

Vireo

HR155WM / HR155CM / HR185WM

Mechanical Ventilation with Heat Recovery

User / Homeowner Guide

Your Heat Recovery Unit is covered by our standard warranty.

One of the ways to maintain this guarantee is to ensure that the filters are regularly checked and replaced.

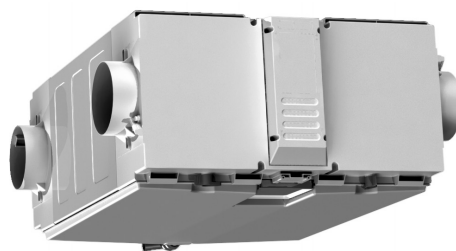
Register today for your FREE 'Filter Reminder' service and receive an automatic prompt to change your filters every 12 months via text message or email.

To register you can either scan the QR code or type into your web browser the following link:

www.greenwood.co.uk/homeownerregistration



Vireo HR155WM



Vireo HR155CM



Vireo HR185WM

Commissioning and Inspection Record:

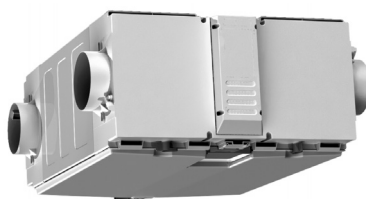
Located on pages 16-19 of this guide, should have been completed by the Commissioning Engineer.

Contents

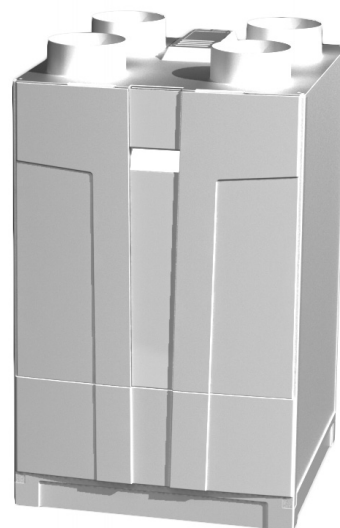
User / Homeowner Information	Page
1.0 Ventilation in Your Home.....	2
2.0 General Overview.....	3
3.0 Controls	4
4.0 Servicing and Maintenance.....	7
5.0 Commissioning and Inspection Record	16
6.0 Declaration of Performance (DOP).....	20
7.0 Guarantee	24



Vireo HR155WM



Vireo HR155CM



Vireo HR185WM

1.0 Ventilation in Your Home

1.1 Your home has a Heat Recovery Ventilation System installed. This consists of a continuously running Supply and Extract System with Heat Recovery that is linked by a network of ducts to extract air on a continual basis from the following areas (referred to as "wet rooms") in residential dwellings:

- Kitchen
- Utility Room
- WC/Cloakroom
- Ensuite Bath/Shower Room

And supply air continually to:

- Living Room
- Dining Room
- Bedroom
- Study

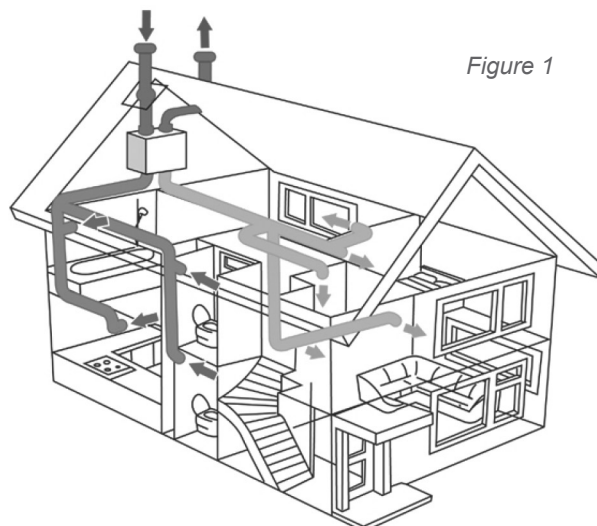


Figure 1

2.0 General Overview

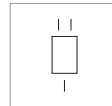
2.1 The product incorporates a Heat Exchanger that recovers the heat energy from the "extract air" that would normally be lost with other ventilation systems. It does this using minimal power consumption as the product uses EC low energy motors.

2.1.1 Depending on the way your Vireo unit has been installed, the specific operation may vary.

The unit has two speeds available:

I	Low Speed:	Operating on a continual basis
II	High Speed:	Activating manually using our GS2 switch, via "switch-live" or our GRC1 boost and status controller

GS2 switch markings: Low (I) & High (II) operation



GRC1 boost and system status controller markings:
Low (I) & High (II) operation
(See section 3.1.6 for system status details)



Note: Other manufacturer's switches may show different markings, or your unit may be connected to a Building Management System (BMS).

2.1.2 To maintain good indoor air quality within the dwelling it is important that the ventilation system remains in operation at all times unless powered down periodically for maintenance/repair.

2.1.3 **Warning:** This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

2.1.4 Where an open-flued oil or gas-fuelled appliance is installed, precautions must be taken to avoid a back-flow of gases into the room.

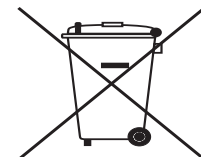
2.1.5 If the supply cord is damaged, it must be replaced by a special cord / assembly available from the manufacturer or its service agent. The replacement must be carried out by a qualified Electrician in accordance with IEE or local regulations.

2.1.6 To disassemble the unit, disconnect from mains supply and use a screwdriver to segregate the electronic components and motors from the plastic housing. Dispose items in accordance with WEEE.

2.1.7 WEEE Statement

This product may not be treated as household waste. Instead it should be handed to an appropriate collection point for the recycling of electrical and electronic equipment.

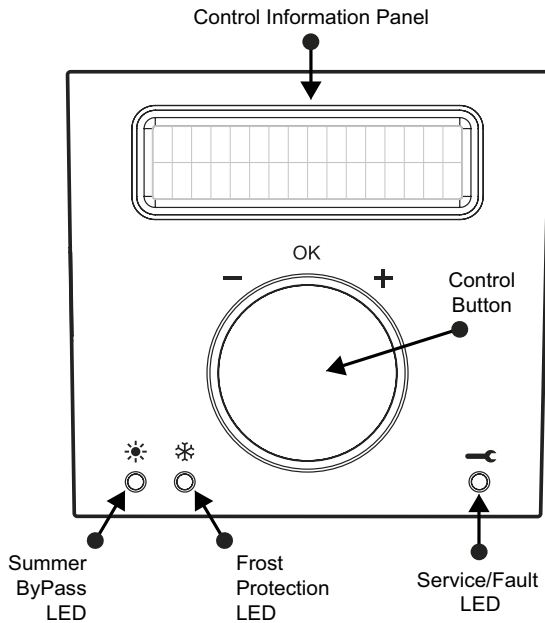
For more detailed information about the recycling of this product, please contact your local council office or your household waste disposal service.



3.0 Controls

This section covers how to operate your Vireo Heat Recovery unit.

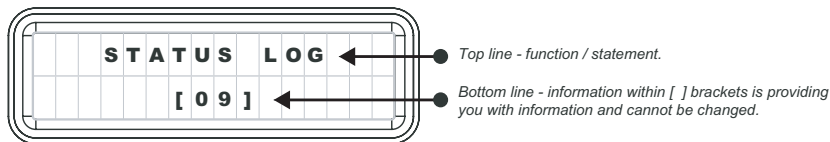
3.1 Integral LCD Display



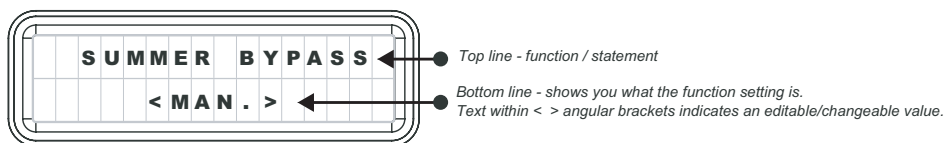
USER / SERVICE / SETUP MENU

Below are examples/explanations of what you would see on your control panel.

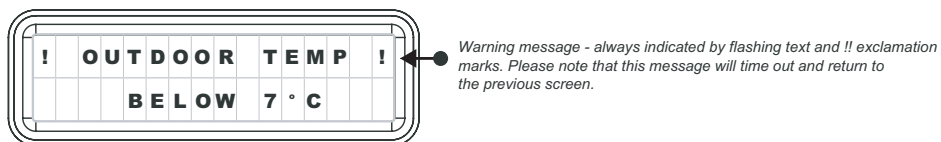
Example 1: Status / Service Log Screen



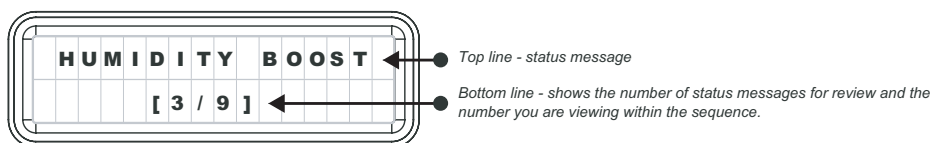
Example 2: Function Selection Screen



Example 3: Warning / Alert Message







Example 4: Status Message



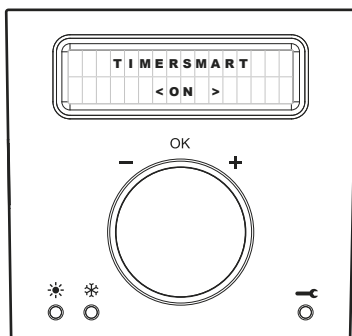
Note: For specific adjustment details, please refer to respective function shown on Page 6, 8 and 9.

3.1.1

Function	Description
<p>Greenwood TimerSMART™</p> 	<p>Greenwood TimerSMART™ monitors the length of time that there has been an occupancy presence detected within a “wet” room (via the Switch Live) and provides a fixed over-run time period to best match the length of time that the Switch Live is active (See 3.1.2 for adjust function setting On/Off).</p>
<p>Greenwood HumidiSMART™</p> 	<p>Greenwood HumidiSMART™ monitors the ambient humidity within the “wet” room environment and looks for short peaks of humidity made by either showering or bathing. This smart technology ensures that your Vireo unit is not on boost for prolonged periods of time (See 3.1.3 for adjust function setting On/Off).</p>
<p>Greenwood SummerSMART™</p> 	<p>Greenwood SummerSMART™ monitors the internal and external temperature and automatically identifies when the filtered summer bypass needs to be activated, protecting your home from overheating. (See 3.1.4 for adjust function setting Auto/Manual/Off).</p>
<p>Greenwood WinterSMART™</p> 	<p>Greenwood WinterSMART™ monitors the internal and external temperature and automatically identifies when the frost protection needs to be activated, protecting your unit from freezing.</p>

3.1.2 **Greenwood TimerSMART™**

To adjust the Greenwood TimerSMART™ Mode:

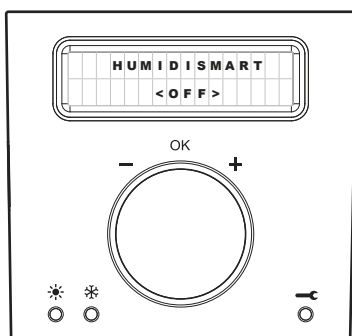


- Press control button to activate panel
- Scroll to “User Menu” option and press button to enter
- Scroll to “TimerSmart” option and press button
- The current setting status will flash
- Rotate button to desired outcome
- Press to confirm
- Screen will time out after 30 seconds

Factory set to ON Option's ON / OFF

3.1.3 **Greenwood HumidiSMART™**

To adjust the Greenwood HumidiSMART™ Mode:

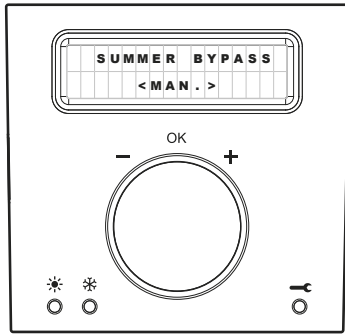


- Press control button to activate panel
- Scroll to “User Menu” option and press button to enter
- Scroll to “HumidiSmart” option and press button
- The current setting status will flash
- Rotate button to desired outcome
- Press to confirm
- Screen will time out after 30 seconds

Factory set to ON Option's ON / OFF

3.1.4 Summer ByPass Manual Override

To manually override the Greenwood SummerSMART™ Mode:



- Press control button to activate panel
- Scroll to "User Menu" option and press button to enter
- Scroll to "Summer ByPass" option and press button
- The current setting status will flash
- Rotate button to desired outcome
- Press to confirm
- Screen will time out after 30 seconds

Note:

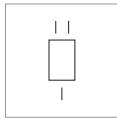
- If "manual" option selected, the option will be available to "OPEN" or "SHUT" the summer bypass
- Rotate button to desired outcome and press to confirm
- Rotate button to select period of time required
- Press to confirm

Factory set to AUTO Option's AUTO / MAN / OFF

Note: Unit will return to "Auto Mode" at the end of the manual time out period. Unit will not allow the Summer ByPass to be opened at temperature below 7°C.

3.1.5 Ventilation Speed Control for GS2

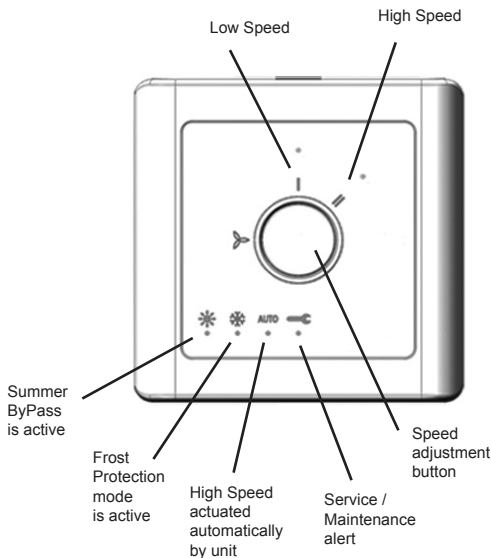
The GS2 is a hard wired switch used to switch between Low and High speed



- Press the switch towards the (I) to activate the Low Speed
- Press the switch towards the (II) to activate the High Speed

3.1.6 Ventilation Speed Control and System Status for GRC1

The GRC1 is a hardwired controller used to switch between low and high speeds as well as provide system status updates.



To change speed setting

- Press button to identify speed and system status
- Press button again to change speed

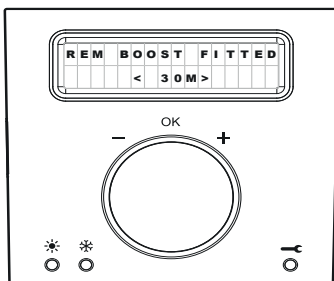
Note:

- Unit will automatically return to low speed. See below for high speed time duration set up.

GRC1 System Status Alerts

- Status alerts are for indication only
- If Service / Maintenance is required please return to the Vireo unit and follow guidelines in Section 4

LCD Control on Vireo Unit



- Press control button to activate panel
- Scroll to "User Menu" option and press button to enter
- Scroll to "REM Boost Fitted" option and press button
- The current setting status will flash
- Rotate button to desired outcome (30, 60, 90 or 120 minutes)
- Press to confirm
- Screen will time out after 30 seconds

4.0 Servicing & Maintenance

4.1 **Warning: The units must be isolated from the Mains Supply before commencing any service or maintenance work.**

4.1.1 Your Vireo unit contains self-cleaning backward curved impellers that require no servicing.

Note: The motors have sealed for life bearings, which do not require lubrication.


Periodic cleaning of the ceiling supply and extract valves should be carried out as required, taking care not to adjust the valves set position, as this may cause an unbalanced system, resulting in either under-ventilation or unnecessary over-ventilation occurring.

Periodic inspection and/or replacement of filters should be carried out. Frequency greatly depends on geographic location and urban density. The filters trap dirt in the atmosphere and act as protection for both the system and the dwelling. The system's airflow can be reduced if the filters are not replaced, this can affect overall system performance. For this reason, it is important to check the filters regularly and to replace them as often as each year (See Sections 4.1.8, 4.1.9 and 4.2.0).

Periodic inspection and/or cleaning/replacement of the heat exchanger should be carried out. The filters should help to protect the heat exchanger but over time, dirt in the atmosphere can penetrate the filters and gain access to the heat exchanger. The system's airflow can be reduced if the heat exchanger is not cleaned/replaced and this can affect overall system performance. For this reason, it is important to check the status of the heat exchanger regarding the time remaining indicated on the display (See Sections 4.2.1, 4.2.2 and 4.2.3).

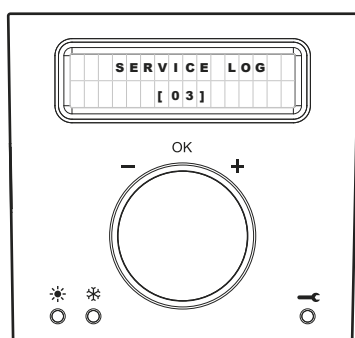
Please contact us on +44 (0)1276 408404 for replacement filters and heat exchangers.

4.1.2 **Service Indicator**

If the filters or the heat exchanger needs replacing the LED with the Service symbol  will appear. To establish what needs to be replaced, you will need to access the Service Menu and review the Service Log.

4.1.3 **Service Log**

This enables you to identify what your system requires, to review the Service Log:

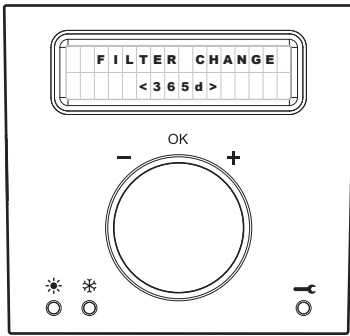


- Press control button to activate panel
- Scroll to "Service Menu" option and press button to enter
- First option is the "Service Log" which indicates the number of logs for review
- Rotate button and press
- Scroll through each log and press button to return back to main options within the Service Menu

NOTE: If "fan failure" log is showing please contact Technical Services on +44 (0)1276 408402.

4.1.4 Filter Status

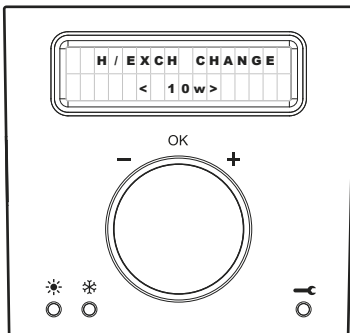
If the Filter status within the “Service Log” is showing as 0 days the filters will need to be replaced (See Sections 4.1.8 HR155WM, 4.1.9 HR155CM and 4.2.0 HR185WM).



- Press control button to activate panel
- Scroll to “Service Menu” option and press button to enter
- First option is the “Service Log” which indicates the number of logs for review
- Scroll to “Filter Change” option and press button
- The request to reset timer will flash
- Press to confirm
- Screen will time out after 30 seconds

4.1.5 Heat Exchanger Status

If the Heat Exchanger status within the “Service Log” is showing as 0 weeks the heat exchanger will need to be replaced (See Section 4.2.1 HR155WM, 4.2.2 HR155CM and 4.2.3 HR185WM).

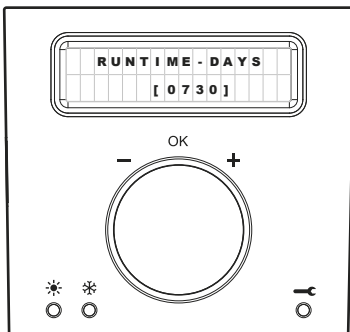


- Press control button to activate panel
- Scroll to “Service Menu” option and press button to enter
- First option is the “Service Log” which indicates the number of logs for review
- Scroll to “H/Exch Change” option and press button
- The request to reset timer will flash
- Press to confirm
- Screen will time out after 30 seconds

Note: If you clean your heat exchanger during the period, do not adjust the timer.

4.1.6 Run Time

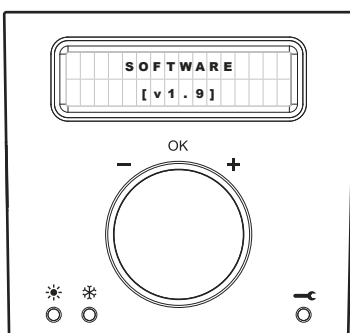
To review the length of time your unit has been in operation:



- Press control button to activate panel
- Scroll to “Service Menu” option and press button to enter
- Scroll to “Runtime - Days” option to review (time shown in days)
- Screen will time out after 30 seconds

4.1.7 Software Identification

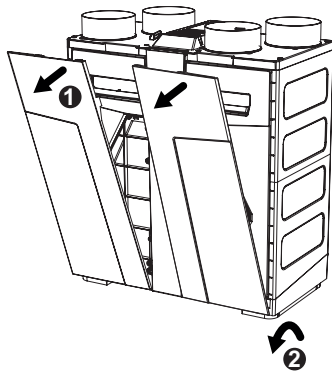
To review what software version is activated on your unit:



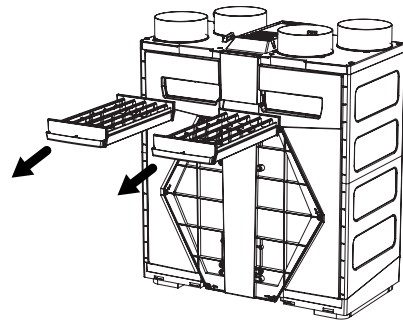
- Press control button to activate panel
- Scroll to “Service Menu” option and press button to enter
- Scroll to “Software” option to review
- Screen will time out after 30 seconds

4.1.8 To replace the Vireo HR155WM Filters

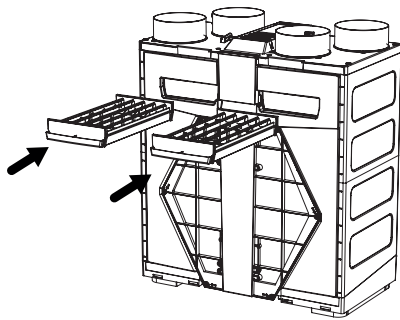
- Replace at approximately 1 year interval.



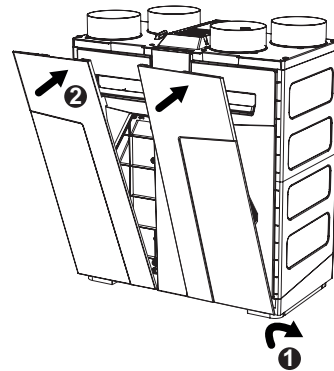
Step 1 Isolate Vireo HR155WM from the Mains Supply. Pull down the top part (❶) of the two front panels and lift out (❷) of locating tabs at the bottom.



Step 2 Remove both filters from the unit by the handles.



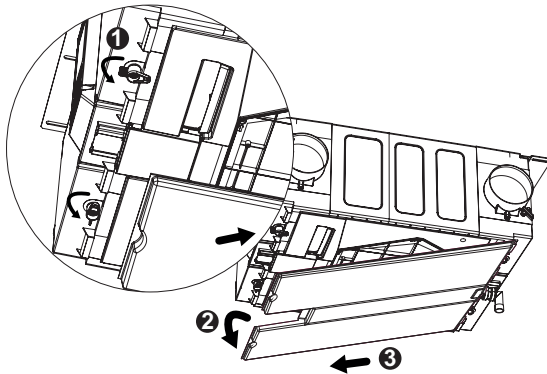
Step 3 Re-insert new filters into the unit.



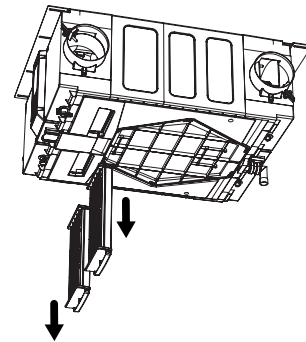
Step 4 Locate the front panels in the bottom tabs (❶) and click them back into place at the top (❷). Turn the Mains Supply back on. Reset Filter Status (See Section 4.1.4).

4.1.9 To replace the Vireo HR155CM Filters

- Replace at approximately 1 year intervals.

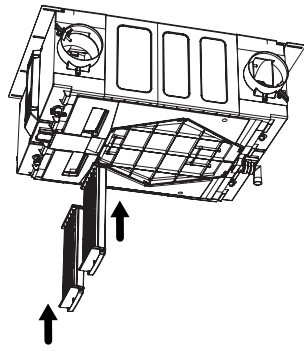


Step 1 Isolate Vireo HR155CM from the Mains Supply. Rotate and unlock the tabs (❶), Slightly pull down the top part (❷) of the front panel and pull out (❸) of locating tabs and condensate connection located at the bottom of the unit.

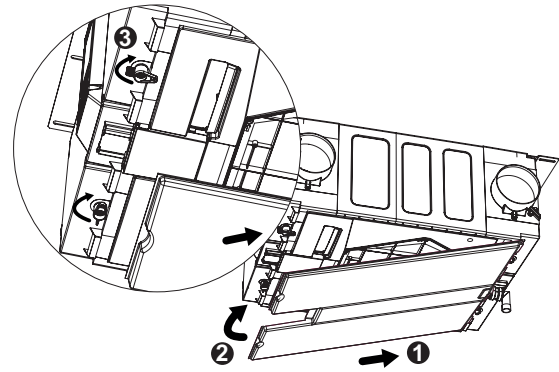


Step 2 Remove both filters from the unit by the handles.

Note: Take care when removing lid as a small amount of water maybe present.



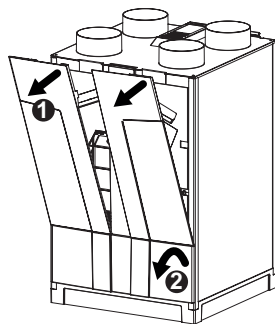
Step 3 Re-insert new filters into the unit.



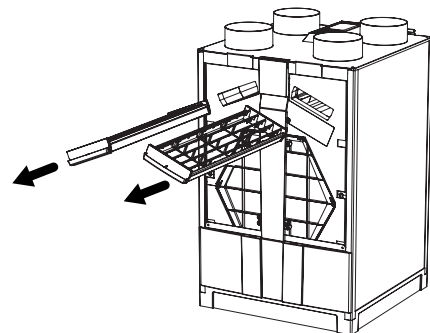
Step 4 Re-connect the front panel (1) into the condensation connection point and the bottom locating tabs and position back against the unit (2). Rotate the two retaining latches to secure (3). Turn the Mains Supply back on. Reset Filter Status (See Section 4.1.4).

4.2.0 To replace the Vireo HR185WM Filters

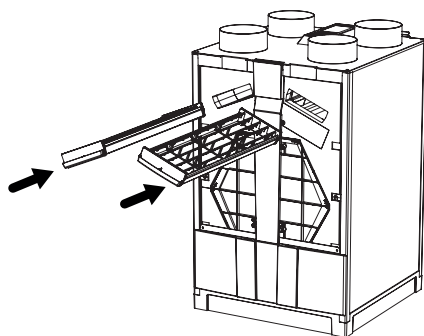
- Replace at approximately 1 year intervals.



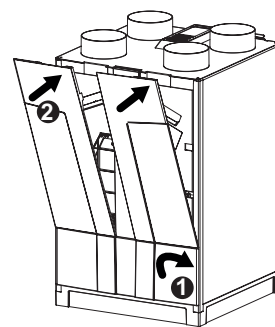
Step 1 Isolate Vireo HR185WM from the Mains Supply. Pull down the top part of the two front panels (1) and lift out (2) of locating tabs at the top of the valance panel.



Step 2 Remove both filters from the unit by the handles.



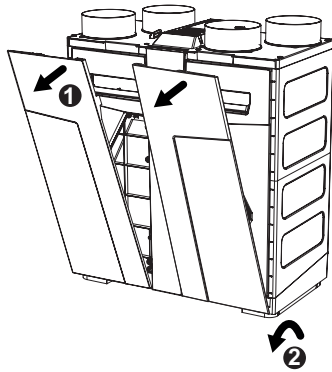
Step 3 Re-insert new filters into the unit.



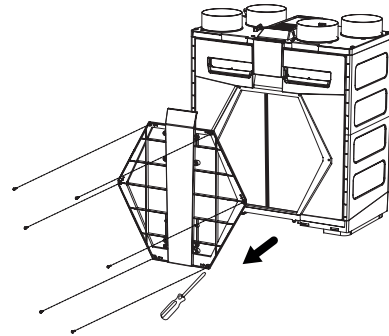
Step 4 Locate the front panels in the tab at the top of the valance panel (1) click them back into place at the top (2). Turn the Mains Supply back on. Reset Filter Status (See Section 4.1.4).

4.2.1 To Clean and Replace the Vireo HR155WM Heat Exchanger

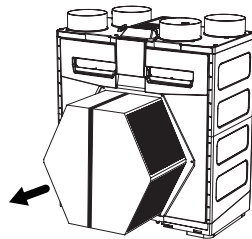
- Clean approximately at two year intervals.
- Replace approximately at five year intervals.



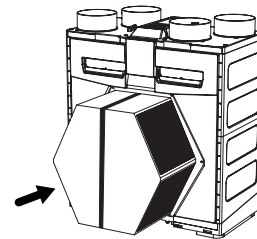
Step 1 Isolate Vireo HR155WM from the Mains Supply. Pull down the top part (1) of the two front panels and lift out (2) of locating tabs at the bottom.



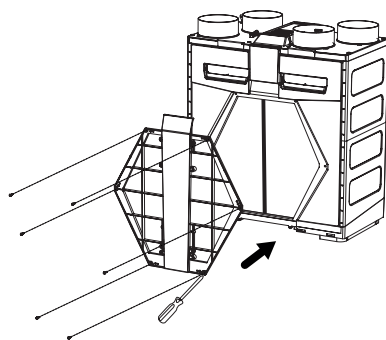
Step 2 Unscrew the six heat exchanger locating screws and remove panel.



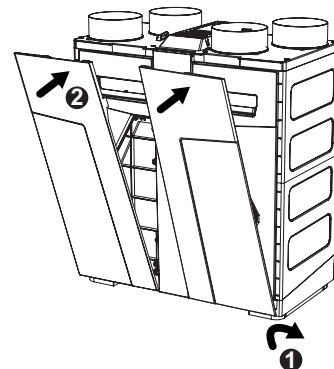
Step 3 Remove the heat exchanger by gently pulling on the nylon strap, taking care not to damage it. Clean each face of the heat exchanger with a vacuum cleaner and wash with warm water. Ensure heat exchanger is dry before continuing to Step 4.



Step 4 Re-insert the cleaned or new heat exchanger, taking care not to cause damage.



Step 5 Reposition the panel and secure with the six locating screws.

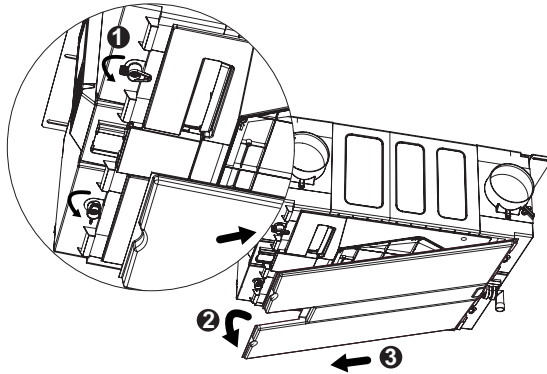


Step 6 Locate the front panels in the bottom tabs (1) and click them back into place at the top (2). Turn the Mains Supply back on. Reset Heat Exchanger Status (See Section 4.1.5).

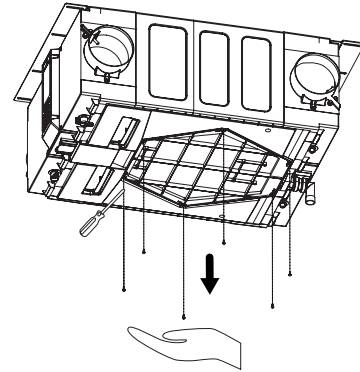
Important Note: Do not attempt to clean the heat exchanger with detergent.

4.2.2 To Clean and Replace the Vireo HR155CM Heat Exchanger

- Clean approximately at two year intervals.
- Replace approximately at five year intervals.



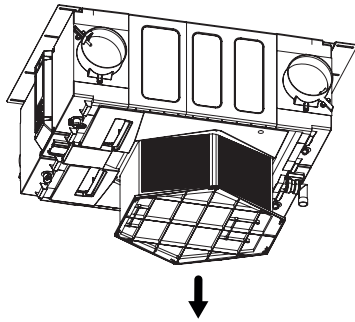
Step 1 Isolate Vireo HR155CM from the Mains Supply. Rotate and unlock the tabs (1), Slightly pull down the top part (2) of the front panel and pull out (3) of locating tabs and condensate connection located at the bottom of the unit.



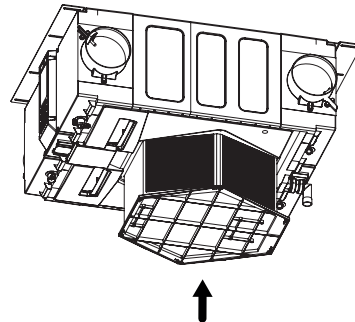
Step 2 Unscrew the six heat exchanger locating screws and remove panel.

Note: Ensure you support the Heat Exchanger cover when removing the final screw.

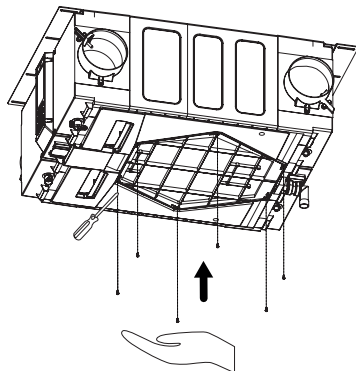
Note: Take care when removing lid as a small amount of water maybe present.



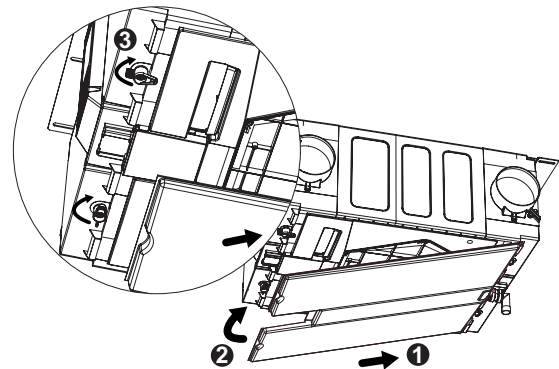
Step 3 Supporting with your hand, gently remove the heat exchanger, taking care not to tilt it to an angle as water will be present. Clean each face of the heat exchanger with a vacuum cleaner and wash with warm water, take care not to cause damage to the unit. Ensure heat exchanger is dry before continuing to Step 4.



Step 4 Re-insert the cleaned or new heat exchanger, taking care not to cause damage. Support in place with hand until completing Step 5.



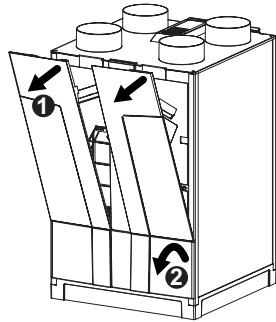
Step 5 Reposition the panel against the unit and secure with the six locating screws.



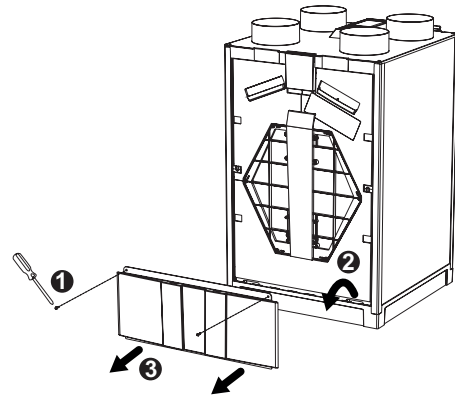
Step 6 Re-connect the front panel (1) into the condensation connection point and the bottom locating tabs and position back against the unit (2). Rotate the two retaining latches to secure (3). Turn the Mains Supply back on. Reset Heat Exchanger Status (See Section 4.1.5).

To Clean and Replace the Vireo HR185WM Heat Exchanger

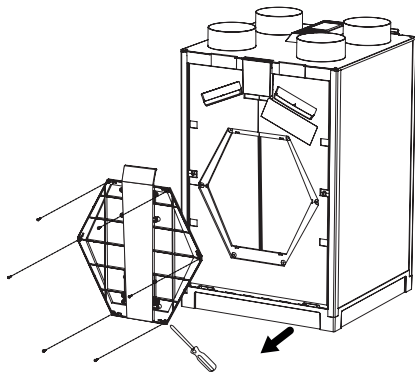
- Clean approximately at two year intervals.
- Replace approximately at five year intervals.



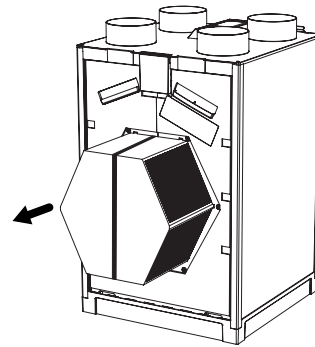
Step 1 Isolate Vireo HR185WM from the Mains Supply. Pull down the top part of the two front panels (1) and lift out (2) of locating tabs at the top of the valance panel.



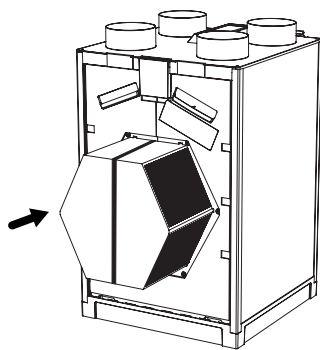
Step 2 Unscrew the two valance screws (1) and lift out (2) of locating tabs at the bottom and remove valance (3).



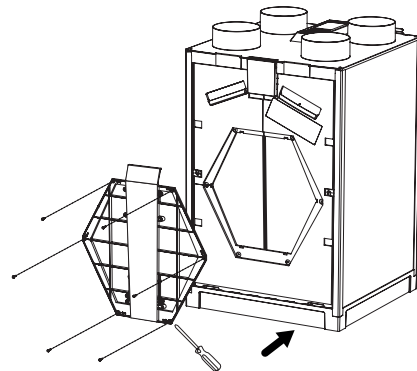
Step 3 Unscrew the six heat exchanger locating screws and remove panel.



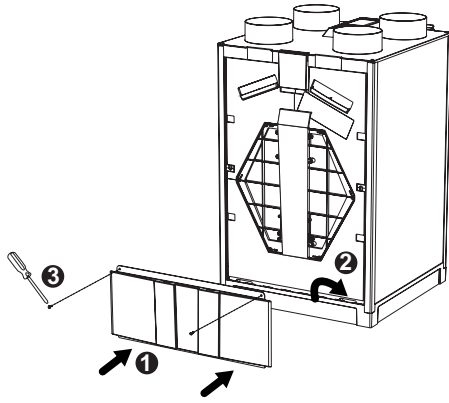
Step 4 Remove the heat exchanger by gently pulling on the nylon strap, taking care not to damage it. Clean each face of the heat exchanger with a vacuum cleaner and wash with warm water. Ensure heat exchanger is dry before continuing to Step 5.



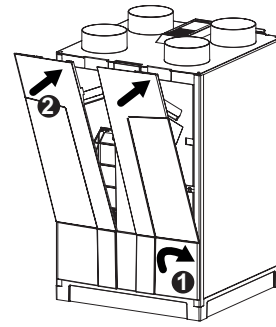
Step 5 Re-insert the cleaned or new heat exchanger, taking care not to cause damage.



Step 6 Reposition the panel and secure with the six locating screws.



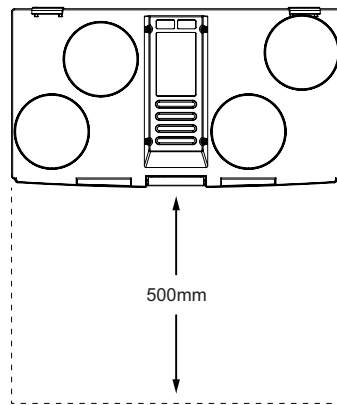
Step 7 Locate the valance panel (❶) in the bottom tabs (❷) and secure in place with two screws (❸).



Step 8 Locate the front panels in the bottom tabs (❶) and click them back into place at the top (❷). Turn the Mains Supply back on. Reset Heat Exchanger Status (See Section 4.1.5).

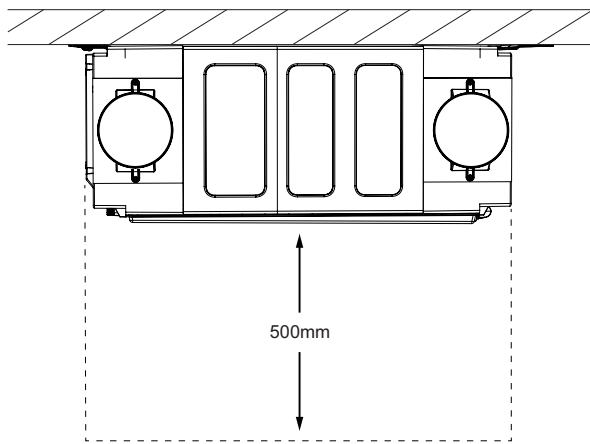
4.2.4 **Access for Maintenance**

4.2.5 **Footprint of Vireo HR155WM**



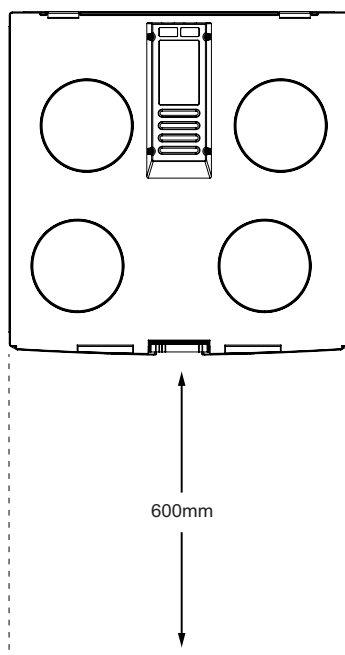
Top View

4.2.6 **Footprint of Vireo HR155CM**



Side View

4.2.7 **Footprint of Vireo HR185WM**



Top View

5.0 Commissioning & Inspection Record

- 5.1 This section should be used to record all installation details. The Commissioning Engineer should use the following Parts 1 to 3, to record important information relating to the installation, of which, copies should be given to the Building Control Body (BCB), the Developer, the Installer and also be incorporated into the Homeowner Pack for the homeowner to keep.

•	Part 1	System details and declarations
•	Part 2a	Installation details
•	Part 2b	Inspection of installation
•	Part 3	Airflow measurement test and commissioning details

Part 1 - System details and declaration

1.1 Installation Address Details	
Dwelling Name/Number	
Street	
Locality	
Town	
County	
Post Code	
1.2 Installation Details	
System Classification*	System 4 – Continuous Mechanical Supply and Extract with Heat Recovery
Manufacturer	Zehnder Group UK Limited
Model Number	
Serial Number (where available)	
Location of MVHR Unit	

***Note: If a system has been installed that is not defined by System 1 to 4 in Approved Document F, further installation checks and commissioning procedures may be required. Seek particular guidance from the manufacturer for these systems.**

Part 2a - Installation

1.1 Installation Checklist - General (all Systems)	Tick as appropriate	
Has the system been installed in accordance with manufacturer's requirements?	Yes	No
Have relevant system installation clauses been followed as detailed in Tables 1, 3, 5 and 7 as applicable?	Yes	No
Type of ductwork installed (e.g. rigid, semi-rigid)		
If any deviation from Tables 1, 3, 5 and 7, these should be detailed here.		
Description of installed controls (e.g. timer, central control, humidistat, PIR, etc)		
Location of manual/override controls		

2.2 Installation Engineer's Details	
Name	
Company	
Address Line 1	
Address Line 1	
Telephone Number	
Post Code	
Signature	
Competent Person Scheme/ Registration Number (if applicable)	
Date of Installation (completion)	

Part 2b - Inspection of Installation

This section should be completed before completing Part 3.

2.3a Visual Inspections - General (all Systems)	Tick as appropriate	
Total installed equivalent area of background ventilators in dwelling?		mm
Total floor area of dwelling?		m ²
Does the total installed equivalent ventilator area meet the requirements given in Tables 5.2a, 5.2b, or 5.2c in ADF?	Yes	No
Have all background ventilators been left in the open position?	Yes	No
Have the correct number and location of extract fans/terminals been installed that satisfy Table 5.2a in ADF?	Yes	No
Is the installation complete with no obvious defects present?	Yes	No
Do all internal doors have sufficient undercut to allow air transfer between rooms (i.e. 10 mm over and above final floor finish)?	Yes	No
Has all protection/packaging been removed (including from background ventilators) such that system is fully functional?	Yes	No
For ducted systems, has the ductwork installation been installed in such manner that air resistance and leakage is kept to a minimum?	Yes	No
Are the correct number and size of background ventilators provided that satisfy ADF?	Yes	No
Has the entire system been installed such that there is sufficient access for routine maintenance and repair/replacement of components?	Yes	No
2.3b Visual Inspections - General (Systems 3 and 4 only)		
Have appropriate air terminal devices been installed to allow system balance?	Yes	No
Has the heat recovery unit (System 4 only) and all ductwork been effectively insulated where installed in unheated spaces?	Yes	No
Condensate connection is complete and drains to an appropriate location (System 4 only)?	Yes	No

2.3c Other Inspections - General (Systems 1, 3 and 4 only)

Upon initial start up, was any abnormal sound or vibration experienced, or unusual smells detected?	Yes	No
---	-----	----

2.3d Inspector's Details

Name	
Company	
Address Line 1	
Address Line 1	
Telephone Number	
Post Code	
Signature	
Competent Person Scheme/ Registration Number (if applicable)	
Date of Inspection (completion)	

Part 3 - Airflow measurement test and commissioning details**2.3c Other Inspections - General (Systems 1, 3 and 4 only)**

Schedule of air flow measurement equipment used, (model and serial)	Date of last UKAS calibration
1.	
2.	
3.	

3.3 Air Flow Measurements (Extract) - System 3 and 4 only

Room reference (location of terminals)	Measured Air Flow High Rate (l/s)	Design Air Flow High Rate (l/s) Refer to Table 5.1a ADF	Measured Air Flow Low Rate (l/s)	Design Air Flow Low Rate (l/s) Refer to Table 5.1a in ADF
Kitchen				
Bathroom				
En Suite				
Utility				
Other...				
Other...				
Other...				

3.4 Air Flow Measurements (Supply) - System 4 only

Room reference (location of terminals)	Measured Air Flow High Rate (l/s)	Design Air Flow High Rate (l/s) Refer to Table 5.1b ADF	Measured Air Flow Low Rate (l/s)	Design Air Flow Low Rate (l/s) Refer to Table 5.1b in ADF
Living Room 1				
Living Room 2 (if present)				
Dining Room				
Bedroom 1				
Bedroom 2				
Bedroom 3				
Bedroom 4				
Bedroom 5				
Study				
Other...				

3.5 Commissioning - Systems 3 and 4 only

Have controls been set-up in accordance with the manufacturer's recommendations?	Yes	No
Have all distribution grilles been locked to prevent unauthorised adjustment?	Yes	No

3.6 Test Engineer's Details

Name	
Company	
Address Line 1	
Address Line 1	
Telephone Number	
Post Code	
Signature	
Competent Person Scheme/ Registration Number (if applicable)	
Date of Test	

6.0 Declaration of Performance

Declaration of Performance Residential Ventilation Unit Greenwood Vireo HR155WM												
Supplier Name or Trade Mark	Greenwood Airvac			Greenwood Airvac			Greenwood Airvac			Greenwood Airvac		
Supplier Model Identifier and Options Installed	Manual Control (via manual switch)			Clock Control (via 7 day timer control)			Central Demand Control (with 1 sensor)			Local Demand Control (with 2 or more sensors)		
SEC in [kWh/(m ² a)] for Each Climate (Cold, Average, Warm)	-73.5	-35.0	-10.4	-74.8	-36.2	-11.5	-77.3	-38.4	-13.5	-81.6	-42.1	-16.9
SEC Class (Cold, Average, Warm)	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
Declared Typology	Bidirectional			Bidirectional			Bidirectional			Bidirectional		
Type of Motor Drive Installed	Variable Speed			Variable Speed			Variable Speed			Variable Speed		
Type of Heat Recovery ¹	Recuperative			Recuperative			Recuperative			Recuperative		
Heat Recovery Efficiency ²	90%			90%			90%			90%		
Maximum Flow Rate in (m ³ /h) / (l/s) ³	279 / 77			279 / 77			279 / 77			279 / 77		
Electric Power Input at Maximum Flow Rate (W) ⁴	154			154			154			154		
Sound Power Level (L _{WA}) in dB(A) ⁵	50			50			50			50		
Reference Flow Rate in (m ³ /h) / (l/s) ⁶	191 / 53			191 / 53			191 / 53			191 / 53		
Reference Pressure Difference	50			50			50			50		
SPI in [W/(m ³ /h)] ⁷	0.33			0.33			0.33			0.33		
Control Factor and Typology	1			0.95			0.85			0.65		
Declared Maximum Internal and External Leakage (%) ⁸	Internal: 2.7% External: 2.9%			Internal: 2.7% External: 2.9%			Internal: 2.7% External: 2.9%			Internal: 2.7% External: 2.9%		
Position and Description of Visual Filter Warning	Details within Homeowner Guide			Details within Homeowner Guide			Details within Homeowner Guide			Details within Homeowner Guide		
Internet Address for Preassembly / Disassembly Instructions	www.greenwood.co.uk			www.greenwood.co.uk			www.greenwood.co.uk			www.greenwood.co.uk		
AEC (kWh electricity/a) for Each Climate (Cold, Average, Warm)	16.2	10.8	10.3	15.2	9.8	9.3	13.3	7.9	7.5	10.2	4.8	4.4
AHS (kWh electricity/a) for Each Climate (Cold, Average, Warm)	89.6	45.8	20.7	89.9	46.0	20.8	90.6	46.3	20.9	91.8	46.9	21.2

1. Type of Heat Recovery: Recuperative is without humidity recovery and renewable is with humidity recovery.
2. Efficiency according to EN13141-7:2010 at reference airflow rate @50Pa; and according to EN13141-8:2014 systems without connection.
3. Maximum flow at 100 Pa external pressure (shown in both m³/h and l/s).
4. Electrical power input at the maximum airflow rate (Watts).
5. Casing noise radiation at reference flow rate at 50Pa external pressure.
6. Reference flow rate is 70% of the maximum airflow at 50Pa external pressure according to EN13141-7:2010 (shown in both m³/h and l/s).
7. In accordance with EN13141-7:2010 at reference flow rate.
8. In accordance with EN13141-7:2010 at reference flow rate and EN13141-8:2014 systems without connection.

SEC: Specific Energy Consumption

SPI: Specific Power Input

AEC: Annual Electricity Consumption

AHS: Annual Heating Saved

Declaration of Performance Residential Ventilation Unit Greenwood Vireo HR155CM

Supplier Name or Trade Mark	Greenwood Airvac			Greenwood Airvac			Greenwood Airvac			Greenwood Airvac		
Supplier Model Identifier and Options Installed	Manual Control (via manual switch)			Clock Control (via 7 day timer control)			Central Demand Control (with 1 sensor)			Local Demand Control (with 2 or more sensors)		
SEC in [kWh/(m ² a)] for Each Climate (Cold, Average, Warm)	-73.3	-34.9	-10.2	-74.6	-36.0	-11.3	-77.2	-38.3	-13.3	-81.6	-42.0	-16.8
SEC Class (Cold, Average, Warm)	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
Declared Typology	Bidirectional			Bidirectional			Bidirectional			Bidirectional		
Type of Motor Drive Installed	Variable Speed			Variable Speed			Variable Speed			Variable Speed		
Type of Heat Recovery ¹	Recuperative			Recuperative			Recuperative			Recuperative		
Heat Recovery Efficiency ²	90%			90%			90%			90%		
Maximum Flow Rate in (m ³ /h) / (l/s) ³	245 / 68			245 / 68			245 / 68			245 / 68		
Electric Power Input at Maximum Flow Rate (W) ⁴	133			133			133			133		
Sound Power Level (L _{WA}) in dB(A) ⁵	48			48			48			48		
Reference Flow Rate in (m ³ /h) / (l/s) ⁶	173 / 48			173 / 48			173 / 48			173 / 48		
Reference Pressure Difference	50			50			50			50		
SPI in [W/(m ³ /h)] ⁷	0.34			0.34			0.34			0.34		
Control Factor and Typology	1			0.95			0.85			0.65		
Declared Maximum Internal and External Leakage (%) ⁸	Internal: 2.7% External: 2.9%			Internal: 2.7% External: 2.9%			Internal: 2.7% External: 2.9%			Internal: 2.7% External: 2.9%		
Position and Description of Visual Filter Warning	Details within Homeowner Guide			Details within Homeowner Guide			Details within Homeowner Guide			Details within Homeowner Guide		
Internet Address for Preassembly / Disassembly Instructions	www.greenwood.co.uk			www.greenwood.co.uk			www.greenwood.co.uk			www.greenwood.co.uk		
AEC (kWh electricity/a) for Each Climate (Cold, Average, Warm)	16.3	11.0	10.5	15.3	9.9	9.5	13.4	8.0	7.6	10.3	4.9	4.4
AHS (kWh electricity/a) for Each Climate (Cold, Average, Warm)	89.6	45.8	20.7	89.9	46.0	20.8	90.6	46.3	20.9	91.8	46.9	21.2

1. Type of Heat Recovery: Recuperative is without humidity recovery and renewable is with humidity recovery.
2. Efficiency according to EN13141-7:2010 at reference airflow rate @50Pa; and according to EN13141-8:2014 systems without connection.
3. Maximum flow at 100 Pa external pressure (shown in both m³/h and l/s).
4. Electrical power input at the maximum airflow rate (Watts).
5. Casing noise radiation at reference flow rate at 50Pa external pressure.
6. Reference flow rate is 70% of the maximum airflow at 50Pa external pressure according to EN13141-7:2010 (shown in both m³/h and l/s).
7. In accordance with EN13141-7:2010 at reference flow rate.
8. In accordance with EN13141-7:2010 at reference flow rate and EN13141-8:2014 systems without connection.

SEC: Specific Energy Consumption

SPI: Specific Power Input

AEC: Annual Electricity Consumption

AHS: Annual Heating Saved

Declaration of Performance Residential Ventilation Unit Greenwood Vireo HR185WM

Supplier Name or Trade Mark	Greenwood Airvac			Greenwood Airvac			Greenwood Airvac			Greenwood Airvac		
Supplier Model Identifier and Options Installed	Manual Control (via manual switch)			Clock Control (via 7 day timer control)			Central Demand Control (with 1 sensor)			Local Demand Control (with 2 or more sensors)		
SEC in [kWh/(m ² a)] for Each Climate (Cold, Average, Warm)	-75.5	-36.7	-11.9	-76.6	-37.7	-12.8	-78.8	-39.6	-14.6	-82.6	-42.9	-17.5
SEC Class (Cold, Average, Warm)	A+	A	E	A+	A	E	A+	A	E	A+	A+	E
Declared Typology	Bidirectional			Bidirectional			Bidirectional			Bidirectional		
Type of Motor Drive Installed	Variable Speed			Variable Speed			Variable Speed			Variable Speed		
Type of Heat Recovery ¹	Recuperative			Recuperative			Recuperative			Recuperative		
Heat Recovery Efficiency ²	91%			91%			91%			91%		
Maximum Flow Rate in (m ³ /h) / (l/s) ³	313 / 87			313 / 87			313 / 87			313 / 87		
Electric Power Input at Maximum Flow Rate (W) ⁴	156			156			156			156		
Sound Power Level (L _{WA}) in dB(A) ⁵	52			52			52			52		
Reference Flow Rate in (m ³ /h) / (l/s) ⁶	220 / 61			220 / 61			220 / 61			220 / 61		
Reference Pressure Difference	50			50			50			50		
SPI in [W/(m ³ /h)] ⁷	0.29			0.29			0.29			0.29		
Control Factor and Typology	1			0.95			0.85			0.65		
Declared Maximum Internal and External Leakage (%) ⁸	Internal: 2.4% External: 2.3%			Internal: 2.4% External: 2.3%			Internal: 2.4% External: 2.3%			Internal: 2.4% External: 2.3%		
Position and Description of Visual Filter Warning	Details within Homeowner Guide			Details within Homeowner Guide			Details within Homeowner Guide			Details within Homeowner Guide		
Internet Address for Preassembly / Disassembly Instructions	www.greenwood.co.uk			www.greenwood.co.uk			www.greenwood.co.uk			www.greenwood.co.uk		
AEC (kWh electricity/a) for Each Climate (Cold, Average, Warm)	14.8	9.4	9.0	13.9	8.6	8.1	12.3	6.9	6.5	9.6	4.2	3.8
AHS (kWh electricity/a) for Each Climate (Cold, Average, Warm)	90.3	46.1	20.9	90.5	46.3	20.9	91.1	46.6	21.1	92.2	47.1	21.3

1. Type of Heat Recovery: Recuperative is without humidity recovery and renewable is with humidity recovery.
2. Efficiency according to EN13141-7:2010 at reference airflow rate @50Pa; and according to EN13141-8:2014 systems without connection.
3. Maximim flow at 100 Pa external pressure (shown in both m³/h and l/s).
4. Electrical power input at the maximum airflow rate (Watts).
5. Casing noise radiation at reference flow rate at 50Pa external pressure.
6. Reference flow rate is 70% of the maximim airflow at 50Pa external pressure according to EN13141-7:2010 (shown in both m³/h and l/s).
7. In accordance with EN13141-7:2010 at reference flow rate.
8. In accordance with EN13141-7:2010 at reference flow rate and EN13141-8:2014 systems without connection.

SEC: Specific Energy Consumption

SPI: Specific Power Input

AEC: Annual Electricity Consumption

AHS: Annual Heating Saved

7.0 The Guarantee Period

- 7.1 This Greenwood product (Vireo HR155WM / HR155CM / HR185WM) has a 2 Year Guarantee.
- 7.1.1 This does not affect your statutory rights.
- 7.1.2 Full details available on request from +44 (0)1276 408404 or www.greenwood.co.uk / info@greenwood.co.uk

Zehnder Group UK Limited

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Web: www.greenwood.co.uk

All information is believed correct at time of going to press. E&OE.

All goods are sold according to Zehnder Group UK Ltd's Standard Conditions of Sale which are available on request.

All dimensions referred to are in millimetres unless otherwise stated.

Zehnder Group UK Ltd reserves the right to change specifications and prices without prior notice.



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05.10.1050 Issue 3 December 2015