



**for fresher air**

# **Air Handling Units**



**direct drive - belt drive - custom built**

# Air Handling Units

## Introduction

Vectaire's comprehensive and extensive range of air handling units from "Compact" plant room models to custom built belt driven models able to deliver up to 20m<sup>3</sup>/sec ensures that any installation requirement can be met.

## Design brief

To provide a comfortable, healthy environment, often without loss of heat and a multiplicity of parameters -

**The occupants** want a non-intrusive system.

**The designers** want to ensure that air exchange is optimised whilst bringing fresh air into the building.

**The builders** need a reliable product that can be easily installed and set up.

**The answer** lies in well thought out, efficient ventilation.

**The correct ventilation** method is an air handling system which encompasses all of the above.



## What product to choose?

Stricter rules governing air tightness of buildings means more emphasis on controlled fresh air supply. Air handling units, which are easy to install and which have a wide variety of options, will effectively ventilate the required area providing a healthy atmosphere for people to work and play. Vectaire's range of units, together with comprehensive, computerised design facilities, gives the specifier the ability to choose a fan capacity which ensures a proper level of ventilation, together with **heating, heat recovery, sound attenuation and control options**.



## Flexibility

Vectaire's air handling units are available in an extensive range with a variety of options which contribute to their versatility of use and ensure that exactly the correct unit can be specified. There are direct drive versions either electrically or hot water heated together with belt driven units for bigger airflow requirements. Combine this with the facility for custom built systems, and the flexibility of design and use is infinite.



## Technical Support

With its firm commitment to quality and customer care, Vectaire's technical support staff can help with your requirements.

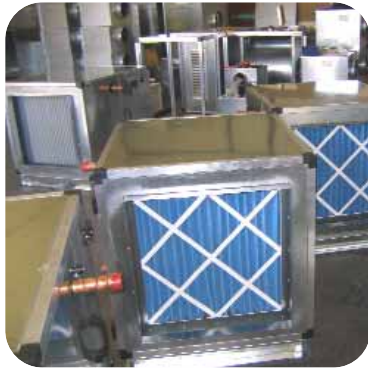
## Installation

Vectaire can advise on installing and commissioning your air handling unit system and can give full technical back-up.



direct drive - belt drive - custom built

# Air Handling Units



## Quality Control

Vectaire air handling units are manufactured to the highest quality and inspected at every stage of the manufacturing process. All products are built to BS EN ISO 9001. We operate a continuous evaluation of products and services to ensure customer requirements are met in full.

## Materials

Vectaire air handling units are generally finished in galvanised, double skinned steel with 25mm thick mineral wool slab insulation and have a triple layer of steel at the corners with pre-drilled 8mm dia holes providing an ideal location for fixing points. All panel filters are manufactured from bonded and coated continuous spun glass fibre filaments with arrestance of 84% to G3 grade.



## Heating Control Panels

Designed for quick and easy installation with external wiring kept to a minimum. A mains supply is taken to the panel door interlocked isolator and outputs then taken to the fan, heater and safety circuits. Sensors are supplied pre-wired to the panel. Switches on the front of the panel allow control of the fan and heater. All outputs to the fan are protected. All control panels are stand alone, but can be BMS compatible as an option.



## Options

A full range of accessories and controls are also available - these include

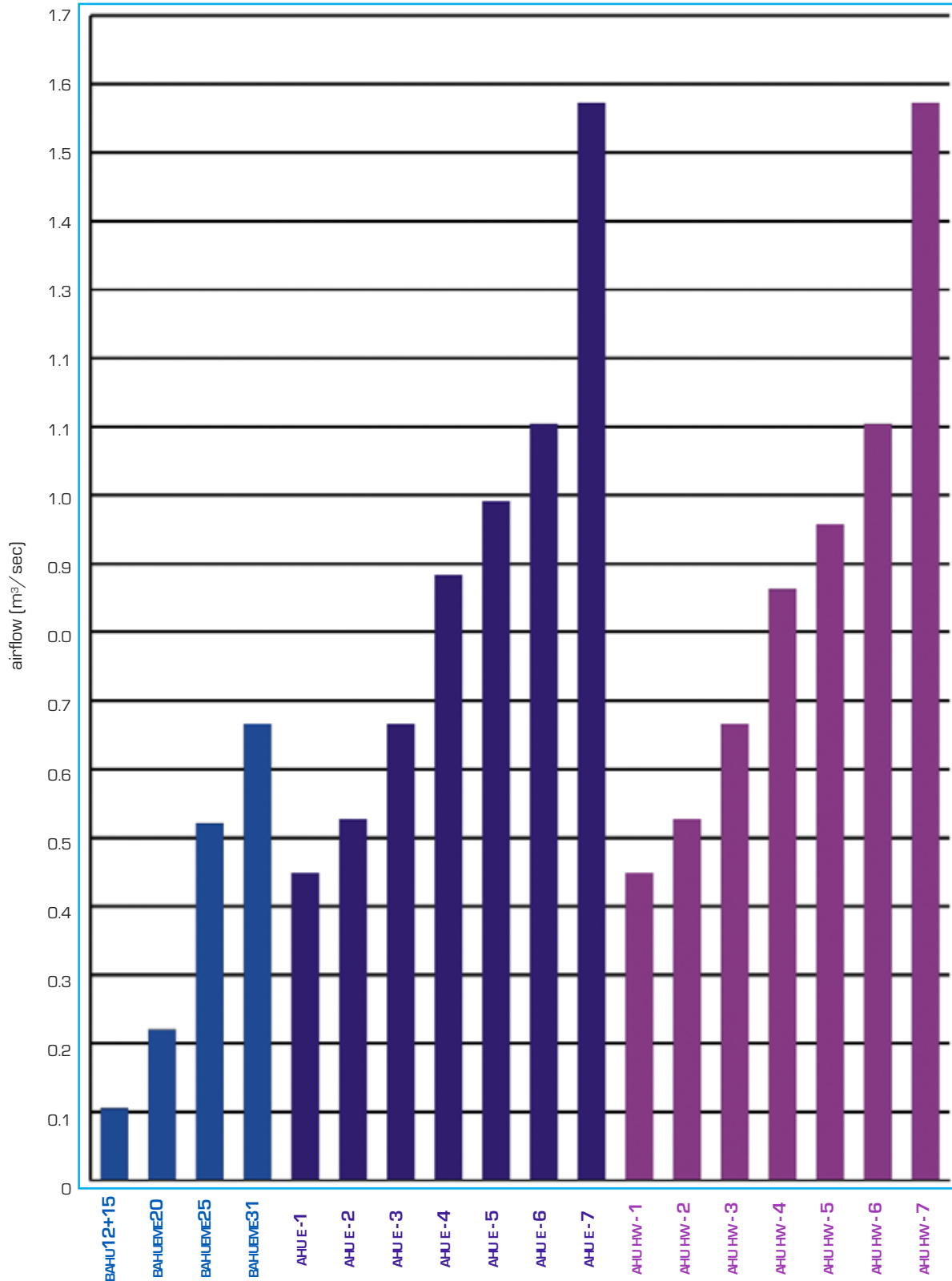
- intake damper/mixing box
- electric or hot water frost heaters
- bag filters
- cooling coils
- heat recovery systems
  - cross flow heat exchangers
  - thermal wheel
  - run around coils
- alternative heating source
  - gas fired
- casings
  - 50mm panels can be supplied with high density mineral wool and barrier matt
  - can be constructed in a vertical or horizontal layout
  - can be supplied as "flatpack" for on site assembly



**Manufactured in UK to ISO 9001**

# Direct Drive - Air Handling Units

## Selection Chart



See page 5 for BAHU details, page 9 for AHUE details, and page 15 for AHU-HW details

# Direct Drive - Air Handling Units

## Compact



## "BAHU" - compact



### Features - PLANT Models

- electrically heated
- 5 models for duct installation - BAHU
- airflow from 0.001 to 0.66 m<sup>3</sup>/sec
- pressure to 350 Pa
- speed controllable
- single skinned spangled galvanised steel cases with 25mm thick acoustic lining
- panel filter fitted into slide-in channels
- can be mounted horizontally or vertically with access either on bottom or top
- complete with integral mounting points for either floor or ceiling mounting
- quick and easy to install
- LPHW model available - please contact technical department for details

### Additional Features - WEATHERPROOF Models

- external models available with top access via a single removable weather lid - BAHU-R
- air intake side protected by weather proof cowl and bird guard

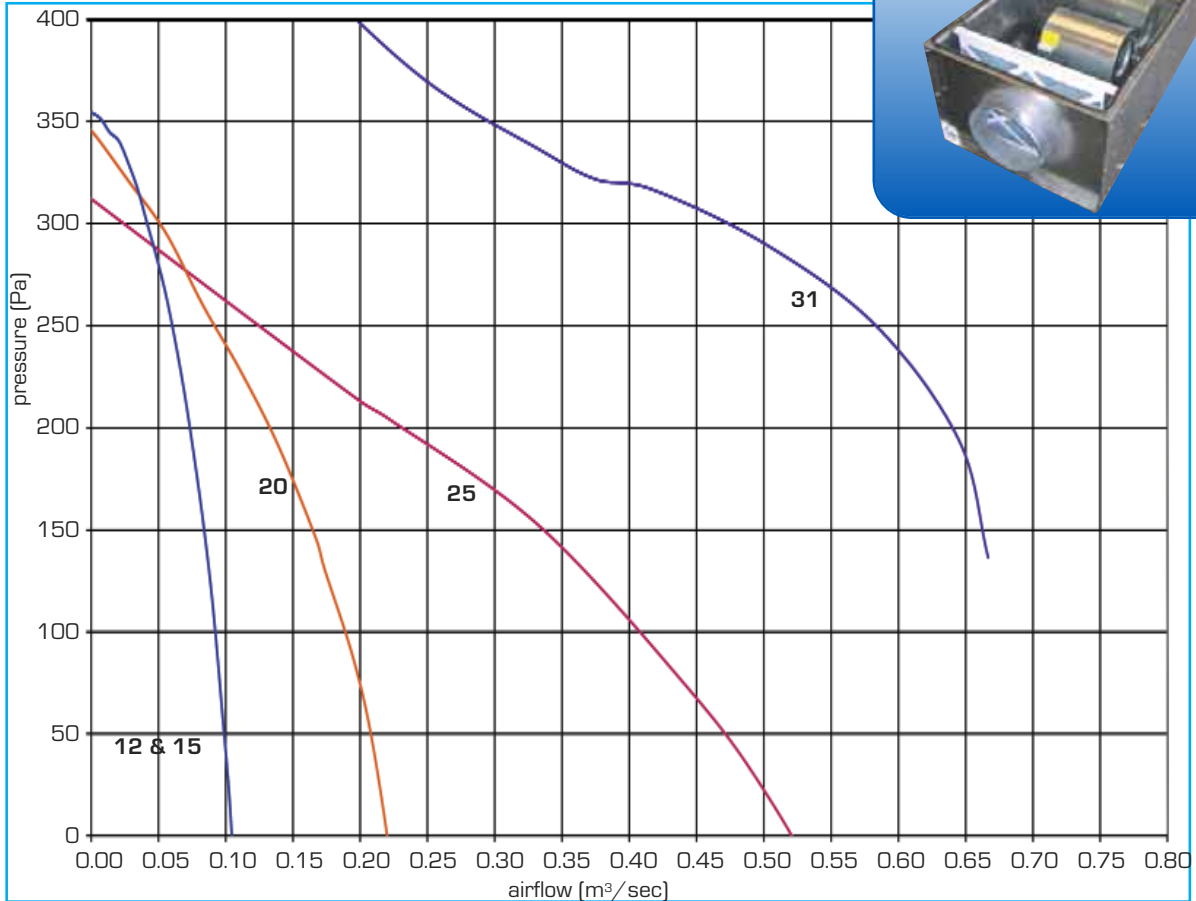
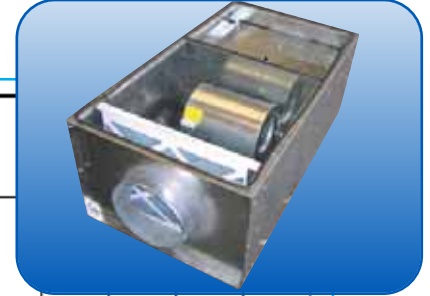
- external models in galvanised steel, single skinned with plastisol exterior in light grey to BS10A05
- LPHW model available - please contact technical department for details

### Specification

- the fans are direct drive double inlet, double width, forward curved centrifugal fans
- fan blades statically and dynamically balanced in accordance with VDI2060 and ISO 1940/1
- direct drive induction motors with IP10 protection.
- insulation Class 'O' barafoam
- a manual reset thermal cut-out is an integral part of heater control circuits. It is recommended that fans should be operated via a run-on timer incorporated within the controller
- maximum air temperature 40°C
- panel filters manufactured from bonded and coated spun glass fibre to EU3 grade, fitted as standard in easily removable housings
- **manufactured in UK to ISO 9001**



### Performance



Performance based on filters with a pressure drop 20% above clean

Range - D and R	
BAHU12	BAHU25
BAHU15	BAHU31
BAHU20	

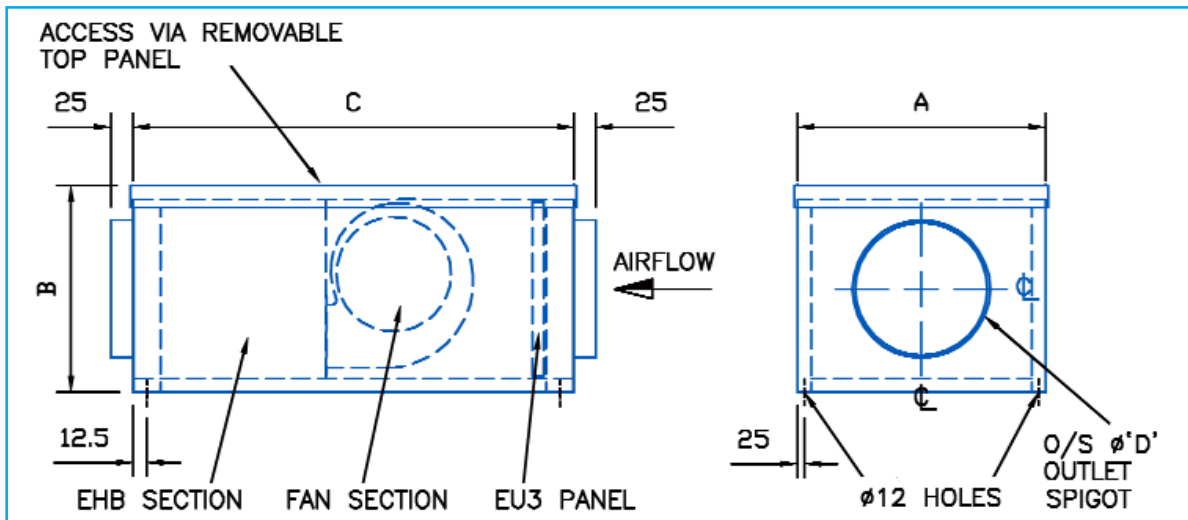
Model	m³/sec at Pa								Max m³/hr	Fan				Sound Pressure Level dBA@3m	Speed Control- ler
	0	50	100	150	200	250	300	350		Supply	Power W	FLC A	SC A		
<b>12's</b>	0.104	0.098	0.092	0.084	0.073	0.060	0.041	0.008	374	230V1ph	135	0.63	1.60	28.0	VC1
<b>SFP</b>	1.05	1.10	1.16	1.24	0.14	1.66	2.38	-							
<b>15's</b>	0.104	0.098	0.092	0.084	0.073	0.060	0.41	0.008	374	230V1ph	135	0.63	1.60	28.0	VC1
<b>SFP</b>	1.05	1.10	1.16	1.24	0.14	1.66	2.38	-							
<b>20's</b>	0.220	0.208	0.188	0.164	0.132	0.091	0.050	-	792	230V1ph	190	0.85	2.20	32.0	VC1
<b>SFP</b>	0.83	0.87	0.93	1.03	1.21	1.65	2.83	-							
<b>25's</b>	0.521	0.471	0.407	0.336	0.231	0.124	0.024	-	1876	230V1ph	373	3.60	11.20	37.0	VC4M
<b>SFP</b>	1.61	1.72	1.89	2.17	3.03	-	-	-							
<b>31's</b>	-	-	-	0.662	0.640	0.583	0.473	0.295	2398	230V1ph	373	3.85	12.00	42.0	VC4M
<b>SFP</b>	-	-	-	1.23	1.24	1.28	1.46	2.12							

SFP = Specific Fan Power

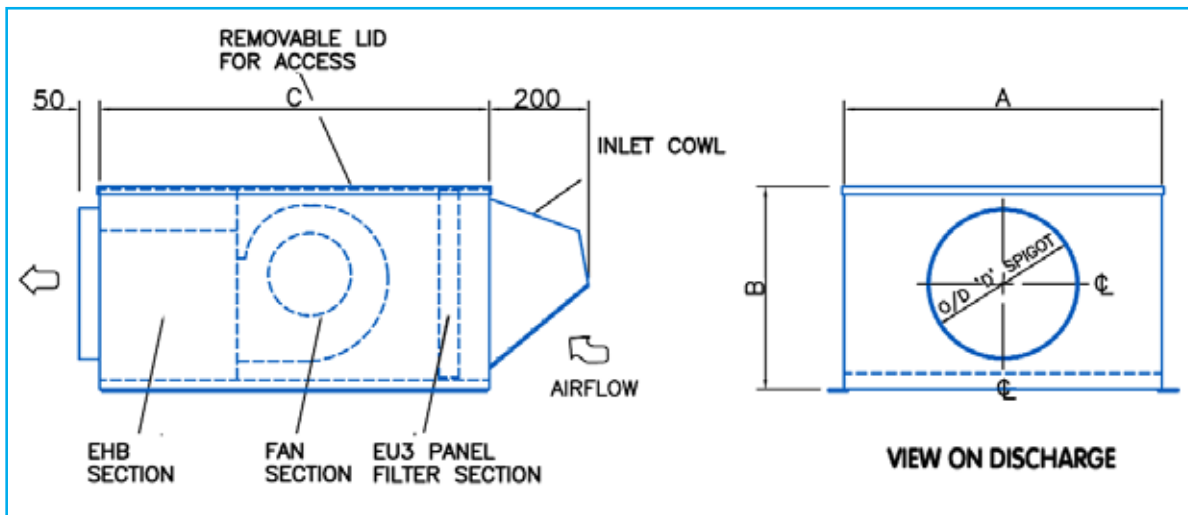
## BAHU - *Dimensions*

Model	A mm	B mm	C mm	D mm	kg
BAHU12	400	225	750	125	29
BAHU15	400	225	750	150	29
BAHU20	475	335	850	200	37
BAHU25	500	400	920	250	45
BAHU31	550	475	970	315	49
BAHU12-R	400	350	750	125	24
BAHU15-R	400	350	750	150	24
BAHU20-R	425	375	850	200	35
BAHU25-R	650	450	900	250	43
BAHU31-R	650	475	900	315	47

### BAHU - Plant Models

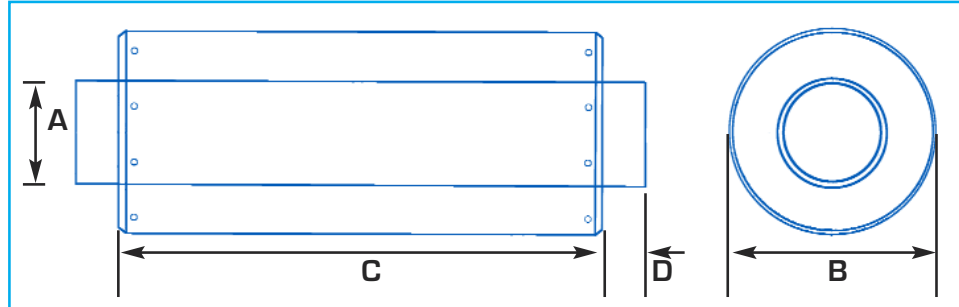


### BAHU-R - Weatherproof Models



## BAHU-Silencer & Heater

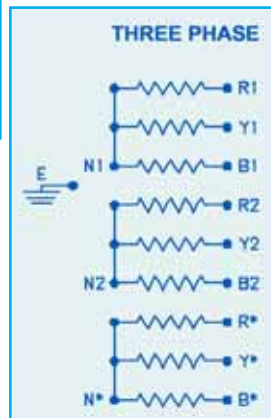
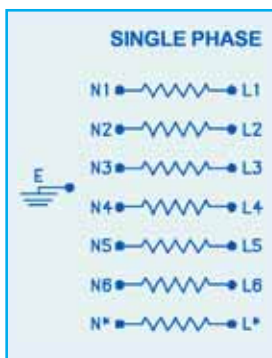
### Silencers



Model	A mm - Dia	B mm - Dia	C mm	D mm	kg
SIL125	123	230	600	40	5.4
SIL150	148	255	600	40	6.1
SIL200	198	305	600	40	7.6
SIL250-900	248	355	900	40	9.1
SIL315-900	313	420	900	40	12.3

Model	Attenuation: Insertion loss - dB - mid frequency Hz							
	63	125	250	500	1000	2000	4000	8000
SIL125	4	8	13	30	35	35	31	15
SIL150	4	7	12	23	30	36	31	15
SIL200	4	6	10	20	27	32	20	11
SIL250-900	5	8	12	24	30	30	22	14
SIL315-900	4	7	10	20	31	28	17	14

### Electric Heater Batteries



Model	kW Rating	Single Phase Steps				3 Phase Steps						
		1	2	3	4	6	1	2	3	4		
BAHU12 BAHU15	1.5	✓										
	2.0	✓	✓									
	2.5	✓										
	3.0	✓	✓									
BAHU20	2.0	✓	✓									
	2.5	✓										
	3.0	✓	✓									
	4.5	✓		✓								
BAHU25	4.5	✓		✓								
	6.0	✓	✓	✓				✓				
	7.5	✓		✓				✓				
	9.0	✓	✓	✓				✓	✓			
BAHU31	9.0	✓	✓	✓				✓	✓			
	12.0		✓	✓	✓	✓		✓	✓			
	15.0		✓	✓		✓		✓	✓			
	18.0		✓	✓		✓		✓	✓			



# Air Handling Units

## *Custom Built*



### General

VECTAIRE offers an extensive range of supply/extract units and associated ancillary equipment. Fans are available which cater for air volumes up to 20 m<sup>3</sup>/sec, for both internal and external applications. Most design parameters can be accommodated, and among the many variants we are able to provide are the following.

### Cases

- single or double skinned with 25mm or 50mm thick panels.
- different panel infill, including a combination of high-density mineral wool and barrier matt to give high noise reduction.
- differing panel skin materials including stainless steel, aluminium and plastic coated sheet steel.
- powder coat paint finish to any BS or RAL number to either internal, external or both surfaces.
- casings supplied in "flat pack" form to facilitate site assembly.

### Components

- The following components can be readily catered for:
  - **filters**
    - CARBON
    - HEPA
    - GREASE
    - WASHABLE
  - run-a-round coil systems
  - thermal wheels
  - gas fired heaters - indirect and direct
  - **fans**
    - SISW
    - DUPLEX (FOR LOW PROFILE)
    - TWIN MOTORS
    - SINGLE PHASE
    - 2 SPEED
    - MOUNTED OUT OF AIR STREAM
    - FITTED WITH STANDBY

### Specifications

- units can be designed to meet the requirements of the following:
  - HTM03/01
  - CO4

### Controls

- any variation of control package can be supplied:
  - simple pre-wiring of motor to an external isolator
  - an in-built control panel pre-wired to motors, damper motors, sensors etc

# Air Handling Units

## *Custom Built*



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# Air Handling Units



## Contracts Completed

Luton Hoo Hotel

Aston Martin

Burger King

Neville Hall Hospital

RAF Odiham

RAF Benson

RNAS Clyde

Lyreco

HP Foods

Calypso Soft Drinks

Disney Stores

Princess of Wales Hospital

Royal Yacht Britannia

BUPA Hospital, Leicester

Warner Holiday Camp

Bass Inns

Livingstone FC

Hambden Park

Blackburn Rovers FC

Waitrose

Sandwell Hospital

Domino Pizza

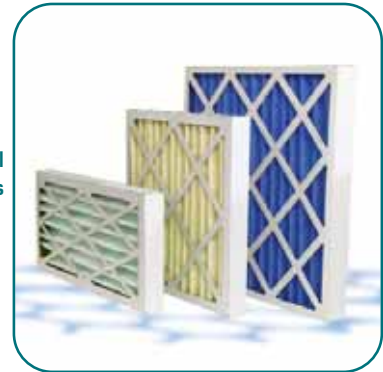
Kentucky Fried Chicken

Featherstone Technical College





Bag Filters



Panel Filters



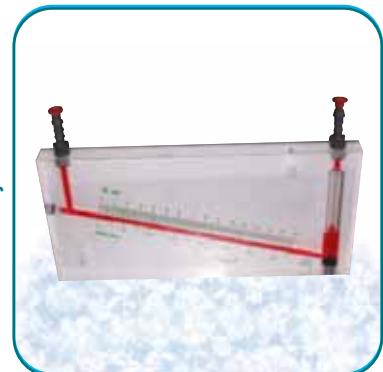
Pressure Switch



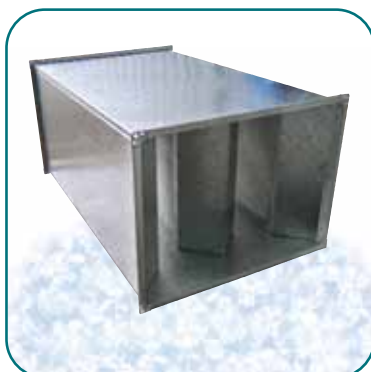
Port Holes



Speed Controller



Manometer



Silencer



Anti Vibration Mounts

## Other Vectaire Ventilation Units



**"PA"**  
Plate Mounted Axial Fan



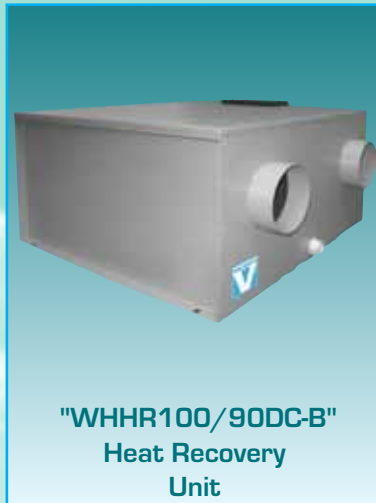
**"LCA"**  
Long Cased Axial Fan



**"ACFS"**  
SUPER SILENT  
Acoustic Cabinet Fans



**Heat Recovery Units**



**"WHHR100/90DC-B"**  
Heat Recovery  
Unit



**"WHHR125DC-Aera"**  
Heat Recovery  
Unit



**Vectaire Ltd**  
Lincoln Road  
Cressex Business Park  
High Wycombe  
Buckinghamshire, HP12 3RH  
Tel: +44(0)1494 522333  
Fax: +44(0)1494 522337  
Email: [sales@vectaire.co.uk](mailto:sales@vectaire.co.uk)  
Web: [www.vectaire.co.uk](http://www.vectaire.co.uk)

