

**NEW**

# VORT PROMETEO HR 400 M

HEAT RECOVERY UNIT  
APPENDIX Q ELIGIBLE



VENTILATION  
AIR CONDITIONING  
AIR CLEANING  
HEATING



# VORT PROMETEO HR 400 M

(Code 11788)



- Appendix Q Eligible - Up to 92% Efficient
- Quiet, Effective Ventilation in Full Compliance with Current Building Regulations
- Energy Saving – Lowers Heating Requirement of the Dwelling
- Summer Bypass
- Horizontal and Vertical Mount

## DESCRIPTION

VORT PROMETEO HR 400 M, is a centralised continuous mechanical supply and extract ventilation unit with an extremely high heat recovery designed to comply not only with current Building Regulations but also with the requirements of the Code for Sustainable Homes.

The appliance can be installed in a horizontal or vertical position and ensures the quiet 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 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.

The product is manually switched by the home occupant between low (continuous) speed and high (boost) speed. In addition a summer bypass valve can be operated by a separate switch. This function is particularly useful during summer nights when the outdoor temperature is often equal to or higher than the indoor desired temperature.

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 <sup>3</sup> /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 VO grade.
- **Fan Motors**  
DC 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.

## 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. They protect against 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.

## CERTIFICATIONS

VORT PROMETEO HR 400 M 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.

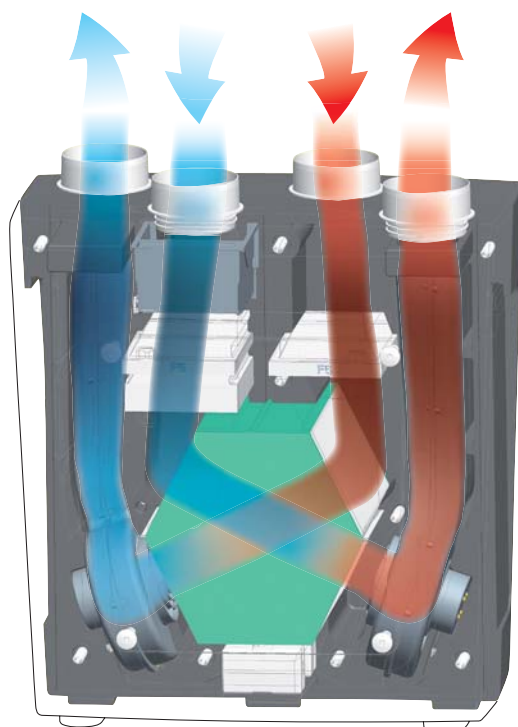
The performances:

- EN 308: heat exchangers performances;
- EN 13141-7: fans performances;
- ADF (2010) 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.

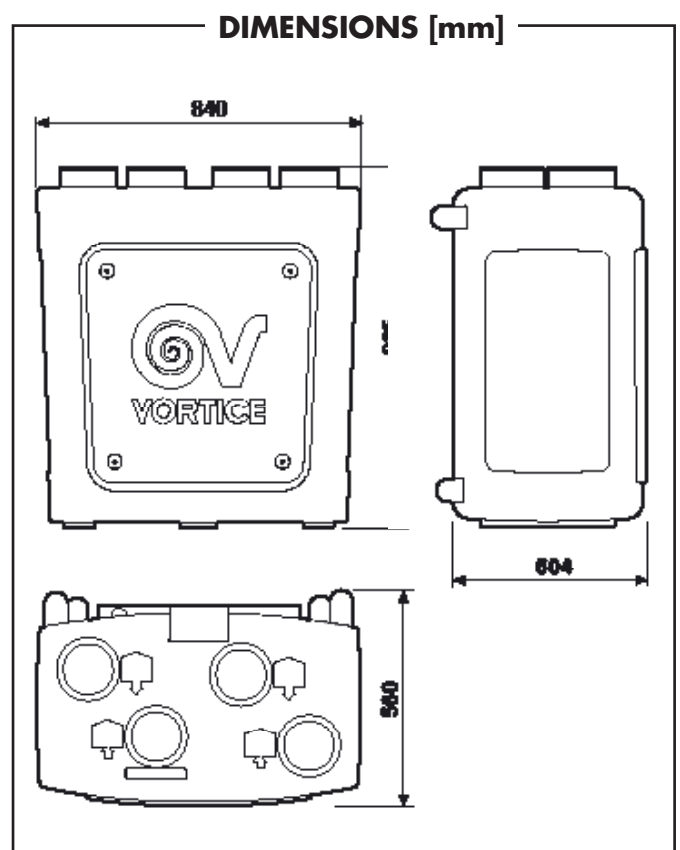
## APPENDIX Q ELIGIBILITY

The Prometeo HR 400 M with its low energy DC motors and innovative design has been independently assessed by the 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.

The unit must be commissioned by means of the (RF) remote control unit and external radio module that do not come as standard with the product. Please contact Vortice Limited regarding the loan facility.



Normal operation mode

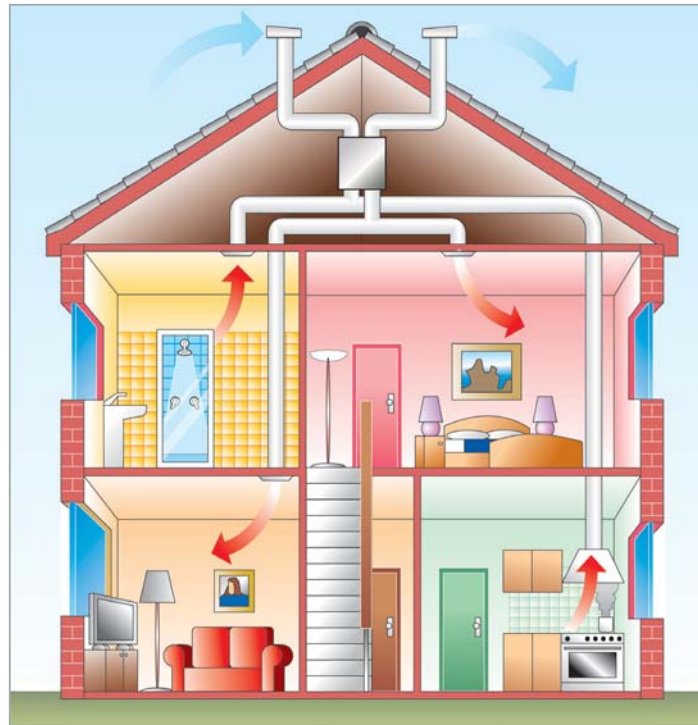




# BUILDING REGULATIONS DOCUMENT F1 2010

## SYSTEM 4 CONTINUOUS MECHANICAL SUPPLY & EXTRACT VENTILATION WITH HEAT RECOVERY

A continuous balanced mechanical central supply and extract system to be positioned in loft or cupboard space. An integral heat exchanger recovers a large percentage of heat energy that would have otherwise been lost. In employing this type of system, there is no need to install background ventilators in the dwelling.



### CONTINUOUS SUPPLY AND EXTRACT

**1** For any design air permeability, determine the whole dwelling ventilation supply rate from **Table 5.1b**.

As an alternative where the designed **air permeability** is intended to be leakier than ( $>$ )  $5\text{m}^3/(\text{h}\cdot\text{m}^2)$  at 50 Pa, allow for

infiltration for all dwelling types by subtracting from the **whole dwelling ventilation** supply rate from **Table 5.1b**:  $0.04\text{l}/(\text{s}\cdot\text{m}^3)$

$\times$  **gross internal volume** of the dwelling heated space ( $\text{m}^3$ ), but see the cautionary advice in 5.10.

**2** Calculate the whole dwelling extract rate at **maximum operation** by adding the individual room rates for '**minimum high rate**' from **Table 5.1a**.

**3** The required air flow rates as as follows: **Maximum Extract Rate (boost)** is the greater step of 1 and 2 above.

The Minimum individual room extract rates should be at least those given in **Table 5.1a** for minimum high rate.

**4** No Background ventilators are required with System 4.

**TABLE 5.1a**

Room	Minimum intermittent extract rate	Continuous rate	
		Minimum high rate	Minimum low rate
Kitchen	30 l/s (adjacent to hob, 60 l/s elsewhere)	13 l/s	Total extract rate must be at least the whole building ventilation rate in Table 5.1b
Utility room	30 l/s	8 l/s	
Bathroom	15 l/s	8 l/s	
Sanitary Accommodation	6 l/s	6 l/s	

**TABLE 5.1b**

	Number of bedrooms in dwelling				
	1	2	3	4	5
Whole building ventilation rate (l/s)	13	17	21	25	29
Minimum value in any dwelling of 0,3 l/s per m <sup>2</sup> floor area					

- In addition, the minimum ventilation rate should not be less than 0.3 l/s per m<sup>2</sup> internal floor area (this includes each floor, e.g. for a two-storey building, add the ground and first floor areas).
- This is based on two occupants in the main bedroom and a single occupant in all other bedrooms. This should be used as the default value. If a greater level of occupancy is expected, then add 4 l/s per occupant.

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