NEW

VORT PROMETEO HR 400

HEAT RECOVERY UNIT

VORTICE

VENTILATION
AIR CONDITIONING
AIR CLEANING
HEATING

VORT PROMETEO HR 400

(Code 11815)

- Quiet, Effective with a Thermal Efficiency up to 92 %
- Energy Saving – Lowers Heating Requirement of the Dwelling
- Radio Frequency (RF) Control and Status Display
- Automatic Summer Bypass and Frost Protection
- Horizontal and Vertical Mount

DESCRIPTION

VORT PROMETEO HR 400, is a centralised continuous mechanical supply and extract ventilation unit with an extremely high heat recovery rate.

The appliance can be installed in a horizontal or vertical position and ensures the silent and continuous ventilation of the home. The Vort Prometeo removes the "stale" air from all wet rooms and creates a permanent air path, through the property, from the dry habitable rooms. Air, drawn into the dwelling by a fan driven by one of the two low consumption DC-EC motors, is routed through an integral high-efficiency synthetic heat exchanger where warmth from the extracted air is transferred to the incoming fresh air before it is supplied to the habitable rooms. The volumes required are detailed in current regulations; during normal operation the total volumes of air extracted and air supplied are essentially the same. In a completely automatic mode, the environmental conditions in the dwelling are maintained constant, while energy consumption is reduced.

Integral temperature, humidity and CO_2 sensors ensure the product operates at the optimal speed, whilst the wireless controllers not only allow occupant intervention but also receive and display the comfort levels transmitted from the Prometeo unit.

The incoming and outgoing air flows are separate and suitably filtered. During the cold season the heat of the expelled air is transferred to the incoming air flow, with a thermal efficiency up to 92%. The condensation created in the process, which is collected inside the product, is then drained off to the outside automatically.

CHARACTERISTICS

TECHNICAL DATA	
Maximum Airflow *	420 m^3/h
Maximum Consumption	195 w
Height	935 mm
Length	840 mm
Depth	502 mm
Weight	25 Kg

* Value refers to zero static pressure.

- **The Heat Exchanger**
  Counter-Flow type, made of PE (Polyethylene)
- **External Casing**
  PPE (PP polyfoam)
- **Impellers, Front Cover and Front Cover Screws**
  PP (Polypropylene)
- **Remote Control**
  ABS
- **Casing Containing the PCB and the Controls**
  ABS+PC with self-extinguishing V0 grade
- **Fan Motors**
  DC-EC brushless type, in order to combine high performances and very low consumptions, located on anti-vibration mounts
- **Spigots**
  150 mm diameter, each connection has a diagram showing the direction and source of the air.

SUMMER BY-PASS

When the outdoor temperature is equal to or higher than the indoor desired temperature, but lower than the current indoor temperature, the by-pass valve will open allowing a direct intake of outdoor air, by-passing the heat exchanger. This function is particularly useful in summer nights.

FROST PROTECTION

When the temperature and relative humidity of both indoor and outdoor air streams are at a condition whereby frost may form on the heat exchanger surface, the frost protection valve will open automatically in an attempt to correct the situation. In particularly harsh climates this may not solve the problem and if this is the case Vortice recommend the installation of an optional 500 W in-duct heater (part code 22317) which is operated by a signal from the Prometeo. It tempers the incoming fresh air and guarantees that frost will not form.

FILTERS

The Vort Prometeo includes two F5 filters, fitted inside the unit near the heat exchanger. These are easily accessible by removing the front panel. Protecting impurities entering both the dwelling and the heat exchanger. A further optional filter, class F7, (part code 22323) which can be installed into the unit, assures additional filtering capacities. The Prometeo monitors filter condition and electronically indicates, visually and audibly, if filter maintenance is required.

RF REMOTE CONTROL

Each of the functions of the Prometeo is controlled by the radio frequency (RF) remote control. The 2-way transmission controller allows the unit to be switched on, off and adjusted by the installer: Initial setup of Minimum speed and Maximum speed values can therefore be set remotely by the installer without the need for return visits to the unit from each room. Speed 2 is determined automatically by the electronics. In this way the initial setup procedure, balancing the unit in accordance with the Building Regulations, consisting of the simultaneous regulation of fan motor speeds and air valves adjustment, is extremely easy.

The home occupant has control also via the RF controller of selected functions;

- Manual Operation (the speed selection is made by the occupant);
- Automatic Operation (the operating speed is set automatically by the system, depending on ambient conditions measured by the sensors);
- Summer Mode (the outdoor air is supplied to the property by-passing the heat exchanger);
- Speed Setting (1,2,3), of the unit operating in Manual mode;
- Desired Indoor Temperature (which determines whether the by-pass valve should be operated);
- Timer (the product, working in Manual mode, will work at the maximum speed for: 10', 20', 30' or indefinitely, until the unit is returned to speed 1).

The RF Controller displays:

- Working mode of the appliance (Manual, Automatic, Summer);
- Speed Setting (1,2,3);
- Timer Setting;
- Average temperature, relative humidity and CO_2 levels;
- Time and Date.

An additional radio frequency (RF) antenna, part code (22315) including a connection cable is available as an option, and allows the control of the Prometeo even if the position chosen for its installation is screened from radio waves.

AUTOMATIC OPERATION

The VORT PROMETEO HR 400 measures the temperature, the relative humidity (R.H.) and CO_2 levels of treated air. It uses this data to determine, when running in automatic mode, whether speed 1 or 3 is required for the best environment.

NOISE SUPPRESSION

The VORT PROMETEO HR 400 is also supplied with a silencer (0,5 m long) to minimize the sound emission. This silencer should be placed adjacent to the product on the habitable room supply duct.

CERTIFICATIONS

VORT PROMETEO HR 400 is constructed in compliance with the most recent standards which certify:
The safety:

- EN 60335-1: safety of electric appliances for domestic and similar use, part 1: General Standards;
- EN 60335-2-80: safety of electric appliances for domestic and similar use, part 2: particular standards for fans;
- EN 50366: emissions potentially dangerous from electromagnetic fields (EMF);
- EN 60529: degrees of protection provided by enclosures (IP code).

The electromagnetic compatibility (EMC):

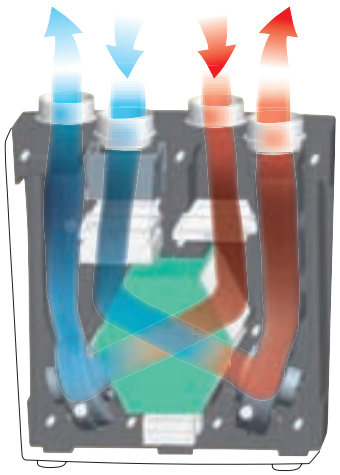
- EN 55014-1: electromagnetic emissions;
- EN 55014-2: immunity to electromagnetic fields;
- EN 61000-3-2: limits for harmonic current emissions;
- EN 61000-3-3: limitation of voltage fluctuation and flickers.

The performances:

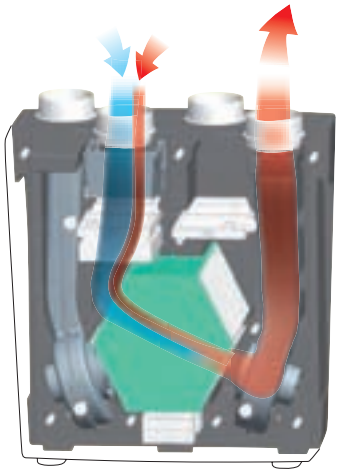
- EN 308: heat exchangers performances;
- EN 13141-7: fans performances;
- ADF (2006) System 4 - Continuous Mechanical Extract with Heat Recovery (MVHR) - applicable in England and Wales;
- Scottish Technical Handbook 2007; Section 3.14;
- TGD (2008) Part F-Ventilation-applicable in Ireland;
- BRE Digest 398-Continuous Mechanical Ventilation in dwellings.

APPENDIX Q ELIGIBILITY (UK)

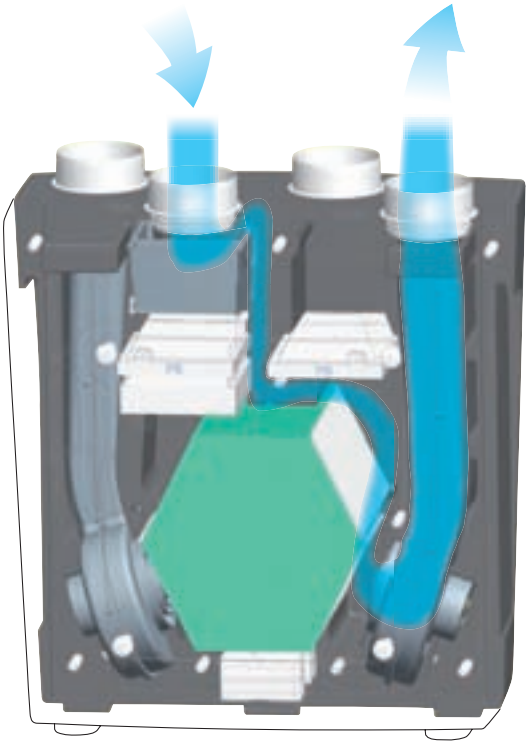
The Prometeo HR 400 with its low energy DC motors and innovative design has been independently tested by the British Building Research Establishment (BRE) to the appropriate SAP Appendix Q test methodology and is Appendix Q Eligible in all configurations from Kitchen + 1 to Kitchen + 8 additional wet rooms.

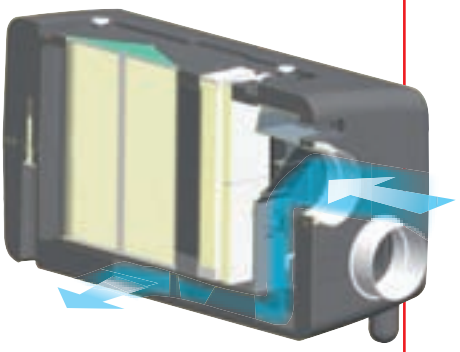


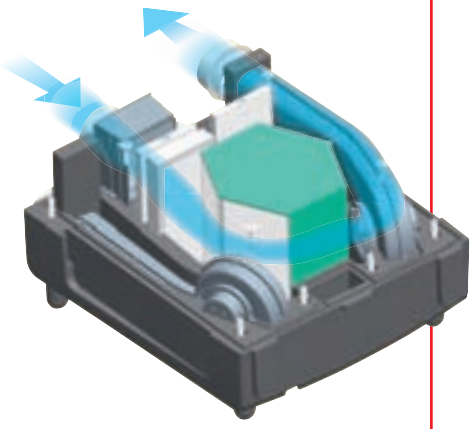
Normal operation mode



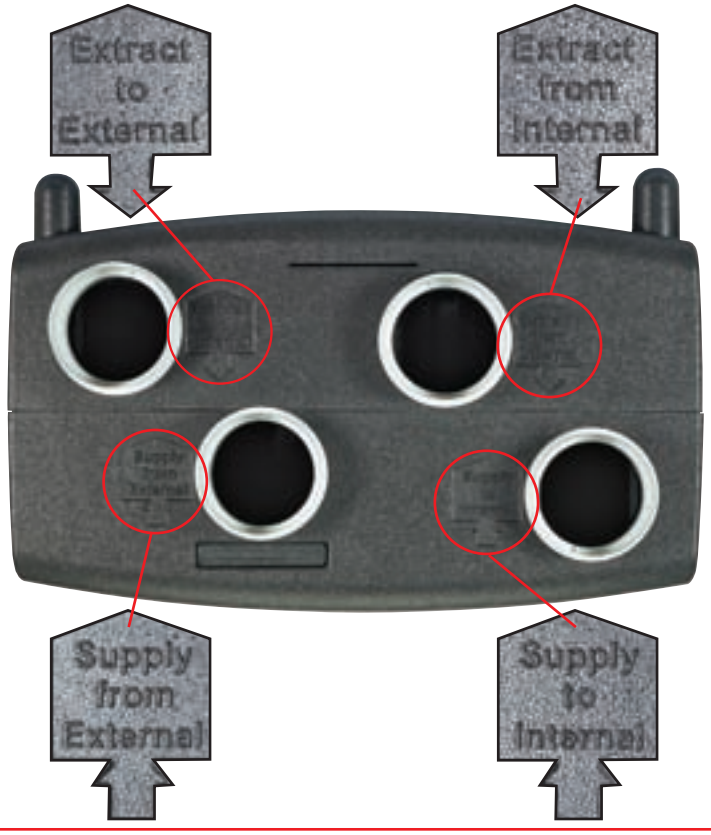
Anti-Frost



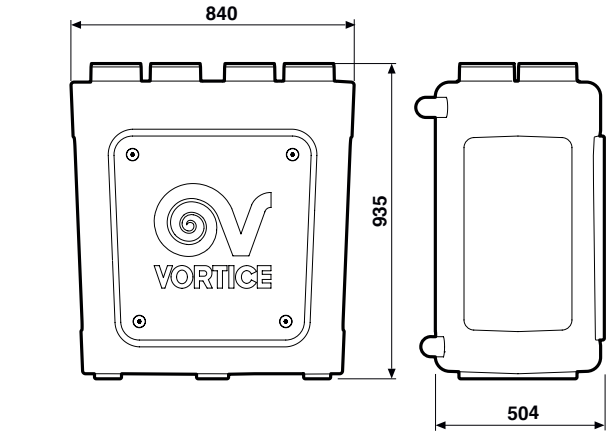


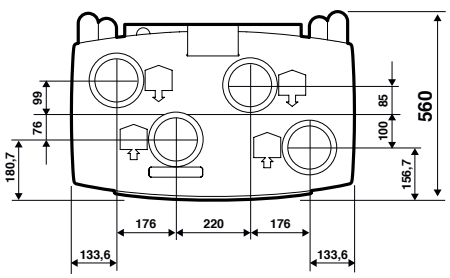


By-pass mode



DIMENSIONS [mm]





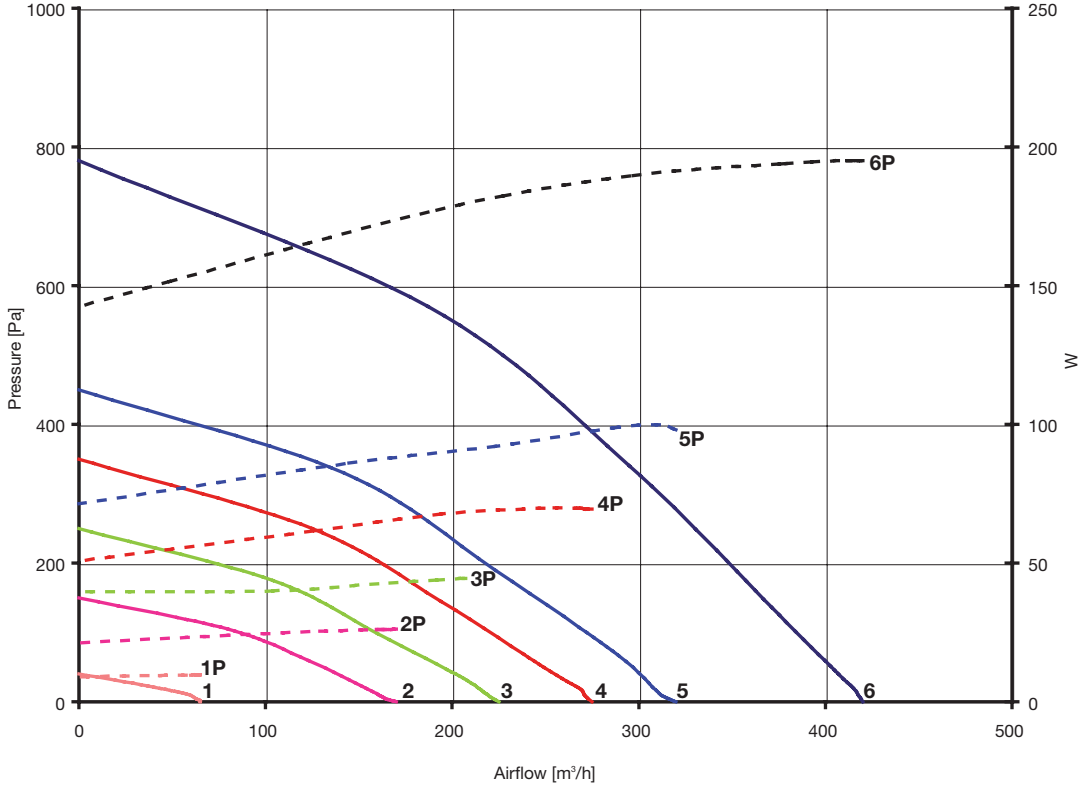
PERFORMANCES AND CONSUMPTIONS CHART

Air flow m³/h	Pressure Pa	Power W	Current A	cos φ	Supply V/Hz	Setting
50	18	10	0,09	0,48	230/50	$(Vmin)_{min}$
80	20	15	0,13	0,48	230/50	*
80	100	24	0,21	0,48	230/50	Default
150	50	30	0,27	0,48	230/50	*
150	80	38	0,34	0,48	230/50	*
150	115	42	0,38	0,48	230/50	$(Vmid)_{mid}$
200	240	93	0,84	0,48	230/50	$(Vmin)_{max}$
230	100	75	0,68	0,48	230/50	*
230	150	88	0,80	0,48	230/50	*
230	180	93	0,84	0,48	230/50	$(Vmax)_{min}$
230	490	181	1,64	0,48	230/50	$(Vmax)_{max}$
280	100	106	0,92	0,5	230/50	*
280	150	119	1,00	0,5	230/50	*
280	395	187	1,62	0,5	230/50	$(Vmax)_{max}$
330	100	137	1,19	0,5	230/50	*
330	150	160	1,39	0,5	230/50	*
330	250	192	1,66	0,5	230/50	$(Vmax)_{max}$
380	110	193	1,67	0,5	230/50	$(Vmax)_{max}$

Curve N°	Legend
1	**$(Vmin)_{min}$** Speed 1 minimum settable value
5	**$(Vmax)_{min\ when}$ $(Vmin)_{max}$** Speed 1 maximum settable value
2	**Default** Initial product setting
3	**$(Vmid)_{mid}$** Mean setting (average of $(Vmin)_{min}$ and $(Vmax)_{max}$)
4	**$(Vmin)_{max}$** Speed 3 minimum settable value
6	**$(Vmax)_{max}$** Speed 3 maximum settable value

* = Values corresponding to intermediate product settings

PERFORMANCE CURVES



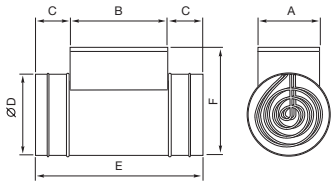
Performance curves	
Curve N°	Rpm
6	3520
5	2800
4	2470
3	2080
2	1600
1	700

Power absorption curves	
Curve N°	Rpm
6P	3520
5P	2800
4P	2470
3P	2080
2P	1600
1P	700

PRODUCT	DESCRIPTION
PRE-HEATING BOX 	When the temperature and relative humidity of air entering and leaving the Prometeo unit are such that frost may form on the heat exchanger surface, this can affect the efficiency of the unit. It can also affect the completely automatic system in the VORT PROMETEO HR 400 that manages changes in fan speeds that, in the vast majority of cases, allow defrosting to be carried out. In particularly harsh climates, this may not solve the problem. In such cases, Vortice recommend the installation of a 500 W heater on the air intake duct so that incoming air can be warmed. This heater will operate automatically for the minimum time needed and will ensure the problem of frosting is solved.
CONTROLS 	Code 22313 - RF Remote Controller White Code 22315 - External RF Receiver Module An additional remote-controlled radiofrequency RF device including a connection cable is available as an optional accessory and allows control of the appliance even if the position chosen for its installation is shielded from radio waves.
EXTERNAL FILTER BOX 	Code 22329 - F5 External Filter Box Galvanised filter box (F5) designed to simplify maintaining the VORT PROMETEO HR 400. The filter box is fitted to the outside of the appliance and protects the intake and outlet ducts serving various rooms (replacing standard filters). Time spent on maintenance is less (thanks to a specially sized filter that guarantees perfect filtering characteristics even when the unit is used for long periods), and maintenance work is simplified as direct access to the Prometeo unit is not required.
FILTERS	Code 22342 - F5 Filter for the External Filter Box Code 22321 - F5 Filters Code 22323 - F7 Filters
HEAT EXCHANGER	Code 22318 - Heat Exchanger
SCREWDRIVER	Code 22340 - Hexagonal Screwdriver for Maintenance
NOISE ATTENUATOR 	- To be installed in the ventilation system, always after the fan, and/or the filter box/duct heater. - Useful when noise level required is particularly low. - Working temperature: -30° +60° C. - Maximum working pressure: 2000 Pa. - Maximum air speed: 25 m/s max.
BACKDRAUGHT SHUTTER 	- To be directly mounted in ventilation ducts or on fan outlet. - Composed by a cylinder in electro galvanized sheet steel calendered and welded. - Closure and seal are ensured by a toroidal gasket in neoprene closed cell.

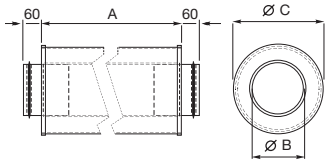
SIZES

Code	Model	A [mm]	B [mm]	C [mm]	Ø D [mm]	E [mm]	F [mm]	Weight [kg]
22317	PRE-HEATING BOX	150	285	40	150	380	250	2,2



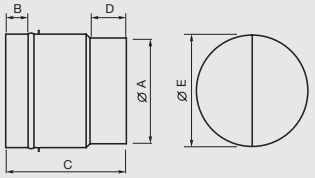
SIZES

Code	Model	A [mm]	Ø B [mm]	Ø C [mm]	Weight [kg]
22780	NA 100	1000	100	211	2
22781	NA 125	1000	125	241	2
22756	NA 150	1000	150	266	2



SIZES

Code	Model	Ø A [mm]	B [mm]	C [mm]	D [MM]	Ø E [mm]	Weight [kg]
22551	IN LINE-S 100	96	23	100	36,5	103	0,196
22556	IN LINE-S 125	122	23	110	36,5	128	0,270
22562	IN LINE-S 150	146	28	120	36,5	153	0,353

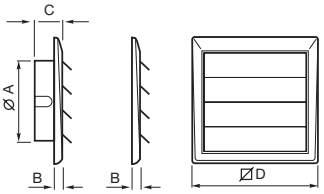


PRODUCT	DESCRIPTION

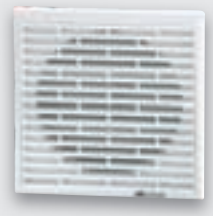
GRAVITY SHUTTER

- To be installed at the duct outlet on vertical wall.
- Useful to avoid air return from the outside and to protect the product.
- Totally manufactured from shockproof thermoplastic anti UV resin.
- Flaps are shaped in order to avoid their block.

SIZES						
Code	Model	Ø A [mm]	B [mm]	C [mm]	⌀ D [mm]	Nr flaps
22332	GGR 100	99	8	28	140	5
22333	GGR 120/125	119	8	28	160	5
22334	GGR 150/160	155	8	28	198	6

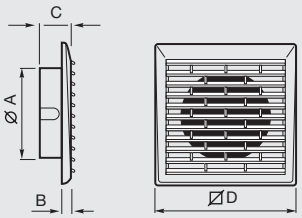


FIXED GRILLE



- To be mounted at the beginning or the end of a ventilation duct.
- Totally manufactured from shockproof thermoplastic anti UV resin.

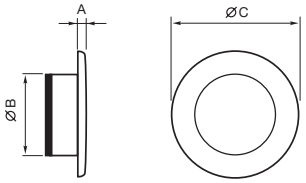
SIZES					
Code	Model	Ø A [mm]	B [mm]	C [mm]	⌀ D [mm]
22165	FG 100	99	8	28	140
22166	FG 125	119	8	28	160
22167	FG 150	155	8	28	198



AIR VALVE

- To be applied to plafond, ceilings, ventilation ducts, double-ceilings etc.
- Allow flow rate regulation with a simple adjustment of the rotating core.
- White thermoplastic polystyrene.

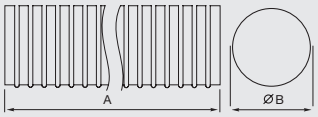
SIZES				
Code	Model	A [mm]	Ø B [mm]	Ø C [mm]
22189	AV 100	13	80	140
22190	AV 125	15	115	166
22191	AV 150	17	130	204



ALUMINIUM FLEXIBLE DUCT

- Ideal for ventilation and air conditioning, low noise and for high pressure.
- Totally manufactured from aluminium.
- Length 4 m (Ø 100 mm -150 mm).

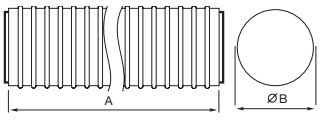
SIZES			
Code	Model	A [mm]	Ø B [mm]
22175	AFD 100-4	4000	102
22176	AFD 125-4	4000	127
22177	AFD 150-4	4000	152



INSULATED ALUMINIUM FLEXIBLE DUCT

- Ideal for ventilation and air conditioning, low heat dissipation, condensation, noise and for high pressure.
- Totally manufactured from aluminium with internal thermal insulation by standard fiberglass (25 mm 16 kg/m³).
- Length 4 m (Ø 100 mm - 150 mm).

SIZES			
Code	Model	A [mm]	Ø B [mm]
22182	AFD-I 100-4	4000	102
22183	AFD-I 125-4	4000	127
22184	AFD-I 150-4	4000	152



Abstract from Standard Assessment Procedure – Appendix Q MVHR Product Data 09/12/2008
SAP Appendix Q Testing Results

RESULTS FOR SAP CALCULATIONS (AT MINIMUM FLOW RATE CONDITION)

THIS PRODUCT HAS ONLY BEEN TESTED WITH RIGID DUCTWORK AND THE DATA ARE NOT APPLICABLE FOR SAP CALCULATIONS IF INSTALLED WITH FLEXIBLE DUCTWORK.

TABLE Q2 – Systems with rigid ductwork only

Exhaust terminal configuration	Fan speed setting	Specific fan power (W/l/s)	Heat exchange efficiency (%)	Energy Saving Trust Best Practice Performance Compliant
Kitchen + 1 additional wet room	100% variable	0.57	92	Yes
Kitchen + 2 additional wet rooms	100% variable	0.54	91	Yes
Kitchen + 3 additional wet rooms	100% variable	0.56	90	Yes
Kitchen + 4 additional wet rooms	100% variable	0.63	90	Yes
Kitchen + 5 additional wet rooms	100% variable	0.67	89	Yes
Kitchen + 6 additional wet rooms	100% variable	0.76	88	Yes
Kitchen + 7 additional wet rooms	100% variable	0.85	88	Yes
Kitchen + 8 additional wet rooms	100% variable	0.98	87	Yes

These figures are entered into either:

A In the case of SAP software amended to SAP 2005 version 9.81 allowing direct entry of MVHR data, the SAP software, or

B In the case of SAP software amended to SAP 2005 version 9.81 not allowing direct entry of MVHR data, the SAP Q MVHR Calculation Spreadsheet v9.81 and the results from the spreadsheet into the Special Features part of the SAP 9.81software, or

C In the case of SAP software to SAP 2005 version 9.80, the SAP Q MVHR Calculation Spreadsheet v9.80 and the results from the spreadsheet into the Special Features part of the SAP 9.80 software. They must NOT be entered directly into SAP 2005 version 9.80 software

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