ATTIC-MOUNTED

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

QUICK GUIDE

HCH 5

HCH 8

INSTALLATION

WALL-MOUNTED

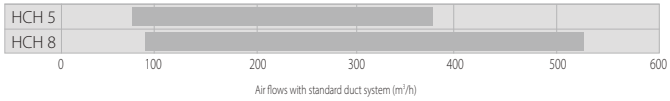
ATTIC-MOUNTED

CEILING

ATTIC-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 -20°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.

Dantherm CLIMATE SOLUTIONS

ATTIC-MOUNTED UNITS

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 potentiometers located behind the removable front panels of all models. 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 , which is connected to the ventilation unit by a cable (2m). It is recommended that the panel be fitted on a wall on the ground floor, e.g. in a back corridor or living room 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 HC residential ventilation unit. The smoke/fire detection system must be connected to the accessory controller (HAC 1 accessory) at the fire protection terminals. 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 power off/on again.

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 HAC 1 accessory controller.

Service and maintenance

In general, the only regular maintenance required by HC 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-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
- 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 on the unit
- HCH models are suitable for installation on uninsulated attics
- Separate HCH control panel included, plus a 2m cable
- Fully operational in surrounding temperatures down to -20°C

Third party testing and certifications

Code	Description
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

ATTIC-MOUNTED UNITS

HCH 5

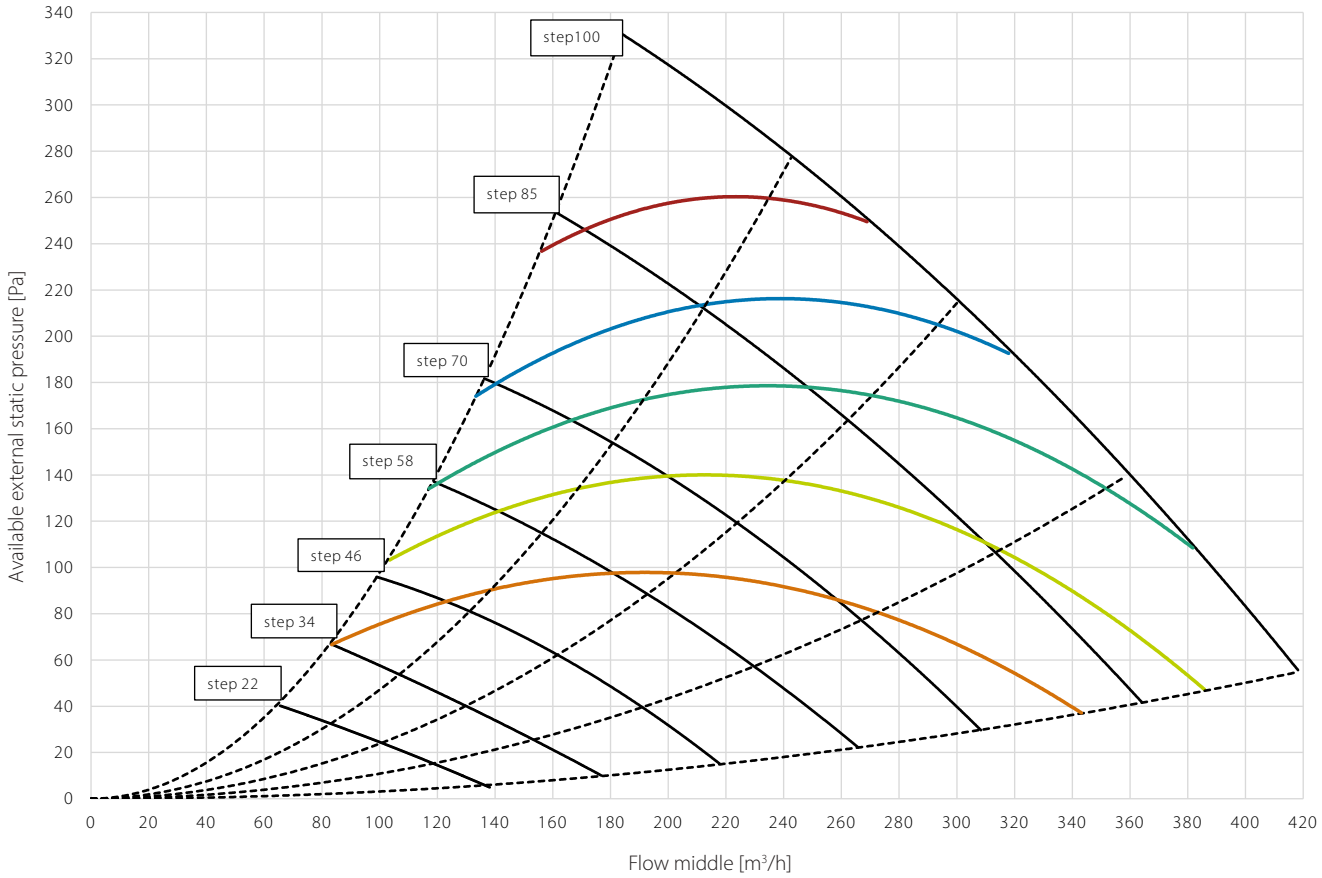
TECHNICAL DATA

Specifications	Units	HCH 5
Performance		
Maximum air flow	m^3/h	375
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	-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		
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		
Separate HCP 4 control panel included plus 2m cable		Yes
Supply voltage	V	1 x 230
Frequency	Hz	50
Maximum current consumption, without pre- and after-heat	A	0.7
Maximum power consumption, without pre- and after-heat	W	154

** 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

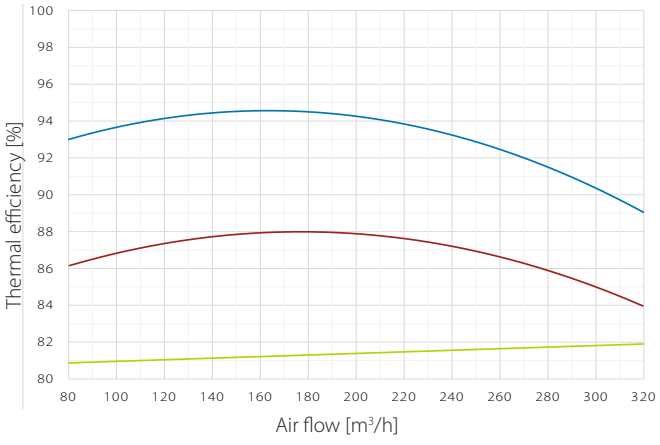
* SFP/SPI/SEL includes power consumption of both fans and the control.

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



Dantherm CLIMATE SOLUTIONS

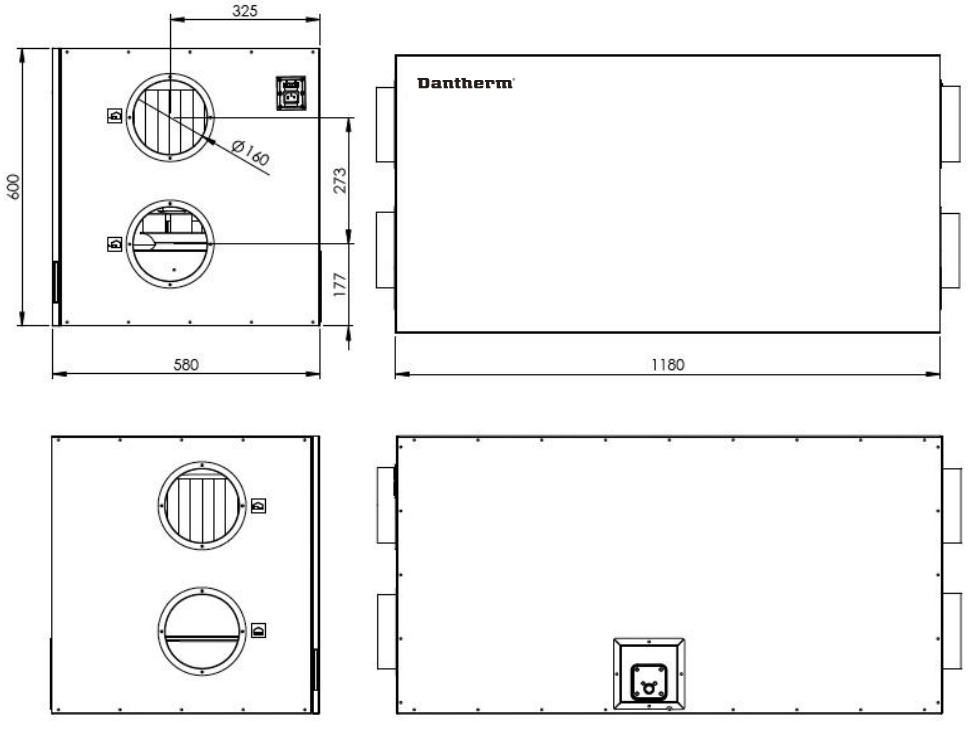
HCH 5

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		
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 10m² floor, 2.4m ceiling height, mean absorption 0.2.

DIMENSIONS



ATTIC-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
- 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 on the unit
- HCH models are suitable for installation on uninsulated attics
- Separate HCP control panel included, plus a 2m cable
- Fully operational in surrounding temperatures down to -20°C

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
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ATTIC-MOUNTED UNITS

HCH 8

TECHNICAL DATA

Specifications	Units	HCH 8
Performance		
Maximum air flow	m^3/h	530
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		
Separate HCP 4 control panel included + 2m cable		Yes
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.*
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HCH 8

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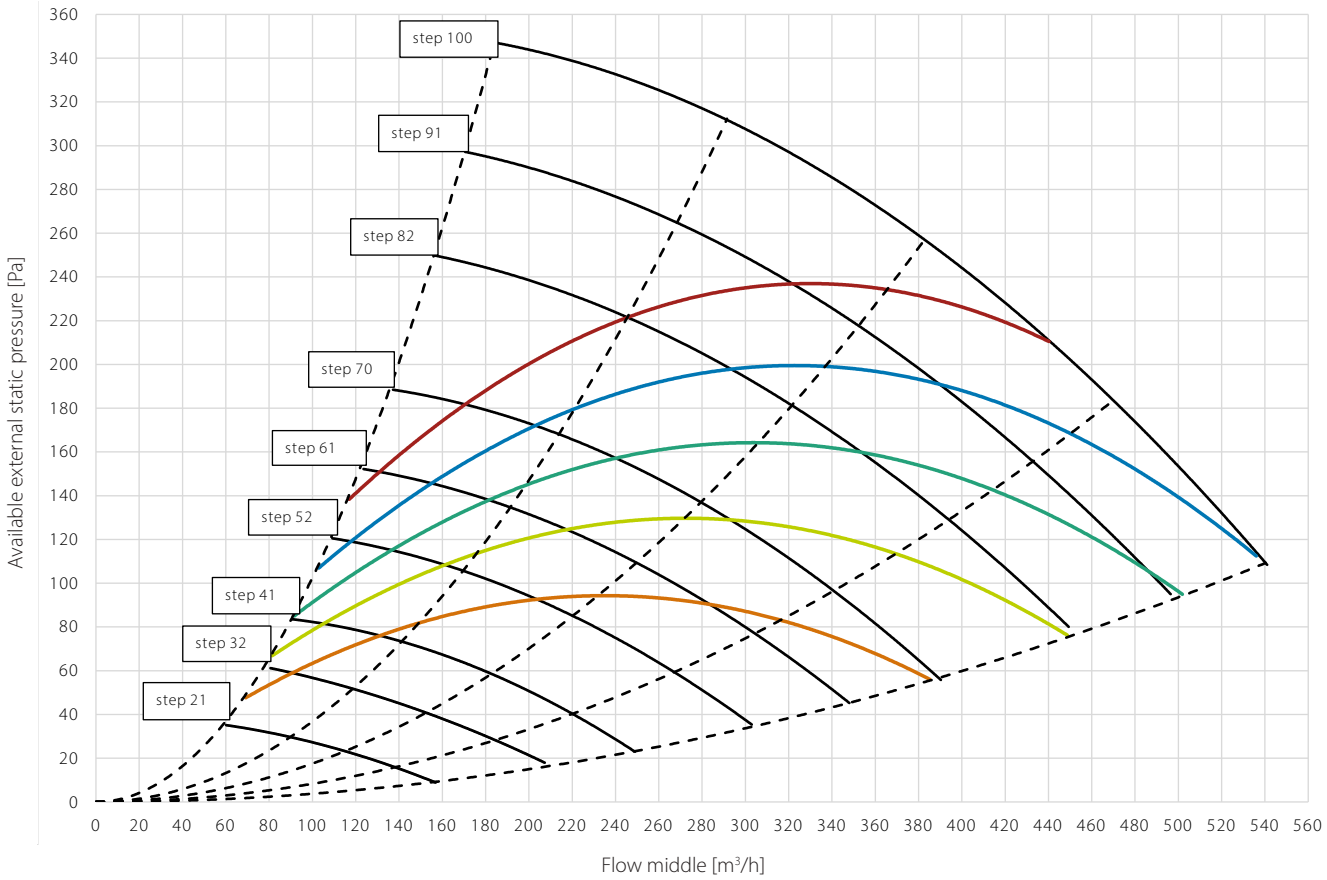

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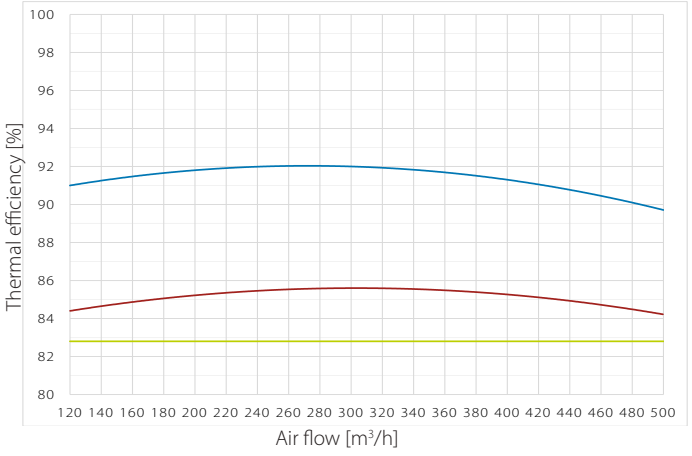

Dantherm CLIMATE SOLUTIONS

HCH 8

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			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