

CI/SFB

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2nd Edition



Air Handling Unit Range

Non-Residential Sectors

Vent-Axia[®]

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Vent-Axia®

Purpose designed for ease of installation, longevity and powerful performance, Vent-Axia's Air Handling units feature rugged construction, compact size, fully insulated air casing seals and efficient direct drive or belt drive fans. With the choice of mounting on the roof, in a plant room, on a wall or from the ceiling, it all adds up to a quiet, unobtrusive and dependable contribution to better air quality.

Vent-Axia has a long established history in the Air Handling market and the introduction of the New High Efficiency eViking Range reinforces our commitment to energy efficient ventilation solutions.

The popular range of belt / direct drive Mini-Direct, Mini-Belt, MiniSlim, Slimline and Mini-Viking is now strengthened with the inclusion of the XP Viking and FP modular systems.

The extended Air Handling range now consists of standard fan / filter / heater functionality from 0.05 m³/s through to 3.5 m³/s; with mix/match modules for cooling, heating, filtration, heat recovery and humidification from 0.2 m³/s to 16.0 m³/s available in the Viking Modular range.

AHU Range Overview

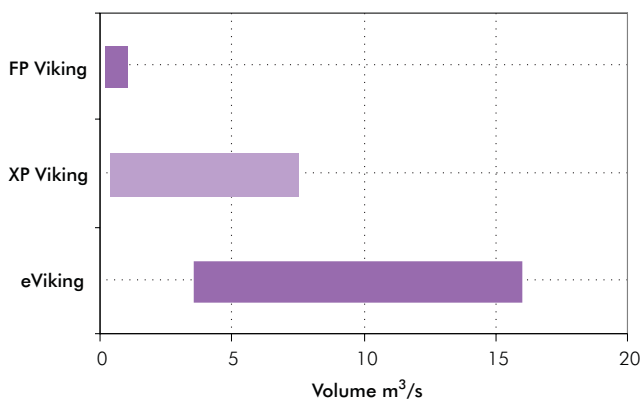
Viking Modular Range Overview

Specification

	eViking	XP Viking	FP Viking
Airflow Range m ³ /s	3.5 - 16.0	0.4 - 7.5	0.2 - 1.0
Construction	Double Skin	Double Skin	Double Skin
Drive	Direct/Belt	Direct/Belt	Belt
Impellers	Backward/Forward curved centrifugal		Forward curved centrifugal
Access	Left or right	Left or right	Top or Bottom
External	✓	✓	-
Internal	Wall	-	✓
	Floor	✓	✓
	Suspended	-	✓
Heating	LPHW	✓	✓
	Electric	✓	✓
	Gas	✓	-
	DX	✓	✓
	DX	✓	✓
Cooler	Chilled Water	✓	✓
	Plate	✓	✓
Heat Recovery	Wheel	✓	-
	RAC	✓	✓
	Steam	✓	✓
Humidification	Adiabatic	✓	-
	Mixing Sections	✓	✓
Dampers	Panel	G3	G4
	Bag	G3/4 - F5-9	G3/4 - F5-9
	Grease	G3	G3
	Compact	F6-9	F6-9
Attenuators	✓	✓	✓
Controls	Optional	Optional	Optional

Airflow Range

Model	Airflow Range m ³ /s	
FP Viking	0.2	1.0
XP Viking	0.4	7.5
eViking	3.5	16.0



Standard Range Overview

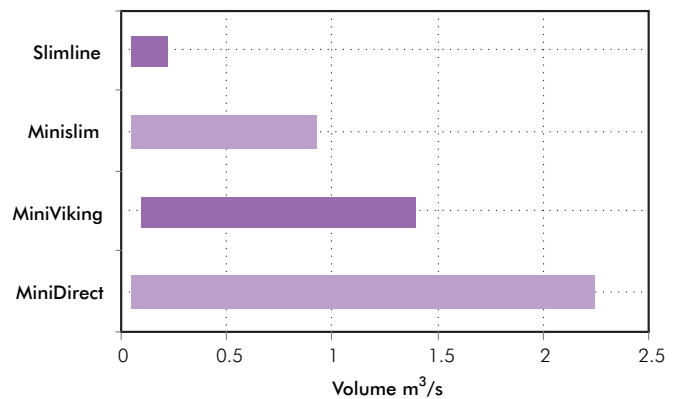
Specification

	Minislim	Slimline	MiniDirect	MiniViking
Airflow Range m ³ /s	0.05 - 0.92	0.05 - 0.22	0.05 - 2.25	0.1 - 1.4
Construction	Double Skin	Double Skin	Double Skin	Double Skin
Drive	Direct	Direct	Direct	Direct/Belt
Impellers	Forward curved centrifugal			
Access	Top or Bottom	Top or Bottom	Left or right	Left or right
External	-	-	✓	✓
Internal	Floor	✓	✓	✓
	Suspended	✓	✓	✓
Heating	LPHW	✓	✓	Sp
	Electric	✓	✓	✓
Dampers	✓	✓	✓	-
Filtration	Panel	-	-	G4
	Bag	F5	F5	-
Attenuators	Y	Y	✓	✓
Controls	Optional	Optional	Optional	In-Built

Sp = Special order, Y = dependent on model

Airflow Range

Model	Airflow Range m ³ /s	
Slimline	0.05	0.22
Minislim	0.05	0.92
MiniViking	0.1	1.4
MiniDirect	0.05	2.25



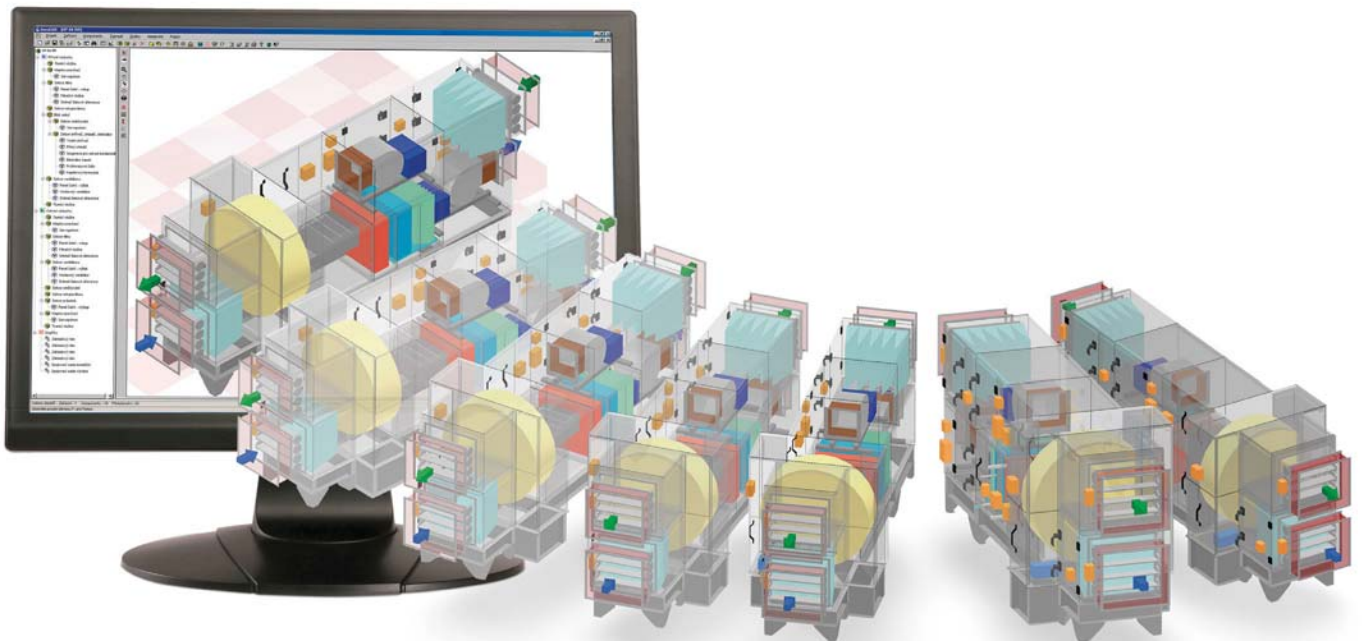
AeroCad Selection Software

Selecting the correct modular Air Handling Units (Viking Modular Range)

The drawback of modularity and choice can be complexity – that's where Vent-Axia employs AeroCad selection software to help specify the correct Viking Air Handling Solution for the application.

The AeroCad software helps Vent-Axia support specifiers in the selection, scaling and calculation of Air Handling Units.
The key outputs from the software include:

- Full visualisation of design incl. casing transparency to allow internal components to be seen
- Simulation in 'real' space and display from any visual angle
- Unit display in application
- Accurate calculations of components
- Automated selection and scaling of components
- Calculations of mixing, heat recovery and their combinations
- Calculations and results for summer and winter seasons
- Summation (weights, power inputs, outputs)
- File export to DXF, BMP, XLS or PDF

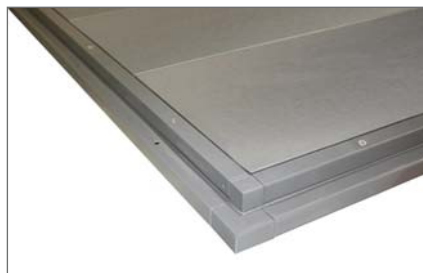


eViking Air Handling Unit Range

Features and Benefits

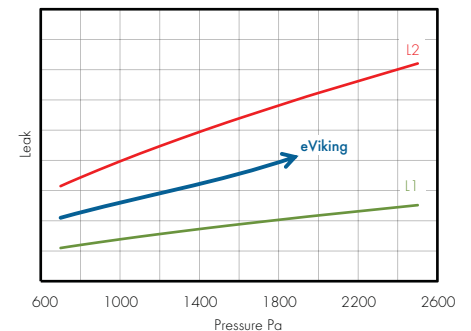
- A+ energy class design
- Highly efficient heat recovery even above 80%
- IE2 efficiency Motors, Optional EC Motors
- Minimized pressure drop of built-in assemblies
- Excellent casing tightness L2
- Optimized Footprint

- energy consumption production
- The new eViking air-handling units offer enhanced levels of quality and set a new, higher standard
- Excellent Mechanical and Physical Properties



Excellent casing tightness L2

- Without the need for additional adaptation
- Across wide pressure range



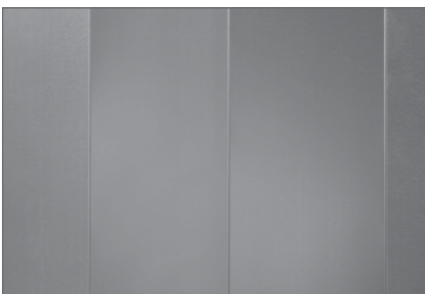
Creative Casing Design

This new range of eViking Air Handling units have been designed to meet the latest European Regulations.

eViking features not only offers significantly better performance and technical parameters but also greater reliability and a reduced footprint

The new eViking air-handling units offer enhanced levels of quality and set a new, higher standard.

Unique Panel Construction



Laminated Wall

- High strength and Air tightness
- Incorporating low density insulation offering excellent performance without using aluminium frames
- Construction offering wasteless and low

Self-contained Panel

- High mechanical strength and tightness of the casing contributes to energy savings
- Very good thermal insulation
- Excellent casing attenuation

Mechanical strength of casing	D2
Casing air leakage	L2
Filter bypass leakage	< 0.5% (F9)
Thermal insulation	T3
Thermal bridging	TB3
Operating temperature	-40 to +50°C
Acoustic insulation of casing (dB / octave band)	
9/63Hz, 13/125Hz, 20/250Hz, 25/500Hz, 32/1kHz, 32/2kHz, 34/4kHz, 37/8kHz	

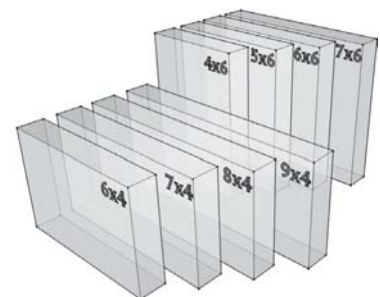
Casing Mechanical Performance in accordance with EN 1886-2008

eViking air-handling units are also suitable for coastal and Swimming Pool Applications.

Tailored to Your Needs

Different locations - different customers – different needs.

The laminated eViking concept allows you to select the unit height and width for air-handling units in the vertical or horizontal according to your actual space requirements.

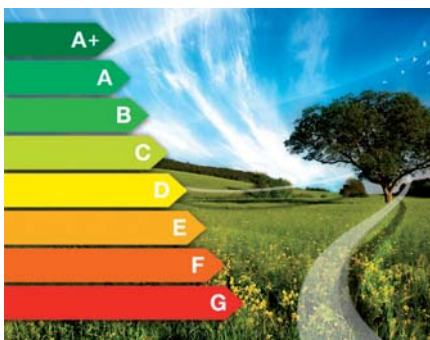


Module Dimensions (mm)

Module size	Width	Height	Height with 85mm baseframe
6x4	1998	1332	1417
7x4	2304	1332	1417
8x4	2610	1332	1417
9x4	2916	1332	1417
4x6	1386	1944	2029
5x6	1692	1944	2029
6x6	1998	1944	2029
7x6	2304	1944	2029



Energy rating is just the beginning



Casing

- Casing tightness L2
- Thermal bridging TB3
- Thermal insulation standard T3

Fans

- Highly efficient fans
- Motor efficiencies IE2 (EFF1)
- Optional EC motors

Heat Recovery

- Heat recovery as needed even above 80%
- Designed for maximum efficiency with minimum pressure loss

Result: **A+ Class Efficiency**

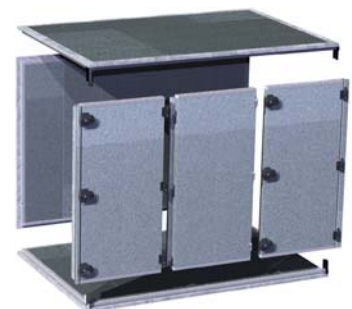
Furthermore.....

Excellent Access - Service and Cleaning

We have also focussed on providing excellent access to the internal space when designing the service side of these new air-handling units.

We have considered both service access to individual internal components as well as easy cleaning of the unit internal space for hygienic applications.

- Double door
- Easy-to-remove panels
- Possibility to deliver disassembled units
- Easy connection to associated services.



Important Standards and Directives for the Design of Air-handling Systems

When developing eViking air-handling units, we have closely adhered to the requirements of technical standards and directives to give you the right product with maximum energy efficiency whilst complying with demanding hygiene and environmental requirements.

Requirements for buildings	Requirements for air-handling systems	Requirements for air-handling units
Directive 2010/31/EU on the energy performance of buildings	EN 13779 Ventilation-performance requirements for ventilation and room-conditioning systems	EN 1886 Ventilation for buildings - Air handling units - Mechanical performance
Law No. 406/2000 Sb. on energy economy, Order No. 148/2007 on the energy performance of buildings	EN 15242 Ventilation for buildings-Calculation methods for the determination of air flow rates in buildings including infiltration	EN 13053 Ventilation for buildings. Air handling units. Ratings and performance for units, components and sections
EN 15251 Indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics	EN 15243 Ventilation for buildings - Calculation of room temperatures and of load and energy for buildings with room-conditioning systems	VDI 6022 Hygiene requirements for ventilation and air-conditioning systems and devices
EN 15240 Ventilation for buildings - Energy performance of buildings - Guidelines for inspection of air-conditioning systems	EN 12599 Ventilation for buildings -Tests procedures and measuring methods for handing over installed ventilation and air conditioning systems	VDI 3803 Air-conditioning - Central Air-conditioning Systems - Structural And Technical Principles
EN 15239 Ventilation for buildings - Energy performance of buildings - Guidelines for inspection of ventilation systems	EN 15423 Ventilation for buildings - Fire precautions for air distribution systems in buildings	DIN 1946-4 Ventilation in buildings and health care rooms

eViking Air Handling Unit Range

Cross-section Variability

Cross-section variability is achieved by the arrangement of four and six modules (laminas) in basic heights.

Minimized Length Dimensions

The unique casing design allowed us to abandon the traditional air handling unit sections and relationship between air handling unit casing and internal components.

The eViking concept is able to "wrap" internal components with minimum spacing using a casing of optimal length.

The length dimensions of each functional part (built-in assembly) of the air-handling unit are designed in modular grid lengths equalling multiples of 102 mm.

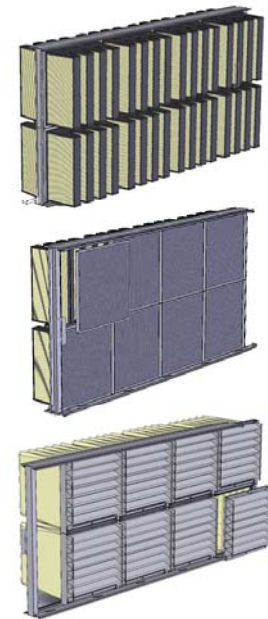
These functional parts are then integrated into assembly blocks in lengths equalling multiples of 306 mm (modular width of the lamina). This combination enables the air-handling unit to be designed to specific length requirements.

Optimized Components

The design of some built-in assemblies itself contributes to the length of units.

Combined filtration walls are a good example of this.

For example, fitting two filters into a common frame will result in maximum reduction of the length.



Optimized Output According to Energy Classes

Performance Range

The newly-launched eViking air-handling unit range covers a wide performance range, see table below.

Example: At the commonly used velocity of 3 m/s, an air-handling unit with a section area of 7x6 will presently provide you with an output of 12.11 m³/s.

Energy Performance matrix comparing unit dimensions & airflow (m³/s)

Unit Dimensions	A+		A		B	
	1,5 m/s	2 m/s	2,5 m/s	3 m/s	3,5 m/s	4 m/s
7x6	6.06	8.08	10.08	12.11	14.11	16.13
6x6	5.19	6.95	8.67	10.42	12.13	13.89
5x6	4.36	5.89	7.28	8.72	10.19	11.64
4x6	3.53	4.69	5.86	7.03	8.22	9.39
9x4	5.16	6.89	8.61	10.33	12.05	13.77
8x4	4.61	6.13	7.66	9.19	10.75	12.27
7x4	4.33	5.38	6.72	8.08	9.41	10.77
6x4	3.47	4.64	5.77	6.94	8.11	9.27

Lower outputs units can be selected from our XP Viking air-handling unit range.

Surface Finishes for any Application

eViking air-handling units are characterized by their long service life and trouble-free operation. Thanks to a wide range of surface finishing combinations (galvanized, powder coating, and stainless steel) which comply with the grade of atmosphere corrosivity in accordance with EN 12500 and corrosion resistance in accordance with EN ISO 14713, the eViking concept enables air-handling units to fulfil the requirements of the highest applicable standards.

Frame	Internal casing	External casing	Corrosivity	Application
galvanized	galvanized	galvanized	C2/C2	air-handling units for indoor environment - low corrosivity (air-handling units for outdoor environment - low corrosivity)
galvanized + powder coating RAL	galvanized	galvanized + powder coating RAL	C2/C4	air-handling units for indoor environment - low corrosivity (air-handling units for outdoor environment - low corrosivity)
galvanized	galvanized + powder coating RAL	galvanized	C4/C2	air-handling units for indoor environment - high corrosivity
galvanized + powder coating RAL	galvanized + powder coating RAL	galvanized + powder coating RAL	C4/C4	air-handling units for indoor environment - extra high corrosivity (air-handling units for outdoor environment - extra high corrosivity)
galvanized	galvanized + powder coating RAL epoxy coating	galvanized + powder coating RAL	(C4/C4)	version for pools
galvanized + powder coating RAL	galvanized + powder coating RAL stainless steel	galvanized + powder coating RAL	(C4/C4)	hygienic version
galvanized + powder coating RAL	galvanized + powder coating RAL stainless steel	galvanized + powder coating RAL	C5 economy 1/C4	air-handling units for indoor environment - extra high corrosivity (air-handling units for outdoor environment - extra high corrosivity)
galvanized + powder coating RAL	stainless steel	galvanized + powder coating RAL	C5 economy 2/C4	air-handling units for indoor environment - extra high corrosivity (air-handling units for outdoor environment - extra high corrosivity)
galvanized + powder coating RAL	stainless steel	stainless steel	C5/C5	air-handling units for indoor environment - extra high corrosivity (air-handling units for outdoor environment - extra high corrosivity)

Functions

Impellers	Backward/Forward curved centrifugal	
Heating	LPHW	✓
	Electric	✓
	Gas	✓
	DX	✓
Cooler	DX	✓
	Chilled Water	✓
Heat Recovery	Plate	✓
	Wheel	✓
	RAC	✓

Humidification	Steam	✓
	Adiabatic	✓
Filtration	Panel	G3
	Bag	G3/4 - F5-9
	Grease	G3
	Compact	F6-9
Attenuators	✓	
Controls	Optional	

Technical Support

For a detailed selection and performance specification, please contact our Technical Support Team on 0844 856 0594.

XP Viking Modular Range

Features and Benefits

- **Construction Parameters according to EN1886.**
- **Mechanical strength Class D2(M)**
- **Casing air leakage Class L3(M)**
- **Filter bypass leakage $k < 1\%$ / $k < 0,5\%$**
- **50mm Acoustic insulated casing**
- **Thermal transmittance Class T3(M)**
- **Thermal bridging Class TB2(M)**
- **Operation temperature: -40 to + 40 °C**

Model Range

Spanning a duty envelope up to $7.5\text{m}^3/\text{s}$ (Heating only), XP Viking Air Handling units are available in 7 model sizes.

Construction

XP Viking Air handling units have a unique modular frameless construction with smooth internal casing. Modular construction simplifies access/installation with units being delivered in sections for site assembly.

Sandwich construction 1mm panels with 50mm rockwool insulation ($110\text{kg}/\text{m}^3$) providing high air soundproofing of casing and thermal casing insulation with reduced heat losses.

Connection of sections is simple providing fast and easy installation, and the clean inside surface to the unit, allows easy cleaning.

All internal electrical devices are terminated on the external casing with terminal boxes, simplifying installation and reducing installation costs

Units are suitable for internal or external application with options on internal and external material finishes.

Easy accessibility to maintenance sections is provided with inspection doors and panels. Variability of connections enables specifiers to combine the side of pipework connections & service access enabling optimisation of the plant room space & ensure easy access for maintenance.

Components

- Fans - Direct or Belt Drive
- Dampers, Mixing Boxes
- Panel Filters, Bag Filters
- Heating Coils (LPHW, Electric, Gas & DX)
- Cooling Coils (CHW & DX)
- Humidification - Steam or Adiabatic
- Heat Recovery (Plate, Rotary & RAC)
- Attenuators
- Indirect Gas-Fired Burners

Configurations

XP Viking Air Handling units are available in either series, parallel or vertical configurations suitable for both internal and external applications. External units offer RAL9002 finish, with optional roof, external louvers, special bonding, dampers located within the unit, and protection of base frames.



A smooth connection between panels and strengtheners allows for easy cleaning to ensure clean surfaces in the unit.



The units have a casing insulated by rockwool with a density of $110\text{kg}/\text{m}^3$, which provides thermal casing insulation (Class T3(M) according to EN1886) and reduced heat losses.

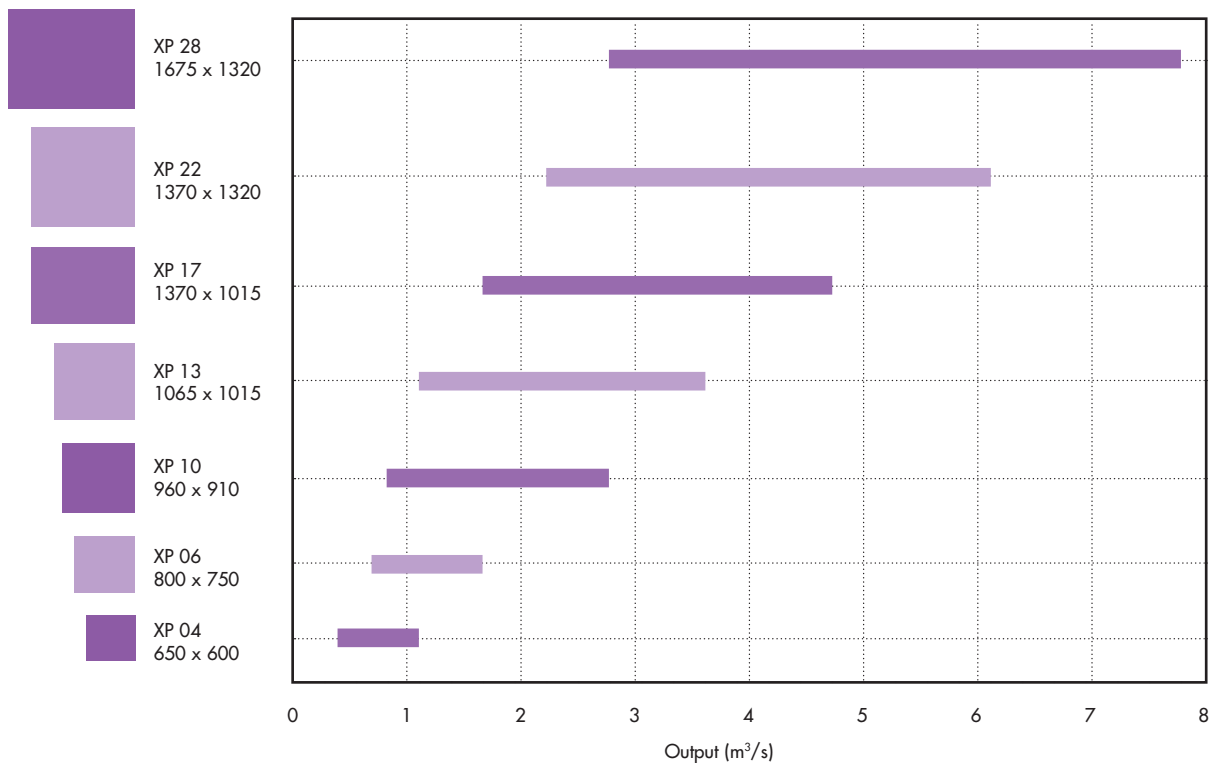


Easy accessibility of all service places is provided by inspection doors and inspection panels. The closing system enables very easy closing of the inspection door.



Parameters

Cross-section (mm)



Functions

Impellers	LPHW	✓
	Electric	✓
Heating	Gas	✓
	DX	✓
	DX	✓
Cooler	Chilled Water	✓
	Plate	✓
Heat Recovery	Wheel	✓
	RAC	✓

Humidification	Steam	✓
	Adiabatic	✓
Filtration	Panel	G3-4
	Bag	G3/4 - F5-9
	Grease	G3
	Compact	F6-9
Attenuators		✓
Controls		Optional

FP Viking Modular Range

Features and Benefits

- The FP Viking units with their frameless structure achieve parameters according to the European standard EN 1886.
- Mechanical strength Class D1(M)
- Casing air leakage Class L3(M)
- Filter bypass leakage $k < 1\%$
- Thermal bridging Class TB2(M)
- Thermal transmittance Class T3(M)
- 40/25mm Acoustic insulated casing
- Operation Temperature: -40 to $+40^{\circ}\text{C}$

Model Range

Spanning a duty envelope from 0.2 to 1.0m³/s FP Viking Air Handling units are available in 2 model sizes.

Construction

FP Viking Air handling units have a unique modular frameless construction. Modular construction simplifies access/installation with units being delivered in sections for site assembly.

Sandwich construction with 40/25mm rockwool insulation providing high air soundproofing of casing and thermal casing insulation with reduced heat losses.

Connection of sections is simple providing fast and easy installation, and the clean inside surface to the unit, allows easy cleaning.

Units are suitable for internal mounting only, either suspended, floor or wall mounted

Finish: External Zinc coated, internal Zinc coated. Optional External RAL9002, internal Zinc Coated.

Easy accessibility to maintenance sections is provided with inspection doors/panels.

Variability of connections enables specifiers to combine the side of connections & service access enabling optimisation of space & ensure easy access for maintenance.

Components

- Fans - Belt Drive
- Dampers, Mixing Boxes
- Panel Filters, Bag Filters
- Heating Coils (LPHW, Electric & DX)
- Humidification - Steam
- Cooling Coils (CHW & DX)
- Heat Recovery (Plate & RAC)
- Attenuators

Configurations

FP Viking Air Handling units are available in either series, parallel configurations and suitable for internal applications



Modern, frameless construction



Side hangings for easy installation



Heat exchangers with integrated bypass



Belt-driven fans



Parameters

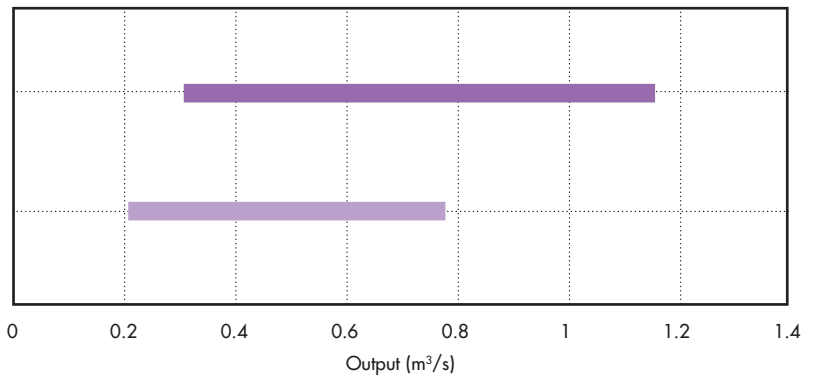
Cross-section (mm)



FP 4.0
Full cross-section 995 x 360
Inside cross-section 915 x 310



FP 2.7
Full cross-section 690 x 360
Inside cross-section 610 x 310



Pressure difference of fans: up to 1000 Pa
Inlet air temperature: -40 °C to +40 °C

Functions

Impellers	Forward curved centrifugal	
	LPHW	✓
	Electric	✓
Heating	Gas	-
	DX	✓
	DX	✓
Cooler	Chilled Water	✓
	Plate	✓
Heat Recovery	Wheel	-
	RAC	✓

Humidification	Steam	✓
	Adiabatic	-
	Panel	G4
Filtration	Bag	G3/4 - F5-9
	Grease	G3
	Compact	-
Attenuators		✓
Controls		Optional

Viking Modular Range Control Systems

WebClima Control System



WebClima control present a unique solution to Vent Axia's Viking modular air-handling units control, which features the use of modern technology, simple design, very easy and intuitive control with remote access via Internet and a number of user friendly functions. The WebClima server integrates with the local network and Internet.

If you can use an internet browser you can operate WebClima, its that simple



Function

WebClima control system is intended for any configuration of air-handling devices from simple to complex.

Optimised for the Viking range of modular air-handling units and can be applied for all common applications. It enables error-free and complex regulation of temperature, humidity and fans output control by controllers (frequency inverters) or two speed motors.

Operating mode of the device can be permanent (manual) or controlled by program. The mode can be changed by one click only.



Regulation

Control unit ensures cascade regulation of room temperature; it is also possible by means of up to four basic controllable sequences of heating + cooling + heat recovery + mixing. It is possible to use the function of frost coil (pre-heater) or re-heating of air. Temperature can be

controlled in three steps (temperature modes), which can be reset anytime.

In the service and administrator settings there is all necessary regulation characteristics and parameters for regulation optimising to suit the particular application. For example, except for common limiters of maximum and minimum temperature of supply air it is also possible configure the temperature monitoring of reverse water from water heater.



Control and operation

Web interface provides modern and intuitiveness interface.



Hand held regulation

If required or in places where AHU cannot be connected to PC, local control can be achieved by using HMI control device.



Easy configuration

The control unit is individually pre-configured in production for each air-handling unit. The configuration can be optimised thanks to the structured control menu with control of access privileges. It is easy and intuitive and runs in the Internet browser environment which follows usual standards.



Remote control

Remote control by means of network or Internet connection allows unlimited access to the unit anytime and its full monitoring, control and setting. WebClima advises you about all modes and status changes and archives the records. It automatically alerts you about errors by sending e-mail messages. Remote control from wherever there is internet access allows you to optimise the operating modes to suit you, including the ability to control operating costs.



Protection and signalling

WebClima ensures all protection of connected components and devices (e.g. electric motors, electric heaters, water

heaters, frost coils, heat-recovery, etc.). Safe operation of main water heater is increased because of active anti-freeze protection and controlled tempering of water heater when starting up the device.

Signalling: For maintenance & service it is important that operation modes and errors are visualised directly in the web control interface. Failure alert via e-mail is an excellent function along with SMS notification to a mobile phone. It is also possible to signal remotely the operation modes by means of LED on optional controller ORe1 or HMI control device.



Programs and time-scales

WebClima control system uses of three time-schedules, which control the program operation of the air-handling unit. The everyday plan is the base. The weekly plan is of higher priority, the highest priority is set for the annual plan. It is possible to set time-scales in the control interface. Indication of the presently valid control mode ensures easy orientation within the menu.

Multiple possibilities of program operation enable:

- Eight intervals in the daily plan
- Seven intervals in the weekly plan
- Six intervals in the annual plan

In each interval (point of alteration) it is possible to set operation and temperature parameters, and also output for fans with output controllers or two speed fans.



Automatic selection

When the air-handling unit configuration is created within AeroCAD selection programme, then the exact selection of the required control takes only a few minutes. This process is fully automatic and error-free.



VCB Control system



VCB control units are ideal for control of small and medium sized air handling units where there is no interface with centralised building management system

Other components with autonomous control can be connected as well. VCB control units are designed for dust free dry environment without chemicals. The units are always manufactured exactly according to the configuration of air handling unit. This ensures optimal control of the air handling unit.

Functions

VCB control units are compact control and power switchboards for control of air handling units. Sophisticated control algorithms ensure system stability, comfortable control and energy saving. The units have been developed especially for control of Vent Axia Viking modular air handling units.



Control

Main control process – temperature control of supply air based on room temperature. (heating, cooling, heat recovery).

Optional output control (speed) of fans (with corresponding configuration of AHU) – 2 or 5 output levels.



Operating

The unit can either be controlled by internal controller using the menu on the display or by remote controller. Control specification is determined by the user by selecting the control parameters (internal/external) in settings of VCB unit.



Day and week programs

The unit provides setting of eight points where the user can set required modes and values. Within each point you can set required temperature, operation and air flow rate.



Protection

The VCB units have anti-freeze protection of water heater, protection of electric heater and protection of motors of fans.



Status

The VCB unit provides notifications for the user about operation states of the AHU. Various modes and state are displayed on two LCDs and on the HMI display. Status is also displayed by indicating light, the red diode indicates failure.

VCB-A option



Control

Main control of temperature is based on room temperature – therefore it provides cascade temperature control by three air temperature sensors (VCB control is based on supply air temperature only).

Three temperature modes Comfort, Economy, Ventilation (VCB only has two 2).



Programs and time-scales

WebClima control system uses of three time-schedules, which control

the program operation of the air-handling unit. The everyday plan is the base. The weekly plan is of higher priority, the highest priority is set for the annual plan. It is possible to set time-scales in the control interface. Indication of the presently valid control mode ensures easy orientation within the menu.

Multiple possibilities of program operation enable:

- Eight intervals in the daily plan
- Seven intervals in the weekly plan
- Six intervals in the annual plan

In each interval (point of alteration) it is possible to set operation and temperature parameters, and also output for fans with output controllers or two speed fans.



Protection

Water heater pump control based on outdoor temperature including stop mode in summer. (VCB has manual breaker).

Frost protection function of water heater mixing set (SUMX) based on outdoor temperature. (VCB has control return water temperature only).

Cooling stop mode based on outdoor temperature. (VCB has it according to supply air temp. only).

Hard connected controller HMI is supplied with every control unit VCB-A.

Compensation of room temperature based on outdoor air temperature.

Remote controller Ore2, Ore1 or Ore5 is also available.

VMD Range

Features and Benefits

- Performance range up to 1.4m³/s
- Motor Insulation Class F
- Anodised aluminium pentapost frame
- Double skinned panels
- Compact direct drive units
- Electric heater battery
- Built-in fan and heating controls
- Minimal site installation time
- 1 Year Guarantee

Features

The Mini Viking packaged small air handling units have been developed using feedback from installers through to the end user and benefit from tried and tested components; e.g. double skinned construction with plastisol outer panel, mineral wool insulation and galvanised steel inner panel.

This construction offers weather resistance and long life with a good thermal and acoustic performance. The materials can also be recycled.

Specification

Energy Considerations

Mini Viking Air Handling Units are designed with savings on potential energy consumption being a prime consideration. Low air resistance components are incorporated as standard, with high efficiency motors also available.

Model Range

Spanning a duty envelope of 0.1m³/s to 1.4m³/s, Mini Viking air handling units are available in eight direct drive.

Standard units comprise of direct drive fan, filter, electric heater battery and built-in pre-wired controls.

Construction

Framework is anodised aluminium with airtight door seals and manual door catches which can be tool locked in position.

Double inlet, forward curved centrifugal fans provide the lowest noise levels with sufficient performance for ducted systems. Impellers and motor impeller assemblies are dynamically balanced to minimise vibration. Motors are further resiliently mounted.

The motors in VMD1L, VMD1M, VMD2L, VMD2M & VMD3L are conventionally mounted permanent capacitor type with sealed for life ball bearings. Protection is IP44 with Class F insulation (50° ambient max.). VMD1H, VMD2H and VMD3H units have smooth and powerful outer rotor type motors. Note: all these direct driven fan/motor assemblies respond best to step transformer type speed control. This type of controller will maximise the service life of the motor.

Filters – Standard filters are EU4 pleated paper type 100mm deep. These have an efficiency equivalent to a standard grade bag filter and a better dust holding capacity than a fibre or foam filter. Special high grade bag filters can be supplied but they require an additional housing.

Electric Coils

Electric heaters are sheathed tube type with low surface loading for long life. They include a manual reset high temperature cut-out and are mounted at the fan discharge to protect filters and motors from excess heat. Fan and heating controls are built in and wired internally, reducing site installation time to a minimum. A standard customer interface terminal box is common to all units and provides for various external remote items such as supply fan speed control, time clock, set point adjustment, PIR sensor and room or duct sensor. A power isolator is also provided. Outputs for extract fan (starter built-in), shut off damper and signal input from a fire alarm are also provided. N.B. An additional relay PCB will be required for use with an air quality sensor.

Electric heater temperature control is by thyristor. This method enables the sensor to be mounted down stream of the heater in the supply airflow and can hold +/-1°C of the chosen setpoint. A 0-10v cooling output signal is also available which can be used as above.

Inlet damper and motor come complete with weatherproof motor cover, needing only wiring into main terminal box.



KEY	ELECTRICAL ARRANGEMENT FOR FAN & HEATER
	(240V) 1 Phase Fan / (240V) 1 Phase Heater
	(240V) 1 Phase Fan / (415V) 3 Phase Heater
	(415V) 3 Phase Fan / (415V) 3 Phase Heater

Direct Drive Supply Air Handling Units Quick Selection Chart

	External Duct Resistance ~ Pa									
	75	100	125	150	175	200	250	300	400	500
0.1	VMD1L	VMD1L	VMD1L	VMD1L	VMD1L	VMD1M	VMD1M			
0.15	VMD1L	VMD1L	VMD1L	VMD1L	VMD1M	VMD1M	VMD1M	VMD1H		
0.2	VMD1L	VMD1L	VMD1L	VMD1M	VMD1M	VMD1M	VMD1H			
0.25	VMD1L	VMD1M	VMD1M	VMD1M	VMD1M	VMD1M	VMD1H			
0.3	VMD1M	VMD1M	VMD1M	VMD1M	VMD1M	VMD1H	VMD2M			
0.35	VMD1M	VMD1M	VMD1M	VMD1H	VMD1H	VMD1H	VMD2M			
	VMD1H	VMD1H	VMD1H	VMD2L	VMD2L	VMD2L				
0.4	VMD1H	VMD1H	VMD1H	VMD1H	VMD1H	VMD2M	VMD2M	VMD2H		
	VMD2L	VMD2L	VMD2L	VMD2L						
0.45	VMD2L	VMD2L	VMD2L	VMD2M	VMD2M	VMD2M	VMD2M	VMD2H		
	VMD2M	VMD2M	VMD2M							
0.5	VMD2L	VMD2L	VMD2M	VMD2M	VMD2M	VMD2M	VMD2M	VMD2H		
	VMD2M	VMD2M								
0.55	VMD2M	VMD2M	VMD2M	VMD2M	VMD2M	VMD2M	VMD2M	VMD2H		
0.6	VMD2M	VMD2M	VMD2M	VMD2M	VMD2M	VMD2M	VMD2H	VMD3H		
0.65	VMD2M	VMD2M	VMD2M	VMD2M	VMD2M	VMD2H	VMD3L	VMD3H	VMD3H	VMD3H
							VMD3H			
0.7	VMD2M	VMD2M	VMD2M	VMD2H	VMD2H	VMD3L	VMD3L	VMD3H	VMD3H	VMD3H
						VMD3H	VMD3H			
0.75	VMD2H	VMD2H	VMD2H	VMD3L	VMD3L	VMD3L	VMD3L	VMD3H	VMD3H	VMD3H
				VMD3H	VMD3H	VMD3H	VMD3H			
0.8	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3H	VMD3H	VMD3H
	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H			
0.85	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3H	VMD3H	VMD3H
	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H			
0.9	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3H	VMD3H	VMD3H
	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H			
1.0	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3L	VMD3H	VMD3H	VMD3H
	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H			
1.1	VMD3L	VMD3L	VMD3L	VMD3L	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H
	VMD3H	VMD3H	VMD3H	VMD3H						
1.2	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	
1.3	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H		
1.4	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H	VMD3H		

Model	Heater Duty (Kw)	Heater Phase (ph)	Built in Controller	Max. Amps (Total)
VMD1L	3 or 4.5	1	TC5t Thyristor	(3kW) 14A, (4.5kW) 20A
VMD1M	6 or 9	1	TC9 Thyristor	(6kW) 27A, (9kW) 40A
VMD1H	9 or 13.5	3	TC13 Thyristor	(9kW) 15A/ph, (13.5kW) 21A/ph
VMD2L	3, 6 or 9	1	TC9 Thyristor	(3kW) 15A, (6kW) 27A, (9kW) 40A
VMD2M	9 or 13.5	3	TC13 Thyristor	(9kW) 15A/ph, (13.5kW) 21A/ph
VMD2H	15, 18, or 22.5	3	TC13 Thyristor + Solid State Relay	(15kW) 25A/ph, (18kW) 29A/ph, (22.5kW) 35A/ph
VMD3L	18 or 27	3	TH28 Thyristor	(18kW) 28A/ph, (27kW) 40A/ph
VMD3H	27 or 36	3	TH36 Thyristor	(27kW) 42A/ph, (36kW) 55A/ph

VMD Mini Viking Range

Sound power levels dBW re 10–12W (at full speed)

The dBA quoted is the mean A weighted sound pressure level measured at a distance of 3m with spherical sound level propagation. It is included for comparative purposes only and the mean sound level experienced will depend on the area being served.

Model	Fan Data											
	Speed	FLC	Output	Octave band mid frequency Hz								dBA
	(rpm)	(A)	(Watts)	63 Hz	125	250	500	1 K	2 K	4 K	8 K	@ 3m
VMD1L	860	1.0	75	53	51	44	42	39	35	27	20	40
VMD1M	1300	1.5	150	78	77	69	68	64	59	53	44	46
VMD1H	1380	2.0	300	79	80	72	70	66	63	56	47	48
VMD2L	900	2.0	250	75	72	69	66	64	58	52	42	54
VMD2M	1300	3.5	370	78	75	72	69	67	61	55	45	56
VMD2H	1380	3.6	550	79	80	74	72	69	64	57	48	57
VMD3L	900	6.5	750	77	80	78	77	75	71	67	56	66
VMD3H3*	1140	4.2/ph	1000	77	80	78	77	75	71	67	56	66
VMD3H5*	1400	4.2/ph	1500	80	83	81	80	78	74	70	59	68

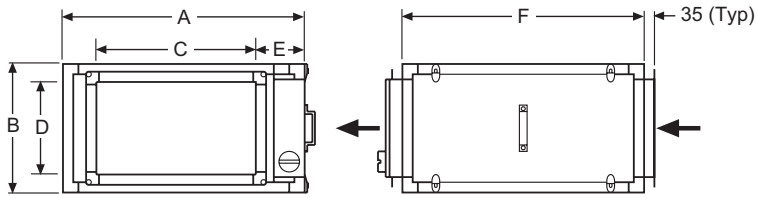
Silencer insertion loss (subtract from sound power levels)

Code	To Suit	Duct Dims. (mm)			63 Hz	125	250	500	1 K	2 K	4 K	8 K
		W	H	L								
VMA53	VMD1	500	300	600	4	6	10	20	28	28	19	20
VMA54	VMD2	500	400	900	5	9	16	30	39	39	31	26
VMA75	VMD3	750	500	1200	6	12	23	40	51	51	41	29

Sound breakout from unit

Model	63 Hz	125	250	500	1 K	2 K	4 K	8 K
VMD1M	69	61	49	43	44	29	15	2
VMD2M	75	67	54	48	48	35	21	8
VMD3L	76	68	56	50	51	36	22	9

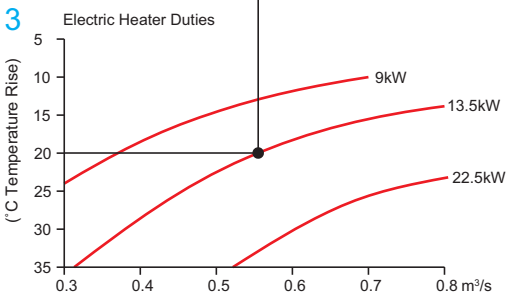
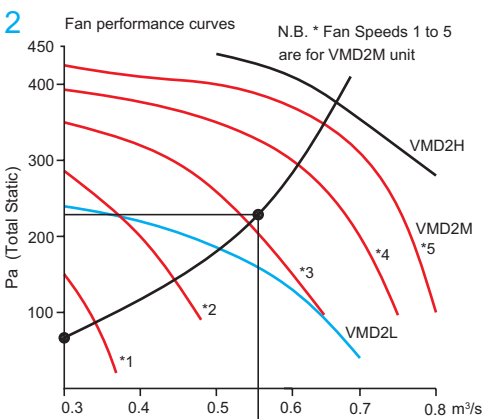
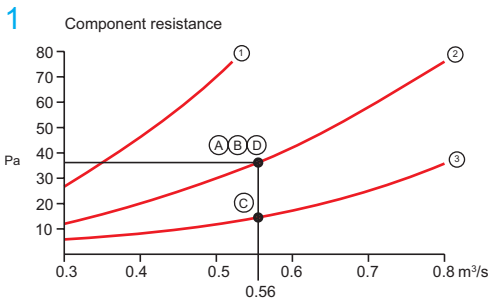
Standard fan, filter electric heater unit



Model	VMD1	VMD2	VMD3
A	750	750	965
B	400	500	700
C	500	500	700
D	300	400	500
E	150	135	133
F	750	1000	1200
Weight (kg)	44	75	170

VMD Mini Viking Range

VMD2 Supply Air Handling Unit - Selection Example



- 1**
- ① Deep cooling coil.
High density electric heater.
 - ② EU4 filter (1/2 dirty).
Standard electric heater.
Weather louvre.
 - ③ Clean filter.
Silencer.
Frost heater.

3 Plot this on fan chart and plot another point half the air volume and 25% of the static to draw in system resistance curve. You can now see that this system will give 0.51m³/s airflow using the quiet VMD2L unit or 0.68m³/s with the VMD2M at full speed (5). The ideal duty would be achieved using the VMD2M with speed controller (Speed 3).

Continue the fan airflow line to read off the ideal heater size. In this case a 13.5kW 3 phase heater will give a 20°C rise, which is sufficient to temper input air from -1°C to 19°C.

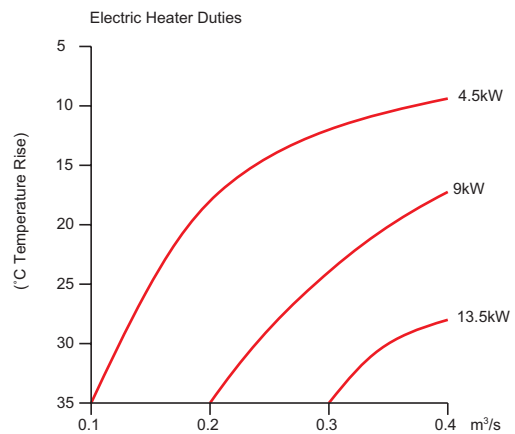
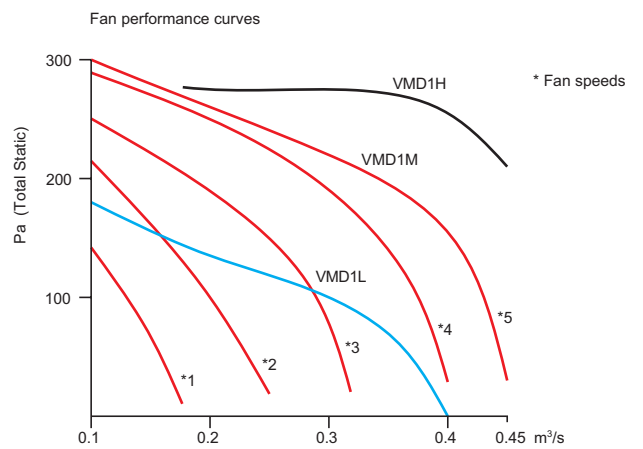
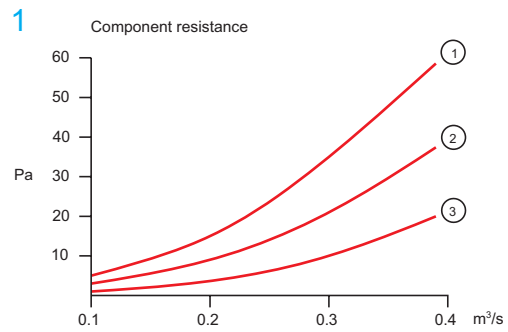
2 EXAMPLE
An office area of 80m² by 2.5m high requires ventilating at 10 air changes per hour.
80 X 2.5 X 10 = 0.56m³/s
60 X 60

The input airflow requires filtering to a good standard (EU4) and electricity is the favoured winter heat source, controlled to minimise wasted energy.

Using the top graph add the filter resistance (A) to the electric heater (B), silencer (C), weather louvre (D) and the external duct resistance (calculated from the duct layout)

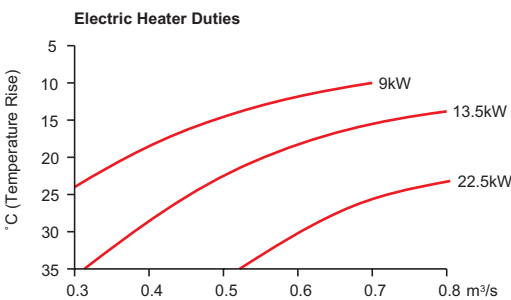
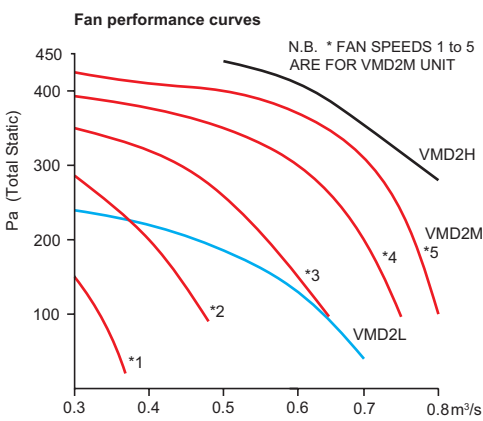
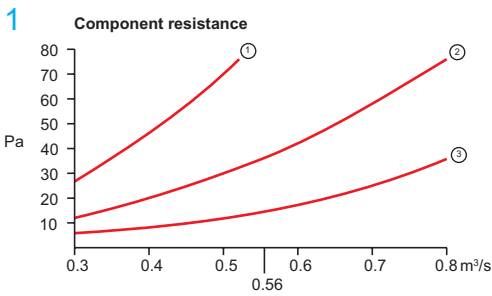
Pa	
A	35
B	35
C	35
D	13
EXT.	100
	218 Pa Total Static Pressure

VMD1 Supply Air Handling Unit - Selection Graphs



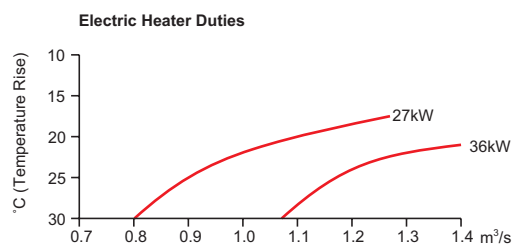
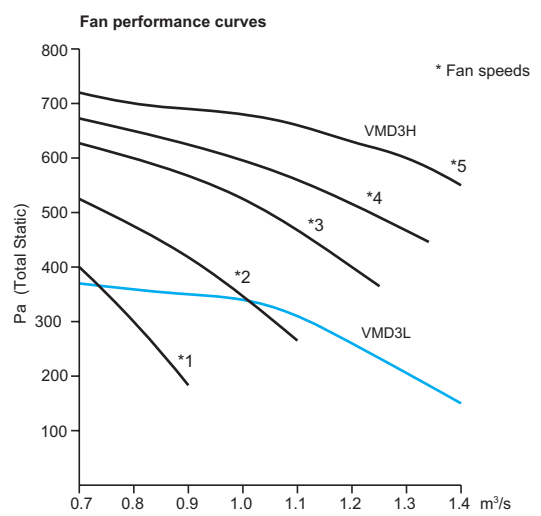
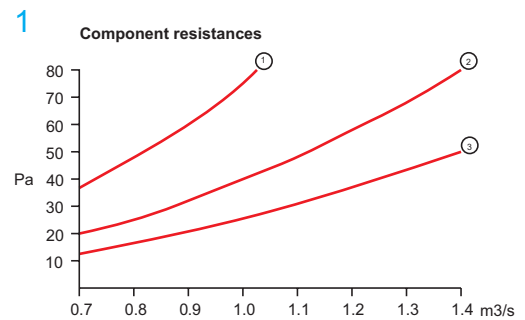
- 1**
- ① Deep cooling coil.
High density electric heater.
 - ② EU4 filter (1/2 dirty).
Standard electric heater.
Weather louvre.
 - ③ Clean filter.
Silencer.
Frost heater.

VMD2 Supply Air Handling Unit - Selection Graphs



- 1**
- ① Deep cooling coil.
High density electric heater.
 - ② EU4 filter (1/2 dirty).
Standard electric heater.
Weather louvre.
 - ③ Clean filter.
Silencer.
Frost heater.

VMD3 Supply Air Handling Unit - Selection Graphs



- 1**
- ① Deep cooling coil.
High density electric heater.
 - ② EU4 filter (1/2 dirty).
Standard electric heater.
Weather louvre.
 - ③ Clean filter.
Silencer.
Frost heater.

MSA, MSB & SL Minislim & Slimline Unit

Features and Benefits

- Performance range up to 0.9m³/s
- Motor Insulation Class B minimum
- Standard Thermal Overload Protection (S.T.O.P.)
- Anodised aluminium pentapost frame
- Double skinned panels
- Low profile direct drive units
- 1 Year Guarantee

Low profile direct drive Air Handling Unit - Duties from 0.05m³/s to 0.92m³/s

Designed specifically for applications with limited available height such as ceiling voids. Access (to be specified at time of ordering) can be from above or below with heater and motor connections on the left or right hand side.

The casing comprises of an AA25 anodised aluminium frame with high density glass reinforced nylon corners and double skinned panels of 0.7mm galvanised steel enclosing 25mm of 60kg/m³ mineral fibre insulation. All panels are retained by proprietary fasteners. All panels are sealed by a purpose designed leak seal gasket fully retained into the aluminium framework.

Minislim Unit - Duties from 0.05m³/s to 0.26m³/s

Similar to the Slimline unit but even more compact for smaller duties with a choice of 2 fan sizes within one unit size. The standard

unit comprises; - inlet flexible connector, EU5 bag filter, l.p.h.w. or electric heater, direct drive fan and outlet flexible connector. Access is top or bottom. The unit is suitable for internal mounting only.

Slimline Unit - Duties from 0.05m³/sec to 0.92m³/sec

Low profile direct drive units with forward curved centrifugal fans designed for applications where restricted height is a problem and top or bottom access is required. There are two sizes of unit each with four different fan options. All units are single phase with the exception of the SL081-4. They are all speed controllable and have Standard Thermal Overload Protection (S.T.O.P.). The standard unit comprises; -inlet flexible connector, EU5 bag filter, l.p.h.w. or electric heater, direct drive fan and outlet flexible connector. The unit is suitable for internal mounting only.

Specification

Direct Drive Fans have forward curved centrifugal impellers factory matched to an external rotor motor and statically and dynamically balanced to ISO 1940 as a complete assembly. The external rotor motors have sealed for life ball bearings. They incorporate Standard Thermal Overload Protection and are fully speed controllable. Insulation is Class B and the enclosure IP44 to DIN 40050 with the electrical design corresponding to DIN IEC 38. The motors are suitable for ambient temperatures of up to 40°C and atmospheres up to 95% R.H.

Flexible Connectors

The Flexible Connectors are manufactured from Revertex JPT 20 with ductmate flanges to DW142.

Bag Filters

Bag Filters are manufactured from fire retardant synthetic material with galvanised steel frames. The filter grade is EU5 to Eurovent 4/5.

L.P.H.W. Heater Batteries

L.P.H.W. Heater Batteries are constructed from copper tube, mechanically bonded to aluminium fins with the complete assembly housed in a galvanised steel casing. The coil headers and return bends are totally enclosed within the air handling unit casing. Flow and return connections are located on the same side of the unit and have male B.S.P. thread. L.P.H.W. Heater Batteries are pressure tested under water to 250p.s.i.

Electric Heater Batteries

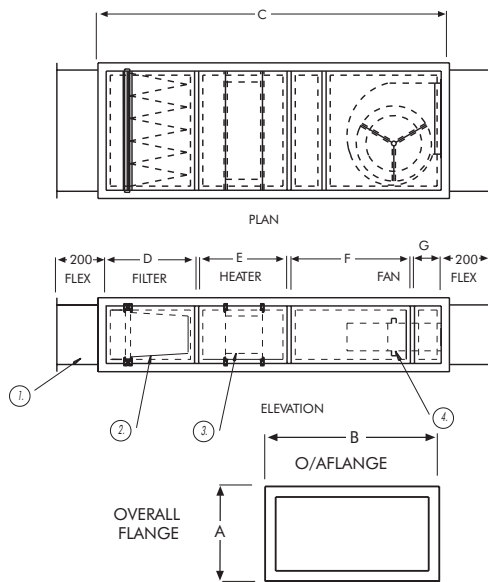
Electric Heater Battery elements are constructed from Nichrome 5 spiral resistance wire surrounded by magnesium oxide powder and sheathed in stainless steel. The elements are carried on a galvanised steel frame. All electric heaters incorporate a thermal cut out device. Electrical connections are via a flush mounted terminal box on the outside of the air handling unit casing.



Insertion loss for standard silencers

	Octave band mid frequency Hz								Length mm
	63	125	250	500	1k	2k	4k	8k	
Minislim	-4	-6	-12	-20	-27	-27	-20	-16	900
Minislim	-5	-9	-17	-28	-37	-37	-29	-24	1200
SL066	-5	-9	-17	-28	-37	-37	-29	-24	1200
SL066	-7	-12	-25	-35	-50	-50	-38	-30	1500
SL066	-8	-15	-28	-42	-50	-50	-46	-34	1800
SL081	-5	-9	-17	-28	-37	-37	-29	-24	1200
SL081	-7	-12	-25	-35	-50	-50	-38	-30	1500
SL081	-8	-15	-28	-42	-50	-50	-46	-34	1800

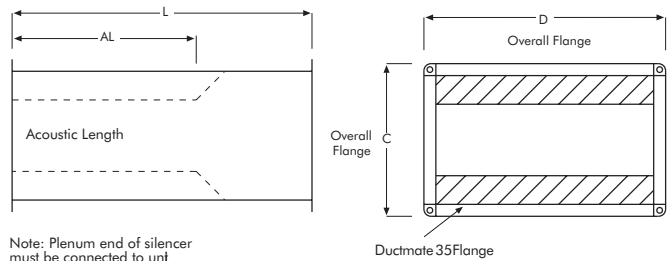
Unit Dimensions (mm)



Unit	SPIGOT						
	A	B	C	D	E	F	G
Minislim	360	660	1560	580	430	280	130
SL066	360	660	1860	580	430	580	130
SL081	360	810	1860	580	430	580	130

No.	Description
1	200mm Flexible Conn.
2	305mm Bag Filter
3	IPHWV Heater (1, 2 or 3 row) or Electric Heater Battery
4	Fan

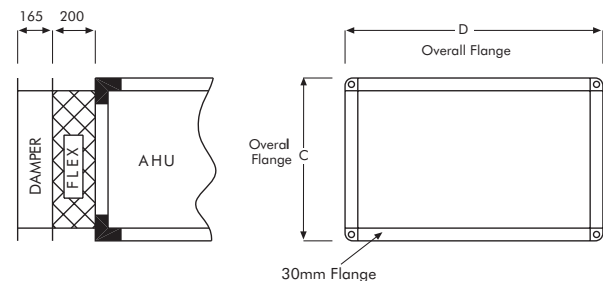
Accessories Dimensions (mm)



Note: Plenum end of silencer must be connected to unit

Ref. No.	Dimensions in mm				Approx Wgt kg
	L	AL	C	D	
Minislim	900	600	360	660	20
Minislim	1200	900	360	660	29
Minislim	1200	900	360	660	29
SL066	1500	1200	360	660	33
SL066	1800	1500	360	660	39
SL066	1200	900	360	810	37
SL081	1500	1200	360	810	42
SL081	1800	1500	360	810	48

Inlet Damper



Dampers are supplied with extended spindles - suitable for motorisation as standard.

Unit	Inlet Damper		Dim in mm		Approx Wgt kg
	Stock Ref. No		C	D	
Minislim	57CD-66		360	660	6
SL066	57CD-66		360	660	6
SL081	57CD-81		360	810	7

MSA, MSB & SL Minislim & Slimline Units

Typical performance for standard unit with bag filter, heater and fan section

Stock Ref.	m ³ /s at Pa															
	0	25	50	75	100	125	150	200	250	300	350	400	450	500	550	600
MS-A	0.21	0.203	0.194	0.183	0.173	0.162	0.152	0.127	0.103	0.077	-	-	-	-	-	-
MS-B	0.269	0.266	0.262	0.258	0.253	0.246	0.242	0.227	0.21	0.181	0.141	0.076	-	-	-	-
SL066-1	0.305	0.294	0.283	0.270	0.253	0.230	0.200	0.124	-	-	-	-	-	-	-	-
SL066-2	0.395	0.385	0.371	0.357	0.340	0.323	0.303	0.254	0.155	-	-	-	-	-	-	-
SL066-3	0.480	0.466	0.450	0.433	0.416	0.399	0.378	0.330	0.270	0.15	-	-	-	-	-	-
SL066-4	0.497	0.488	0.476	0.465	0.451	0.441	0.426	0.399	0.364	0.32	0.259	-	-	-	-	-
SL081-1	0.525	0.512	0.500	0.485	0.475	0.460	0.445	0.415	0.376	0.328	0.227	-	-	-	-	-
SL081-2	-	-	-	-	-	-	-	0.560	0.532	0.500	0.452	0.390	0.292	0.170	-	-
SL081-3	-	-	-	-	-	-	0.782	0.764	0.748	0.726	0.704	0.677	0.645	0.602	0.548	0.463
SL081-4	0.923	0.912	0.899	0.888	0.870	0.862	0.845	0.819	0.793	0.768	0.736	0.705	0.668	0.628	0.582	0.522

Resistance Details

Speed Ref.	Motor r.p.m	F.L.C kW	S.C. Amps	Supply Amps	Speed V/Hz/Ph	Controller
MS-A	1700	0.175	0.77	4.4	230/50/1	SPM 5020 / RTRE 20
MS-B	2050	0.30	1.31	6.0	230/50/1	SPM 5020 / RTRE 20
SL066-1	1180	0.36	1.90	8.0	230/50/1	SPM 5035 / RTRE 35
SL066-2	1230	0.49	2.30	10.0	230/50/1	SPM 5035 / RTRE 35
SL066-3	1230	0.78	3.70	14.0	230/50/1	SPM 5060 / RTRE 60
SL066-4	1130	0.89	4.20	17.0	230/50/1	SPM 5060 / RTRE 60
SL081-1	1130	0.89	4.20	17.0	230/50/1	SPM 5060 / RTRE 60
SL081-2	1180	0.97	4.60	18.0	230/50/1	SPM 5060 / RTRE 60
SL081-3	1160	1.75	8.30	32.0	230/50/1	SPM 5090
SL081-4	1300	2.40	4.30	18.0	400/50/3	RDTK 7

Note: Other types of speed controllers are available as are D.O.L. starters and electric heater controllers.

Sound power levels dBW re 10-12W (at full speed)

The dBA quoted is the mean A weighted sound pressure level measured at a distance of 3m with spherical sound level propagation. It is included for comparative purposes only and the mean sound level experienced will depend on the area being served.

Ref. No.		Octave band mid frequency Hz								dBA@ 3m
		63	125	250	500	1k	2k	4k	8k	
MS-A	Outlet	79	77	69	63	64	63	59	55	51
MS-A	Surroundings	71	69	53	33	30	30	26	22	34
MS-B	Outlet	89	87	79	73	74	73	69	65	61
MS-B	Surroundings	81	79	63	43	40	40	36	32	44
SL066-1	Outlet	80	78	77	75	73	71	63	57	58
SL066-1	Surroundings	72	70	61	45	39	38	30	24	37
SL066-2	Outlet	83	80	79	77	75	70	67	59	59
SL066-2	Surroundings	75	72	63	47	41	37	34	26	39
SL066-3	Outlet	90	87	86	81	82	78	73	63	65
SL066-3	Surroundings	82	79	70	51	48	45	40	30	36
SL066-4	Outlet	86	84	84	80	73	71	68	59	61
	Surroundings	78	76	68	50	39	38	35	26	43
SL081-1	Outlet	86	84	84	80	73	71	68	59	61
	Surroundings	78	76	68	50	39	38	35	26	43
SL081-2	Outlet	81	78	77	77	70	70	68	65	58
	Surroundings	73	70	61	47	36	37	35	32	37
SL081-3	Outlet	89	88	84	82	78	73	70	62	64
	Surroundings	81	80	68	52	44	40	37	29	46
SL081-4	Outlet	92	89	89	86	82	79	75	64	68
	Surroundings	84	81	73	56	48	46	42	41	48

The dBA quoted is the mean A weighted sound pressure level measured at a distance of 3m with spherical sound level propagation. It is included for comparative purposes only and the mean sound level experienced will depend on the area being served.

Silencer resistance (Pa) standard length silencer

Size	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.8	0.9	1.0
MS	2	4	7	11	16	-	-	-	-	-	-	-	-	-	-	-
SL066	2	4	7	11	16	22	29	37	-	-	-	-	-	-	-	-
SL081	1.5	3	5	8	11	15	19	24	30	36	43	51	59	77	97	120

Performance data for standard 1 and 2 row LPHW heaters at 82°C flow 71°C return

Air on		Leaving Air Temp °C @ m³/sec															
Ref. No.	Temp	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.9
Minislim	-5°C	21.5	19.5	17.5	16	14.5	-	-	-	-	-	-	-	-	-	-	-
1 - Row	0°C	25	22.5	21	19.5	18	-	-	-	-	-	-	-	-	-	-	-
Minislim	-5°C	33.5	31	28.5	26.5	24	-	-	-	-	-	-	-	-	-	-	-
2 - Row	0°C	36	33.5	31.5	29.5	27	-	-	-	-	-	-	-	-	-	-	-
SL-066	-5°C	24	22	20.5	19	17.5	16.5	15	14	12.5	-	-	-	-	-	-	-
1 - Row	0°C	27	25	23.5	22.5	21	20	18.5	17.5	16.5	-	-	-	-	-	-	-
SL-066	-5°C	40	37	35	33	31.5	29.5	28	26	24.5	-	-	-	-	-	-	-
2 - Row	0°C	-	-	37.5	35.5	34	32.5	30.5	29	27.5	-	-	-	-	-	-	-
SL-081	-5°C	26.5	24.5	23	22	20.5	19.5	18.5	17.5	16.5	16	15	14	13	12	11	9
1 - Row	0°C	29.5	27.5	26	25	24	23	22	21	20	19.5	18.5	17.5	17	16	15	13
SL-081	-5°C	-	38	36.5	34.5	33	32	30.5	29.5	28	26.5	25.5	24	23	21.5	20	17.5
2 - Row	0°C	-	-	38.5	37	35.5	34.5	33	32	31	29.5	28.5	27	26	25	23.5	21

Single Phase - Electric Heater

kW	1 Step	2 Step	3 Step	4 Step
	Heater	Heater	Heater	Heater
0.5	Yes	-	-	-
0.75	Yes	-	-	-
1.0	Yes	Yes	-	-
1.5	Yes	Yes	Yes	-
2.0	Yes	Yes	-	Yes
2.5	Yes	-	-	-
3.0	Yes	Yes	Yes	Yes
4.0	Yes	Yes	-	Yes
4.5	Yes	-	Yes	-
5.0	Yes	Yes	-	-
6.0	Yes	Yes	Yes	Yes
7.5	Yes	-	Yes	-
8.0	Yes	Yes	-	Yes
9.0	Yes	-	Yes	-
10.0	Yes	Yes	-	Yes
12.0	Yes	Yes	Yes	Yes

Three Phase - Electric Heater

kW	1 Step	2 Step	3 Step	4 Step
	Heater	Heater	Heater	Heater
3.0	Yes	Yes	-	-
4.5	Yes	Yes	Yes	-
6.0	Yes	Yes	-	Yes
7.5	Yes	-	-	-
9.0	Yes	Yes	Yes	Yes
12.0	Yes	Yes	-	Yes
13.5	Yes	-	Yes	-
15.0	Yes	Yes	-	-
18.0	Yes	Yes	Yes	Yes
22.5	Yes	-	Yes	-
24.0	Yes	Yes	-	Yes

Damper resistance (Pa)

Size	Air Volume m³/sec															
	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.8	0.9	1.0
MS	1	1.5	2.5	4	6	-	-	-	-	-	-	-	-	-	-	-
SL066	1	1.5	2.5	4	6	8	10	13	16	-	-	-	-	-	-	-
SL081	1	1.5	2	2.5	3.5	5	6.5	8	10	12	14.5	17	20	26	32	40

D1 to D6 Mini Direct Range

Features and Benefits

- Performance range up to 2.25m³/s
- Motor Insulation Class B minimum
- Standard Thermal Overload Protection (S.T.O.P.)
- Anodised Aluminium pentapost frame
- Double skinned panels
- Compact direct drive units
- Internal standard
- Optional external unit
- 1 Year Guarantee

Mini Direct Drive Units

Direct Drive Air Handling Units with neat and compact design. Access can be on the left or right hand side (to be specified at time of ordering).

Mini Direct Drive Unit - Duties from 0.05m³/s to 2.25m³/s

A compact and economical range of units with directly driven centrifugal fans. There are six standard unit sizes. All the fans are speed controllable for added flexibility and incorporate

Standard Thermal Overload Protection (S.T.O.P.). The standard unit consists of a rigid inlet connector, 100mm EU4 panel filter, l.p.h.w. or electric heater, direct drive centrifugal fan and rigid outlet connector.

Suitable for internal mounting as standard, models suitable for external mounting with optional roof canopy, inlet weather cowl and plastic coated panels (colour BS10A05) is available to order.

Specification

Direct Drive Fans have forward curved centrifugal impellers factory matched to an external rotor motor and statically and dynamically balanced to ISO 1940 as a complete assembly. The external rotor motors have sealed for life ball bearings. They incorporate Standard Thermal Overload Protection (S.T.O.P.) and are fully speed controllable. Insulation is class B and the enclosure IP44 to DIN 40050 with the electrical design corresponding to DIN IEC 38. Motors are suitable for ambient temperatures of up to 40°C and atmospheres up to 95% R.H.

Flexible Connectors

The Flexible Connectors are manufactured from Revertex JPT 20 with ductmate flanges to DW142.

Panel Filters

Panel Filters are manufactured from fire retardant synthetic material with galvanised steel frames. The filter grade is EU4 to Eurovent 4/5.

L.P.H.W. Heater Batteries

L.P.H.W. Heater Batteries are constructed from copper tube, mechanically bonded to aluminium fins with the complete assembly housed in a galvanised steel casing. The coil headers and return bends are totally enclosed within the air handling unit casing. Flow and return connections are located on the same side of the unit and have male B.S.P. thread. L.P.H.W. Heater Batteries are pressure tested under water to 250 p.s.i.

Electric Heater Batteries

Electric Heater Battery elements are constructed from Nichrome 5 spiral resistance wire surrounded by magnesium oxide powder and sheathed in stainless steel. The elements are carried on a galvanised steel frame. All electric heaters incorporate a thermal cut out device. Electrical connections are via a flush mounted terminal box on the outside of the air handling unit casing.



Typical performance for standard unit with panel filter, heater and fan section

Stock Ref.	0	25	50	75	100	125	150	200	250	300	350	400
D-1A	0.2	0.19	0.18	0.17	0.159	0.148	0.137	0.113	0.088	0.059	-	-
D-1B	0.262	0.258	0.254	0.249	0.244	0.238	0.231	0.215	0.19	0.158	0.116	-
D-2B	0.486	0.478	0.466	0.455	0.442	0.426	0.41	0.37	0.322	0.264	0.188	-
D-3C	0.5	0.48	0.46	0.437	0.412	0.383	0.351	0.279	0.184	-	-	-
D-3D	0.635	0.617	0.597	0.578	0.554	0.526	0.494	0.411	0.286	0.1	-	-
D-4D	0.686	0.671	0.653	0.633	0.612	0.587	0.56	0.481	0.351	0.106	-	-
D-4E	0.873	0.848	0.822	0.79	0.76	0.73	0.695	0.622	0.526	0.405	0.2	-
D-5E	0.965	0.938	0.91	0.88	0.848	0.816	0.78	0.7	0.6	0.468	-	-
D-5G	-	-	-	-	1.21	1.181	1.15	1.088	1.01	0.923	0.797	0.582
D-5H	1.392	1.366	1.34	1.311	1.285	1.257	1.23	1.17	1.1	1.02	0.925	0.755
D-6G	-	-	-	-	-	-	1.21	1.155	1.08	0.99	0.88	0.675
D-6H	1.484	1.45	1.425	1.4	1.395	1.335	1.3	1.245	1.175	1.1	1	0.88

Fan & Motor Data

Stock Ref. No.	Speed RPM	Motor kW	FLC Amps	SC Amps	Supply V/Hz/Ph	Speed Controller
D-1A	1700	0.175	0.77	4.4	230/50/1	SPM 5020 / RTRE 20
D-1B	2050	0.3	1.31	6	230/50/1	SPM 5020 / RTRE 20
D-2B	2150	0.35 x 2	1.45 x 2	6 x 2	230/50/1	SPM 5035 / RTRE 35
D-3C	1150	0.44	1.85	7.5	230/50/1	SPM 5035 / RTRE 35
D-3D	1100	0.7	3.05	13	230/50/1	SPM 5035
D-4D	1100	0.7	3.05	13	230/50/1	SPM 5035
D-4E	1100	1.02	4.8	24	230/50/1	SPM 5060 / RTRE 60
D-5E	1100	1.02	4.8	24	230/50/1	SPM 5060 / RTRE 60
D-5G	1120	1.52	7.1	28	230/50/1	SPM 5090 / RTRE 9
D-5H	1185	2	3.7	20	400/50/3	RDTK 7
D-6G	1120	1.52	7.1	28	230/50/1	SPM 5090 / RTRE 9
D-6H	1185	2	3.7	20	400/50/3	RDTK7
D-6J	1185	2.0 x 2	3.7 x 2	20 x 2	400/50/3	RD14

Note: Other types of speed controllers are available as are D.O.L. starters and electric heater controllers.

D1 to D6 Mini Direct Drive Range

Performance data for standard 1 and 2 row LPHW heaters at 82°C flow 71°C return

Stock Ref.	Air on Temp	Leaving Air temp °C @ m³/sec @Pa															
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.2	1.4	1.6	1.8	2	2.4
D1-1 Row	-5°C	21.5	17.5	14.5	-	-	-	-	-	-	-	-	-	-	-	-	-
D1-1 Row	0°C	25	21	18	-	-	-	-	-	-	-	-	-	-	-	-	-
D1-2 Row	-5°C	33.5	28.5	24	-	-	-	-	-	-	-	-	-	-	-	-	-
D1-2 Row	0°C	36	31.5	27	-	-	-	-	-	-	-	-	-	-	-	-	-
D2-1 Row	-5°C	24	20.5	17.5	15	12.5	-	-	-	-	-	-	-	-	-	-	-
D2-1 Row	0°C	27	23.5	21	18.5	16.5	-	-	-	-	-	-	-	-	-	-	-
D2-2 Row	-5°C	N/A	35	31.5	28	N/A	-	-	-	-	-	-	-	-	-	-	-
D2-2 Row	0°C	N/A	37.5	34	30.5	27.5	-	-	-	-	-	-	-	-	-	-	-
D3-1 Row	-5°C	27.5	23.5	21.5	19.5	17.5	16	-	-	-	-	-	-	-	-	-	-
D3-1 Row	0°C	30	26.5	24.5	22.5	21	19.5	-	-	-	-	-	-	-	-	-	-
D3-2 Row	-5°C	N/A	37	34	31.5	29	27	-	-	-	-	-	-	-	-	-	-
D3-2 Row	0°C	N/A	39.5	36.5	34	32	29.5	-	-	-	-	-	-	-	-	-	-
D4-1 Row	-5°C	27.5	24	22	20	19	17.5	16	15	13.5	12.5	-	-	-	-	-	-
D4-1 Row	0°C	30.5	27	25	23.5	22	21	19.5	18.5	17.5	16	-	-	-	-	-	-
D4-2 Row	-5°C	N/A	39.5	37	35	33	31	29.5	27.5	25.5	24	-	-	-	-	-	-
D4-2 Row	0°C	N/A	N/A	39.5	37.5	35.5	34	32	30.5	28.5	27	-	-	-	-	-	-
D5-1 Row	-5°C	-	-	-	-	23	22	21	20.5	19.5	18.5	17	15.5	-	-	-	-
D5-1 Row	0°C	-	-	-	-	26.5	25.5	24.5	23.5	23	22	20.5	19	-	-	-	-
D5-2 Row	-5°C	-	-	-	-	36.5	35	34	33	31.5	30.5	28.5	26.5	-	-	-	-
	0°C	-	-	-	-	39	37.5	36.5	35.5	34.5	33.5	31.5	29.5	-	-	-	-
D6-1 Row	-5°C	-	-	-	-	24	23	22.5	21.5	21	20	19	18	16.5	15.5	14.5	12.5
	0°C	-	-	-	-	27	26.5	25.5	25	24	23.5	22.5	21.5	20	19	18	16
D6-2 Row	-5°C	-	-	-	-	39.5	38.5	37.5	36.5	35.5	34.5	33	31.5	30	28.5	27	25.5
	0°C	-	-	-	-	-	-	39.5	39	38	37	35.5	34	32.5	31	29.5	27

Single Phase - Electric Heater

kW	1 Step	2 Step	3 Step	4 Step	5 Step	6 Step
	Heater	Heater	Heater	Heater	Heater	Heater
0.5	Yes	-	-	-	-	-
0.75	Yes	-	-	-	-	-
1	Yes	Yes	-	-	-	-
1.5	Yes	Yes	Yes	-	-	-
2	Yes	Yes	-	Yes	-	-
2.5	Yes	-	-	-	-	-
3	Yes	Yes	Yes	Yes	-	-
4	Yes	Yes	-	Yes	-	-
4.5	Yes	-	Yes	-	-	-
5	Yes	Yes	-	-	Yes	-
6	Yes	Yes	Yes	Yes	-	Yes
7.5	Yes	-	Yes	-	Yes	-
8	Yes	Yes	-	Yes	-	-
9	Yes	-	Yes	-	-	Yes
10	Yes	Yes	-	Yes	Yes	-
12	Yes	Yes	Yes	Yes	-	Yes

Three Phase - Electric Heater

kW	1 Step	2 Step	3 Step	4 Step	5 Step	6 Step
	Heater	Heater	Heater	Heater	Heater	Heater
3	Yes	Yes	-	-	-	-
4.5	Yes	Yes	Yes	-	-	-
6	Yes	Yes	-	Yes	-	-
7.5	Yes	-	-	-	-	-
9	Yes	Yes	Yes	Yes	-	-
12	Yes	Yes	-	Yes	-	-
13.5	Yes	-	Yes	-	-	Yes
15	Yes	Yes	-	-	Yes	-
18	Yes	Yes	Yes	Yes	-	Yes
22.5	Yes	-	Yes	-	Yes	-
24	Yes	Yes	-	Yes	-	-
27	Yes	Yes	Yes	-	-	Yes
30	Yes	-	-	Yes	Yes	-

Sound power levels dBW re 10–12W (at full speed)

The dBA quoted is the mean A weighted sound pressure level measured at a distance of 3m with spherical sound level propagation. It is included for comparative purposes only and the mean sound level experienced will depend on the area being served.

Stock Ref. No.		Octave band mid frequency Hz								dBA @ 3m
		63	125	250	500	1k	2k	4k	8k	
D-1A	Outlet	79	77	69	63	64	63	59	55	51
D-1A	Breakout	71	69	53	33	30	30	26	22	34
D-1B	Outlet	89	87	79	73	74	73	69	65	61
D-1B	Breakout	81	79	63	43	44	40	36	32	44
D-2B	Outlet	92	89	82	76	77	76	72	68	63
D-2B	Breakout	84	82	66	46	47	43	39	35	47
D-3C	Outlet	85	82	73	71	70	67	64	64	55
D-3C	Breakout	77	74	57	41	40	34	31	31	38
D-3D	Outlet	87	85	77	75	73	70	67	66	57
D-3D	Breakout	79	77	61	45	43	37	34	33	40
D-4D	Outlet	87	85	77	75	73	70	67	66	57
D-4D	Breakout	79	77	61	45	43	37	34	33	40
D-4E	Outlet	83	81	78	78	75	70	68	60	60
D-4E	Breakout	77	75	62	48	45	37	35	29	41
D-5E	Outlet	83	81	78	78	75	70	68	60	60
D-5E	Breakout	77	75	62	48	45	37	35	29	41
D-5G	Outlet	90	86	82	79	75	71	69	62	61
D-5G	Breakout	84	80	66	49	45	38	36	31	45
D-5H	Outlet	88	86	84	82	78	74	72	64	64
D-5H	Breakout	82	80	68	52	48	41	39	33	50
D-6G	Outlet	90	86	82	79	75	71	69	62	61
D-6G	Breakout	84	80	66	49	45	38	36	31	45
D-6H	Outlet	88	86	84	82	78	74	72	64	64
D-6H	Breakout	82	80	68	52	48	41	39	33	50
D-6J	Outlet	91	89	87	85	81	77	75	67	67
D-6J	Breakout	85	83	71	53	51	44	42	36	53

Insertion loss for standard silencers

Unit Size	Octave band mid frequency Hz								Length mm
	63	125	250	500	1k	2k	4k	8k	
D-1	-4	-6	-12	-20	-27	-27	-20	-16	600
D-2	-5	-9	-17	-28	-37	-37	-29	-24	900
D-3	-5	-9	-17	-28	-37	-37	-29	-24	900
D-4	-5	-9	-17	-28	-37	-37	-29	-24	900
D-5	-5	-9	-17	-28	-37	-37	-29	-24	900
D-6	-5	-9	-17	-28	-37	-37	-29	-24	900

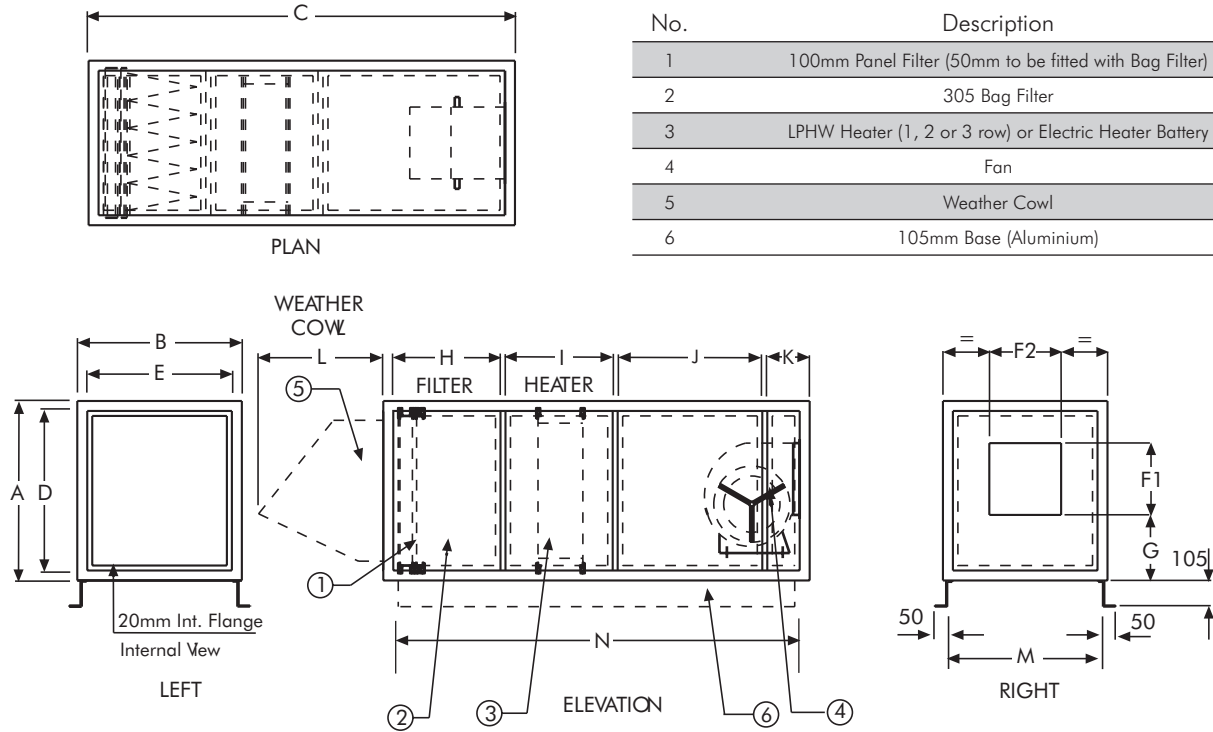
N.B. For data on other silencer lengths please enquire

Direct Drive Units

Stock Ref. No.	Maximum Electric Heater Size
D1	10.0kW
D2	15.0kW
D3	24.0kW
D4 TO D6	30.0kW

D1 to D6 Mini Direct Drive Range

Fan Dimensions (mm)



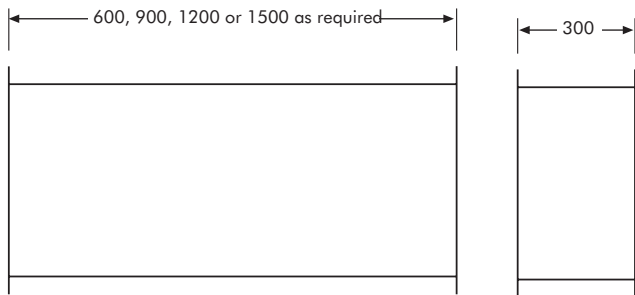
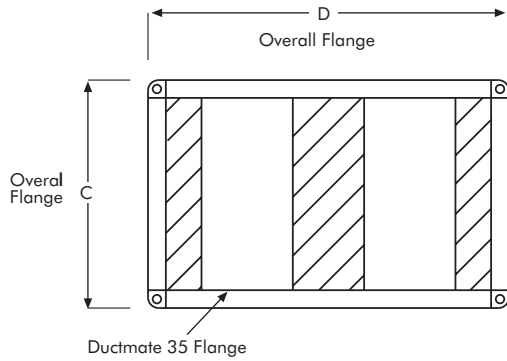
No.	Description
1	100mm Panel Filter (50mm to be fitted with Bag Filter)
2	305 Bag Filter
3	LPHW Heater (1, 2 or 3 row) or Electric Heater Battery
4	Fan
5	Weather Cowl
6	105mm Base (Aluminium)

Unit	A	B	C	D	E	F1	F2	G	H	I	J	K	L*	M*	N*
D1A	360	660	1560	280	580	102	168	172	580	430	280	130	200	625	1440
D1B	360	660	1560	280	580	102	232	172	580	430	280	130	200	625	1440
D2B	420	660	1560	340	580	232	204	93	580	430	280	130	250	625	1440
D3C	520	660	1560	440	580	146	287	281	580	430	280	130	300	625	1440
D3D	520	660	1560	440	580	146	287	281	580	430	280	130	300	625	1440
D4D	720	660	1560	640	580	146	287	432	580	430	280	130	500	625	1440
D4E	720	660	1710	640	580	160	365	456	580	430	430	130	500	625	1590
D5E	720	960	1710	640	880	160	365	456	580	430	430	130	500	925	1590
D5G	720	960	1710	640	880	188	365	435	580	430	430	130	500	925	1590
D5H	720	960	1710	640	880	188	365	435	580	430	430	130	500	925	1590
D6G	720	1260	1710	640	1180	188	365	435	580	430	430	130	500	1225	1590
D6H	720	1260	1710	640	1180	188	365	435	580	430	430	130	500	1225	1590
D6J	720	1260	1710	640	1180	188	730	435	580	430	430	130	500	1225	1590

*Dimension relates to weather proof unit

Accessories Dimensions (mm)

Standard silencer (single skinned)

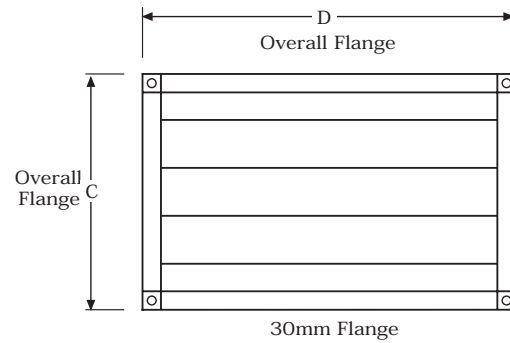
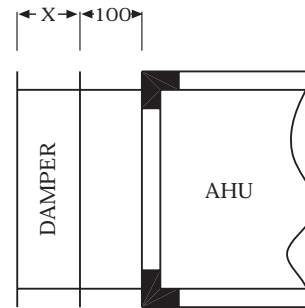


Outlet Diffusers for Connection to Silencer

This item is essential when connecting a silencer directly to the discharge side of a fan section. The flanges at either end match the AHU and silencer dimension.

Unit	Diffuser Stock Ref. No.	Dimensions in mm		Approx Wgt kg
		C	D	
D1	54BC1	360	660	18
D2	54BC2	420	660	21
D3	54BC3	520	660	32
D4	54BC4	720	660	40
D5	54BC5	720	960	46

Inlet Damper



Dampers are supplied with extended spindles suitable for motorisation as standard. When using a damper, a rigid connector will be required.

Unit	Inlet Damper Stock Ref.	Rigid Connector Stock Ref.	Flexible Connector Stock Ref.	Dimensions (mm)			Approx Wgt kg
				C	D	X	
D1	57CD-66	54MC1	68FC-1	360	660	165	6
D2	57CD-2	54MC2	68FC-2	420	660	165	6.5
D3	57CD-3	54MC3	68FC-3	520	660	165	7
D4	57CD-4	54MC4	68FC-4	720	660	165	9

Standard length silencer resistance (Pa)

Stock Ref.	Pressure Drop (Pa) Air Volume m ³ /sec															
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.2	1.4	1.6	1.8	2	2.4
D-1	2	8	18	-	-	-	-	-	-	-	-	-	-	-	-	-
D-2	1.5	5	12	20	31	-	-	-	-	-	-	-	-	-	-	-
D-3	1	4	8	14	21	31	41	54	-	-	-	-	-	-	-	-
D-4	1	2	4	7	10	15	20	26	32	40	58	-	-	-	-	-
D-5	1	1	2	4	5	7	10	13	16	20	29	39	51	65	80	-
D-6	1	1	2	2	3	5	6	8	10	12	18	24	31	29	48	70

Standard Range Control Systems



Single Phase SPM (Auto Transformer)

- Single Phase, 5 step auto-transformer speed controller
- Low motor noise - no magnetic hum.
- ON/OFF Switch
- IP54 enclosure

Stock Ref. No.	Max Peak Load Current	Dimensions H x W x D (mm)	Weight kg
SPM5020	2.0 amps	230 x 166 x 118	2.2
SPM5035	3.5 amps	230 x 166 x 118	3.5
SPM5060	6.0 amps	230 x 166 x 118	5
SPM5075	7.5 amps	284 x 240 x 132	6
SPM5090	9.0 amps	316 x 270 x 168	10.5
SPM5140	14.0 amps	316 x 270 x 168	16.5

Notes

- 1) Fans incorporating Standard Thermal Overload Protection connections will automatically re-start following a break in supply or operation of Standard Thermal Overload Protection. It is the responsibility of the installer to ensure adequate protection as required by statutory regulations.
- 2) For fans with Standard Thermal Overload Protection leads brought out it is recommended to use a separate VentAxia STE starter. For fans without Standard Thermal Overload Protection use a separate D.O.L. starter such as our RDO range.
- 3) With electronic speed controllers there is a possibility of some additional motor noise.



Single Phase RTRE - (enhanced Auto Transformer)

- Single Phase 5 step auto-transformer speed controller.
- Separate starter not required when used with Standard Thermal Overload Protected fans.
- Low motor noise - no magnetic hum.
- Additional terminals to allow connection of remote switching device.
- Additional terminals to allow connection of remote anti-freezing thermostat.
- IP54 enclosure.

Stock Ref. No.	Max Peak Load Current	Dimensions H x W x D (mm)	Weight kg
RTRE 20	2.0 amps	230 x 166 x 118	2.3
RTRE 35	3.5 amps	230 x 166 x 118	3.6
RTRE 60	6.0 amps	230 x 166 x 118	5.1
RTRE 75	7.5 amps	284 x 240 x 132	6.1

Refer to eDemand controller pages for additional control options



Three Phase RDTK (Auto Transformer)

- Three phase 5 step auto - transformer speed controller.
- Separate starter* not required when used with Standard Thermal Overload Protected fans.
- Low motor noise - no magnetic hum.
- Compact fire retardant surface mounting enclosure.
- Additional terminals to allow connection of remote switching device.
- Additional terminals to allow connection of remote anti-freezing thermostat.
- IP54 enclosure apart from RDTK4, RDTK7 and RD14 which are IP21.

Stock Ref. No.	Max Peak Load Current	Dimensions H x W x D (mm)	Weight kg
RDTK10	1.0 amps	284 x 240 x 132	4.7
RDTK20	2.0 amps	284 x 240 x 132	7.4
RDTK4	4.0 amps	316 x 270 x 168	12.9
RDTK 7	7.0 amps	316 x 270 x 168	18.7

* Other form of motor protection must be provided for units without Standard Thermal Overload Protection (S.T.O.P.).

** This controller does not incorporate overload protection. Other form of motor protection must be provided.

Electric Heater Controllers

Vent-Axia range of matching electric heater control packages are designed to meet your every requirement.

CMS RANGE - 'Control made simple'

- Compact fire retardant polycarbonate surface mounting enclosure.
- Supply fan connections.
- Fan interlock.
- Integral fan run on timer for heat dissipation.
- High temperature cut-out connections.
- Fascia indication for FAN 'RUN' / HEAT 'ON' / POWER 'ON'.
- Connections for thermostats.
- Connections for remote clock operation.

HEATING LOAD from 3kW to 9kW - in 1, 2 or 3 steps

SUPPLY - 230V / 1Ph / 50Hz

Options:

- (1) Surface mounting time clock
- (2) Duct or room thermostat.
- (3) Air proving switch
- (4) Differential switch

Dimensions: 332mm H x 316mm W x 147mm D

VHC RANGE - Customised specification both stepped and thyristor control options are available. Please enquire.

Air Handling Design Request Form



To request an AHU design, download the online design request form from the Vent-Axia range, please go to our website www.vent-axia.com



At Vent-Axia we have a history of innovation. When you look at our heritage, it soon becomes clear why we have been the First name in Ventilation since our inception



Vent-Axia Firsts

1936 - Marine engineer Joe Akester invented the unitary extractor fan 'Silent 6' made from Bakelite material. The original products featured DC motors.

1945 - Following the Second World War, Sir Winston Churchill bought two Silent 6 fans for his Chartwell home. A copy of the cheque for £28.19s 8p is in Vent-Axia's reception area at Crawley.

1953 - The 'X type' fan was produced in 4 sizes and the unique 'R type' controller enabled the fans to be reversed for the first time.

1961 - Vent-Axia Standard Range was launched and applications became more varied with the first dedicated models for roof and wall mounting and even a model for commercial and military vehicles.

1975 - The Universal fan range featured the first 'centrifugal' shutter mechanism that allowed the shutters to operate in both directions without pull-cords.

1985 - The T Series' product range featured a patented DC solenoid shutter and offered unique applications like In-Line and Dark Room models. Accessories like the Direct Mount Spigot and wall terminations also enabled the fans to be used with ducting as a complete installation kit.

1985 - Vent-Axia was the first, (in fact the only) fan company to be awarded the Royal Warrant by the Queen for supplying unit ventilation to Royal Households.

1992 - The 16th edition of IEE regulations 'on site guide' was issued and Vent-Axia launched the first Safety Extra Low Voltage fan to meet the requirements for electrical safety in bathrooms.

1994 - The patented LuminAir became the first fan and light combination and its IP57 protection made the unit electrically safe for shower installation.

1997 - Domestic energy efficient ventilation began with the launch of the LoWatt range featuring a DC motor and patented shutter system that used no additional power.

2002 - Commercial fans became energy efficient with LoWatt T Series launched at Interbuild in Birmingham.

2006 - The Sentinel range was developed as the first 'Demand' ventilation system with energy efficient EC/DC motors.

2007 - Vent-Axia launched the first complete Lo-Carbon ventilation range featuring Residential Fans, MEV, MVHR and Commercial Energy Efficient products.

2008 - As part of the Sentinel family, Totus 'Demand' Energy Recovery became the first low energy commercial ventilation system with a 90% efficient energy recovery and EC/DC motor.

2009 - Sentinel Kinetic becomes the first Lo-Carbon product with 90% heat recovery and cooker hood facility.

2011 - Tempra first 100mm Single Room Heat Recovery Unit



By Appointment to H.M. The Queen
Suppliers of Unit Ventilation Equipment
Vent-Axia Ltd., Crawley, Sussex



By Appointment to H.M. The Queen
Suppliers of Unit Ventilation Equipment
Vent-Axia, Crawley, West Sussex

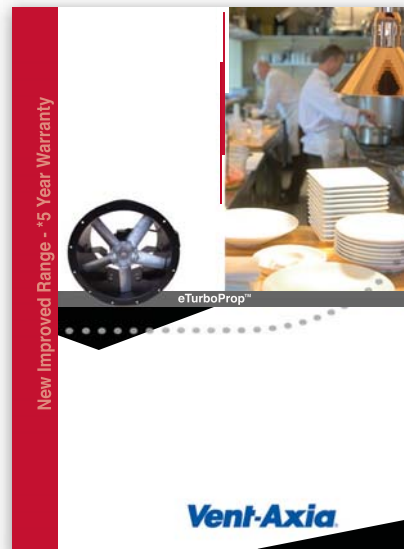
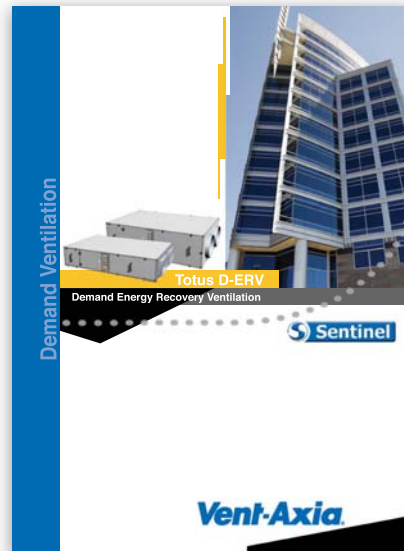
Vent-Axia®

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Supply & Service

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