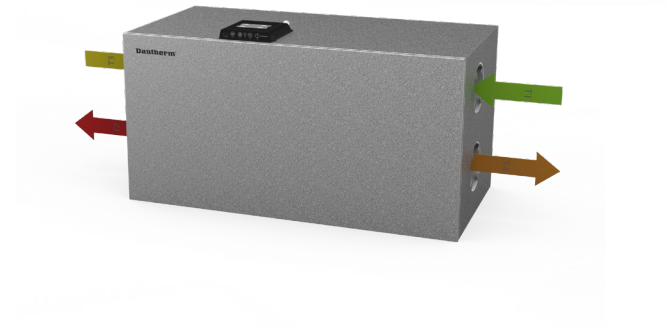
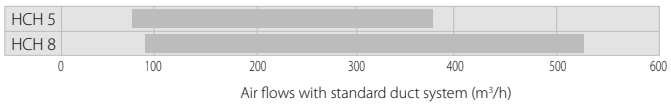
Attic and wall-mounted units

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.



Air flows with standard duct system (m^3/h)

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 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

HCH 5

The HCH 5 residential ventilation unit is primarily designed for 1-2 family houses. The unit is 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% by-pass, 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
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

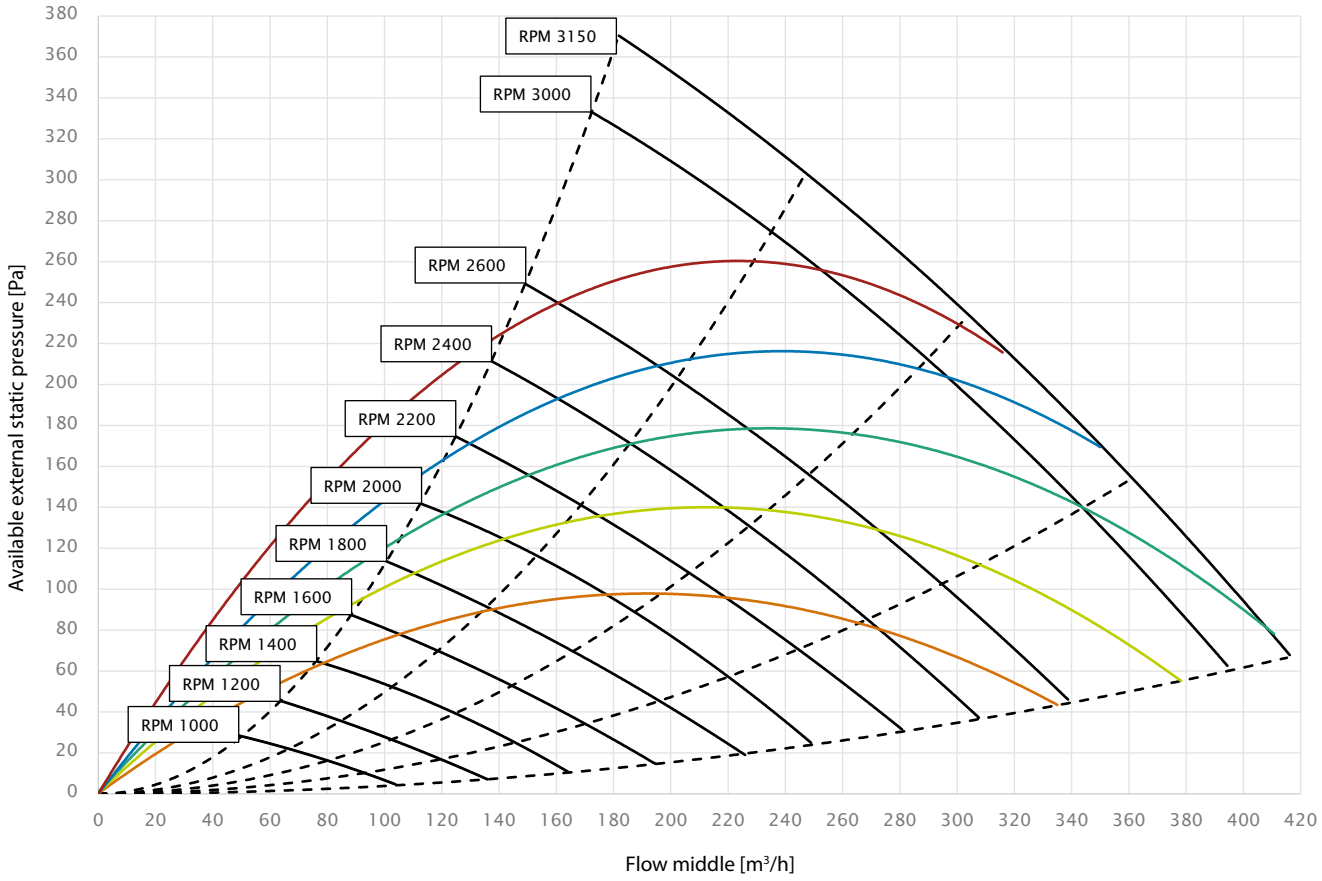
HCH 5

Specifications	Units		HCH 5
Maximum achievable flow at 100Pa	V100Pa	m^3/h	350
Maximum declared 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
Performance			
Thermal efficiency	η_{EN}	%	Up to 94 **
Leakage (external and internal) according to EN 13141-7	class		<2% (Class A1)
Filters in accordance with EN779			G4 (optional on supply: F7)
Filters in accordance with ISO 16890			ISO Coarse 75% (optional on supply: ePM1>50%)
By-pass			Yes
Installation surrounding temperature range	t_{surr}	°C	-12 to +50
Operational temperature range without preheating	t_{ODA}	°C	-13 *** to +50
Operational temperature range with preheating	t_{ODA}	°C	-20 to +50
Cabinet			
Dimensions	w x h x d	mm	1180 x 600 x 580
Duct connection	Ø	mm	160
Weight		kg	52
Weight including packaging		kg	66
Dimensions including packaging and pallet	w x h x d	mm	1210 x 610 x 750
Outer cabinet material			galvanised metal
Colour	RAL		galvanised metal 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
Electrical			
Voltage	U	V	1 x 230
Maximum power consumption (without/with preheater)	P	W	154/1554
Frequency	f	Hz	50
Protection class			IP20

* Requires an Energy Efficiency Class A+ kit (including CO_2 sensor and HAC 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

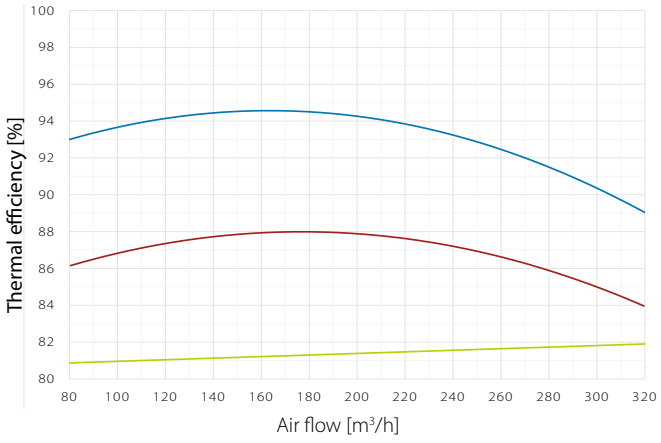
* SFP/SPI/SEL includes power consumption of both fans and the control.

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

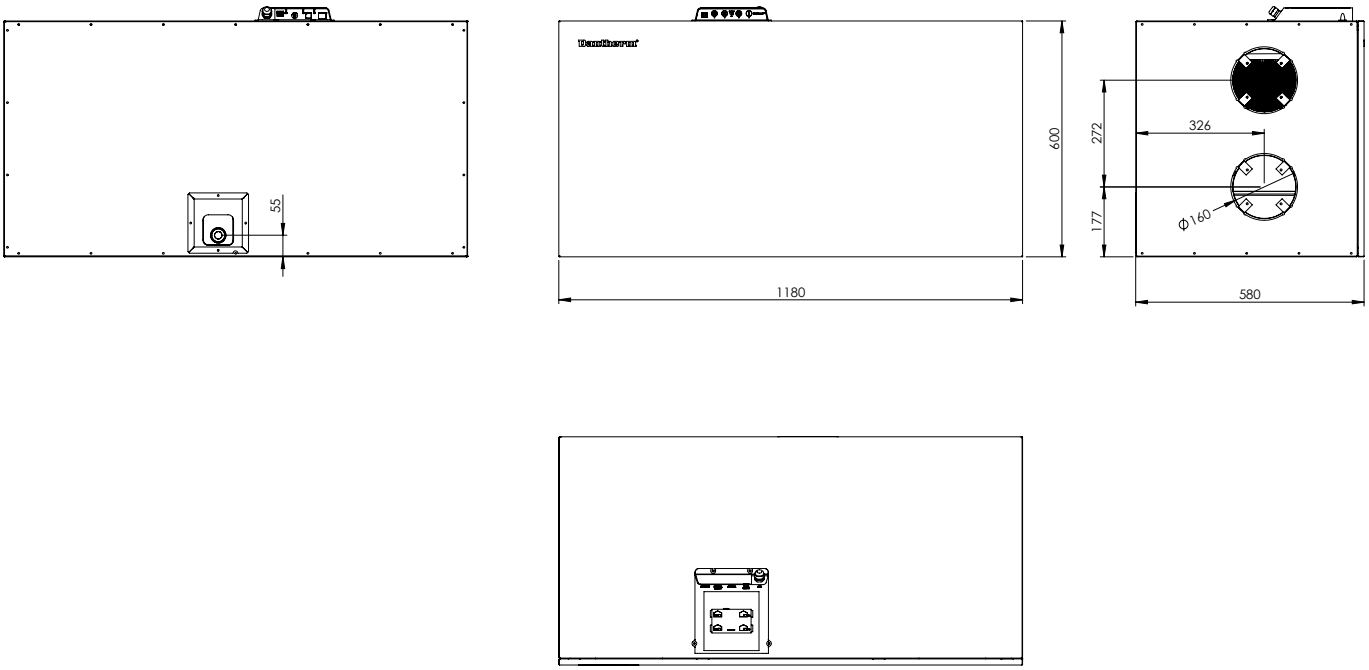
Sound data with G4/G4 filters

Flow	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)
162	70	Supply air	23	34	40	36	29	25	17	18	42	
		Extract air	23	33	39	37	29	24	18	18	42	
		Cabinet	22	31	39	41	31	29	23	21		40
	100	Supply air	25	35	43	38	31	28	18	18	45	
		Extract air	25	36	42	39	40	25	17	18	45	
		Cabinet	23	34	41	42	33	31	24	21		41
216	70	Supply air	26	36	44	39	33	30	19	18	46	
		Extract air	28	36	43	41	34	29	18	18	46	
		Cabinet	28	35	45	44	37	35	27	21		45
	100	Supply air	26	37	44	40	34	31	19	18	47	
		Extract air	27	37	45	42	35	30	19	18	48	
		Exhaust air	34	43	52	52	47	51	38	21	57	
		Cabinet	26	34	46	45	38	36	28	21		46
250	100	Supply air	28	39	46	42	37	33	21	18	49	
		Extract air	30	39	48	45	38	33	20	18	50	
		Cabinet	28	36	50	48	41	39	32	22		49

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

HCH 5

Dimensions



Duct connections

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

Attic and wall-mounted units

HCH 8

HCH 8

The HCH 8 residential ventilation unit is 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% by-pass, 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

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
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

Attic and wall-mounted units

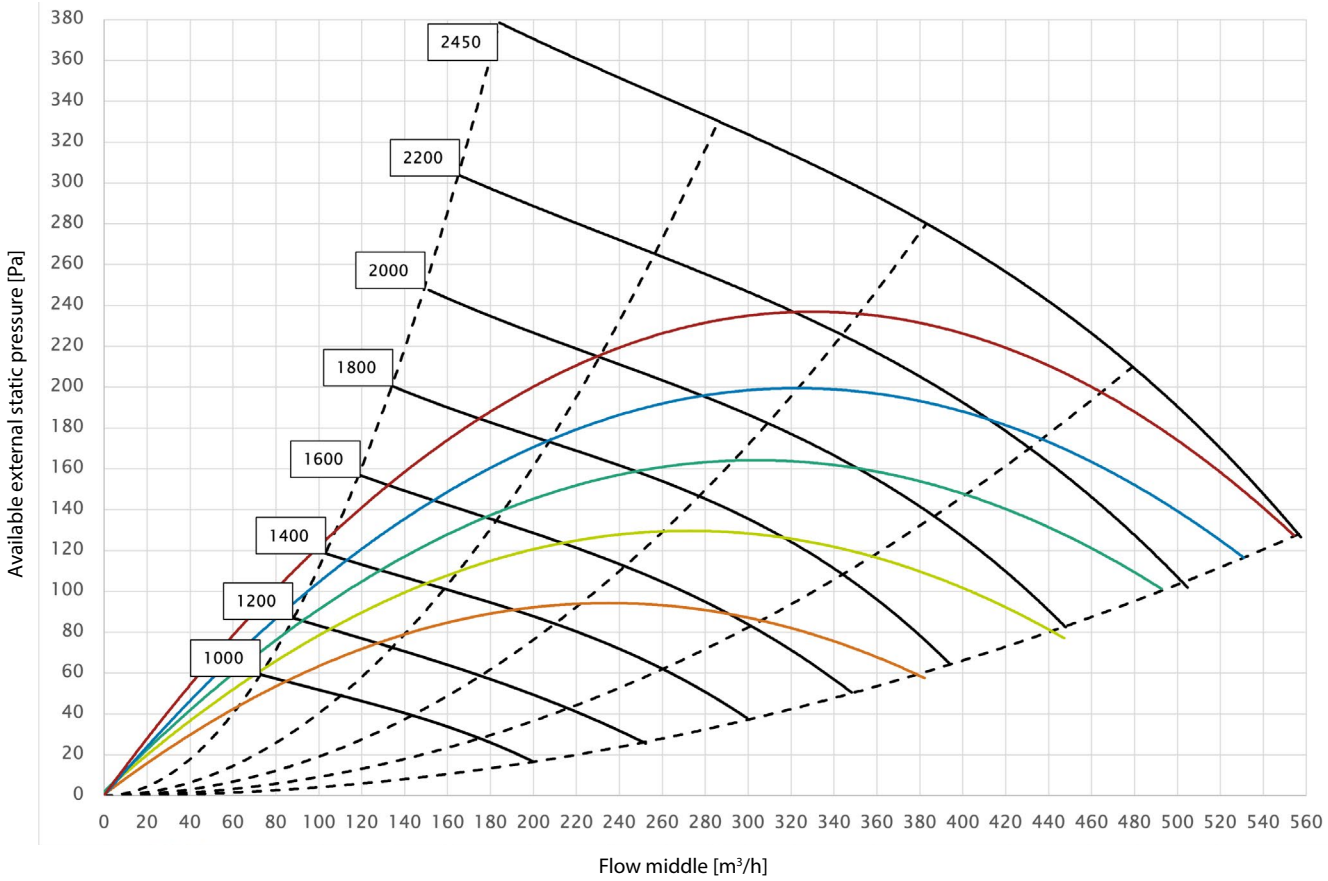
HCH 8

Specifications	Units		HCH 8
Maximum achievable flow at 100Pa	V100Pa	m^3/h	500
Maximum declared 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
Performance			
Thermal efficiency	η_{EN}	%	Up to 92% **
By-pass			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 d x h	mm	1180 x 780 x 600
Duct connection	Ø	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			galvanised metal
Colour	RAL		galvanised metal 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			
Voltage	U	V	1 x 230
Frequency	f	Hz	50
Max. current consumption, without pre- and after-heat		A	1.1
Max. power consumption, without pre- and after-heat	P	W	246

* Requires an Energy Efficiency Class A+ kit (including CO_2 sensor and HAC 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

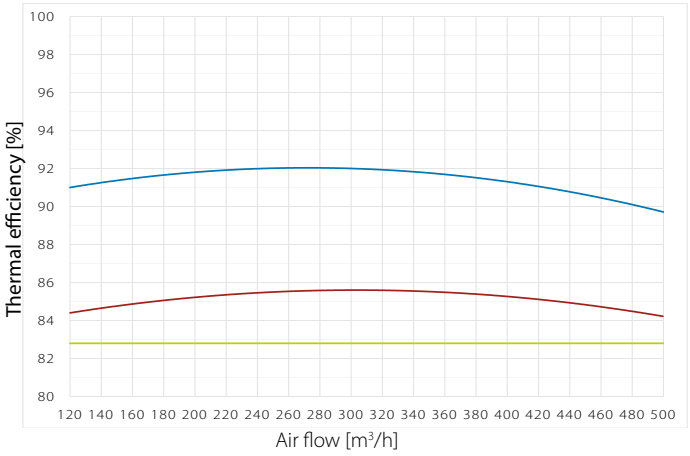
* SFP/SPI/SEL includes power consumption of both fans and the control.

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



HCH 8

Sound data with G4/G4 filters

Flow	Pres.	Measure point	Frequency band sound power L_W(A) dB(A)								Total sound power L_W(A)	Sound pres. L_p(A) Standard room*
m³/h	Pa		63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	dB(A)	dB(A)
350	100	Supply air	44	51	56	50	43	38	23	7	63	
		Extract air	41	47	48	46	41	36	23	2	59	
		Cabinet	26	37	52	43	40	37	23	17		52
450	100	Supply air	39	48	62	55	52	50	37	22	67	
		Extract air	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