

for fresher air

Air

Handling

Units



DIRECT DRIVE - BELT DRIVE - CUSTOM BUILT



Certificate No: GB9455

direct drive - belt drive - custom built *Air Handling Units*



Introduction

AVT's comprehensive and extensive range of air handling units from "IME" plant room models to custom built belt driven models able to deliver up to 20m³/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. AVT'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

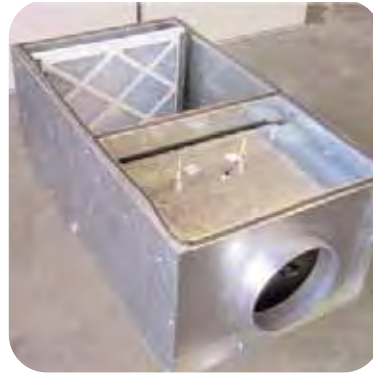
AVT's range of air handling units are available in an extensive range with a variety of options which contribute to their versatility of use and ensure that exactly the correct unit can be specified. There are direct drive versions either electrically or hot water heated together with belt driven units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

Technical Support

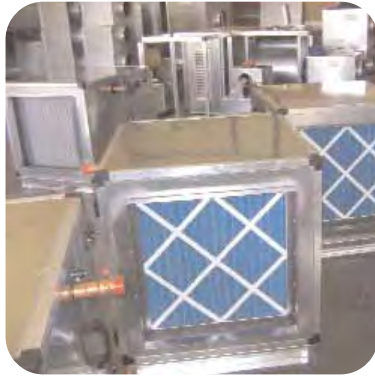
With its firm commitment to quality and customer care, AVT's technical support staff can help with your requirements.

Installation

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



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Quality Control

AVT 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

AVT 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 BMS compatible.

Options

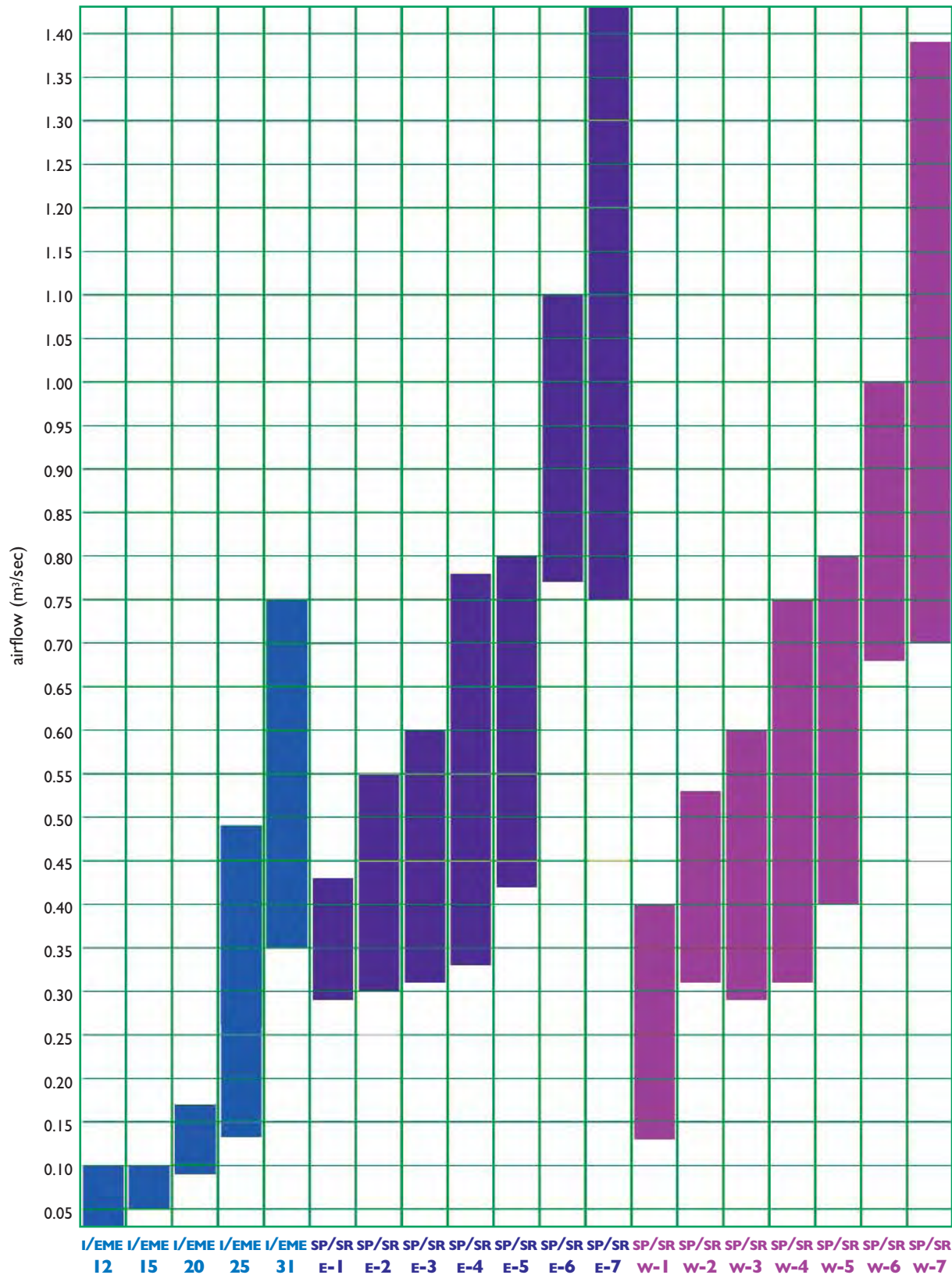
A full range of accessories and controls are also available - these include

- **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 IME/EME details, page 9 for SPE/SRE details, and page 15 for SPW/SRW details



"SPW/SRW" - LPHW heater



Features - PLANT Models

- 14 models (7 sizes) for duct or roof installation
- airflow to 1.40 m³/sec
- pressure to 350 Pa
- speed controllable
- inlets and outlets fitted with "Mez" type duct connecting flanges
- rigid casing construction with triple layer of steel at corners - 8mm dia integral fixing point at each corner for either floor or ceiling mounting
- optional casing materials include stainless steel or aluminium - can be powder coated to any BS or RAL colour
- bag and panel filter fit into slide-in channels
- top access on duct mounted models (bottom access can be provided if required)

Additional Features - WEATHERPROOF Models

- top access on roof mounted models (via a single, removable weather lid)
- air inlets on external units protected by weather proof cowl and bird guard
- roof mounted units constructed in galvanised steel, single skin with plastisol exterior in light grey to BS10A05

Specification

- internally mounted units are finished in galvanised, double skinned steel with 25mm thick mineral wool slab insulation of 65 kg/m³ density (providing high

degree of acoustic insulation) (50mm panels with high density mineral wool and barrier matt also available for reduced noise breakout)

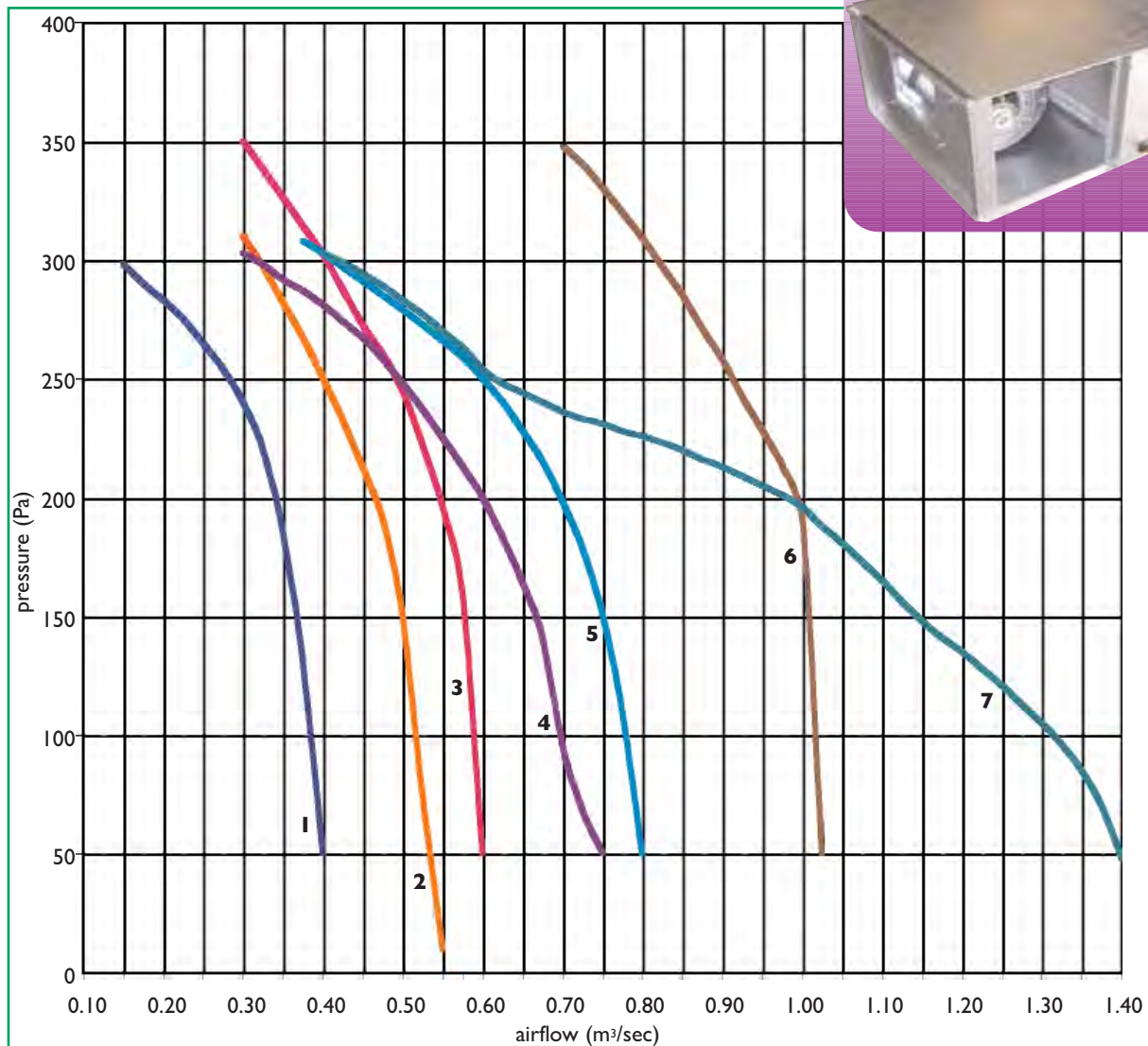
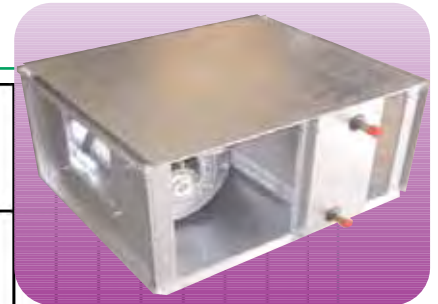
- fans are direct drive double inlet, double width, forward curved centrifugal type, mounted on integral anti-vibration mounts
- motors - with thermal overload protection
- LPHW batteries are constructed from copper tubes mechanically bonded onto aluminium fins supplied with standard BSP male connectors
- maximum air temperature 40°C
- panel filters manufactured from bonded and coated spun glass fibre to G3 grade, fitted as standard in easily removable housings. Higher degree of filtration can be provided on request
- **manufactured in UK to ISO 9001**



LPHW COIL



Fan, Filter and LPHW Heater Battery



Performance curves are based on "clean filter" conditions. An additional 80Pa should be added to the external pressure of the product for unit selection at a "mean dirty" condition

	Range	
	Plant	Roof
1	SPW1	SRW1
2	SPW2	SRW2
3	SPW3	SRW3
4	SPW4	SRW4
5	SPW5	SRW5
6	SPW6	SRW6
7	SPW7	SRW7



Fan, Filter and LPHW Heater Battery

Model	m ³ /sec at Pa							Max Coil kW	Fan				Speed Controller
	50	100	150	200	250	300	350		Supply	Power W	FLC A	SC A	
SPW/SRW1	0.40	0.38	0.37	0.34	0.28	0.14	-	21	230v 1ph	373	2.00	5.00	QE6
SFP	1.00	1.05	1.08	1.17	1.42	2.85	-						
SPW/SRW2	0.53	0.52	0.50	0.46	0.40	0.32	-	21	230v 1ph	373	2.85	7.13	QE6
SFP	0.75	0.77	0.80	0.87	1.00	1.25	-						
SPW/SRW3	0.60	0.59	0.58	0.54	0.49	0.41	0.30	21	230v 1ph	373	3.85	9.63	QE6
SFP	0.67	0.68	0.69	0.74	0.81	0.97	1.33						
SPW/SRW4	0.75	0.69	0.67	0.60	0.48	0.32	-	29	230v 1ph	550	3.80	9.50	QE6
SFP	0.67	0.67	0.69	0.79	1.01	1.49	-						
SPW/SRW5	0.80	0.78	0.75	0.69	0.60	0.41	-	29	230v 1ph	550	4.80	12.00	QE6
SFP	0.63	0.63	0.66	0.71	0.81	1.17	-						
SPW/SRW6	1.00	1.00	1.00	1.00	0.92	0.82	0.69	36	230v 1ph	550	6.80	17.00	QE8
SFP	0.60	0.60	0.60	0.630	0.60	0.65	0.77						
SPW/SRW7	1.39	1.32	1.14	0.98	0.61	0.40	-	34	230v 1ph	736	7.40	18.50	QE8
SFP	0.53	0.56	0.65	0.75	1.20	1.84	-						

Performance curves are based on "clean filter" conditions. An additional 80Pa should be added to the external pressure of the product for unit selection at a "mean dirty" condition

SFP - Specific Fan Power

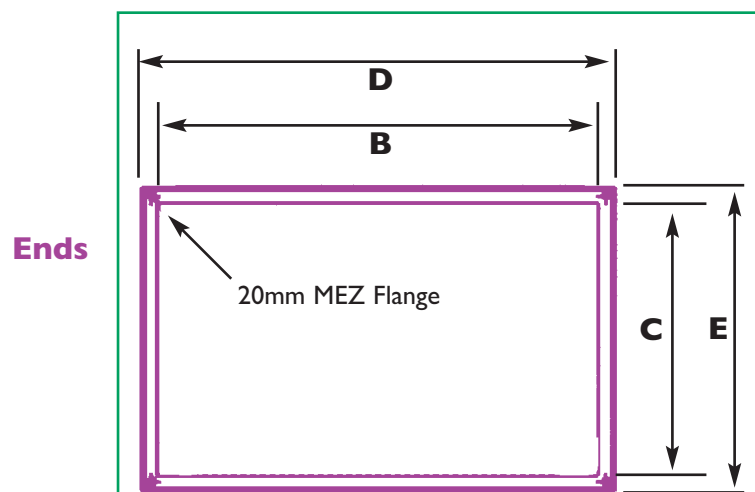
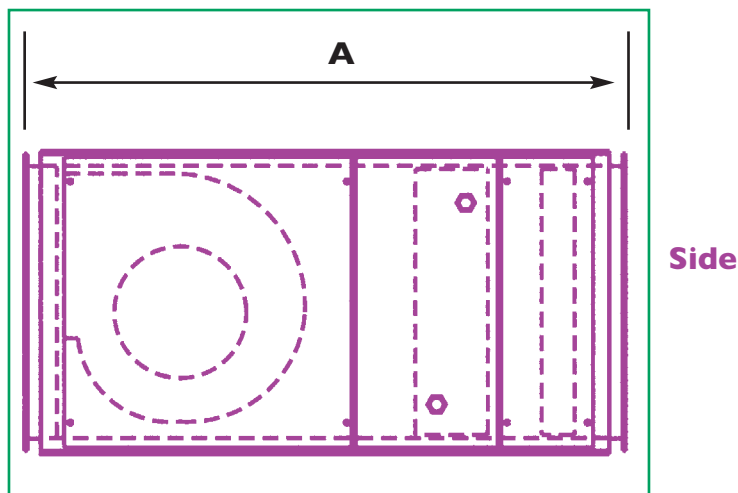
Fan Outlet Sound Levels

Model	Sound Pressure Level dBA at 3m	Sound Power Levels dB							
		Mid Octave Bands (Hz)							
		63	125	250	500	1000	2000	4000	8000
SPW/SRW1	40	61	70	70	59	62	54	51	47
SPW/SRW2	43	65	73	68	67	67	62	59	52
SPW/SRW3	47	76	79	73	73	73	67	65	67
SPW/SRW4	45	71	73	66	71	71	69	66	62
SPW/SRW5	50	77	79	73	74	77	77	74	69
SPW/SRW6	48	75	77	71	73	75	74	71	67
SPW/SRW7	48	78	80	72	74	74	73	72	66



Fan, Filter and LPHW Heater Battery - Plant Models

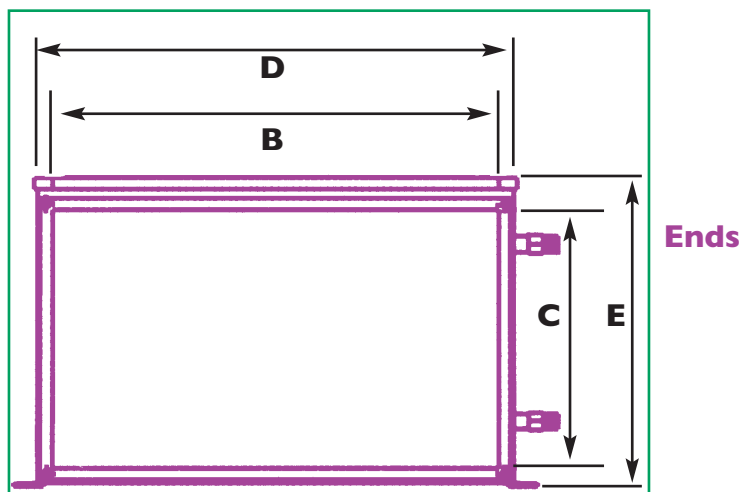
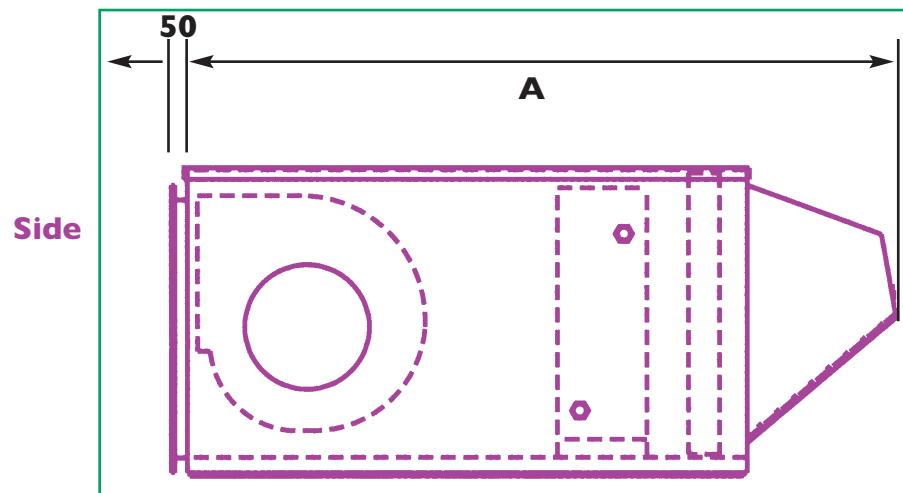
Model-Duct	A mm	B mm	C mm	D mm	E mm	kg
SPW1	950	600	450	650	500	79
SPW2	950	600	450	650	500	79
SPW3	950	600	450	650	500	79
SPW4	950	750	450	800	500	93
SPW5	950	750	450	800	500	93
SPW6	1050	825	500	875	550	112
SPW7	1350	900	600	950	650	131





Fan, Filter and LPHW Heater Battery - Weatherproof Models

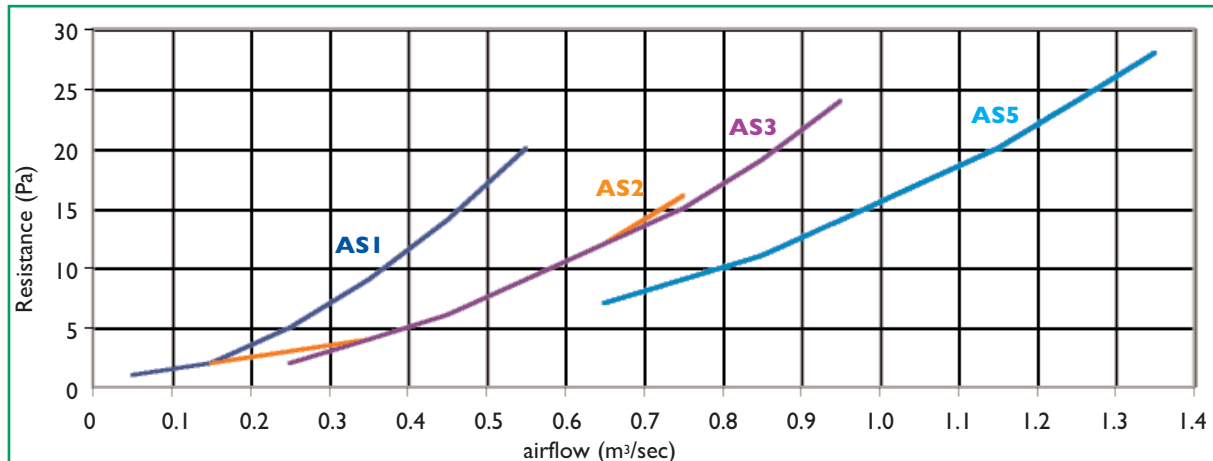
Model-Roof	A mm	B mm	C mm	D mm	E mm	kg
SRW1	1200	600	450	650	580	74
SRW2	1200	600	450	650	580	74
SRW3	1200	600	450	650	580	74
SRW4	1200	750	450	800	580	87
SRW5	1200	750	450	800	580	87
SRW6	1350	825	500	875	580	104
SRW7	1600	900	600	950	680	125



Direct Drive - Air Handling Units Silencers



Pressure Drop

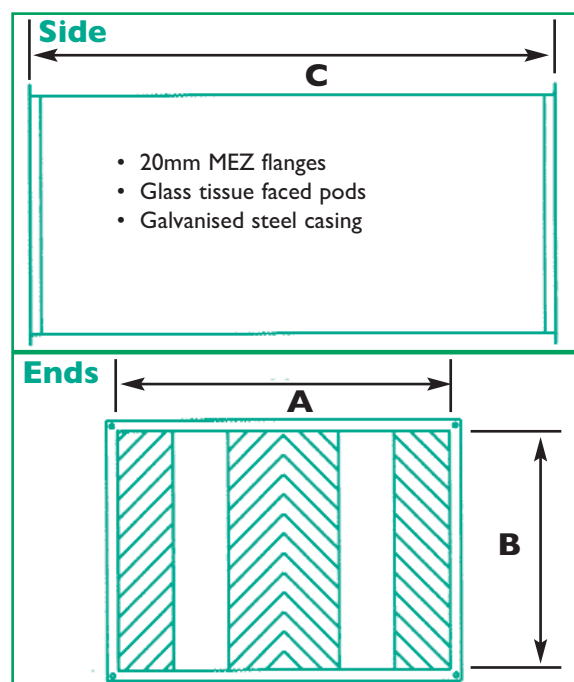


Insertion Loss

Model	Attenuation: Insertion loss - dB - mid frequency Hz							
	63	125	250	500	1000	2000	4000	8000
ASI	5	9	16	30	39	39	31	26
AS2	5	9	19	33	42	42	30	18
AS3	5	9	17	31	41	41	33	26
AS5	5	9	16	30	39	39	31	26

Dimensions

Model	A	B	C	kg
ASI	600	450	1000	48
AS2	750	450	1200	51
AS3	825	500	1000	80
AS5	900	600	1000	105



Air Handling Units Control Panels



Electric Heating

Single Stage Electric Heating Control Panel

Epoxy painted steel enclosure, 160 x 250 x 125mm
Individual switches and indicators for fan and heater
Individual MCB for fan and heater element
Mains input: 230v, 50Hz, 1ph
Maximum output: Heater 1 x 3kw 1ph elements
Fan 1 x 1ph
2A MCB fitted as standard
Number of steps of heater control: 1



3 Step Electric Heating Control Panel

Epoxy painted steel enclosure, 300 x 400 x 150mm
Door interlocked isolator
Individual switches, and run and trip indicators for fan and heater
Panel live indicator
Individual fuses for fan and heater element
Mains input: 400v, 50Hz, 3ph and neutral; or 230v 50Hz 1ph
Maximum output: Heater 3 x 3kw 1ph elements
Fan 1 x 1ph 6.3A max full load current
2A fuse fitted as standard
Number of steps of heater control: 3
Fan run-on timer: approximately 2 minutes



6 Step Electric Heating Control Panel

Epoxy painted steel enclosure, 400 x 500 x 150mm
Door interlocked isolator
Individual switches, and run and trip indicators for fan and heater
Panel live indicator
Individual fuses for fan and heater element
Mains input: 400v, 50Hz, 3ph and neutral; or 230v 50Hz 1ph
Maximum output: Heater 6 x 3kw 1ph elements
Fan 1 x 1ph 6.3A max full load current
6A MCB fitted as standard
Number of steps of heater control: 6
Fan run-on timer: approximately 2 minutes



Hot Water Heating

Hot Water Heating Control Panel

Epoxy painted steel enclosure
Individual switches, and run and trip indicators for fan and heater
Panel live indicator
Heater on indicator
Mains input: 230v, 50Hz, 1ph
Maximum output: Fan 1 x 1ph 10A max full load current



Air Handling Units

Custom Built



General

AVT offers an extensive range of supply/extract units and associated ancillary equipment. Fans are available which cater for air volumes up to 20 m³/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:
 - DEO Spec 037
 - 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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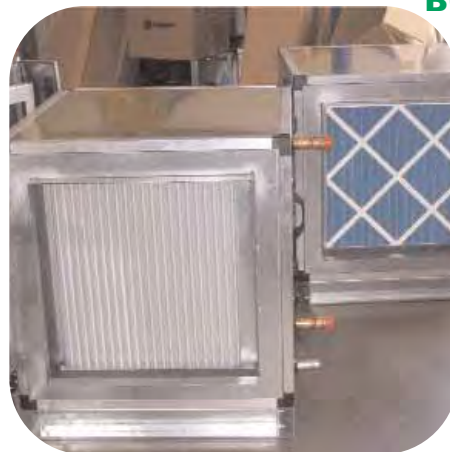
Air Handling Units ¹



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

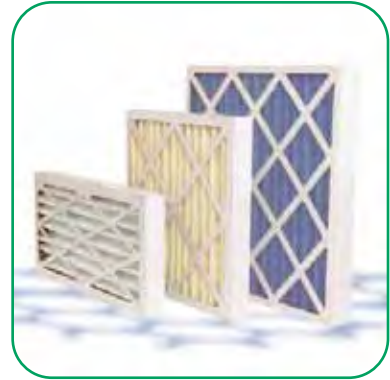
Royal Yacht Britannia
BUPA Hospital, Leicester
Warner Holiday Camp
Bass Inns
Livingstone FC
Hambden Park
Blackburn Rovers FC
Waitrose
Sandwell Hospital
Domino Pizza
Kentucky Fried Chicken
Featherstone Technical College



Air Handling Units Components/Accessories



**Bag
Filters**



**Panel
Filters**



**Pressure
Switch**



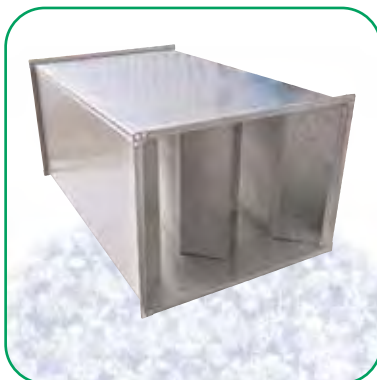
Port Holes



**Speed
Controller**



Manometer



Silencer



**Anti
Vibration
Mounts**

Other Air Vent Technology Ventilation Units



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