



TECHINCAL SUBMITTAL

Quotation Ref: QT337041 Rev 2 - 6 x SV15D with Humidity

Project: Charmeldon - Reynolds House Data Centre
Phase III Ground and 1st Floor

Date: 22/05/2023

Company Name: Charmeldon

For the Attention of: Mr Gary Hall

TECHNICAL SUBMITTAL

Dear Gary,

We thank you for your valued enquiry for the above project and are pleased to submit our technical submission for the selected equipment as summarised below.

- 6 No SV15D040-X100-0 complete with CR50-0 Horizontally configured air discharge condensing units and 3gk/hr Humidification capacity.

We trust that we have interpreted your requirements correctly and that our technical submission meets with your approval. However, should you require any further information please do not hesitate to contact me quoting the Airedale Reference shown above.

We look forward to working with you on this project.

Information Regarding Global Supply Change

The global Semi-Conductor shortage has impacted many industries across the globe, this has been further compounded by the ongoing war in Ukraine. This has effected numerous supply chains around the world.

As a result of this ongoing disruption, product lead times provided in this proposal/order acknowledgment are based on current manufacturing capability and are subject to change until all parts are received and are available to commence production.

In some instances (where appropriate) we may offer product under concession with the customers approval. This would support faster delivery, meaning outstanding parts would be fitted on site once available. In such instances an invoice will be raised to allow partial payment in line with our standard terms and conditions of sale.

Communication is the key to our success and we will provide regular updates on product lead times, parts and despatch dates.

Yours faithfully,



Jeremy Champion

CHVAC Sales Engineer - Commercial & Industrial

Airedale International Air Conditioning Ltd.

Leeds Road, Rawdon, Leeds LS19 6JY, UK

e: jeremy.k.champion@airedale.com

m: +44 (0) 7860 675 187

SmartCool MODEL NOMENCLATURE

Model SV15D040-X100-0 Nomenclature – Qty 6 with Humidification Option

Tag:

1	2	3,4	5	6,7,8	9	10	11	12	13	14	15
S	V	15	D	40	-	X	1	0	0	-	0

1 – Product Type

S: SmartCool Unit

2 – Product Variant

V: Variable Speed Compressor

3,4 – Case Width

15: 1500mm

5 – Flow Configuration

D : Down Flow

6,7,8 – Nominal Cooling Capacity

40: 40 kW

9 – Separator

10 – First Identifier

X: DX Air Cooled

11 – Second Identifier

1: Single Compressor

12 – Third Identifier

0: Not Chilled Water

13 – Forth Identifier

0: Not Used

14 – Separator

15 – Power Supply

0: 400V/3~/50Hz + N

TECHNICAL SUBMITTAL

Summary

This section includes computer room air conditioning units and accessories as indicated on drawings and schedules, equipment designed to provide environmental precision air conditioning for applications such as telecommunication facilities, data centres, computer rooms, clean rooms and laboratories

Quality Assurance

We hereby declare under our sole responsibility as manufacturer that the apparatus detailed in this document complies with all relevant EU Directives, as listed below. If alterations are made to the appliance without prior consultation with us, this becomes invalid.

Relevant EU Council Directives:

Machinery (MD) 2006/42/EC
Pressure equipment (PED) 2014/68/EU
Electromagnetic Compatibility (EMC) 2014/30/EU

Applied harmonised standards, where applicable, in particular:

EN 12735-1	EN 12735-2	EN 378-1	EN 378-2	EN 378-4
EN 13134	EN 61000-6-2	EN 61000-6-4	EN ISO 12100	EN 10204
EN 60204-1	EN ISO 13585	EN 14276-1	EN 14276-2	

Issue status of standards relevant at the time of issue:

PED Conformity Assessment Module A2:

Refer to PED Certificate Module H CE54847

Quality Certificates:

Quality Assurance to BS EN ISO 9001: 2015
BSI Certificate No. FM00542

PED Notified Body No: 2797
BSI, Say Building, Amsterdam, 1066 EP, Netherlands

Warranty:

Type	Cover Level	Warranty Period
UK & Export Supply Only	Parts Only Warranty	12 months from date of commissioning, or 18 months from date of despatch whichever is the sooner.
UK Only Supply & Commissioned by Airedale ¹	Parts & Labour Warranty	12 months from date of commissioning, or 18 months from date of despatch whichever is the sooner.

¹ Applicable to All AIAC products with the exception of the ARTUS Unit

TECHNICAL SUBMITTAL

General

The computer room air conditioning equipment shall be designed specifically for precision temperature and humidity control applications. It shall automatically monitor and control cooling, humidification and filtering functions for the conditioned space. The system shall be built to the highest quality engineering and manufacturing standards and shall be subject to a functional test prior to leaving the factory.

Construction

The cabinet shall be manufactured using a steel frame. Panels shall be removable so that access can be gained to the side and rear of the unit by removing panels during installation.

The galvanised sheet steel panels and frame shall be coated with an epoxy baked powder paint to provide a durable finish. Standard unit colour shall be Black Grey to RAL 7021.

Cabinets shall be lined internally with various thickness fire resistant foam (BS 476) for thermal and acoustic insulation. The insulation density shall not be less than 75 kg/m³.

The cabinet doors shall be full height, hinged and key lock secured. The hinge arrangement shall allow flexible door opening/removal for improved access. A propriety rubberised door seal shall reduce sound breakout and eradicate air leakage. In-seal type foam based door seals shall not be acceptable.

The unit design shall incorporate a series of M6 fixings to the top and bottom face to ease customer ductwork connection and reduce installation time.

Refrigeration System

Evaporator Coil - shall be ideally positioned to optimise airflow and heat transfer; they shall be manufactured from refrigeration quality copper tube with mechanically bonded aluminium fins. The copper tube shall be internally cross hatched for improved heat transfer. Fins shall be coated with a non-stick acrylic (hydrophilic) film to provide additional corrosion protection and efficient surface water removal for improved performance. Plain aluminium shall not be acceptable. The cooling coil shall be mounted over a full width stainless steel condensate tray. The factory pressure test shall be not less than 45Barg. Sweated copper pipe for brazed connection shall be standard.

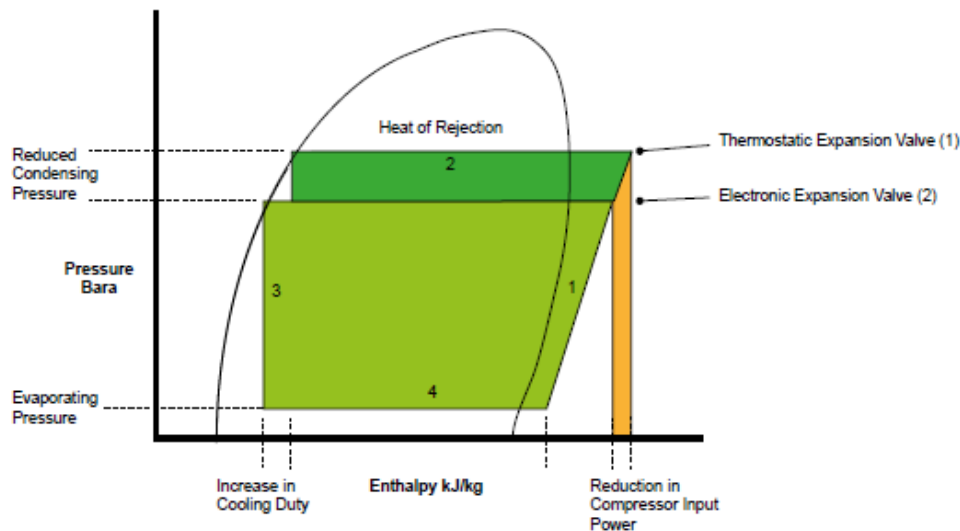
Electronic Expansion Valves (EEV) - Electronic expansion valves differ to the normal thermostatic expansion valves in their ability to maintain control of the suction superheat at reduced head pressures. This can lead to significant energy savings particularly at reduced loading and low ambient temperatures. EEV step position, superheat setpoint, head pressure set point and other features can be viewed and adjusted via the microprocessor display.

Whilst offering versatile control at the full design duty of the unit, Thermostatic Expansion Valves (TEV) do not automatically optimise themselves to all operating conditions. Therefore, if the refrigeration system is operating at 40% or 50% of full load, especially at a lower ambient temperature than that for which the valve was sized, the conventional TEV must have the design head pressure available to ensure good refrigerant control. Maintaining an artificially high condensing pressure is normal in conventional systems.

Using an EEV allows for good refrigeration control whilst operating at part load and lower ambient conditions with a reduced condensing pressure. By fitting an EEV and adjusting the head pressure control setting an increase in the system EER (Energy Efficiency Ratio) of up to 30% can typically be seen. The Mollier diagram shown below helps to illustrate how this increase in efficiency is achieved.

EEVs differ from thermostatic expansion valves in their ability to maintain control of refrigerant flow and suction superheat at reduced head pressures. The turn-down rate of a typical EEV is superior to that of its thermostatic equivalent, such that a reduced optimum condensing pressure can be maintained at low compressor load. However low the load is on the compressor, from 0 to 100%, there will not be a problem with turndown, even down to 10% of the valve's rated capacity.

TECHNICAL SUBMITTAL



Key:

(1) Cooling Cycle @ 22°C ambient with a conventional TEV fitted.

(2) Cooling Cycle @ 22°C ambient, showing a typical EEV condensing temperature taking full advantage of lower ambient air temperatures (below 35°C).

Compressor(s) - shall be mounted on the unit base via the use of vibration isolators. Each compressor shall be designed for use with R410A refrigerant

One refrigeration circuit with discharge check valve(s) and liquid line pressure transducer.

Inverter Drive - The compressors shall be driven by an inverter drive, which has improved envelope management capabilities, a reduced footprint and a fast start sequence. The inverter drive shall allow the compressors in the SmartCool Inverter range to vary running speed from 100% down to 16% of maximum achievable speed. The inverter drive is BMS compatible. Configuration and programming, as well as the start/stop controls and speed reference, are managed by a CAREL pCO controller or any BMS (Building Management System) via RS485 serial connection using the ModbusR protocol.

Head Pressure Control

Intelligent Modulation - The system shall be fitted with a voltage regulating fan speed controller which allows set point adjustment and system monitoring via the indoor unit microprocessor controller. A pressure transducer is fitted to the liquid line which in turn feeds back the head pressure to the microprocessor. The condenser fan speed can then modulate via the controller to provide optimum control under varying ambient conditions. The head pressure can be monitored via the display keypad.

Airflow Components

Electronically Commutated (EC) Fan Motor - Shall be backward curved impellers, direct drive centrifugal fan assemblies with integral hub mounted motor which is statically and dynamically balanced for quiet operation.

The impellers shall be single mould composite plastic with a galvanised rotor and die cast aluminium EC power module. EC motors incorporate integrated electronics to convert AC power to DC for efficient and accurate speed control and are adjustable via the microprocessor display keypad. The fans offer maximum air flow performance while keeping sound levels to a minimum. It gives the flexibility of connecting to AC mains with the efficiency and simple speed control of a DC motor. The EC fan offers significant power reduction in comparison with an equivalent AC fan at both full and modulated fan speeds. The inbuilt EC fan control module allows for fan speed modulation from 15-100%, a standard AC fan's modulating range is typically 40-100% of full fan speed.

Air Flow Switch - An adjustable differential pressure switch shall activate a visual alarm at the status panel and break the power supply in the event of a fan or motor failure.

Standard Fan Control - Fixed fan speed that is adjustable via the unit display.

TECHNICAL SUBMITTAL

Filtration

ISO-C-75 Air Filtration - Vertical Pleated disposable panel filters in a rigid frame. Conforming to EN16890:2016. Access and removal from unit front.

Filter Alarm - As standard the microprocessor provides an alarm following a pre set run time limit being exceeded indicating the requirement for the filters to be changed.

Humidification

Control Principles - In a humidifier with electrodes, steam shall be produced by passing a current between electrode plates and the water to generate heat. The higher the current being passed between the electrodes, the greater the quantity of steam that is produced. To modulate the rate of steam production, this system shall vary the level of water within the cylinder, thereby increasing the immersion level of the electrodes and the current being passed between them. The more conducting area that is available to pass current between the electrodes, the larger the amount of steam that shall be produced. Modulated by the controller, the water level is varied so that the level of steam being produced ensures that the room humidity set-point is continually maintained within a tight tolerance.

Optimised Lifetime - The life span of the Airedale humidification system shall be optimised by the inclusion of a water conductivity sensor into the bottle feed. This sensor shall determine the conductivity level of the supply water and by using an algorithm embedded in the software, determines the frequency that the bottle should be drained. Example: As liquid water is boiled off into steam, mineral deposits are left in solution increasing the conductivity of the water. To counter this, the intelligent software increases the frequency of drain meaning that the replenishing supply water keeps the concentration of minerals diluted. By maintaining an acceptable mineral concentration, the bottle lifespan is maximised.

3kg/hr. Humidifier - Intelligent modulation shall be provided by an electrode boiler. The sealed humidifier design shall ensure that only clean sterile steam is supplied to the conditioned area and corrosive salts and minerals are held in the disposable bottle. The steam shall be distributed through a sparge pipe fitted to the coil assembly.

Electrical Components

The control panel shall contain the necessary contactors, transformer, sub circuit protection, volt free contacts for a common alarm and mains and inter-connecting terminals. The panel is situated within the cabinet and allows for essential maintenance of other components within the unit. The electrical control panels are wired to the latest European standards and codes of practice.

This system has been designed to be connected to a 400V/3~ /50Hz + N type distribution system.

Controls

The units shall be supplied with a European ROHS Directive 2002/95/EC compatible microprocessor controller. The microprocessor controller offers powerful analogue and digital control to meet a wide range of monitoring and control features including a real time clock and Industry standard communication port and network connections. All the boards feature a 32-bit microprocessor, and consequently the calculation power and operation processing speed have been significantly increased. Also featured are a visual alarm and the facility to adjust and display control settings by local operator for information and control.

Helix Terminal - The display keypad features a simple array of keys to navigate through the in-built menus. With an 8 x 22 character (132 x 64 pixel) screen size, back lit in white for improved contrast, the larger screen shall provide for user friendly viewing and easy status recognition by displaying a combination of text and icons. The default screen shall show the unit status and room condition (°C/RH %) without the need for interrogation and an easy to navigate menu structure for further interrogation and adjustment shall be provided.

Supply Air Temperature Control - A temperature sensor shall be mounted in the supply air side of the unit to sense the supply air condition, also a combined temperature and humidity sensor shall be mounted in the return air side of the unit to sense the return air condition. The temperature sensors shall be an NTC type thermistor with an accuracy of not less than +/- 5% at 25°C at the sensor.

TECHNICAL SUBMITTAL

The supply sensor is supplied loose for onsite fitment. The sensor should be located under the floor void (in the centre of the unit, 1.5m away) away from obstructions.

The microprocessor shall sense the supply air conditions and maintain the supply air temperature by modulating the unit capacity and by controlling cooling outputs accordingly, this will ensure that user defined supply air set point and/or the high/low return air temperature alarm shall be maintained.

The microprocessor shall sense the return air conditions and maintain the return air humidity by controlling humidification outputs accordingly. The microprocessor shall monitor and display the following values as a minimum:

- Supply Air Temperature.
- Return Air Temperature.
- Return Air Humidity.
- Fan Run Hours.
- Humidifier Run Hours.
- Compressor Run Hours.

Alarm Log - The controller shall log and allow viewing of not less than the last 200 conditions recorded in descending chronological order through the keypad display. The standard display keypad shall visually display operating alarms, however, as an optional extra, a display keypad with audible alarms is available

Networking - No network will be configured and all the units will operate to their own setpoints.

Additional Factory Installed Options

BACnet RS485 Interface - The Airedale Helix controller shall be able to communicate directly using the BACnet MS/TP® protocol. Some of the key benefits of BACnet interfacing and Open Protocol are listed below:

- Simple plug-in interface card
- RS485 compatible
- integration of equipment from different manufacturers
- Media sharing – using same communication cables
- Inter-linking of different building services

Packing Option

Standard Packing – The unit(s) shall be mounted on a wooden pallet and covered with polythene. The unit(s) shall be strapped/mechanically fastened to the pallet(s) for transportation purposes. All wooden parts are treated to meet the International Standards for Phytosanitary Measures (ISPM).

Additional Supplied Loose Options

Open Floorstand - Shall be complete with adjustable feet and floor tile lip.

TECHNICAL SUBMITTAL

Outdoor Unit - CR50-0 Horizontal – Qty 6

Painted Galvanised Unit Case - The unit shall be coated with epoxy baked powder paint to provide a durable finish. The optional paint colour shall be Light Grey (RAL 7035).

Fan & Motor Assembly - Shall be an axial flow fan assembly with low noise sickle type blades.

Electronically Commutated (EC) Fan Motor - Shall incorporate external EC rotor motor technology to provide highly accurate discreet speed control. The fans offer maximum air flow performance while keeping sound levels to a minimum. Each fan shall incorporate electronically commutated DC motor control using semi-conductor modules responding to a signal from the Airedale indoor unit or from an independent control module for standalone units. EC motors are DC motors with integrated AC to DC conversion; this gives the flexibility of connecting to AC mains with the efficiency and simple speed control of a DC motor. The EC fan shall offer significant power reduction in comparison with equivalent AC fan at both full and modulated fan speeds. The inbuilt EC fan control module shall allow for fan speed modulation from 15-100%, the modulating range of a standard AC fan is typically 40-100% of full fan speed.

Horizontal Air Discharge - As standard, unit legs are attached and delivered in the horizontal air discharge mode as are the isolator and fan speed controller. The legs attached to the top of the unit are for lifting and stacking and shall be removed and stored safely if not required. Only 2 units may be stacked together.

Condenser Coil - Large surface area coil(s) ideally positioned to optimise airflow and heat transfer, manufactured from refrigeration quality copper tube with mechanically bonded aluminium fins. The copper tube is internally rifled for improved heat transfer. Factory pressure tested to 45barg. Sweat copper pipe for brazed connection as standard.

Condenser Coil Coating - Epoxy-coated condenser coil fins to provide corrosion protection.

Mains Isolator - A weatherproof mains isolator shall be fitted to ensure complete unit isolation of the electrical panel during adjustment and maintenance.

Head Pressure Control - Variable head pressure control shall be provided by the indoor unit.

Packing Option

Standard Packing – The unit(s) shall be mounted on a wooden pallet and covered with polythene. The unit(s) shall be strapped/mechanically fastened to the pallet(s) for transportation purposes. All wooden parts are treated to meet the International Standards for Phytosanitary Measures (ISPM).

SmartCool TECHNICAL DETAIL

Model SV15D040-X100-0 – Qty 6

Tag:

<u>Operating Conditions</u>			
Air On Temperature (db)	26.0	°C	
Air On Relative Humidity	40.0	%	
Air Off Temperature (Sensible)	14.5	°C	
Ambient	35.0	°C	
Refrigerant	R410A		
No. of Refrigeration Circuits	1		
Dimensions (mm)	1500 x 1980 x 890	WxHxD	Machine Mass 510 kg
<u>Predicted Performance (Gross)</u>			
Total Mechanical Cooling Capacity	45.0	kW	
Sensible Mechanical Cooling Capacity	45.0	kW	
EER Mechanical Cooling	2.30		
CCT 1 Evaporating Temperature	8.6	°C	
CCT 1 Condensing Temperature	53.7	°C	
Total Power Input (Unit)	18.4	kW	
Total Power Input (System)	19.5	kW	
Unit Airflow	3.31	m³/s	Sound Pressure Level at 3.0 m 62.2 dB(A)
<u>Fan Data</u>			
Type	EC Motor		Fan Speed 1,607 rpm
Quantity	2		Power Supply 400V/3~/50Hz
Full Load Amps / Fan	2.9	A	Maximum ESP 243 Pa
Full Load Amps / Unit	5.8	A	Selected ESP 25 Pa
Total Power Input	2.2	kW	Impeller Type Backward Curved
<u>Compressor Data</u>			
Type	Scroll		Motor Rating 17.96 kW
Quantity	1		Total Power Input 16.15 kW
Nominal Run Amps	37.2	A	Power Supply 400V/3~/50Hz
Locked Rotor Amps	42.80	A	
<u>Electric Heating Data</u>			
Total Rating	N/A	kW	Number of Elements N/A
Current Per Phase	N/A	A	Stages of Reheat N/A
<u>Humidification Data</u>			
Capacity	3.00	kg/hr	Cylinder Disposable
Full Load Amps	3.30	A	Conductivity Type Standard
Rating	2.25	kW	
<u>Unit Electrical Data*</u>			
Single Power Supply	400V/3~/50Hz + N		Recommended Mains Fuse Size 63 A
Running Load Amps	53.90	A	Max Mains Incoming Cable Size 16 mm²

*Electrical data is for reference only, for current data please contact Airedale.

Please note that whilst Airedale endeavours to ensure that the provided unit performance data is accurate at time of pre-tender, due to our continual development policy we reserve the right to amend this information without due notice

OUTDOOR UNIT TECHNICAL DETAIL

Indoor Unit - SV15D040-X100-0

Outdoor Unit - CR50-0 Horizontal – Qty 6

<u>Construction</u>		
Material	Galvanised Sheet Steel	
Paint Type	Epoxy Baked Powder	
Colour	Light Grey (RAL 7035)	
Number of Circuits	1	
Refrigerant Type	R410A	
Holding charge	Inert Gas	
Machine Dry Mass	150	kg
Dimension (H x W x L) (1)	1217x1167x2177	mm
<u>Fan Data</u>		
Type	Axial-EC	
Number of Fans	2	
Diameter	630	mm
Maximum Speed	1024	rpm
<u>Per Fan</u>		
Full Load Amps	3.3	A
Motor Rating	0.8	kW
Locked rotor Amps	N/A	A
<u>Unit Electrical Data</u>		
Mains Supply	230V/1~/50Hz + N	
Nominal Run Amps	6.6	A
Maximum Start Amps	6.6	A
Recommended Mains Fuse Size	10	A
Max Mains Incoming Cable Size	6	mm ²
<u>Unit Mechanical Data</u>		
Total Face Area	2.15	m ²
Nominal Airflow	4.8	m ³ /s
Coil Volume	10.7	l
Refrigerant Charge (2)	4.2	kg

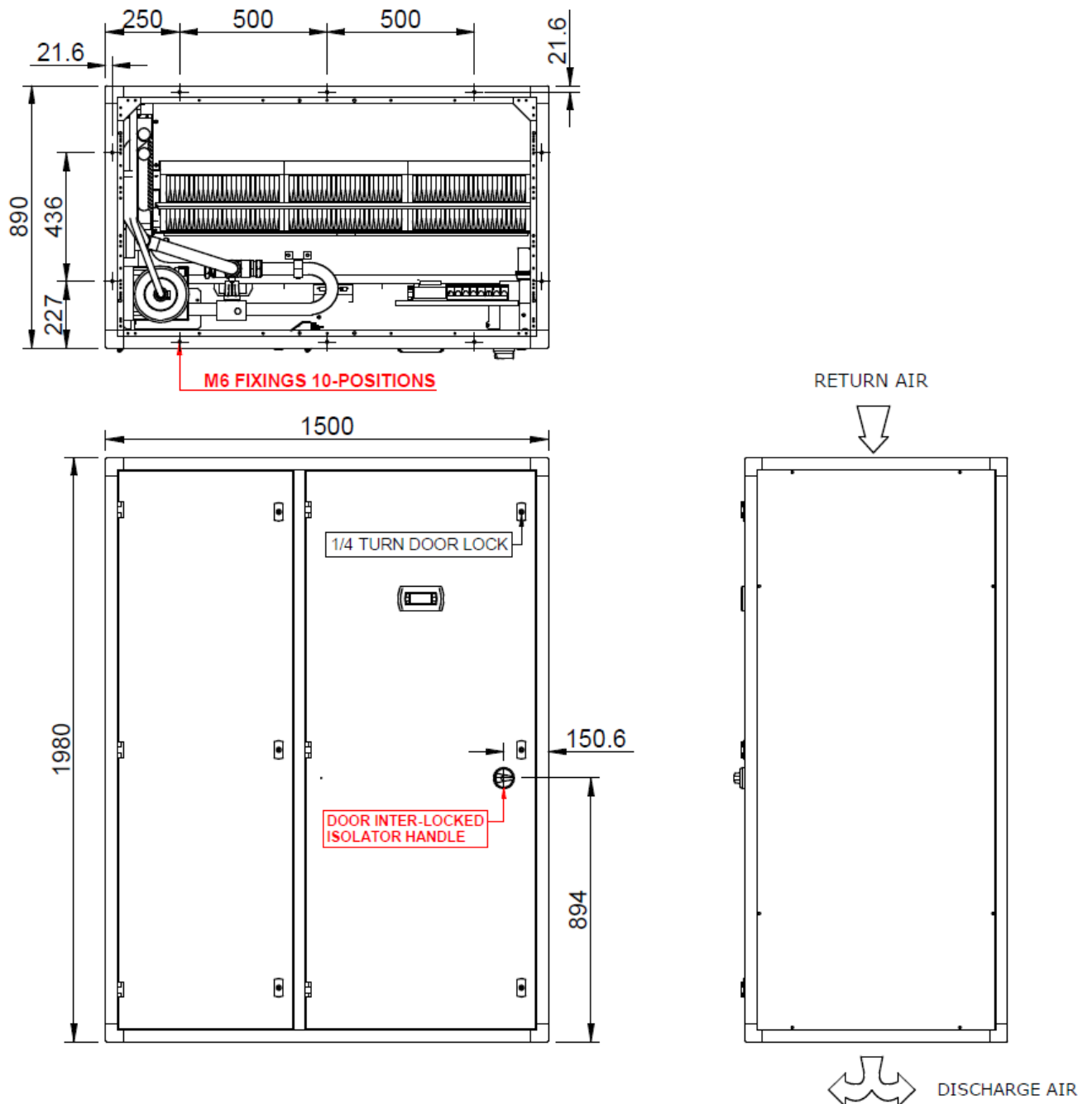
- (1) Overall dimensions for clearance;
 (2) For guidance only.

Please note that whilst Airedale endeavours to ensure that the provided unit performance data is accurate at time of proposal, due to our continual development policy we reserve the right to amend this information without due notice

GENERAL ARRANGEMENT – UNIT

Model: SV15D040-X100-0 General Arrangement – Qty 6

Tag:

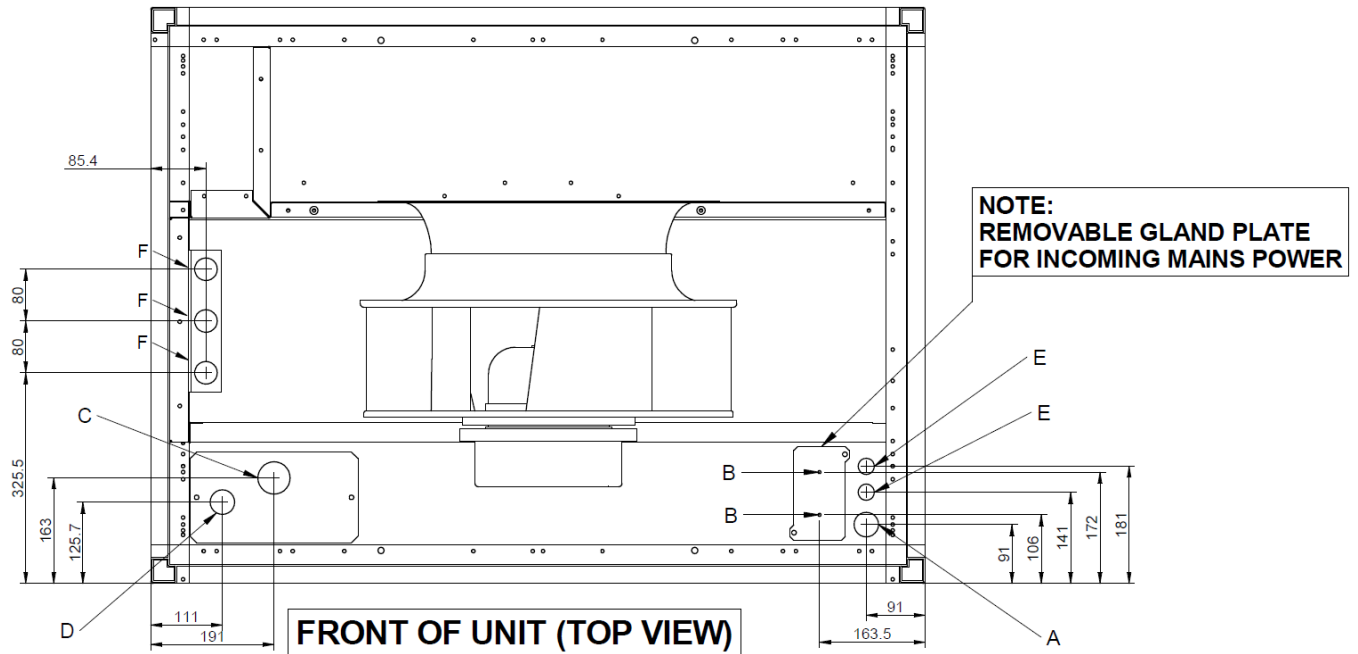


Please note that whilst Airedale endeavours to ensure that the provided unit Drawings are accurate at time of pre-tender, due to our continual development policy we reserve the right to amend this information without due notice

INCOMING SERVICES – UNIT

Model: SV15D040-X100-0 Incoming Services

Tag:



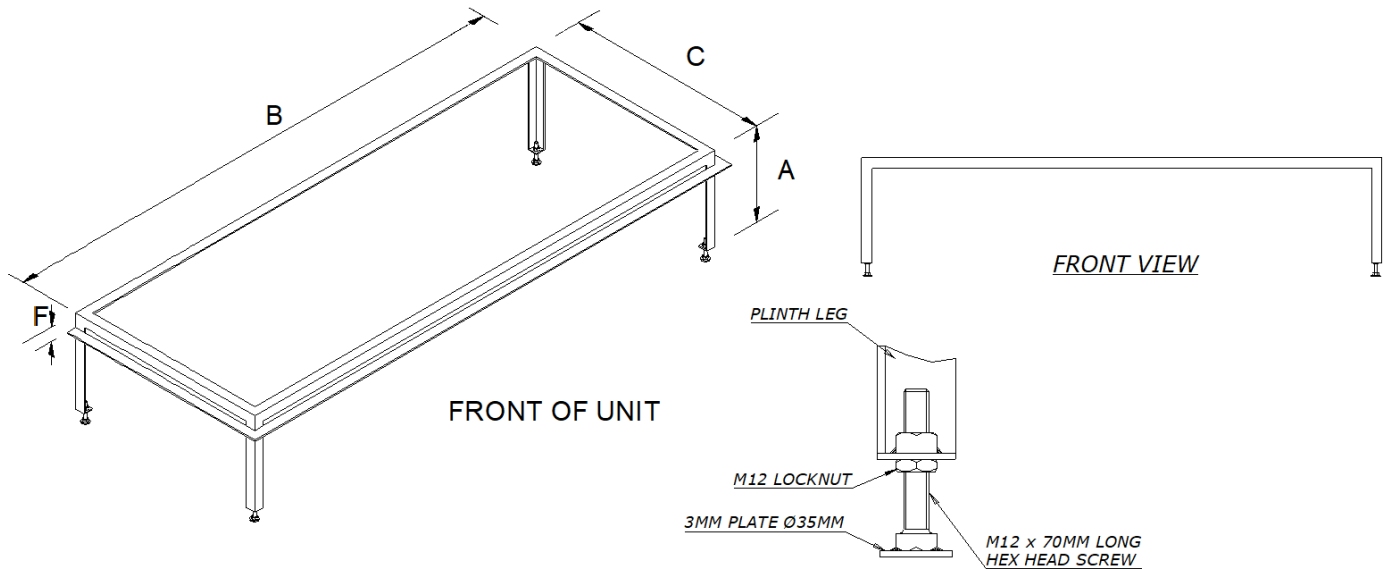
SV15D040-X100-0	A	B	C	D	E	F
Service Type	Controls Inlet	Power Supply (Primary & Optional Secondary)	Discharge (Circuit 1)	Liquid (Circuit 1)	Condenser/Dry Cooler Power (Circuit 1)	Water Feeds & Drains
			Ø 1 1/8"	Ø 5/8"		

Please note that whilst Airedale endeavours to ensure that the provided unit Drawings are accurate at time of pre-tender, due to our continual development policy we reserve the right to amend this information without due notice

GENERAL ARRANGEMENT – FLOORSTAND

Model: SV15D040-X100-0 Open Floorstand – Qty 6

Tag:



ASSEMBLY OF ADJUSTABLE FOOT - GIVING +/- 20MM FOR LEVELING

NOTE: OVERALL FLOORSTAND HEIGHT IS DIMENSION 'A' + 50MM FOR FOOT

A	B	C	F
Floorstand Height* Min 300 -Max 750	Unit Width	Unit Depth	Floor Tile Height**
TBA	1,497	887	TBA

*Customer to Provide the Dimensions at time of order

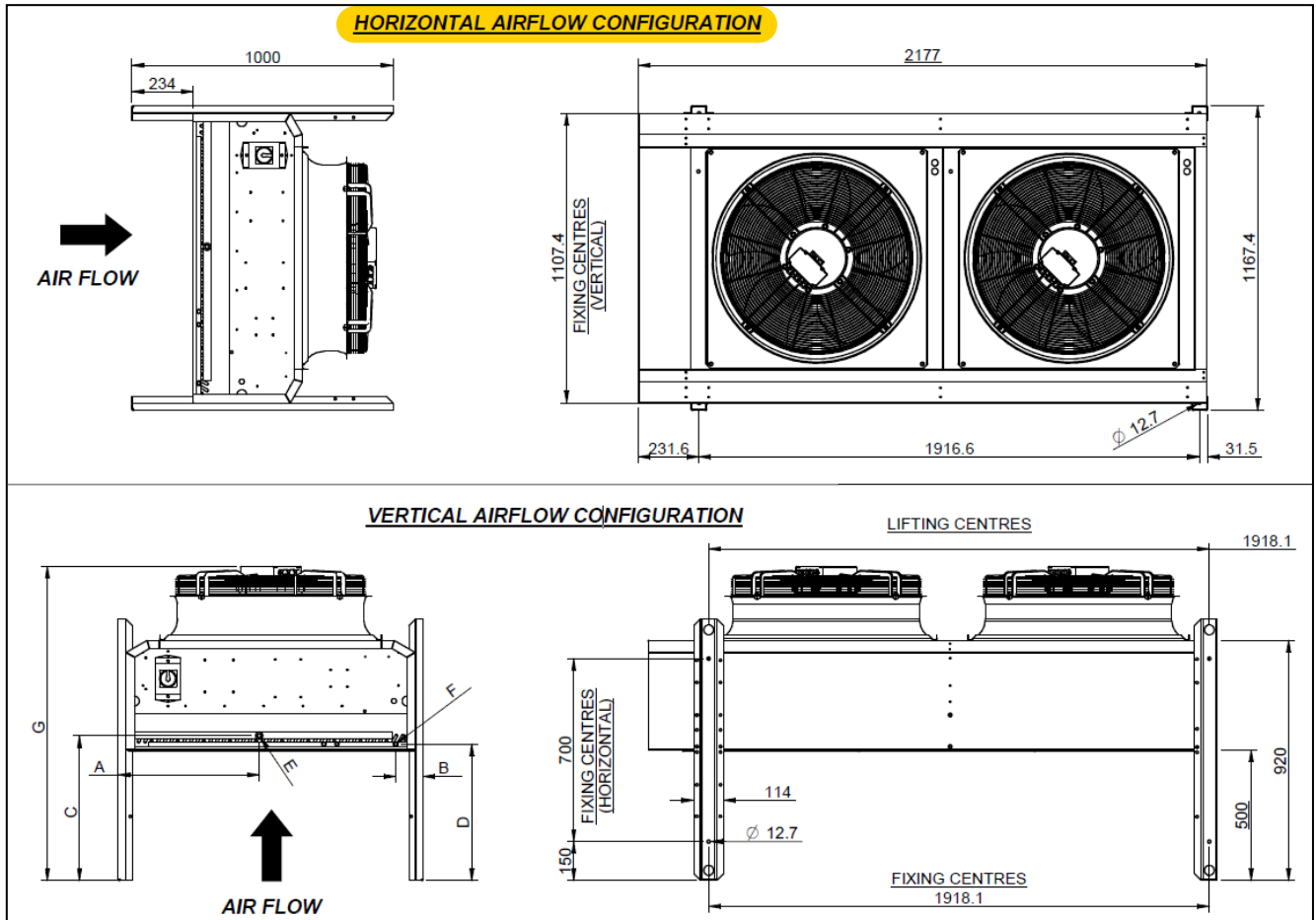
**Floor Tile Height – If Required, Note – unless requested will be supplied without support

Please note that whilst Airedale endeavours to ensure that the provided unit Drawings are accurate at time of pre-tender, due to our continual development policy we reserve the right to amend this information without due notice

GENERAL ARRANGEMENT – OUTDOOR UNIT

Model: CR50-0 Horizontal – Qty 6

Tag:

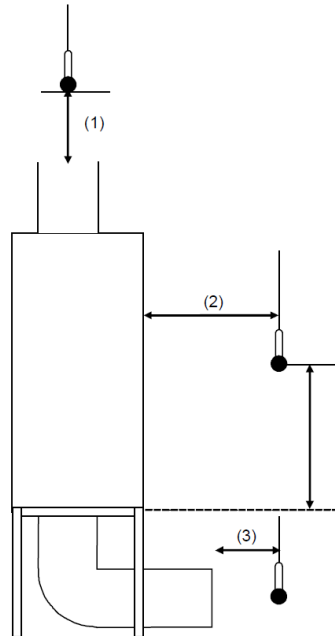


A	B	C	D	E	F	G
Inlet Connection X (mm)	Outlet Connection X (mm)	Inlet Connection Y (mm)	Outlet Connection Y (mm)	Inlet Ø	Outlet Ø	Total Height (Vertical)
540	105	555	523	1-1/8"	3/4"	1,217

SmartCool Sound Data

Model SV15D040-X100-0 Sound Data

Tag:



Sound Power - 3.3 m³/s

Frequency	Overall dB(A)	63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz
dB									
(2) Case Breakout	73.2	75.2	71.6	71.4	65.1	64.3	67.4	64.3	67.2
(3) Supply Air	91.0	94.9	87.8	92.0	87.2	84.7	83.6	78.9	81.1
(1) Return Air	90.7	100.7	89.2	94.2	87.4	83.2	80.7	79.4	77.6

Sound Pressure - 3.3 m³/s

Frequency	Overall dB(A)	63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz
dB									
(2) Case Breakout @3m	62.2	64.2	60.6	60.3	54.1	53.3	56.4	53.2	56.2
(3) Supply Air @3m	80.0	83.9	76.8	81.0	76.1	73.7	72.6	67.9	70.1
(1) Return Air @3m	79.7	89.7	78.2	83.2	76.4	72.1	69.7	68.4	66.6
(2) Case Breakout @ 2m	68.2	70.2	66.6	66.4	60.1	59.3	62.4	59.3	62.2

Measurement of Sound Data - All sound data quoted has been measured in the third-octave band limited values, using a Real Time Analyser calibrated sound intensity meter in accordance with BS EN ISO9614 Part 1: 2009. All Sound Power Levels quoted are calculated from measured sound intensity according to BS EN ISO9614 Part 1: 2009.

Semi Hemispherical Sound Pressure Levels are calculated from sound power using the semi-hemispherical method where the noise source is in junction with 2 boundaries i.e. the floor and 1 wall.

Free Field - For comparison, the semi hemispherical figures can typically be reduced by 6dB to provide free field conditions.

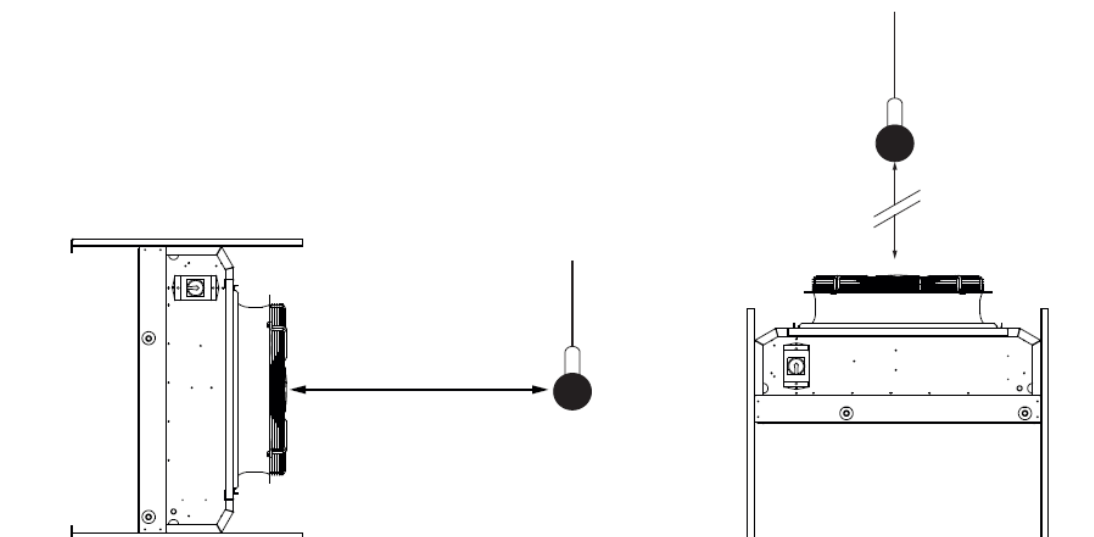
IMPORTANT - The sound data quoted is based on the unit having a ducted return air and standard backwards curved EC motors fitted, refer to illustration above. Case breakout sound data is therefore independent of the discharge air and return air sound data. For non-ducted return air applications, the overall case breakout sound levels may increase, due to the return air sound being predominant. Within the conditioned space, sound from in-room ducted discharge air grilles and other equipment will contribute to the overall sound level and should therefore be considered as part of sound calculations. Specialist acoustic advice is recommended for noise critical applications.

Please note that whilst Airedale endeavours to ensure that the provided unit Sound data is accurate at time of pre-tender, due to our continual development policy we reserve the right to amend this information without due notice

Outdoor Unit Sound Data

Model CR50-0 Horizontal Sound Data

Tag:



Frequency (Hz)	Sound Power – Maximum Fan Speed								
	Overall dB(A)	63	125	250	500 (dB)	1k	2k	4k	8k
Sound Power	82	83	93	76	77	77	73	67	66
Sound Pressure @ 10m	54	55	65	48	49	49	45	39	38

Method of Sound Measurement

All sound data quoted has been measured in the third-octave band limited values, using a Real Time Analyser calibrated

sound intensity meter in accordance with BS EN ISO9614 Part 1: 2009.

All Sound Power Levels quoted are calculated from measured sound intensity according to BS EN ISO9614 Part 1: 2009.

Resultant performance figures obtained from test will be proven to not differ from the claimed figures by more than the allowable deviations specified in table 7 of section VII of Eurovent RS 6/C/003-2016 (A-weighted sound power; +3dBA).

Semi hemispherical

Sound Pressure Levels are calculated from sound power using the semi-hemispherical method where the noise source is in junction with 2 boundaries i.e. the floor and 1 wall.

Important The sound data quoted is based on the unit having the STANDARD FAN running at FULL SPEED under normal operating conditions. For sound data of optional fan selections, please contact Airedale.

Please note that whilst Airedale endeavours to ensure that the provided unit Sound data is accurate at time of pre-tender, due to our continual development policy we reserve the right to amend this information without due notice.