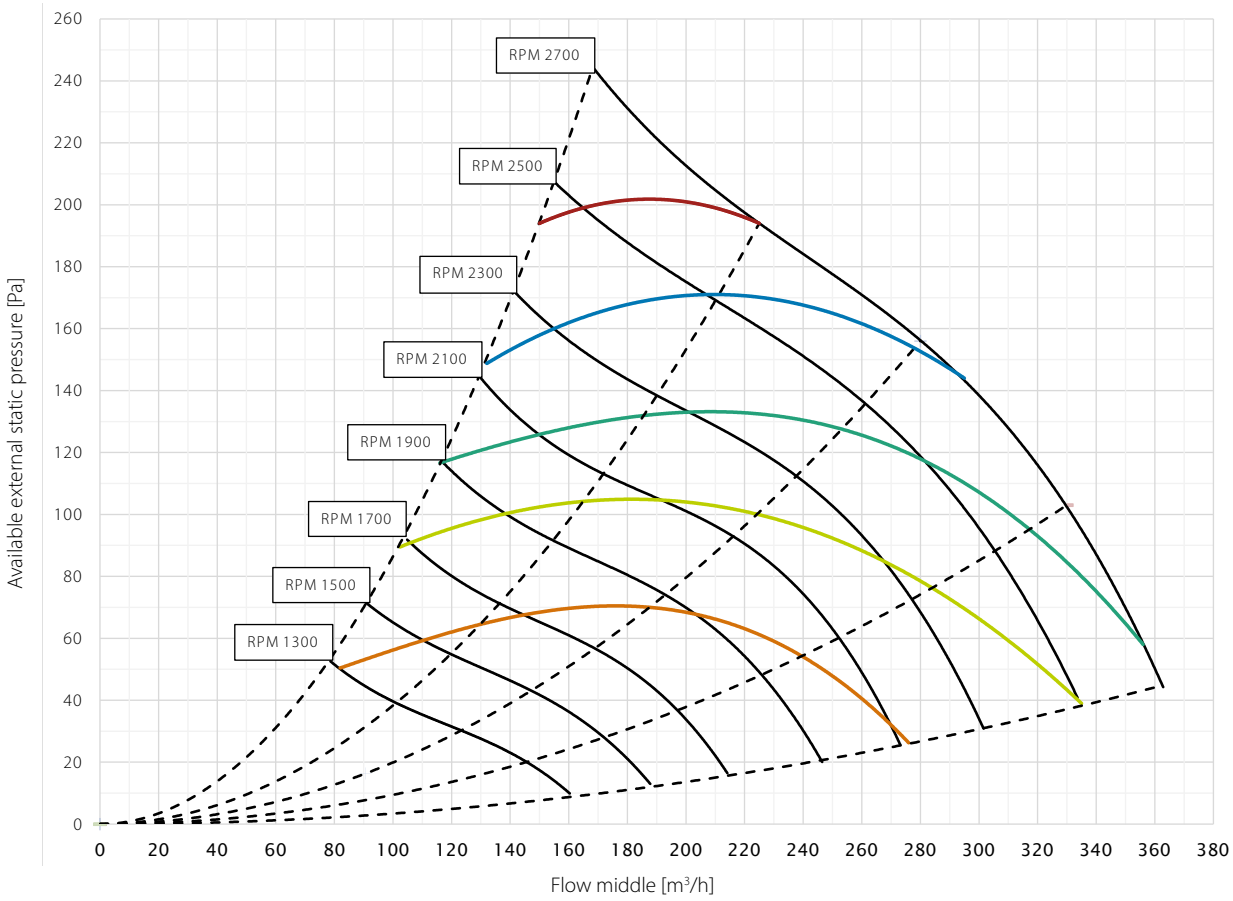
TECHNICAL DATA

Specifications	Units		HCV 400$_{P2}$
Max. flow	V100Pa	m³/h	330
Max. rated flow	Vmax.rated	m³/h	240
Recommended operating range	V	m³/h	50 - 240
EN 13141-7 reference flow at 50Pa	V_{ref}	m³/h	168
Performance			
Thermal efficiency in accordance with EN13141-7	η_{SUP}	%	91
Specific power consumption in accordance with EN13141-7	SEL/SYI	W(m³/h)	0.20
Leakage (external and internal) in accordance with EN13141-7	-	%	<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779			G4 (optional on supply: F7)
Installation ambient temperature	t_{SURR}	°C	+12 to +50
Outdoor temperature range without preheater installed	t_{ODA}	°C	-12* to +50
Outdoor temperature range with preheater installed	t_{ODA}	°C	-20 to +50
Maximum absolute humidity in extract air	x	g/kg	10
Cabinet			
Dimensions (without wall bracket)	w x d x h	mm	540 x 549 x 1050
Spigots/duct connections	Ø	mm	160 – female
Weight		kg	39
Thermal conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transition figures – polystyrene insulation	U	W/m²K	<1
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Drainage hose	Ø/length	"/m	¾ / 1
Cabinet colour	RAL	-	9016
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	170/1,570
Frequency	f	Hz	50
Protection class	-	-	IP21

** The use of the preheating coil is recommended at outdoor temperature below -3°C to ensure balanced operation.*

HCV 400P2

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

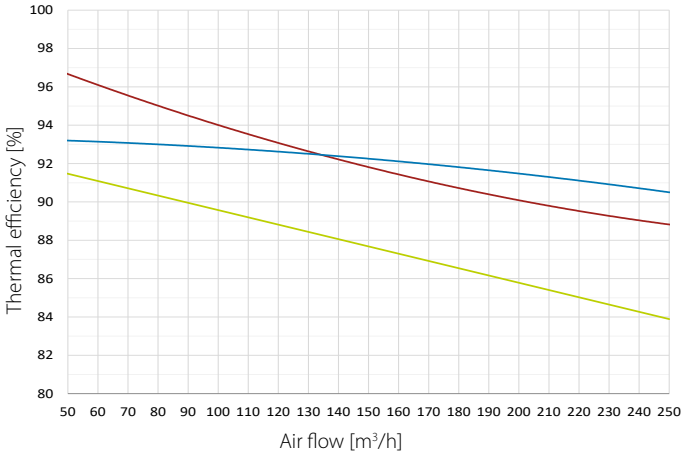
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 85% RH; extract air: 20°C, 37% RH
- Thermal efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 85% RH; extract air: 20°C, 60% RH
- Thermal efficiency acc. PassivHaus Institut
  Operational conditions: outdoor air: 4°C, 80% RH; extract air: 21°C, 30% RH

All values at balanced flow



SOUND POWER LEVEL (Lw) – DUCTS

		[dB(A)]								
RPM	Duct	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	supply/exhaust	26.9	29.6	30.6	30.6	25.8	23.0	11.7	16.4	36
	extract/outdoor	28.0	38.1	38.1	37.5	30.6	29.4	15.5	13.7	43
1300	supply/exhaust	28.8	30.1	32.5	32.4	27.5	24.6	14.5	17.9	37
	extract/outdoor	29.4	39.7	39.8	39.5	32.3	31.7	19.0	16.4	45
1400	supply/exhaust	29.7	30.5	34.4	34.5	29.4	27.1	16.6	19.6	39
	extract/outdoor	30.6	39.3	41.2	41.2	33.7	33.5	20.2	17.7	46
1500	supply/exhaust	31.1	31.3	37.0	36.5	31.3	29.3	18.2	21.0	41
	extract/outdoor	31.8	39.0	43.5	43.1	35.4	35.3	22.3	18.8	48
1600	supply/exhaust	31.9	32.0	38.6	38.0	32.8	31.1	20.3	21.6	43
	extract/outdoor	33.3	38.7	46.1	44.8	37.0	37.2	25.1	19.6	49
1700	supply/exhaust	32.5	32.5	41.6	39.7	34.2	32.6	20.9	22.1	45
	extract/outdoor	34.0	39.2	48.8	46.1	38.3	38.7	26.6	20.4	51
1800	supply/exhaust	32.0	31.1	42.4	41.4	35.9	34.5	22.7	22.6	46
	extract/outdoor	35.2	39.7	52.0	47.2	39.8	40.1	28.7	21.0	54
1900	supply/exhaust	33.1	32.3	43.7	42.8	37.3	36.1	24.6	23.0	47
	extract/outdoor	35.9	40.1	52.4	47.9	40.7	41.2	30.1	21.7	54
2000	supply/exhaust	34.0	33.1	45.3	43.5	38.5	37.2	25.4	23.4	49
	extract/outdoor	37.2	40.8	55.2	48.3	42.1	42.6	31.7	22.6	57
2100	supply/exhaust	34.9	33.6	46.6	44.4	39.8	38.4	26.7	23.8	50
	extract/outdoor	38.1	41.6	56.0	49.2	43.3	43.7	33.2	24.6	57
2200	supply/exhaust	36.7	35.4	48.3	45.4	41.3	39.8	28.6	24.1	51
	extract/outdoor	38.5	42.7	58.5	50.3	44.6	44.9	34.7	27.0	59
2300	supply/exhaust	37.2	36.2	50.9	46.7	42.6	41.0	30.2	24.5	53
	extract/outdoor	39.4	43.3	60.8	51.4	45.4	45.7	35.7	27.8	62
2400	supply/exhaust	38.2	37.0	51.1	47.9	43.6	42.1	31.6	24.7	54
	extract/outdoor	40.4	44.1	60.0	52.7	46.6	46.8	37.0	29.5	61
2500	supply/exhaust	39.3	37.7	51.7	48.9	44.6	43.0	32.7	25.6	55
	extract/outdoor	41.1	45.0	59.3	54.4	47.5	47.7	38.2	30.8	61
2600	supply/exhaust	40.8	38.6	52.3	50.3	45.7	44.0	33.9	27.3	55
	extract/outdoor	42.3	45.5	60.5	56.3	48.6	48.7	39.2	32.2	62
2700	supply/exhaust	40.8	39.3	53.0	51.9	46.6	44.8	34.9	27.6	56
	extract/outdoor	42.4	46.3	62.3	58.3	49.6	49.4	40.1	33.1	64

SOUND PRESSURE LEVEL (L_P) – CABINET

1m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	-	-	12.9	19.5	21.5	21.9	18.0	10.3	27
1400	-	5.7	18.5	23.8	23.5	23.5	18.5	10.6	29
1600	-	6.0	22.1	26.9	26.3	27.6	18.8	11.0	32
1800	-	6.9	25.3	29.4	28.2	28.3	20.6	12.0	34
2000	-	7.6	27.8	31.2	30.7	30.5	22.6	14.3	36
2200	-	8.0	31.3	33.3	32.6	32.8	24.8	17.4	39
2600	-	10.5	31.3	38.2	37.0	36.9	29.7	22.8	43
3000	-	13.1	31.4	43.1	40.2	40.0	33.0	26.1	47
3400	-	16.7	33.8	49.7	44.5	43.3	36.5	29.8	52

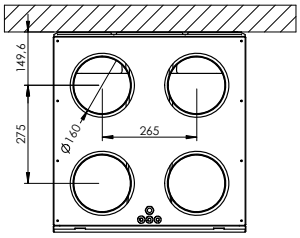
2m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	-	-	8.7	18.6	21.5	21.9	18.0	10.3	27
1400	-	-	12.7	22.1	22.8	22.8	18.5	10.6	28
1600	-	-	16.9	25.3	25.5	24.9	18.8	11.0	31
1800	-	2.1	20.0	28.6	27.2	26.4	20.6	12.0	33
2000	-	3.5	22.9	30.9	29.4	28.5	21.7	13.6	35
2200	-	5.0	26.4	32.6	31.4	30.1	23.2	15.3	37
2600	-	8.1	27.3	37.2	36.3	33.8	27.1	19.9	41
3000	-	11.0	30.0	43.1	39.1	37.2	30.7	23.6	46
3400	-	14.0	30.9	49.7	42.7	41.6	34.1	27.1	51

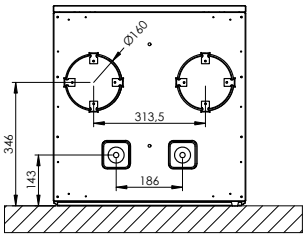
HCV 400P2

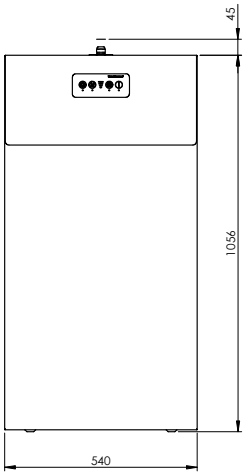
DIMENSIONS

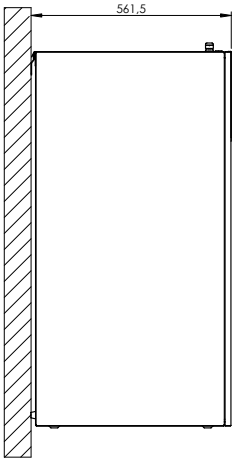
On the HCV 400 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor.

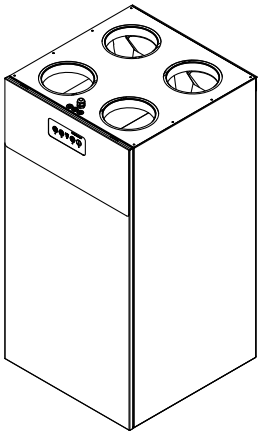


Top view









REVIT Revit files are available for free on request. Contact your local supplier or Dantherm for access.

DUCT CONNECTIONS

2 set-up in 1 unit, easy change on site

(A) LEFT SET-UP
Factory set-up

- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

(B) RIGHT SET-UP Optional - easy change on site

On the HCV 400 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor

Dantherm CLIMATE SOLUTIONS

WALL-MOUNTED UNITS

HCV 400E1

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- Summer mode in which supply fan is stopped and any open window will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- High-efficiency heat recovery
- EC fan motors with extremely low energy consumption (low SPI)
- Easy-to-install and commission solution with built -in air pressure spigots for easy calibration
- Highly customisable units, with the option to add a high variety of internal as well as external accessories
- Ducts can be connected to the top of the unit, with the option to connect the supply duct to the base if ducts are to run beneath the floor
- The HCV 400 takes up only as little space as a 60 x 60cm cupboard

The HCV 400E1 is a highly efficient residential ventilation unit for houses, villas, and apartments. It comes supplied as a packaged basic ventilation unit complete with built-in control panel, and is delivered with all parts necessary for wall installation. All HCV 400 units fit perfectly in a 60 x 60cm cupboard.

The unit is available in a variant without filter lid and with an Aluzinc surface. Delivered four units on a pallet at a time, it minimises the use of packaging in consideration of the environment.

Third party testing and certifications

Code	Description
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

WALL-MOUNTED UNITS

HCV 400$_{E1}$

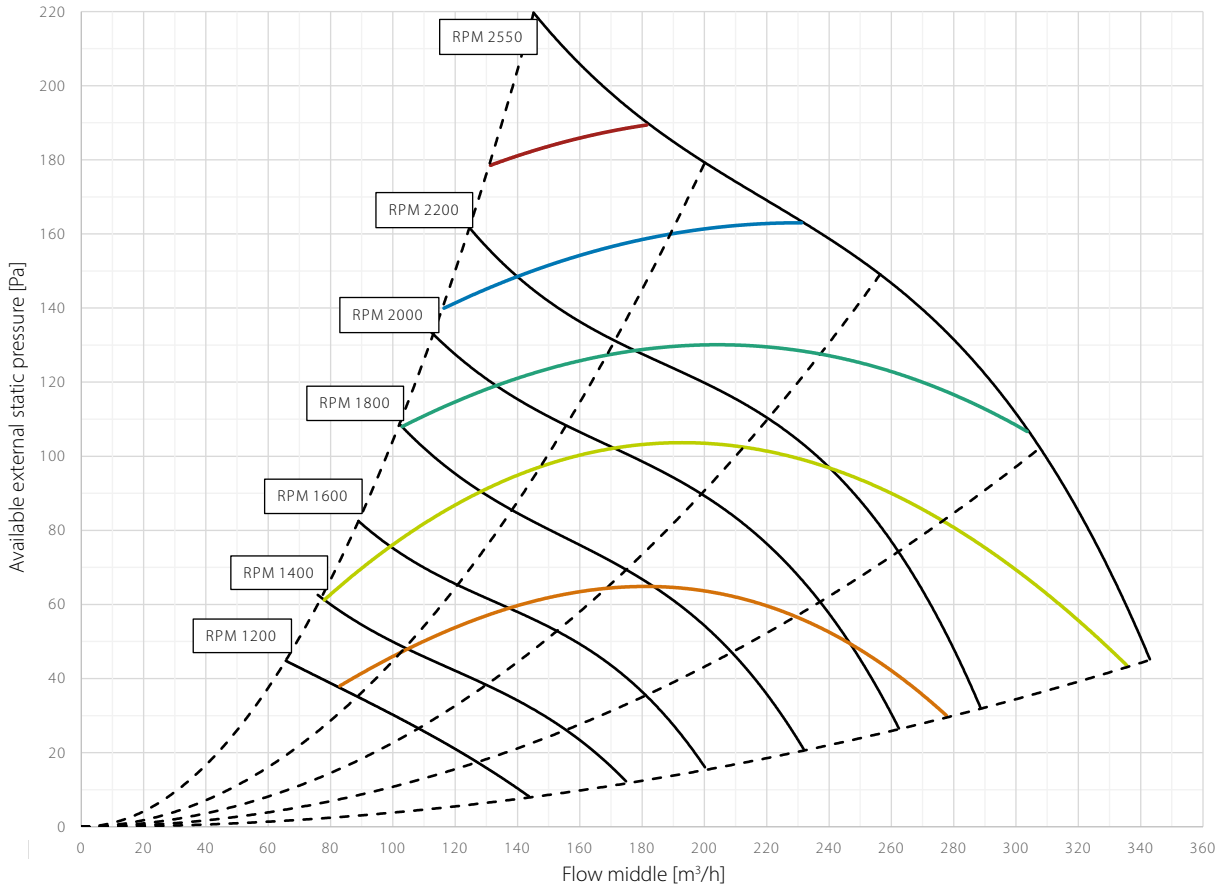
TECHNICAL DATA

Specifications	Units		HCV 400$_{E1}$
Max. flow	V100Pa	m³/h	330
Max. rated flow	Vmax.rated	m³/h	240
Recommended operating range	V	m³/h	50 - 240
EN 13141-7 reference flow at 50Pa	V_{ref}	m³/h	168
Performance			
Thermal efficiency in accordance with EN13141-7	η_{SUP}	%	84
Specific power consumption in accordance with EN13141-7	SEL/SYI	W(m³/h)	0.20
Leakage (external and internal) in accordance with EN13141-7	-	%	<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779			G4 (optional on supply: F7)
Installation ambient temperature	t_{SURR}	°C	+12 to +50
Outdoor temperature range without preheater installed	t_{ODA}	°C	-12* to +50
Outdoor temperature range with preheater installed	t_{ODA}	°C	-20 to +50
Maximum absolute humidity in extract air	x	g/kg	10
Cabinet			
External dimensions (without wall bracket)	w x d x h	mm	540 x 549 x 1050
Spigots/duct connections	Ø	mm	160 – female
Weight		kg	39
Thermal conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transition figures – polystyrene insulation	U	W/m²K	<1
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Drainage hose	Ø/length	"/m	¾ / 1
Cabinet colour	RAL	-	9016
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	170/1,570
Frequency	f	Hz	50
Protection class	-	-	IP21

** The use of the preheating coil is recommended at outdoor temperature below -5°C to ensure balanced operation.*

HCV 400 E1

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

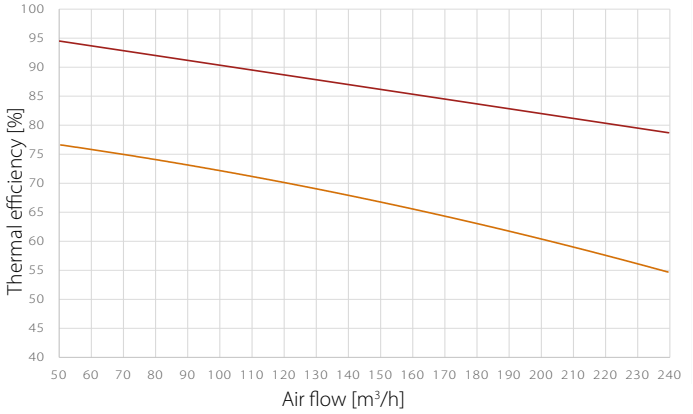
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 70% RH; extract air: 20°C, 38% RH
- Humidity efficiency acc. to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 88% RH; extract air: 20°C, 60% RH

All values at balanced flow



SOUND POWER LEVEL (Lw) – DUCTS

		[dB(A)]								
RPM	Duct	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	supply/exhaust	28.6	31.3	32.3	32.3	26.8	23.0	11.7	14.5	37
	extract/outdoor	28.0	38.1	38.1	37.5	30.6	29.4	15.5	16.4	43
1300	supply/exhaust	30.5	31.8	34.2	34.1	28.5	24.6	14.5	17.9	39
	extract/outdoor	29.4	39.7	39.8	39.5	32.3	31.7	19.0	19.0	45
1400	supply/exhaust	31.4	32.2	36.1	36.2	30.4	27.1	16.6	18.3	41
	extract/outdoor	30.6	39.3	41.2	41.2	33.7	33.5	20.2	20.4	46
1500	supply/exhaust	32.8	33.0	38.7	38.2	32.3	29.3	18.2	19.6	43
	extract/outdoor	31.8	39.0	43.5	43.1	35.4	35.3	22.3	21.6	48
1600	supply/exhaust	33.6	33.7	40.3	39.7	33.8	31.1	20.3	20.4	44
	extract/outdoor	33.3	38.7	46.1	44.8	37.0	37.2	25.1	22.1	49
1700	supply/exhaust	34.2	34.2	43.3	41.4	35.2	32.6	20.9	21.0	46
	extract/outdoor	34.0	39.2	48.8	46.1	38.3	38.7	26.6	22.6	51
1800	supply/exhaust	33.7	32.8	44.1	43.1	36.9	34.5	22.7	21.6	47
	extract/outdoor	35.2	39.7	52.0	47.2	39.8	40.1	28.7	23.0	54
1900	supply/exhaust	34.8	34.0	45.4	44.5	38.3	36.1	24.6	22.1	49
	extract/outdoor	35.9	40.1	52.4	47.9	40.7	41.2	30.1	23.4	54
2000	supply/exhaust	35.7	34.8	47.0	45.2	39.5	37.2	25.4	23.0	50
	extract/outdoor	37.2	40.8	55.2	48.3	42.1	42.6	31.7	23.8	57
2100	supply/exhaust	36.6	35.3	48.3	46.1	40.8	38.4	26.7	23.8	51
	extract/outdoor	38.1	41.6	56.0	49.2	43.3	43.7	33.2	24.6	57
2200	supply/exhaust	38.4	37.1	50.0	47.1	42.3	39.8	28.6	24.1	53
	extract/outdoor	38.5	42.7	58.5	50.3	44.6	44.9	34.7	27.0	59
2300	supply/exhaust	38.9	37.9	52.6	48.4	43.6	41.0	30.2	24.5	55
	extract/outdoor	39.4	43.3	60.8	51.4	45.4	45.7	35.7	27.8	62
2400	supply/exhaust	39.9	38.7	52.8	49.6	44.6	42.1	31.6	24.7	55
	extract/outdoor	40.4	44.1	60.0	52.7	46.6	46.8	37.0	29.5	61
2500	supply/exhaust	41.0	39.4	53.4	50.6	45.6	43.0	32.7	25.6	56
	extract/outdoor	41.1	45.0	59.3	54.4	47.5	47.7	38.2	30.8	61
2600	supply/exhaust	42.5	40.3	54.0	52.0	46.7	44.0	33.9	27.3	57
	extract/outdoor	42.3	45.5	60.5	56.3	48.6	48.7	39.2	32.2	62
2700	supply/exhaust	42.5	41.0	54.7	53.6	47.6	44.8	34.9	27.6	58
	extract/outdoor	42.4	46.3	62.3	58.3	49.6	49.4	40.1	33.1	64

SOUND PRESSURE LEVEL (L_P) – CABINET

1m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	-	-	12.9	19.5	21.5	21.9	18.0	10.3	27
1400	-	5.7	18.5	23.8	23.5	23.5	18.5	10.6	29
1600	-	6.0	22.1	26.9	26.3	27.6	18.8	11.0	32
1800	-	6.9	25.3	29.4	28.2	28.3	20.6	12.0	34
2000	-	7.6	27.8	31.2	30.7	30.5	22.6	14.3	36
2200	-	8.0	31.3	33.3	32.6	32.8	24.8	17.4	39
2600	-	10.5	31.3	38.2	37.0	36.9	29.7	22.8	43
3000	-	13.1	31.4	43.1	40.2	40.0	33.0	26.1	47
3400	-	16.7	33.8	49.7	44.5	43.3	36.5	29.8	52

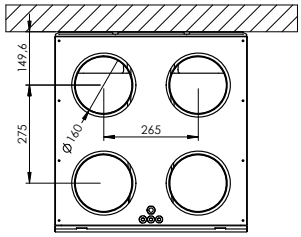
2m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	-	-	8.7	18.6	21.5	21.9	18.0	10.3	27
1400	-	-	12.7	22.1	22.8	22.8	18.5	10.6	28
1600	-	-	16.9	25.3	25.5	24.9	18.8	11.0	31
1800	-	2.1	20.0	28.6	27.2	26.4	20.6	12.0	33
2000	-	3.5	22.9	30.9	29.4	28.5	21.7	13.6	35
2200	-	5.0	26.4	32.6	31.4	30.1	23.2	15.3	37
2600	-	8.1	27.3	37.2	36.3	33.8	27.1	19.9	41
3000	-	11.0	30.0	43.1	39.1	37.2	30.7	23.6	46
3400	-	14.0	30.9	49.7	42.7	41.6	34.1	27.1	51

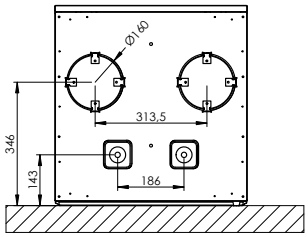
HCV 400 E1

DIMENSIONS

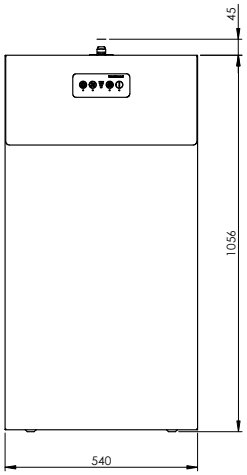
On the HCV 400 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor.

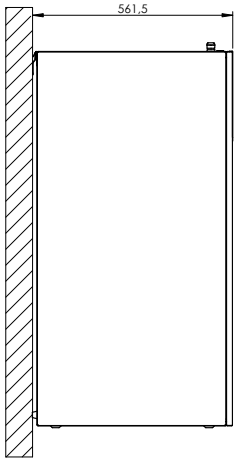


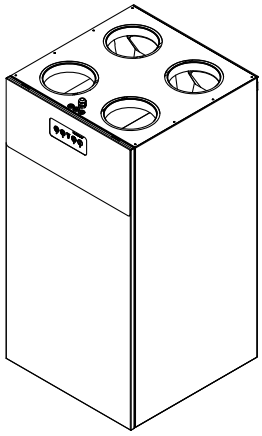
Top view



Bottom view







REVIT Revit files are available for free on request. Contact your local supplier or Dantherm for access.

DUCT CONNECTIONS

2 set-up in 1 unit, easy change on site

(A) LEFT SET-UP
Factory set-up

- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

(B) RIGHT SET-UP Optional - easy change on site

On the HCV 400 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor

Dantherm CLIMATE SOLUTIONS

WALL-MOUNTED UNITS

HCV 460P2

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- Summer mode in which supply fan is stopped and any open window will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- High-efficiency heat recovery
- EC fan motors with extremely low energy consumption (low SPI)
- Easy-to-install and commission solution with built-in air pressure spigots for easy calibration
- Highly customisable units with the option to add a high variety of internal as well as external accessories
- The HCV 460 takes up only as little space as a 60 x 60cm cupboard

The HCV 460P2 is a highly efficient residential ventilation unit for houses, villas, and apartments of up to 450m² or more. It comes supplied as a packaged basic ventilation unit complete with built-in control panel, and is delivered with all parts necessary for wall installation. All HCV 460 units also fit perfectly in a 60 x 60cm cupboard.

The HCV 460 can come in Aluzinc or painted in RAL 9016. The units will be delivered on pallets of four to reduce packaging and shipping costs. This makes it ideal for large-scale projects.

Third party testing and certifications

Code	Description
PHI	Passivhaus certified
PCDB listed SAP App. Q	Listed in the UK database for balanced whole-house mechanical ventilation with heat recovery
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

HCV 460 P2

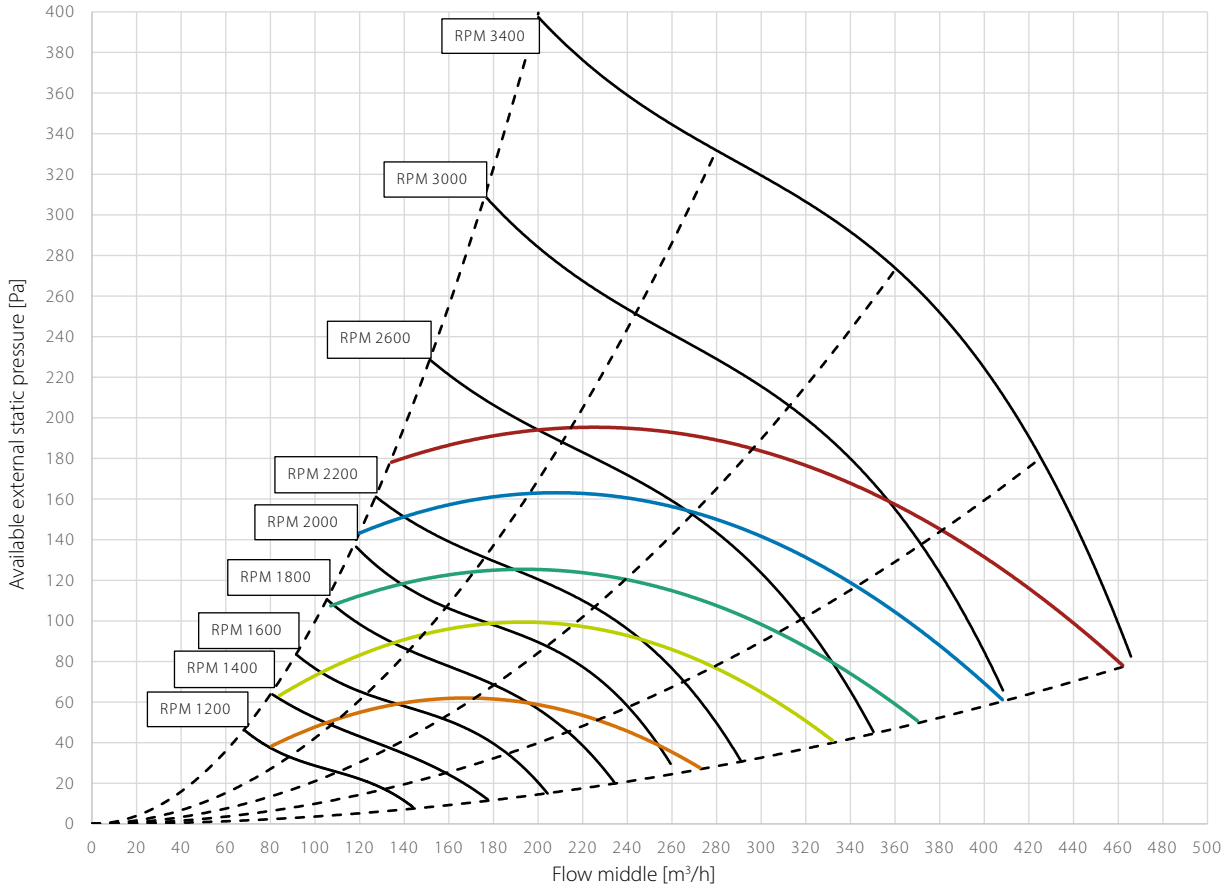
TECHNICAL DATA

Specifications	Units		HCV 460$_{P2}$
Max. flow	V100Pa	m³/h	460
Max. rated flow	Vmax.rated	m³/h	360
Operating range DIBt	V_{DIBt}	m³/h	70 - 360
Operating range Passivhaus at 100Pa	V_{phi}	m³/h	106 - 270
EN 13141-7 reference flow at 50Pa	V_{ref}	m³/h	252
Performance			
Thermal efficiency in accordance with EN13141-7	η_{SUP}	%	86
Leakage (external and internal) in accordance with EN 13141-7			<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779			G4 (optional on supply: F7)
Installation surrounding temperature	t_{SURR}	°C	+12 to +50
Outdoor temperature without preheater installed	t_{ODA}	°C	-12* to +50
Outdoor temperature with preheater installed	t_{ODA}	°C	-20 to +50
Maximum absolute humidity of extract air	x	g/kg	10
Cabinet			
Dimensions (without bracket)	w x h x d	mm	540 x 549 x 1050**
Spigots/ducts connections	Ø	mm	160 – female
Weight		kg	40
Thermal conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transition figures – polystyrene insulation	U	W/m²K	U<1
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Drainage hose included	Ø/length	"/m	¾ / 1
Cabinet colour	RAL	-	9016
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	230/2,080
Frequency	f	Hz	50
Protection class	-	-	IP21

* *The use of preheating coil is recommended at outdoor temperature -3°C to ensure balanced operation.*
** *+20mm fitting.*

HCV 460P2

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0,.5 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

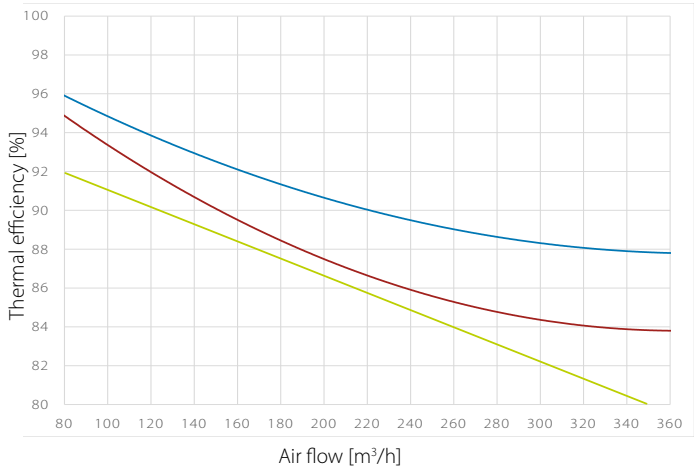
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 85% RH; extract air: 20°C, 37% RH
- Thermal efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 85% RH; extract air: 20°C, 60% RH
- Thermal efficiency acc. PassivHaus Institut
  Operational conditions: outdoor air: 4°C, 94% RH; extract air: 21°C, 30% RH

All values at balanced flow



SOUND POWER LEVEL (Lw) – DUCTS

		[dB(A)]								
RPM	Duct	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	supply/exhaust	26.9	29.6	30.6	30.6	25.8	23.0	11.7	16.4	36
	extract/outdoor	28.0	38.1	38.1	37.5	30.6	29.4	15.5	13.7	43
1300	supply/exhaust	28.8	30.1	32.5	32.4	27.5	24.6	14.5	17.9	37
	extract/outdoor	29.4	39.7	39.8	39.5	32.3	31.7	19.0	16.4	45
1400	supply/exhaust	29.7	30.5	34.4	34.5	29.4	27.1	16.6	19.6	39
	extract/outdoor	30.6	39.3	41.2	41.2	33.7	33.5	20.2	17.7	46
1500	supply/exhaust	31.1	31.3	37.0	36.5	31.3	29.3	18.2	21.0	41
	extract/outdoor	31.8	39.0	43.5	43.1	35.4	35.3	22.3	18.8	48
1600	supply/exhaust	31.9	32.0	38.6	38.0	32.8	31.1	20.3	21.6	43
	extract/outdoor	33.3	38.7	46.1	44.8	37.0	37.2	25.1	19.6	49
1700	supply/exhaust	32.5	32.5	41.6	39.7	34.2	32.6	20.9	22.1	45
	extract/outdoor	34.0	39.2	48.8	46.1	38.3	38.7	26.6	20.4	51
1800	supply/exhaust	32.0	31.1	42.4	41.4	35.9	34.5	22.7	22.6	46
	extract/outdoor	35.2	39.7	52.0	47.2	39.8	40.1	28.7	21.0	54
1900	supply/exhaust	33.1	32.3	43.7	42.8	37.3	36.1	24.6	23.0	47
	extract/outdoor	35.9	40.1	52.4	47.9	40.7	41.2	30.1	21.7	54
2000	supply/exhaust	34.0	33.1	45.3	43.5	38.5	37.2	25.4	23.4	49
	extract/outdoor	37.2	40.8	55.2	48.3	42.1	42.6	31.7	22.6	57
2100	supply/exhaust	34.9	33.6	46.6	44.4	39.8	38.4	26.7	23.8	50
	extract/outdoor	38.1	41.6	56.0	49.2	43.3	43.7	33.2	24.6	57
2200	supply/exhaust	36.7	35.4	48.3	45.4	41.3	39.8	28.6	24.1	51
	extract/outdoor	38.5	42.7	58.5	50.3	44.6	44.9	34.7	27.0	59
2300	supply/exhaust	37.2	36.2	50.9	46.7	42.6	41.0	30.2	24.5	53
	extract/outdoor	39.4	43.3	60.8	51.4	45.4	45.7	35.7	27.8	62
2400	supply/exhaust	38.2	37.0	51.1	47.9	43.6	42.1	31.6	24.7	54
	extract/outdoor	40.4	44.1	60.0	52.7	46.6	46.8	37.0	29.5	61
2500	supply/exhaust	39.3	37.7	51.7	48.9	44.6	43.0	32.7	25.6	55
	extract/outdoor	41.1	45.0	59.3	54.4	47.5	47.7	38.2	30.8	61
2600	supply/exhaust	40.8	38.6	52.3	50.3	45.7	44.0	33.9	27.3	55
	extract/outdoor	42.3	45.5	60.5	56.3	48.6	48.7	39.2	32.2	62
2700	supply/exhaust	40.8	39.3	53.0	51.9	46.6	44.8	34.9	27.6	56
	extract/outdoor	42.4	46.3	62.3	58.3	49.6	49.4	40.1	33.1	64
3000	supply/exhaust	44.3	41.5	52.0	57.2	49.6	47.5	37.9	30.8	59
	extract/outdoor	45.6	48.4	60.7	64.8	52.9	52.2	43.0	36.4	67
3400	supply/exhaust	48.6	44.0	51.2	62.2	52.4	50.3	41.0	33.9	63
	extract/outdoor	47.4	50.8	58.5	71.7	55.6	55.1	46.1	39.5	72

SOUND PRESSURE LEVEL (L_P) – CABINET

1m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	-	-	12.9	19.5	21.5	21.9	18.0	10.3	27
1400	-	5.7	18.5	23.8	23.5	23.5	18.5	10.6	29
1600	-	6.0	22.1	26.9	26.3	27.6	18.8	11.0	32
1800	-	6.9	25.3	29.4	28.2	28.3	20.6	12.0	34
2000	-	7.6	27.8	31.2	30.7	30.5	22.6	14.3	36
2200	-	8.0	31.3	33.3	32.6	32.8	24.8	17.4	39
2600	-	10.5	31.3	38.2	37.0	36.9	29.7	22.8	43
3000	-	13.1	31.4	43.1	40.2	40.0	33.0	26.1	47
3400	-	16.7	33.8	49.7	44.5	43.3	36.5	29.8	52

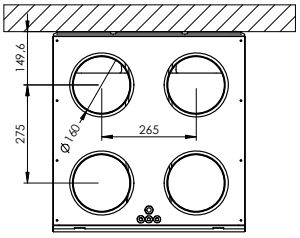
2m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	-	-	8.7	18.6	21.5	21.9	18.0	10.3	27
1400	-	-	12.7	22.1	22.8	22.8	18.5	10.6	28
1600	-	-	16.9	25.3	25.5	24.9	18.8	11.0	31
1800	-	2.1	20.0	28.6	27.2	26.4	20.6	12.0	33
2000	-	3.5	22.9	30.9	29.4	28.5	21.7	13.6	35
2200	-	5.0	26.4	32.6	31.4	30.1	23.2	15.3	37
2600	-	8.1	27.3	37.2	36.3	33.8	27.1	19.9	41
3000	-	11.0	30.0	43.1	39.1	37.2	30.7	23.6	46
3400	-	14.0	30.9	49.7	42.7	41.6	34.1	27.1	51

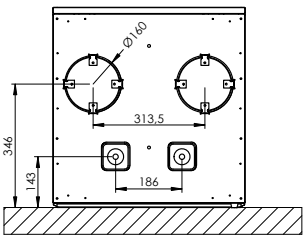
HCV 460P2

DIMENSIONS

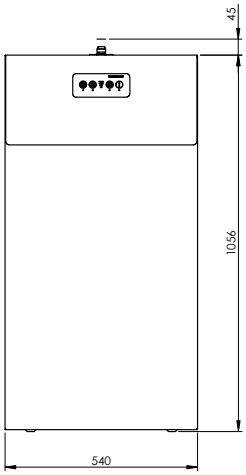
On the HCV 460 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor.

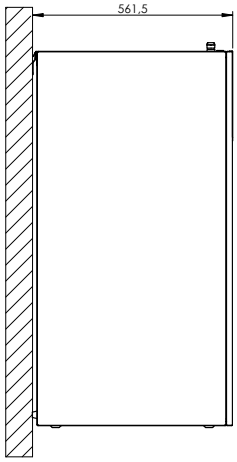


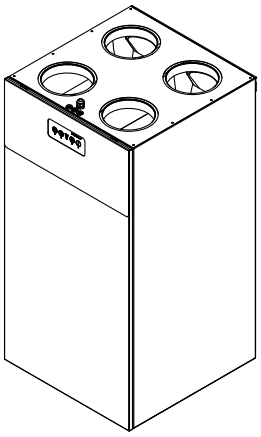
Top view



Bottom view







REVIT Revit files are available for free on request. Contact your local supplier or Dantherm for access.

DUCT CONNECTIONS

2 set-up in 1 unit, easy change on site

(A) LEFT SET-UP
Factory set-up

- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

(B) RIGHT SET-UP Optional -
easy change on site

On the HCV 460 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor

Dantherm CLIMATE SOLUTIONS

WALL-MOUNTED UNITS

HCV 460E1

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- Summer mode in which supply fan is stopped and any open window will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- High-efficiency heat recovery
- EC fan motors with extremely low energy consumption (low SPI)
- Easy-to-install and commission solution with built -in air pressure spigots for easy calibration
- Highly customisable units with the option to add a high variety of internal as well as external accessories
- The HCV 460 takes up only as little space as a 60 x 60cm cupboard

The HCV 460E1 is a highly efficient residential ventilation unit for houses, villas, and apartments of up to 450m^2 or more. It comes supplied as a packaged basic ventilation unit complete with built-in control panel, and is delivered with all parts necessary for wall installation. All HCV 460 units also fit perfectly in a 60 x 60cm cupboard.

The HCV 460 comes in Aluzinc. The units will be delivered on pallets of four to reduce packaging and shipping costs. This makes it ideal for large-scale projects.

WALL-MOUNTED UNITS

HCV 460$_{E1}$

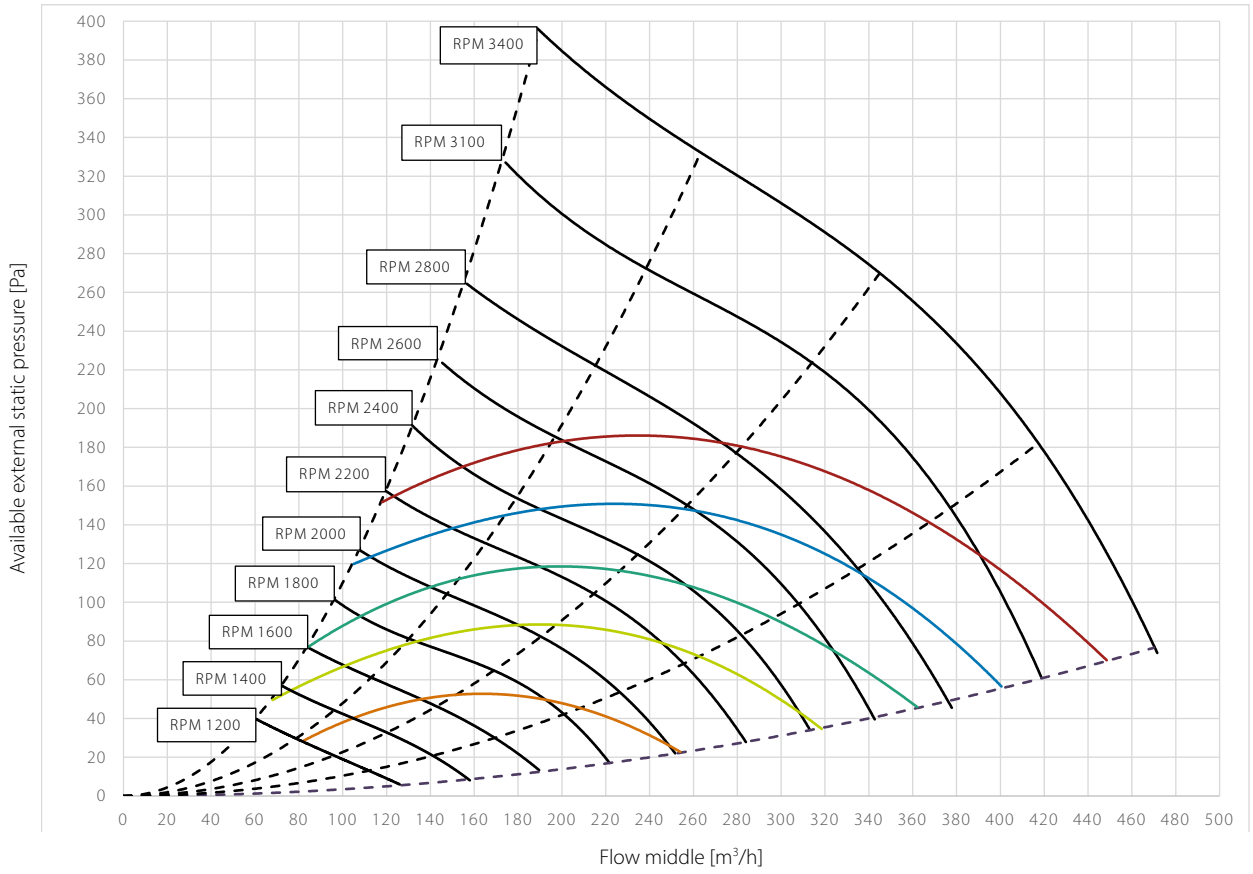
TECHNICAL DATA

Specifications	Units		HCV 460$_{E1}$
Max. flow	V100Pa	m³/h	460
Max. rated flow	Vmax.rated	m³/h	360
EN 13141-7 reference flow at 50Pa	V_{ref}	m³/h	252
Performance			
Thermal efficiency in accordance with EN13141-7	η_{SUP}	%	77
Leakage (external and internal) in accordance with EN13141-7		%	<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779			G4 (optional on supply: F7)
Installation surrounding temperature	t_{SURR}	°C	+12 to +50
Outdoor temperature without preheater installed	t_{ODA}	°C	-12 to +50
Outdoor temperature with preheater installed	t_{ODA}	°C	-20 to +50
Maximum absolute humidity in extract air	x	g/kg	10
Cabinet			
Exterior dimensions without wall brackets	w x h x d	mm	540 x 549 x 1050
Spigots/duct connections	Ø	mm	160 – female
Weight		kg	40
Heat conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transfer coefficient of the polystyrene insulation	U	W/m²K	U<1
Fire classification of the polystyrene insulation	class		"DIN 4102-1 class B2 EN 13501 class E"
Drainage hose (included)	Ø/length	"/m	¾/1
Cabinet colour	RAL	-	9016
Electrical			
Voltage	U	V	230
Maximum power consumption without/with preheater	P	W	230/2,080
Frequency	f	Hz	50
Protection class	-	-	IP21

* *The use of preheating coil is recommended at outdoor temperature -3°C to ensure balanced operation.*
** *+20mm fitting.*

HCV 460E1

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

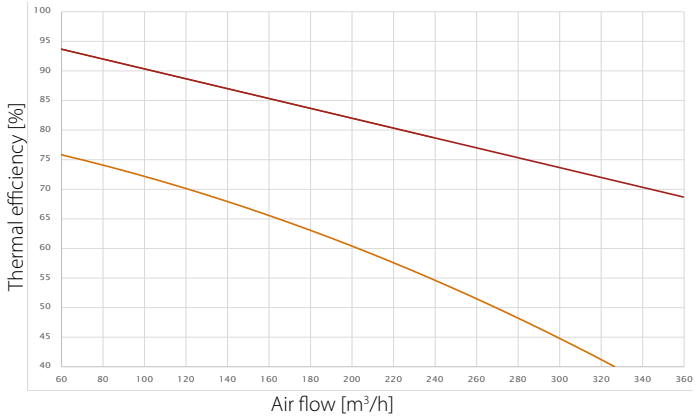
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 85% RH; extract air: 20°C, 38% RH
- Humidity efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 88% RH; extract air: 20°C, 60% RH

All values at balanced flow



SOUND POWER LEVEL (Lw) – DUCTS

		[dB(A)]								
RPM	Duct	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	supply/exhaust	28.6	31.3	32.3	32.3	26.8	23.0	11.7	14.5	37
	extract/outdoor	28.0	38.1	38.1	37.5	30.6	29.4	15.5	16.4	43
1300	supply/exhaust	30.5	31.8	34.2	34.1	28.5	24.6	14.5	17.9	39
	extract/outdoor	29.4	39.7	39.8	39.5	32.3	31.7	19.0	19.0	45
1400	supply/exhaust	31.4	32.2	36.1	36.2	30.4	27.1	16.6	18.3	41
	extract/outdoor	30.6	39.3	41.2	41.2	33.7	33.5	20.2	20.4	46
1500	supply/exhaust	32.8	33.0	38.7	38.2	32.3	29.3	18.2	19.6	43
	extract/outdoor	31.8	39.0	43.5	43.1	35.4	35.3	22.3	21.6	48
1600	supply/exhaust	33.6	33.7	40.3	39.7	33.8	31.1	20.3	20.4	44
	extract/outdoor	33.3	38.7	46.1	44.8	37.0	37.2	25.1	22.1	49
1700	supply/exhaust	34.2	34.2	43.3	41.4	35.2	32.6	20.9	21.0	46
	extract/outdoor	34.0	39.2	48.8	46.1	38.3	38.7	26.6	22.6	51
1800	supply/exhaust	33.7	32.8	44.1	43.1	36.9	34.5	22.7	21.6	47
	extract/outdoor	35.2	39.7	52.0	47.2	39.8	40.1	28.7	23.0	54
1900	supply/exhaust	34.8	34.0	45.4	44.5	38.3	36.1	24.6	22.1	49
	extract/outdoor	35.9	40.1	52.4	47.9	40.7	41.2	30.1	23.4	54
2000	supply/exhaust	35.7	34.8	47.0	45.2	39.5	37.2	25.4	23.0	50
	extract/outdoor	37.2	40.8	55.2	48.3	42.1	42.6	31.7	23.8	57
2100	supply/exhaust	36.6	35.3	48.3	46.1	40.8	38.4	26.7	23.8	51
	extract/outdoor	38.1	41.6	56.0	49.2	43.3	43.7	33.2	24.6	57
2200	supply/exhaust	38.4	37.1	50.0	47.1	42.3	39.8	28.6	24.1	53
	extract/outdoor	38.5	42.7	58.5	50.3	44.6	44.9	34.7	27.0	59
2300	supply/exhaust	38.9	37.9	52.6	48.4	43.6	41.0	30.2	24.5	55
	extract/outdoor	39.4	43.3	60.8	51.4	45.4	45.7	35.7	27.8	62
2400	supply/exhaust	39.9	38.7	52.8	49.6	44.6	42.1	31.6	24.7	55
	extract/outdoor	40.4	44.1	60.0	52.7	46.6	46.8	37.0	29.5	61
2500	supply/exhaust	41.0	39.4	53.4	50.6	45.6	43.0	32.7	25.6	56
	extract/outdoor	41.1	45.0	59.3	54.4	47.5	47.7	38.2	30.8	61
2600	supply/exhaust	42.5	40.3	54.0	52.0	46.7	44.0	33.9	27.3	57
	extract/outdoor	42.3	45.5	60.5	56.3	48.6	48.7	39.2	32.2	62
2700	supply/exhaust	42.5	41.0	54.7	53.6	47.6	44.8	34.9	27.6	58
	extract/outdoor	42.4	46.3	62.3	58.3	49.6	49.4	40.1	33.1	64

SOUND PRESSURE LEVEL (L_P) – CABINET

1m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	-	-	12.9	19.5	21.5	21.9	18.0	10.3	27
1400	-	5.7	18.5	23.8	23.5	23.5	18.5	10.6	29
1600	-	6.0	22.1	26.9	26.3	27.6	18.8	11.0	32
1800	-	6.9	25.3	29.4	28.2	28.3	20.6	12.0	34
2000	-	7.6	27.8	31.2	30.7	30.5	22.6	14.3	36
2200	-	8.0	31.3	33.3	32.6	32.8	24.8	17.4	39
2600	-	10.5	31.3	38.2	37.0	36.9	29.7	22.8	43
3000	-	13.1	31.4	43.1	40.2	40.0	33.0	26.1	47
3400	-	16.7	33.8	49.7	44.5	43.3	36.5	29.8	52

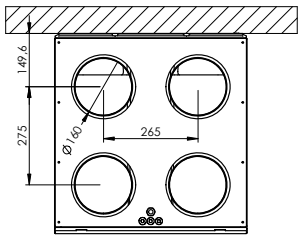
2m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	-	-	8.7	18.6	21.5	21.9	18.0	10.3	27
1400	-	-	12.7	22.1	22.8	22.8	18.5	10.6	28
1600	-	-	16.9	25.3	25.5	24.9	18.8	11.0	31
1800	-	2.1	20.0	28.6	27.2	26.4	20.6	12.0	33
2000	-	3.5	22.9	30.9	29.4	28.5	21.7	13.6	35
2200	-	5.0	26.4	32.6	31.4	30.1	23.2	15.3	37
2600	-	8.1	27.3	37.2	36.3	33.8	27.1	19.9	41
3000	-	11.0	30.0	43.1	39.1	37.2	30.7	23.6	46
3400	-	14.0	30.9	49.7	42.7	41.6	34.1	27.1	51

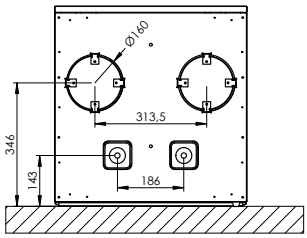
HCV 460E1

DIMENSIONS

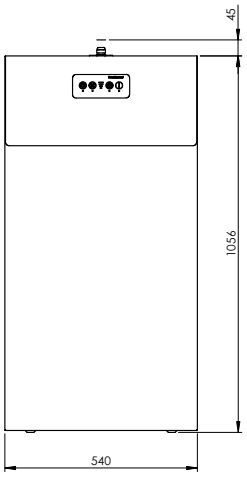
On the HCV 460 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor.

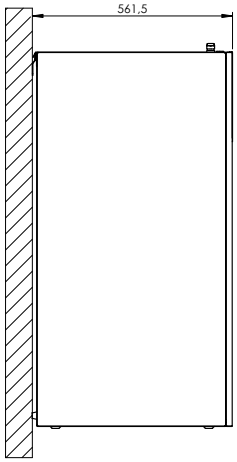


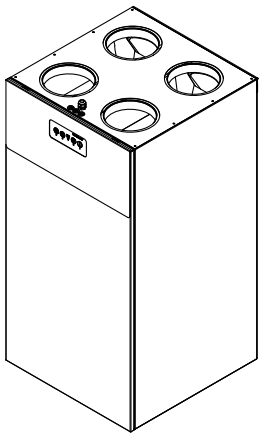
Top view



Bottom view







REVIT Revit files are available for free on request. Contact your local supplier or Dantherm for access.

DUCT CONNECTIONS

2 set-up in 1 unit, easy change on site

(A) LEFT SET-UP
Factory set-up

- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

(B) RIGHT SET-UP Optional - easy change on site

On the HCV 460 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor

Dantherm CLIMATE SOLUTIONS

WALL-MOUNTED UNITS

HCV 500

The HCV 500 is a highly efficient residential ventilation unit for houses, villas, and apartments of up to 450m² or more. It comes supplied as a packaged basic ventilation unit complete with built-in control panel, and are delivered with all parts necessary for wall installation. The HCV 500 is ideal for free wall installation with minimum 700mm space. A standard wall rail is supplied with all units.

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- Summer mode in which supply fan is stopped and any open window will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- High-efficiency heat recovery
- EC fan motors with extremely low energy consumption (low SPI)
- Easy-to-install and commission solution with built-in air pressure spigots for easy calibration
- Highly customisable units, with option a high variety of internal as well as external accessories
- A standard wall rail is supplied with the unit

Third party testing and certifications

Code	Description
DIBt	Certified by the German Institute of Construction Technology
EPB	Listed in the database for Energy Performance of Buildings in Belgium
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

HCV 500

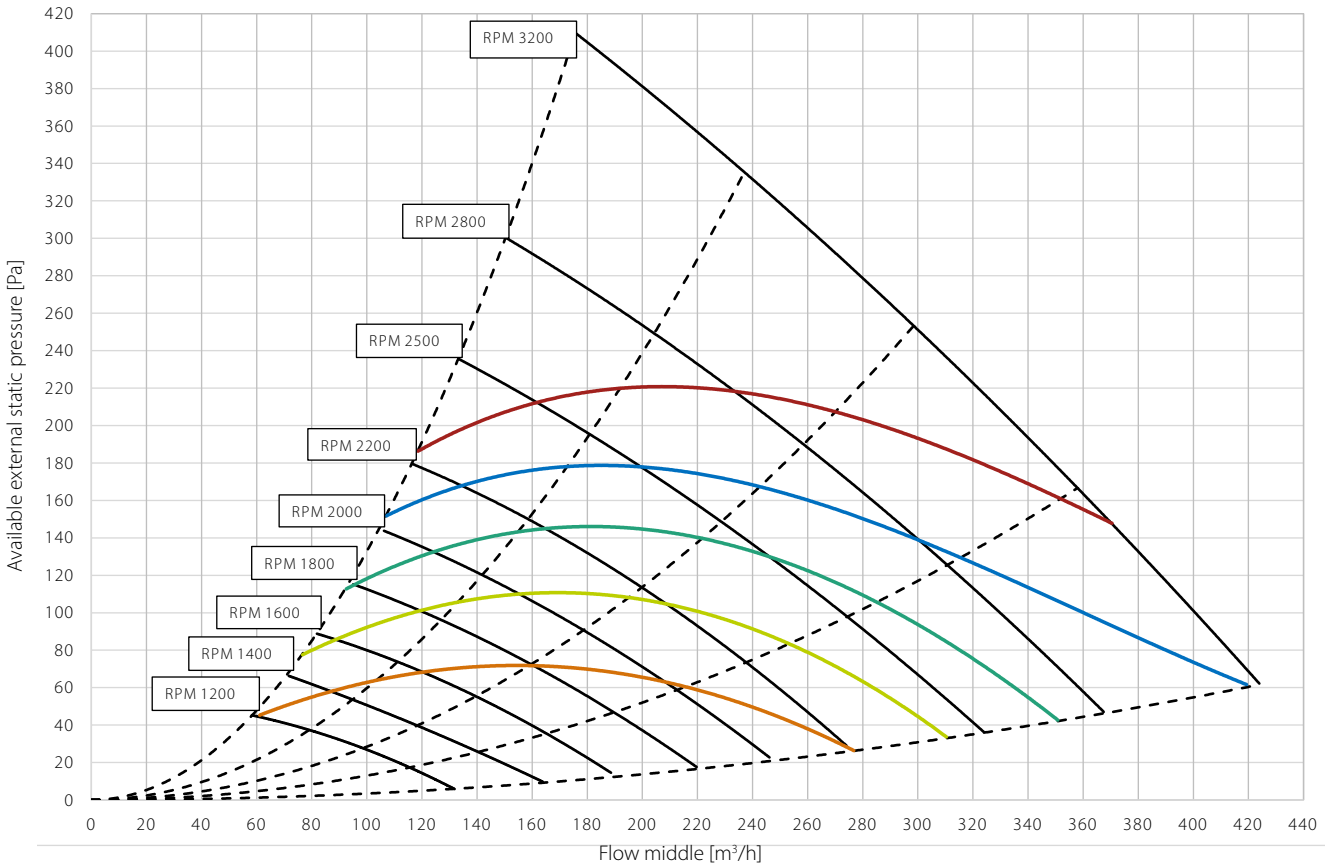
TECHNICAL DATA

Specifications	Units		HCV 500
Max. flow	V100Pa	m^3/h	400
Max. rated flow	Vmax.rated	m^3/h	300
Recommended operating range	V	m^3/h	70 - 300
EN 13141-7 reference flow at 50Pa	V_{ref}	m^3/h	210
Performance			
Thermal efficiency in accordance with EN13141-7	η_{SUP}	%	86
Specific power consumption in accordance with EN13141-7	SFP	$W/m^3/h$	0.21
Leakage (external and internal) in accordance with EN13141-7	-	%	<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779	-	-	G4 (optional on supply: F7)
Installation ambient temperature	t_{SURR}	°C	+12 to +50
Outdoor temperature range without preheater installed	t_{ODA}	°C	-12* to +50
Outdoor temperature range with preheater installed	t_{ODA}	°C	-20 to +50
Maximum absolute humidity in extract air	x	g/kg	10
Cabinet			
Dimensions (without wall bracket)	w x d x h	mm	700 x 603 x 1050
Spigots/duct connections	Ø	mm	160 – female
Weight		kg	49.5
Thermal conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transition figures – polystyrene insulation	U	W/m^2K	<1
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Drainage hose	Ø/length	"/m	¾ / 1
Cabinet colour	RAL	-	9016
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	170/1370
Frequency	f	Hz	50
Protection class	-	-	IP21

** The use of the preheating coil is recommended at outdoor temperature below -3°C to ensure balanced operation.*

HCV 500

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

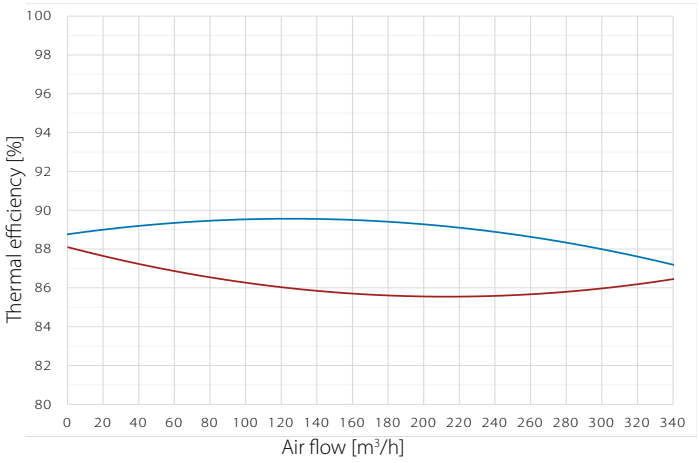
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 88% RH; extract air: 20°C, 38% RH
- Thermal efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 87% RH; extract air: 20°C, 60% RH

All values at balanced flow



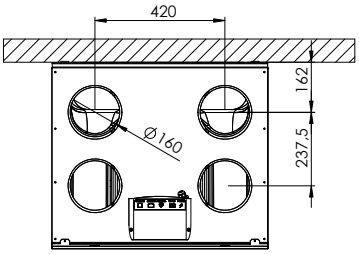
HCV 500

SOUND DATA WITH G4/G4 FILTERS

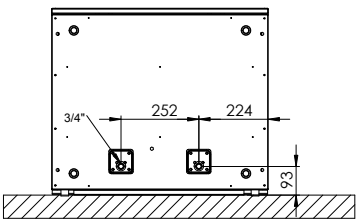
Air volume	Pres-sure	Operational point	Frequency band sound power Lw(A) dB(A)								Total sound power	Sound pressure standard room*
m³/h	Pa		63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	Lw(A) dB(A)	Lp(A) dB(A)
230	100	Supply air	41	44	52	49	42	37	29	22	55	
		Extract air	49	50	59	54	46	44	37	27	61	
		Cabinet	30	41	46	48	42	37	25	19	51	46

**Standard room = room with 10m² floor, 2.4m ceiling height, mean absorption 0.2*

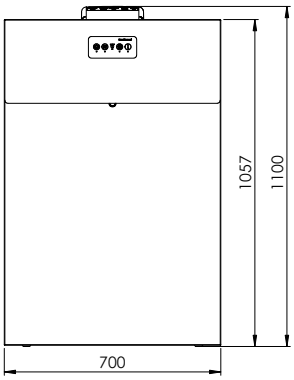
DIMENSIONS

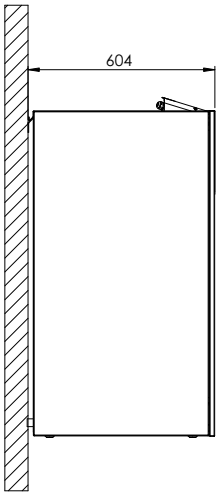


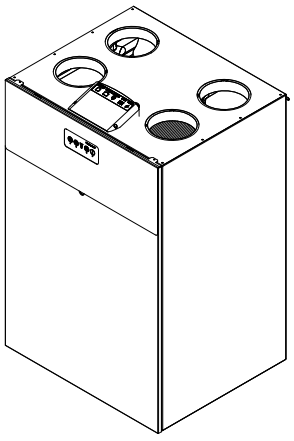
Top view



Bottom view







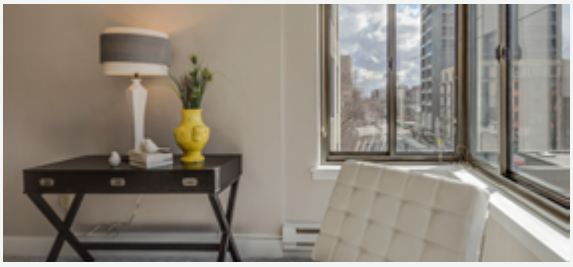
REVIT

Revit files are available for free on request. Contact your local supplier or Dantherm for access.

WALL-MOUNTED UNITS

HCV 700

The HCV 700 is a highly efficient residential ventilation unit for houses, villas, and apartments of up to 450m^2 or more. It comes supplied as a packaged basic ventilation unit complete with built-in control panel, and are delivered with all parts necessary for wall installation. The HCV 700 is ideal for free wall installation with minimum 700mm space. A standard wall rail is supplied with all units.



- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- Summer mode, in which supply fan is stopped and any open window will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure, to enhance chimney functionality
- High-efficiency heat recovery
- EC fan motors with extremely low energy consumption (low SPI)
- Easy-to-install and commission solution with built-in air pressure spigots for easy calibration
- Highly customisable units, with the option to add a high variety of internal as well as external accessories
- A standard wall rail is supplied with the unit

Third party testing and certifications

Code	Description
DIBt	Certified by the German Institute of Construction Technology
EPB	Listed in the database for Energy Performance of Buildings in Belgium
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

HCV 700

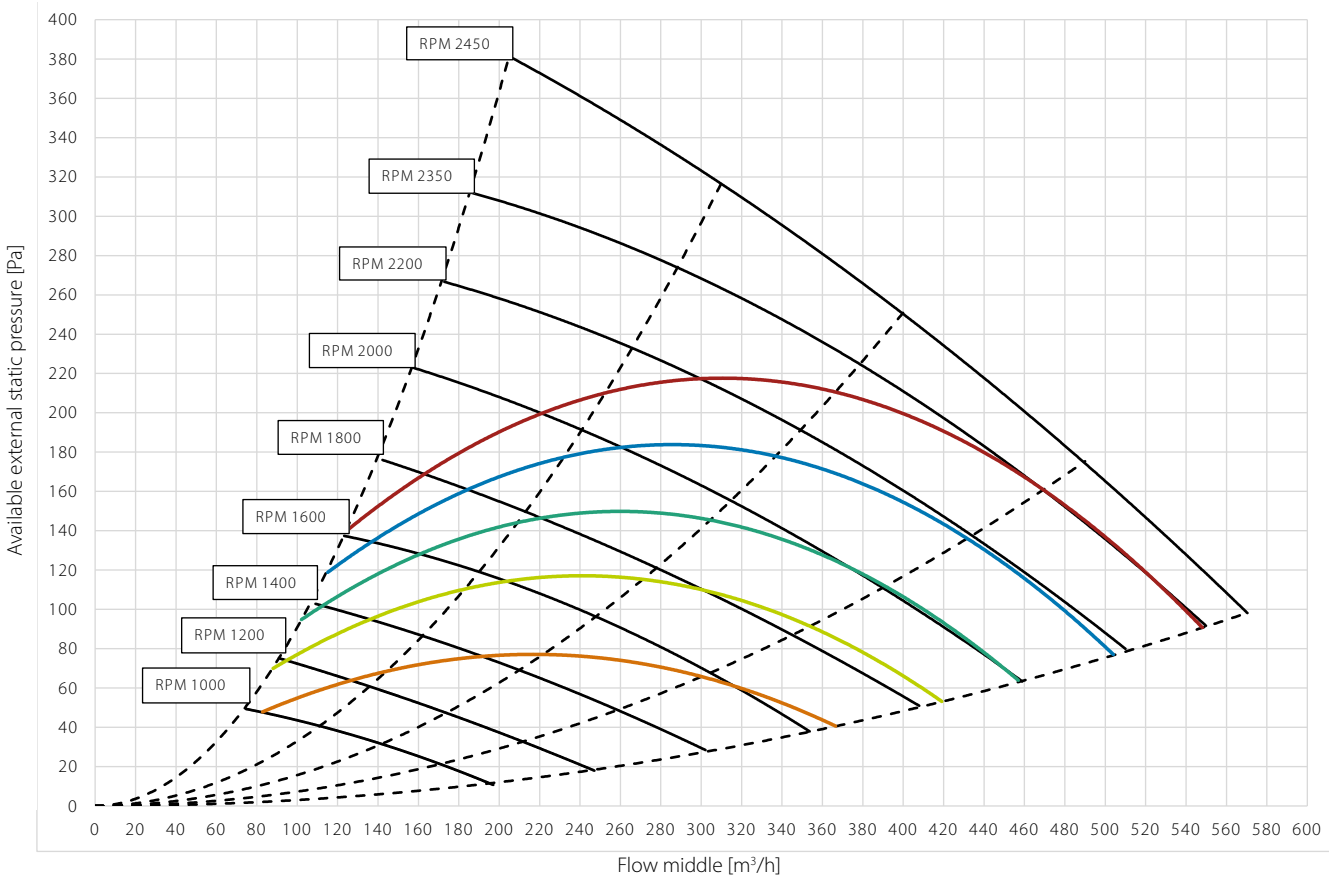
TECHNICAL DATA

Specifications	Units		HCV 700
Max. flow	V100Pa	m^3/h	550
Max. rated flow	Vmax.rated	m^3/h	450
Recommended operating range	V	m^3/h	80 - 450
EN 13141-7 reference flow at 50Pa	V_{ref}	m^3/h	315
Performance			
Thermal efficiency in accordance with EN13141-7	η_{SUP}	%	85
Specific power consumption in accordance with EN13141-7	SFP	$W/m^3/h$	0.22
Leakage (external and internal) in accordance with EN13141-7	-	%	<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779	-	-	G4 (optional on supply: F7)
Installation ambient temperature	t_{surp}	°C	+12 to +50
Outdoor temperature range without preheater installed	t_{ODA}	°C	-12* to +50
Outdoor temperature range with preheater installed	t_{ODA}	°C	-20 to +50
Maximum absolute humidity in extract air	x	g/kg	10
Cabinet			
Dimensions (without wall bracket)	w x d x h	mm	700 x 750 x 1050
Spigots/duct connections	Ø	mm	200 – female
Weight		kg	70
Thermal conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transition figures – polystyrene insulation	U	W/m^2K	<1
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Drainage hose	Ø/length	"/m	¾ / 1
Cabinet colour	RAL	-	9016
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	234/1,834
Frequency	f	Hz	50
Protection class	-	-	IP21

** The use of the preheating coil is recommended at outdoor temperature below -3°C to ensure balanced operation.*

HCV 700

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

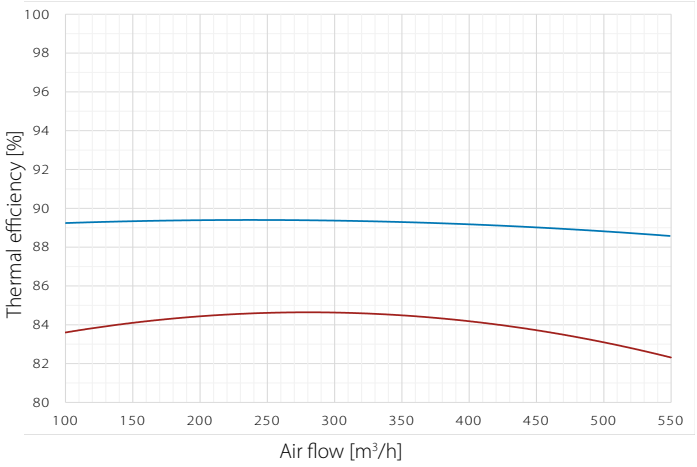
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 85% RH; extract air: 20°C, 37% RH
- Thermal efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 87% RH; extract air: 20°C, 60% RH

All values at balanced flow

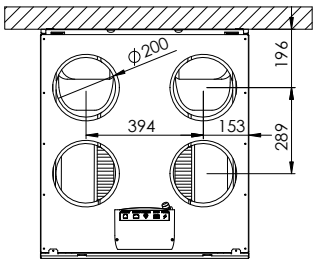


HCV 700

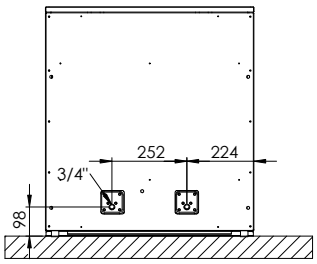
SOUND DATA WITH G4/G4 FILTERS

Air volume	Pres-sure	Operational point	Frequency band sound power Lw(A) dB(A)								Total sound power	Sound pressure standard room*
m³/h	Pa		63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	Lw(A) dB(A)	Lp(A) dB(A)
350	100	Supply air	54	55	64	57	53	45	35	27	65.5	
		Extract air	63	62	68	63	56	52	44	34	71.1	
		Cabinet	36	45	55	52	50	43	28	20	57.8	53

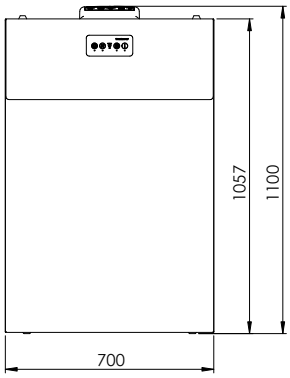
DIMENSIONS

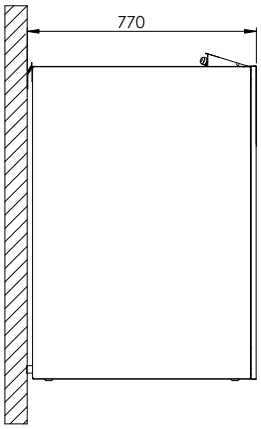


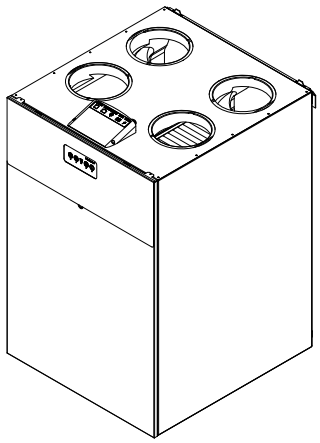
Top view



Bottom view







REVIT

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CEILING- AND WALL-MOUNTED

ENERGY-EFFICIENT VENTILATION SOLUTIONS FOR:
HOMES, APARTMENTS, NEW-BUILDS AND RENOVATIONS

QUICK GUIDE

HCC 2 PLA

HCC 260$_{P1}$

HCC 360$_{P2}$
HCC 360$_{E1}$

INSTALLATION

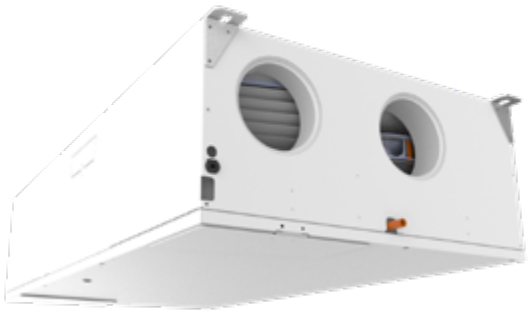
WALL-MOUNTED

ATTIC-MOUNTED

CEILING

CEILING AND WALL-MOUNTED

HCC RANGE



PAINTED IN RAL 9016

SURFACE IN ALUZINC

Model range

The HCC range is available in a variant with an Aluzinc surface, standard filter resetting capability as well as easy PCB access to connect accessories. Delivered four units on a pallet at a time, it also minimises the use of packaging in consideration of the environment.

Overview

The HCC residential ventilation unit is primarily designed for new constructions or retrofitting into multiple apartment buildings. The outer dimensions and design allow easy installation into a suspended ceiling or onto a wall, hidden inside a closet.

The unit is supplied as a basic unit, with the option of fitting a wide range of accessories into the unit, thus extending the comfort and reducing the energy consumption.

The residential ventilation unit is equipped with a highly efficient plastic counter-flow heat exchanger, which is optimised to a high efficiency level. This, combined with a low headroom, results in a very slim ventilation unit, easily hidden in a suspended ceiling, together with the duct system.

HCC enclosure

The unit enclosure is designed to fit low headroom suspended ceilings, and yet still with easy service access. The outer surface is 0.8mm Aluzinc powder coated sheet, which comes in options painted with white in RAL 9010 or not, with two external lids covering the two filter slots.

All inside air paths and insulation, is made of EPS (Polystyrene). This has a high insulation level, and good air tightness, which permits location of the units in spaces with temperatures down to +12°C .

Because of their ability to be either ceiling- or wall-mounted, the units will fit into almost any residential area without being visible.

Function

The unit ventilates residential homes by extracting the inside humid air, and replacing it with fresh outside air, which has been heated with the heat energy of the extracted air. This reduces energy consumption.

CEILING AND WALL-MOUNTED

HCC RANGE

When very humid inside air is extracted, the humidity will condensate inside the heat exchanger, and be collected by the embedded drip tray. This water is drained from the unit through the enclosed hose and then disposed of in the nearest drainage.

Mirroring all duct connections

The air flow direction can be electronically swapped, providing ability to route the connected ducts, either to the right or to the left. This means that the supply air duct connections can be either to the right or to the left hand side of the unit. (Supply air and extract air duct connections always towards the inside of the house and outside air and exhaust air ducts always towards the outside of the house).

All electrical cables can be connected from either the left or the right hand side, regardless of fan direction.

Filters

Requiring no tools, users can change the filter on their own and then reset the filter timer using the standard filter resetting button (HCC 260 and HCC 360) or the optional HCP 11 wired control. If no controls are available, the filter is to be changed by an installer with the appropriate PC Tool on his laptop for resetting the filter timer.

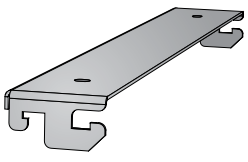
Apart from changing the air filters and cleaning the outside of the unit, any other form of service will have to be carried out by qualified personnel. Local Dantherm technicians and Dantherm partners are always available to solve any problem with the unit that might arise.

Removing the front cover gives access to all types of service and repair.

Installation parts

The enclosed mounting bracket is designed to conduct a safe installation process, and is suitable for both wall and ceiling installation.

The mounting bracket will tilt the unit slightly towards the drainage spigot, ensuring correct drainage of any condensed water inside the unit when used for ceiling installation. It will also offer a easy wall installation process.



UNIVERSAL MOUNTING BRACKET

FILTER CHANGE

ILLUSTRATION OF DUCT CONNECTIONS IN FAN DIRECTION MODE A

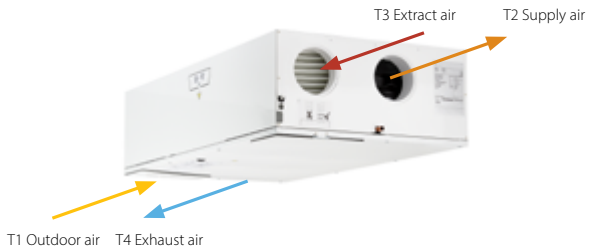
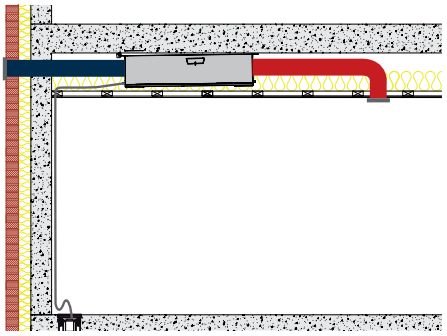
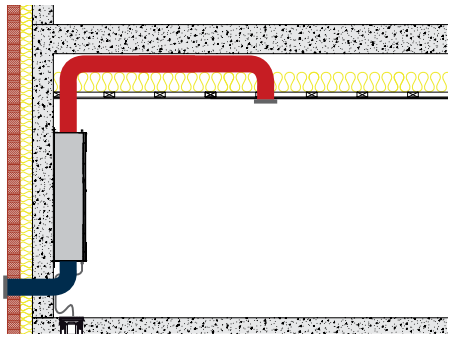


ILLUSTRATION OF DUCT CONNECTIONS IN FAN DIRECTION MODE B



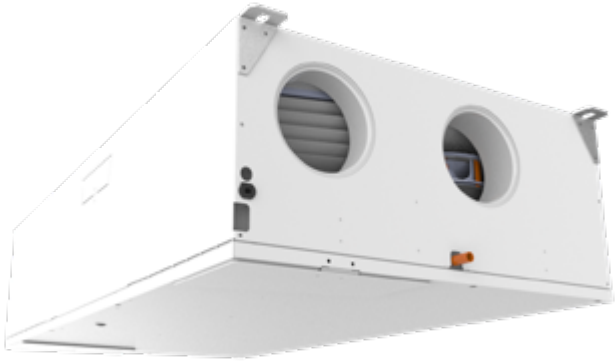
HCC 2 IN SUSPENDED CEILING



HCC 2 ON WALL

CEILING AND WALL-MOUNTED

HCC 2PLA



The HCC 2 is a unique and flexible residential ventilation solution. With only 30cm installation headroom it is ideal for installation in suspended ceilings or onto a wall, even hidden inside a closet. The unit can be electronically reversed, meaning that both air flows will be reversed. This allows the same unit type to be mounted with the inside/outside ducts connected to either the right or the left hand side of the unit. Electrical connections can be connected from either the left or the right.

- High efficiency heat recovery – up to 94%
- EC fan motors with low energy consumption (low SPI)
- Only 300mm installation headroom height is required
- Time controlled ventilation level, based on 11 different built-in pre-programmed week programs, reducing power consumption in periods with low ventilation demands
- Summer cooling mode
- AAutomatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a momentary inside overpressure, to enhance chimney functionality
- Easy-to-install and commissioning solution with built in air measure ports, for easy balancing with PC Tool
- Electronically left/right fan direction switching, allowing same unit type to adapt any physical installation requirements, regardless of ceiling and wall selection
- TCP/IP ModBus connection, for inter-operation with Building Management System
- Electrical connections can be connected from either the left or the right

Third party testing and certifications

Code	Description
PHI	Passivhaus certified
DIBt	Certified by the German Institute of Construction Technology
EPB	Listed in the database for Energy Performance of Buildings in Belgium
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

CEILING AND WALL-MOUNTED

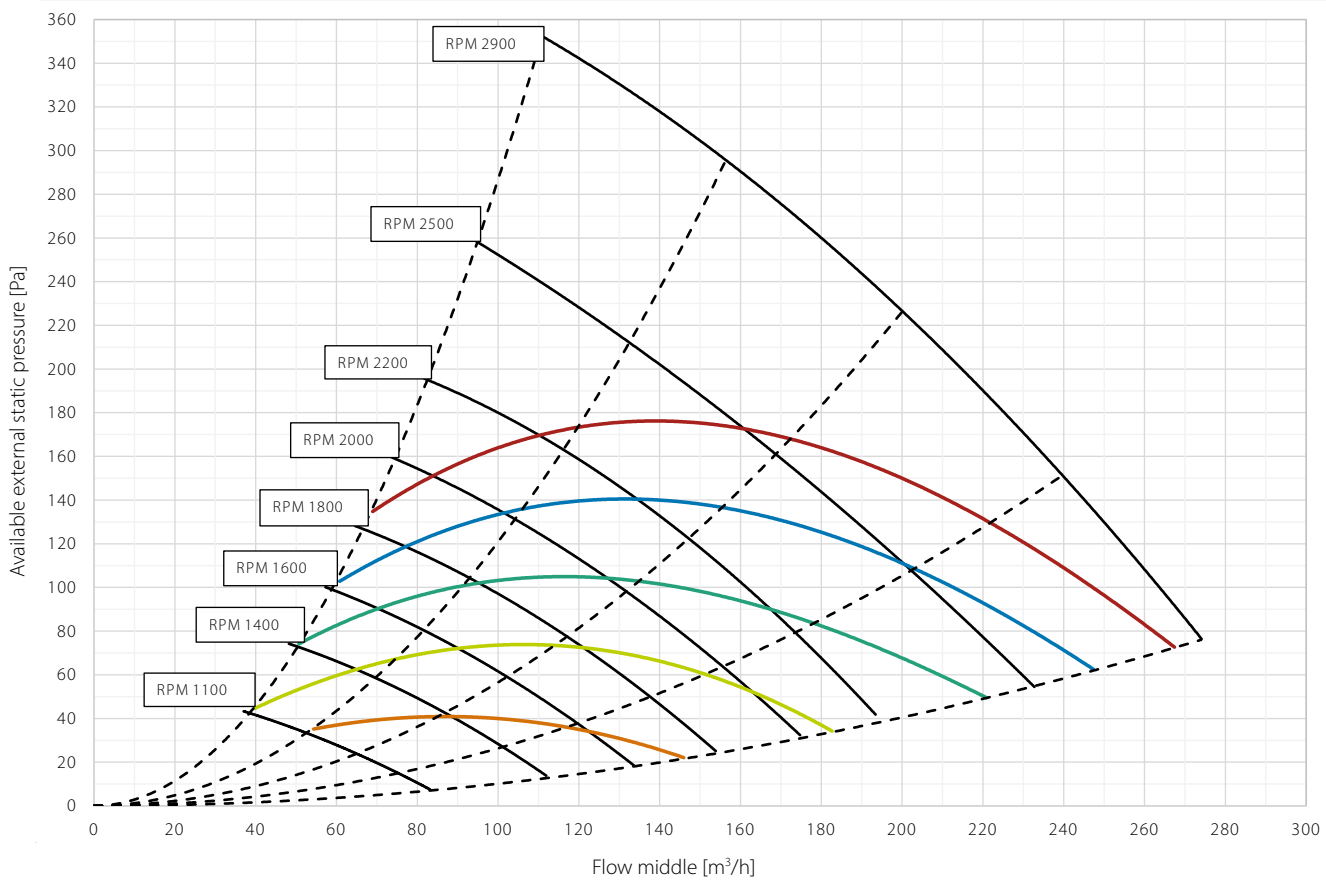
HCC 2PLA

TECHNICAL DATA

Specifications	Units		HCC 2PLA
Max. flow	V100Pa	m^3/h	260
Max. rated flow at 100Pa	Vmax.rated	m^3/h	180
Recommended operating range	V	m^3/h	50 - 180
Operating range DIBt	V_{DBIt}	m^3/h	70 to 140
Operating range Passivhaus at 100Pa	V_{PHI}	m^3/h	70 to 140
EN 13141-7 reference flow at 50Pa	V_{REF}	m^3/h	126
Performance			
Thermal efficiency DIBt	η_{DBIt}	%	93.8
Thermal efficiency Passivhaus	η_{PHI}	%	93
Thermal efficiency EN 13141-7 at reference flow	η_{EN}	%	94
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779	-	-	G4 (optional on supply: F7)
Installation surrounding temperature range	t_{surr}	°C	+12 to +40
Maximum humidity in extract air at 25°C	RH	%	55
Outdoor temperature range without preheating installed	t_{ODA}	°C	-12* to +45
Outdoor temperature range with preheating installed	t_{ODA}	°C	-15 to +45
Cabinet			
Dimensions (without wall bracket)	w x d x h	mm	600 x 279 x 1122
Spigots/duct connections	Ø	mm	125 – female
Weight	m	kg	34
Heat conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transfer coefficient – polystyrene insulation	U	W/m^2K	<1
Leakage (external and internal) according to EN 13141-7	class		<2% (Class A1)
Drainage hose (included)	Ø	"	1/2
Cabinet colour	RAL	-	9016
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	127/1,027
Frequency	f	Hz	50
Protection class	-	-	IP20

** In order to ensure balanced ventilation, preheater is recommended when outdoor temperature is below -3°C.*

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

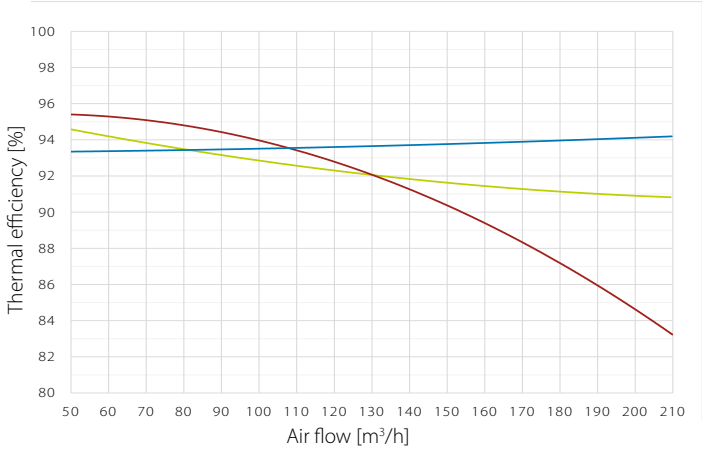
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 88% RH; extract air: 20°C, 38% RH
- Thermal efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 85% RH; extract air: 20°C, 60% RH
- Thermal efficiency according Passivhaus Institut
  Operational conditions: outdoor air: 4°C, 94% RH; extract air: 21°C, 30% RH

All values at balanced flow



SOUND DATA WITH G4/G4 FILTERS

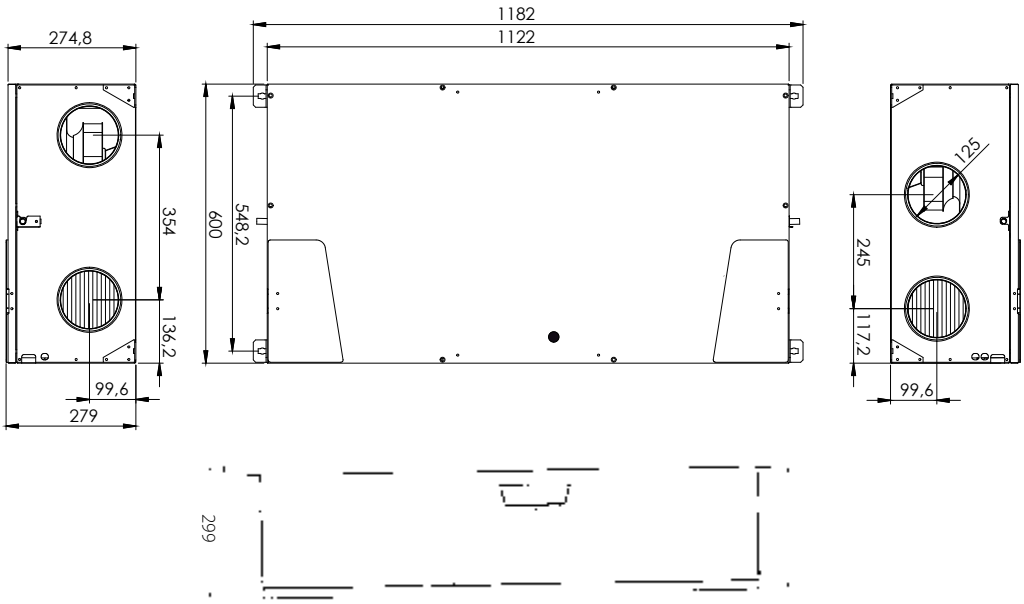
Air-volume	Pres.	Measure point	Frequency band sound power L_W(A) dB(A)								Total sound power L_W(A)	Sound pres. Lp(A) Standard room*
m³/h	Pa		63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	dB(A)	dB(A)
80	30	Supply air	23	43	40	42	39	32	20	18	47	
		Extract air	12	26	24	24	16	16	17	18	30	
		Cabinet									30	25
98	50	Supply air	28	41	51	48	44	39	26	18	54	
		Extract air	16	27	31	29	19	16	17	18	35	
		Cabinet									34	29
100	100	Supply air	32	49	56	52	49	44	33	19	59	
		Extract air	19	31	42	33	23	19	17	18	43	
		Cabinet									37	32
126	70	Supply air	31	43	55	52	49	45	33	19	58	
		Extract air	19	30	42	33	23	19	17	18	42	
		Exhaust air	30	43	54	52	47	43	32	18	57	
		Cabinet									40	35
140	100	Supply air	34	46	56	56	52	49	37	21	60	
		Extract air	21	33	44	36	27	21	18	18	45	
		Exhaust air	33	45	56	56	51	47	36	20	60	
		Cabinet									43	38
162		Cabinet									46	41
198		Cabinet									48	43

** Standard room = room with 10m² floor, 2.4m ceiling height, mean absorption 0.2.*

CEILING AND WALL-MOUNTED

HCC 2PLA

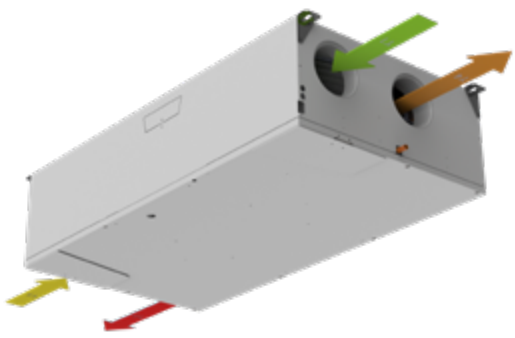
DIMENSIONS



DUCT CONNECTIONS

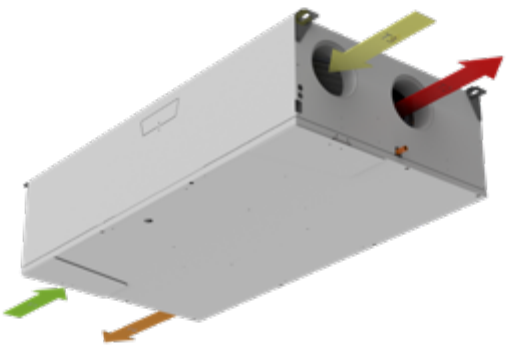
2 set-up in 1 unit, easy change on site

(A) LEFT SET-UP
Factory set-up



- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

(B) RIGHT SET-UP Optional -
easy change on site



On the HCC 2 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor

CEILING AND WALL-MOUNTED

HCC 260P1

The HCC 260P1 is a unique and flexible residential ventilation solution. With only 30cm installation headroom it is ideal for installation in suspended ceilings or onto a wall, even hidden inside a closet. The unit can be electronically reversed, meaning that both air flows will be reversed. This allows the same unit type to be mounted with the inside/outside ducts connected to either the right or the left hand side of the unit. Electrical connections can be connected from either the left or the right.

The HCC 260P1 has an Aluzinc surface, standard filter resetting capability as well as easy PCB access to connect accessories. Delivered 4 units on a pallet at a time, it also minimises the use of packaging in consideration of the environment.

- High efficiency heat recovery – up to 94%
- EC fan motors with low energy consumption (low SPI)
- Only 300mm installation headroom height is required
- Time controlled ventilation level, based on 11 different built-in pre-programmed week programs, reducing power consumption in periods with low ventilation demands
- Summer cooling mode
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a momentary inside overpressure, to enhance chimney functionality
- Easy-to-install and commissioning solution with built-in air measure ports, for easy balancing with PC Tool
- Electronically left/right fan direction switching, allowing same unit type to adapt any physical installation requirements, regardless of ceiling and wall selection
- TCP/IP ModBus connection, for inter-operation with Building Management System
- Electrical connections can be connected from either the left or the right
- Foil panel on unit

Third party testing and certifications

Code	Description
PHI	Passivhaus certified
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

CEILING AND WALL-MOUNTED

HCC 260P1

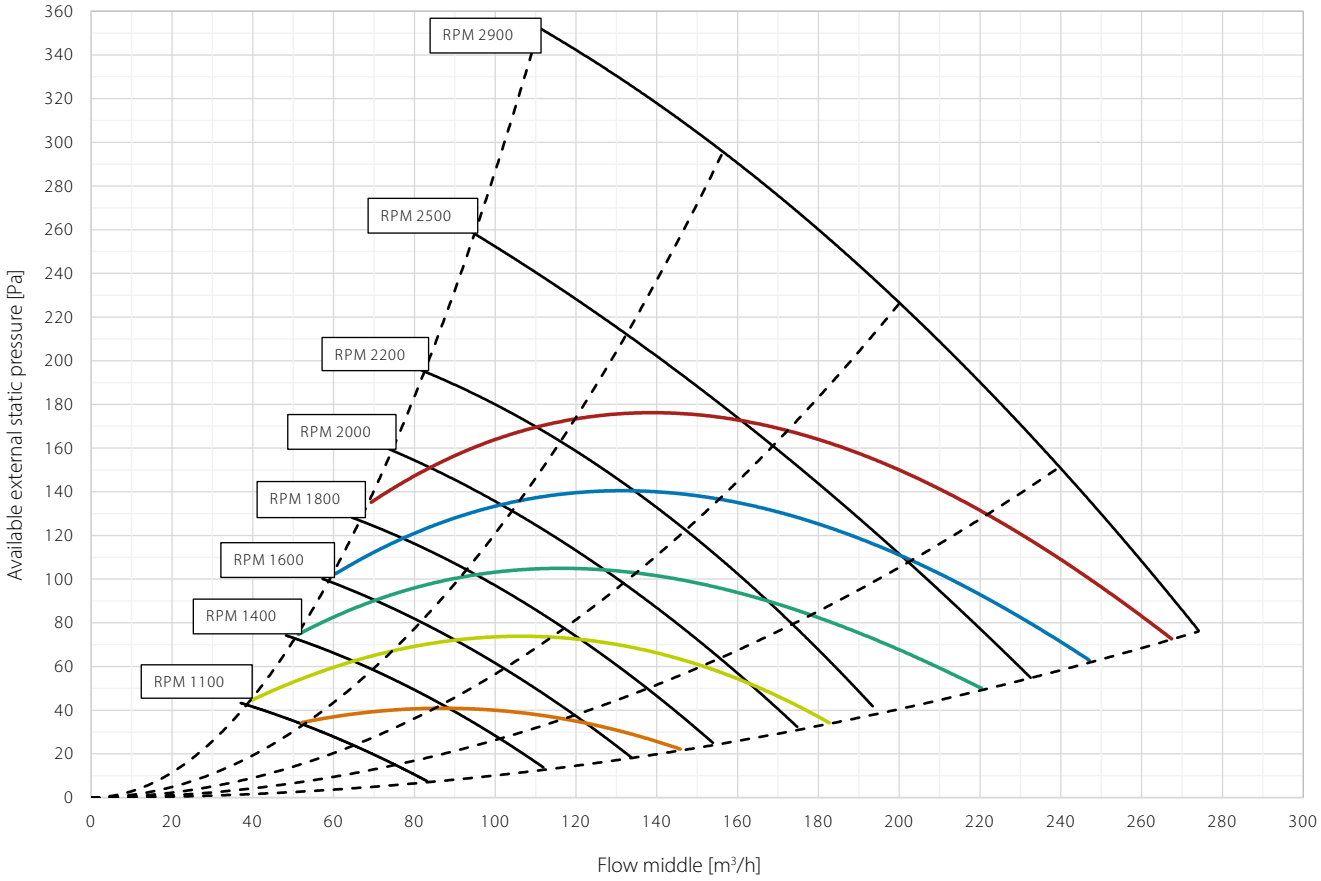
TECHNICAL DATA

Specifications	Units		HCC 260P1
Max. flow	V100Pa	m^3/h	260
Max. rated flow	Vmax.rated	m^3/h	180
Recommended operating range	V	m^3/h	50 - 180
Operating range DIBt	V_{DBIt}	m^3/h	70 to 140
Operating range Passivhaus at 100Pa	V_{PHI}	m^3/h	50 to 180
EN 13141-7 reference flow at 50Pa	V_{ref}	m^3/h	126
Performance			
Thermal efficiency DIBt	η_{DBIt}	%	93.8
Thermal efficiency Passivhaus	η_{PHI}	%	93
Thermal efficiency EN 13141-7 at reference flow	η_{EN}	%	94
Leakage (external and internal) according to EN 13141-7	class		<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779	-	-	G4 (optional on supply: F7)
Installation surrounding temperature range	t_{surr}	°C	+12 to +40
Maximum humidity in extract air at 25°C	RH	%	55
Outdoor temperature range without preheating installed	t_{ODA}	°C	-12* to +45
Outdoor temperature range with preheating installed	t_{ODA}	°C	-15 to +45
Cabinet			
Dimensions (without wall bracket)	w x d x h	mm	600 x 279 x 1122
Spigots/duct connections	Ø	mm	125 – female
Weight	-	kg	34
Heat conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transfer coefficient – polystyrene insulation	U	W/m^2K	<1
Drainage hose (accessory)	Ø		1/2"
Cabinet colour	-	-	Alu-zinc
Fire classification of the polystyrene insulation	class	-	DIN 4102-1 class B2 EN 13501 class E
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	127/1,027
Frequency	f	Hz	50
Protection class	-	-	IP20

** In order to ensure balanced ventilation, preheater is recommended when outdoor temperature is below -3°C.*

HCC 260P1

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

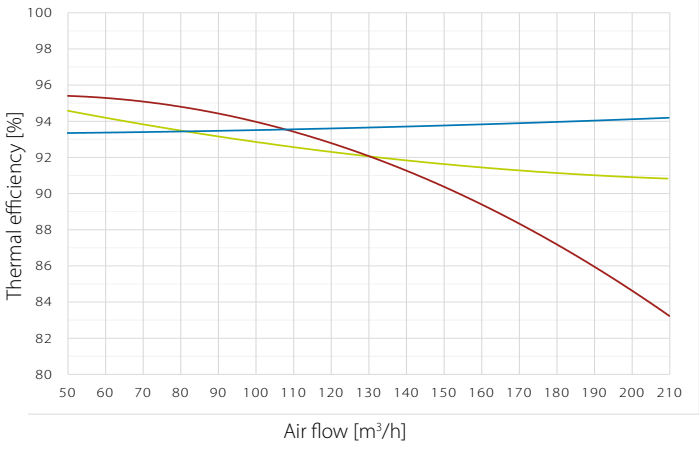
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 88% RH; extract air: 20°C, 38% RH
- Thermal efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 85% RH; extract air: 20°C, 60% RH
- Thermal efficiency according Passivhaus Institut
  Operational conditions: outdoor air: 4°C, 94% RH; extract air: 21°C, 30% RH

All values at balanced flow



Dantherm CLIMATE SOLUTIONS

HCC 260P1

SOUND DATA WITH G4/G4 FILTERS

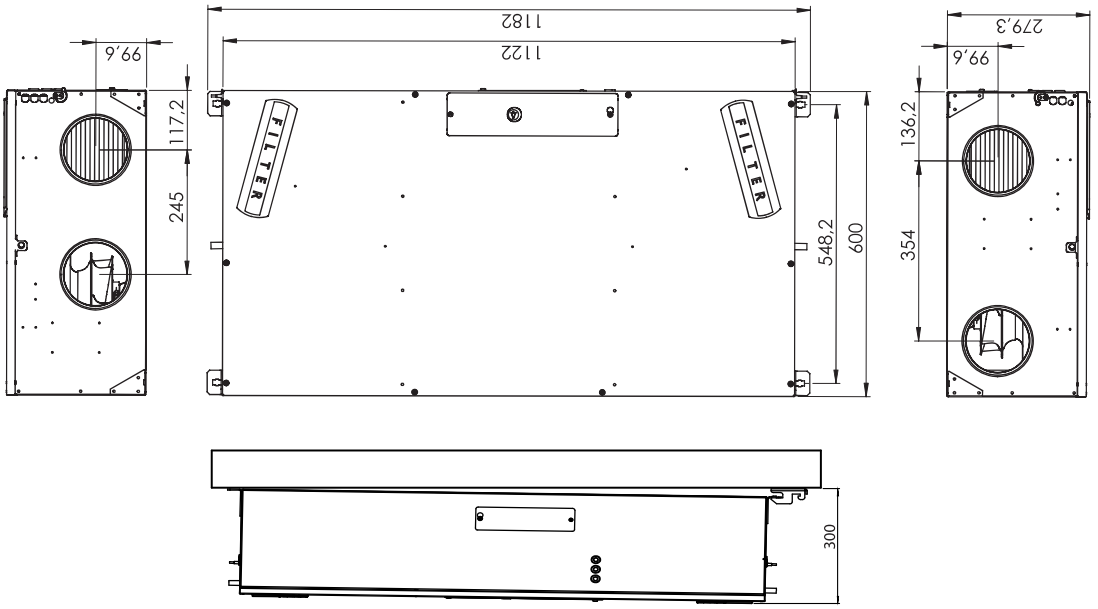
Air-volume	Pres.	Measure point	Frequency band sound power L_W(A) dB(A)								Total sound power L_W(A)	Sound pres. Lp(A) Standard room*
m³/h	Pa		63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	dB(A)	dB(A)
80	30	Supply air	23	43	40	42	39	32	20	18	47	
		Extract air	12	26	24	24	16	16	17	18	30	
		Cabinet									30	25
98	50	Supply air	28	41	51	48	44	39	26	18	54	
		Extract air	16	27	31	29	19	16	17	18	35	
		Cabinet									34	29
100	100	Supply air	32	49	56	52	49	44	33	19	59	
		Extract air	19	31	42	33	23	19	17	18	43	
		Cabinet									37	32
126	70	Supply air	31	43	55	52	49	45	33	19	58	
		Extract air	19	30	42	33	23	19	17	18	42	
		Exhaust air	30	43	54	52	47	43	32	18	57	
		Cabinet									40	35
140	100	Supply air	34	46	56	56	52	49	37	21	60	
		Extract air	21	33	44	36	27	21	18	18	45	
		Exhaust air	33	45	56	56	51	47	36	20	60	
		Cabinet									43	38
162		Cabinet									46	41
198		Cabinet									48	43

** Standard room = room with 10m² floor, 2.4m ceiling height, mean absorption 0.2.*

CEILING AND WALL-MOUNTED

HCC 260P1

DIMENSIONS

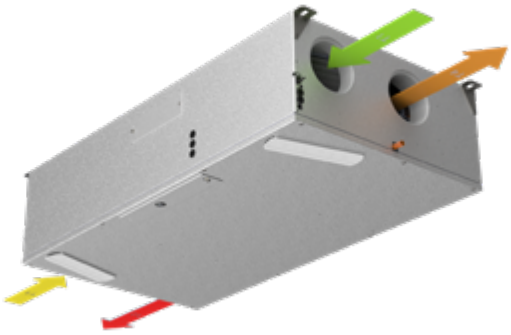


REVIT Revit files are available for free on request. Contact your local supplier or Dantherm for access.

DUCT CONNECTIONS

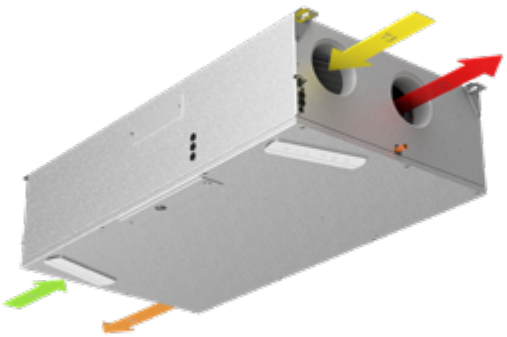
2 set-up in 1 unit, easy change on site

(A) LEFT SET-UP
Factory set-up



- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

(B) RIGHT SET-UP Optional -
easy change on site



Dantherm CLIMATE SOLUTIONS

CEILING AND WALL-MOUNTED

HCC 360E1

The HCC 360E1 is a unique and flexible residential ventilation solution. With only 30cm installation headroom it is ideal for installation in suspended ceilings or onto a wall, even hidden inside a closet. The unit can be electronically reversed, meaning that both air flows will be reversed. This allows the same unit type to be mounted with the inside/outside ducts connected to either the right or the left hand side of the unit. Electrical connections can be connected from either the left or the right.

The HCC 360E1's surface is in Aluzinc and the units will be delivered on pallets of four to reduce packaging and shipping costs. This makes it ideal for large-scale projects.

- High efficiency heat recovery – up to 85%
- EC fan motors with low energy consumption (low SPI)
- Only 300mm installation headroom height is required
- Time controlled ventilation level, based on 11 different built-in pre-programmed week programs, reducing power consumption in periods with low ventilation demands
- Summer cooling mode
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a momentary inside overpressure, to enhance chimney functionality
- Easy-to-install and commissioning solution with built in air measure ports, for easy balancing with PC Tool
- Electronically left/right fan direction switching, allowing same unit type to adapt any physical installation requirements, regardless of ceiling and wall selection
- TCP/IP ModBus connection, for inter-operation with Building Management System
- Electrical connections can be connected from either the left or the right
- Two humidity sensors to facilitate switching from left/right setup
- Prepared for easy mounting of condensate pump

Third party testing and certifications

Code	Description
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

CEILING AND WALL-MOUNTED

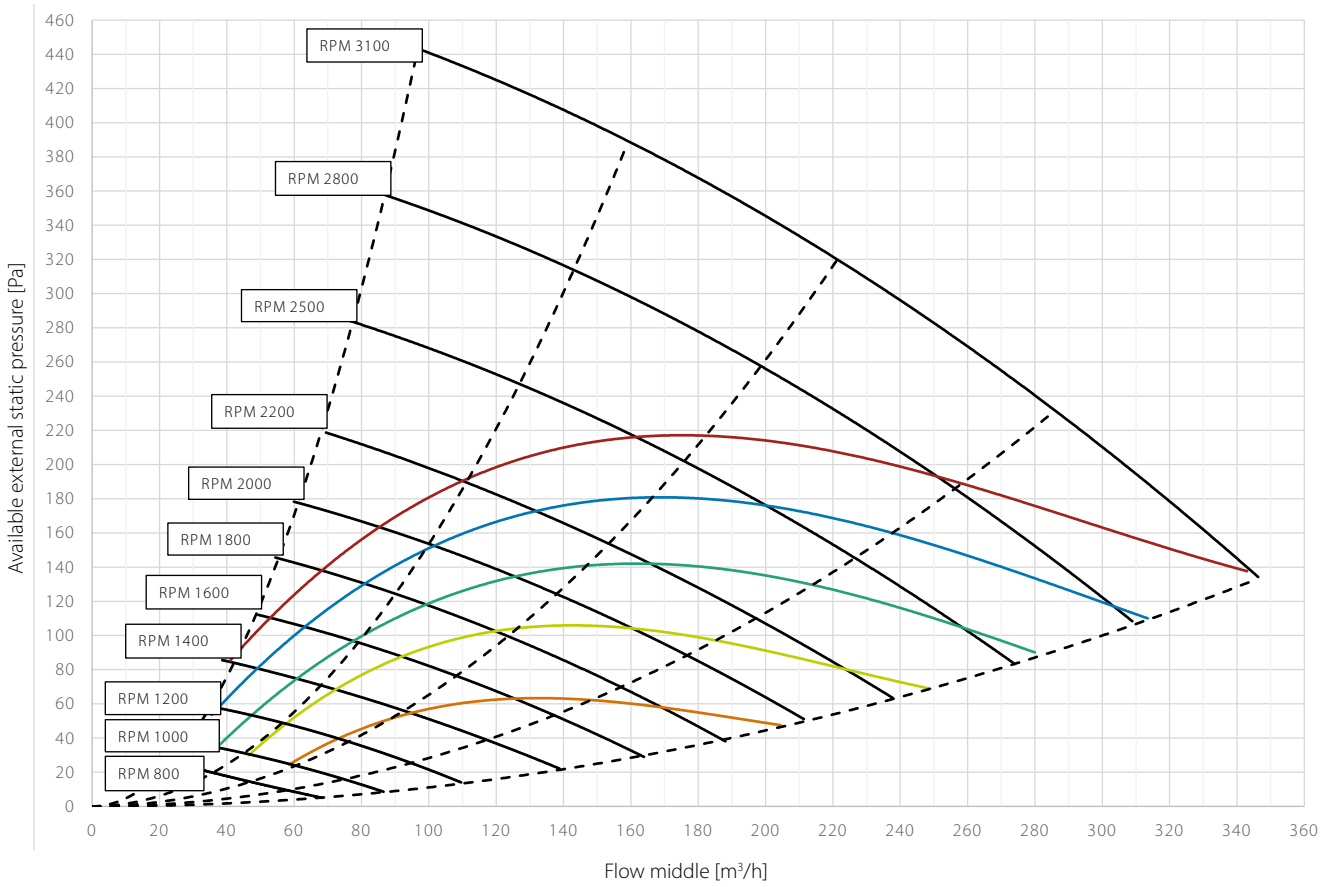
HCC 360E1

TECHNICAL DATA

Specifications	Units		HCC 360E1
Max. flow	V100Pa	m^3/h	360
Max. rated flow	Vmax.rated	m^3/h	180
Recommended operating range	V	m^3/h	50 - 180
EN 13141-7 reference flow at 50Pa	V_{ref}	m^3/h	126
Performance			
Thermal efficiency EN 13141-7 at reference flow	η_{EN}	%	80
Leakage (external and internal) according to EN 13141-7	class		<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779	-	-	G4 (optional on supply: F7)
Installation surrounding temperature range	t_{surr}	°C	+12 to +40
Maximum humidity in extract air at 25°C	RH	%	55
Outdoor temperature range without preheating installed	t_{ODA}	°C	-12* to +45
Outdoor temperature range with preheating installed	t_{ODA}	°C	-15 to +45
Cabinet			
Dimensions (without wall bracket)	w x d x h	mm	600 x 279 x 1122
Spigots/duct connections	Ø	mm	125 – female
Weight	-	kg	34
Heat conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transfer coefficient – polystyrene insulation	U	$W/(m^2K)$	<1
Drainage hose (accessory)	Ø	"	1/2
Cabinet colour	RAL	-	no paint/raw Alu-zinc
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	161/1,061
Frequency	f	Hz	50
Protection class	-	-	IP20

** In order to ensure balanced ventilation, preheater is recommended when outdoor temperature is below -5°C.*

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

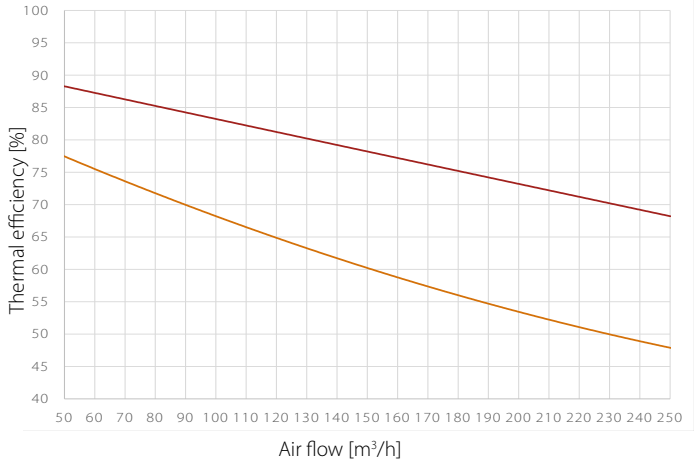
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 70% RH; extract air: 20°C, 38% RH
- Humidity efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 88% RH; extract air: 20°C, 60% RH

All values at balanced flow



SOUND POWER LEVEL (Lw) – DUCTS

		[dB(A)]								
RPM	Duct	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1400	supply/exhaust	29.7	44.1	48.1	48.4	46.6	43.8	33.3	18.4	54
	extract/outdoor	25.1	33.2	38.3	36.9	21.9	15.9	-	-	42
1600	supply/exhaust	31.7	44.1	58.0	52.1	50.0	47.3	37.5	23.4	60
	extract/outdoor	27.5	33.3	46.6	45.2	25.7	19.2	-	-	49
1800	supply/exhaust	33.8	44.2	60.3	54.6	52.9	50.2	40.8	27.8	62
	extract/outdoor	30.0	33.5	46.6	46.1	29.1	22.3	-	-	50
2000	supply/exhaust	36.0	44.4	64.4	56.5	55.4	52.8	43.9	31.5	66
	extract/outdoor	32.8	35.0	50.9	46.3	32.0	25.4	13.1	-	52
2200	supply/exhaust	37.3	45.8	64.4	59.9	57.7	55.2	46.7	35.0	67
	extract/outdoor	34.1	37.1	51.0	48.4	34.7	28.2	16.2	-	53
2500	supply/exhaust	39.9	48.0	64.5	62.5	61.1	58.8	50.2	39.8	68
	extract/outdoor	36.7	39.6	52.0	49.3	38.2	32.1	20.8	-	54
2800	supply/exhaust	42.4	50.2	67.9	65.6	64.1	61.8	53.2	43.3	72
	extract/outdoor	39.3	42.2	54.5	55.1	41.7	35.5	24.8	13.3	58
3100	supply/exhaust	54.5	52.5	68.7	70.5	67.6	64.7	56.0	46.3	74
	extract/outdoor	47.9	44.4	55.3	64.8	45.6	38.6	28.4	17.6	65

SOUND PRESSURE LEVEL (L_P) – CABINET

1m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1000	-	-	9.9	17.8	18.1	20.1	15.7	-	24
1200	-	-	11.0	19.5	19.1	20.2	15.7	-	25
1400	-	-	13.1	22.6	19.1	20.2	15.7	-	26
1500	-	-	18.0	25.0	21.0	20.4	15.8	-	28
1600	-	-	24.0	26.7	21.0	20.6	15.9	-	30
1700	-	-	26.2	29.2	21.4	21.0	16.0	-	32
1800	-	-	26.3	30.2	21.4	21.5	16.1	-	33
1900	-	-	27.0	31.7	22.9	21.8	16.3	-	34
2000	-	-	28.0	32.0	25.3	22.0	16.4	-	34
2100	-	-	29.5	32.9	25.4	22.7	16.9	-	35
2200	-	-	30.0	33.0	25.6	23.0	18.4	-	36
2300	-	-	30.4	34.8	26.3	23.4	19.0	-	37
2500	-	-	32.0	36.3	28.4	25.5	19.5	10.0	38
2700	-	-	36.1	40.8	30.5	27.5	19.7	11.1	43
2800	-	-	36.5	41.7	32.6	28.5	21.4	12.9	43
2900	-	-	31.7	45.3	32.7	29.0	22.2	13.3	46
3100	-	11.2	40.0	47.2	34.4	31.1	24.9	15.6	48

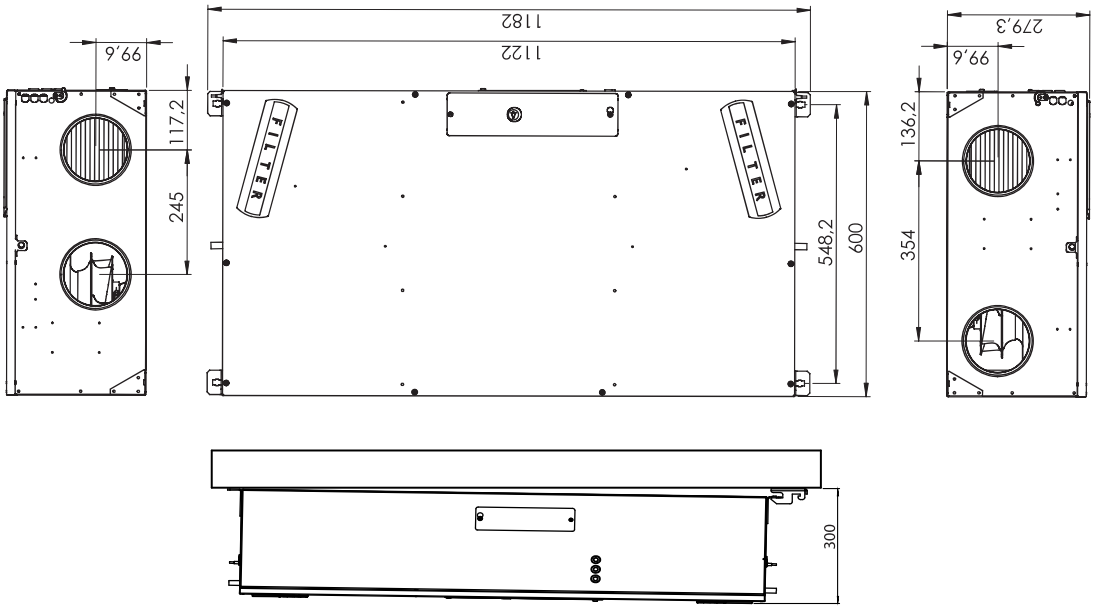
2m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1000	-	-	5.6	17.8	18.1	18.2	14.1	-	23
1200	-	-	6.9	19.5	19.1	18.2	14.8	-	24
1400	-	-	10.6	21.1	19.1	19.3	15.0	-	25
1500	-	-	15.8	24.1	19.2	19.3	15.2	-	27
1600	-	-	17.7	25.0	20.7	20.0	15.6	-	28
1700	-	-	19.8	26.0	21.0	20.1	16.0	-	29
1800	-	-	20.0	28.3	21.0	20.2	16.1	-	30
1900	-	-	21.0	31.2	22.8	20.2	16.2	-	32
2000	-	-	22.0	31.5	22.8	20.5	16.4	-	33
2100	-	-	23.5	32.9	23.6	20.5	16.7	-	34
2200	-	-	23.5	33.0	25.0	22.4	18.4	-	34
2300	-	-	24.0	33.6	25.0	22.4	19.0	-	35
2500	-	-	29.0	34.7	26.1	24.3	19.5	-	37
2700	-	-	30.9	38.7	27.7	26.0	19.7	-	40
2800	-	-	31.0	39.0	28.4	26.1	20.9	-	40
2900	-	-	31.0	43.0	29.3	26.4	21.0	-	44
3100	-	6.7	31.0	45.3	31.4	28.1	21.9	10.6	46

CEILING AND WALL-MOUNTED

HCC 360E1

DIMENSIONS

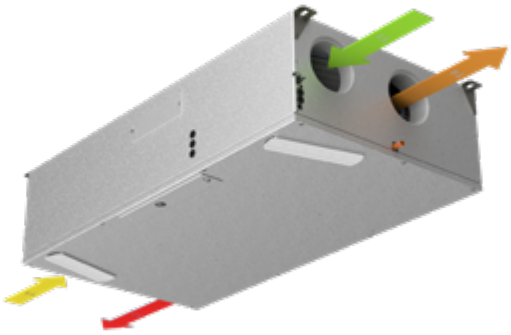


REVIT Revit files are available for free on request. Contact your local supplier or Dantherm for access.

DUCT CONNECTIONS

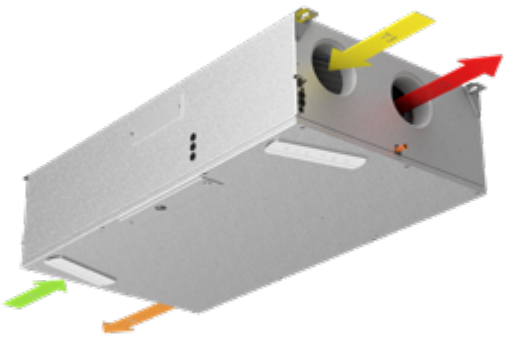
2 set-up in 1 unit, easy change on site

(A) LEFT SET-UP
Factory set-up



- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

(B) RIGHT SET-UP Optional -
easy change on site



Dantherm CLIMATE SOLUTIONS

CEILING AND WALL-MOUNTED

HCC 360P2

The HCC 360P2 is a unique and flexible residential ventilation solution. With only 30cm installation headroom it is ideal for installation in suspended ceilings or onto a wall, even hidden inside a closet. The unit can be electronically reversed, meaning that both air flows will be reversed. This allows the same unit type to be mounted with the inside/outside ducts connected to either the right or the left hand side of the unit. Electrical connections can be connected from either the left or the right.

The HCC 360P2's surface is in Aluzinc and the units will be delivered on pallets of four to reduce packaging and shipping costs. This makes it ideal for large-scale projects.

- High efficiency heat recovery – up to 85%
- EC fan motors with low energy consumption (low SPI)
- Only 300mm installation headroom height is required
- Time controlled ventilation level, based on 11 different built-in pre-programmed week programs, reducing power consumption in periods with low ventilation demands
- Summer cooling mode
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a momentary inside overpressure, to enhance chimney functionality
- Easy-to-install and commissioning solution with built in air measure ports, for easy balancing with PC Tool
- Electronically left/right fan direction switching, allowing same unit type to adapt any physical installation requirements, regardless of ceiling and wall selection
- TCP/IP ModBus connection, for inter-operation with Building Management System
- Electrical connections can be connected from either the left or the right
- Two humidity sensors to facilitate switching from left/ right setup
- Prepared for easy mounting of condensate pump

Third party testing and certifications

Code	Description
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

CEILING AND WALL-MOUNTED

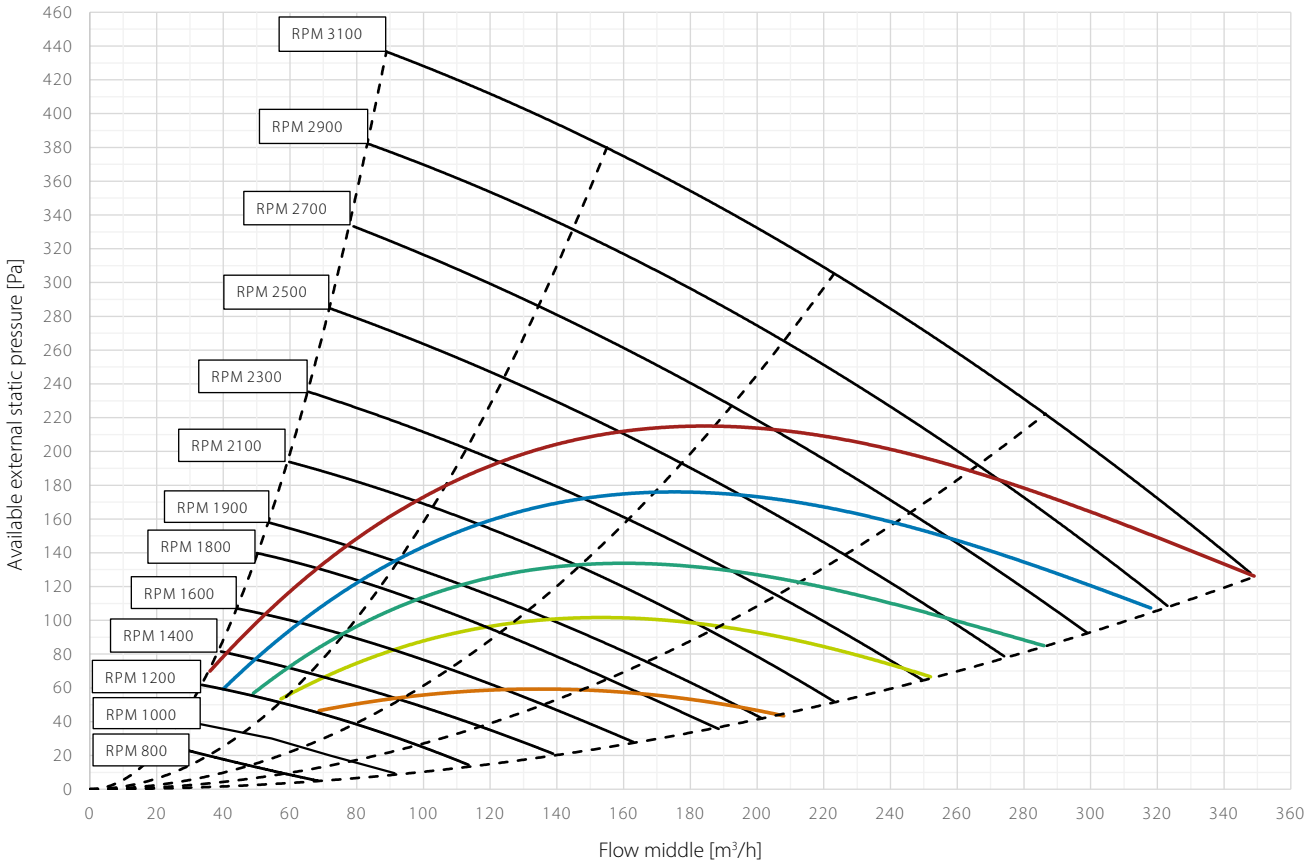
HCC 360P2

TECHNICAL DATA

Specifications	Units		HCC 360P2
Max. flow	V100Pa	m^3/h	360
Max. rated flow	Vmax.rated	m^3/h	220
Recommended operating range	V	m^3/h	50 - 220
EN 13141-7 reference flow at 50Pa	V_{ref}	m^3/h	154
Performance			
Thermal efficiency EN 13141-7 at reference flow	η_{EN}	%	88
Leakage (external and internal) according to EN 13141-7	class		<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779	-	-	G4 (optional on supply: F7)
Installation surrounding temperature range	t_{surr}	°C	+12 to +40
Maximum humidity in extract air at 25°C	RH	%	55
Outdoor temperature range without preheating installed	t_{ODA}	°C	-12* to +45
Outdoor temperature range with preheating installed	t_{ODA}	°C	-15 to +45
Cabinet			
Dimensions (without wall bracket)	w x d x h	mm	600 x 279 x 1122
Spigots/duct connections	Ø	mm	125 – female
Weight	-	kg	34
Heat conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transfer coefficient – polystyrene insulation	U	W/m^2K	U<1
Drainage hose (accessory)	Ø	"	1/2
Cabinet colour	RAL	-	no paint/raw Alu-zinc
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	161/1,061
Frequency	f	Hz	50
Protection class	-	-	IP20

** In order to ensure balanced ventilation, preheater is recommended when outdoor temperature is below -3°C.*

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

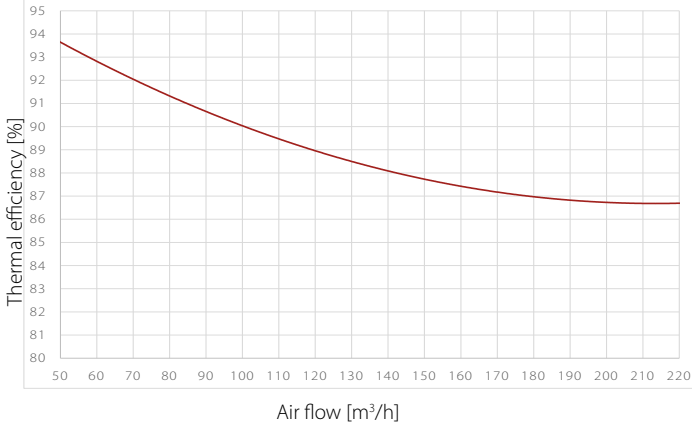
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry) Operational conditions: outdoor air: 7°C, 88% RH; extract air: 20°C, 38% RH

All values at balanced flow



SOUND POWER LEVEL (Lw) – DUCTS

		[dB(A)]								
RPM	Duct	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1000	supply/exhaust	21.3	34.5	38.1	37.2	34.3	30.7	17.6	-	43
	extract/outdoor	20.2	28.7	25.8	27.9	14.1	-	-	-	33
1200	supply/exhaust	24.4	44.1	40.7	41.5	39.1	36.2	24.5	-	48
	extract/outdoor	20.8	35.2	29.1	31.6	16.9	12.5	-	-	38
1400	supply/exhaust	27.7	44.1	44.5	45.7	43.2	40.4	30.1	15.5	51
	extract/outdoor	24.7	37.0	34.6	35.3	21.4	16.3	-	-	41
1500	supply/exhaust	34.5	45.1	47.8	48.1	44.8	42.9	33.4	18.5	53
	extract/outdoor	25.5	37.2	36.1	37.7	23.0	17.7	-	-	42
1700	supply/exhaust	38.4	45.2	52.3	51.5	48.3	46.8	37.3	23.5	57
	extract/outdoor	28.0	37.4	41.5	42.6	26.5	21.2	-	-	46
1900	supply/exhaust	38.5	45.3	58.4	54.7	52.1	49.5	40.9	28.1	61
	extract/outdoor	31.2	37.6	46.3	45.5	30.8	24.9	10.8	-	49
2100	supply/exhaust	38.6	45.4	61.0	56.7	53.7	51.8	43.5	32.0	63
	extract/outdoor	33.2	37.8	48.6	45.5	34.0	27.7	14.8	-	51
2300	supply/exhaust	38.7	45.5	61.0	61.3	57.8	55.1	46.7	36.1	66
	extract/outdoor	34.9	38.0	49.0	46.9	36.5	30.6	17.6	-	52
2500	supply/exhaust	38.9	46.6	61.8	62.1	59.6	57.4	49.0	38.8	67
	extract/outdoor	36.2	38.2	52.3	48.4	38.9	33.3	20.7	-	54
2700	supply/exhaust	40.5	48.6	66.0	64.1	61.7	59.6	51.1	41.4	70
	extract/outdoor	38.9	39.8	61.7	52.3	41.3	35.9	23.6	12.4	62
2900	supply/exhaust	42.3	50.5	68.8	67.1	64.4	61.7	53.2	43.7	72
	extract/outdoor	40.1	41.5	64.4	59.7	44.1	38.1	26.2	15.0	66
3100	supply/exhaust	54.9	51.4	69.0	71.4	68.5	63.7	55.2	45.7	75
	extract/outdoor	49.1	42.7	56.4	67.3	47.9	40.1	28.6	17.5	68

SOUND PRESSURE LEVEL (L_P) – CABINET

1m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1000	-	-	9.9	17.8	18.1	20.1	15.7	-	24
1200	-	-	11.0	19.5	19.1	20.2	15.7	-	25
1400	-	-	13.1	22.6	19.1	20.2	15.7	-	26
1500	-	-	18.0	25.0	21.0	20.4	15.8	-	28
1600	-	-	24.0	26.7	21.0	20.6	15.9	-	30
1700	-	-	26.2	29.2	21.4	21.0	16.0	-	32
1800	-	-	26.3	30.2	21.4	21.5	16.1	-	33
1900	-	-	27.0	31.7	22.9	21.8	16.3	-	34
2000	-	-	28.0	32.0	25.3	22.0	16.4	-	34
2100	-	-	29.5	32.9	25.4	22.7	16.9	-	35
2200	-	-	30.0	33.0	25.6	23.0	18.4	-	36
2300	-	-	30.4	34.8	26.3	23.4	19.0	-	37
2500	-	-	32.0	36.3	28.4	25.5	19.5	10.0	38
2700	-	-	36.1	40.8	30.5	27.5	19.7	11.1	43
2800	-	-	36.5	41.7	32.6	28.5	21.4	12.9	43
2900	-	-	31.7	45.3	32.7	29.0	22.2	13.3	46
3100	-	11.2	40.0	47.2	34.4	31.1	24.9	15.6	48

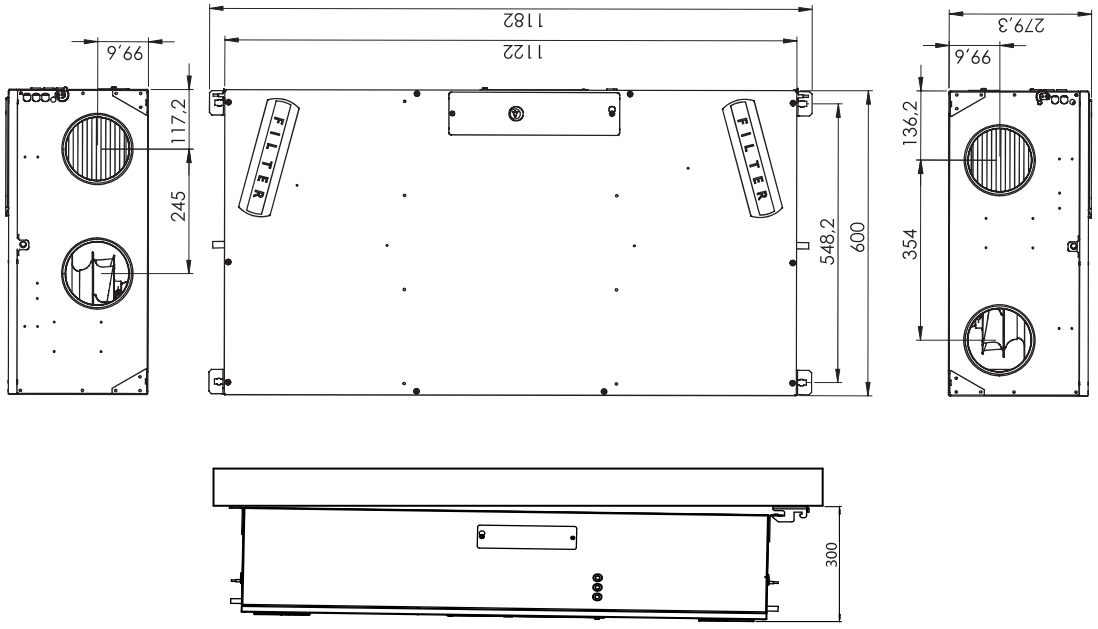
2m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1000	-	-	5.6	17.8	18.1	18.2	14.1	-	23
1200	-	-	6.9	19.5	19.1	18.2	14.8	-	24
1400	-	-	10.6	21.1	19.1	19.3	15.0	-	25
1500	-	-	15.8	24.1	19.2	19.3	15.2	-	27
1600	-	-	17.7	25.0	20.7	20.0	15.6	-	28
1700	-	-	19.8	26.0	21.0	20.1	16.0	-	29
1800	-	-	20.0	28.3	21.0	20.2	16.1	-	30
1900	-	-	21.0	31.2	22.8	20.2	16.2	-	32
2000	-	-	22.0	31.5	22.8	20.5	16.4	-	33
2100	-	-	23.5	32.9	23.6	20.5	16.7	-	34
2200	-	-	23.5	33.0	25.0	22.4	18.4	-	34
2300	-	-	24.0	33.6	25.0	22.4	19.0	-	35
2500	-	-	29.0	34.7	26.1	24.3	19.5	-	37
2700	-	-	30.9	38.7	27.7	26.0	19.7	-	40
2800	-	-	31.0	39.0	28.4	26.1	20.9	-	40
2900	-	-	31.0	43.0	29.3	26.4	21.0	-	44
3100	-	6.7	31.0	45.3	31.4	28.1	21.9	10.6	46

CEILING AND WALL-MOUNTED

HCC 360P2

DIMENSIONS

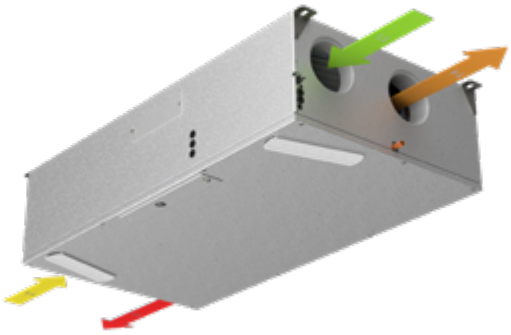


REVIT Revit files are available for free on request. Contact your local supplier or Dantherm for access.

DUCT CONNECTIONS

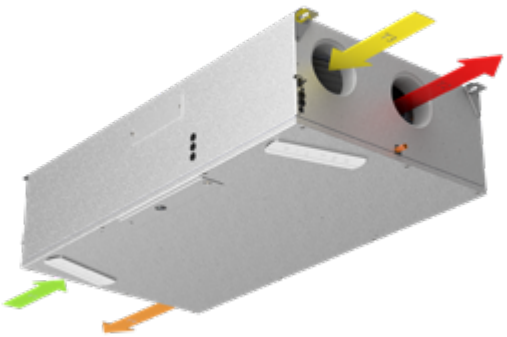
2 set-up in 1 unit, easy change on site

(A) LEFT SET-UP
Factory set-up



- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

(B) RIGHT SET-UP Optional -
easy change on site



Dantherm CLIMATE SOLUTIONS

ATTIC- AND WALL-MOUNTED

ENERGY-EFFICIENT VENTILATION SOLUTIONS FOR:
HOMES, APARTMENTS, NEW-BUILDS AND RENOVATIONS

QUICK GUIDE

RCV 320

HCH 5

HCH 8

INSTALLATION

WALL-MOUNTED

ATTIC-MOUNTED

CEILING

ATTIC AND WALL-MOUNTED UNITS

RCV RANGE

Function

All units are equipped with easy-access filter slots behind the upper front cover. The control panel with LED light indicators is located in an opening in the front cover.

Cabinet

The RCV insulation is made of expanded polystyrene (EPS) with outer surface is made of 0.8mm Aluzinc sheet metal. This has a high insulation level, and good air tightness, which permits location of the units in spaces with temperatures down to -12°C.

The RCV series complies with European fire safety requirements as specified in EN 13501 class E

The leakage rate of the unit (internal and external) is <2% as specified in EN13141-7 leakage class A1.

Installation

After installation of the unit, ducts and condensate hose, the unit needs to be calibrated to the specific environment. Appropriate initial adjustments are performed with Dantherm PC Tool.

Function

The unit ventilates residential homes by extracting the inside humid air, and replacing it with fresh outside air, which has been heated with the heat energy of the extracted air. This reduces energy consumption.

The air volume can be controlled by:

- Selecting a fixed fan speed from 0-4
- Demand mode, in which a built in RH sensor continuously adjusts the fan speed depending on any immediate demand, determined by the humidity of the extracted air
- Week timer program – the fan speed will increase or decrease according to an hourly time schedule, or specific demand

When very humid inside air is extracted, the humidity will condensate inside the heat exchanger and be collected by the embedded drip tray. This water is drained from the unit through the enclosed hose and then disposed of in the nearest drainage. ducts connected to the home (supply and extract) are always on the left-hand side of the unit. The condensation drain is located at the rear of the unit.

Maintenance

In general, the only regular maintenance required by the RCV residential ventilation units is to check/change the air filters twice a year when the alarm is triggered (flashing LED and acoustic alarm).

The user changes the filter by opening the filter cover, changing the filters and resetting the filter timer on the built-in control panel.

Apart from changing the air filters and cleaning the outside of the unit, any other form of service will have to be carried out by qualified personnel.

Local Dantherm partners are always available with support to solve any problem that might arise with the unit.

Removing the front cover gives access to all types of service and repair.

RCV RANGE

Flexible unit

The factory-mounted duct seals on the side of the unit can easily be removed using a side cutter and then used to seal off other ducts not to be used.

Mirroring all duct connections

2 set-up in 1 unit, easy change on site

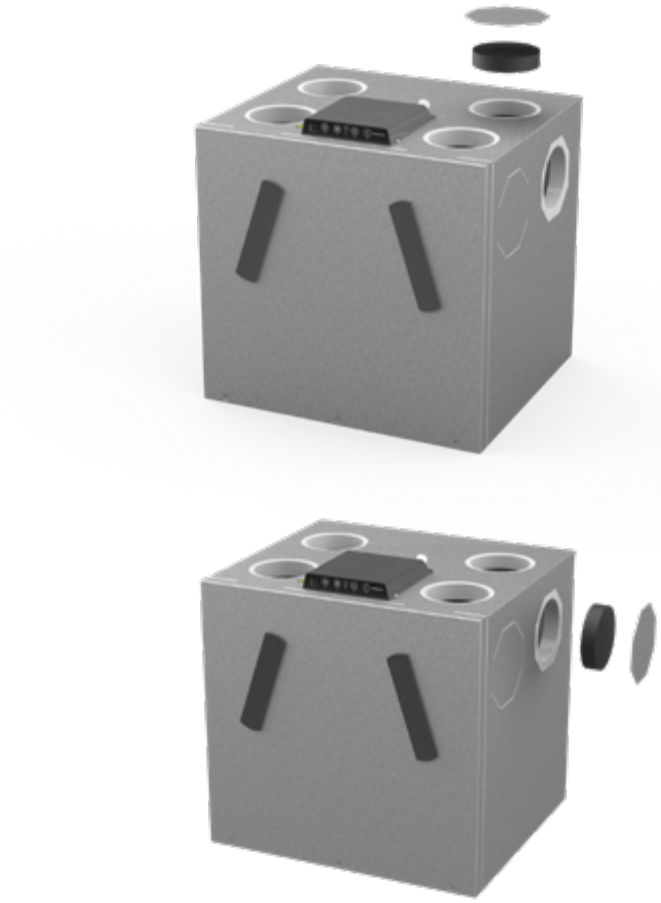
The air flow direction can be electronically swapped, providing ability to route the connected ducts, either to the right or to the left. This means that the supply air duct connections can be either to the right or to the left hand side of the unit.

Unlike all other residential ventilation units on the market, the RCV offers a stunning 48 different ways of connecting ducts to the unit.

24 available combinations for left setups (A) and 24 for right setups (B). Simply choose whichever one is more convenient in terms of installation!

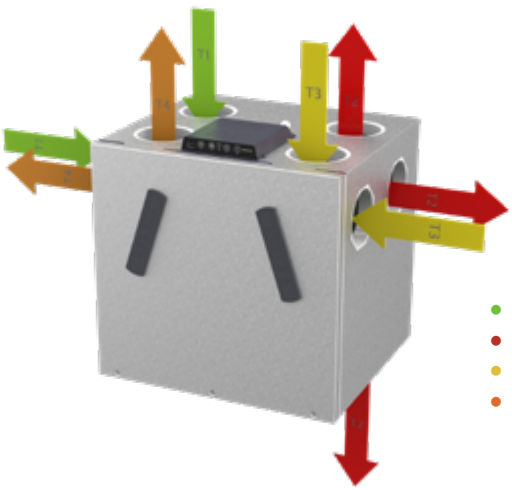
With this flexible unit, you'll be able to find a fast and cost-efficient way to finalise installation work, even in the trickiest of installation areas.

On the RCV 320 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor

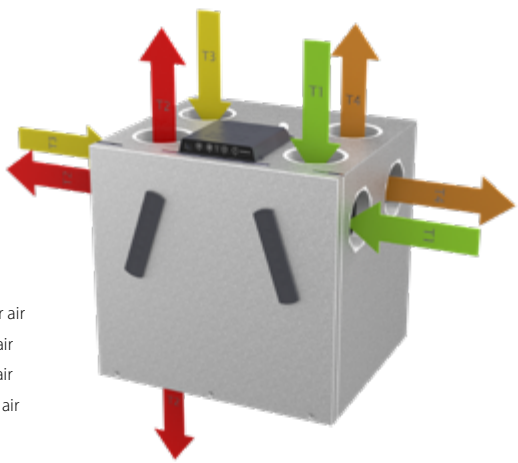


DUCT CONNECTIONS

(A) LEFT SET-UP
Factory set-up



(B) RIGHT SET-UP Optional -
easy change on site



- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

On the RCV 320 it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor

WALL AND ATTIC-MOUNTED UNITS

RCV 320$_{P1}$

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- Summer mode in which the supply fan is stopped, thereby reducing power consumption. Open windows will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- High-efficiency heat recovery
- EC fan motors with extremely low energy consumption (low SPI)
- Highly customisable units with the option to add a high variety of internal as well as external accessories
- Ducts can be connected through the top of the unit, either side or the bottom as preferred
- Compact design
- External pre-heater as accessory
- Free smartphone App available

The 320$_{P1}$ is a highly efficient and very compact residential ventilation unit for houses, villas, and apartments. Based on patent-pending technology and an ingenious design, it is delivered as a true plug and play solution with a built-in control panel and all necessary parts for on-site wall installation.

Heat recovery takes place in a highly efficient counter-flow heat exchanger, which is able to achieve optimum efficiency with the least possible loss of pressure in connection with the low air volumes used in housing.

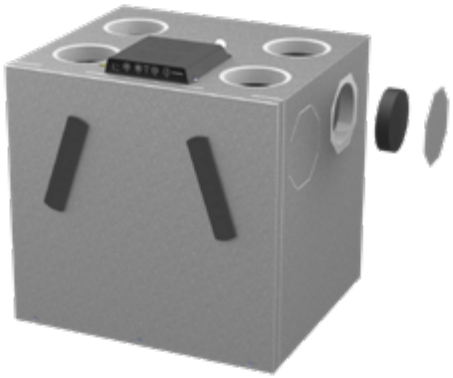
All units come with an Aluzinc surface finish and will be packaged four units on a pallet at a time to ease handling at building sites.

Third party testing and certification

Code	Description
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings
PCDB listed SAP App. Q	Pending: Listed in the UK database for balanced whole-house mechanical ventilation with heat recovery
PHI	Passivhaus certified
EPB	Pending: Listed in the database for Energy Performance of Buildings in Belgium

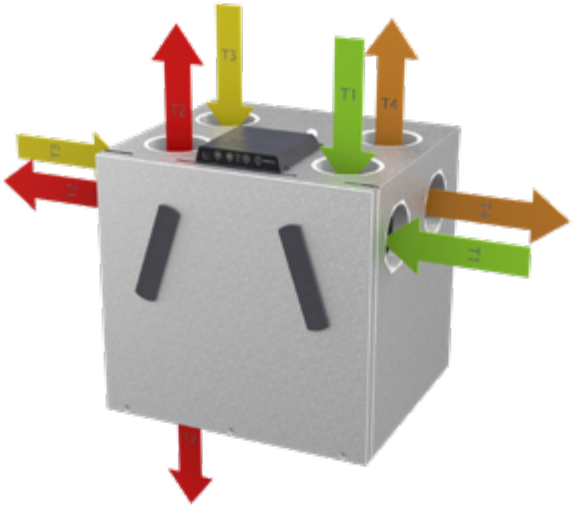
WALL AND ATTIC-MOUNTED UNITS

RCV 320$_{P1}$



Flexible unit

The factory-mounted duct seals on the side of the unit can easily be removed using a side cutter and then used to seal off other ducts not to be used.

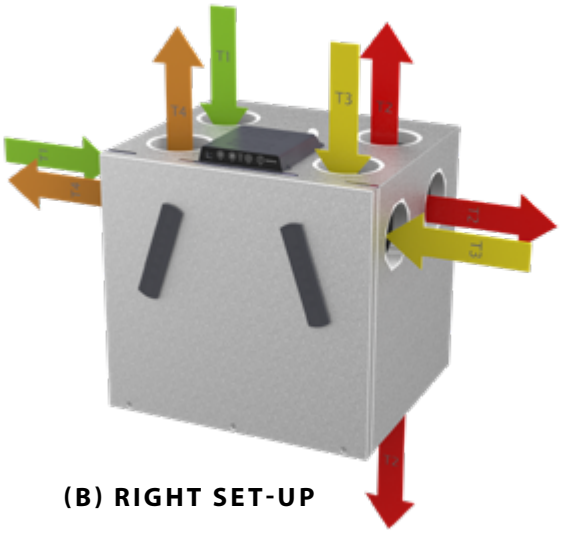


(A) LEFT SET-UP

Tired of having to redo ducting to fit ventilation units?

Unlike all other residential ventilation units on the market, the RCV offers a stunning 48 different ways of connecting ducts to the unit. 24 available combinations for left setups (A) and 24 for right setups (B). Simply choose whichever one is more convenient in terms of installation!

With this flexible unit, you'll be able to find a fast and cost-efficient way to finalise installation work, even in the trickiest of installation areas.



(B) RIGHT SET-UP

- T1 Outdoor air
- T2 Supply air
- T3 Extract air
- T4 Exhaust air

Dantherm® CLIMATE SOLUTIONS

RCV 320$_{P1}$

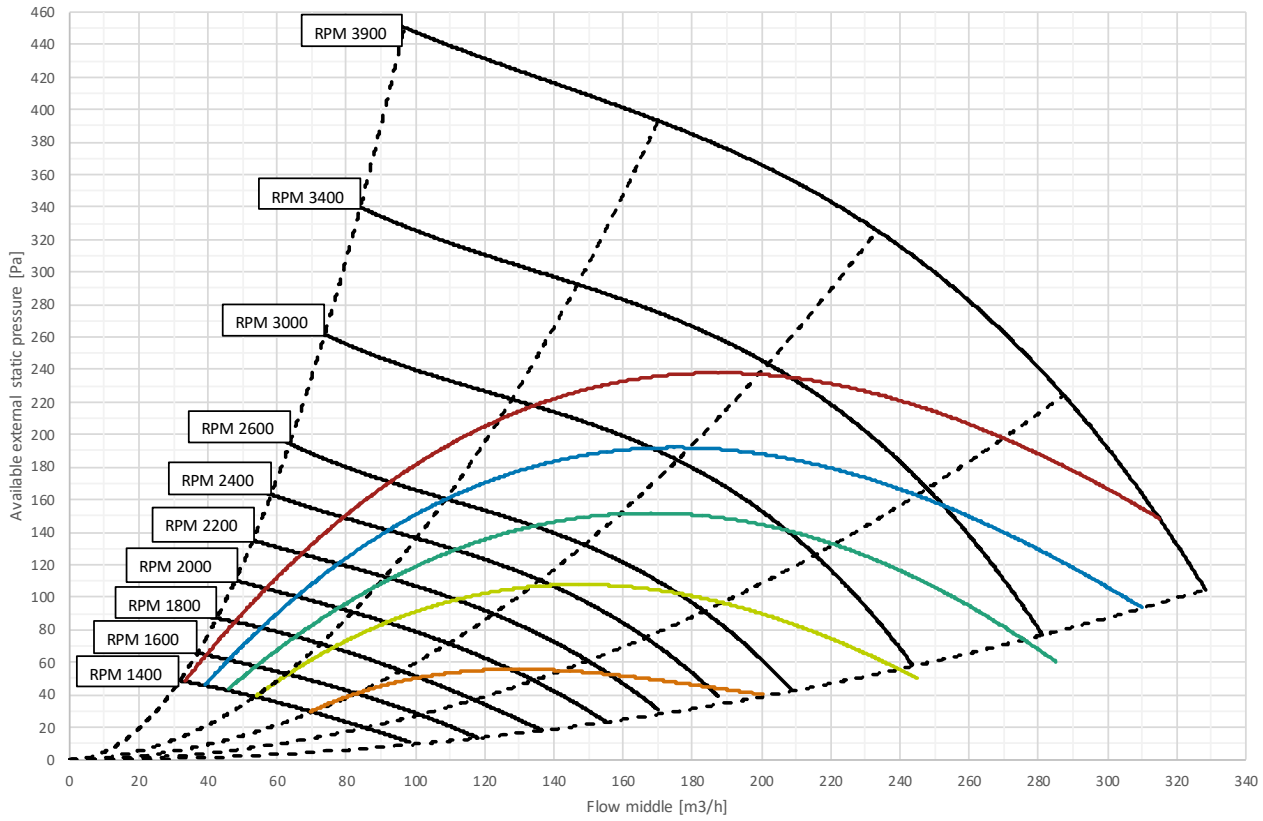
TECHNICAL DATA

Specifications	Units		RCV 320P1
Maximum flow at 100Pa	V_{100Pa}	m^3/h	320
Maximum rated flow at 100Pa	$V_{max.. nom.}$	m^3/h	200
Recommended operating range	V	m^3/h	50 - 200
Operating range Passivhaus at 100Pa	V_{PHI}	m^3/h	71 - 162
EN 13141-7 reference flow at 50Pa	V_{REF}	m^3/h	140
Performance			
Thermal efficiency in accordance with PHI	η_{SUP}	%	94
Thermal efficiency in accordance with EN13141-7	η_{SUP}	%	95
Leakage (external and internal) in accordance with EN 13141-7			<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779:2012			G4 (optional on supply: F7)
Installation surrounding temperature	t_{SURR}	°C	-12 to +45
Outdoor temperature without preheater installed	t_{ODA}	°C	-12* to +45
Outdoor temperature with preheater installed	t_{ODA}	°C	-15 to +45
Maximum absolute humidity of extract air	x	g/kg	10
Cabinet			
Dimensions (without bracket)	w x h x d	mm	600 x 603 x 526**
Spigots/ducts connections	Ø	mm	8 pcs ø125 and 2 pcs oval (68 x 163) – female
Weight		kg	32
Thermal conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transition figures – polystyrene insulation	U	W/m^2K	U<1
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Drainage hose included	Ø/length	"/m	ø¾" – 1m
Cabinet colour	-	-	raw Alu-zinc
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	170/1370
Frequency	f	Hz	50
Protection class	-	-	IP21

* *The use of preheating coil is recommended at outdoor temperature -3°C to ensure balanced operation.*
** *+20mm fitting.*

RCV 320$_{P1}$

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



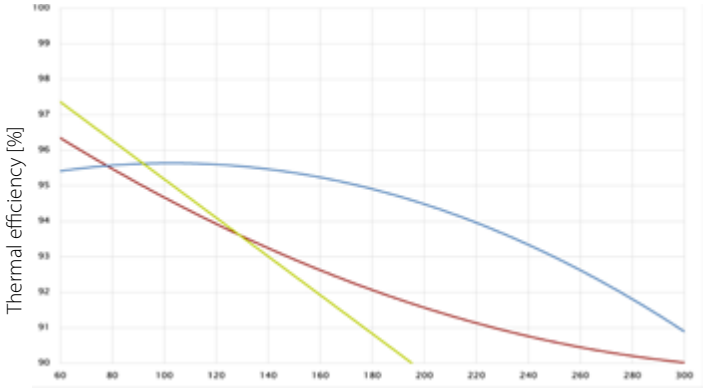
SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 85% RH; extract air: 20°C, 37% RH
- Thermal efficiency according to EN 13141-7 (with condensation)
  Operational conditions: outdoor air: 2°C, 85% RH; extract air: 20°C, 60% RH
- Thermal efficiency acc. PassivHaus Institut
  Operational conditions: outdoor air: 4°C, 94% RH; extract air: 21°C, 30% RH

All values at balanced flow



Dantherm CLIMATE SOLUTIONS

RCV 320$_{P1}$

SOUND POWER LEVEL (Lw) – DUCTS

		[dB(A)]								
RPM	Duct	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	supply/exhaust	23.6	33.1	32.8	34.0	30.0	20.8	13.3	18.5	39
	extract/outdoor	20.2	26.0	26.0	30.0	23.9	15.5	6.9	13.0	33
1400	supply/exhaust	26.2	36.1	37.0	37.2	34.4	24.6	19.0	18.6	42
	extract/outdoor	21.9	28.5	30.1	33.7	28.3	21.5	18.1	21.4	37
1600	supply/exhaust	27.8	36.7	41.0	40.2	37.6	28.8	22.0	19.1	45
	extract/outdoor	23.9	29.0	35.6	36.3	31.7	25.5	17.3	21.5	40
1800	supply/exhaust	30.2	38.1	46.1	43.1	40.6	32.1	24.9	13.3	49
	extract/outdoor	26.8	30.4	38.2	38.9	34.7	28.8	18.8	21.7	43
2000	supply/exhaust	32.0	39.8	49.4	45.8	43.5	35.2	28.5	13.0	52
	extract/outdoor	30.2	31.5	41.9	41.3	37.5	31.6	18.1	20.3	46
2200	supply/exhaust	34.2	40.9	51.0	48.1	46.0	38.1	31.8	12.7	54
	extract/outdoor	32.3	33.0	43.4	43.6	39.9	34.1	21.5	21.5	48
2400	supply/exhaust	35.4	42.3	54.4	50.1	47.6	40.6	34.7	18.7	57
	extract/outdoor	33.9	34.2	44.5	45.8	42.0	36.2	20.7	14.9	49
2600	supply/exhaust	38.6	43.9	55.8	52.4	49.7	43.1	37.5	19.7	58
	extract/outdoor	36.6	35.8	47.7	47.8	43.8	38.4	24.8	23.3	52
3000	supply/exhaust	40.1	45.6	59.0	62.5	53.1	47.0	41.9	26.9	65
	extract/outdoor	37.7	37.5	47.7	53.3	47.3	42.5	28.3	23.3	55
3400	supply/exhaust	43.8	51.4	62.4	68.8	57.0	50.2	45.7	31.9	70
	extract/outdoor	40.3	40.1	48.2	61.2	50.2	45.1	31.2	24.6	62

SOUND PRESSURE LEVEL (Lp) – CABINET

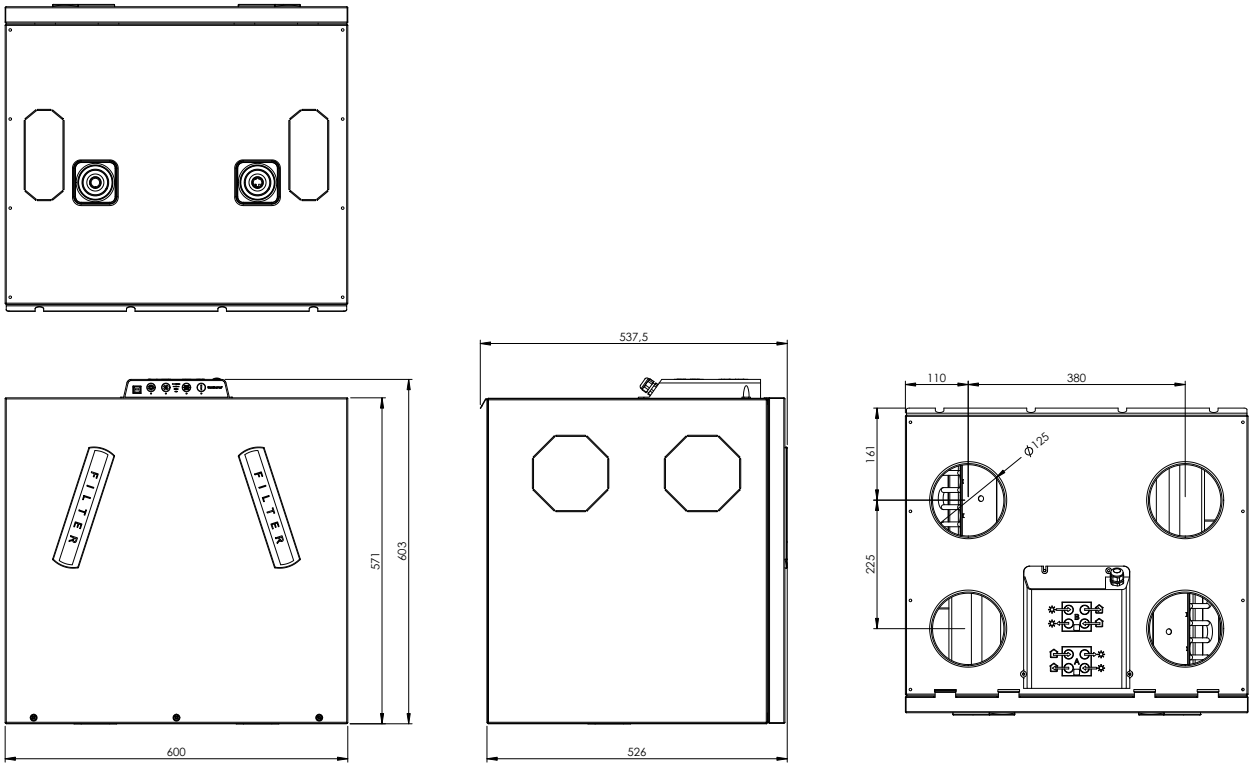
2m distance

	Without background noise weighted [dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1000	-	2.6	9.5	12.9	9.6	5.8	1.4	3.0	17
1200	-	4.0	11.1	15.8	16.3	12.6	9.4	4.1	21
1400	-	7.1	13.9	17.6	16.4	12.6	5.3	1.7	22
1600	-	8.5	18.0	20.8	17.7	13.2	6.0	-0.1	24
1800	-	10.0	21.9	23.6	20.2	16.3	9.4	4.9	27
2000	-	11.5	22.4	25.7	22.2	18.3	11.6	5.6	29
2200	-	13.3	26.5	28.2	24.6	20.7	13.3	5.6	32
2400	-	18.5	28.1	30.9	27.7	24.4	17.5	5.6	35
2600	11.0	20.1	29.9	34.6	29.5	25.6	18.9	5.6	37
3000	11.1	20.2	32.3	37.9	32.1	29.0	22.8	9.0	40

RCV 320$_{P1}$

DIMENSIONS

On the 320$_{P1}$, it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor.



REVIT

Revit files are available for free on request.
Contact your local supplier or Dantherm for access.

Dantherm® CLIMATE SOLUTIONS

ATTIC AND WALL-MOUNTED UNITS

RCV 320$_{P2}$

The RCV 320 is a highly efficient and very compact residential ventilation unit for houses, villas, and apartments. Based on patent-pending technology and an ingenious design, it is delivered as a true plug and play solution with a built-in control panel and all necessary parts for on-site wall installation.

All units come with an Aluzinc surface finish and will be packaged four units on a pallet at a time to ease handling at building sites. In addition to speeding up your installation work, this reduces the amount of packaging materials for you to get rid of while also benefitting the environment.

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- Summer mode in which the supply fan is stopped and any open window will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- High-efficiency heat recovery
- EC fan motors with extremely low energy consumption (low SPI)
- Highly customisable units with the option to add a high variety of internal as well as external accessories
- Ducts can be connected through the top of the unit, either side or the bottom as preferred
- Compact design

Third party testing and certification

Code	Description
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

RCV 320$_{P2}$

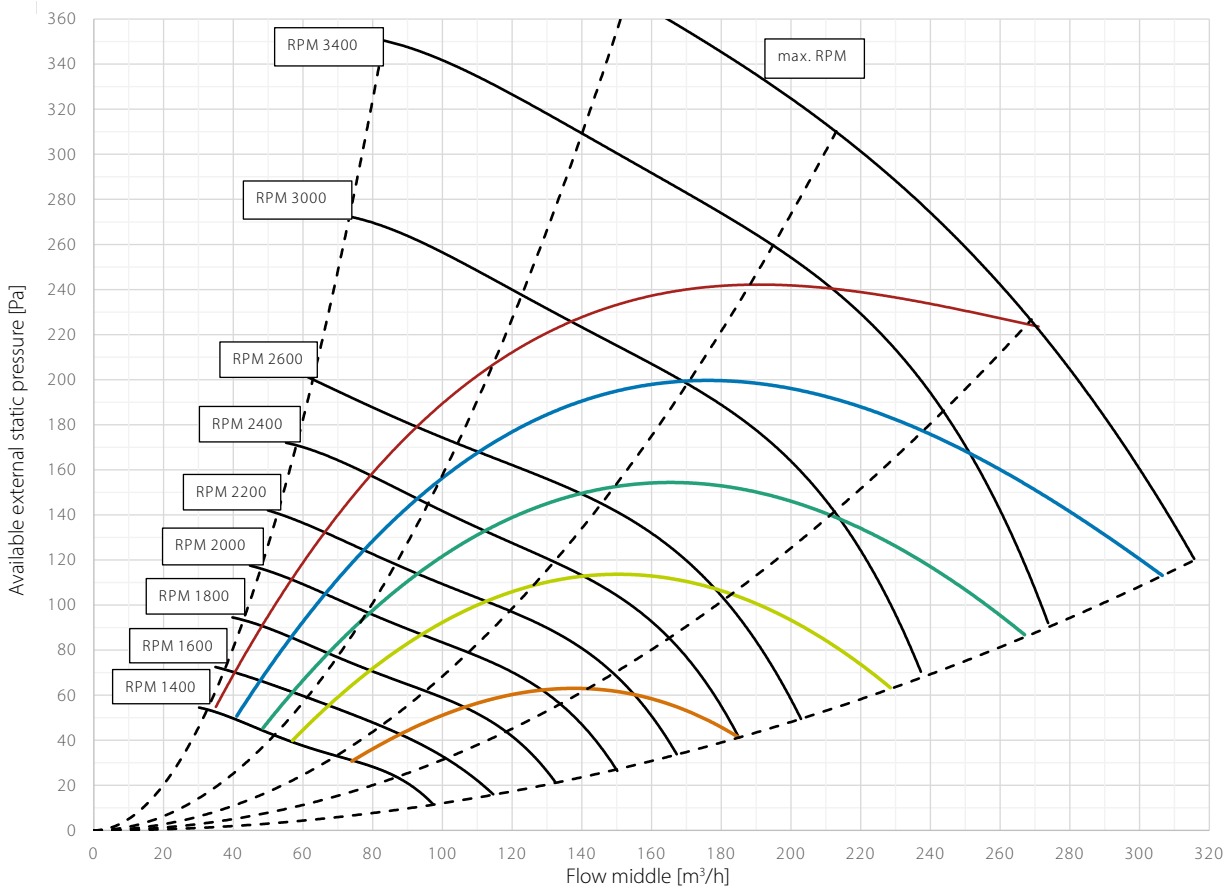
TECHNICAL DATA

Specifications	Units		RCV 320$_{P2}$
Maximum flow	V_{100Pa}	m^3/h	320
Maximum rated flow	$V_{max.. nom.}$	m^3/h	200
Recommended operating range	V	m^3/h	50 - 200
EN 13141-7 reference flow at 50Pa	V_{ref}	m^3/h	140
Performance			
Thermal efficiency in accordance with EN13141-7	η_{SUP}	%	90
Leakage (external and internal) in accordance with EN 13141-7			<2% (Class A1)
Filters in accordance with ISO16890	-	-	ISO Coarse 75% (optional on supply: ePM1>50%)
Filters in accordance with EN779			G4 (optional on supply: F7)
Installation surrounding temperature	t_{SURR}	°C	-12 to +45
Outdoor temperature without preheater installed	t_{ODA}	°C	-12* to +40
Outdoor temperature with preheater installed	t_{ODA}	°C	-20 to +40
Maximum absolute humidity of extract air	x	g/kg	10
Cabinet			
Dimensions (without bracket)	w x h x d	mm	600 x 603 x 526**
Spigots/ducts connections	Ø	mm	8 pcs ø125 and 2 pcs oval (68 x 163) – female
Weight		kg	32
Thermal conductivity – polystyrene insulation	λ	W/mK	0.031
Heat transition figures – polystyrene insulation	U	W/m^2K	U<1
Fire classification of the polystyrene insulation	-	-	DIN 4102-1 class B2 EN 13501 class E
Drainage hose included	Ø/length	"/m	ø¾" – 1m
Cabinet colour	RAL	-	no paint/raw Alu-zinc
Electrical			
Voltage	U	V	230
Maximum power consumption (without/with preheater)	P	W	170/1070
Frequency	f	Hz	50
Protection class	-	-	IP21

* *The use of preheating coil is recommended at outdoor temperature -3°C to ensure balanced operation.*
** *+20mm fitting.*

RCV 320$_{P2}$

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

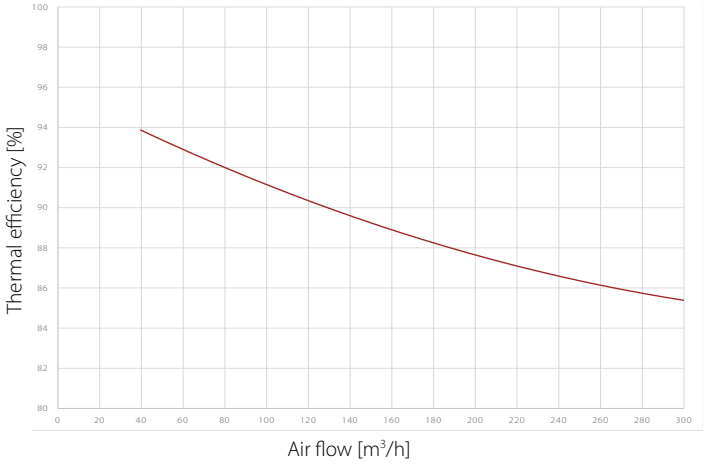
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 85% RH; extract air: 20°C, 37% RH

All values at balanced flow



RCV 320$_{P2}$

SOUND POWER LEVEL (Lw) – DUCTS

		[dB(A)]								
RPM	Duct	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1200	supply/exhaust	23.6	33.1	32.8	34.0	30.0	20.8	13.3	18.5	39
	extract/outdoor	20.2	26.0	26.0	30.0	23.9	15.5	6.9	13.0	33
1400	supply/exhaust	26.2	36.1	37.0	37.2	34.4	24.6	19.0	18.6	42
	extract/outdoor	21.9	28.5	30.1	33.7	28.3	21.5	18.1	21.4	37
1600	supply/exhaust	27.8	36.7	41.0	40.2	37.6	28.8	22.0	19.1	45
	extract/outdoor	23.9	29.0	35.6	36.3	31.7	25.5	17.3	21.5	40
1800	supply/exhaust	30.2	38.1	46.1	43.1	40.6	32.1	24.9	13.3	49
	extract/outdoor	26.8	30.4	38.2	38.9	34.7	28.8	18.8	21.7	43
2000	supply/exhaust	32.0	39.8	49.4	45.8	43.5	35.2	28.5	13.0	52
	extract/outdoor	30.2	31.5	41.9	41.3	37.5	31.6	18.1	20.3	46
2200	supply/exhaust	34.2	40.9	51.0	48.1	46.0	38.1	31.8	12.7	54
	extract/outdoor	32.3	33.0	43.4	43.6	39.9	34.1	21.5	21.5	48
2500	supply/exhaust	35.4	42.3	54.4	50.1	47.6	40.6	34.7	18.7	57
	extract/outdoor	33.9	34.2	44.5	45.8	42.0	36.2	20.7	14.9	49
2700	supply/exhaust	38.6	43.9	55.8	52.4	49.7	43.1	37.5	19.7	58
	extract/outdoor	36.6	35.8	47.7	47.8	43.8	38.4	24.8	23.3	52
2900	supply/exhaust	40.1	45.6	59.0	62.5	53.1	47.0	41.9	26.9	65
	extract/outdoor	37.7	37.5	47.7	53.3	47.3	42.5	28.3	23.3	55

RCV 320$_{P2}$

SOUND PRESSURE LEVEL (L_P) – CABINET

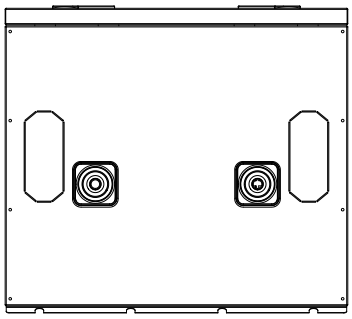
2m distance

	[dB(A)]								
RPM	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total
1000	-	2.6	9.5	12.9	9.6	5.8	1.4	3.0	17
1200	-	4.0	11.1	15.8	16.3	12.6	9.4	4.1	21
1400	-	7.1	13.9	17.6	16.4	12.6	5.3	1.7	22
1600	-	8.5	18.0	20.8	17.7	13.2	6.0	-0.1	24
1800	-	10.0	21.9	23.6	20.2	16.3	9.4	4.9	27
2000	-	11.5	22.4	25.7	22.2	18.3	11.6	5.6	29
2200	-	13.3	26.5	28.2	24.6	20.7	13.3	5.6	32
2400	-	18.5	28.1	30.9	27.7	24.4	17.5	5.6	35
2600	11.0	20.1	29.9	34.6	29.5	25.6	18.9	5.6	37
3000	11.1	20.2	32.3	37.9	32.1	29.0	22.8	9.0	40

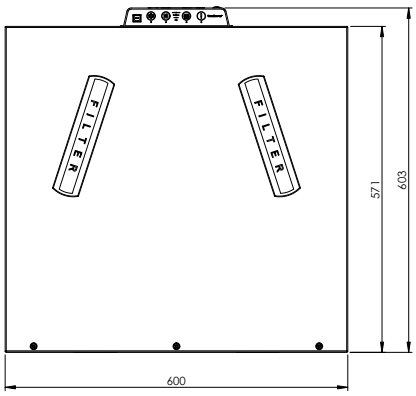
RCV 320$_{P2}$

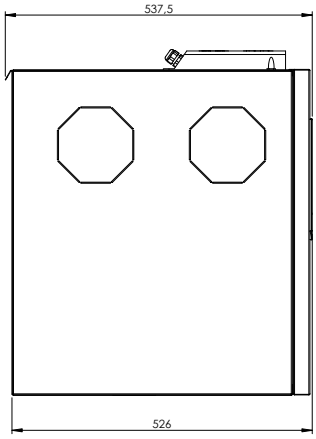
DIMENSIONS

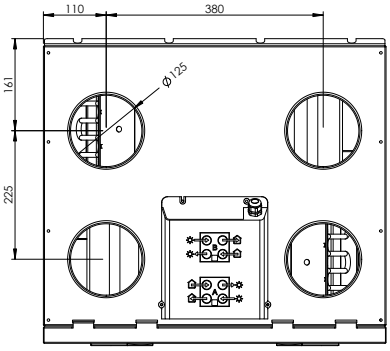
On the RCV 320, it is possible to connect the supply duct to the bottom if the ducts are to run beneath the floor.



REVIT Revit files are available for free on request. Contact your local supplier or Dantherm for access.

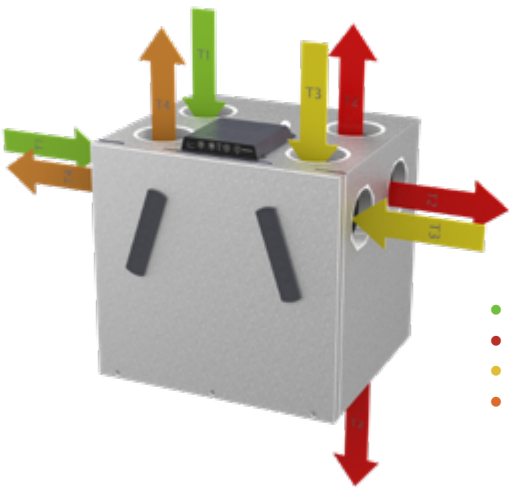




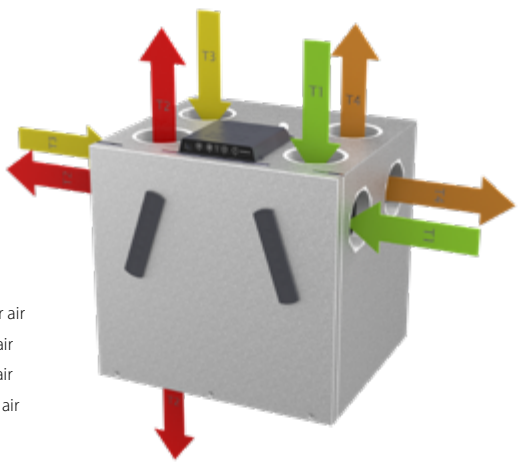


DUCT CONNECTIONS

(A) LEFT SET-UP
Factory set-up



(B) RIGHT SET-UP Optional - easy change on site



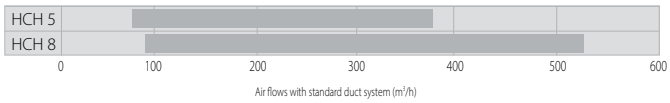
- **T1** Outdoor air
- **T2** Supply air
- **T3** Extract air
- **T4** Exhaust air

Dantherm CLIMATE SOLUTIONS

ATTIC AND WALL-MOUNTED UNITS

HCH RANGE

For a quick selection of the product range you can use the selection chart below. The selection chart shows the air volumes at 100Pa pressure loss.



Overview

The HCH residential ventilation units are primarily designed for 1 and 2 family houses. The units are supplied as packaged ventilation units complete with built-in demand-control and a control panel. The residential ventilation units are fitted with highly efficient counter-flow heat exchangers which are optimised to a very high efficiency level thus achieving a very low specific fan power (SPI value) for the entire unit.

For a quick selection you can use the selection chart below. The selection chart shows the air volumes when operating with a normal duct system with normal pressure drop.

All HCH models are fully operational in surrounding temperatures down to -12°C.

The HCH residential ventilation units are horizontal models designed to be fitted in the loft or on the floor of a plant room. They fulfil the ventilation requirements of houses up to approximately 475m^2, depending on national requirements and the actual pressure loss in the installation.

All HCH models have duct connections at the ends and service access at the front. Electrical connection is at the end of the unit facing the fresh air – right-hand – side. The ducts connected to the home (supply and extract) are always on the left-hand side of the unit. The condensation drain is located at the rear of the unit.

HCH RANGE

Filters

All models use 50mm G4 compact filters as standard for both supply air and extract air. This will cater for the majority of air cleaning needs. The advantage of compact filters is that they have a considerably larger filter surface area than fibrous filters and small bag filters. The filter thus works for longer and under normal conditions, it will not need changing more than twice a year, equivalent to the filter timer setting.

If necessary, F7 filters (pollen filters) are available as accessories, which ensure that allergens do not enter the home through the ventilation system.

PANEL FILTERS

CHANGING THE HCH FILTER

Installation

Measurement and adjustment of air volumes is done via pressure nozzles and PC-tool. A performance graph is adhered to the polystyrene front showing the pressure and air volumes the installer must use to determine the correct fan speeds. The label also has a space for the installer to write in the air volumes, the back pressure and fan speeds to which the system has been adjusted.

Operation

The two horizontal models HCH 5 and HCH 8 are operated via the control panel. It is recommended to connect an App or HCP11 so that the status of the unit can be seen/heard and adjusted.

Safety operation – connection to a smoke or fire alarm system

It is possible to connect a standard smoke/fire alarm system to the HCH residential ventilation unit. When activated, the alarm system will give a fire alarm signal and stop both fans to avoid more smoke/fire to enter from outside. Once the smoke/fire danger is no longer present, the unit must be restarted manually by reset button on foil panel..

When desired (due to higher risk of smoke/fire or higher safety requirements), it is also possible to build duct dampers into the duct work and have the ventilation unit open/close these whenever the unit is running/stopped. The damper motors (one for supply and one for extract air) can be powered and controlled by the accessory controller FPC (Fire Protections Controller).

Service and maintenance

In general, the only regular maintenance required by HCH products is to check/change the air filters twice a year, when the alarm LED blinks yellow and the acoustic alarm bleeps once an hour. On the HCH models, the front panel is removed, after which the two filters can be changed and the filter timer reset.

Apart from changing the air filters and cleaning the outside of the unit, any other form of service will have to be carried out by qualified personnel. Local Dantherm technicians and Dantherm partners are always available to solve any problem with the unit that might arise.

ATTIC AND WALL-MOUNTED UNITS

HCH 5

The HCH 5 residential ventilation units are primarily designed for 1-2 family houses. The units are supplied as packaged ventilation units complete with built-in demand-control and a control panel. The residential ventilation units are fitted with highly efficient counter-flow heat exchangers which are optimised to a very high efficiency level thus achieving a very low specific fan power (SPI value) for the entire unit.

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- High-efficiency heat recovery
- EC motors with extremely low energy consumption (low SPI)
- Easy-to-install solution with pressure pipes for air volume measurement and adjustment via PC-Tool
- HCH models are suitable for installation on uninsulated attics
- Summer mode in which the supply fan is stopped and any open window will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- Highly customisable units with the option to add a high variety of internal as well as external accessories
- Internal pre-heater as accessory

Third party testing and certifications

Code	Description
PHI	Passivhaus certified
PCDB listed SAP App. Q	Listed in the UK database for balanced whole-house mechanical ventilation with heat recovery
DIBt	Certified by the German Institute of Construction Technology
EPB	Listed in the database for Energy Performance of Buildings in Belgium
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

HCH 5

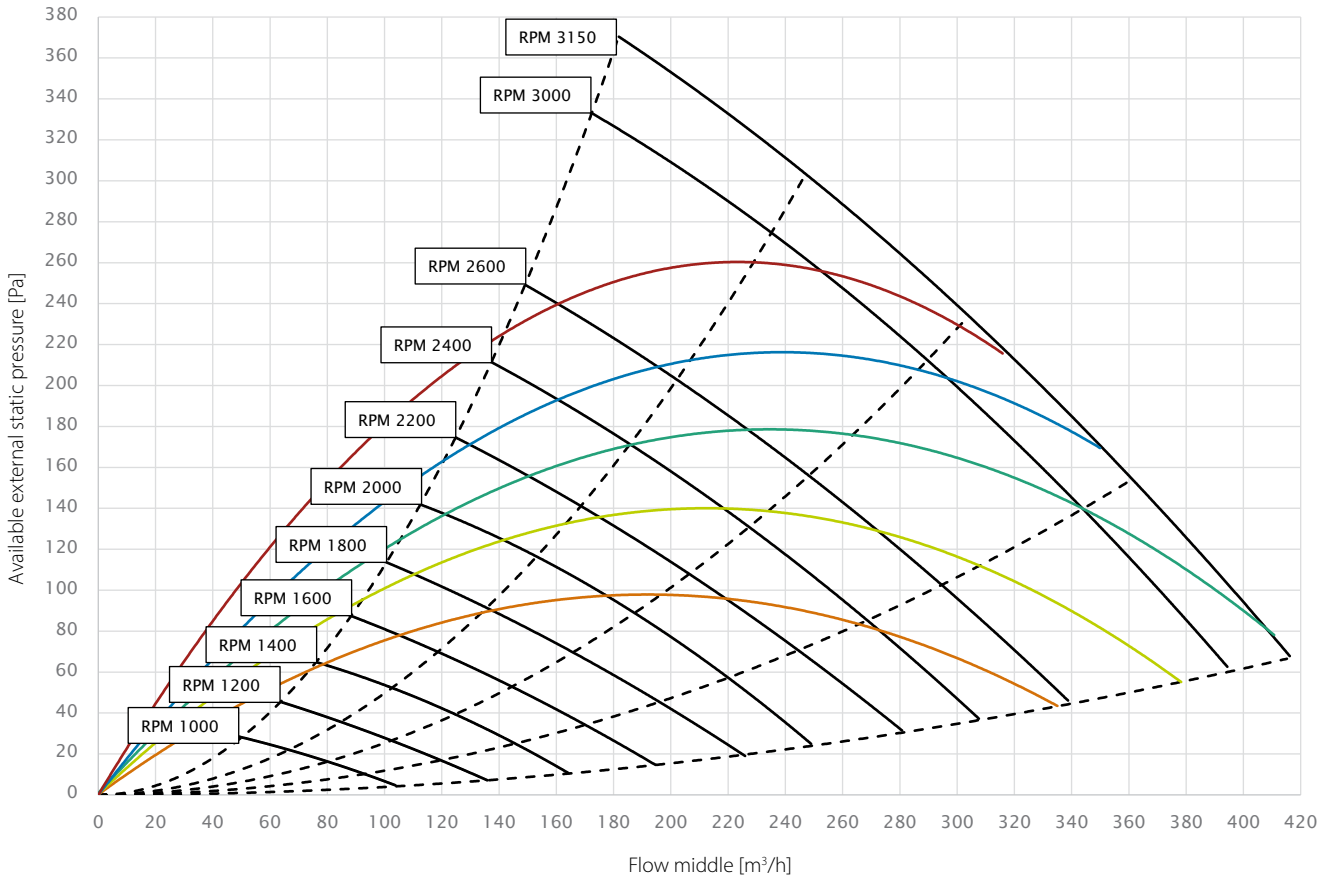
TECHNICAL DATA

Specifications	Units	HCH 5
Performance		
Max. flow at 100Pa	m^3/h	350
Max. rated flow at 100Pa	Vmax.rated + m^3/h	300
Recommended operating range	V + m^3/h	80 - 300
EN 13141-7 reference flow at 50Pa	V_{REF} + m^3/h	210
Energy consumption class – average climate	SEC-class	A
Energy consumption class – average climate	SEC-class	A+ *
Heat exchanger type		Dantherm aluminium counter-flow heat exchanger
Thermal efficiency		Up to 94% **
Bypass		Yes
Filters in accordance with EN779		G4 (optional on supply: F7)
Filters in accordance with ISO 16890		ISO Coarse 75% (optional on supply: ePM1>50%)
Surrounding temperature where the unit is installed	°C	-12 to +50
Operational temperature range without preheating	°C	-13 *** to +50
Operational temperature range with preheating	°C	-20 to +50
Leakage (external and internal) according to EN 13141-7	class	<2% (Class A1)
Cabinet		
Dimensions (w x h x d)	mm	1180 x 600 x 580
Duct connection	mm	160
Weight unit	kg	52
Weight including packaging	kg	66
Dimensions including packaging and pallet (w x d x h)	mm	1210 x 610 x 750
Outer cabinet material		Aluzinc
Colour	RAL	Alzunik grey
Cabinet insulation, polystyrene	mm	40
Insulation factor – cabinet	W/m^2x °K	0.78
Fire classification – polystyrene cabinet	DIN 4102	class B1
Fire classification – whole unit	EN 13501	class E
Protection class		IP20
Electrical data		
Supply voltage	V	1 x 230
Frequency	Hz	50
Maximum power consumption (without/with preheater)	W	154/1554

** Requires an Energy Efficiency Class A+ kit (including CO_2 sensor and HAC 1 accessory control). Described under Accessories.*
*** Condensing operation.*
**** We recommend preheating at temperatures under -3°C to ensure a balanced operation.*

HCH 5

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

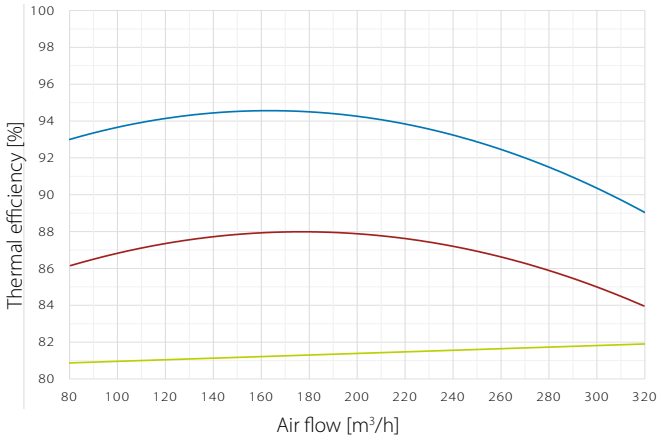
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 80% RH; extract air: 20°C, 38% RH
- Thermal efficiency (with condensation)
  Operational conditions: outdoor air: -10°C, 50% RH; extract air: 25°C, 55% RH
- Thermal efficiency according Passivhaus Institut
  Operational conditions: outdoor air: 4°C, 90% RH; extract air: 21°C, 32% RH

All values at balanced flow



HCH 5

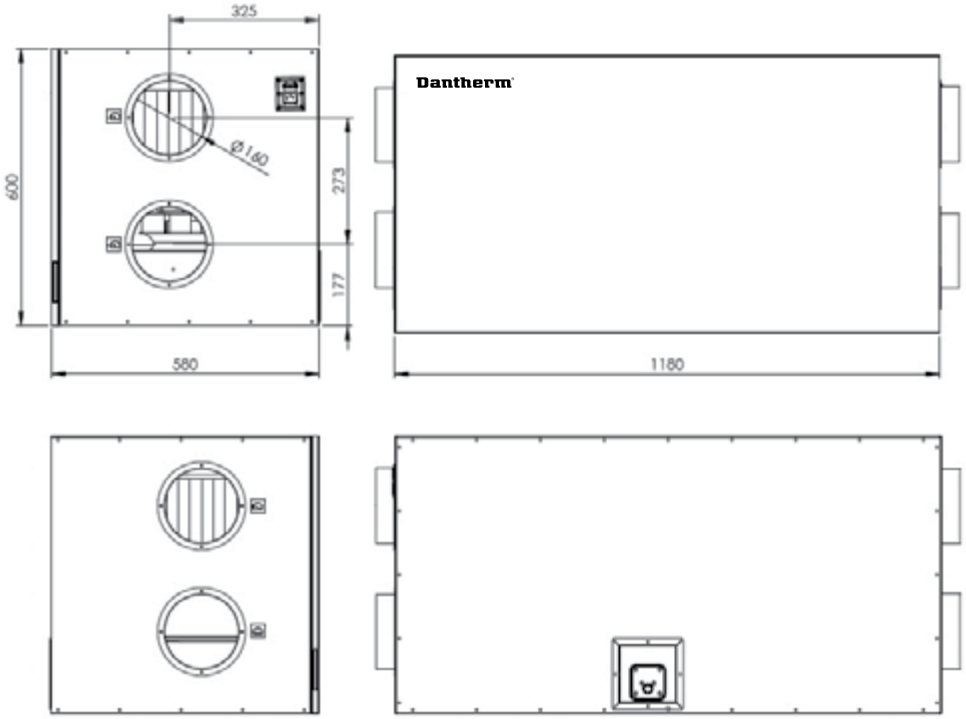
SOUND DATA WITH G4/G4 FILTERS

Flow m^3/h	Pressure Pa	Measure Point	Frequency band sound power Lw dB(A)								Total sound power Lw dB(A)	Sound pressure Standard room* Lp dB(A)
			63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz		
162	70	Supply air duct	23	34	40	36	29	25	17	18	42	
		Extract air duct	23	33	39	37	29	24	18	18	42	
		Cabinet	22	31	39	41	31	29	23	21		40
	100	Supply air duct	25	35	43	38	31	28	18	18	45	
		Extract air duct	25	36	42	39	40	25	17	18	45	
		Cabinet	23	34	41	42	33	31	24	21		41
216	70	Supply air duct	26	36	44	39	33	30	19	18	46	
		Extract air duct	28	36	43	41	34	29	18	18	46	
		Cabinet	28	35	45	44	37	35	27	21		45
	100	Supply air duct	26	37	44	40	34	31	19	18	47	
		Extract air duct	27	37	45	42	35	30	19	18	48	
		Exhaust air duct	34	43	52	52	47	51	38	21	57	
		Cabinet	26	34	46	45	38	36	28	21		46
250	100	Supply air duct	28	39	46	42	37	33	21	18	49	
		Extract air duct	30	39	48	45	38	33	20	18	50	
		Cabinet	28	36	50	48	41	39	32	22		49

* Standard room = room with $10m^2$ floor, 2.4m ceiling height, mean absorption 0.2.

HCH 5

DIMENSIONS



DUCT CONNECTIONS

ATTIC AND WALL-MOUNTED UNITS

HCH 8

The HCH 8 residential ventilation units are primarily designed for 1-2 family houses. The units are supplied as packaged ventilation units complete with built-in demand-control and a control panel. The residential ventilation units are fitted with highly efficient counter-flow heat exchangers which are optimised to a very high efficiency level thus achieving a very low specific fan power (SPI value) for the entire unit.

- Demand-controlled ventilation with integrated humidity sensor, reducing power consumption at times with low ventilation demands
- High-efficiency heat recovery
- EC motors with extremely low energy consumption (low SPI)
- Easy-to-install solution with pressure pipes for air volume measurement and adjustment via PC-Tool
- HCH models are suitable for installation on uninsulated attics
- Summer mode in which the supply fan is stopped and any open window will supply cooler outside air, lowering the room temperature
- Automatic free-cooling features via inbuilt 100% bypass, including the possibility of increasing the air flow automatically, lets in cool night air following hot days to help maintain a comfortable temperature throughout the day
- Fireplace mode, creating a temporary inside overpressure to enhance chimney functionality
- Highly customisable units with the option to add a high variety of internal as well as external accessories
- Internal pre-heater as accessory

Third party testing and certifications

Code	Description
PHI	Passivhaus certified
PCDB listed SAP App. Q	Listed in the UK database for balanced whole-house mechanical ventilation with heat recovery
DIBt	Certified by the German Institute of Construction Technology
EPB	Listed in the database for Energy Performance of Buildings in Belgium
ErP	Compliant with EU regulations for Eco-design
Nordic Swan Ecolabel	Listed in the Nordic Swan database for products suitable for Ecolabelled buildings

HCH 8

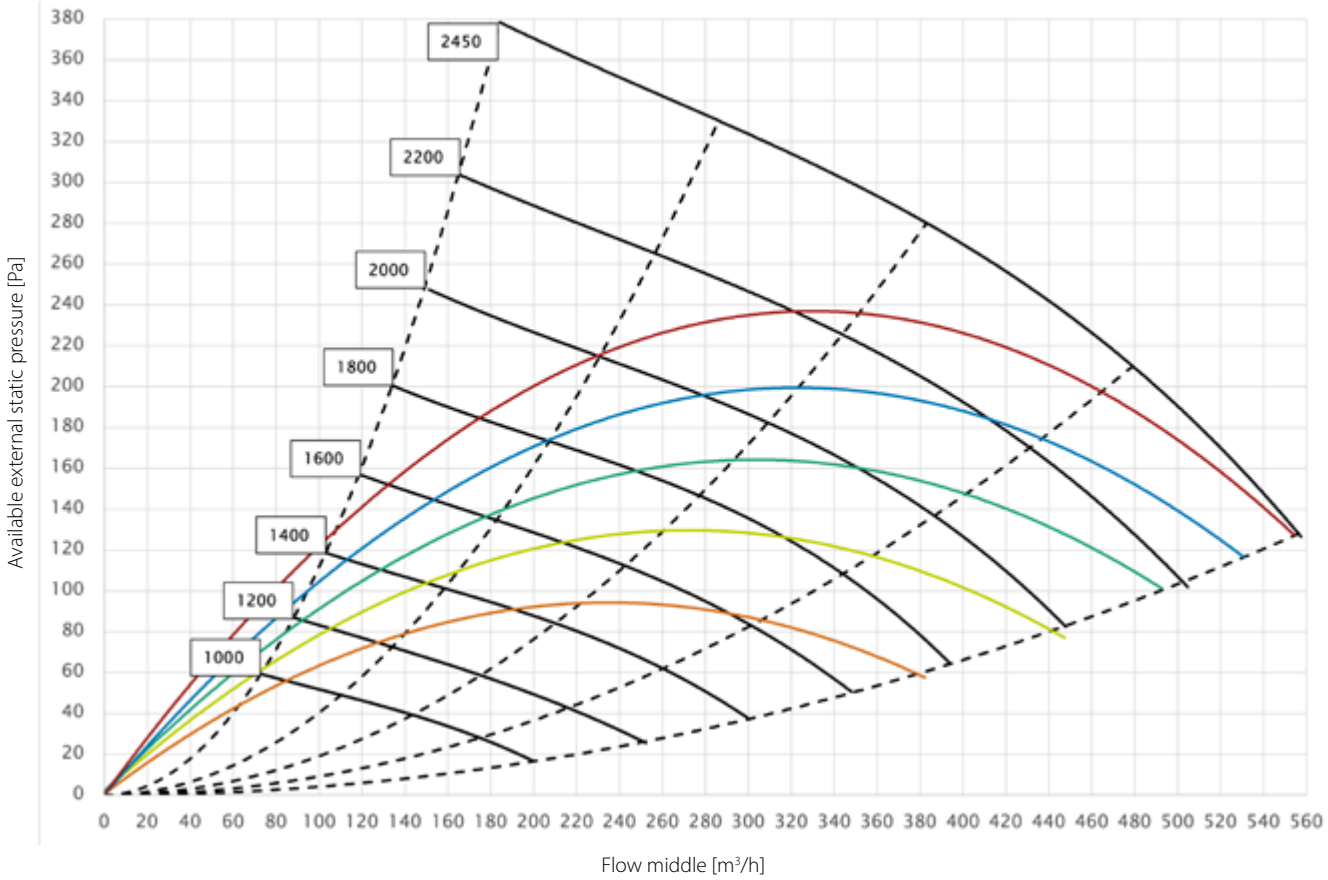
TECHNICAL DATA

Specifications	Units	HCH 8
Performance		
Max. flow at 100Pa	m^3/h	500
Max. rated flow at 100Pa	Vmax.rated + m^3/h	500
Recommended operating range	V + m^3/h	80 - 500
EN 13141-7 reference flow at 50Pa	V_{REF} + m^3/h	350
Energy consumption class – average climate	SEC-class	A
Energy consumption class – average climate	SEC-class	A+ *
Heat exchanger type		Dantherm aluminium counter-flow heat exchanger
Thermal efficiency		Up to 92% **
Bypass		Yes
Filters in accordance with EN779		G4 (optional on supply: F7)
Filters in accordance with ISO 16890		ISO Coarse 75% (optional on supply: ePM1>50%)
Surrounding temperature where the unit is installed	°C	-20 to +50
Operational temperature range without preheating	°C	-13 *** to +50
Operational temperature range with preheating	°C	-20 to +50
Leakage (external and internal) according to EN 13141-7	class	<2% (Class A1)
Cabinet		
Height	mm	600
Width	mm	1180
Depth (standard mounting rail/rail for plan mounting)	mm	780
Duct connection	mm	250
Weight, unit	kg	70
Weight including packaging	kg	84
Dimensions including packaging and pallet (w x d x h)	mm	1200 x 800 x 775
Outer cabinet material		Aluzinc
Colour	RAL	Alzunik grey
Cabinet insulation – polystyrene	mm	40
Insulation factor – cabinet	W/m2x °K	0.78
Fire classification – polystyrene cabinet		DIN 4102 class B1
Fire classification – whole unit		EN 13501 class E
Protection class		IP20
Electrical data		
Supply voltage	V	1 x 230
Frequency	Hz	50
Max. current consumption, without pre- and after-heat	A	1.1
Max. power consumption, without pre- and after-heat	W	246

** Requires an Energy Efficiency Class A+ kit (including CO_2 sensor and HAC 1 accessory control). Described under Accessories.*
*** Condensing operation.*
**** We recommend preheating at temperatures under -3°C to ensure a balanced operation.*

HCH 8

CAPACITY AND SPI CURVES WITH G4/G4 FILTERS



SFP/SPI/SEL*	0.45 W/m³/h	0.39 W/m³/h	0.33 W/m³/h	0.28 W/m³/h	0.22 W/m³/h
	1620 J/m³	1400 J/m³	1200 J/m³	1000 J/m³	800 J/m³
	1.62 W/l/s	1.40 W/l/s	1.20 W/l/s	1.0 W/l/s	0.80 W/l/s

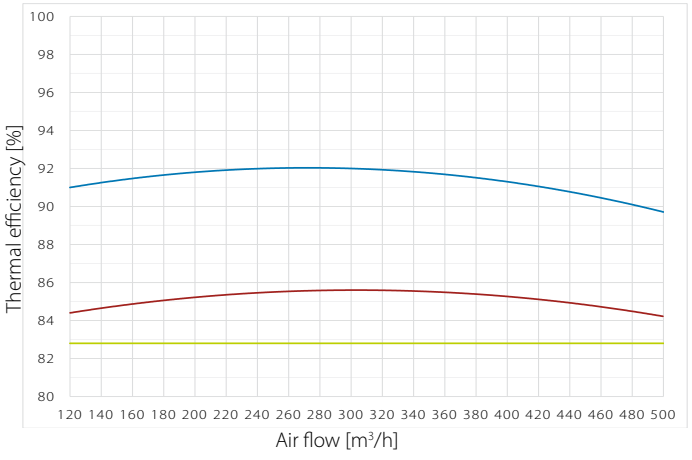
* SFP/SPI/SEL includes power consumption of both fans and the control.

THERMAL EFFICIENCY CURVES

Legend

- Thermal efficiency according to EN 13141-7 (dry)
  Operational conditions: outdoor air: 7°C, 80% RH; extract air: 20°C, 38% RH
- Thermal efficiency (with condensation)
  Operational conditions: outdoor air: -10°C, 50% RH; extract air: 25°C, 55% RH
- Thermal efficiency according Passivhaus Institut
  Operational conditions: outdoor air: 4°C, 90% RH; extract air: 21°C, 32% RH

All values at balanced flow



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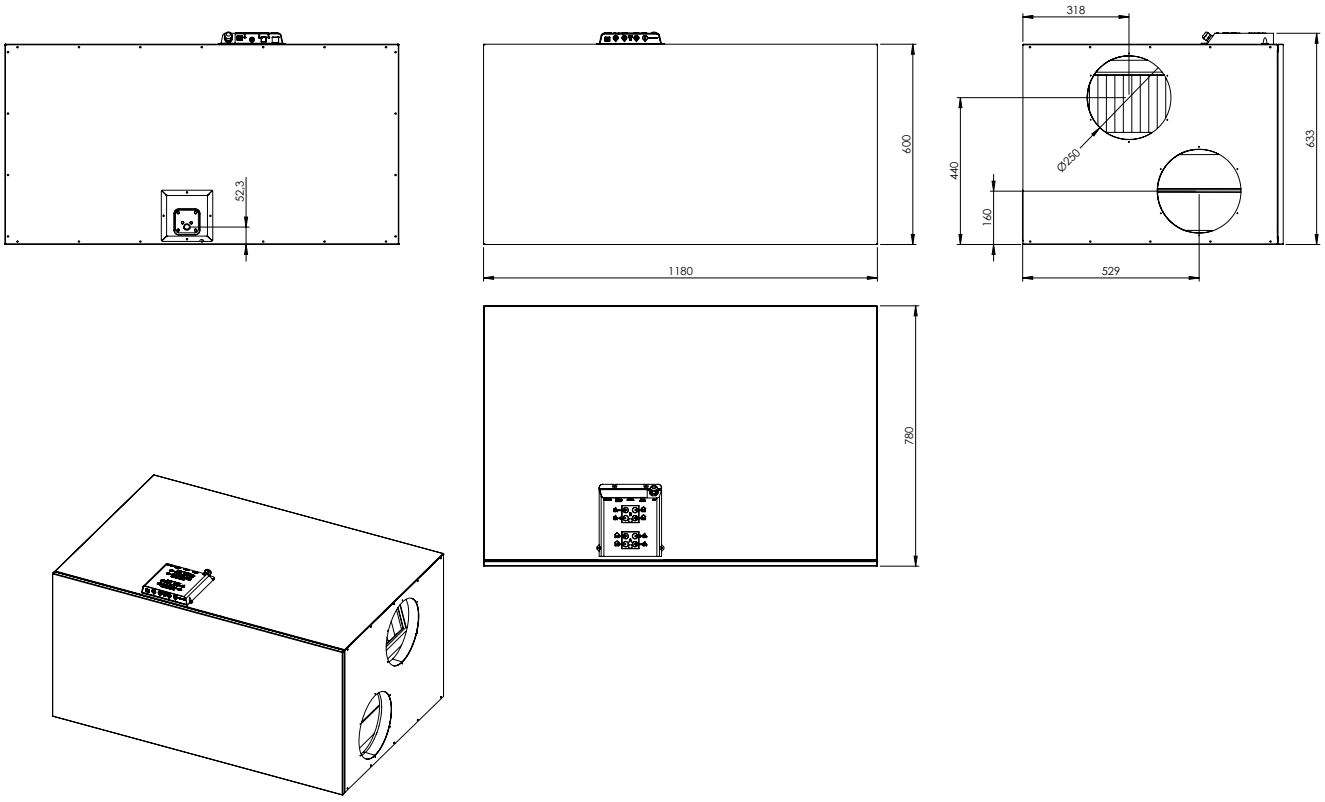
HCH 8

SOUND DATA WITH G4/G4 FILTERS

Flow m³/h	Pressure Pa	Measure Point	Frequency band sound power Lw dB(A)								Total sound power Lw dB(A)	Sound pressure Standard room* Lp dB(A)
			63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz		
350	100	Supply air duct	44	51	56	50	43	38	23	7	63	
		Extract air duct	41	47	48	46	41	36	23	2	59	
		Cabinet	26	37	52	43	40	37	23	17		52
450	100	Supply air duct	39	48	62	55	52	50	37	22	67	
		Extract air duct	39	47	61	55	53	48	37	20	66	
		Cabinet	38	46	60	52	50	47	36	22		61

* Standard room = room with 10m² floor, 2.4m ceiling height, mean absorption 0.2.

DIMENSIONS



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