NEW R410A!

AIREDALE
air conditioning for every environment

SmartCool™

Downflow – Precision Air Conditioning

R410A

Installation, Maintenance and Commissioning

ISO 14001
EMS32085

ISO 9001
FM00642

About Airedale Products & Customer Services

Warranty

All AIAC products or parts (non consumable) supplied for installation within the UK mainland and commissioned by an AIAC engineer, carry a full Parts & Labour warranty for a period of 12 months from the date of commissioning or 18 months from the date of despatch, whichever is the sooner.

Parts or Equipment supplied by AIAC for installation within the UK or for Export that are properly commissioned in accordance with AIAC standards and specification, not commissioned by an AIAC engineer; carry a 12 month warranty on non consumable Parts only from the date of commissioning or 18 months from the date of despatch, whichever is the sooner.

Parts or equipment installed or commissioned not to acceptable AIAC standards or specification invalidate all warranty.

Warranty is only valid in the event that

In the period between delivery and commissioning the equipment: is properly protected & serviced as per the AIAC installation & maintenance manual provided where applicable the glycol content is maintained to the correct level.

In the event of a problem being reported and once warranty is confirmed as valid under the given installation and operating conditions, the Company will provide the appropriate warranty coverage (as detailed above) attributable to the rectification of any affected Airedale equipment supplied (excluding costs for any specialist access or lifting equipment that must be ordered by the customer).

Any spare part supplied by Airedale under warranty shall be warranted for the unexpired period of the warranty or 3 months from delivery, whichever period is the longer.

To be read in conjunction with the Airedale Conditions of Sale - Warranty and Warranty Procedure, available upon request.

CAUTION

Warranty cover is not a substitute for maintenance. Warranty cover is conditional to maintenance being carried out in accordance with the recommendations provided during the warranty period. Failure to have the maintenance procedures carried out will invalidate the warranty and any liabilities by Airedale International Air Conditioning Ltd.

Spares

A spares list for 1 3 and 5 years will be supplied with every unit and is also available from our Spares department on request.

Training

As well as our comprehensive range of products, Airedale offers a modular range of Refrigeration and Air Conditioning Training courses, for further information please contact Airedale.

Customer Services

For further assistance, please e-mail: ***enquiries@airedale.com*** or telephone:

UK Sales Enquiries	+ 44 (0) 113 239 1000	***enquiries@airedale.com***
International Enquiries	+ 44 (0) 113 239 1000	***enquiries@airedale.com***
Spares Hot Line	+ 44 (0) 113 238 7878	***spares@airedale.com***
Airedale Service	+ 44 (0) 113 239 1000	***service@airedale.com***
Technical Support	+ 44 (0) 113 239 1000	***tech.support@airedale.com***
Training Enquiries	+ 44 (0) 113 239 1000	***marketing@airedale.com***

For information, visit us at our Web Site: ***www.airedale.com***

Legal Notices

AIAC Ltd endeavours to ensure that the information in this document is correct and fairly stated, but none of the statements are to be relied upon as a statement or representation of fact. AIAC Ltd does not accept liability for any error or omission, or for any reliance placed on the information contained in this document.
The development of Airedale products and services is continuous and the information in this document may not be up to date. It is important to check the current position with AIAC Ltd at the address stated. This document is not part of a contract or licence unless expressly agreed.

Cover image is the SC25D100-X2X2-0; Controller display is for illustration only.

Health and Safety

IMPORTANT

The information contained in this manual is critical to the correct operation and maintenance of the unit and should be read by all persons responsible for the installation, commissioning and maintenance of this Airedale unit.

Safety

The equipment has been designed and manufactured to meet international safety standards but, like any mechanical/electrical equipment, care must be taken if you are to obtain the best results.

CAUTION **1 Installation, service and maintenance of Airedale equipment should only be carried out by technically trained competent personnel.**

CAUTION **2 When working with any air conditioning units ensure that the electrical isolator is switched off prior to servicing or repair work and that there is no power to any part of the equipment.**

3 Also ensure that there are no other power feeds to the unit such as fire alarm circuits, BMS circuits etc.

4 Electrical installation commissioning and maintenance work on this equipment should be undertaken by competent and trained personnel in accordance with local relevant standards and codes of practice.

5 The refrigerant used in this range of products is classified under the COSHH regulations as an irritant, with set Workplace Exposure Levels (WEL) for consideration if this plant is installed in confined or poorly ventilated areas.

6 A full hazard data sheet in accordance with COSHH regulations is available should this be required.

Protective personal equipment

Airedale recommends that personal protective equipment is used whilst installing, maintaining and commissioning equipment.

Refrigerant Warning

The Airedale SmartCool uses R410A refrigerant which is a high pressure refrigerant. It requires careful attention to proper storage and handling procedures.

Use on manifold gauge sets designed for use with R410A refrigerant. Use only refrigerant recovery units and cylinders designed for high pressure refrigerants.

R410A must only be charged in the liquid state.

The refrigerant must be stored in a clean, dry area away from sunlight. The refrigerant must never be stored above 50°C.

Manual Handling

Some operations when servicing or maintaining the unit may require additional assistance with regard to manual handling. This requirement is down to the discretion of the engineer. Remember do not perform a lift that exceeds your ability.

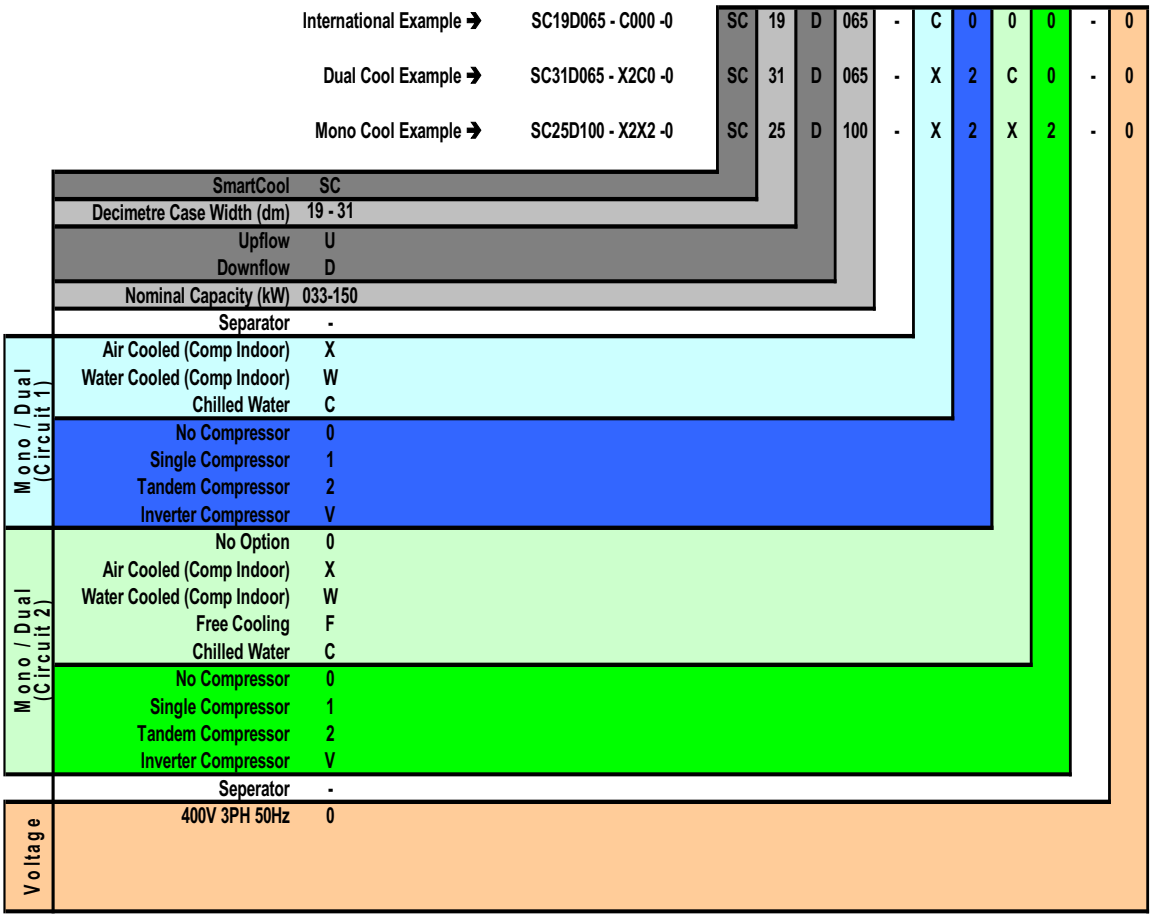
Environmental Policy

It is our policy to:

- Take a proactive approach to resolve environmental issues and ensure compliance with regulatory requirements.
- Train personnel in sound environmental practices.
- Pursue opportunities to conserve resources, prevent pollution and eliminate waste.
- Manufacture products in a responsible manner with minimum impact on the environment.
- Reduce our use of chemicals and minimise their release to the environment.
- Measure, control and verify environmental performance through internal and external audits.
- Continually improve our environmental performance.

Specifier's Guide Indoor Unit

Nomenclature



Note

Dual Cool units are defined as those having 2 different cooling mediums (i.e. R410A and Chilled Water [X2C0]).

Dual Circuit units are defined as those having 2 independent cooling circuits (i.e. X2X2 or C0C0).

Introduction

Designed to provide environmental precision air conditioning for applications such as telecommunication facilities, data centers, computer rooms, clean rooms and laboratories.

	Description	Capacity kW (1)
X2X2	Dual circuit direct expansion air cooled	55 -122
X2C0	Dual cool direct expansion air cooled and chilled water	(X2) 30 – 82.5 (C0) 50 - 102
W2W2	Dual circuit direct expansion water cooled	54 -123
W2C0	Dual cool direct expansion water cooled and chilled water	(W2) 30 - 85 (C0) 50 - 102
W2F0	Dual cool water cooled and glycol free cooling	(W2) 30 - 86 (F0) 50 - 102
C000	Single circuit chilled water	69 -149
C0C0	Dual circuit chilled water	20 -102

(1) Based on nominal unit capacities

Full function units provide full control of temperature, humidity and filtration.

The modular design of the SmartCool allows grouping of differing model types and capacities to be installed side by side. The flexibility of this type of installation provides for multi-circuit functionality.

A full range of air cooled condensers is available with the direct expansion indoor units to provide a matched system with optional performance upgrade, refer to ***Outdoor Unit***

A full range of Dry coolers is available to complement the free cooling indoor units. Dry coolers are a cost effective and safe solution against legionella.

Also available is a full range of Airedale water chillers to complement the chilled water indoor units.

The range has been designed and optimised for operation with ozone benign refrigerant R410A.

CE Directive

CE

Airedale certify that the equipment detailed in this manual conforms with the following EC Directives:

Electromagnetic Compatibility Directive (EMC)	2004/108/EC
Low Voltage Directive (LVD)	2006/95/EC
Machinery Directive (MD)	89/392/EEC in the version 2006/427/EC
Pressure Equipment Directive (PED)	97/23/EC

To comply with these directives appropriate national & harmonised standards have been applied. These are listed on the Declaration of Conformity, supplied with each product.

System Configurations

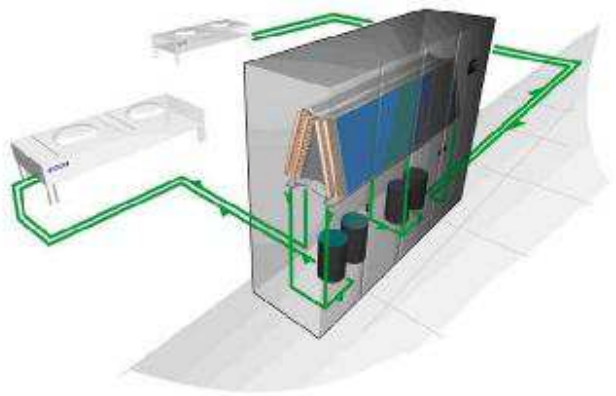
Dual Circuit

X2X2

The SmartCool X2X2 is an air cooled, direct expansion (DX), double circuit system linked to two separate, remotely mounted air cooled condensers.

Optimised for heat transfer using energy efficient refrigerant R410A in each circuit, the X2X2 system is located within the conditioned space, absorbing room heat and transferring it outside to the condensers.

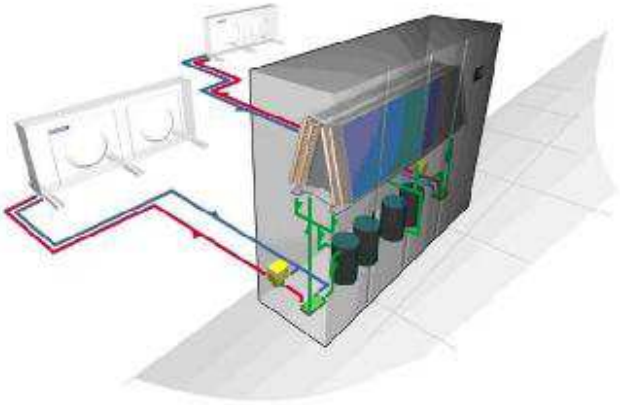
By using one or more same/dissimilar sized scroll compressors across the X2X2 double circuit, part load efficiency can be maximised and capacity more precisely matched to application.



W2W2

Suitable for applications favouring reduced refrigerant charges, the SmartCool W2W2 is a double circuit system featuring, DX cooling within the case and dry coolers outside.

Warm room air is passed through two completely independent evaporator coils and an integral plate condenser transfers the heat load to the glycol solution which is then channelled outside to two air cooled dry coolers.

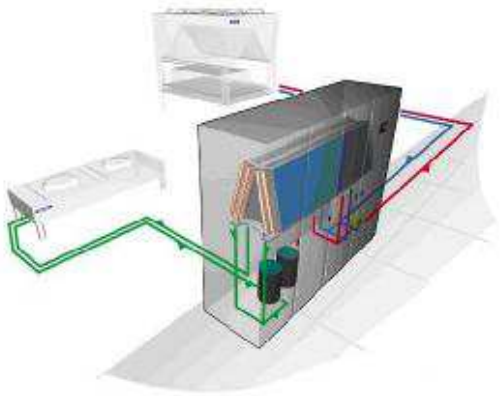


Dual Cool

X2C0

For redundancy in critical applications, the SmartCool dual cool X2C0 offers two different cooling mediums, air cooled DX and chilled water, within the same case.

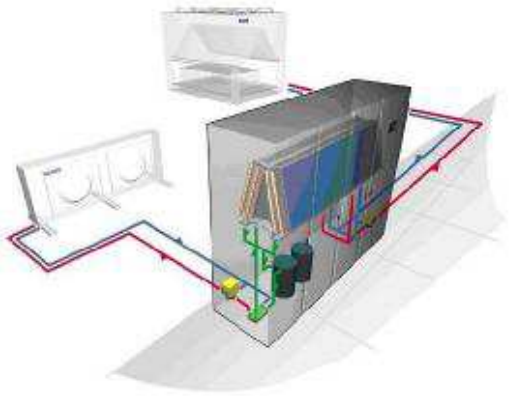
The X2C0 system is managed by the Airetronix microprocessor to select which medium acts as the primary source of cooling or which acts as back-up, should the primary source fail or is unable to cope with the heat load.



W2C0

For applications where a water cooled system is preferred over air cooled, the SmartCool W2C0 comprises two different cooling mediums within the same case: DX water cooled, as in the W2W2 system, and chilled water, as in the C000 system.

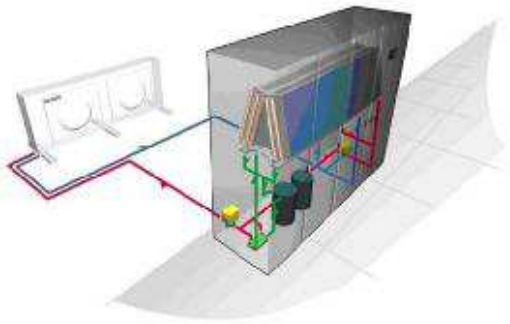
The Airetronix microprocessor elects which medium acts as the primary source of cooling and which as back-up, if the primary source fails or is unable to cope with the heat load.



W2F0

The W2F0 system includes a free-cooling coil in conjunction with the evaporator. In low ambient conditions, particularly in relation to the high temperatures and continuous system operation of a server environment, the W2F0 system will run with minimum energy. At times of higher ambient, sophisticated Airetronix controls technology will modulate the 3-way water regulating valves to transition from free cooling back to mechanical cooling.

Typically the SmartCool W2F0 single circuit free-cooling system uses 46%* less energy than a standard air cooled DX system.

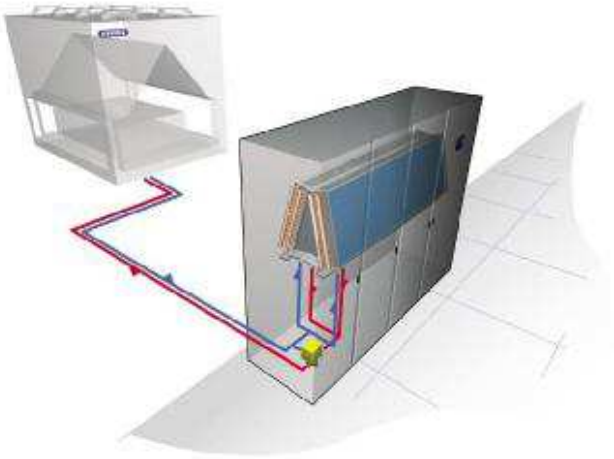


Chilled Water

C000

Where a chilled water single circuit system is preferred, warm room air is blown across the efficient cooling coils of the SmartCool C000 and the heat transferred to a chilled water system such as Airedale's high efficiency TurboChill.

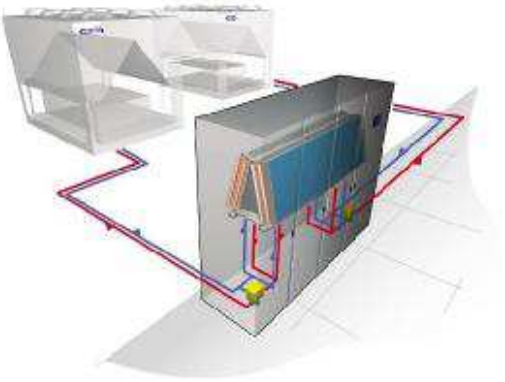
By controlling the 3-way water regulating valve, the intelligent Airetronix microprocessor can achieve precise control of temperature and humidity.



C0C0

In the SmartCool C0C0 unit, the cooling coils are split into two independent systems, each with a 3-way water regulating valve, and cooled by chilled water from two separate chillers.

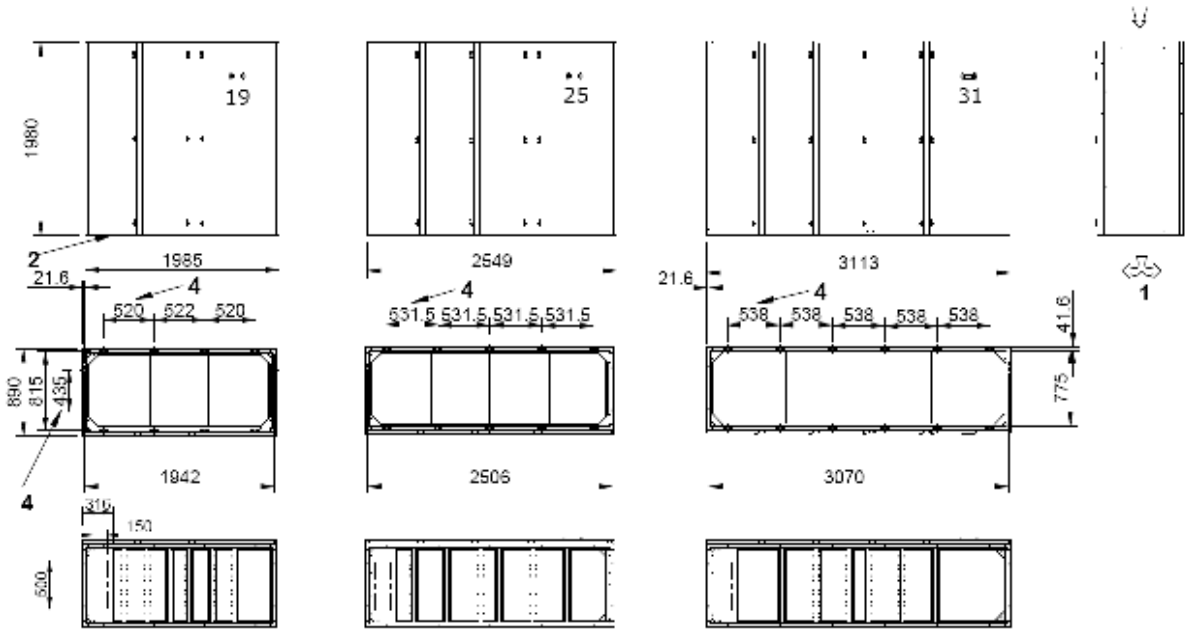
For extra security, the dual circuit configuration of SmartCool C0C0 offers 2N redundancy.



Installation Data

Dimensions

Standard Airflow Configuration (mm)

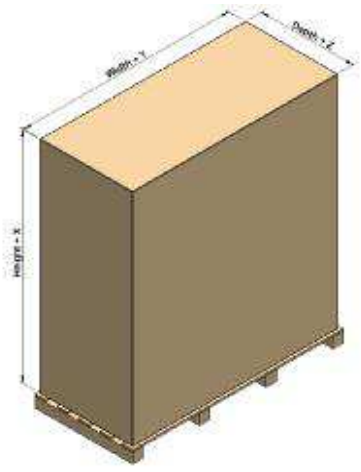


		H x D x W
SC19D	mm	1980 x 890 x 1985
SC25D	mm	1980 x 890 x 2549
SC31D	mm	1980 x 890 x 3113

(1) Forward or reversed air discharge available as standard on all products. Does not require configuring.
(2) Area denotes services entry location. For specific details please contact Airedale.
(3) Open base. Shaded area denotes air discharge.
(4) M6 fixing holes positions for mounting ceiling duct extensions or plenums.

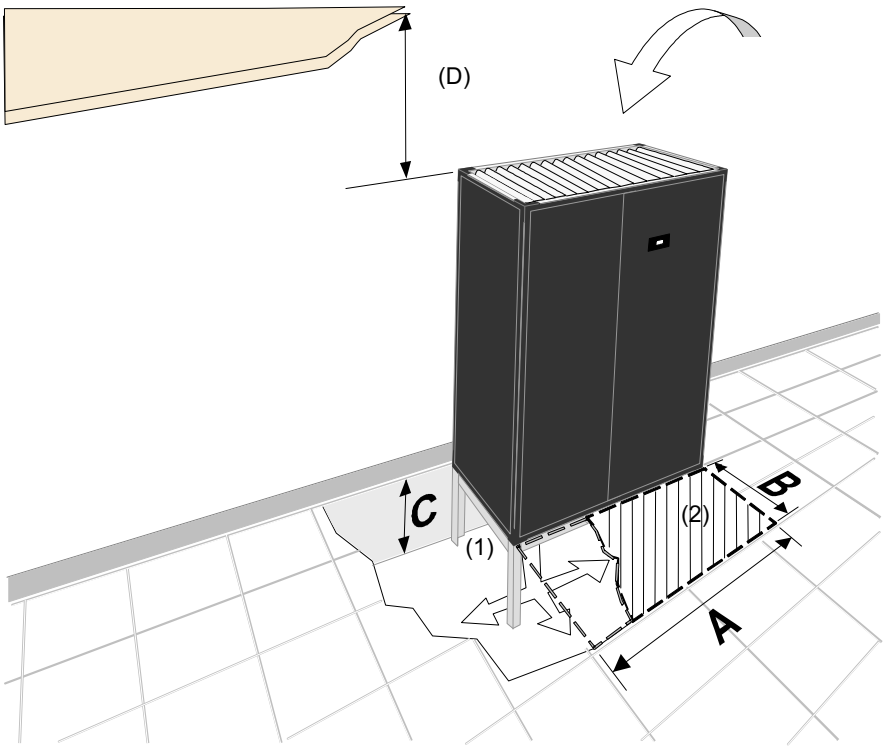
Packed Dimensions

For specific markets units shall be shipped, mounted on wooden pallet and covered with polythene. The pallet shall be mechanically fixed to the unit for transportation only (Please contact Airedale for this option)



X = 160mm
Y = 50mm
Z = 50mm

Positioning



Minimum Unit Clearance

Open & Enclosed Floorstand Option

		A	B	C - Floorstand(3)
SC19D	mm	1985	800	Min 200 – Max 750 (+ 50mm Feet Adjustable +/- 20mm) (4)
SC25D	mm	2549	800	
SC31D	mm	3113	800	

Minimum Ceiling Clearance- (D)

		Forward Only	Forward and 1 Side	Forward and 2 Sides	All Faces
SC19D	mm	720	500	380	250
SC25D	mm	740	550	440	280
SC31D	mm	750	590	480	300

Notes

(1) Shown with optional open floor stand.
(2) Shaded area indicates minimum service and maintenance requirements. The unit must be installed with allowance for carpet tile clearance.
(3) Dimension C denotes recommended minimum/maximum floor stand height, refer to Airedale for special applications, ***please specify at order***.
(4) Min = Threaded foot at minimum extension (additional to “C” dimension).
Max = Threaded foot at maximum extension (additional to “C” dimension).

Electrical Services Incoming Cable

Service connections to the smartcool unit are from the left hand side. Provision must be made when sizing cable lengths.

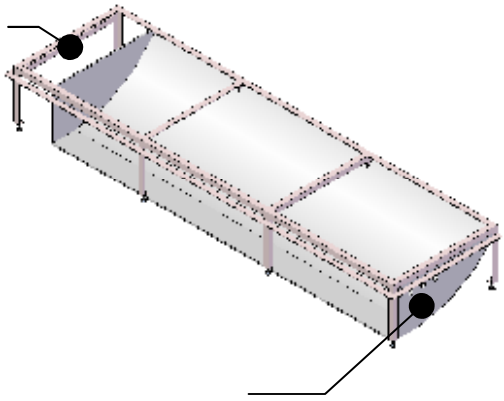
Mains Electrical Incoming Isolator Termination

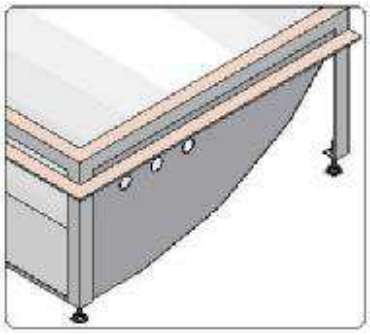
Electrical Services Entry Option 2

Mechanical Services Entry + Electrical Option 1

The Floorstand provided by Airedale however has provision for cable entry via the right hand side should it be required, adjacent to the condensate drain.

Option 1





Option 2
Electrical services through floor stand
(Next to condensate drain)

Incoming Mains Gland Plate

4 hole centres are punched in the gland plate for location of cable glands. The plate is removable for drilling to required size.
Holes1 and 2 for interconnecting wiring to Outdoor unit.
Holes 3 and 4 for Mains incoming Supply A and B

Weights

	Unit	Shipped Weight (kg)	Installed Weight (kg)
X2X2	SC19D055-X2X2-0	900	900
	SC19D070-X2X2-0	900	910
	SC19D080-X2X2-0	900	910
	SC25D080-X2X2-0	1020	1020
	SC25D090-X2X2-0	1110	1120
	SC25D100-X2X2-0	1130	1130
	SC31D100-X2X2-0	1280	1290
	SC31D120-X2X2-0	1300	1310
	SC31D130-X2X2-0	1300	1310

	Unit	Shipped Weight (kg)	Installed Weight (kg)
X2C0	SC19D033-X2C0-0	820	860
	SC19D038-X2C0-0	820	860
	SC19D045-X2C0-0	820	860
	SC19D064-X2C0-0	890	920
	SC19D070-X2C0-0	900	930
	SC19D076-X2C0-0	900	930
	SC25D045-X2C0-0	940	980
	SC25D050-X2C0-0	990	1030
	SC25D055-X2C0-0	1000	1040
	SC25D067-X2C0-0	1010	1050
	SC25D073-X2C0-0	1010	1060
	SC25D080-X2C0-0	1020	1060
	SC31D055-X2C0-0	1150	1200
	SC31D065-X2C0-0	1150	1210
	SC31D075-X2C0-0	1160	1210
	SC31D077-X2C0-0	1170	1220
	SC31D080-X2C0-0	1170	1220
	SC31D083-X2C0-0	1170	1220

Note
(1) Shipped weights
(2) Installed weight includes refrigerant charges/ internal water volume.

Weights

	Unit	Shipped Weight (kg)	Installed Weight (kg)
W2W2	SC19D055-W2W2-0	940	940
	SC19D070-W2W2-0	970	980
	SC19D080-W2W2-0	970	980
	SC25D080-W2W2-0	1090	1110
	SC25D090-W2W2-0	1220	1230
	SC25D100-W2W2-0	1230	1250
	SC31D100-W2W2-0	1390	1400
	SC31D120-W2W2-0	1400	1410
	SC31D130-W2W2-0	1400	1420

	Unit	Shipped Weight (kg)	Installed Weight (kg)
W2C0	SC19D033-W2C0-0	850	880
	SC19D038-W2C0-0	860	890
	SC19D045-W2C0-0	860	890
	SC19D064-W2C0-0	950	980
	SC19D070-W2C0-0	950	980
	SC19D076-W2C0-0	960	990
	SC25D045-W2C0-0	980	1020
	SC25D050-W2C0-0	1050	1090
	SC25D055-W2C0-0	1050	1100
	SC25D067-W2C0-0	1070	1110
	SC25D073-W2C0-0	1070	1120
	SC25D080-W2C0-0	1080	1120
	SC31D055-W2C0-0	1210	1260
	SC31D065-W2C0-0	1220	1270
	SC31D075-W2C0-0	1220	1270
	SC31D077-W2C0-0	1230	1280
	SC31D080-W2C0-0	1230	1280
	SC31D083-W2C0-0	1230	1290

Note
(1) Shipped weights
(2) Installed weight includes refrigerant charges/ internal water volume.

Weights

	Unit	Shipped Weight (kg)	Installed Weight (kg)
W2F0	SC19D033-W2F0-0	850	880
	SC19D038-W2F0-0	860	890
	SC19D045-W2F0-0	860	890
	SC19D064-W2F0-0	950	980
	SC19D070-W2F0-0	950	980
	SC19D076-W2F0-0	960	990
	SC25D045-W2F0-0	980	1020
	SC25D050-W2F0-0	1050	1090
	SC25D055-W2F0-0	1050	1100
	SC25D067-W2F0-0	1070	1110
	SC25D073-W2F0-0	1070	1120
	SC25D080-W2F0-0	1080	1120
	SC31D055-W2F0-0	1210	1260
	SC31D065-W2F0-0	1220	1270
	SC31D075-W2F0-0	1220	1270
	SC31D077-W2F0-0	1230	1280
	SC31D080-W2F0-0	1230	1280
	SC31D083-W2F0-0	1230	1290

	Unit	Shipped Weight (kg)	Installed Weight (kg)
C000	SC19D065-C000-0	725	780
	SC19D075-C000-0	725	780
	SC19D090-C000-0	730	780
	SC25D090-C000-0	840	920
	SC25D100-C000-0	840	920
	SC25D110-C000-0	840	920
	SC31D110-C000-0	1000	1080
	SC31D130-C000-0	1000	1080
	SC31D150-C000-0	1000	1080

	Unit	Shipped Weight (kg)	Installed Weight (kg)
C0C0	SC19D033-C0C0-0	730	790
	SC19D038-C0C0-0	730	790
	SC19D045-C0C0-0	730	790
	SC25D045-C0C0-0	850	930
	SC25D050-C0C0-0	850	930
	SC25D055-C0C0-0	850	930
	SC31D055-C0C0-0	1010	1100
	SC31D065-C0C0-0	1010	1100
	SC31D075-C0C0-0	1010	1100

Note
(1) Shipped weights
(2) Installed weight includes refrigerant charges/ internal water volumes.

Refrigerant Pipe Sizing Guide

The refrigerant pipe sizing information below is for a guide only. Pipe sizes based on 100% load.

Indoor Unit	Outdoor Unit	Indoor Unit Connection Size		Equivalent Pipe Lengths with R410A					
				0-15m	Discharge		15-40m	Discharge	
		Liquid	Disch	Liquid (3)	Horizontal (1)	Vertical (2)	Liquid (3)	Horizontal (1)	Vertical (2)
SC19D055-X2X2-0	CR50	1/2"	7/8"	5/8"	7/8"	3/4"	5/8"	7/8"	7/8"
SC19D070-X2X2-0	CR65	5/8"	7/8"	5/8"	7/8"	7/8"	5/8"	7/8"	7/8"
SC19D080-X2X2-0	CR65	5/8"	7/8"	5/8"	7/8"	7/8"	3/4"	7/8"	7/8"
SC25D080-X2X2-0	CR65	5/8"	7/8"	5/8"	7/8"	7/8"	3/4"	7/8"	7/8"
SC25D090-X2X2-0	CR65	7/8"	1 1/8"	5/8"	7/8"	7/8"	3/4"	7/8"	7/8"
SC25D100-X2X2-0	CR80	7/8"	1 1/8"	3/4"	1 1/8"	1 1/8"	3/4"	1 1/8"	1 1/8"
SC31D100-X2X2-0	CR80	7/8"	1 1/8"	3/4"	1 1/8"	1 1/8"	3/4"	1 1/8"	1 1/8"
SC31D120-X2X2-0	CR105	7/8"	1 1/8"	3/4"	1 1/8"	1 1/8"	3/4"	1 1/8"	1 1/8"
SC31D130-X2X2-0	CR105	7/8"	1 1/8"	3/4"	1 1/8"	1 1/8"	7/8"	1 1/8"	1 1/8"
SC19D033-X2C0-0	CR50	1/2"	7/8"	5/8"	7/8"	3/4"	5/8"	7/8"	7/8"
SC19D038-X2C0-0	CR65	5/8"	7/8"	5/8"	7/8"	7/8"	5/8"	7/8"	7/8"
SC19D045-X2C0-0	CR65	5/8"	7/8"	5/8"	7/8"	7/8"	3/4"	7/8"	7/8"
SC19D064-X2C0-0	CR105	5/8"	7/8"	3/4"	1 1/8"	1 1/8"	7/8"	1 3/8"	1 1/8"
SC19D070-X2C0-0	CR105	7/8"	1 1/8"	3/4"	1 1/8"	1 1/8"	7/8"	1 3/8"	1 1/8"
SC19D076-X2C0-0	CR105	7/8"	1 1/8"	3/4"	1 1/8"	1 1/8"	7/8"	1 3/8"	1 1/8"
SC25D045-X2C0-0	CR65	7/8"	1 1/8"	5/8"	7/8"	7/8"	3/4"	7/8"	7/8"
SC25D050-X2C0-0	CR65	7/8"	1 1/8"	5/8"	7/8"	7/8"	3/4"	7/8"	7/8"
SC25D055-X2C0-0	CR80	7/8"	1 1/8"	3/4"	1 1/8"	1 1/8"	3/4"	1 1/8"	1 1/8"
SC25D067-X2C0-0	CR105	7/8"	1 3/8"	3/4"	1 1/8"	1 1/8"	7/8"	1 3/8"	1 1/8"
SC25D073-X2C0-0	CR105	7/8"	1 3/8"	3/4"	1 1/8"	1 1/8"	7/8"	1 3/8"	1 1/8"
SC25D080-X2C0-0	CR105	7/8"	1 3/8"	3/4"	1 1/8"	1 1/8"	7/8"	1 3/8"	1 1/8"
SC31D055-X2C0-0	CR80	7/8"	1 3/8"	3/4"	1 1/8"	1 1/8"	3/4"	1 1/8"	1 1/8"
SC31D065-X2C0-0	CR105	7/8"	1 3/8"	3/4"	1 1/8"	1 1/8"	3/4"	1 1/8"	1 1/8"
SC31D075-X2C0-0	CR105	7/8"	1 3/8"	3/4"	1 1/8"	1 1/8"	7/8"	1 1/8"	1 1/8"
SC31D077-X2C0-0	CR105	7/8"	1 3/8"	3/4"	1 1/8"	1 1/8"	7/8"	1 3/8"	1 1/8"
SC31D080-X2C0-0	CR105	7/8"	1 3/8"	3/4"	1 1/8"	1 1/8"	7/8"	1 3/8"	1 1/8"
SC31D083-X2C0-0	CR105	7/8"	1 3/8"	3/4"	1 1/8"	1 1/8"	7/8"	1 3/8"	1 1/8"

(1) For interconnecting pipework with a predominantly horizontal layout.
(2) For interconnecting pipework with a predominantly vertical layout.
(3) Careful pipework selection must be done if the liquid line rises. Additional system sub cooling may be required to overcome friction losses.

IMPORTANT

Tandem Compressor and suction throttle valve applications:
In part load, gas velocity should be taken into account when selecting and commissioning pipework to ensure full oil return.

REMEMBER excessive pressure loss in interconnecting pipework will impair system performance; this should be factored in during the design of the system and where necessary oil separators employed.
Excessive pressure drop in liquid lines can cause poor refrigerant distribution to expansion devices and can cause malfunction of the system (especially with condensers lower than the evaporator)

Oil Traps

For long vertical rises in both liquid and discharge lines, it is essential that oil traps are located every 4m to ensure proper oil movement / entrapment. In addition there should be an oil trap at the exit of the air handling unit before a vertical riser is applied (refer to example below).

Pipe Supports

The following table identifies the maximum distance between pipe supports on vertical and horizontal pipe runs.

Pipe O/D (inches)	Support distance (m)
3/8 - 7/8	1.0
1 1/8 - 2 1/8	2.0

CAUTION **All pipework should be clamped prior to insulation being applied. Clamping over insulation is not acceptable.**

Horizontal Sections

It is good practice to ensure a slight gradient toward the compressor in the direction of the refrigerant flow for suction lines running horizontal. This assists oil return to the compressor. A gradient of approximately 1:200 (0.5%) shall be used.

Liquid Line

If the system is configured with the SmartCool higher than the condenser unit h it may be required to increase the degree of sub cooling to prevent flashing gas. This flashing is caused by excess pressure drop caused by the static head of refrigerant and can cause poor operation of the evaporator and metering device.

Careful pipe sizing is recommended to ensure that the liquid does not form gas due to excess pressure drop

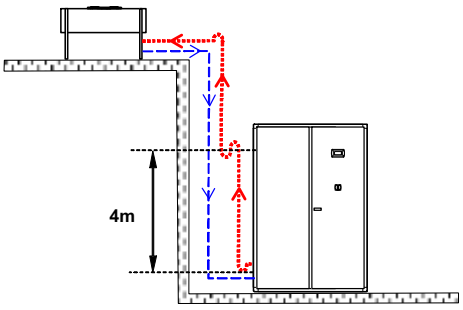
Increasing the liquid line size minimizes pipe friction and flashing due to friction pressure drop.

However as a fail safe it is recommended that the condenser is installed below the indoor unit to allow for correct liquid drain.

Pipe Insulation

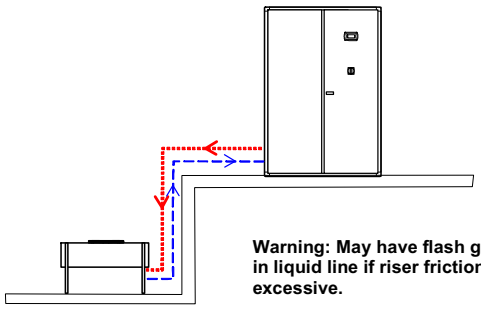
The liquid line of the system must be insulated if passing through extremely warm places (Boiler houses etc). Ensuring that the refrigerant does not become flash gas.

Condenser above Air Handling Unit



Discharge Line Liquid

Condenser below Air Handling Unit



Warning: May have flash gas occurring in liquid line if riser friction losses are excessive.

Diagrams above for illustration only

Refrigerant Charging Guide

The following information can be used to estimate the refrigerant quantity required in a typical split system installation.

Unit Refrigerant Charge (kg/Circuit)

The following table shows the refrigerant charge / circuit for the indoor and outdoor units.

Indoor Unit			Standard Condenser		Larger Condenser	
(Indoor Unit)	kg/Circuit	HGRH(1) kg/Circuit	(Outdoor Unit)	kg/Circuit	(Outdoor Unit)	kg/Circuit
SC19D055-X2X2	4.41	4.56	CR50	4.9	CR65	9.78
SC19D070-X2X2	4.66	4.81	CR65	9.78	CR80	8.37
SC19D080-X2X2	4.66	4.81	CR65	9.78	CR80	8.37
SC25D080-X2X2	5.84	6.04	CR65	9.78	CR80	8.37
SC25D090-X2X2	6.37	6.60	CR65	9.78	CR80	8.37
SC25D100-X2X2	6.38	6.60	CR80	8.37	CR105	16.72
SC31D100-X2X2	7.56	7.83	CR80	8.37	CR105	16.72
SC31D120-X2X2	7.57	7.83	CR105	16.72	CR130	22.05
SC31D130-X2X2	7.67	7.94	CR105	16.72	CR130	22.05
SC19D033-X2C0	4.34	4.49	CR50	4.9	CR65	9.78
SC19D038-X2C0	4.59	4.74	CR65	9.78	CR80	8.37
SC19D045-X2C0	4.59	4.74	CR65	9.78	CR80	8.37
SC19D064-X2C0	5.13	5.33	CR105	16.72	CR130	22.05
SC19D070-X2C0	5.13	5.34	CR105	16.72	CR130	22.05
SC19D076-X2C0	5.14	5.34	CR105	16.72	CR130	22.05
SC25D045-X2C0	5.77	5.97	CR65	9.78	CR80	8.37
SC25D050-X2C0	6.31	6.53	CR65	8.37	CR80	8.37
SC25D055-X2C0	6.31	6.53	CR80	8.37	CR105	16.72
SC25D067-X2C0	6.31	6.56	CR105	16.72	CR130	22.05
SC25D073-X2C0	6.32	6.57	CR105	16.72	CR130	22.05
SC25D080-X2C0	6.32	6.57	CR105	16.72	CR130	22.05
SC31D055-X2C0	7.49	7.75	CR80	8.37	CR105	16.72
SC31D065-X2C0	7.49	7.76	CR105	16.72	CR130	22.05
SC31D075-X2C0	7.49	7.76	CR105	16.72	CR130	22.05
SC31D077-X2C0	7.50	7.79	CR105	16.72	CR130	22.05
SC31D080-X2C0	7.50	7.79	CR105	16.72	CR130	22.05
SC31D083-X2C0	7.50	7.79	CR105	16.72	CR130	22.05

(1)Fitted with optional hot gas re-heat

Liquid Line Refrigerant Charge (kg/m)

The following table shows the refrigerant charge / metre for the liquid line, using R410A and assuming a liquid line temperature of 40°C.

Liquid Line (m)	kg/m
3/8"	0.05
1/2"	0.09
5/8"	0.15
3/4"	0.21
7/8"	0.30
1 1/8"	0.53

IMPORTANT

The pipe sizes/refrigerant charges quoted are for guidance only. It is the responsibility of the installing contractor/site engineer to check the pipe sizes/refrigerant charges are correct for each system installation and application. Excess pressure drop on a system may require additional refrigerant charges to ensure correct unit operation.

Split systems may require additional oil which should be added to the low side of each compressor.

Design should be in accordance with accepted refrigeration practice to ensure good oil return to the compressor(s) under all normal operating conditions.

Calculation of Liquid Line Refrigerant Charge (kg)

The liquid line refrigerant charge can be calculated using the following equation:

LR = L x m

Where:
LR = Total Liquid Line Refrigerant charge (kg)
L = Length of Interconnecting pipework (metres)
m = Liquid Line Refrigerant charge / metre. Refer to Liquid Line Refrigerant Charge (kg/m), above.

Calculation of System Refrigerant Charge (kg)

The system refrigerant charge can be calculated using the following equation:

SR = LR + IR + OR

Where:
SR = Total System Refrigerant charge (kg)
LR = Total Liquid Line Refrigerant charge. (As calculated from above)
IR = Indoor Unit Refrigerant Charge.
OR = Outdoor Unit Refrigerant Charge.

Example

Indoor Unit Model Ref. = SC19D055-X2X2-0
Outdoor Unit Model Ref. = CR50 Condenser
Interconnecting Pipework = 10 metres

Selecting The Liquid Line Size

From the ***Refrigerant Pipe Sizing Guide***, the liquid line size given for pipework length of 10 metres is:

Liquid Line Size = 5/8"

Liquid Line Refrigerant Charge

LR = L x m

Where:
L = 10 metres
m = 0.15 kg/m

LR = 10 x 0.15

Liquid Line Charge = 1.5 kg

System Refrigerant Charge

SR = LR + IR + OR

Where:
LR = 1.5 kg. (As calculated from above)
IR = 4.41 kg
OR = 4.9 kg

SR = 1.5 + 5.57 + 4.9

System Refrigerant Charge = 10.81kg / Circuit

Liquid Sub Cooling

The degree of liquid sub cooling required to prevent flashing of liquid refrigerant can be calculated by the following method.

Given the following as an example:

- Refrigerant R410A
- Condensing temperature (54.4°C)
- Liquid lift 20m
- Piping friction loss 0.21 bar
- Losses through valves and fittings 0.5 Bar

1. Determine the pressure drop due to pipe friction = 0.21 Bar
2. Pressure drop due to valves and fittings = 0.5 Bar
3. Pressure loss due to liquid lift = height x 0.115 = 20 x 0.115 = 2.3 bar

Note:- At normal liquid temperatures the static pressure loss due to elevation at the top of a liquid lift 0.115 bar/m

Therefore:- Total pressure loss in liquid line = 3.01bar

Condensing pressure @ Condensing temperature (54.4°C) = 34 Bar
Total pressure loss in liquid line = 3.01 Bar
Nett pressure at Expansion valve = 34 - 3.01 = 30.99 bar

Saturation temperature at the Nett pressure at expansion valve (30.99 bar) = 52°C
(from Refrigerant tables)

Sub cooling required

= Condensing temperature — Saturation temperature at the Nett pressure at expansion valve
= 54.4 - 52 = 2.4 °C

Therefore liquid sub cooling required to prevent liquid flashing = 2.4 °C

Packaged Unit Pre-Charged Refrigerant Volumes

Indoor unit	kg / circuit	HGRH kg / circuit
SC19D055-W2W2	5.75	5.90
SC19D070-W2W2	7.32	7.47
SC19D080-W2W2	7.32	7.47
SC25D080-W2W2	8.51	8.70
SC25D090-W2W2	10.85	11.07
SC25D100-W2W2	10.85	11.07
SC31D100-W2W2	12.04	12.30
SC31D120-W2W2	12.04	12.30
SC31D130-W2W2	12.04	12.31
SC19D033-W2C0	5.68	5.83
SC19D038-W2C0	7.25	7.40
SC19D045-W2C0	7.25	7.40
SC19D064-W2C0	9.60	9.81
SC19D070-W2C0	9.61	9.81
SC19D076-W2C0	9.61	9.82
SC25D045-W2C0	8.44	8.63
SC25D050-W2C0	10.78	11.00
SC25D055-W2C0	10.78	11.00
SC25D067-W2C0	10.79	11.04
SC25D073-W2C0	10.79	11.04
SC25D080-W2C0	10.80	11.04
SC31D055-W2C0	11.96	12.23
SC31D065-W2C0	11.97	12.23
SC31D075-W2C0	11.97	12.23
SC31D077-W2C0	11.97	12.26
SC31D080-W2C0	11.98	12.27
SC31D083-W2C0	11.98	12.27

Indoor unit	kg / circuit	HGRH kg / circuit
SC19D033-W2F0	5.68	5.83
SC19D038-W2F0	7.25	7.40
SC19D045-W2F0	7.25	7.40
SC19D064-W2F0	9.60	9.81
SC19D070-W2F0	9.61	9.81
SC19D076-W2F0	9.61	9.82
SC25D045-W2F0	8.44	8.63
SC25D050-W2F0	10.78	11.00
SC25D055-W2F0	10.78	11.00
SC25D067-W2F0	10.79	11.04
SC25D073-W2F0	10.79	11.04
SC25D080-W2F0	10.80	11.04
SC31D055-W2F0	11.96	12.23
SC31D065-W2F0	11.97	12.23
SC31D075-W2F0	11.97	12.23
SC31D077-W2F0	11.97	12.26
SC31D080-W2F0	11.98	12.27
SC31D083-W2F0	11.98	12.27

(1)Fitted with optional hot gas re-heat

Design Data – Water Cooled & Free Cooling

Dry Cooler (kW)

The dry cooler design duty is equivalent to the Total Heat of Rejection (THR) from the indoor unit.

This value can be taken from the performance data in the technical manual using the following.

Parameters required are:

- Ambient conditions (°C dB) ***Airedale recommend a 10°C lower than the EWT.***
- Glycol content (%)
- Entering & leaving water/glycol temperatures (°C) (EWT and LWT)
- Mean condensing temperature (°C) Based on 5°C above leaving water/glycol temperature

Calculation of Design Volumetric Flow Rate (l/s)

The maximum design volumetric flow rate can be calculated using the following equation:

$$\dot{V} = \frac{Q}{\rho \times Cp \times \Delta T}$$

Where:

Q	=	Total Heat Rejection (kW).
ΔT	=	Temperature Difference between Water/Glycol Entering/ Leaving (°C).
ρ	=	Density. Refer to table below.
Cp	=	Specific heat capacity. Refer to table below.

Calculation of Indoor Unit Pressure Drop (ΔP_S)

The maximum indoor unit pressure drop can be calculated using the following equation:

$$\Delta P_S = \Delta P_W \times P\chi$$

Using the volumetric flow rate calculated above, the pressure drop (ΔPw) can be taken from the relevant pressure drop graph..

Where:

ΔP_S	=	Maximum Water/Glycol Pressure Drop for the indoor unit (kPa).
ΔP_W	=	Equivalent Water Pressure Drop for indoor unit (kPa).
$P\chi$	=	% Glycol Pressure Drop Correction Factor @ 20°C Water Temperature. Refer to table below.

The resultant pressure drop (ΔP_S) is the maximum pressure drop based on the indoor unit running at the prescribed conditions.

This will typically occur when the water/glycol temperature is approximately 20°C and the water/glycol is being circulated through the free cooling coil and through the water cooled condenser.

The indoor unit pressure drop will reduce at other operating conditions.

Specific Heat Capacity (Cp)

Water/Glycol Temperature °C	Ethylene Glycol (Volume) / Freezing Point °C				
	0% / 0°C	10% / -4°C	20% / -9°C	30% / -15°C	40% / -23°C
	Fχ	Fχ	Fχ	Fχ	Fχ
20	4.183	3.972	3.815	3.645	3.468
25	4.181	3.981	3.826	3.660	3.485
30	4.179	3.989	3.838	3.674	3.502
35	4.178	3.998	3.849	3.688	3.518
40	4.179	4.007	3.861	3.702	3.535
45	4.181	4.015	3.872	3.716	3.552

Density (ρ)

Water/Glycol Temperature °C	Ethylene Glycol (Volume) / Freezing Point °C				
	0% / 0°C	10% / -4°C	20% / -9°C	30% / -15°C	40% / -23°C
	Fχ	Fχ	Fχ	Fχ	Fχ
20	998	1013	1030	1045	1060
25	997	1012	1028	1043	1058
30	996	1010	1026	1041	1055
35	994	1008	1024	1039	1053
40	992	1006	1022	1036	1050
45	990	1003	1020	1035	1048

Pressure Drop Correction Factor ($P\chi$)

Water/Glycol Temperature °C	Ethylene Glycol (Volume)				
	0%	10%	20%	30%	40%
	Pχ	Pχ	Pχ	Pχ	Pχ
20	0.983	1.0125	1.054	1.0958	1.15

Installation Data

System Pressure Strength Test

The system must be pressure tested to ensure that the pipework is installed satisfactory.

Nitrogen (Oxygen free) should only be used.

Strength Pressure Test is the pressure applied to a refrigeration system for its integral strength and it is usually defined as maximum working pressure (MWP) x factor of 1.43.

The pressure test ideally should be carried out for a period of one hour.

IMPORTANT **Low pressure transducers and switches must be removed whilst the high pressure strength test is carried out.**

CAUTION **Before carrying out the pressure test, precautions shall be taken to evacuate all personnel from the area of risk and post notices advising that the system or equipment is under pressure.**

The test pressure in the system should be held for at least one hour. A longer period may be appropriate for larger systems or a fall in pressure due to leaks may not be detected. Any fall in pressure indicates a leak which should be traced.

System Leak Test

The system leak test is carried out with the low pressure transducers and switches fitted.

Leak Pressure Test is the pressure applied to a refrigeration system or part of a system to test for leakage. This test pressure is defined as Maximum Working Pressure of the particular system x factor of 1.1.

RECORD **Record on commissioning sheet provided once completed.**

IMPORTANT It is important that solenoid valves are energised correctly to ensure that the Hot Gas Reheat coil is fully pressure tested (the normally closed (NC) valve should be energised).

The use of a magnetic coil lifter is recommended.

Filter Drier

The filter drier must be installed as close to the expansion valve as possible. It should be the last component within the system to be installed.

IMPORTANT **Failure to correctly fit a filter drier can cause malfunction of the system. They are however no substitute to good refrigeration practices with regard to system cleanliness.**

Installation Data

Evacuation

Evacuation for systems operating on R410A refrigerant should be carried out as follows

1 The procedure should be carried out using a high vacuum pump. The pump should be connected to the high and low pressure sides of the system via a gauge manifold fitted with compound gauges. A high vacuum gauge should be fitted to the system at the furthest point from the vacuum pump.

2 Triple evacuation should be used to ensure that all contaminants are removed or at least reduced to significantly low proportions.

3 The vacuum pump should be operated until a pressure of 1.5 Torr (200 Pa) absolute pressure is reached, at which time the vacuum pump should be stopped and the vacuum broken with oxygen free nitrogen until the pressure rises above zero.

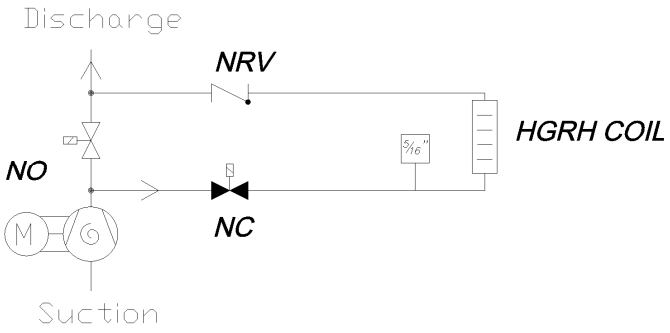
4 The above operation should be repeated a second time.

5 The system should then be evacuated a third time but this time to 0.5 Torr (absolute pressure and broken with the correct refrigerant, until pressures equalise between the charging bottle and the system.

RECORD **Record on commissioning sheet provided once completed.**

IMPORTANT It is important that solenoid valves are energises correctly to ensure that the Hot Gas Reheat Coil is fully evacuated. (The Normally Closed (NC) valve should be energised).

The use of a magnetic coil lifter is recommended.



CAUTION **Ensure that the evacuation gauge is isolated before introducing any pressure. The gauge may become dangerous when exposed to any positive pressure.**

Installation Data

Refrigerant Handling Only certified personnel must charge the systems with refrigerant

CAUTION **Personal protective equipment must be worn when handling refrigerants.**

Charging Gauges The refrigerant Schrader connections on the SmartCool units are 5/16" to allow for the increase working pressures of R410A. Gauges designed for R410A must only be used.

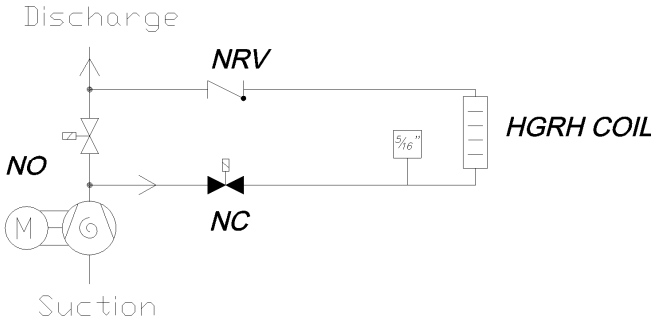
Refrigerant Quality The system must be charged with clean virgin refrigerant R410A only.

Refrigerant Charge Weights The exact refrigerant charge is dependant on site circumstances and operating temperatures. Pipework runs must be taken into consideration. The refrigerant charge must be weighed into the system and recorded within your F-Gas record.

RECORD **Record on commissioning sheet provided once completed.**

IMPORTANT It is important that solenoid valves are energised correctly to ensure that the Hot Gas ReHeat coil is broken of vacuum (the Normally Closed (NC) valve should be energised).

The use of a magnetic coil lifter is recommended.



The valve must also be energised when charging the system with refrigerant.

The solenoid valve head must be put back on the body before unit operation.

Schrader Caps Schrader caps must be replaced following connection of service gauges to the unit.

Final Leak Test A final leak test must be carried out following removal of service gauges prior to leaving site ensuring that the system complies with F-Gas regulations.

Installation Data

Oil Charging Guide

The compressor(s) is supplied with oil for up to approximately 20m of interconnecting pipework.

Compressors

The compressor oil sight glass (where fitted) should indicate a level of between 1/3 and 2/3 to ensure correct operation.

Run the compressor(s) for a minimum of 1 hour to check oil return and motor function. For tandem or trio sets, checks should be performed in part load operation.

1. Use a temperature metering device on each circuit:
2. Check operation and superheat readings are within acceptable limits.
3. Check suction and discharge pressure are within acceptable limits.
4. Check there is NO foaming in the compressor sight glass. This would indicate the presence of liquid returning to the compressor.
5. Check sight glass following commissioning and top oil up if level has fallen below minimum.
6. If oil has been added to allow for long pipe runs, large number of oil traps, etc, and the level in the compressors keep decreasing; the oil return in the system is insufficient. A pipework design check is required.

IMPORTANT It is possible to check the oil level of a compressor a few moments after it is turned off. However the oil level must not be observed when the compressor is turned off. The refrigerant in the system can give a false indication of this level.

In this case the oil level should be at about 1/3.

IMPORTANT **For applications with pipework in excess of 20m, long vertical runs, special operating conditions etc, ensure good oil return is guaranteed AND add sufficient oil to the system.**

REMEMBER, TOO MUCH or TOO LITTLE OIL can cause compressor damage. As a rule NO MORE than 10% additional oil should be added to any system.

ALWAYS use the oil specified by the compressor manufacturer.

Polyolester oil is extremely hygroscopic and will rapidly absorb moisture from the air. The oil must therefore not be left open to the atmosphere for long periods of time. The system must be correctly evacuated to ensure all moisture is removed.

Pressure switch settings

High pressure switch cut-out	40.3 bar	(583psi)
High pressure switch cut-in	30.0 bar	(435psi)
High pressure switch differential	10.3 bar	(148psi)
Low pressure switch cut-out	1.0 bar	(14psi)
Low pressure cut-in	3.0 bar	(43psi)
Low pressure differential	2.0 bar	(29psi)

Compressor Oil Information

	Unit	Total oil charge (l)		Compressor Weight (kg)		Oil Sight Glass	Recommended oil replacement variant	Motor Protection Type	Discharge Gas Temperature Protection	Temperature Range	Oil sump heater
		CP1	CP2	CP1	CP2						
X2X2	SC19D055-X2X2	1.57	1.57	37.2	37.2	Yes	PVE Lubricant 320HV	Internal	Thermodisc		No
	SC19D070-X2X2	1.57	1.57	37.2	37.2						
	SC19D080-X2X2	1.57	1.57	37.2	37.2						
	SC25D080-X2X2	1.57	1.57	37.2	37.2						
	SC25D090-X2X2	3	3	58	58	Yes	POE 160SZ	Internal	Discharge Gas Thermostat	Opens @135°C	Yes
	SC25D100-X2X2	3	3	58	58						
	SC31D100-X2X2	3	3	58	58						
	SC31D120-X2X2	3.3	3.3	64.2	64.2						
	SC31D130-X2X2	3.3	3.3	64.2	64.2						
X2C0	SC19D033-X2C0	1.57	1.57	37.2	37.2	Yes	PVE Lubricant 320HV	Internal	Thermodisc		No
	SC19D038-X2C0	1.57	1.57	37.2	37.2						
	SC19D045-X2C0	1.57	1.57	37.2	37.2						
	SC19D064-X2C0	3.3	3.3	67	67	Yes	POE 160SZ	Internal	Discharge Gas Thermostat	Opens @135°C	Yes
	SC19D070-X2C0	3.3	3.3	69	69						
	SC19D076-X2C0	3.6	3.3	72	72						
	SC25D045-X2C0	1.57	1.57	37.2	37.2	Yes	PVE Lubricant 320HV	Internal	Thermodisc		No
	SC25D050-X2C0	3	3	58	58	Yes	POE 160SZ	Internal	Discharge Gas Thermostat	Opens @135°C	Yes
	SC25D055-X2C0	3	3	58	58						
	SC25D067-X2C0	3.3	3.3	67	67						
	SC25D073-X2C0	3.3	3.3	69	69						
	SC25D080-X2C0	3.6	3.6	72	72						
	SC31D055-X2C0	3	3	58	58						
	SC31D065-X2C0	3.3	3.3	64.2	64.2						
	SC31D075-X2C0	3.3	3.3	64.2	64.2						
	SC31D077-X2C0	3.3	3.3	69	69						
	SC31D080-X2C0	3.3	3.3	69	72						
	SC31D083-X2C0	3.6	3.8	72	72						
W2W2	SC19D055-W2W2	1.57	1.57	37.2	37.2	Yes	PVE Lubricant 320HV	Internal	Thermodisc		No
	SC19D070-W2W2	1.57	1.57	37.2	37.2						
	SC19D080-W2W2	1.57	1.57	37.2	37.2						
	SC25D080-W2W2	1.57	1.57	37.2	37.2						
	SC25D090-W2W2	3	3	58	58	Yes	POE 160SZ	Internal	Discharge Gas Thermostat	Opens @135°C	Yes
	SC25D100-W2W2	3	3	58	58						
	SC31D100-W2W2	3.3	3.3	64.2	64.2						
	SC31D120-W2W2	3.3	3.3	64.2	64.2						
	SC31D130-W2W2	3.3	3.3	64.2	64.2						

Compressor Oil Information

	Unit	Total Oil Charge (l)		Compressor Weight (kG)		Oil Sight Glass	Recommended oil replacement variant	Motor Protection Type	Discharge Gas Temperature Protection	Temperature Range	Oil sump heater
W2C0	SC19D033-W2C0	1.57	1.57	37.2	37.2	Yes	PVE Lubricant 320HV	Internal	Thermodisc		No
	SC19D038-W2C0	1.57	1.57	37.2	37.2						
	SC19D045-W2C0	1.57	1.57	37.2	37.2						
	SC19D064-W2C0	3.3	3.3	67	67	Yes	POE 160SZ	Internal	Discharge Gas Thermostat	Opens @135°C	Yes
	SC19D070-W2C0	3.3	3.3	69	69						
	SC19D076-W2C0	3.6	3.6	72	72						
	SC25D045-W2C0	1.57	1.57	37.2	37.2	Yes	PVE Lubricant 320HV	Internal	Thermodisc		No
	SC25D050-W2C0	3	3	58	58	Yes	POE 160SZ	Internal	Discharge Gas Thermostat	Opens @135°C	Yes
	SC25D055-W2C0	3	3	58	58						
	SC25D067-W2C0	3.3	3.3	69	69						
	SC25D073-W2C0	3.3	3.3	69	69						
	SC25D080-W2C0	3.6	3.6	72	72						
	SC31D055-W2C0	3	3	58	58						
	SC31D065-W2C0	3.3	3.3	64.2	64.2						
	SC31D075-W2C0	3.3	3.3	64.2	64.2						
	SC31D077-W2C0	3.3	3.3	69	69						
	SC31D080-W2C0	3.3	3.6	69	72						
	SC31D083-W2C0	3.6	3.6	72	72						
W2F0	SC19D033-W2F0	1.57	1.57	37.2	37.2	Yes	PVE Lubricant 320HV	Internal	Thermodisc		No
	SC19D038-W2F0	1.57	1.57	37.2	37.2						
	SC19D045-W2F0	1.57	1.57	37.2	37.2						
	SC19D064-W2F0	3.3	3.3	67	67	yes	POE 160SZ	Internal	Discharge Gas Thermostat	Opens @135°C	Yes
	SC19D070-W2F0	3.3	3.3	69	69						
	Sc19D076-W2F0	3.6	3.6	72	72						
	SC25D045-W2F0	1.57	1.57	37.2	37.2	Yes	PVE Lubricant 320HV	Internal	Thermodisc		No
	SC25D050-W2F0	3	3	58	58	yes	POE 160SZ	Internal	Discharge Gas Thermostat	Opens @135°C	Yes
	SC25D055-W2F0	3	3	58	58						
	SC25D067-W2F0	3.3	3.3	67	67						
	SC25D073-W2F0	3.3	3.3	69	69						
	SC25D080-W2F0	3.6	3.6	72	72						
	SC31D055-W2F0	3	3	58	58						
	SC31D065-W2F0	3.3	3.3	64.2	64.2						
	SC31D075-W2F0	3.3	3.3	64.2	64.2						
	SC31D077-W2F0	3.3	3.3	69	69						
	SC31D080-W2F0	3.3	3.6	69	72						
	SC31D083-W2F0	3.6	3.6	72	72						

Installation Data

Chilled Water System

The chilled water coil is factory pressure tested to 20 barg. The chilled water system maximum operating pressure is 10 barg.

The chilled water pipework external to the unit is required to be pressure tested to ensure water tightness.

The chilled water coils need to be bled of air prior to unit operation. The bleed valve is positioned at the top of the coil; with access through the front door.

For the valve working pressure, please contact Airedale.

IMPORTANT Air in a chilled water system may reduce the cooling performance of the unit. The required pump power input would also be increased.

Humidification

Humidifier - Intelligent Modulation

Humidification 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.

Featuring modulating capacity output control as standard, the system shall provide continuous modulation of steam output in response to a proportional control signal. The output control shall range is 20%-100% of the humidifier rated value and be designed to give an approximate steam output of +/- 5% at 25°C (at the sensor), thus ensuring precise control of the conditioned space.

The cylinder operating life time shall be automatically optimised via the integrated water conductivity sensor, which combined with the AIRETronix controls shall monitor and regulate the water refill cycle to reduce excessive salt deposits and the progressive wear of the cylinder.

All humidifier parameters and alarms shall be accessible and adjustable via the microprocessor display keypad unit, main features shall include not less than:

Supply water conductivity (μS/cm)
Actual steam output (kg/h)
Required steam output (kg/h)
Actual current rating (A)
Required current rating (A)
Status mode (Start Up, Running, Filling, Draining)

Humidifier Bottle Information

Limit Values for the supply water with Medium to High conductivity in an immersed electrode humidifier.

			Min	Max
Hydrogen ions		pH	7	8.5
Specific conductivity at 20°C	σR, 20°C	µS/cm	300	1250
Total dissolved solids	TDS	mg/l	(1)	(1)
Dry residue at 180°C	R180	mg/l	(1)	(1)
Total hardness TH		mg/l CaCO3	100(2)	400
Temporary hardness		mg/l CaCO3	60(3)	300
Iron + Manganese		mg/l Fe + Mn	0	0.2
Chlorides		ppm- Cl	0	30
Silica		mg/l SiO2	0	20
Residual chlorine		mg/l Cl	0	0.2
Calcium sulphate		mg/l CaSO4	0	100
Metallic impurities		mg/l	0	0
Solvents, diluents, soaps, lubricants		mg/l	0	0

(1) Values depending on specific conductivity; in general: TDS ≅ 0.93 * σ20; R180 ≅ 0.65 * σ20
(2) not lower than 200% of the chloride content in mg/l of Cl-
(3) not lower than 300% of the chloride content in mg/l of Cl-

Limit Values for the supply water with Medium to Low conductivity in an immersed electrode humidifier

			Min	Max
Hydrogen ions		pH	7	8.5
Specific conductivity at 20°C	σR, 20°C	µS/cm	125	500
Total dissolved solids	TDS	mg/l	(1)	(1)
Dry residue at 180°C	R180	mg/l	(1)	(1)
Total hardness TH		mg/l CaCO3	50(2)	250
Temporary hardness		mg/l CaCO3	30(3)	150
Iron + Manganese		mg/l Fe + Mn	0	0.2
Chlorides		ppm- Cl	0	20
Silica		mg/l SiO2	0	20
Residual chlorine		mg/l Cl	0	0.2
Calcium sulphate		mg/l CaSO4	0	60
Metallic impurities		mg/l	0	0
Solvents, diluents, soaps, lubricants		mg/l	0	0

(1) Values depending on specific conductivity; in general: TDS ≅ 0.93 * σ20; R180 ≅ 0.65 * σ20
(2) not lower than 200% of the chloride content in mg/l of Cl-
(3) not lower than 300% of the chloride content in mg/l of Cl-

Warning: no relation can be demonstrated between water hardness and conductivity.
IMPORTANT WARNING: do not treat water with softeners!
This could cause corrosion of the electrodes or the formation of foam, leading to potential operating problems or failures.

IMPORTANT **The water supply should conform to Local Water Regulations and within the following guidelines:**
Supply water pressure between 1.0 barg to 8.0 barg, > 8.0 bar a pressure reducing valve should be fitted.
A minimum flow rate of 1.21 l/min is required.

The humidifier inlet is fitted with a braided flexible hose, having 3/4” BSPF connection.

IMPORTANT **Ensure the union between the humidifier assembly and supply hose is fully tightened. Any looseness, misalignment or damage to the union can lead to water leakage.**

CAUTION **It is recommended that a shut off valve and a mechanical strainer be fitted to the water supply prior to the humidifier assembly.**

Water Conductivity

As standard the humidifier is fitted with the standard conductivity cylinder which covers the majority of water supplies. Low and high conductivity options can be specified at order.

Water Conductivity & Cylinder Type

3 different cylinders shall be available which correspond to the supply water conductivity.

The cylinder type shall be matched with the standard conductivity of the supply water to ensure optimum performance and increases the life span of the cylinder.

1	Low Conductivity	(Soft Water)	100 to 350 μS/cm
2	Standard Conductivity	(Moderate/Hard Water)	350 to 750 μS/cm
3	High Conductivity	(Very Hard Water)	750 to 1250 μS/cm

Conductivity is a measure of the ability of water to pass an electric current, measured in micro Siemens / centimetre (μS/cm).
As standard the humidifier shall be fitted with the standard conductivity cylinder which shall cover the majority of water supplies. Where the water conductivity is known, ***please specify at order***. For further details please contact Airedale.

CAUTION **The supply water pressure to the humidifier assembly must be between 1 - 8 barg.**

Safe Operation of Humidifier

To protect the humidifier bottle from dangerous pressures in event of the steam supply pipe becoming blocked, a tundish is installed between the water inlet solenoid and the cylinder to act as a reservoir and to feed water to the humidifier inlet manifold as required.

CAUTION **An overflow weir is incorporated in the common fill/drain tundish. Any pressure build up in the cylinder would be allowed to vent through the tundish to atmosphere.**

IMPORTANT **It is MOST IMPORTANT that the steam distribution pipe is not damaged or kinked at any time to avoid the risk of unacceptably high pressure building up in the electrode bottle**

Installation Data

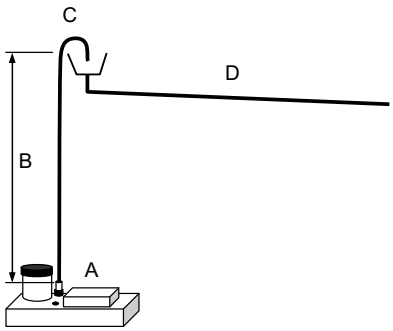
Condensate Drain Pipework

Condensate Pump

IMPORTANT **Use only 10mm (3/8") copper tube when connecting the discharge stub to the condensate pump. The discharge line from the pump should rise no more than 6m vertically and no more than 8m in total length before being interrupted with a swan neck air break and tundish.**

When calculating the total head required and factor into the drain pipework design.

Suitable roding positions should be incorporated particularly if the run is long.



A Condensate Pump
B Condensate pump discharge line; 10mm (3/8") copper tube; maximum vertical run 6m, maximum TOTAL run 8m
C Swan Neck with Tundish
D Drain line from Tundish, > 10mm (3/8") tube **(MUST BE copper tube when coupled with humidifier drain)**, minimum fall 1 : 20

Condensate & Humidifier (Optional Extra)

All drain trays are fitted with their own trap assembly.

Condensate drain may be run to waste via ordinary plastic waste pipe.

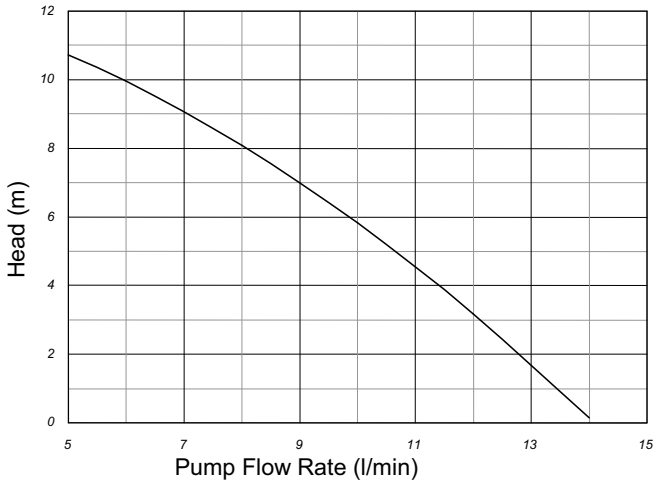
Humidifier drain may be run to waste via pipe suitable for liquid temperatures of 100°C.

All drain pipework operating under gravity should be sloped away from the equipment and the gradient should be made as steep as possible.

Suitable roding positions should be incorporated particularly if the run is long.

Condensate Pump Performance

The following graphs illustrate the TOTAL static (head) pressure available. The system horizontal pipe losses and vertical lift should be factored in when calculating the condensate pump performance.



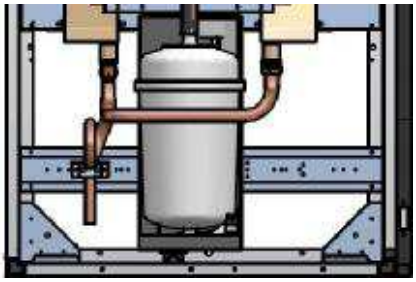
Water Leak Detector Tape

The water detector tape should be insulated at the ends. This will avoid nuisance alarms should un-insulated ends touch any conductive material.

Location

The condensate pump is located within the base of the unit on the right hand side. However if a humidifier is fitted as an integral part of the machine the condensate pump is mounted under the unit. The pump is supplied loose with full instruction for onsite fitment.

Fitting Instructions



The location of the pump assembly depends on the type of Floorstand. Front or Rear discharge air.

The pump is positioned near to the outlet of the Floorstand air discharge allowing unrestricted condensate flow. (Front or Rear of the unit)

Pipework

The pipework supplied loose can be cut to allow unrestricted condensate flow from the condensate and humidifier drain. The pipework fitted is connected to the condensate drain with a compression fitting. The pipework locates into the pump through grommet holes.

Pipe Clips

The flexible pipework clips are to be tightened sufficiently to maintain a water tight seal during unit operation. Do not over tighten as this can damage the condensate hose.

Condensate Drain Priming

The drain tray must be primed with water to ensure that the trap is full before the unit is operated.

Checking for Leaks

Check that the pipework and condensate drain tray do not leak water.

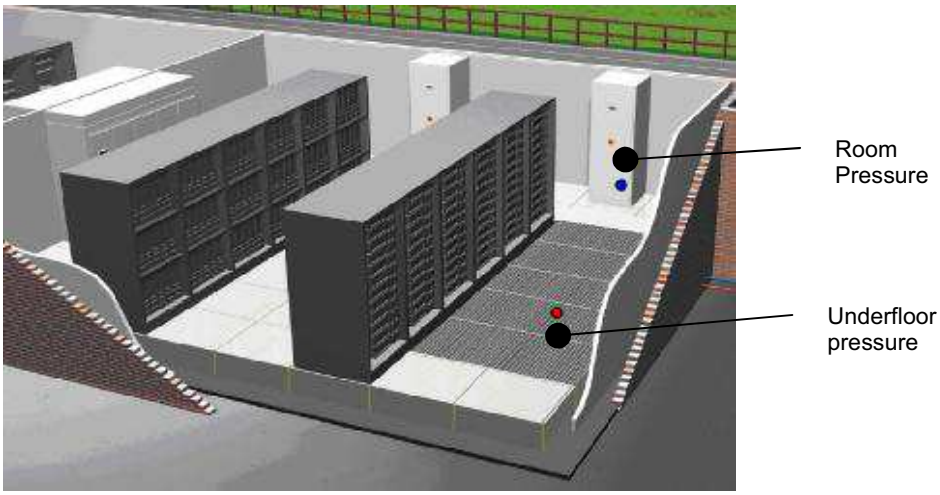
Condensate Pump Operation

Check that the condensate pump operates correctly and that the maximum pumping head of 10.8 m is not exceeded. Ensure that a tundish is used to ensure free flow of condensate to customer drains and therefore cannot back feed when the pump is turned off.

Constant Pressure Control

Constant pressure control is a method of controlling air pressure within a space, such as a floor void or a duct. The air pressure is controlled using a variable speed fan that is modulated to maintain a given set point.

Constant pressure control monitors the air pressure differential between two points. In a typical application (shown below) the pressure under the raised floor (red) is compared to the room pressure (blue).



The two pressure points, positive and negative, are routed back to an air differential pressure sensor inside the CRAC unit. The value from the air pressure sensor is compared to the set point and a fan speed demand is generated, to maintain the required pressure differential.

It is the responsibility of the installer to fit the air pressure sensor(s). The sensor shall be located under the false floor with the 6mm flamtronix tubing routed back into the control panel of the unit (the tubing must not be obstructed /damaged to ensure accurate pressure control).
The constant pressure system shall be commissioned by Airedale following routing of tubing from the pressure diffuser and the unit.
A maximum of 8m/s air velocity is allowed at the diffuser so consideration must be made when locating the diffuser.

Constant Air Volume

Constant air volume is a method of automatically adjusting the unit fan speed to deliver a specific air volume.
When faced with a change in system resistance, the fan speed modulates to obtain the air volume set point.
Constant air volume monitors the air pressure differential between two points. These two pressure points, positive and negative, are routed back to an air differential pressure sensor inside the unit

Fan Speeds

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC19D065-C000-0	EC SC19D STD	3.66	1.83	5.50	6.9 3.7 -	7.2 4.0 -	7.3 4.3 -	7.5 4.6 -	7.7 4.9 -	7.8 5.2 -	8.0 5.5 -	8.2 5.8 -	8.3 6.1 -	8.5 6.4 -	8.6 6.7 -	8.8 7.0 -
	EC SC19D UPG	3.66	1.83	5.50	6.5 3.4 9.6	6.6 3.7 9.7	6.8 4.0 9.8	6.9 4.3 9.9	7.1 4.6 -	7.3 4.9 -	7.4 5.2 -	7.6 5.4 -	7.7 5.6 -	7.9 5.8 -	8.0 6.1 -	8.2 6.3 -
SC19D075-C000-0	EC SC19D STD	4.22	2.11	5.50	7.9 4.2 -	8.1 4.4 -	8.2 4.7 -	8.4 5.0 -	8.5 5.3 -	8.7 5.6 -	8.8 5.8 -	9.0 6.1 -	9.2 6.4 -	9.3 6.7 -	9.5 7.0 -	9.6 7.2 -
	EC SC19D UPG	4.22	2.11	5.50	7.4 3.7 9.6	7.6 4.0 9.7	7.7 4.4 9.8	7.9 4.7 9.9	8.0 5.0 -	8.1 5.2 -	8.3 5.4 -	8.4 5.6 -	8.5 5.9 -	8.7 6.1 -	8.8 6.3 -	8.9 6.5 -
SC19D090-C000-0	EC SC19D STD	5.06	2.53	5.50	9.4 4.8 -	9.6 5.1 -	9.7 5.4 -	9.9 5.6 -	- 5.9 -	- 6.1 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.2 -	- 7.3 -	- 7.5 -
	EC SC19D UPG	5.06	2.53	5.50	8.9 4.4 9.6	9.0 4.8 9.7	9.1 5.1 9.8	9.2 5.3 9.9	9.4 5.5 -	9.5 5.7 -	9.6 5.9 -	9.7 6.1 -	9.8 6.3 -	9.9 6.5 -	- 6.7 -	- 6.9 -
SC19D100-C000-0	EC SL19D STD	5.06	2.53	5.70	9.3 4.8 -	9.5 5.0 -	9.6 5.3 -	9.8 5.6 -	9.9 5.8 -	- 6.1 -	- 6.3 -	- 6.6 -	- 6.9 -	- 7.1 -	- 7.3 -	- 7.5 -
	EC SL19D UPG	5.06	2.53	5.70	8.8 4.3 9.9	8.9 4.7 10	9.0 5.1 -	9.2 5.3 -	9.3 5.5 -	9.4 5.7 -	9.5 5.9 -	9.6 6.1 -	9.7 6.3 -	9.8 6.5 -	9.9 6.7 -	- 6.9 -
SC19D105-C000-0	EC SL19D STD	5.06	2.53	5.70	9.5 4.9 -	9.7 5.2 -	9.8 5.4 -	10.0 5.7 -	- 5.9 -	- 6.2 -	- 6.5 -	- 6.7 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SL19D UPG	5.06	2.53	5.70	9.0 4.5 -	9.1 4.9 -	9.2 5.1 -	9.3 5.3 -	9.4 5.5 -	9.5 5.7 -	9.6 6.0 -	9.8 6.2 -	9.9 6.4 -	10.0 6.6 -	- 6.8 -	- 7.0 -
SC25D090-C000-0	AC SC25D STD	5.32	2.66	7.75	8.0 4.2 -	8.2 4.5 -	8.4 4.9 -	8.6 5.2 -	8.7 5.5 -	8.9 5.7 -	9.1 5.9 -	9.2 6.1 -	9.4 6.3 -	9.6 6.6 -	9.8 6.8 -	9.9 7.0 -
	EC SC25D STD	5.32	2.66	7.75	7.5 4.0 -	7.7 4.3 -	7.8 4.6 -	8.0 4.9 -	8.2 5.2 -	8.3 5.5 -	8.5 5.8 -	8.7 6.1 -	8.8 6.4 -	9.0 6.7 -	9.2 7.0 -	9.3 7.2 -
	EC SC25D UPG	5.32	2.66	7.75	7.0 3.7 9.9	7.1 4.0 -	7.3 4.3 -	7.4 4.6 -	7.6 4.9 -	7.7 5.2 -	7.9 5.4 -	8.0 5.6 -	8.2 5.8 -	8.3 6.0 -	8.5 6.3 -	8.6 6.5 -

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC25D100-C000-0	AC	5.91	2.96	7.75	8.8	9.0	9.2	9.3	9.5	9.7	9.8	-	-	-	-	-
	SC25D STD				4.6	5.0	5.3	5.5	5.8	6.0	6.2	6.4	6.7	6.9	7.1	7.3
					-	-	-	-	-	-	-	-	-	-	-	-
	EC SC25D STD	5.91	2.96	7.75	8.2	8.4	8.5	8.7	8.9	9.0	9.2	9.3	9.5	9.7	9.8	-
					4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.6	6.9	7.2	7.4
					-	-	-	-	-	-	-	-	-	-	-	-
	EC SC25D UPG	5.91	2.96	7.75	7.7	7.8	7.9	8.1	8.2	8.4	8.5	8.6	8.8	8.9	9.1	9.2
					4.0	4.3	4.6	4.9	5.2	5.4	5.6	5.8	6.0	6.3	6.5	6.7
					9.9	-	-	-	-	-	-	-	-	-	-	-
SC25D110-C000-0	AC	6.50	3.25	7.75	9.7	9.9	-	-	-	-	-	-	-	-	-	-
	SC25D STD				5.1	5.4	5.6	5.9	6.1	6.3	6.5	6.8	7.0	7.2	7.4	7.6
					-	-	-	-	-	-	-	-	-	-	-	-
	EC SC25D STD	6.50	3.25	7.75	9.0	9.1	9.3	9.4	9.6	9.8	9.9	-	-	-	-	-
					4.7	5.0	5.3	5.5	5.8	6.1	6.4	6.6	6.9	7.2	7.4	7.5
					-	-	-	-	-	-	-	-	-	-	-	-
	EC SC25D UPG	6.50	3.25	7.75	8.4	8.5	8.7	8.8	8.9	9.1	9.2	9.3	9.4	9.6	9..7	9.8
					4.3	4.6	5.0	5.2	5.4	5.6	5.8	6.1	6.3	6.5	6.7	6.9
					9.9	-	-	-	-	-	-	-	-	-	-	-
SC31D110-C000-0	EC SC31D UPG	5.82	2.91	8.00	7.2	7.4	7.6	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.8
					3.8	4.1	4.4	4.7	5.0	5.2	5.4	5.7	5.9	6.1	6.3	6.5
					9.9	10.0	-	-	-	-	-	-	-	-	-	-
SC31D130-C000-0	EC SC31D UPG	6.88	3.44	8.00	8.6	8.7	8.8	8.9	9.0	9.2	9.3	9.4	9.5	9.7	9.8	9.9
					4.3	4.7	5.0	5.2	5.4	5.6	5.9	6.1	6.3	6.5	6.7	6.9
					9.9	10	-	-	-	-	-	-	-	-	-	-
SC31D150-C000-0	EC SC31D UPG	7.94	3.97	8.00	9.8	9.9	-	-	-	-	-	-	-	-	-	-
					5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9	7.1	7.3
					9.9	10	-	-	-	-	-	-	-	-	-	-

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC19D033-C0C0-0	EC SC19D STD	3.71	1.86	5.50	7.1	7.2	7.4	7.6	7.7	7.9	8.1	8.2	8.4	8.6	8.7	8.9
					3.8	4.1	4.4	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0
					-	-	-	-	-	-	-	-	-	-	-	-
	EC SC19D UPG	3.71	1.86	5.50	6.5	6.7	6.9	7.0	7.2	7.4	7.5	7.7	7.8	7.9	8.1	8.2
					3.4	3.7	4.0	4.4	4.7	5.0	5.2	5.4	5.6	5.9	6.1	6.3
					9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-
SC19D038-C0C0-0	EC SC19D STD	4.27	2.14	5.50	8.0	8.2	8..3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	9.5	9.7
					4.2	4.5	4.8	5.0	5.3	5.6	5.9	6.2	6.4	6.7	7.0	7.2
					-	-	-	-	-	-	-	-	-	-	-	-
	EC SC19D UPG	4.27	2.14	5.50	7.6	7.7	7.8	8.0	8.1	8.2	8.4	8.5	8.6	8.7	8.9	9.0
					3.7	4.1	4.4	4.7	5.0	5.2	5.5	5.7	5.9	6.1	6.3	6.5
					9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-
SC19D045-C0C0-0	EC SC19D STD	5.06	2.53	5.50	9.4	9.6	9.7	9.9	-	-	-	-	-	-	-	-
					4.8	5.1	5.4	5.6	5.9	6.1	6.4	6.7	6.9	7.2	7.3	7.5
					-	-	-	-	-	-	-	-	-	-	-	-
	EC SC19D UPG	5.06	2.53	5.50	8.9	9.0	9.1	9.2	9.4	9.5	9.6	9.7	9.8	9.9	-	-
					4.4	4.8	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9
					9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC25D045-C0C0-0	AC	5.32			8.0	8.2	8.4	8.6	8.7	8.9	9.1	9.2	9.4	9.6	9.8	9.9
	SC25D		2.66		4.2	4.5	4.9	5.2	5.5	5.7	5.9	6.1	6.3	6.6	6.8	7.0
	STD			7.75	-	-	-	-	-	-	-	-	-	-	-	-
	EC	5.32			7.5	7.7	7.8	8.0	8.2	8.3	8.5	8.7	8.8	9.0	9.2	9.3
	SC25D		2.66		4.0	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0	7.2
	STD			7.75	-	-	-	-	-	-	-	-	-	-	-	-
	EC	5.32			7.0	7.1	7.3	7.4	7.6	7.7	7.9	8.0	8.2	8.3	8.5	8.6
	SC25D		2.66		3.7	4.0	4.3	4.6	4.9	5.2	5.4	5.6	5.8	6.0	6.3	6.5
	UPG			7.75	9.9	-	-	-	-	-	-	-	-	-	-	-
SC25D050-C0C0-0	AC	5.91			8.8	9.0	9.2	9.3	9.5	9.7	9.8	-	-	-	-	-
	SC25D		2.96		4.6	5.0	5.3	5.5	5.8	6.0	6.2	6.4	6.7	6.9	7.1	7.3
	STD			7.75	-	-	-	-	-	-	-	-	-	-	-	-
	EC	5.91			8.2	8.4	8.5	8.7	8.9	9.0	9.2	9.3	9.5	9.7	9.8	-
	SC25D		2.96		4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.6	6.9	7.2	7.4
	STD			7.75	-	-	-	-	-	-	-	-	-	-	-	-
	EC	5.91			7.7	7.8	7.9	8.1	8.2	8.4	8.5	8.6	8.8	8.9	9.1	9.2
	SC25D		2.96		4.0	4.3	4.6	4.9	5.2	5.4	5.6	5.8	6.0	6.3	6.5	6.7
	UPG			7.75	9.9	-	-	-	-	-	-	-	-	-	-	-
SC25D055-C0C0-0	AC	6.50			9.7	9.9	-	-	-	-	-	-	-	-	-	-
	SC25D		3.25		5.1	5.4	5.6	5.9	6.1	6.3	6.5	6.8	7.0	7.2	7.4	7.6
	STD			7.75	-	-	-	-	-	-	-	-	-	-	-	-
	EC	6.50			9.0	9.1	9.3	9.4	9.6	9.8	9.9	-	-	-	-	-
	SC25D		3.25		4.7	5.0	5.3	5.5	5.8	6.1	6.4	6.6	6.9	7.2	7.4	7.5
	STD			7.75	-	-	-	-	-	-	-	-	-	-	-	-
	EC	6.50			8.4	8.5	8.7	8.8	8.9	9.1	9.2	9.3	9.4	9.6	9.7	9.8
	SC25D		3.25		4.3	4.6	5.0	5.2	5.4	5.6	5.8	6.1	6.3	6.5	6.7	6.9
	UPG			7.75	9.9	-	-	-	-	-	-	-	-	-	-	-
SC31D055-C0C0-0	EC	5.82			7.2	7.4	7.6	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.8
	SC31D		2.91		3.8	4.1	4.4	4.7	5.0	5.2	5.4	5.7	5.9	6.1	6.3	6.5
	UPG			8.00	9.9	10	-	-	-	-	-	-	-	-	-	-
SC31D065-C0C0-0	EC	6.88			8.6	8.7	8.8	8.9	9.0	9.2	9.3	9.4	9.5	9.7	9.8	9.9
	SC31D		3.44		4.3	4.7	5.0	5.2	5.4	5.6	5.9	6.1	6.3	6.5	6.7	6.9
	UPG			8.00	9.9	10	-	-	-	-	-	-	-	-	-	-
SC31D075-C0C0-0	EC	7.94			9.8	9.9	-	-	-	-	-	-	-	-	-	-
	SC31D		3.97		5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9	7.1	7.3
	UPG			8.00	9.9	10	-	-	-	-	-	-	-	-	-	-

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC19D055-X2X2-0	EC	3.48			6.4	6.7	7.1	7.2	7.4	7.6	7.7	7.9	8.1	8.2	8.4	8.6
	SC19D		1.74		3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6.0	6.3	6.6	6.9
	STD			5.50	-	-	-	-	-	-	-	-	-	-	-	-
	EC	3.48			6.2	6.4	6.6	6.7	6.9	7.0	7.2	7.4	7.5	7.7	7.8	8.0
	SC19D		1.74		3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.3	5.5	5.8	6.0	6.2
	UPG			5.50	9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-
SC19D070-X2X2-0	EC	4.43			8.3	8.4	8.6	8.7	8.9	9.0	9.2	9.3	9.5	9.6	9.8	10.0
	SC19D		2.22		4.3	4.6	4.9	5.2	5.4	5.7	6.0	6.3	6.5	6.8	7.1	7.3
	STD			5.50	-	-	-	-	-	-	-	-	-	-	-	-
	EC	4.43			7.8	8.0	8.1	8.2	8.3	8.5	8.6	8.7	8.8	9.0	9.1	9.2
	SC19D		2.22		3.8	4.2	4.5	4.8	5.1	5.3	5.5	5.8	6.0	6.2	6.4	6.6
	UPG			5.50	9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-
SC19D080-X2X2-0	EC	5.06			9.4	9.6	9.7	9.9	-	-	-	-	-	-	-	-
	SC19D		2.53		4.8	5.1	5.4	5.6	5.9	6.1	6.4	6.7	6.9	7.2	7.3	7.5
	STD			5.50	-	-	-	-	-	-	-	-	-	-	-	-
	EC	5.06			8.9	9.0	9.1	9.2	9.4	9.5	9.6	9.7	9.8	9.9	-	-
	SC19D		2.53		4.4	4.8	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9
	UPG			5.50	9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-
SC25D080-X2X2-0	AC	5.20			7.8	8.1	8.3	8.4	8.6	8.8	8.9	9.1	9.3	9.4	9.6	9.8
	SC25D		2.60		4.1	4.4	4.8	5.1	5.4	5.6	5.8	6.1	6.3	6.5	6.7	6.9
	STD			7.75	-	-	-	-	-	-	-	-	-	-	-	-
	EC	5.20			7.3	7.5	7.7	7.8	8.0	8.2	8.4	8.5	8.7	8.9	9.0	9.2
	SC25D		2.60		3.9	4.2	4.5	4.8	5.1	5.4	5.7	6.0	6.3	6.6	6.9	7.2
	STD			7.75	-	-	-	-	-	-	-	-	-	-	-	-
	EC	5.20			6.8	7.0	7.1	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	8.5
	SC25D		2.60		3.6	3.9	4.2	4.6	4.9	5.1	5.3	5.6	5.8	6.0	6.2	6.4
	UPG			7.75	9.9	-	-	-	-	-	-	-	-	-	-	-

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC25D090-X2X2-0	AC SC25D STD	5.85	2.93	7.75	8.8 4.6 -	8.9 4.9 -	9.1 5.3 -	9.3 5.5 -	9.4 5.7 -	9.6 6.0 -	9.8 6.2 -	9.9 6.4 -	- 6.6 -	- 6.8 -	- 7.1 -	- 7.3 -
	EC SC25D STD	5.85	2.93	7.75	8.1 4.3 -	8.3 4.6 -	8.5 4.9 -	8.6 5.2 -	8.8 5.5 -	8.9 5.7 -	9.1 6.0 -	9.3 6.3 -	9.4 6.6 -	9.6 6.9 -	9.8 7.1 -	10.0 7.3 -
	EC SC25D UPG	5.85	2.93	7.75	7.6 3.9 9.9	7.7 4.3 -	7.9 4.6 -	8.0 4.9 -	8.2 5.1 -	8.3 5.4 -	8.4 5.6 -	8.6 5.8 -	8.7 6.0 -	8.9 6.2 -	9.0 6.4 -	9.1 6.7 -
SC25D100-X2X2-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	- 6.6 -	- 6.9 -	- 7.2 -	- 7.4 -	- 7.5 -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC31D100-X2X2-0	EC SC31D UPG	6.11	3.06	8.00	7.6 3.9 9.9	7.8 4.2 10	7.9 4.5 -	8.0 4.8 -	8.2 5.1 -	8.3 5.3 -	8.4 5.5 -	8.6 5.8 -	8.7 6.0 -	8.8 6.2 -	9.0 6.4 -	9.1 6.6 -
SC31D120-X2X2-0	EC SC31D UPG	7.33	3.67	8.00	9.1 4.7 9.9	9.2 5.0 10	9.3 5.2 -	9.4 5.4 -	9.5 5.6 -	9.7 5.8 -	9.8 6.0 -	9.9 6.3 -	10.0 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -
SC31D130-X2X2-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10.0	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC19D055-W2W2-0	EC SC19D STD	3.48	1.74	5.50	6.4 3.6 -	6.7 3.9 -	7.1 4.2 -	7.2 4.5 -	7.4 4.8 -	7.6 5.1 -	7.7 5.4 -	7.9 5.7 -	8.1 6.0 -	8.2 6.3 -	8.4 6.6 -	8.6 6.9 -
	EC SC19D UPG	3.48	1.74	5.50	6.2 3.3 9.6	6.4 3.6 9.7	6.6 3.9 9.8	6.7 4.2 9.9	6.9 4.5 -	7.0 4.8 -	7.2 5.1 -	7.4 5.3 -	7.5 5.5 -	7.7 5.8 -	7.8 6.0 -	8.0 6.2 -
SC19D070-W2W2-0	EC SC19D STD	4.43	2.22	5.50	8.3 4.3 -	8.4 4.6 -	8.6 4.9 -	8.7 5.2 -	8.9 5.4 -	9.0 5.7 -	9.2 6.0 -	9.3 6.3 -	9.5 6.5 -	9.6 6.8 -	9.8 7.1 -	10.0 7.3 -
	EC SC19D UPG	4.43	2.22	5.50	7.8 3.8 9.6	8.0 4.2 9.7	8.1 4.5 9.8	8.2 4.8 9.9	8.3 5.1 -	8.5 5.3 -	8.6 5.5 -	8.7 5.8 -	8.8 6.0 -	9.0 6.2 -	9.1 6.4 -	9.2 6.6 -
SC19D080-W2W2-0	EC SC19D STD	5.06	2.53	5.50	9.4 4.8 -	9.6 5.1 -	9.7 5.4 -	9.9 5.6 -	- 5.9 -	- 6.1 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.2 -	- 7.3 -	- 7.5 -
	EC SC19D UPG	5.06	2.53	5.50	8.9 4.4 9.6	9.0 4.8 9.7	9.1 5.1 9.8	9.2 5.3 9.9	9.4 5.5 -	9.5 5.7 -	9.6 5.9 -	9.7 6.1 -	9.8 6.3 -	9.9 6.5 -	- 6.7 -	- 6.9 -
SC25D080-W2W2-0	AC SC25D STD	5.20	2.60	7.75	7.8 4.1 -	8.1 4.4 -	8.3 4.8 -	8.4 5.1 -	8.6 5.4 -	8.8 5.6 -	8.9 5.8 -	9.1 6.1 -	9.3 6.3 -	9.4 6.5 -	9.6 6.7 -	9.8 6.9 -
	EC SC25D STD	5.20	2.60	7.75	7.3 3.9 -	7.5 4.2 -	7.7 4.5 -	7.8 4.8 -	8.0 5.1 -	8.2 5.4 -	8.4 5.7 -	8.5 6.0 -	8.7 6.3 -	8.9 6.6 -	9.0 6.9 -	9.2 7.2 -
	EC SC25D UPG	5.20	2.60	7.75	6.8 3.6 9.9	7.0 3.9 -	7.1 4.2 -	7.3 4.6 -	7.5 4.9 -	7.6 5.1 -	7.8 5.3 -	7.9 5.6 -	8.1 5.8 -	8.2 6.0 -	8.4 6.2 -	8.5 6.4 -
SC25D090-W2W2-0	AC SC25D STD	5.85	2.93	7.75	8.8 4.6 -	8.9 4.9 -	9.1 5.3 -	9.3 5.5 -	9.4 5.7 -	9.6 6.0 -	9.8 6.2 -	9.9 6.4 -	- 6.6 -	- 6.8 -	- 7.1 -	- 7.3 -
	EC SC25D STD	5.85	2.93	7.75	8.1 4.3 -	8.3 4.6 -	8.5 4.9 -	8.6 5.2 -	8.8 5.5 -	8.9 5.7 -	9.1 6.0 -	9.3 6.3 -	9.4 6.6 -	9.6 6.9 -	9.8 7.1 -	10.0 7.3 -
	EC SC25D UPG	5.85	2.93	7.75	7.6 3.9 9.9	7.7 4.3 -	7.9 4.6 -	8.0 4.9 -	8.2 5.1 -	8.3 5.4 -	8.4 5.6 -	8.6 5.8 -	8.7 6.0 -	8.9 6.2 -	9.0 6.4 -	9.1 6.7 -
SC25D100-W2W2-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	- 6.6 -	- 6.9 -	- 7.2 -	- 7.4 -	- 7.5 -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC31D100-W2W2-0	EC SC31D UPG	6.11	3.06	8.00	7.6 3.9 9.9	7.8 4.2 10.0	7.9 4.5 -	8.0 4.8 -	8.2 5.1 -	8.3 5.3 -	8.4 5.5 -	8.6 5.8 -	8.7 6.0 -	8.8 6.2 -	9.0 6.4 -	9.1 6.6 -
SC31D120-W2W2-0	EC SC31D UPG	7.33	3.67	8.00	9.1 4.7 9.9	9.2 5.0 10.0	9.3 5.2 -	9.4 5.4 -	9.5 5.6 -	9.7 5.8 -	9.8 6.0 -	9.9 6.3 -	10.0 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -
SC31D130-W2W2-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10.0	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC19D033-X2C0-0	EC	3.71			7.1	7.2	7.4	7.6	7.7	7.9	8.1	8.2	8.4	8.6	8.7	8.9
	SC19D		1.86		3.8	4.1	4.4	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0
	STD			5.50	-	-	-	-	-	-	-	-	-	-	-	-
	EC	3.71			6.5	6.7	6.9	7.0	7.2	7.4	7.5	7.7	7.8	7.9	8.1	8.2
	SC19D		1.86		3.4	3.7	4.0	4.4	4.7	5.0	5.2	5.4	5.6	5.9	6.1	6.3
	UPG			5.50	9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-
SC19D038-X2C0-0	EC	4.27			8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	9.5	9.7
	SC19D		2.14		4.2	4.5	4.8	5.0	5.3	5.6	5.9	6.2	6.4	6.7	7.0	7.2
	STD			5.50	-	-	-	-	-	-	-	-	-	-	-	-
	EC	4.27			7.6	7.7	7.8	8.0	8.1	8.2	8.4	8.5	8.6	8.7	8.9	9.0
	SC19D		2.14		3.7	4.1	4.4	4.7	5.0	5.2	5.5	5.7	5.9	6.1	6.3	6.5
	UPG			5.50	9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-
SC19D045-X2C0-0	EC	5.06			9.4	9.6	9.7	9.9	-	-	-	-	-	-	-	-
	SC19D		2.53		4.8	5.1	5.4	5.6	5.9	6.1	6.4	6.7	6.9	7.2	7.3	7.5
	STD			5.50	-	-	-	-	-	-	-	-	-	-	-	-
	EC	5.06			8.9	9.0	9.1	9.2	9.4	9.5	9.6	9.7	9.8	9.9	-	-
	SC19D		2.53		4.4	4.8	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9
	UPG			5.50	9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-
SC19D064-X2C0-0	EC	5.06			9.4	9.6	9.7	9.9	-	-	-	-	-	-	-	-
	SC19D		2.53		4.8	5.1	5.4	5.6	5.9	6.1	6.4	6.7	6.9	7.2	7.3	7.5
	STD			5.50	-	-	-	-	-	-	-	-	-	-	-	-
	EC	5.06			8.9	9.0	9.1	9.2	9.4	9.5	9.6	9.7	9.8	9.9	-	-
	SC19D		2.53		4.4	4.8	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9
	UPG			5.50	9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-
SC19D070-X2C0-0	EC	5.06			9.4	9.6	9.7	9.9	-	-	-	-	-	-	-	-
	SC19D		2.53		4.8	5.1	5.4	5.6	5.9	6.1	6.4	6.7	6.9	7.2	7.3	7.5
	STD			5.50	-	-	-	-	-	-	-	-	-	-	-	-
	EC	5.06			8.9	9.0	9.1	9.2	9.4	9.5	9.6	9.7	9.8	9.9	-	-
	SC19D		2.53		4.4	4.8	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9
	UPG			5.50	9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-
SC19D076-X2C0-0	EC	5.06			9.4	9.6	9.7	9.9	-	-	-	-	-	-	-	-
	SC19D		2.53		4.8	5.1	5.4	5.6	5.9	6.1	6.4	6.7	6.9	7.2	7.3	7.5
	STD			5.50	-	-	-	-	-	-	-	-	-	-	-	-
	EC	5.06			8.9	9.0	9.1	9.2	9.4	9.5	9.6	9.7	9.8	9.9	-	-
	SC19D		2.53		4.4	4.8	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9
	UPG			5.50	9.6	9.7	9.8	9.9	-	-	-	-	-	-	-	-

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC25D045-X2C0-0	AC SC25D STD	5.32	2.66	7.75	8.0 4.2 -	8.2 4.5 -	8.4 4.9 -	8.6 5.2 -	8.7 5.5 -	8.9 5.7 -	9.1 5.9 -	9.2 6.1 -	9.4 6.3 -	9.6 6.6 -	9.8 6.8 -	9.9 7.0 -
	EC SC25D STD	5.32	2.66	7.75	7.5 4.0 -	7.7 4.3 -	7.8 4.6 -	8.0 4.9 -	8.2 5.2 -	8.3 5.5 -	8.5 5.8 -	8.7 6.1 -	8.8 6.4 -	9.0 6.7 -	9.2 7.0 -	9.3 7.2 -
	EC SC25D UPG	5.32	2.66	7.75	7.0 3.7 9.9	7.1 4.0 -	7.3 4.3 -	7.4 4.6 -	7.6 4.9 -	7.7 5.2 -	7.9 5.4 -	8.0 5.6 -	8.2 5.8 -	8.3 6.0 -	8.5 6.3 -	8.6 6.5 -
SC25D050-X2C0-0	AC SC25D STD	5.91	2.96	7.75	8.8 4.6 -	9.0 5.0 -	9.2 5.3 -	9.3 5.5 -	9.5 5.8 -	9.7 6.0 -	9.8 6.2 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
	EC SC25D STD	5.91	2.96	7.75	8.2 4.3 -	8.4 4.6 -	8.5 4.9 -	8.7 5.2 -	8.9 5.5 -	9.0 5.8 -	9.2 6.1 -	9.3 6.4 -	9.5 6.6 -	9.7 6.9 -	9.8 7.2 -	- 7.4 -
	EC SC25D UPG	5.91	2.96	7.75	7.7 4.0 9.9	7.8 4.3 -	7.9 4.6 -	8.1 4.9 -	8.2 5.2 -	8.4 5.4 -	8.5 5.6 -	8.6 5.8 -	8.8 6.0 -	8.9 6.3 -	9.1 6.5 -	9.2 6.7 -
SC25D055-X2C0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	- 6.6 -	- 6.9 -	- 7.2 -	- 7.4 -	- 7.5 -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC25D067-X2C0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	6.6 - -	6.9 - -	7.2 - -	7.4 - -	7.5 - -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC25D073-X2C0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	6.6 - -	6.9 - -	7.2 - -	7.4 - -	7.5 - -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC25D080-X2C0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	6.6 - -	6.9 - -	7.2 - -	7.4 - -	7.5 - -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC31D055-X2C0-0	EC SC31D UPG	5.82	2.91	8.00	7.2 3.8 9.9	7.4 4.1 10	7.6 4.4 -	7.7 4.7 -	7.8 5.0 -	8.0 5.2 -	8.1 5.4 -	8.3 5.7 -	8.4 5.9 -	8.6 6.1 -	8.7 6.3 -	8.8 6.5 -
SC31D065-X2C0-0	EC SC31D UPG	6.88	3.44	8.00	8.6 4.3 9.9	8.7 4.7 10	8.8 5.0 -	8.9 5.2 -	9.0 5.4 -	9.2 5.6 -	9.3 5.9 -	9.4 6.1 -	9.5 6.3 -	9.7 6.5 -	9.8 6.7 -	9.9 6.9 -
SC31D075-X2C0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
SC31D077-X2C0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
SC31D080-X2C0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
SC31D083-X2C0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC19D033-W2C0-0	EC SC19D STD	3.71	1.86	5.50	7.1 3.8 -	7.2 4.1 -	7.4 4.4 -	7.6 4.6 -	7.7 4.9 -	7.9 5.2 -	8.1 5.5 -	8.2 5.8 -	8.4 6.1 -	8.6 6.4 -	8.7 6.7 -	8.9 7.0 -
	EC SC19D UPG	3.71	1.86	5.50	6.5 3.4 9.6	6.7 3.7 9.7	6.9 4.0 9.8	7.0 4.4 9.9	7.2 4.7 -	7.4 5.0 -	7.5 5.2 -	7.7 5.4 -	7.8 5.6 -	7.9 5.9 -	8.1 6.1 -	8.2 6.3 -
SC19D038-W2C0-0	EC SC19D STD	4.27	2.14	5.50	8.0 4.2 -	8.2 4.5 -	8.3 4.8 -	8.5 5.0 -	8.6 5.3 -	8.8 5.6 -	8.9 5.9 -	9.1 6.2 -	9.2 6.4 -	9.4 6.7 -	9.5 7.0 -	9.7 7.2 -
	EC SC19D UPG	4.27	2.14	5.50	7.6 3.7 9.6	7.7 4.1 9.7	7.8 4.4 9.8	8.0 4.7 9.9	8.1 5.0 -	8.2 5.2 -	8.4 5.5 -	8.5 5.7 -	8.6 5.9 -	8.7 6.1 -	8.9 6.3 -	9.0 6.5 -
SC19D045-W2C0-0	EC SC19D STD	5.06	2.53	5.50	9.4 4.8 -	9.6 5.1 -	9.7 5.4 -	9.9 5.6 -	- 5.9 -	- 6.1 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.2 -	- 7.3 -	- 7.5 -
	EC SC19D UPG	5.06	2.53	5.50	8.9 4.4 9.6	9.0 4.8 9.7	9.1 5.1 9.8	9.2 5.3 9.9	9.4 5.5 -	9.5 5.7 -	9.6 5.9 -	9.7 6.1 -	9.8 6.3 -	9.9 6.5 -	- 6.7 -	- 6.9 -
SC19D064-W2C0-0	EC SC19D STD	5.06	2.53	5.50	9.4 4.8 -	9.6 5.1 -	9.7 5.4 -	9.9 5.6 -	- 5.9 -	- 6.1 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.2 -	- 7.3 -	- 7.5 -
	EC SC19D UPG	5.06	2.53	5.50	8.9 4.4 9.6	9.0 4.8 9.7	9.1 5.1 9.8	9.2 5.3 9.9	9.4 5.5 -	9.5 5.7 -	9.6 5.9 -	9.7 6.1 -	9.8 6.3 -	9.9 6.5 -	- 6.7 -	- 6.9 -
SC19D070-W2C0-0	EC SC19D STD	5.06	2.53	5.50	9.4 4.8 -	9.6 5.1 -	9.7 5.4 -	9.9 5.6 -	- 5.9 -	- 6.1 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.2 -	- 7.3 -	- 7.5 -
	EC SC19D UPG	5.06	2.53	5.50	8.9 4.4 9.6	9.0 4.8 9.7	9.1 5.1 9.8	9.2 5.3 9.9	9.4 5.5 -	9.5 5.7 -	9.6 5.9 -	9.7 6.1 -	9.8 6.3 -	9.9 6.5 -	- 6.7 -	- 6.9 -
SC19D076-W2C0-0	EC SC19D STD	5.06	2.53	5.50	9.4 4.8 -	9.6 5.1 -	9.7 5.4 -	9.9 5.6 -	- 5.9 -	- 6.1 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.2 -	- 7.3 -	- 7.5 -
	EC SC19D UPG	5.06	2.53	5.50	8.9 4.4 9.6	9.0 4.8 9.7	9.1 5.1 9.8	9.2 5.3 9.9	9.4 5.5 -	9.5 5.7 -	9.6 5.9 -	9.7 6.1 -	9.8 6.3 -	9.9 6.5 -	- 6.7 -	- 6.9 -
SC25D045-W2C0-0	AC SC25D STD	5.32	2.66	7.75	8.0 4.2 -	8.2 4.5 -	8.4 4.9 -	8.6 5.2 -	8.7 5.5 -	8.9 5.7 -	9.1 5.9 -	9.2 6.1 -	9.4 6.3 -	9.6 6.6 -	9.8 6.8 -	9.9 7.0 -
	EC SC25D STD	5.32	2.66	7.75	7.5 4.0 -	7.7 4.3 -	7.8 4.6 -	8.0 4.9 -	8.2 5.2 -	8.3 5.5 -	8.5 5.8 -	8.7 6.1 -	8.8 6.4 -	9.0 6.7 -	9.2 7.0 -	9.3 7.2 -
	EC SC25D UPG	5.32	2.66	7.75	7.0 3.7 9.9	7.1 4.0 -	7.3 4.3 -	7.4 4.6 -	7.6 4.9 -	7.7 5.2 -	7.9 5.4 -	8.0 5.6 -	8.2 5.8 -	8.3 6.0 -	8.5 6.3 -	8.6 6.5 -
SC25D050-W2C0-0	AC SC25D STD	5.91	2.96	7.75	8.8 4.6 -	9.0 5.0 -	9.2 5.3 -	9.3 5.5 -	9.5 5.8 -	9.7 6.0 -	9.8 6.2 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
	EC SC25D STD	5.91	2.96	7.75	8.2 4.3 -	8.4 4.6 -	8.5 4.9 -	8.7 5.2 -	8.9 5.5 -	9.0 5.8 -	9.2 6.1 -	9.3 6.4 -	9.5 6.6 -	9.7 6.9 -	9.8 7.2 -	- 7.4 -
	EC SC25D UPG	5.91	2.96	7.75	7.7 4.0 9.9	7.8 4.3 -	7.9 4.6 -	8.1 4.9 -	8.2 5.2 -	8.4 5.4 -	8.5 5.6 -	8.6 5.8 -	8.8 6.0 -	8.9 6.3 -	9.1 6.5 -	9.2 6.7 -

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC25D055-W2C0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	- 6.6 -	- 6.9 -	- 7.2 -	- 7.4 -	- 7.5 -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC25D067-W2C0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	6.6 -	6.9 -	7.2 -	7.4 -	7.5 -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC25D073-W2C0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	6.6 -	6.9 -	7.2 -	7.4 -	7.5 -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC25D080-W2C0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	6.6 -	6.9 -	7.2 -	7.4 -	7.5 -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC31D055-W2C0-0	EC SC31D UPG	5.82	2.91	8.00	7.2 3.8 9.9	7.4 4.1 10	7.6 4.4 -	7.7 4.7 -	7.8 5.0 -	8.0 5.2 -	8.1 5.4 -	8.3 5.7 -	8.4 5.9 -	8.6 6.1 -	8.7 6.3 -	8.8 6.5 -
SC31D065-W2C0-0	EC SC31D UPG	6.88	3.44	8.00	8.6 4.3 9.9	8.7 4.7 10	8.8 5.0 -	8.9 5.2 -	9.0 5.4 -	9.2 5.6 -	9.3 5.9 -	9.4 6.1 -	9.5 6.3 -	9.7 6.5 -	9.8 6.7 -	9.9 6.9 -
SC31D075-W2C0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
SC31D077-W2C0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
SC31D080-W2C0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
SC31D083-W2C0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -

Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC19D033-W2F0-0	EC SC19D STD	3.71	1.86	5.50	7.1 3.8 -	7.2 4.1 -	7.4 4.4 -	7.6 4.6 -	7.7 4.9 -	7.9 5.2 -	8.1 5.5 -	8.2 5.8 -	8.4 6.1 -	8.6 6.4 -	8.7 6.7 -	8.9 7.0 -
	EC SC19D UPG	3.71	1.86	5.50	6.5 3.4 9.6	6.7 3.7 9.7	6.9 4.0 9.8	7.0 4.4 9.9	7.2 4.7 -	7.4 5.0 -	7.5 5.2 -	7.7 5.4 -	7.8 5.6 -	7.9 5.9 -	8.1 6.1 -	8.2 6.3 -
SC19D038-W2F0-0	EC SC19D STD	4.27	2.14	5.50	8.0 4.2 -	8.2 4.5 -	8.3 4.8 -	8.5 5.0 -	8.6 5.3 -	8.8 5.6 -	8.9 5.9 -	9.1 6.2 -	9.2 6.4 -	9.4 6.7 -	9.5 7.0 -	9.7 7.2 -
	EC SC19D UPG	4.27	2.14	5.50	7.6 3.7 9.6	7.7 4.1 9.7	7.8 4.4 9.8	8.0 4.7 9.9	8.1 5.0 -	8.2 5.2 -	8.4 5.5 -	8.5 5.7 -	8.6 5.9 -	8.7 6.1 -	8.9 6.3 -	9.0 6.5 -
SC19D045-W2F0-0	EC SC19D STD	5.06	2.53	5.50	9.4 4.8 -	9.6 5.1 -	9.7 5.4 -	9.9 5.6 -	- 5.9 -	- 6.1 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.2 -	- 7.3 -	- 7.5 -
	EC SC19D UPG	5.06	2.53	5.50	8.9 4.4 9.6	9.0 4.8 9.7	9.1 5.1 9.8	9.2 5.3 9.9	9.4 5.5 -	9.5 5.7 -	9.6 5.9 -	9.7 6.1 -	9.8 6.3 -	9.9 6.5 -	- 6.7 -	- 6.9 -
SC19D064-W2F0-0	EC SC19D STD	5.06	2.53	5.50	9.4 4.8 -	9.6 5.1 -	9.7 5.4 -	9.9 5.6 -	- 5.9 -	- 6.1 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.2 -	- 7.3 -	- 7.5 -
	EC SC19D UPG	5.06	2.53	5.50	8.9 4.4 9.6	9.0 4.8 9.7	9.1 5.1 9.8	9.2 5.3 9.9	9.4 5.5 -	9.5 5.7 -	9.6 5.9 -	9.7 6.1 -	9.8 6.3 -	9.9 6.5 -	- 6.7 -	- 6.9 -
SC19D070-W2F0-0	EC SC19D STD	5.06	2.53	5.50	9.4 4.8 -	9.6 5.1 -	9.7 5.4 -	9.9 5.6 -	- 5.9 -	- 6.1 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.2 -	- 7.3 -	- 7.5 -
	EC SC19D UPG	5.06	2.53	5.50	8.9 4.4 9.6	9.0 4.8 9.7	9.1 5.1 9.8	9.2 5.3 9.9	9.4 5.5 -	9.5 5.7 -	9.6 5.9 -	9.7 6.1 -	9.8 6.3 -	9.9 6.5 -	- 6.7 -	- 6.9 -
SC19D076-W2F0-0	EC SC19D STD	5.06	2.53	5.50	9.4 4.8 -	9.6 5.1 -	9.7 5.4 -	9.9 5.6 -	- 5.9 -	- 6.1 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.2 -	- 7.3 -	- 7.5 -
	EC SC19D UPG	5.06	2.53	5.50	8.9 4.4 9.6	9.0 4.8 9.7	9.1 5.1 9.8	9.2 5.3 9.9	9.4 5.5 -	9.5 5.7 -	9.6 5.9 -	9.7 6.1 -	9.8 6.3 -	9.9 6.5 -	- 6.7 -	- 6.9 -
SC25D045-W2F0-0	AC SC25D STD	5.32	2.66	7.75	8.0 4.2 -	8.2 4.5 -	8.4 4.9 -	8.6 5.2 -	8.7 5.5 -	8.9 5.7 -	9.1 5.9 -	9.2 6.1 -	9.4 6.3 -	9.6 6.6 -	9.8 6.8 -	9.9 7.0 -
	EC SC25D STD	5.32	2.66	7.75	7.5 4.0 -	7.7 4.3 -	7.8 4.6 -	8.0 4.9 -	8.2 5.2 -	8.3 5.5 -	8.5 5.8 -	8.7 6.1 -	8.8 6.4 -	9.0 6.7 -	9.2 7.0 -	9.3 7.2 -
	EC SC25D UPG	5.32	2.66	7.75	7.0 3.7 9.9	7.1 4.0 -	7.3 4.3 -	7.4 4.6 -	7.6 4.9 -	7.7 5.2 -	7.9 5.4 -	8.0 5.6 -	8.2 5.8 -	8.3 6.0 -	8.5 6.3 -	8.6 6.5 -
SC25D050-W2F0-0	AC SC25D STD	5.91	2.96	7.75	8.8 4.6 -	9.0 5.0 -	9.2 5.3 -	9.3 5.5 -	9.5 5.8 -	9.7 6.0 -	9.8 6.2 -	- 6.4 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
	EC SC25D STD	5.91	2.96	7.75	8.2 4.3 -	8.4 4.6 -	8.5 4.9 -	8.7 5.2 -	8.9 5.5 -	9.0 5.8 -	9.2 6.1 -	9.3 6.4 -	9.5 6.6 -	9.7 6.9 -	9.8 7.2 -	- 7.4 -
	EC SC25D UPG	5.91	2.96	7.75	7.7 4.0 9.9	7.8 4.3 -	7.9 4.6 -	8.1 4.9 -	8.2 5.2 -	8.4 5.4 -	8.5 5.6 -	8.6 5.8 -	8.8 6.0 -	8.9 6.3 -	9.1 6.5 -	9.2 6.7 -

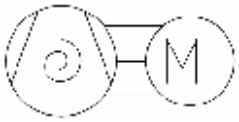
Model	Fan Selection	Standard Air Volume (m³/s)	DeHum Air Volume (m³/s)	Max Air Volume (m³/s)	External Static Pressure (Pa)											
					25	50	75	100	125	150	175	200	225	250	275	300
SC25D055-W2F0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	- 6.6 -	- 6.9 -	- 7.2 -	- 7.4 -	- 7.5 -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC25D067-W2F0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	6.6 -	6.9 -	7.2 -	7.4 -	7.5 -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC25D073-W2F0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	6.6 -	6.9 -	7.2 -	7.4 -	7.5 -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC25D080-W2F0-0	AC SC25D STD	6.50	3.25	7.75	9.7 5.1 -	9.9 5.4 -	- 5.6 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.8 -	- 7.0 -	- 7.2 -	- 7.4 -	- 7.6 -
	EC SC25D STD	6.50	3.25	7.75	9.0 4.7 -	9.1 5.0 -	9.3 5.3 -	9.4 5.5 -	9.6 5.8 -	9.8 6.1 -	9.9 6.4 -	6.6 -	6.9 -	7.2 -	7.4 -	7.5 -
	EC SC25D UPG	6.50	3.25	7.75	8.4 4.3 9.9	8.5 4.6 -	8.7 5.0 -	8.8 5.2 -	8.9 5.4 -	9.1 5.6 -	9.2 5.8 -	9.3 6.1 -	9.4 6.3 -	9.6 6.5 -	9.7 6.7 -	9.8 6.9 -
SC31D055-W2F0-0	EC SC31D UPG	5.82	2.91	8.00	7.2 3.8 9.9	7.4 4.1 10	7.6 4.4 -	7.7 4.7 -	7.8 5.0 -	8.0 5.2 -	8.1 5.4 -	8.3 5.7 -	8.4 5.9 -	8.6 6.1 -	8.7 6.3 -	8.8 6.5 -
SC31D065-W2F0-0	EC SC31D UPG	6.88	3.44	8.00	8.6 4.3 9.9	8.7 4.7 10	8.8 5.0 -	8.9 5.2 -	9.0 5.4 -	9.2 5.6 -	9.3 5.9 -	9.4 6.1 -	9.5 6.3 -	9.7 6.5 -	9.8 6.7 -	9.9 6.9 -
SC31D075-W2F0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
SC31D077-W2F0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
SC31D080-W2F0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -
SC31D083-W2F0-0	EC SC31D UPG	7.94	3.97	8.00	9.8 5.1 9.9	9.9 5.3 10	- 5.5 -	- 5.7 -	- 5.9 -	- 6.1 -	- 6.3 -	- 6.5 -	- 6.7 -	- 6.9 -	- 7.1 -	- 7.3 -

Pipework Schematics

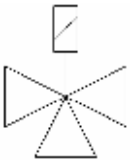
Legend

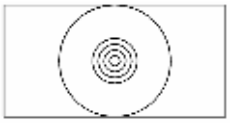

Centrifugal Fan

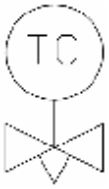

Axial Fan



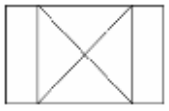
Scroll Compressor


Three Way Solenoid Valve


Sight Glass



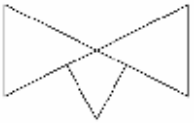
Thermostatic Expansion Valve

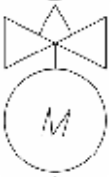

Filter Drier


Normally Closed Solenoid Valve

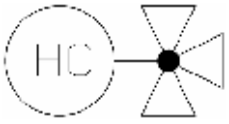

Check Valve


Shut Off Valve

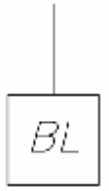

Bypass Balancing Valve



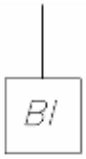
Three Way Regulating Valve



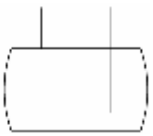
Three Way regulating valve with head pressure control



Bleed Valve



Binder Point


Liquid Receiver

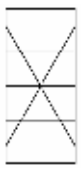
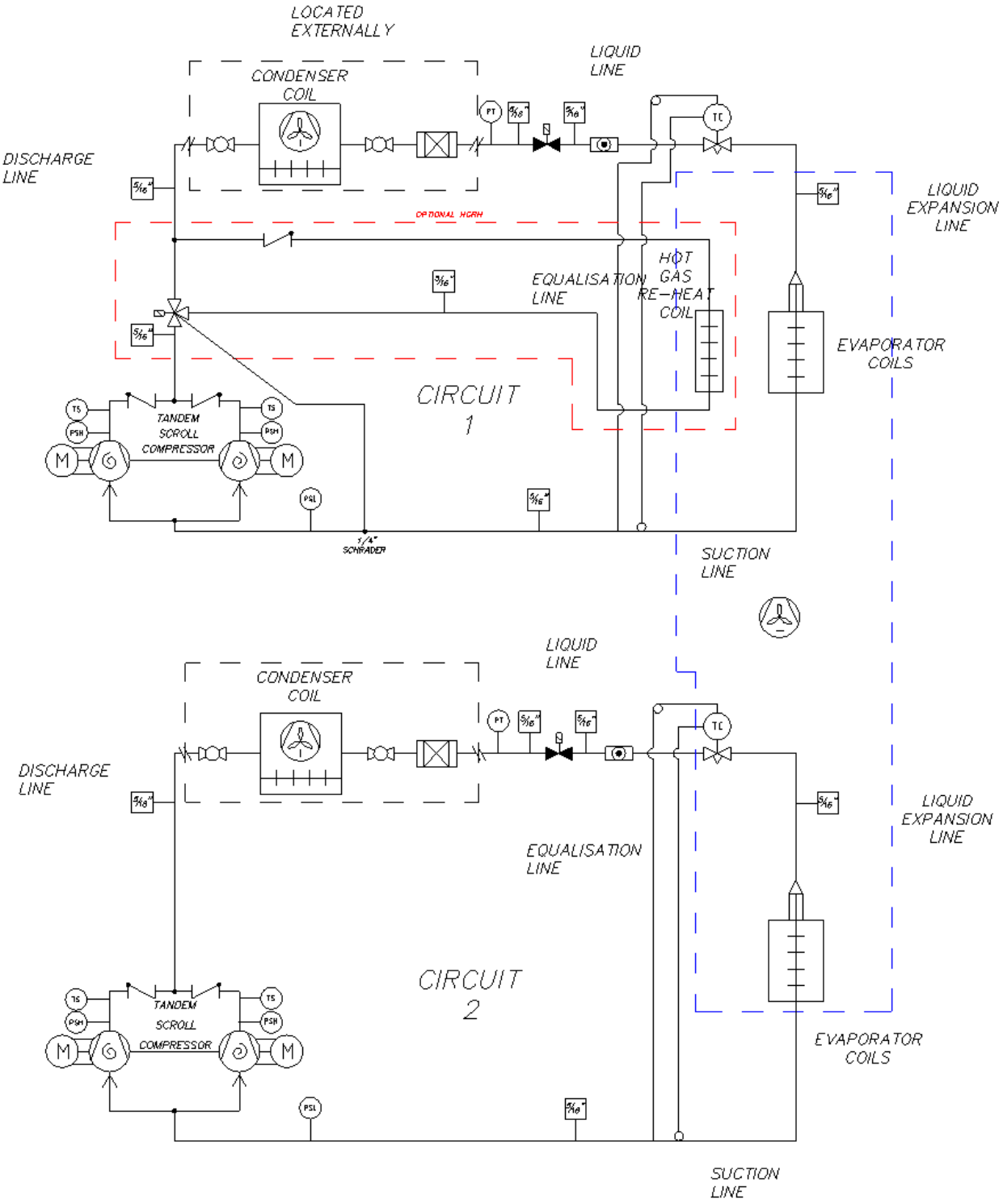
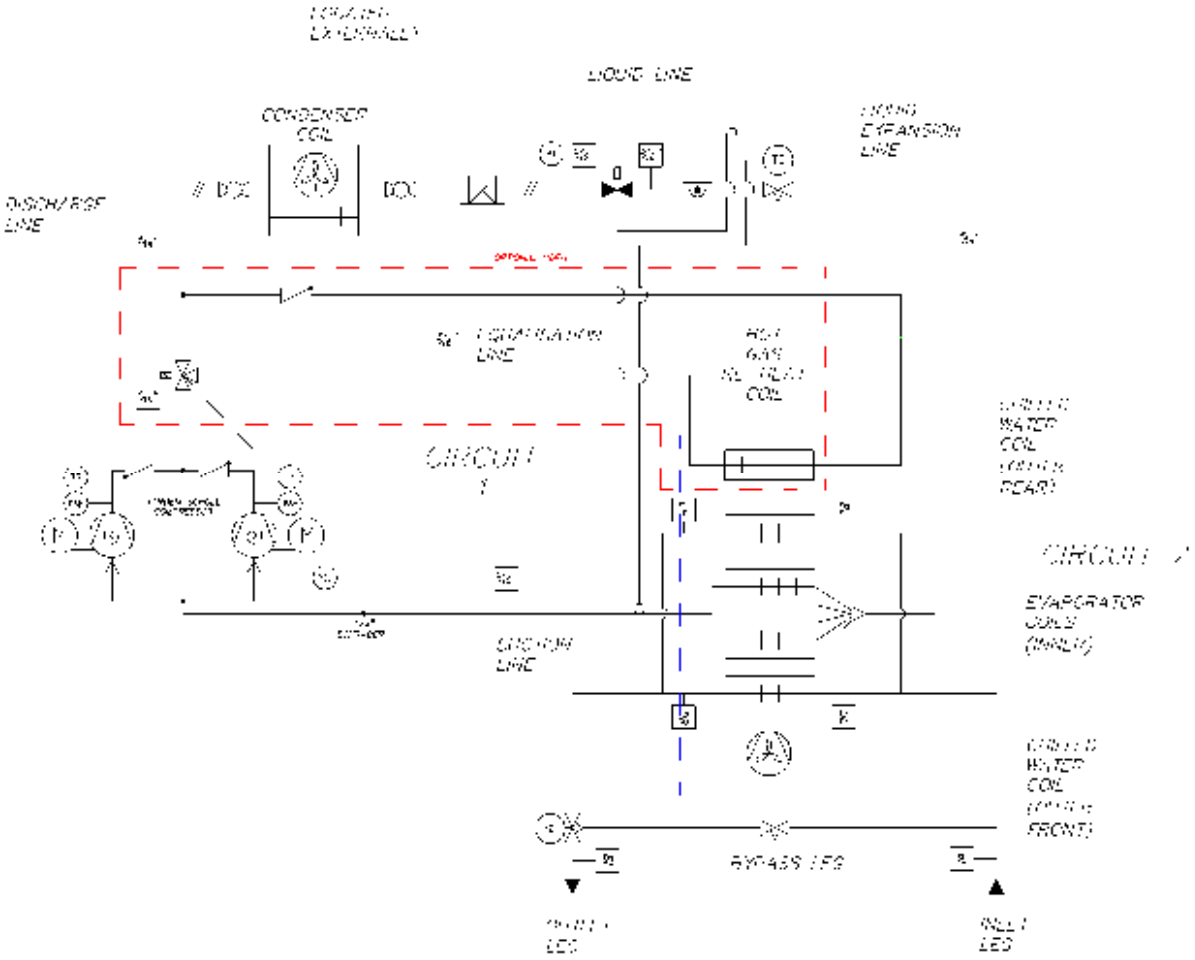


Plate Condenser

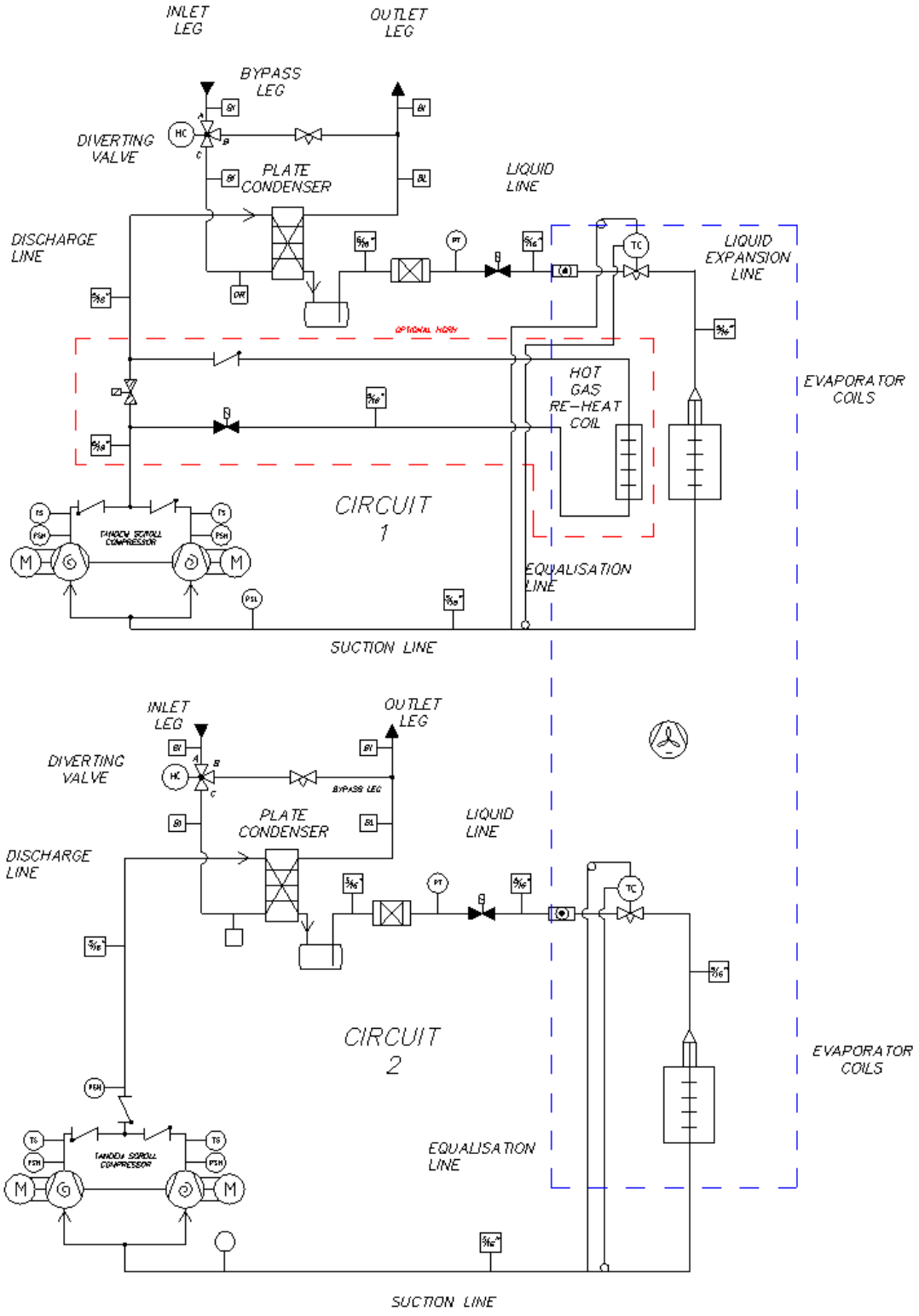
X2X2


LOCATED EXTERNALLY
CONDENSER COIL
LIQUID LINE
DISCHARGE LINE
OPTIONAL HGRH
LIQUID EXPANSION LINE
HOT GAS RE-HEAT COIL
EQUALISATION LINE
EVAPORATOR COILS
CIRCUIT 1
TANDEM SCROLL COMPRESSOR
1/4" SCHRADER
SUCTION LINE
CONDENSER COIL
LIQUID LINE
DISCHARGE LINE
LIQUID EXPANSION LINE
EQUALISATION LINE
CIRCUIT 2
TANDEM SCROLL COMPRESSOR
EVAPORATOR COILS
SUCTION LINE

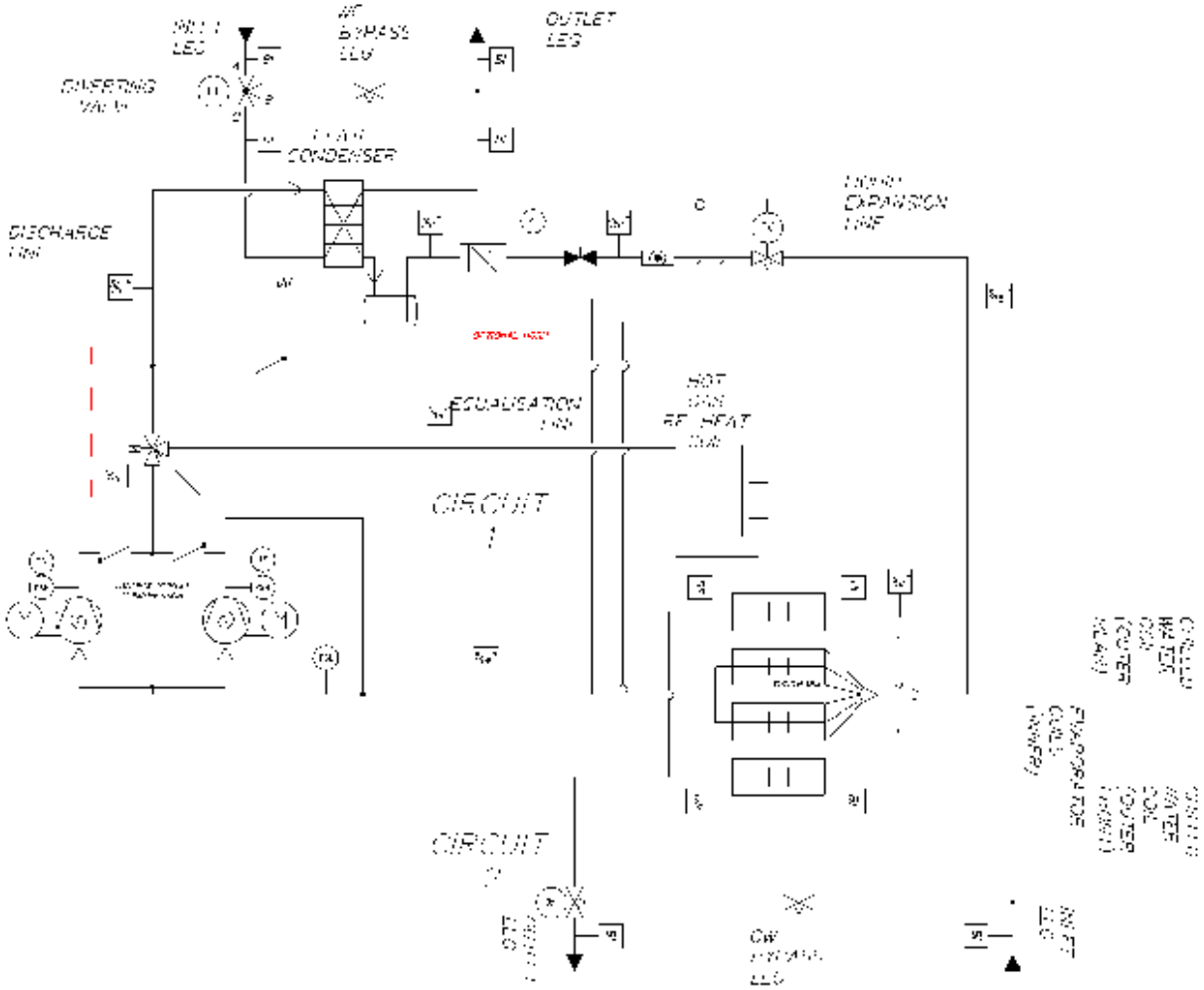
X2C0


LIQUID LINE
CONDENSER COIL
DISCHARGE LINE
EXPANSION LINE
CIRCUIT 1
EVAPORATOR COIL (MAIN)
BYPASS LEG

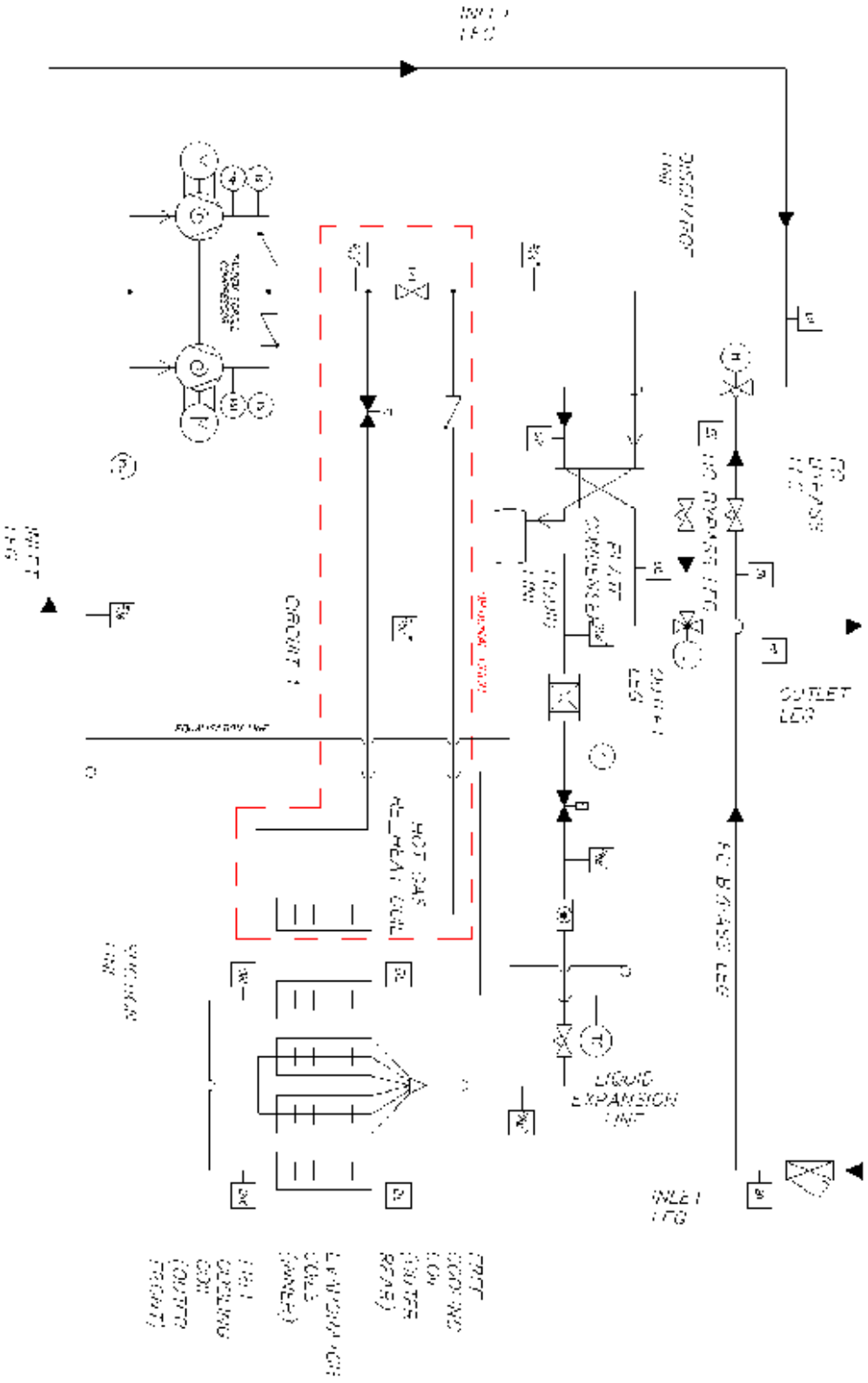
W2W2


INLET LEG
OUTLET LEG
BYPASS LEG
DIVERTING VALVE
PLATE CONDENSER
LIQUID LINE
DISCHARGE LINE
LIQUID EXPANSION LINE
EVAPORATOR COILS
HOT GAS RE-HEAT COIL
CIRCUIT 1
EQUALISATION LINE
SUCTION LINE
INLET LEG
OUTLET LEG
DIVERTING VALVE
BYPASS LEG
PLATE CONDENSER
LIQUID LINE
DISCHARGE LINE
CIRCUIT 2
EVAPORATOR COILS
EQUALISATION LINE
SUCTION LINE

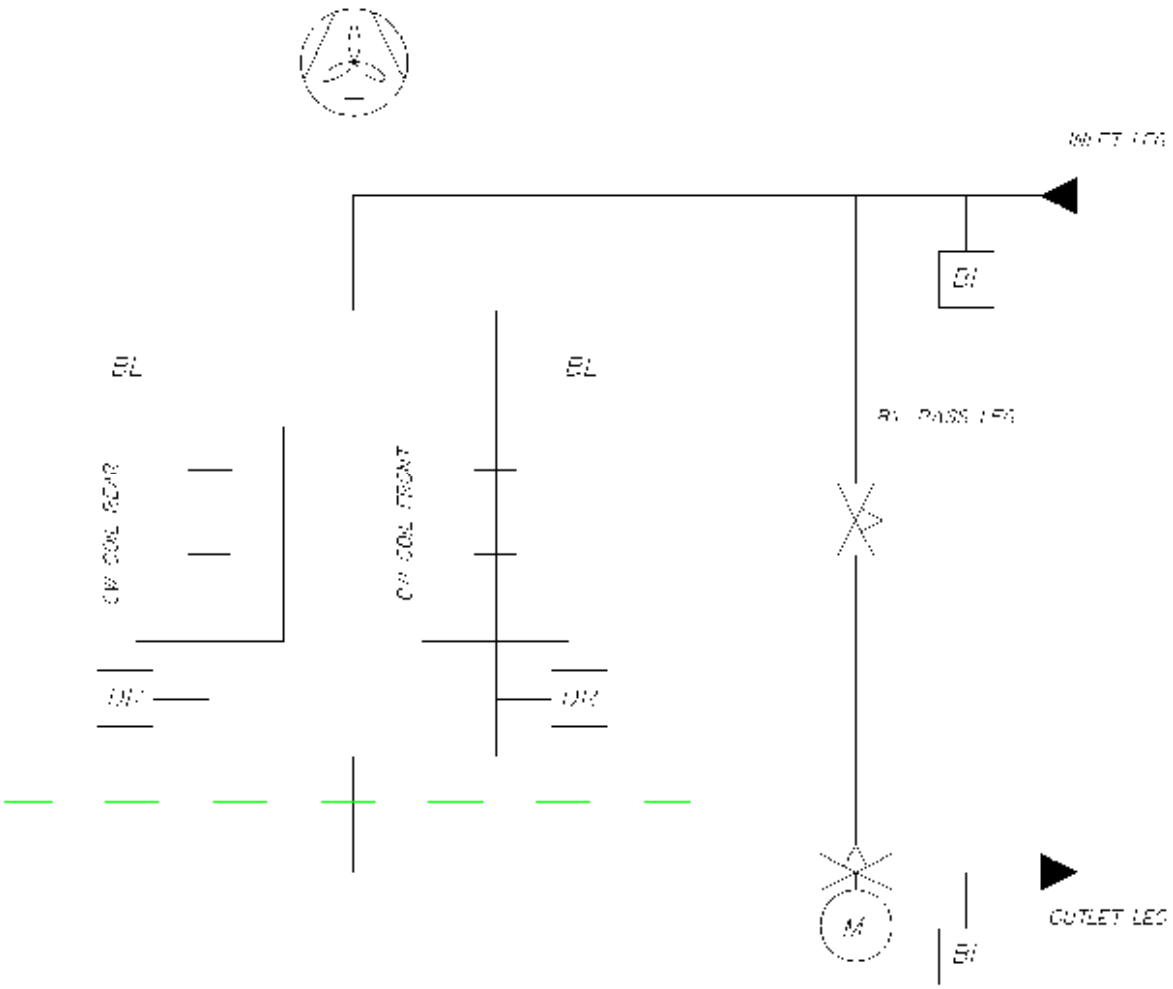
W2C0


OUTLET
LEG
CONDENSER
DISCHARGE
EQUALISATION
CIRCUIT
1
CIRCUIT
2

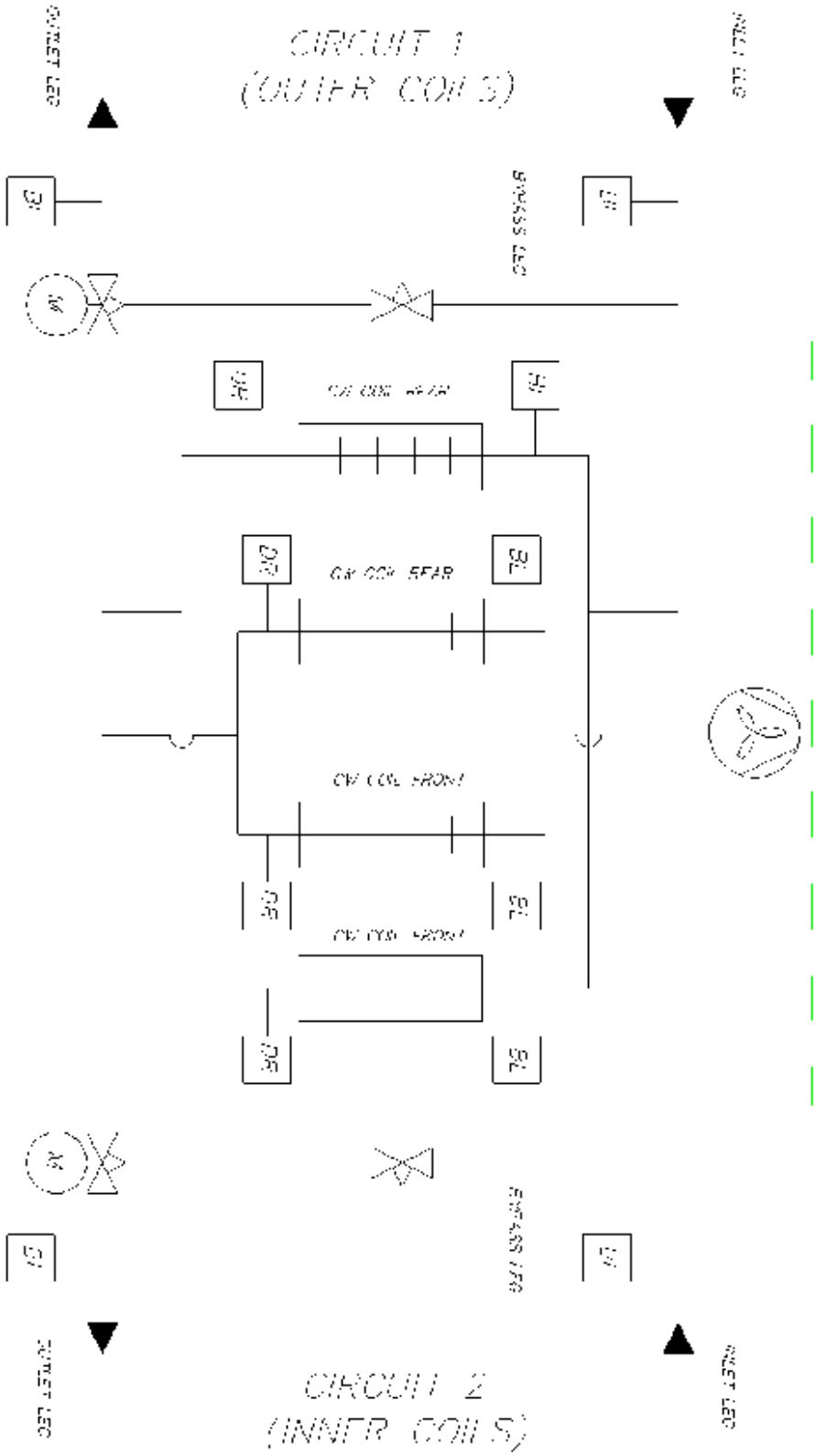
W2F0



C000



C0C0

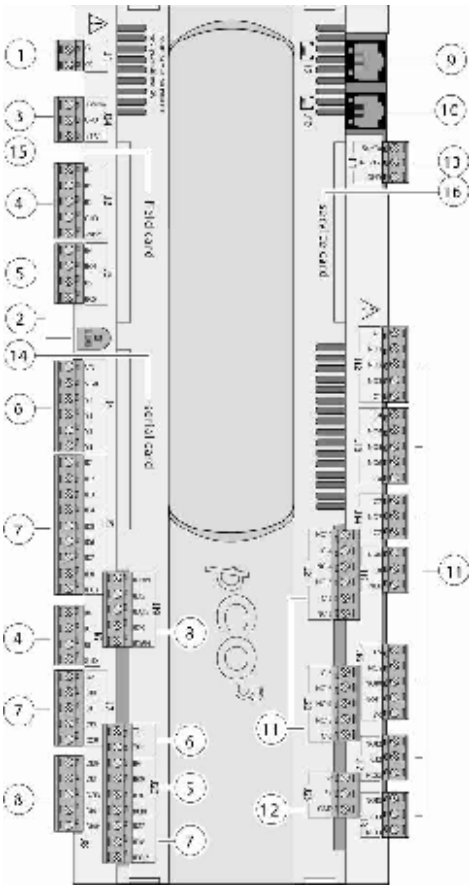


Controls

The following section covers a brief outline of the controls within the unit. Further information is available in the full controls manual upon request.

PCO3 CONTROLLER

The unit is equipped with a PCO3 controller allowing connection to displays, I/O expansion modules, Field boards and all the relevant temperature and pressure sensors.



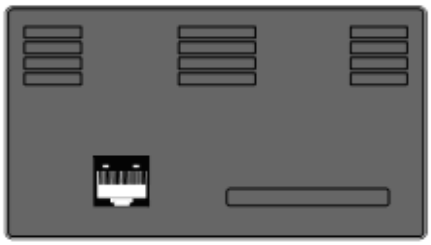
1. Power connector [G(+), G0(-)]
2. Yellow power LED and 3 LEDs for the pLAN networks.
3. Additional power supply (max. 200 mA) for the terminal and 0 to 5 V ratiometric probes;
4. Universal NTC, 0 to 1 V, 0 to 5 V ratiometric, 0 to 10V, 0 to 20 mA, 4 to 20 mA analogue inputs;
5. Passive analogue inputs, NTC, PT1000, ON/OFF (pCO large only)
6. Analogue outputs, 0/10V (pCO large only)
7. Digital inputs, 24Vac/Vdc (pCO large only)
8. Digital inputs, 230Vac or 24Vac/Vdc (pCO large only)
9. Connector for terminal display (external panel with direct signals);
10. Connector for all standard pCO series terminals and for downloading the application software
11. Relay digital outputs (J21 & J22 pCO large only)
12. Connector for connection to I/O expansion modules (pCO large only)
13. Connector for pLAN local network
14. Cover for inserting the optional supervisor serial board,
15. Cover for inserting the optional field board
16. Cover for inserting the optional service board.

DISPLAY KEYPAD CONNECTIONS

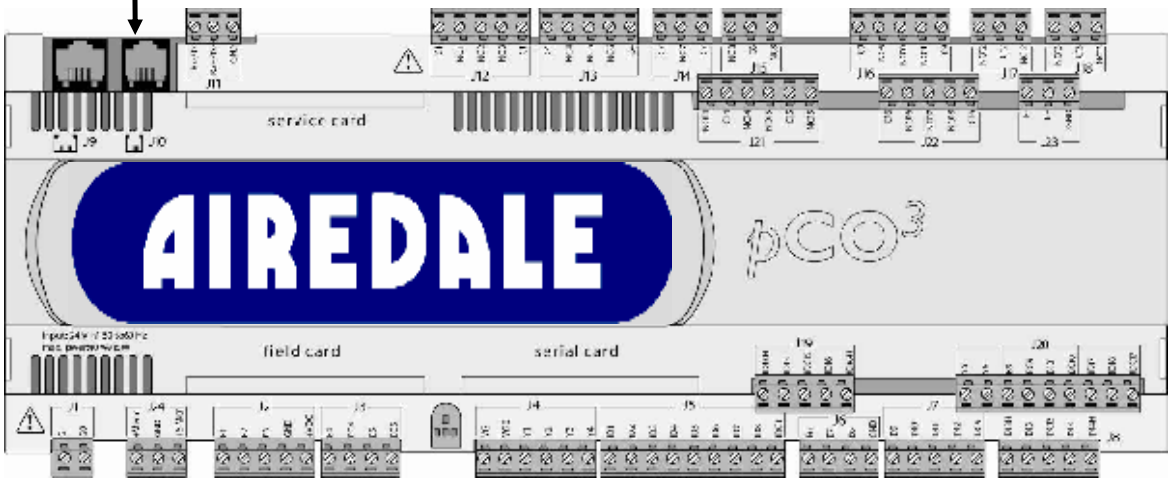
The display keypad is equipped with a LCD display (8 rows x 22 columns) with 6 buttons, connected to the controller by a RJ11 cable.

pGD1 Display

Local network Connection, plug cable into J10 on PC0 controller

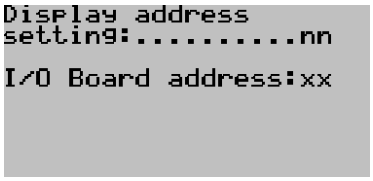


Display Keypad



Addressing the Display Keypad

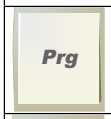
The address of the display keypad can be configured only after having connected the power supply, using the RJ11 connection cable.



To access configuration mode, press the + + buttons together and hold them for at least 5 seconds; the screen shown below will be displayed, with the cursor flashing in the top left corner:

To change the address of the display keypad (display address setting), press the button once: the cursor will move to the address field (nn).

Use the or buttons to select the desired value, and confirm by pressing again. If the value selected is not the same as the one saved previously, the screen shown below will be displayed, and the new value will be saved to the permanent memory. If the field nn is set to 0, the terminal will communicate with the pCO board using “point-to-point” protocol (not pLAN) and the field “I/O Board address: xx” will not be displayed, as it has no meaning.

	1.	ALARM	When one or more alarms are active the ALARM button will illuminate red. Pressing the ALARM button once will indicate information regarding any active alarms. Pressing the ALARM button twice will reset any active alarms.
	2.	PRG	Pressing the PRG button will select the main navigation menu.
	3.	ESC	Pressing the ESC button will return the user to the main display screen showing unit status.
	4.	UP	Pressing the UP button can either: Scroll through the various display screens, providing the cursor is in the top left position. Increase the value of a set point adjustment.
	5.	ENTER	Pressing the ENTER button will confirm any set point adjustments and move the cursor to the next available set point.
	6.	DOWN	Pressing the DOWN button can either: Scroll through the various display screens, providing the cursor is in the top left position. Decrease the value of a set point adjustment.

Standard Icons

 Fan operating

 Cooling - up to 6 stages

 Heating - up to 3 stages

 De-Humidification

 Humidification - Variable

Use Of Extra Functions Buttons

↑ + ↵ + ↓	UP + DOWN+ ENTER	Allows users to change the display address
🔔 + ↵	ALARM + ENTER	Allows access to controller system information.
🔔 + ↑	ALARM + UP	Allows access to change controller address (only when display address is zero)
Esc + ↵	ESC + ENTER	Allows the user to switch between the preinstalled languages
Prg + ↵	PRG + ENTER	Temporarily displays the address of the controller.
↵ + ↑	ENTER + UP	Change unit on remote display keypad.

Navigation

Initially, use the Prg button to access the main navigation menu, the cursor will appear in the top right hand corner with

the first menu UNIT ON/OFF selected.

Use the ↑ and ↓ buttons to move to the desired menu. The selected menu will be shown in BLOCK CAPITALS.

Press ↵ to enter the selected menu.

Navigation Sub Menus

There are eight sub menus available from the main navigation menu, these are listed below:

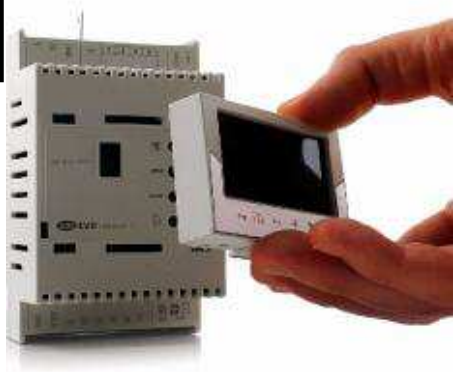
1. Unit On/Off	Allows the user to switch on or switch off the unit.
2. Maintenance	Allows the user to view maintenance related parameters, such as hours run, sensor calibration and manual overrides.
3. Alarm Log	Allows the user to view the alarm log.
4. Input/Output	Allows the user to view the status of the controller inputs and outputs.
5. Clock	Allows the user to view the current time, date and day of the week. On/Off and temperature time zones can also be set.
6. Set point	Allows the user to adjust the return air temperature set point.
7. User	Allows the user to adjust user related parameters, such as high and low alarm limits and temperature bands.
8. Manufacturer	Allows the user to enter the manufacturer menu and adjust various manufacturer related parameters, such as unit configuration and timing settings.

EVD EVO Driver Setup

Removable Plug and Play Display

The EVD Evolution uses an optional LCD graphic display for driver configuration. The display uses a plug and play connection, so it can be mounted and removed at any time (except during parameters loading/downloading and driver reset).

To configure the driver, first unclip the silver front cover by pressing the tab at the top and pulling the cover away. Next connect the LCD screen to the front of the driver as shown below:



To Switch Between Drivers A and B, Press and Hold the Help/Alarm Key and the Enter key simultaneously for 1 second.

The selected driver Is shown In The Top Right Corner Of The Screen.

Driver Initialization (Driver Reset Function)

When downloading a new strategy into a unit, ensure the following procedure is followed to ensure the driver returns to its default values before the default of the controller commences. This will allow the correct driver settings to be loaded into the correct driver.

When the driver is powered up for the first time, the screen will display.

Confirm Yes / No

Push the help/alarm and select/enter buttons at the same time and keep them held for 5 seconds as shown below:

Confirm Reset

Reset to default

Operation Successful

This time change the network address to match the address of the driver. Press the select key to move the cursor to the number and use the up/down keys to change the value. Press the select key to confirm each number.

Confirm Yes / No

Input / Outputs

The inputs and outputs of the controller are listed below

SmartCool		
		Analogue Inputs
AI 1 (B1-GND)	Universal	Return Air Humidity
AI 2 (B2- +VDC)	Universal	Constant air volume or constant pressure
AI 3 (B3- +VDC)	Universal	CCT 1 Liquid Transducer or CW Supply temp sensor
AI 4 (B4-BC4)	Passive	Return Air Temperature
AI 5 (B5-BC5)	Passive	Supply Air Temperature
AI 6 (B6- +VDC)	Universal	CCT 1 Discharge Temperature
AI 7 (B7-GND)	Universal	CCT 2 Liquid Transducer **or** Dual Cool Water Temperature
AI 8 (B8-GND)	Universal	CCT 2 Discharge Temperature **or** Dual Cool Frost Protection
AI 9 (B9-BC9)	Passive	CCT 1 Supply Water Temperature
AI 10 (B10-BC10)	Passive	CCT 2 Supply Water Temperature **or** Glycol Dry Cooler Ambient Temperature
		Digital Inputs
DI 1 (ID1-IDC1)	24Vac	Remote On-Off
DI 2 (ID2-IDC1)	24Vac	Airflow Switch
DI 3 (ID3-IDC1)	24Vac	Filter Change Switch
DI 4 (ID4-IDC1)	24Vac	Phase Rotation
DI 5 (ID5-IDC1)	24Vac	Water Flood Detection/Condensate Pump
DI 6 (ID6-IDC1)	24Vac	Fire/Smoke Detection
DI 7 (ID7-IDC1)	24Vac	Refrigerant Leak Detection
DI 8 (ID8-IDC1)	24Vac	Over Heat Cut Out (Auto)
DI 9 (ID9-IDC9)	24Vac	CCT1 Compressor 1 Status
DI 10 (ID10-IDC9)	24Vac	CCT1 Compressor 2 Status
DI 11 (ID11-IDC9)	24Vac	CCT1 Low Pressure Trip
DI 12 (ID12-IDC9)	24Vac	CCT2 Low Pressure Trip
DI 13 (ID13-IDC13)	24Vac	CCT2 Compressor 1 Status
DI 14 (ID14-IDC13)	24Vac	CCT2 Compressor 2 Status
DI 15 (ID15-IDC15)	24Vac	Not Used
DI 16 (ID16-IDC15)	24Vac	Not Used
DI 17 (ID17-IDC17)	24Vac	CCT1 Dry Cooler fault
DI 18 (ID18-IDC17)	24Vac	CCT2 Dry Cooler fault

		Analogue Outputs
AO1(Y1-G0)	0 - 10Vdc	Supply Air Fans
AO2 (Y2-G0)	0 - 10Vdc	CCT1 CR/DR Fans **or** CCT1 CW Regulating Valve
AO3 (Y3-G0)	0 - 10Vdc	CCT2 CR/DR Fans **or** CCT2 CW Regulating Valve
AO4 (Y4-G0)	0 - 10Vdc	Thyristor Heating/LPHW Regulating Valve
AO5 (Y5-G0)	0 - 10Vdc	CCT1 WX HP Regulating Valve
AO6 (Y6-G0)	0 - 10Vdc	CCT2 WX HP Regulating Valve

		Digital Outputs
DO 1 (NO1-C1)	NO Relay	Heat 1
DO 2 (NO2-C1)	NO Relay	Heat 2
DO 3 (NO3-C1)	NO Relay	Heat 3
DO 4 (NO4-C4)	NO Relay	CCT1 Compressor 1 or CPY Hum Enable
DO 5 (NO5-C4)	NO Relay	CCT1 Compressor 2
DO 6 (NO6-C4)	NO Relay	CCT1 Liquid Line Solenoid
DO 7 (NO7-C7)	NO Relay (SSR)	Non-Critical Alarm
DO 8 (NO8-C8)	NO / NC Relay	Critical Alarm
DO 9 (NO9-C9)	NO Relay	CCT2 Compressor 1
DO 10 (NO10-C9)	NO Relay	CCT2 Compressor 2
DO 11 (NO11-C9)	NO Relay	CCT2 Liquid Line Solenoid
DO 12 (NO12-C12)	NO / NC Relay (SSR)	Hot Gas Soloniod Valve
DO 13 (NO13-C13)	NO / NC Relay	CPY Hum Enable
DO 14 (NO14-C14)	NO / NC Relay (SSR)	Not Used
DO 15 (NO15-C15)	NO / NC Relay (SSR)	Not Used
DO 16 (NO16-C16)	NO Relay	CCT1 Dry Cooler Enable
DO 17 (NO17-C16)	NO Relay	CCT2 Dry Cooler Enable
DO 18 (NO18-C16)	NO Relay	Not Used

Technical Data

IMPORTANT **The following information is for general guidance; refer to the certified drawings provided for installation.**

CAUTION **ALL work MUST be carried out by technically trained competent personnel.**

The equipment contains live electrical and moving parts, ISOLATE prior to maintenance or repair work. The electrical panel in the SmartCool may remain live with the control panel door open.

Ensure Electrical lock-off procedures are conducted.

General

Once the refrigeration pipework is complete the electrical supply can be connected by routing the cables through the appropriate casing hole and connecting the cables as per the wiring diagram supplied with each unit

A fused and isolated electrical supply of the appropriate rating should be installed.

As standard the equipment is designed for 400V, 3 Phase, Neutral and earth 50Hz to all relevant IEE regulations, British standards and IEC requirements.

All mains and interconnecting wiring should be carried out to National and Local codes.

Wires should be capable of carrying the maximum load current under non-fault conditions at the stipulated voltage.

Avoid large voltage drops on cable runs, particularly low voltage wiring

CAUTION **Each unit requires an independently fused and isolated power supply.**

System Operating Limits

X2 Models

Cooling		
Indoor Air Temperature		+18°C to +28°C
Indoor RH%		+40% to +55%
Outdoor Temperature - Standard Condenser Match		-20°C to +41°C
Outdoor Temperature - Larger Condenser Match		-20°C to +48°C

For conditions outside those quoted, please contact Airedale.

W2 Models

Cooling		
Indoor Air Temperature		+18°C to +28°C
Indoor RH%		+40% to +55%
Condenser Minimum Entering Temperature °C		+25°C
Condenser Maximum Leaving Water Temperature °C		+45°C

For conditions outside those quoted, please contact Airedale.

C0 Models

Cooling		
Indoor Air Temperature		+18°C to +28°C
Indoor RH%		+40% to +55%
Water Entering Temperature		+5°C to +10°C
Water Leaving Temperature		+10°C to +16°C

Conditions quoted at 100% Water.
For conditions outside those quoted, please contact Airedale.

Air Cooled Models (X2X2)

Performance Data – Air Cooled Models

Cooling Duties

Standard Condenser Match

X2X2		Ambient Temperature (°C)									
Model	Air On °C DB %RH	25 TC (KW)	25 SC (KW)	30 TC (KW)	30 SC (KW)	35 TC (KW)	35 SC (KW)	40 TC (KW)	40 SC (KW)	46 TC (KW)	46 SC (KW)
SC19D055-X2X2-0 2 x CR50	22/50	52.4	48.8	52.4	48.8	51.7	48.5	49.1	47.4	45.7	45.7
	24/45	53.5	52.4	53.5	52.4	52.8	52.0	50.2	50.2	46.7	46.7
	26/40	54.5	54.5	54.5	54.5	53.7	53.7	51.1	51.1	47.6	47.6
SC19D070-X2X2-0 2 x CR65	22/50	65.2	59.8	65.2	59.8	64.9	59.6	62.2	58.4	58.7	56.9
	24/45	66.9	64.2	66.9	64.2	66.5	64.1	63.7	63.0	60.1	60.1
	26/40	68.3	68.3	68.3	68.3	67.9	67.9	65.0	65.0	61.4	61.4
SC19D080-X2X2-0 2 x CR65	22/50	74.2	67.2	74.2	67.2	73.1	66.7	69.8	65.3	65.7	63.5
	24/45	76.1	72.2	76.1	72.2	74.9	71.6	71.5	70.2	67.3	67.3
	26/40	77.7	77.6	77.7	77.5	76.3	76.3	72.9	72.9	68.7	68.7
SC25D080-X2X2-0 2 x CR65	22/50	75.7	69.8	75.7	69.8	74.4	69.2	71.1	67.5	66.9	65.4
	24/45	77.6	75.1	77.6	75.1	76.2	74.4	72.8	72.7	68.5	68.5
	26/40	79.3	79.3	79.3	79.3	77.7	77.7	74.3	74.3	70.0	70.0
SC25D090-X2X2-0 2 x CR65	22/50	82.4	76.5	82.4	76.5	80.4	75.6	76.8	73.8	72.1	71.6
	24/45	84.6	82.3	84.6	82.3	82.3	81.2	78.6	78.6	73.9	73.9
	26/40	86.4	86.4	86.4	86.4	84.0	84.0	80.2	80.2	75.5	75.5
SC25D100-X2X2-0 2 x CR80	22/50	93.9	85.6	93.9	85.6	92.1	84.6	88.0	82.6	82.8	80.0
	24/45	96.3	91.7	96.3	91.7	94.3	90.7	90.1	88.7	84.8	84.8
	26/40	98.3	98.3	98.3	98.3	96.1	96.1	91.9	91.9	86.5	86.5
SC31D100-X2X2-0 2 x CR80	22/50	95.8	86.2	95.8	86.2	93.6	85.2	89.3	83.1	83.7	80.4
	24/45	98.3	92.5	98.3	92.5	95.9	91.4	91.5	89.4	85.8	85.8
	26/40	100.3	99.3	100.3	99.3	97.8	97.8	93.3	93.3	87.7	87.7
SC31D120-X2X2-0 2 x CR105	22/50	109.6	99.1	109.6	99.1	109.0	98.8	104.1	96.5	97.9	93.6
	24/45	112.4	106.4	112.4	106.4	111.6	106.0	106.7	103.9	100.4	100.4
	26/40	114.8	114.4	114.8	114.4	113.9	113.9	108.9	108.9	102.5	102.5
SC31D130-X2X2-0 2 x CR105	22/50	117.2	105.7	117.2	105.7	115.9	105.1	110.9	102.8	104.5	99.9
	24/45	120.2	113.4	120.2	113.4	118.7	112.7	113.6	110.5	107.0	107.0
	26/40	122.8	122.1	122.8	122.1	121.2	121.2	116.0	116.0	109.3	109.3

TC=Total Cooling SC=Sensible Cooling
(1) All data quoted is gross
(2) Deduct fan gain for nett duties, refer to **Mechanical Data**

Technical

Mechanical Data- X2X2

		SC19D055-X2X2	SC19D070-X2X2	SC19D080-X2X2
Standard Condenser Match		**2 x CR50**	**2 x CR65**	**2 x CR65**
Capacity				
Nom Cooling (Gross) –	kW	52.8	66.5	74.9
Capacity Steps		4	4	4
Fan Gain	kW	0.55	1.12	1.73
Dimensions – W x D x H	Mm	1985 x 890 x 1980	1985 x 890 x 1980	1985 x 890 x 1980
Weight – Machine / Operating	kg	900 / 900	900 / 910	900 / 910
Construction		Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour		Frame:Anodised Aluminium Frame with Black Nylon Corners		
Evaporator		Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages		4/1	4/1	4/1
Fan Motor		Backwards Curved, Centrifugal direct drive		
Motor Type		EC	EC	EC
Quantity x Motor Size	kW	2 x 2.2	2 x 2.2	2 x 2.2
Speed @25Pa / Maximum ESP	rpm	906 / 1360	1160 / 1360	1339 / 1360
Maximum ESP	Pa	490	259	49
Nominal Airflow	m³/s	3.5	4.4	5.1
Compressor – Scroll				
Configuration – X2X2		Dual Circuit – Circuit 1 Tandem Compressors / Circuit 2 Tandem Compressors		
Quantity – X2X2		2	2	2
Oil Charge Volume – X2X2	l	4 x 1.57	4 x 1.57	4 x 1.57
Oil Type		Polyolvinyl		
Refrigeration		Dual Circuit		
Refrigerant control and type		Thermostatic Expansion Valve (Optional EEV)		
Refrigerant type		R410A		
Holding Charge		Inert Gas		
Charge (per circuitl)	kg	9.3	14.5	14.5
Connections				
Liquid (sweat)	in	1/2	5/8	5/8
Discharge (sweat)	in	7/8	7/8	7/8
Condensate Drain Hose	mm	22	22	22
Filtration		**Disposable to BS EN 779-G4**		
Quantity		3	3	3
OPTIONAL EXTRAS				
Hot Gas Reheat -				
Nom Heating (Gross)	kW	8.3	9.2	9.7
Electric Heating (Total)	kW	21	21	21
Humidifier				
Capacity	kg/hr	15	15	15
Feed/Drain		3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump				
Head	m	10.8	10.8	10.8
Flow	l/m	5	5	5
Drain		10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor		Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size	kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @ 25Pa / Maximum ESP	rpm	922 / 1480	1190 / 1520	1360 / 1500
Maximum ESP	Pa	600	411	216
Fan Gain	kW	0.55	1.14	1.73
Second upgrade Motor - EC Motor				
Quantity x Motor Size	kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP	rpm	N/A	N/A	N/A
Maximum ESP	Pa	N/A	N/A	N/A
Fan Gain	kW	N/A	N/A	N/A
Low Pressure Hot Water		Copper Tube/Aluminium Fin		
Capacity Gross	kW	22.16	24.45	26
Water Flow (Nominal)	l/s	0.49	0.54	0.58
Pressure drop	kPa	9.4	9.7	10.1
LPHW Connection Sizes	mm	22	22	22

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Based on air temperature of 15.5°C leaving the evaporator coil
(5) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(6) Fan gain based on 25Pa ESP @ Nominal air volume. Fan gain figure will change as airflow and ESP change

Mechanical Data – X2X2 Continued

		SC25D080-X2X2	SC25D090-X2X2	SC25D0100-X2X2
Standard Condenser Match		**2 x CR65**	**2 x CR65**	**2 x CR80**
Capacity				
Nom Cooling (Gross) –	kW	76.2	82.3	94.3
Capacity Steps		4	4	6
Fan Gain	kW	2.16	2.61	3.01
Dimensions – W x D x H	Mm	2549 x 890 x 1980	2549 x 890 x 1980	2549 x 890 x 1980
Weight – Machine / Operating	Kg	1020 / 1020	1100 / 1120	1130 / 1130
Construction		Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour		Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator		Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages		4/1	4/1	6/1
Fan Motor		Backwards Curved, Centrifugal direct drive		
Motor Type		AC	AC	AC
Quantity x Motor Size	kW	3 x 2.38	3 x 2.38	3 x 2.38
Speed @25Pa / Maximum ESP	RPM	1070 / 1360	1207 / 1360	1360 / 1360
Maximum ESP	Pa	353	200	20
Nominal Airflow	m³/s	5.2	5.9	6.5
Compressor – Scroll				
Configuration – X2X2		Dual Circuit – Circuit 1 Tandem Compressors / Circuit 2 Tandem Compressors		
Quantity – X2X2		4	2	2
Oil Charge Volume – X2X2	l	4 x 1.57	4 x 3	4 x 3.3
Oil Type		Polyolvinyl	Polyolester	
Refrigeration		Dual Circuit		
Refrigerant control and type		Thermostatic Expansion Valve (Optional EEV)		
Refrigerant type		R410A		
Holding Charge		Inert Gas		
Charge (per circuit)	kg	15.6	16.2	14.8
Connections				
Liquid (sweat)	in	7/8	7/8	7/8
Discharge (sweat)	in	1 1/8	1 1/8	1 1/8
Condensate Drain Hose	mm	22	22	22
Filtration		**Disposable to BS EN 779-G4**		
Quantity		4	4	4
OPTIONAL EXTRAS				
Hot Gas Reheat -				
Nom Heating (Gross)	kW	11.5	12.2	12.2
Electric Heating (Total)	kW	21	21	31.5
Humidifier				
Capacity	kg/hr	15	15	15
Feed/Drain		3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump				
Head	m	10.8	10.8	10.8
Flow	l/m	5	5	5
Drain		10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor		Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size	kW	3 x 2.2	3 x 2.2	3 x 2.2
Speed @ 25Pa / Maximum ESP	rpm	1050 / 1340	1220 / 1360	1337 / 1360
Maximum ESP	Pa	327	180	45
Fan Gain	kW	1.32	1.86	2.6
Second upgrade Motor - EC Motor		Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size	kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / Maximum ESP	rpm	1070 1520	1212 1520	1354 1520
Maximum ESP	Pa	487	351	195
Fan Gain	kW	1.3	1.85	2.6
Low Pressure Hot Water		Copper Tube/Aluminium Fin		
Capacity Gross	kW	32.5	34.1	35.7
Water Flow (Nominal)	l/s	0.72	0.76	0.79
Pressure drop	kPa	37.4	21	21.8
LPHW Connection Sizes	mm	22	22	22

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Based on air temperature of 15.5°C leaving the evaporator coil
(5) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(6) Fan gain based on 25Pa ESP @ Nominal air volume. Fan gain figure will change as airflow and ESP change

Mechanical Data – X2X2 Continued

			SC31D100-X2X2	SC31D120-X2X2	SC31D130-X2X2
Standard Condenser Match			**2 x CR80**	**2 x CR105**	**2 x CR105**
Capacity					
Nom Cooling (Gross) –	(1)	kW	95.9	111.6	118.7
Capacity Steps			6	4	6
Fan Gain	(6)	kW	1.46	2.51	3.22
Dimensions – W x D x H		Mm	3113 x 890 x 1980	3113 x 890 x 1980	3113 x 890 x 1980
Weight – Machine / Operating	(2)	Kg	1280 / 1290	1300 / 1310	1300 / 1310
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			6/1	4/1	6/1
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @25Pa / Maximum ESP		RPM	1120 / 1520	1347 / 1520	1480 /1520
Maximum ESP		Pa	478	232	77
Nominal Airflow		m³/s	6.1	7.3	7.9
Compressor – Scroll					
Configuration – X2X2			Dual Circuit – Circuit 1 Tandem Compressors / Circuit 2 Tandem Compressors		
Quantity – X2X2			2	2	2
Oil Charge Volume – X2X2		l	2 x 3 + 2 x 3.3	4 x 3.3	4 x 3.3
Oil Type			Polyolester		
Refrigeration			Dual Circuit		
Refrigerant control and type			Thermostatic Expansion Valve (Optional EEV)		
Refrigerant type			R410A		
Holding Charge			Inert Gas		
Charge (per circuit)	(3)	kg	15.9	24.3	24.4
Connections					
Liquid (sweat)		in	7/8	7/8	7/8
Discharge (sweat)		in	1 1/8	1 1/8	1 1/8
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat -	(4)				
Nom Heating (Gross)		kW	14.6	15.8	16.3
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(6)	kW	N/A	N/A	N/A
Second upgrade Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(6)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(5)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	40.6	43.8	45.2
Water Flow (Nominal)		l/s	0.9	0.97	1.01
Pressure drop		kPa	35.9	37.4	38.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C /45°C RH ambient 35°C
(2) Machine weight excludes a refrigerant charge
(3) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit).***
(4) Based on air temperature of 15.5°C leaving the evaporator coil
(5) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(6) Fan gain based on 25Pa ESP @ Nominal air volume. Fan gain figure will change as airflow and ESP change

Electrical Data – X2X2

			SC19D055-X2X2	SC19D070-X2X2	SC19D080-X2X2
Standard Condenser Match -			**2 x CR50**	**2 x CR65**	**2 x CR65**
Unit Data Full Function- X2X2	(1)				
Nominal Run Amps		A	63	74.6	82.1
Maximum Start Amps		A	124.5	150.2	168.9
Recommended Mains Fuse Size		A	80	100	100
Max Mains Incoming Cable Size		mm²	70	70	70
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling only – X2X2					
Nominal Run Amps		A	46.8	58.4	65.9
Maximum Start Amps		A	108.3	134	152.7
Recommended Mains Fuse Size		A	63	80	80
Evaporator Fan - Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	2 x 2.2	2 x 2.2	2 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Compressor 1 , Circuit 1 & 2	(3)				
Motor Size		kW	4.6	5.6	6.3
Nominal Run Amps		A	8.5	11.4	13.3
Locked Rotor Amps		A	70	87	100
Type of Start				Direct On Line	
Compressor 2, Circuit 1 & 2	(3)				
Motor Size		kW	4.6	5.6	6.3
Nominal Run Amps		A	8.5	11.4	13.3
Locked Rotor Amps		A	70	87	100
Type of Start				Direct On Line	
Standard Condenser Match – AC Motor Per Fan					
Quantity x Motor Size		kW	2 x 0.6	2 x 0.6	2 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			2	2	2
Number of Elements			6	6	6
Rating (Total)		kW	21	21	21
Current Per Phase		A	30.31	30.31	30.31
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Condenser Match - EC Motor-Per Fan					
Quantity x Motor Size		kW	2 x 0.73	2 x 0.73	2 x 0.73
Full Load Amps		A	3.3	3.3	3.3
SCAF Condenser Match - Motor - Per Fan					
Quantity x Motor Size		kW	2 x 1.4	2 x 1.4	2 x 1.4
Full Load Amps		A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – X2X2 Continued

			SC25D080-X2X2	SC25D090-X2X2	SC25D100-X2X2
Standard Condenser Match -			**2 x CR65**	**2 x CR65**	**2 x CR80**
Unit Data Full Function - X2X2	(1)				
Nominal Run Amps		A	90.5	89.9	100.7
Maximum Start Amps		A	177.3	169.1	213.7
Recommended Mains Fuse Size		A	125	125	125
Max Mains Incoming Cable Size		mm²	70	70	70
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only – X2X2					
Nominal Run Amps		A	74.3	73.7	84.5
Maximum Start Amps		A	161.1	152.9	197.5
Recommended Mains Fuse Size		A	100	100	100
Evaporator Fan - Motor - Per Fan					
Motor Type			AC	AC	AC
Quantity x Motor Size	(2)	kW	3 x 2.38	3 x 2.38	3 x 2.38
Full Load Amps		A	5	5	5
Locked Rotor Amps		A	17.5	17.5	17.5
Compressor 1 , Circuit 1 & 2	(3)				
Motor Size		kW	6.31	7.19	7.19
Nominal Run Amps		A	13.27	12.87	12.87
Locked Rotor Amps		A	100	92	92
Type of Start				Direct On Line	
Compressor 2, Circuit 1 & 2	(3)				
Motor Size		kW	6.31	7.19	9.46
Nominal Run Amps		A	13.27	12.87	16.93
Locked Rotor Amps		A	100	92	130
Type of Start				Direct On Line	
Standard Condenser Match - AC Motor Per Fan					
Quantity x Motor Size		kW	2 x 0.6	2 x 0.6	3 x 0.6
Full Load Amps		A	2.62	2.62	2.62
Electric Heating					
Stage of Reheat			2	2	3
Number of Elements			6	6	9
Rating (Total)		kW	21	21	31.5
Current Per Phase		A	30.31	30.31	45.47
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
Standard Size Fan Motor - EC Motor –Per Fan					
Quantity x Motor Size		kW	2 x 2.2	2 x 2.2	2 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Larger Size Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Standard Condenser Match - EC Motor-Per Fan					
Quantity x Motor Size		kW	2 x 0.73	2 x 0.73	3 x 0.73
Full Load Amps		A	3.3	3.3	3.3
SCAF Condenser Match - Motor-Per Fan					
Quantity x Motor Size		kW	2 x 1.4	2 x 1.4	3 x 1.4
Full Load Amps		A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – X2X2 Continued

			SCD31D100-X2X2	SC31D120-X2X2	SC31D130-X2X2
Standard Condenser Match -			**2 x CR80**	**2 x CR105**	**2 x CR105**
Unit Data - X2X2	(1)				
Nominal Run Amps		A	100.1	108.2	112.8
Maximum Start Amps		A	213.1	221.3	256.5
Recommended Mains Fuse Size		A	125	125	125
Max Mains Incoming Cable Size		mm²	70	70	70
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only – X2X2					
Nominal Run Amps		A	83.9	92.0	96.6
Maximum Start Amps		A	196.9	205.1	240.3
Recommended Mains Fuse Size		A	100	125	125
Evaporator Fan - Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Compressor 1 , Circuit 1 & 2	(3)				
Motor Size		kW	7.19	9.46	9.46
Nominal Run Amps		A	12.87	16.93	16.93
Locked Rotor Amps		A	92	130	130
Type of Start				Direct On Line	
Compressor 2, Circuit 1 & 2	(3)				
Motor Size		kW	9.46	9.46	10.86
Nominal Run Amps		A	16.93	16.93	19.22
Locked Rotor Amps		A	130	130	163
Type of Start				Direct On Line	
Standard Condenser Match - AC Motor Per Fan					
Quantity x Motor Size		kW	3 x 0.6	3 x 0.6	3 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.47	45.47	45.47
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
Standard Size Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Larger Size Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Condenser Match - EC Motor-Per Fan					
Quantity x Motor Size		kW	3 x 0.73	3 x 0.73	3 x 0.73
Full Load Amps		A	3.3	3.3	3.3
SCAF Condenser Match - Motor-Per Fan					
Quantity x Motor Size		kW	3 x 1.4	3 x 1.4	3 x 1.4
Full Load Amps		A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Sound Data – X2X2

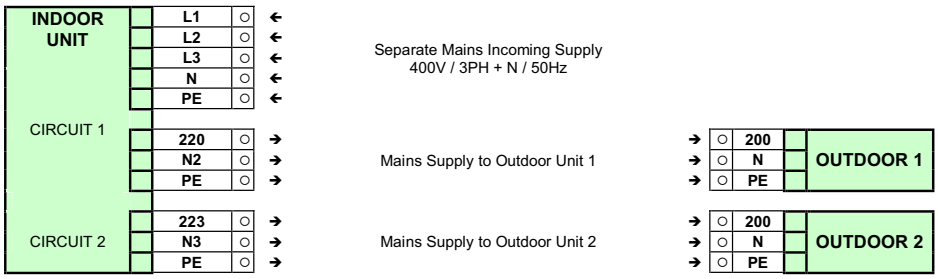
	Sound Measurement	Overall dB(A)	Frequency (Hz) dB							
			63	125	250	500	1000	2000	4000	8000
SC19D055-X2X2-0	Discharge Air	77	91	82	72	69	72	73	65	58
	Return Air	69	67	73	69	65	64	61	55	48
	Case Breakout	57	80	64	56	48	50	43	35	33
	Sound Pressure @ 3m	51	74	58	50	42	44	37	29	27
SC19D070-X2X2-0	Discharge Air	79	91	86	78	71	74	73	64	59
	Return Air	76	71	80	76	72	70	69	63	57
	Case Breakout	59	81	66	58	50	51	46	37	34
	Sound Pressure @ 3m	53	75	60	52	44	45	40	31	28
SC19D080-X2X2-0	Discharge Air	81	93	88	82	74	76	74	66	62
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	61	83	68	61	53	52	49	38	35
	Sound Pressure @ 3m	55	77	62	55	47	46	43	32	29
SC25D080-X2X2-0	Discharge Air	82	94	89	82	75	76	75	66	62
	Return Air	80	75	84	81	76	74	73	68	62
	Case Breakout	61	83	69	62	54	53	49	38	35
	Sound Pressure @ 3m	55	77	63	56	48	47	43	32	29
SC25D090-X2X2-0	Discharge Air	84	99	92	85	76	78	76	67	64
	Return Air	83	77	87	84	78	77	76	71	64
	Case Breakout	64	87	71	64	56	54	52	39	37
	Sound Pressure @ 3m	58	81	65	58	50	48	46	33	31
SC25D100-X2X2-0	Discharge Air	86	100	94	87	79	80	78	69	67
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	66	88	73	66	58	56	54	39	38
	Sound Pressure @ 3m	60	82	67	60	52	50	48	32	32
SC31D100-X2X2-0	Discharge Air	85	99	93	86	78	79	77	68	65
	Return Air	84	78	88	85	79	78	77	72	65
	Case Breakout	65	87	72	65	57	55	53	38	37
	Sound Pressure @ 3m	59	81	66	59	51	49	47	32	31
SC31D120-X2X2-0	Discharge Air	88	102	97	89	81	82	81	72	70
	Return Air	88	82	92	89	83	81	81	76	69
	Case Breakout	68	90	76	69	61	59	56	38	40
	Sound Pressure @ 3m	62	84	70	63	55	53	50	32	34
SC31D130-X2X2-0	Discharge Air	90	107	98	91	82	83	82	72	70
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	70	94	77	70	62	59	56	40	42
	Sound Pressure @ 3m	64	88	71	64	56	53	50	34	36

(1) dB(A) is the overall sound level, measured on the A scale
(2) All sound data measured at nominal conditions, Discharge Air, Return air and case breakout is sound power.

Interconnecting Wiring –X2X2

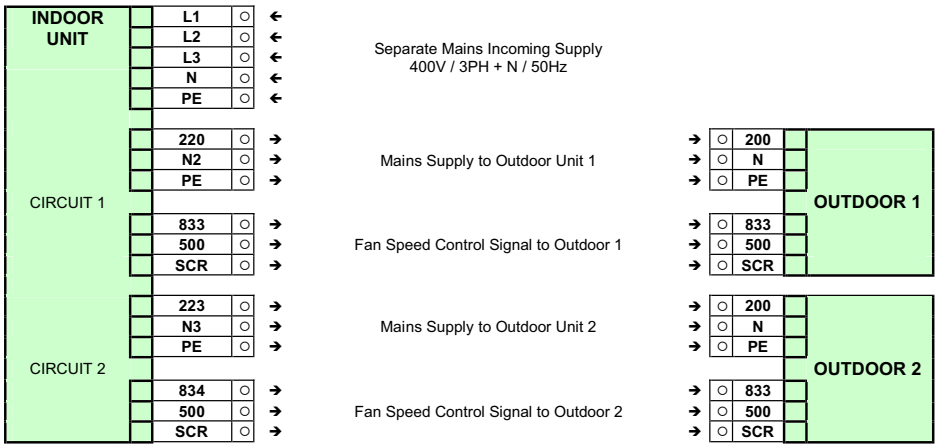
Single Phase AC & SCAF Condensers (FSC Indoor)
(CR12, 16, 22, 30, 50, 65, 80, 105 and 140 AC Models), (CR12, 16, 22, 30, 50, 65 SCAF Models)

Fan Speed Control Fitted to Indoor Unit (With sub fusing supplied)



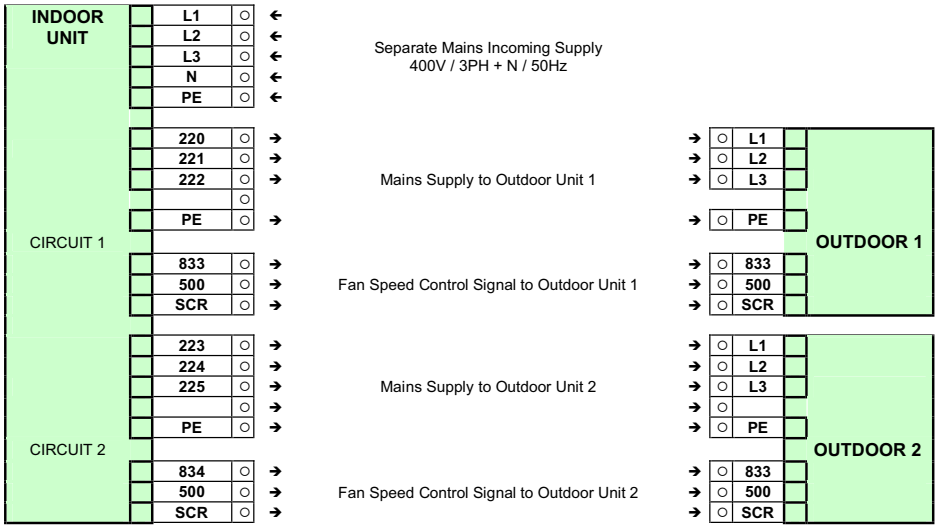
Single Phase EC & SCAF Condensers (FSC Outdoor)
(CR12, 16, 22, 30, 50, 65, 80, 105 and 140 EC Models), (CR80 and 105 SCAF Models)

Fan Speed Control Fitted to Outdoor Unit (With sub fusing supplied)



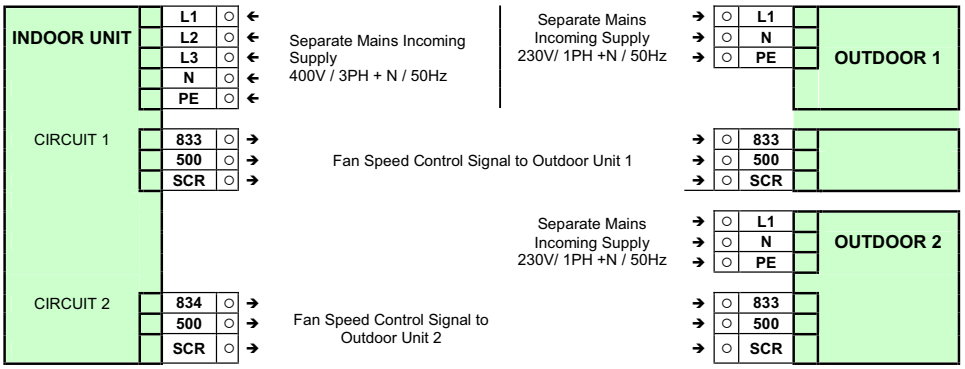
Three Phase AC, EC and SCAF condensers
(CR26, 35, 60, 75, 95 and 130 and CR165 AC/EC models), (CR26, 35, 60, 75, 95 and 130 SCAF models)

Fan Speed Control Fitted to Outdoor Unit (With sub fusing supplied)



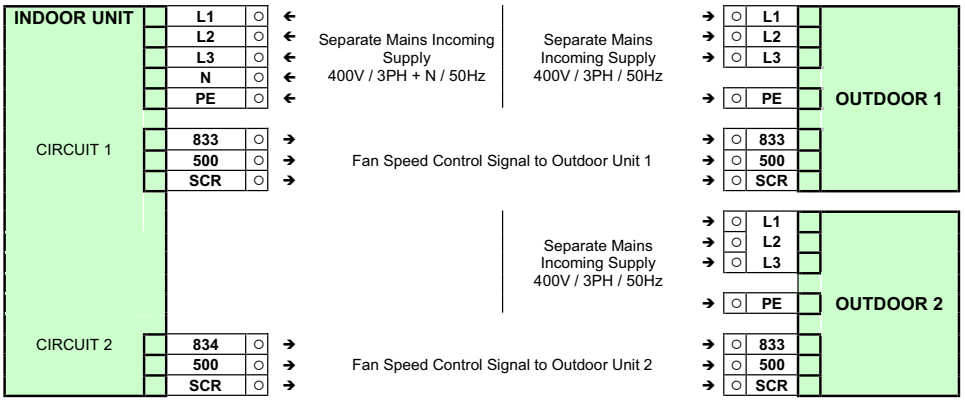
Non Sub Fused Single Phase SCAF Condenser (CR140)

Fan Speed Control Fitted to Outdoor Unit (No sub fusing available)



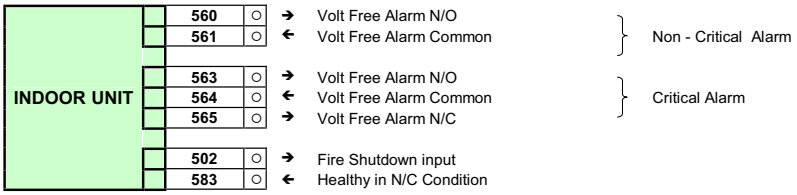
Non Sub Fused Three Phase SCAF Condenser (CR165)

Fan Speed Control Fitted to Outdoor Unit (No sub Fusing available)

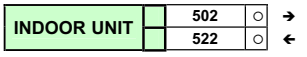


All Models

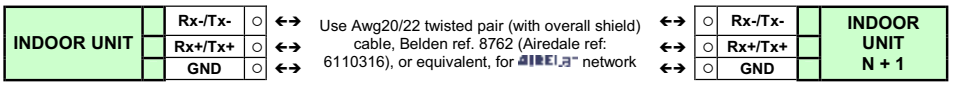
Indoor Controls Only



Remote On/Off



Run/Standby Network



CABLE INSTALLATION In line with IEE Wiring Regulations, the following should be observed:

- Extra low voltage control cables (ELV) and mains power cable should be segregated by a minimum distance of 50mm
- If cables must cross, it is recommended that they cross at right angles
- Airedale recommends that ELV cables are screened at one end to earthed enclosures

Air Cooled and Chilled Water Models (X2C0)

Performance Data – Air Cooled & Chilled Water Models

Cooling Duties

X2C0		Ambient Temperature (°C)									
Model	Air On Temp. (°C) / %RH	25 TC (kW)	25 SC (kW)	30 TC (kW)	30 SC (kW)	35 TC (kW)	35 SC (kW)	40 TC (kW)	40 SC (kW)	46 TC (kW)	46 SC (kW)
SC19D033-X2C0-0 1 x CR50	22 / 50	28.4	28.4	28.4	28.4	27.9	27.9	26.6	26.6	24.9	24.9
	24 / 45	29.4	29.4	29.4	29.4	28.9	28.9	27.6	27.6	25.8	25.8
	26 / 40	30.5	30.5	30.5	30.5	29.9	29.9	28.5	28.5	26.8	26.8
SC19D038-X2C0-0 1 x CR65	22 / 50	35.4	35.4	35.4	35.4	35.1	35.1	33.5	33.5	31.6	31.6
	24 / 45	36.8	36.8	36.8	36.8	36.4	36.4	34.9	34.9	33.0	33.0
	26 / 40	38.4	38.4	38.4	38.4	37.9	37.9	36.3	36.3	34.5	34.5
SC19D045-X2C0-0 1 x CR65	22 / 50	40.7	40.7	40.7	40.7	39.8	39.8	38.0	38.0	35.7	35.7
	24 / 45	42.3	42.3	42.3	42.3	41.3	41.3	39.5	39.5	37.3	37.3
	26 / 40	44.2	44.2	44.2	44.2	43.0	43.0	41.2	41.2	39.0	39.0
SC19D064-X2C0-0 1 x CR105	22 / 50	61.7	59.5	61.7	59.5	60.7	59.1	58.1	58.1	54.4	54.4
	24 / 45	63.2	63.2	63.2	63.2	62.2	62.2	59.5	59.5	55.8	55.8
	26 / 40	64.6	64.6	64.6	64.6	63.4	63.4	60.7	60.7	57.2	57.2
SC19D070-X2C0-0 1 x CR105	22 / 50	67.2	61.6	67.2	61.6	65.6	60.9	62.5	59.8	58.6	58.3
	24 / 45	68.9	66.2	68.9	66.2	67.1	65.5	64.0	64.0	60.0	60.0
	26 / 40	70.4	70.4	70.4	70.4	68.5	68.5	65.3	65.3	61.2	61.2
SC19D076-X2C0-0 1 x CR105	22 / 50	74.0	64.8	74.0	64.8	71.3	63.4	67.6	61.7	62.7	59.9
	24 / 45	75.9	69.3	75.9	69.3	72.9	67.8	69.2	66.3	64.2	64.2
	26 / 40	77.5	74.3	77.5	74.3	74.4	72.9	70.5	70.5	65.4	65.4
SC25D045-X2C0-0 1 x CR65	22 / 50	42.1	42.1	42.1	42.1	41.0	41.0	39.0	39.0	36.8	36.8
	24 / 45	43.8	43.8	43.8	43.8	42.6	42.6	40.7	40.7	38.4	38.4
	26 / 40	45.7	45.7	45.7	45.7	44.4	44.4	42.5	42.5	40.1	40.1
SC25D050-X2C0-0 1 x CR65	22 / 50	46.0	46.0	46.0	46.0	44.3	44.3	42.2	42.2	39.7	39.7
	24 / 45	47.8	47.8	47.8	47.8	46.1	46.1	44.1	44.1	41.5	41.5
	26 / 40	50.0	50.0	50.0	50.0	48.1	48.1	46.0	46.0	43.4	43.4
SC25D055-X2C0-0 1 x CR80	22 / 50	52.9	52.9	52.9	52.9	51.3	51.3	48.8	48.8	45.7	45.7
	24 / 45	54.6	54.6	54.6	54.6	53.0	53.0	50.7	50.7	47.7	47.7
	26 / 40	57.1	57.1	57.1	57.1	55.2	55.2	52.8	52.8	49.8	49.8
SC25D067-X2C0-0 1 x CR105	22 / 50	65.5	65.5	65.5	65.5	64.2	64.2	61.3	61.3	57.6	57.6
	24 / 45	67.0	67.0	67.0	67.0	65.6	65.6	62.6	62.6	58.8	58.8
	26 / 40	68.9	68.9	68.9	68.9	67.3	67.3	64.4	64.4	61.1	61.1
SC25D073-X2C0-0 1 x CR105	22 / 50	71.7	71.3	71.7	71.3	69.6	69.6	66.2	66.2	61.9	61.9
	24 / 45	73.5	73.5	73.5	73.5	71.2	71.2	67.7	67.7	63.2	63.2
	26 / 40	75.2	75.2	75.2	75.2	72.8	72.8	69.4	69.4	65.0	65.0
SC25D080-X2C0-0 1 x CR105	22 / 50	79.2	74.6	79.2	74.6	75.7	72.9	71.7	71.2	66.3	66.3
	24 / 45	81.2	80.4	81.2	80.4	77.4	77.4	73.3	73.3	67.7	67.7
	26 / 40	82.9	82.9	82.8	82.8	79.0	79.0	74.8	74.8	69.4	69.4
SC31D055-X2C0-0 1 x CR80	22 / 50	52.7	52.7	52.7	52.7	51.0	51.0	48.4	48.4	45.2	45.2
	24 / 45	54.5	54.5	54.5	54.5	52.7	52.7	50.2	50.2	47.1	47.1
	26 / 40	56.1	56.1	56.1	56.1	54.4	54.4	52.1	52.1	49.2	49.2
SC31D065-X2C0-0 1 x CR105	22 / 50	60.1	60.1	60.1	60.1	59.4	59.4	56.6	56.6	53.0	53.0
	24 / 45	61.8	61.8	61.8	61.8	61.0	61.0	58.4	58.4	55.1	55.1
	26 / 40	64.2	64.2	64.2	64.2	63.3	63.3	60.7	60.7	57.5	57.5
SC31D075-X2C0-0 1 x CR105	22 / 50	64.8	64.8	64.8	64.8	63.7	63.7	60.8	60.8	57.2	57.2
	24 / 45	66.9	66.9	66.9	66.9	65.7	65.7	63.0	63.0	59.6	59.6
	26 / 40	69.8	69.8	69.8	69.8	68.4	68.4	65.7	65.7	62.1	62.1
SC31D077-X2C0-0 1 x CR105	22 / 50	74.6	74.6	74.6	74.6	72.2	72.2	68.8	68.8	64.3	64.3
	24 / 45	76.5	76.5	76.5	76.5	73.8	73.8	70.3	70.3	66.3	66.3
	26 / 40	79.0	79.0	79.0	79.0	76.3	76.3	73.2	73.2	69.0	69.0
SC31D080-X2C0-0 1 x CR105	22 / 50	78.8	78.8	78.8	78.8	75.4	75.4	71.2	71.2	65.9	65.9
	24 / 45	80.7	80.7	80.7	80.7	77.0	77.0	72.8	72.8	67.6	67.6
	26 / 40	83.1	83.1	83.0	83.0	79.3	79.3	75.4	75.4	70.4	70.4
SC31D083-X2C0-0 1 x CR105	22 / 50	82.6	82.6	82.5	82.5	78.5	78.5	74.3	74.3	68.7	68.7
	24 / 45	84.7	84.7	84.3	84.3	80.3	80.3	75.9	75.9	70.2	70.2
	26 / 40	86.8	86.8	86.2	86.2	82.4	82.4	78.2	78.2	73.0	73.0

TC=Total Cooling SC=Sensible Cooling
(1) All data quoted is gross
(2) Deduct fan gain for nett duties, refer to **Mechanical Data**

Cooling Duties

Model	Air On Temp. (°C) / %RH	Chilled water inlet and outlet temperatures									
		5 / 10 °C		7 / 12 °C		8 / 14 °C		10 / 16 °C		5.5 / 14.5°C	
		TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)
SC19D033-X2C0-0 1 x CR50	22 / 50	68.2	54.8	49.3	44.9	40.2	40.2	31.4	31.4	21.3	21.3
	24 / 45	77.8	63.1	61.6	55.9	49.1	49.1	40.9	40.9	48.1	48.1
	26 / 40	86.2	71.4	70.0	64.3	57.7	57.7	49.7	49.7	58.1	58.1
SC19D038-X2C0-0 1 x CR65	22 / 50	75.5	61.7	55.1	51.3	45.4	45.4	35.6	35.6	22.2	22.2
	24 / 45	86.2	71.1	67.9	63.1	55.3	55.3	46.1	46.1	54.8	54.8
	26 / 40	95.5	80.6	74.7	68.8	65.0	65.0	56.0	56.0	65.8	65.8
SC19D045-X2C0-0 1 x CR65	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC19D064-X2C0-0 1 x CR105	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC19D070-X2C0-0 1 x CR105	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC19D076-X2C0-0 1 x CR105	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC25D045-X2C0-0 1 x CR65	22 / 50	100.7	79.5	78.0	69.4	60.3	60.3	48.6	48.6	62.0	62.0
	24 / 45	114.1	91.2	91.4	81.1	72.4	72.4	61.0	61.0	79.5	76.0
	26 / 40	126.0	103.0	103.1	92.9	84.3	84.3	73.1	73.1	91.3	84.7
SC25D050-X2C0-0 1 x CR65	22 / 50	109.2	86.9	84.2	75.8	65.8	65.8	53.0	53.0	67.8	67.8
	24 / 45	123.8	99.7	98.8	88.7	79.0	79.0	66.5	66.5	84.5	80.3
	26 / 40	136.7	112.6	111.6	101.6	92.0	92.0	79.8	79.8	98.9	93.5
SC25D055-X2C0-0 1 x CR80	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC25D067-X2C0-0 1 x CR105	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC25D073-X2C0-0 1 x CR105	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC25D080-X2C0-0 1 x CR105	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC31D055-X2C0-0 1 x CR80	22 / 50	117.0	90.1	92.1	78.7	71.1	67.7	56.6	56.6	82.6	73.8
	24 / 45	132.0	103.0	107.0	91.6	91.0	91.0	70.1	70.1	99.8	88.0
	26 / 40	145.2	116.1	120.1	104.7	98.7	91.8	83.4	83.4	114.5	101.9
SC31D065-X2C0-0 1 x CR105	22 / 50	133.3	103.7	104.5	90.6	79.8	79.8	64.9	64.9	93.1	84.8
	24 / 45	150.5	118.7	121.6	105.6	97.4	92.6	80.5	80.5	112.6	101.0
	26 / 40	165.8	133.8	136.7	120.8	112.7	107.8	95.9	95.9	129.3	117.1
SC31D075-X2C0-0 1 x CR105	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7
SC31D077-X2C0-0 1 x CR105	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7
SC31D080-X2C0-0 1 x CR105	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7
SC31D083-X2C0-0 1 x CR105	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7

TC=Total Cooling SC=Sensible Cooling
(1) All data quoted is gross
(2) Deduct fan gain for nett duties, refer to **Mechanical Data**

Mechanical Data –X2C0

			SC19D033-X2C0-0	SC19D038-X2C0-0	SC19D045-X2C0-0
Standard Condenser Match -			**1 x CR50**	**1 x CR65**	**1 x CR65**
Capacity					
Nom Cooling (Gross) – X2	(1)	kW	28.9	36.4	41.3
Nom Cooling (Gross) – C0	(2)	kW	61.6	67.9	74.4
Capacity Steps			2	2	2
Fan Gain	(7)	kW	0.66	1.0	1.7
Dimensions - W x D x H		mm	1985 x 890 x 1980	1985 x 890 x 1980	1985 x 890 x 1980
Weight - Machine / Operating	(3)	kg	820 / 860	820 / 860	820 / 860
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator – X2			Rifled Copper Tube/ Turbulated Hydrophilic Coated Aluminium Fins		
Cooling / Dehum Stages			2/1	2/1	2/1
Cooling Coil – C0			Copper Tube / Turbulated Hydrophilic Coated Aluminium Fins		
Cooling / Dehum Stages			1(Modulated)/ 1		
Water Volume		l	27.4	27.4	27.4
Water flow rate		l/s	2.44	2.72	3.14
Pressure drop		kPa	23.33	27.8	35.01
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 2.2	2 x 2.2	2 x 2.2
Speed @ 25Pa / Maximum ESP			964 / 1360	1117 / 1360	1340 / 1360
Maximum ESP		Pa	438	302	49
Nominal Airflow		m^3/s	3.7	4.3	5.1
Compressor - Scroll					
Configuration			Dual Cool - Circuit 1 Tandem Compressors (Refrigeration) / Circuit 2 Chilled water		
Quantity			2	2	2
Oil Charge Volume		l	2 x 1.57	2 x 1.57	2 x 1.57
Oil Type			Polyolvinyl		
Refrigeration			Single Circuit		
Refrigeration Control & Type			Thermostatic Expansion Valve (Optional EEV)		
Refrigeration Type	(4)		R410A		
Holding Charge			Inert Gas		
Charge (Total)		kg	9.2	14.4	14.4
Connections					
Liquid (Sweat) – X2		in	1/2	5/8	5/8
Discharge (Sweat) – X2		in	7/8	7/8	7/8
Water Inlet / Outlet – C0		mm	35	35	35
Condensate Drain Hose		mm	22	22	22
Filtration			Disposable to BS EN 779-G4-600		
Quantity			3	3	3
OPTIONAL EXTRAS					
Hot Gas Reheat - X					
Nom Heating (Gross)	(5)	kW	8.3	9.2	9.7
Electric Heating (Total)		kW	21	21	21
Humidifier					
Capacity		kg/hr	8	8	8
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor			Centrifugal direct drive		
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @ 25Pa / Maximum ESP		RPM	986 / 1520	1145 / 1520	1340 / 1520
Maximum ESP		Pa	589	453	216
Fan Gain	(7)	kW	0.65	1.03	1.73
Second upgrade Fan Motor - EC Motor			Centrifugal direct drive		
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(7)	kW	N/A	N/A	N/A
Low Pressure Hot Water			Copper Tube / Aluminium Fin		
Capacity Gross	(6)	kW	22.2	24.5	26.0
Water Flow (Nominal)		l/s	0.49	0.54	0.58
Pressure drop		kPa	9.4	9.7	10.1
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH 35°C Ambient
(2) Entering air 24°C/45% RH water 7/12°C
(3) Machine weight includes a refrigerant charge / operating weight includes calculated water volume
(4) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit)***
(5) Based on air temperature of 15.5°C leaving the evaporator coil
(6) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(7) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data – X2C0 Continued

		SC19D064-X2C0-0	SC19D070-X2C0-0	SC19D076-X2C0-0
Standard Condenser Match -		**1 x CR105**	**1 x CR105**	**1 x CR105**
Capacity				
Nom Cooling (Gross) – X2	kW	62.2	67.1	72.9
Nom Cooling (Gross) – C0	kW	74.4	74.4	74.4
Capacity Steps		2	2	2
Fan Gain	kW	1.7	1.7	1.7
Dimensions - W x D x H	mm	1985 x 890 x 1980	1985 x 890 x 1980	1985 x 890 x 1980
Weight - Machine / Operating	kg	890 / 920	900 / 930	900 / 930
Construction		Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour		Frame : Anodised Aluminium Frame with Black Nylon Corners		
Evaporator – X2		Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages		2/1	2/1	2/1
Cooling Coil – C0		Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling /Dehum Stages		1(Modulated)/ 1		
Water Volume	l	27.4	27.4	27.4
Water flow rate	l/s	3.14	3.14	3.14
Pressure drop	kPa	35.01	35.01	35.01
Fan Motor		Backwards Curved, Centrifugal direct drive		
Motor Type		EC	EC	EC
Quantity x Motor Size	kW	2 x 2.2	2 x 2.2	2 x 2.2
Speed @ 25Pa / Maximum ESP		1340 / 1360	1340 / 1360	1340 / 1360
Maximum ESP	Pa	49	49	49
Nominal Airflow	m³/s	5.1	5.1	5.1
Compressor - Scroll				
Configuration		Dual Cool - Circuit 1 Tandem Compressors (Refrigeration) / Circuit 2 Chilled water		
Quantity		2	2	2
Oil Charge Volume	l	2 x 3.3	2 x 3.3	2 x 3.6
Oil Type		Polyolester		
Refrigeration		Single Circuit		
Refrigeration Control & Type		Thermostatic Expansion Valve (Optional EEV)		
Refrigeration Type		R410A		
Holding Charge		Inert Gas		
Charge (Total)	kg	21.9	21.9	21.9
Connections				
Liquid (Sweat) – X2	in	7/8	7/8	7/8
Discharge (Sweat) – X2	in	1 1/8	1 1/8	1 1/8
Water Inlet / Outlet – C0	mm	42	42	42
Condensate Drain Hose	mm	22	22	22
Filtration		**Disposable to BS EN 779-G4-600**		
Quantity		3	3	3
OPTIONAL EXTRAS				
Hot Gas Reheat - X				
Nom Heating (Gross)	kW	9.7	9.7	9.7
Electric Heating (Total)	kW	31.5	31.5	31.5
Humidifier				
Capacity	kg/hr	15	15	15
Feed/Drain		3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump				
Head	m	10.8	10.8	10.8
Flow	l/m	5	5	5
Drain		10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor		Centrifugal direct drive		
Quantity x Motor Size	kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @ 25Pa / Maximum ESP	rpm	1364 / 1520	1364 / 1520	1364 / 1520
Maximum ESP	Pa	216	216	216
Fan Gain	kW	1.73	1.73	1.73
Second upgrade Fan Motor - EC Motor				
Quantity x Motor Size	kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP	rpm	N/A	N/A	N/A
Maximum ESP	Pa	N/A	N/A	N/A
Fan Gain	kW	N/A	N/A	N/A
Low Pressure Hot Water		Copper Tube/Aluminium Fin		
Capacity Gross	kW	26	26	26
Water Flow (Nominal)	l/s	0.58	0.58	0.58
Pressure drop	kPa	10.1	10.1	10.1
LPHW Connection Sizes	mm	22	22	22

(1) Entering air 24°C/45% RH 35°C Ambient
(2) Entering air 24°C/45% RH water 7/12°C
(3) Machine weight includes a refrigerant charge / operating weight includes calculated water volume
(4) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit)***
(5) Based on air temperature of 15.5°C leaving the evaporator coil
(6) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(7) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data – X2C0 Continued

			SC25D045-X2C0-0	SC25D050-X2C0-0	SC25D055-X2C0-0
Standard Condenser Match -			**1 x CR65**	**1 x CR65**	**1 x CR80**
Capacity					
Nom Cooling (Gross) – X2	(1)	kW	42.6	46.1	53.0
Nom Cooling (Gross) – C0		kW	91.4	98.8	105.8
Capacity Steps			2	2	3
Fan Gain	(7)	kW	2.24	2.65	3.01
Dimensions - W x D x H		mm	2549 x 890 x 1980	2549 x 890 x 1980	2549 x 890 x 1980
Weight - Machine / Operating	(3)	kg	940 / 980	990 / 1030	1000 / 1040
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator – X2			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	2/1	3/1
Cooling Coil – C0			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling /Dehum Stages			1(Modulated)/ 1		
Water Volume		l	36.8	36.8	36.8
Water Flow rate		l/s	3.8	4.02	4.32
Pressure Drop		kPa	57.4	63	70.7
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			AC	AC	AC
Quantity x Motor Size		kW	3 x 2.38	3 x 2.38	3 x 2.38
Speed @ 25Pa / Maximum ESP			1092 / 1360	1220 / 1360	1360 / 1360
Maximum ESP		Pa	328	188	20
Nominal Airflow		m³/s	5.3	5.9	6.5
Compressor - Scroll					
Configuration			Dual Cool - Circuit 1 Tandem Compressors (Refrigeration) / Circuit 2 Chilled water		
Quantity			2	2	2
Oil Charge Volume		l	2 x 1.57	2 x 3	2 x 3
Oil Type			Polyolvinyl	Polyolester	
Refrigeration			Single Circuit		
Refrigeration Control & Type			Thermostatic Expansion Valve (Optional EEV)		
Refrigeration Type			R410A		
Holding Charge			Inert Gas		
Charge (Total)	(4)	kg	15.6	14.7	14.7
Connections					
Liquid (Sweat) – X2		in	5/8	7/8	7/8
Discharge (Sweat) – X2		in	7/8	1 1/8	1 1/8
Water Inlet / Outlet – C0		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4-600**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat - X	(5)				
Nom Heating (Gross)		kW	11.9	12.2	12.2
Electric Heating (Total)		kW	21	21	31.5
Humidifier					
Capacity		kg/hr	8	8	8
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor			Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Speed @ 25Pa / Maximum ESP		rpm	1074 / 1360	1200 / 1360	1337 / 1360
Maximum ESP		Pa	314	188	45
Fan Gain	(7)	kW	1.4	1.92	2.6
Second upgrade Fan Motor - EC Motor			Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	1270 / 1520	1225 / 1520	1354 / 1520
Maximum ESP		Pa	464	337	195
Fan Gain	(7)	kW	1.4	1.92	2.6
Low Pressure Hot Water	(6)				
Capacity Gross		kW	32.5	34.1	35.7
Water Flow (Nominal)		l/s	0.72	0.76	0.79
Pressure drop		kPa	20.2	21	21.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH 35°C Ambient
(2) Entering air 24°C/45% RH water 7/12°C
(3) Machine weight includes a refrigerant charge / operating weight includes calculated water volume
(4) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit)***
(5) Based on air temperature of 15.5°C leaving the evaporator coil
(6) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(7) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data – X2C0 Continued

			SC25D067-X2C0-0	SC25D073-X2C0-0	SC25D080-X2C0-0
Standard Condenser Match -			**1 x CR105**	**1 x CR105**	**1 x CR105**
Capacity	(1)				
Nom Cooling (Gross) – X2		kW	65.6	71.2	77.4
Nom Cooling (Gross) – C0	(2)	kW	105.8	105.8	105.8
Capacity Steps			2	2	2
Fan Gain		kW	3.01	3.01	3.01
Dimensions - W x D x H		mm	2549 x 890 x 1980	2549 x 890 x 1980	2549 x 890 x 1980
Weight - Machine / Operating	(3)	kg	1010 / 1050	1010 / 1060	1020 / 1060
Construction Material/Colour			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021) Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator – X2 Cooling/Dehum Stages			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins 2/1	2/1	2/1
Cooling Coil – C0 Cooling /Dehum Stages			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins 1(Modulated)/ 1		
Water Volume		l	36.8	36.8	36.8
Water Flow		l/s	4.32	4.32	4.32
Pressure Drop		kPa	70.7	70.7	70.7
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			AC	AC	AC
Quantity x Motor Size		kW	3 x 2.38	3 x 2.38	3 x 2.38
Speed @ 25Pa / Maximum ESP			1360 / 1360	1360 / 1360	1360 / 1360
Maximum ESP		Pa	20	20	20
Nominal Airflow		m³/s	6.5	6.5	6.5
Compressor - Scroll Configuration			Dual Cool - Circuit 1 Tandem Compressors (Refrigeration) / Circuit 2 Chilled water		
Quantity			2	2	2
Oil Charge Volume		l	2 x 3.3	2 x 3.3	2 x 3.6
Oil Type			Polyolester		
Refrigeration			Single Circuit		
Refrigeration Control & Type			Thermostatic Expansion Valve (Optional EEV)		
Refrigeration Type			R410A		
Holding Charge			Inert Gas		
Charge (per Circuit)	(4)	kg	23.0	23.0	23.0
Connections					
Liquid (Sweat) – X2		in	7/8	7/8	7/8
Discharge (Sweat) – X2		in	1 1/8	1 1/8	1 1/8
Water Inlet / Outlet – C0		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4-600**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat - X	(5)				
Nom Heating (Gross)		kW	12.2	12.2	12.2
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		Kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor			Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Speed @ 25Pa / Maximum ESP		rpm	1337 / 1360	1337 / 1360	1337 / 1360
Maximum ESP		Pa	45	45	45
Fan Gain	(7)	kW	2.6	2.6	2.6
Second upgrade Fan Motor - EC Motor			Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	1354/ 1520	1354 / 1520	1354 / 1520
Maximum ESP		Pa	195	195	195
Fan Gain	(7)	kW	2.6	2.6	2.6
Low Pressure Hot Water	(6)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	35.7	35.7	35.7
Water Flow (Nominal)		l/s	0.79	0.79	0.79
Pressure drop		kPa	21.8	21.8	21.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH 35°C Ambient
(2) Entering air 24°C/45% RH water 7/12°C
(3) Machine weight includes a refrigerant charge / operating weight includes calculated water volume
(4) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit)***
(5) Based on air temperature of 15.5°C leaving the evaporator coil
(6) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(7) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data – X2C0 Continued

			SC31D055-X2C0-0	SC31D065-X2C0-0	SC31D075-X2C0-0
Standard Condenser Match -			**1 x CR80**	**1 x CR105**	**1 x CR105**
Capacity					
Nom Cooling (Gross) – X2	(1)	kW	52.7	61.0	65.7
Nom Cooling (Gross) – C0	(2)	kW	107	121.6	135.2
Capacity Steps			3	2	3
Fan Gain	(7)	kW	1.25	2.06	3.22
Dimensions - W x D x H		mm	3113 x 890 x 1980	3113 x 890 x 1980	3113 x 890 x 1980
Weight - Machine / Operating	(3)	kg	1150 / 1200	1150 / 1210	1160 / 1210
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator – X2			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			3/1	2/1	3/1
Cooling Coil – C0			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling /Dehum Stages			1(Modulated)/ 1		
Water Volume		l	44	44	44
Water Flow		l/s	4.18	4.7	5.16
Pressure Drop		kPa	46.7	55.9	65.2
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / Maximum ESP			1061 / 1520	1261 / 1520	1480 / 1520
Maximum ESP		Pa	528	330	77
Nominal Airflow		m³/s	5.8	6.9	7.9
Compressor - Scroll					
Configuration			Dual Cool - Circuit 1 Tandem Compressors (Refrigeration) / Circuit 2 Chilled water		
Quantity			2	2	2
Oil Charge Volume		l	2 x 3.3	2 x 3.3	2 x 3.3
Oil Type			Polyolester		
Refrigeration			Single Circuit		
Refrigeration Control & Type			Thermostatic Expansion Valve (Optional EEV)		
Refrigeration Type			R410A		
Holding Charge			Inert Gas		
Charge (Total)		kg	15.9	24.2	24.2
Connections					
Liquid (Sweat) – X2		in	7/8	7/8	7/8
Discharge (Sweat) – X2		in	1 1/8	1 1/8	1 1/8
Water Inlet / Outlet – C0		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4-600**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat - X	(5)				
Nom Heating (Gross)		kW	14.6	16.1	16.1
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	8	8	8
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(7)	kW	N/A	N/A	N/A
Second upgrade Fan Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(7)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(6)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	40.6	43.8	45.2
Water Flow (Nominal)		l/s	0.9	0.97	1.01
Pressure drop		kPa	35.9	35.9	35.9
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH 35°C Ambient
(2) Entering air 24°C/45% RH water 7/12°C
(3) Machine weight includes a refrigerant charge / operating weight includes calculated water volume
(4) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit)***
(5) Based on air temperature of 15.5°C leaving the evaporator coil
(6) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(7) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data – X2C0 Continued

			SC31D077-X2C0-0	SC31D080-X2C0-0	SC31D083-X2C0-0
Standard Condenser Match -			**1 x CR105**	**1x CR105**	**1 x CR105**
Capacity					
Nom Cooling (Gross) – X2	(1)	kW	73.8	77.0	80.3
Nom Cooling (Gross) – C0	(2)	kW	135.2	135.2	135.2
Capacity Steps			2	3	2
Fan Gain	(7)	kW	3.22	3.22	3.22
Dimensions - W x D x H		mm	3113 x 890 x 1980	3113 x 890 x 1980	3113 x 890 x 1980
Weight - Machine / Operating	(3)	kg	1170 / 1220	1170 / 1220	1170 / 1220
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator – X2			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	3/1	2/1
Cooling Coil – C0			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling /Dehum Stages			1(Modulated)/ 1		
Water Volume		l	44	44	44
Water Flow		l/s	5.2	5.2	5.2
Pressure Drop		kPa	65.2	65.2	65.2
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / Maximum ESP			1480 / 1510	1480 / 1510	1480 / 1510
Maximum ESP		Pa	77	77	77
Nominal Airflow		m³/s	7.9	7.9	7.9
Compressor - Scroll					
Configuration			Dual Cool - Circuit 1 Tandem Compressors (Refrigeration) / Circuit 2 Chilled water		
Quantity			2	2	2
Oil Charge Volume		l	2 x 3.3	(1 x 3.3)+(1 x 3.6)	2 x 3.6
Oil Type			Polyolester		
Refrigeration			Single Circuit		
Refrigeration Control & Type			Thermostatic Expansion Valve (Optional EEV)		
Refrigeration Type			R410A		
Holding Charge			Inert Gas		
Charge (Total)		kg	24.2	24.2	24.2
Connections					
Liquid (Sweat) – X2		in	7/8	7/8	7/8
Discharge (Sweat) – X2		in	1 1/8	1 1/8	1 1/8
Water Inlet / Outlet – C0		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4-600**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat - X	(5)				
Nom Heating (Gross)		kW	16.1	16.1	16.1
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(7)	kW	N/A	N/A	N/A
Second upgrade Fan Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(7)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(6)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	45.2	45.2	45.2
Water Flow (Nominal)		l/s	1.01	1.01	1.01
Pressure drop		kPa	38.8	38.8	38.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH 35°C Ambient
(2) Entering air 24°C/45% RH water 7/12°C
(3) Machine weight includes a refrigerant charge / operating weight includes calculated water volume
(4) For refrigerant charges, refer to ***Unit Refrigerant Charge (kg/Circuit)***
(5) Based on air temperature of 15.5°C leaving the evaporator coil
(6) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(7) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Electrical Data –X2C0

		SC19D033-X2C0-0	SC19D038-X2C0-0	SC19D045-X2C0-0
Standard Condenser Match		**1 x CR50**	**1 x CR65**	**1 x CR65**
Unit Data Full function - X2C0				
Nominal Run Amps	A	51.7	54.5	56.4
Maximum Start Amps	A	113.2	130.2	143.2
Recommended Mains Fuse Size	A	63	63	63
Max Mains Incoming Cable Size	mm²	35	35	35
Mains Supply	V		400V / 3PH + N / 50Hz	
Control circuit	VAC	24	24	24
Unit Data Cooling only –X2C0				
Nominal Run Amps	A	29.8	35.6	39.4
Maximum Start Amps	A	91.3	111.2	126.1
Recommended Mains Fuse Size	A	40	40	50
Evaporator Fan Motor - Per Fan				
Motor Type		EC	EC	EC
Quantity x Motor Size	kW	2 x 2.2	2 x 2.2	2 x 2.2
Full Load Amps	A	3.3	3.3	3.3
Locked Rotor Amps	A	3.3	3.3	3.3
Compressor 1 , Circuit 1				
Motor Size	kW	4.6	5.6	6.3
Nominal Run Amps	A	8.5	11.4	13.3
Locked Rotor Amps	A	70	87	100
Type of Start			Direct On Line	
Compressor 2, Circuit 1				
Motor Size	kW	4.6	5.6	6.3
Nominal Run Amps	A	8.5	11.39	13.27
Locked Rotor Amps	A	70	87	100
Type of Start			Direct On Line	
Standard Condenser Match - AC Motor Per Fan				
Quantity x Motor Size	kW	2x 0.6	2 x 0.6	2 x 0.6
Full Load Amps	A	2.62	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Number of stage of Reheat		2	2	2
Number of Elements		6	6	6
Rating (Total)	kW	21	21	21
Current Per Phase	A	30.31	30.31	30.31
Humidifier				
Capacity	kg/hr	8	8	8
Rating	kW	6	6	6
Full Load Amps	A	8.67	8.67	8.67
First upgrade Fan Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps	A	4.8	4.8	4.8
Locked Rotor Amps	A	4.8	4.8	4.8
Second upgrade Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	N/A	N/A	N/A
Full Load Amps	A	N/A	N/A	N/A
Locked Rotor Amps	A	N/A	N/A	N/A
Standard Condenser Match - EC Motor-Per Fan				
Quantity x Motor Size	kW	2 x 0.73	2 x 0.73	2 x 0.73
Full Load Amps	A	3.3	3.3	3.3
Condenser Match - SCAF Fan				
Quantity x Motor Size	kW	2 x 1.4	2 x 1.4	2 x 1.4
Full Load Amps	A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – X2C0 Continued

		SC19D064-X2C0-0	SC19D070-X2C0-0	SC19D076-X2C0-0
Standard Condenser Match		**1 x CR105**	**1 x CR105**	**1 x CR105**
Unit Data – Full Function - X2C0				
Nominal Run Amps	A	80.2	81.6	85.4
Maximum Start Amps	A	223.9	218.9	257.9
Recommended Mains Fuse Size	A	100	100	100
Max Mains Incoming Cable Size	mm²	35	35	35
Mains Supply	V		400V / 3PH + N / 50Hz	
Control circuit	VAC	24	24	24
Unit Data Cooling Only – X2C0				
Nominal Run Amps	A	54.4	57.3	65
Maximum Start Amps	A	198.2	194.6	237.5
Recommended Mains Fuse Size	A	63	80	80
Evaporator Fan Motor - Per Fan				
Motor Type		EC	EC	EC
Quantity x Motor Size	kW	2 x 2.2	2 x 2.2	2 x 2.2
Full Load Amps	A	3.3	3.3	3.3
Locked Rotor Amps	A	3.3	3.3	3.3
Compressor 1 , Circuit 1				
Motor Size	kW	10.9	12.2	13.7
Nominal Run Amps	A	19.2	20.7	24.5
Locked Rotor Amps	A	163	158	197
Type of Start			Direct On Line	
Compressor 2, Circuit 1				
Motor Size	kW	10.9	12.2	13.7
Nominal Run Amps	A	19.2	20.7	24.5
Locked Rotor Amps	A	163	158	197
Type of Start			Direct On Line	
Standard Condenser Match - AC Motor Per Fan				
Quantity x Motor Size	kW	3 x 0.6	3 x 0.6	3 x 0.6
Full Load Amps	A	2.62	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Number of stage of Reheat		3	3	3
Number of Elements		9	9	9
Rating (Total)	kW	31.5	31.5	31.5
Current Per Phase	A	45.47	45.47	45.47
Humidifier				
Capacity	kg/hr	15	15	15
Rating	kW	11.25	11.25	11.25
Full Load Amps	A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps	A	4.8	4.8	4.8
Locked Rotor Amps	A	4.8	4.8	4.8
Second upgrade Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	N/A	N/A	N/A
Full Load Amps	A	N/A	N/A	N/A
Locked Rotor Amps	A	N/A	N/A	N/A
Standard Condenser Match - EC Motor-Per Fan				
Quantity x Motor Size	kW	3 x 0.73	3x 0.73	3 x 0.73
Full Load Amps	A	3.3	3.3	3.3
Condenser Match - SCAF Fan				
Quantity x Motor Size	kW	3 x 1.4	3 x 1.4	3 x 1.4
Full Load Amps	A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – X2C0 Continued

		SC25D045-X2C0-0	SC25D050-X2C0-0	SC25D055-X2C0-0
Standard Condenser Match		**1 x CR65**	**1 x CR65**	**1 x CR80**
Unit Data - X2C0				
Nominal Run Amps	A	64.8	64.4	82.2
Maximum Start Amps	A	151.6	143.6	175.9
Recommended Mains Fuse Size	A	80	100	100
Max Mains Incoming Cable Size	mm²	35	35	35
Mains Supply	V		400V / 3PH + N / 50Hz	
Control circuit	VAC	24	24	24
Unit Data Cooling Only X2C0				
Nominal Run Amps	A	47.8	47.5	54.2
Maximum Start Amps	A	134.5	126.6	167.2
Recommended Mains Fuse Size	A	63	63	63
Evaporator Fan Motor - Per Fan				
Motor Type		AC	AC	AC
Quantity x Motor Size	kW	3 x 2.38	3 x 2.38	3 x 2.38
Full Load Amps	A	5	5	5
Locked Rotor Amps	A	17.5	17.5	17.5
Compressor 1 , Circuit 1				
Motor Size	kW	6.31	7.19	7.19
Nominal Run Amps	A	13.27	12.87	12.87
Locked Rotor Amps	A	100	92	92
Type of Start			Direct On Line	
Compressor 2, Circuit 1				
Motor Size	kW	6.31	7.19	9.46
Nominal Run Amps	A	13.27	12.87	16.93
Locked Rotor Amps	A	100	92	130
Type of Start			Direct On Line	
Standard Condenser Match - AC Motor Per Fan				
Quantity x Motor Size	kW	2 x 0.6	2 x 0.6	3 x 0.6
Full Load Amps	A	2.62	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Number of stage of Reheat		2	2	3
Number of Elements		6	6	9
Rating (Total)	kW	21	21	31.5
Current Per Phase	A	30.31	30.31	45.47
Humidifier				
Capacity	kg/hr	8	8	8
Rating	kW	6	6	6
Full Load Amps	A	8.67	8.67	8.67
First upgrade Fan Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	2 x 2.2	2 x 2.2	3 x 2.2
Full Load Amps	A	3.3	3.3	3.3
Locked Rotor Amps	A	3.3	3.3	3.3
Second upgrade Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	2 x 3.1	2 x 3.1	3 x 3.1
Full Load Amps	A	4.8	4.8	4.8
Locked Rotor Amps	A	4.8	4.8	4.8
Standard Condenser Match - EC Motor-Per Fan				
Quantity x Motor Size	kW	2 x 0.73	2 x 0.73	3 x 0.73
Full Load Amps	A	3.3	3.3	3.3
Condenser Match - SCAF Fan				
Quantity x Motor Size	kW	2 x 1.4	2 x 1.4	3 x 1.4
Full Load Amps	A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – X2C0 Continued

		SC25D067-X2C0-0	SC25D073-X2C0-0	SC25D080-X2C0-0
Standard Condenser Match		**1 x CR105**	**1 x CR105**	**1 x CR105**
Unit Data Full Function- X2C0				
Nominal Run Amps	A	88.6	90	93.8
Maximum Start Amps	A	232.3	227.3	266.3
Recommended Mains Fuse Size	A	100	100	125
Max Mains Incoming Cable Size	mm²	35	35	35
Mains Supply	V		400V / 3PH + N / 50Hz	
Control circuit	VAC	24	24	24
Unit Data Cooling Only – X2C0				
Nominal Run Amps	A	62.80	65.68	73.38
Maximum Start Amps	A	206.6	203	245.9
Recommended Mains Fuse Size	A	80	80	100
Evaporator Fan Motor - Per Fan				
Motor Type		AC	AC	AC
Quantity x Motor Size	kW	3 x 2.38	3 x 2.38	3 x 2.38
Full Load Amps	A	5	5	5
Locked Rotor Amps	A	17.5	17.5	17.5
Compressor 1 , Circuit 1				
Motor Size	kW	10.86	12.15	13.73
Nominal Run Amps	A	19.2	20.7	24.5
Locked Rotor Amps	A	163	158	197
Type of Start			Direct On Line	
Compressor 2, Circuit 1				
Motor Size	kW	10.86	12.15	13.73
Nominal Run Amps	A	19.2	20.7	24.5
Locked Rotor Amps	A	163	158	197
Type of Start			Direct On Line	
Standard Condenser Match - AC Motor Per Fan				
Quantity x Motor Size	kW	3 x 0.6	3 x 0.6	3 x 0.6
Full Load Amps	A	2.62	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Number of stage of Reheat		3	3	3
Number of Elements		9	9	9
Rating (Total)	kW	31.5	31.5	31.5
Current Per Phase	A	45.47	45.47	45.47
Humidifier				
Capacity	kg/hr	15	15	15
Rating	kW	11.25	11.25	11.25
Full Load Amps	A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	3 x 2.2	3 x 2.2	3 x 2.2
Full Load Amps	A	3.3	3.3	3.3
Locked Rotor Amps	A	3.3	3.3	3.3
Second upgrade Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps	A	4.8	4.8	4.8
Locked Rotor Amps	A	4.8	4.8	4.8
Standard Condenser Match - EC Motor-Per Fan				
Quantity x Motor Size	kW	3 x 0.73	3 x 0.73	3 x 0.73
Full Load Amps	A	3.3	3.3	3.3
Condenser Match - SCAF Fan				
Quantity x Motor Size	kW	3 x 1.4	3 x 1.4	3 x 1.4
Full Load Amps	A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – X2C0 Continued

		SC31D055-X2C0-0	SC31D065-X2C0-0	SC31D075-X2C0-0
Standard Condenser Match		**1 x CR80**	**1 x CR105**	**1 x CR105**
Unit Data Full Function- X2C0				
Nominal Run Amps	A	81.6	85.7	85.7
Maximum Start Amps	A	175.3	198.7	212.4
Recommended Mains Fuse Size	A	100	100	100
Max Mains Incoming Cable Size	mm²	35	35	35
Mains Supply	V		400V / 3PH + N / 50Hz	
Control circuit	VAC	24	24	24
Unit Data Cooling Only – X2C0				
Nominal Run Amps	A	53.6	57.6	59.9
Maximum Start Amps	A	166.6	170.7	203.7
Recommended Mains Fuse Size	A	63	80	80
Evaporator Fan Motor - Per Fan				
Motor Type		EC	EC	EC
Quantity x Motor Size	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps	A	4.8	4.8	4.8
Locked Rotor Amps	A	4.8	4.8	4.8
Compressor 1 , Circuit 1				
Motor Size	kW	7.19	9.46	9.46
Nominal Run Amps	A	12.87	16.93	16.93
Locked Rotor Amps	A	92	130	130
Type of Start			Direct On Line	
Compressor 2, Circuit 1				
Motor Size	kW	9.46	9.46	10.86
Nominal Run Amps	A	16.9	16.9	19.2
Locked Rotor Amps	A	130	130	163
Type of Start			Direct On Line	
Standard Condenser Match - AC Motor Per Fan				
Quantity x Motor Size	kW	3 x 0.6	3 x 0.6	3 x 0.6
Full Load Amps	A	2.62	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Number of stage of Reheat		3	3	3
Number of Elements		9	9	9
Rating (Total)	kW	31.5	31.5	31.5
Current Per Phase	A	45.47	45.47	45.47
Humidifier				
Capacity	kg/hr	8	8	8
Rating	kW	6	6	6
Full Load Amps	A	8.67	8.67	8.67
First upgrade Fan Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	N/A	N/A	N/A
Full Load Amps	A	N/A	N/A	N/A
Locked Rotor Amps	A	N/A	N/A	N/A
Second upgrade Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	N/A	N/A	N/A
Full Load Amps	A	N/A	N/A	N/A
Locked Rotor Amps	A	N/A	N/A	N/A
Standard Condenser Match - EC Motor-Per Fan				
Quantity x Motor Size	kW	3 x 0.73	3 x 0.73	3 x 0.73
Full Load Amps	A	3.3	3.3	3.3
Condenser Match - SCAF Fan				
Quantity x Motor Size	kW	3 x 1.4	3 x 1.4	3 x 1.4
Full Load Amps	A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – X2C0 Continued

		SC31D077-X2C0-0	SC31D080-X2C0-0	SC31D083-X2C0-0
Standard Condenser Match		**1 x CR105**	**1 x CR105**	**1 x CR105**
Unit Data - X2C0				
Nominal Run Amps	A	89.4	89.4	93.2
Maximum Start Amps	A	226.7	257.6	265.7
Recommended Mains Fuse Size	A	100	100	125
Max Mains Incoming Cable Size	mm²	35	35	35
Mains Supply	V		400V / 3PH + N / 50Hz	
Control circuit	VAC	24	24	24
Unit Data Cooling Only – X2C0				
Nominal Run Amps	A	65.1	68.9	72.8
Maximum Start Amps	A	202.4	241.4	245.3
Recommended Mains Fuse Size	A	80	80	100
Evaporator Fan Motor - Per Fan				
Motor Type		EC	EC	EC
Quantity x Motor Size	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps	A	4.8	4.8	4.8
Locked Rotor Amps	A	4.8	4.8	4.8
Compressor 1 , Circuit 1				
Motor Size	kW	12.15	12.15	13.73
Nominal Run Amps	A	20.7	20.7	24.5
Locked Rotor Amps	A	158	158	197
Type of Start			Direct On Line	
Compressor 2, Circuit 1				
Motor Size	kW	12.15	13.73	13.73
Nominal Run Amps	A	20.66	24.51	24.51
Locked Rotor Amps	A	158	197	197
Type of Start			Direct On Line	
Standard Condenser Match - AC Motor Per Fan				
Quantity x Motor Size	kW	3 x 0.6	3 x 0.6	3 x 0.6
Full Load Amps	A	2.62	2.62	2.62
OPTIONAL EXTRAS				
Electric Heating				
Number of stage of Reheat		3	3	3
Number of Elements		9	9	9
Rating (Total)	kW	31.5	31.5	31.5
Current Per Phase	A	45.47	45.47	45.47
Humidifier				
Capacity	kg/hr	15	15	15
Rating	kW	11.25	11.25	11.25
Full Load Amps	A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	N/A	N/A	N/A
Full Load Amps	A	N/A	N/A	N/A
Locked Rotor Amps	A	N/A	N/A	N/A
Second upgrade Motor - EC Motor - Per Fan				
Quantity x Motor Size	kW	N/A	N/A	N/A
Full Load Amps	A	N/A	N/A	N/A
Locked Rotor Amps	A	N/A	N/A	N/A
Standard Condenser Match - EC Motor-Per Fan				
Quantity x Motor Size	kW	3 x 0.73	3 x 0.73	3 x 0.73
Full Load Amps	A	3.3	3.3	3.3
Condenser Match - SCAF Fan				
Quantity x Motor Size	kW	3 x 1.4	3 x 1.4	3 x 1.4
Full Load Amps	A	6	6	6

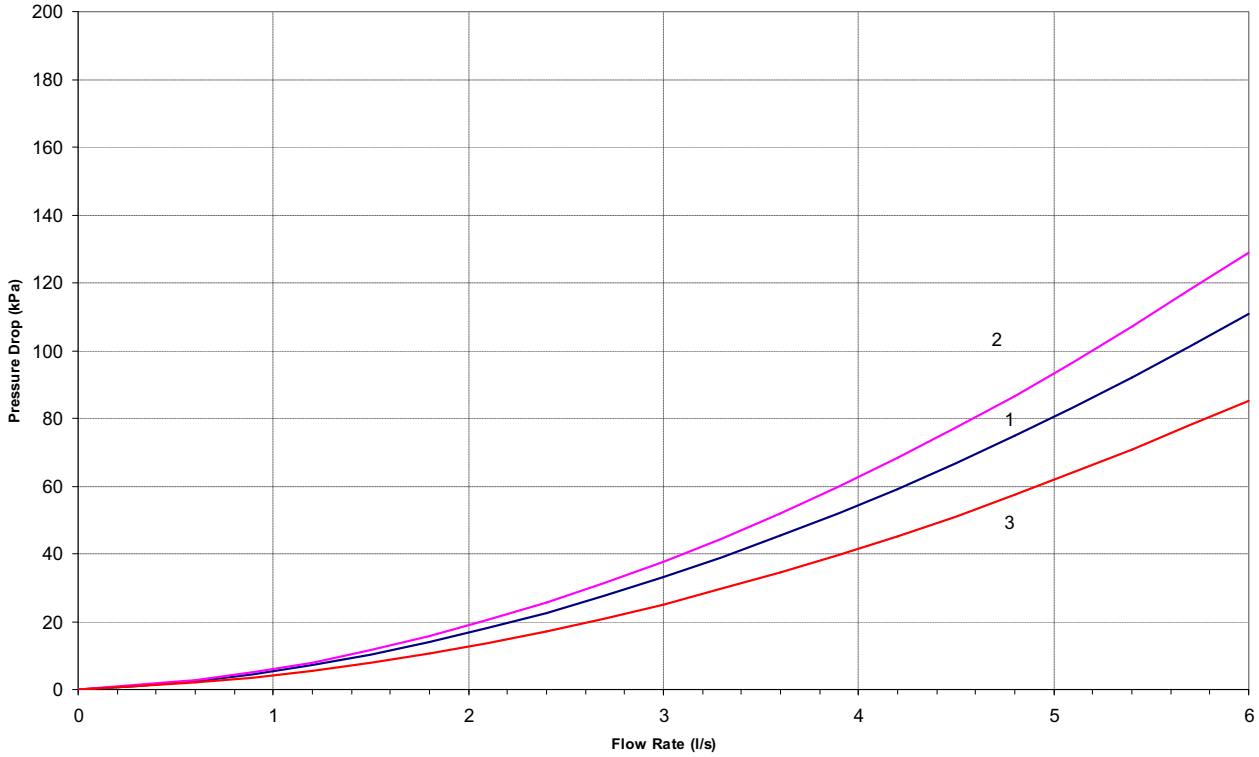
(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Sound Data – X2C0

		Overall dB(A)	Frequency (Hz) 63	125	250	500	1000	2000	4000	8000
SC19D033-X2C0-0	Discharge Air	75	82	83	73	65	70	69	61	54
	Return Air	71	68	75	70	67	65	63	57	51
	Case Breakout	53	72	64	52	45	46	41	32	32
	Sound Pressure @ 3m	47	66	58	46	39	40	35	26	26
SC19D038-X2C0-0	Discharge Air	76	84	85	77	68	71	70	61	54
	Return Air	75	70	79	75	71	69	68	62	56
	Case Breakout	55	73	66	54	47	47	43	34	32
	Sound Pressure @ 3m	49	67	60	48	41	41	37	28	26
SC19D045-X2C0-0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	58	74	69	58	51	50	47	37	33
	Sound Pressure @ 3m	52	68	63	52	45	44	41	31	27
SC19D064-X2C0-0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	57	74	68	58	51	50	47	37	33
	Sound Pressure @ 3m	51	68	62	52	45	44	41	31	27
SC19D070-X2C0-0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	57	74	69	58	51	50	47	37	33
	Sound Pressure @ 3m	51	68	63	52	45	44	41	31	27
SC19D076-X2C0-0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	57	74	68	58	51	50	47	37	33
	Sound Pressure @ 3m	51	68	62	52	45	44	41	31	27
SC25D045-X2C0-0	Discharge Air	81	90	88	83	74	75	73	64	58
	Return Air	81	75	84	82	76	75	74	69	62
	Case Breakout	59	74	70	60	52	51	48	37	34
	Sound Pressure @ 3m	53	68	64	54	46	45	42	31	27
SC25D050-X2C0-0	Discharge Air	83	92	91	85	76	77	74	66	60
	Return Air	83	77	87	84	79	77	76	71	65
	Case Breakout	62	72	70	66	57	55	52	41	37
	Sound Pressure @ 3m	56	66	64	60	51	48	46	35	31
SC25D055-X2C0-0	Discharge Air	85	95	93	87	79	79	77	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	74	73	66	57	56	53	40	37
	Sound Pressure @ 3m	57	68	67	60	51	50	47	34	31
SC25D067-X2C0-0	Discharge Air	85	94	93	87	79	79	77	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	76	72	67	59	56	54	44	35
	Sound Pressure @ 3m	57	65	66	61	53	50	48	38	29
Sc25D073-X2C0-0	Discharge Air	85	95	94	87	79	79	77	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	71	72	67	59	56	54	44	35
	Sound Pressure @ 3m	57	65	66	61	53	50	48	38	29
SC25D080-X2C0-0	Discharge Air	85	94	93	87	79	79	76	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	69	72	67	59	56	54	44	35
	Sound Pressure @ 3m	57	63	66	61	53	50	48	38	29
SC31D055-X2C0-0	Discharge Air	83	92	90	85	76	77	74	66	60
	Return Air	83	77	87	84	78	77	76	71	64
	Case Breakout	61	73	71	63	55	54	51	40	36
	Sound Pressure @ 3m	55	67	65	57	49	47	45	34	30
SC31D065-X2C0-0	Discharge Air	86	96	94	88	80	81	78	69	63
	Return Air	86	80	90	87	82	80	79	74	68
	Case Breakout	64	77	75	65	57	56	54	40	36
	Sound Pressure @ 3m	58	71	69	59	51	50	48	34	29
SC31D075-X2C0-0	Discharge Air	89	99	96	91	83	83	81	72	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	67	78	78	68	59	59	57	46	37
	Sound Pressure @ 3m	61	72	72	62	53	53	51	40	31
SC31D077-X2C0-0	Discharge Air	89	99	97	91	83	83	81	72	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	66	78	78	68	59	59	57	46	37
	Sound Pressure @ 3m	60	72	72	62	53	53	51	40	31
SC31D080-X2C0-0	Discharge Air	89	99	97	91	83	83	81	72	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	67	80	80	68	60	58	57	46	37
	Sound Pressure @ 3m	61	74	74	62	54	52	51	40	31
SC31D083-X2C0-0	Discharge Air	89	98	97	91	83	83	81	71	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	67	79	79	68	60	58	57	46	37
	Sound Pressure @ 3m	61	73	73	62	54	52	51	40	31

(1) dB(A) is the overall sound level, measured on the A scale
(2) All sound data measured at nominal conditions, Discharge Air, Return air and case breakout is sound power.

Waterside pressure drops – X2C0



Key

1	SC19D033 - 045	2	SC25D045 - 055	3	SC31D055 - 075

Pressure drop including coil and valve

(1) Includes coil, 3 port valve and pipework.
(2) To calculate 3 port valve pressure drop:

ΔP valve = $\left(\frac{Q}{M}\right)^2$ where ΔP = Pressure Drop in kPa, Q = Water Flow Rate in l/s and M = $\left(\frac{Kv}{36}\right)$

(3) Fluid 100% water.

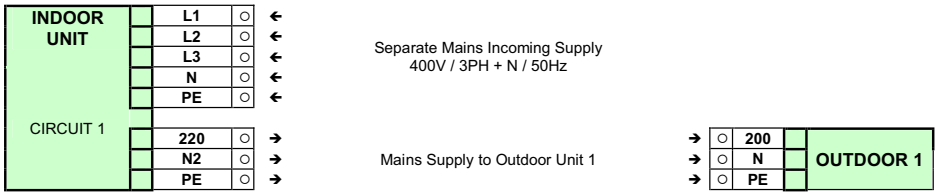
M Values

Model Sizes	SC19D33-45	SC25D45-55	SC31D55-75
Chilled Water Valve	1.11	1.11	1.11

Interconnecting Wiring – X2C0

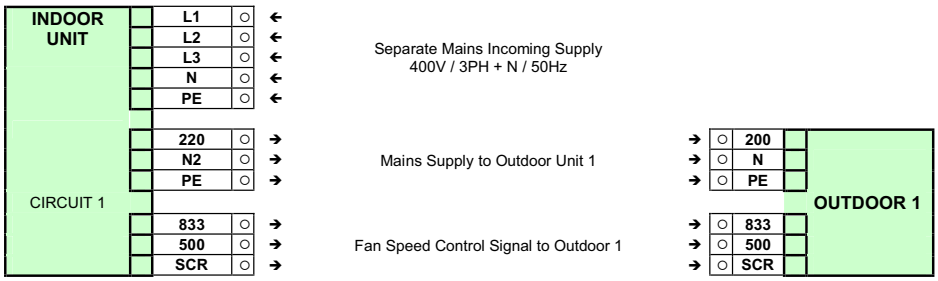
Single Phase AC & SCAF Condensers (FSC Indoor)
(CR12, 16, 22, 30, 50, 65, 80, 105 and 140 AC Models) (CR12, 16, 22 and 30, 50 and 65 SCAF Models)

Fan Speed Control Fitted to Indoor Unit (With sub fusing supplied)



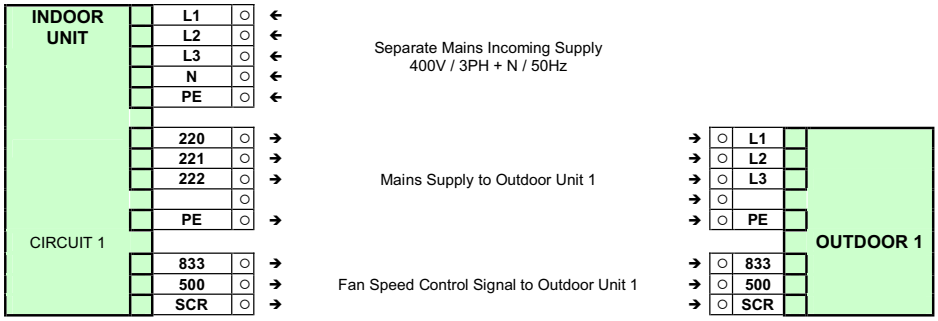
Single Phase EC & SCAF Condensers (FSC Outdoor)
(CR12, 16, 22, 35, 40, 65, 80, 105 and 140 EC Models), (CR80 and 105 SCAF Models)

Fan Speed Control Fitted to Outdoor Unit (With sub fusing supplied)



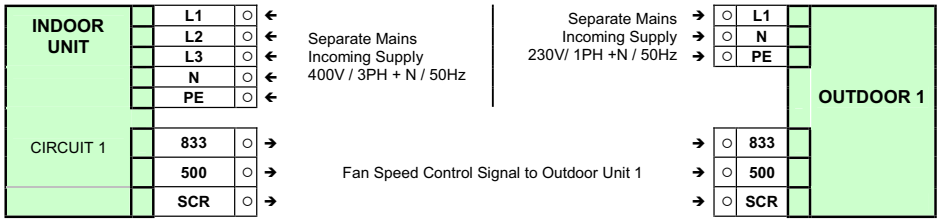
Three Phase AC, EC & SCAF Condensers
(DR26, 35, 60, 75, 95 and 130)

Fan Speed Control Fitted to Outdoor Unit (With sub fusing supplied)



Non Sub Fused Single Phase SCAF Dry Cooler (CR140)

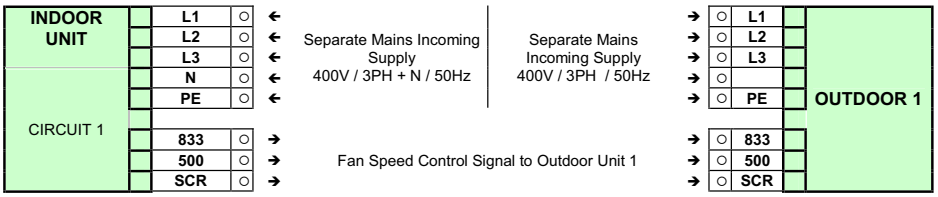
Fan Speed Control Fitted to Outdoor Unit (No sub fusing available)



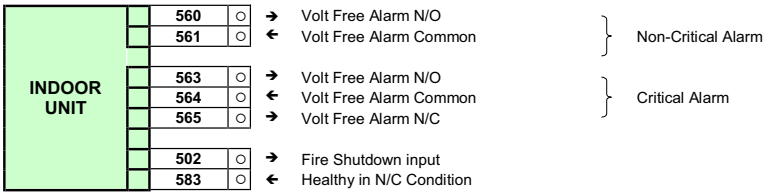
X2C0

Non Sub Fused Three Phase SCAF Condenser (CR165)

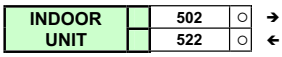
Fan Speed Control Fitted to Outdoor Unit (No sub fusing available)



Indoor Controls Only



Remote On/Off



Run/Standby Network

CABLE INSTALLATION In line with IEE Wiring Regulations, the following should be observed:

- Extra low voltage control cables (ELV) and mains power cable should be segregated by a minimum distance of 50mm
- If cables must cross, it is recommended that they cross at right angles
- Airedale recommends that ELV cables are screened at one end to earthed enclosures

X2C0

Water Cooled Models (W2W2)

Performance Data – Water Cooled Models

Cooling Duties

Cooling Capacity (1) Air On °C DB /%RH		Condenser Entering / Leaving Temperature - Based on ΔT of 5°C											
		25°C/30°C			30°C/35°C			35°C / 40°C			40°C/45°C		
		TC (kW)	SC (kW)	THR (kW)	TC (kW)	SC (kW)	THR (kW)	TC (kW)	SC (kW)	THR (kW)	TC (kW)	SC (kW)	THR (kW)
SC19D055-W2W2-0 2 x DR40	22/50	52.4	48.8	67.2	52.4	48.8	67.2	51.9	48.6	67.1	49.2	47.4	66.4
	24/45	53.5	52.4	68.3	53.5	52.4	68.3	53.0	52.2	68.2	50.2	50.2	67.4
	26/40	54.5	54.5	69.3	54.5	54.5	69.3	54.0	54.0	69.2	51.2	51.2	68.4
SC19D070-W2W2-0 2 x DR55	22/50	65.2	59.8	83.9	65.2	59.8	83.9	65.2	59.8	83.9	63.1	58.8	83.3
	24/45	66.9	64.2	85.6	66.9	64.2	85.6	66.9	64.2	85.6	64.7	63.4	84.9
	26/40	68.3	68.3	87.0	68.3	68.3	87.0	68.3	68.3	87.0	66.1	66.1	86.3
SC19D080-W2W2-0 2 x DR55	22/50	74.2	67.2	95.8	74.2	67.2	95.8	74.2	67.2	95.8	71.5	66.0	94.9
	24/45	76.1	72.2	97.7	76.1	72.2	97.7	76.1	72.2	97.7	73.3	71.0	96.7
	26/40	77.7	77.5	99.3	77.7	77.5	99.3	77.7	77.5	99.3	74.8	74.8	98.3
SC25D080-W2W2-0 2 x DR55	22/50	75.7	69.8	97.3	75.7	69.8	97.3	75.7	69.8	97.3	72.9	68.4	96.3
	24/45	77.6	75.1	99.2	77.6	75.1	99.2	77.6	75.1	99.2	74.7	73.6	98.1
	26/40	79.3	79.3	100.8	79.3	79.3	100.8	79.3	79.3	100.8	76.3	76.3	99.7
SC25D090-W2W2-0 2 x DR70	22/50	82.4	76.5	106.9	82.4	76.5	106.9	82.4	76.5	106.9	79.7	75.2	106.0
	24/45	84.6	82.3	109.1	84.6	82.3	109.1	84.6	82.3	109.1	81.7	80.9	108.1
	26/40	86.4	86.4	110.9	86.4	86.4	110.9	86.4	86.4	110.9	83.5	83.5	109.9
SC25D100-W2W2-0 2 x DR70	22/50	93.9	85.6	122.1	93.9	85.6	122.1	93.9	85.6	122.1	90.6	83.8	121.3
	24/45	96.3	91.7	124.5	96.3	91.7	124.5	96.3	91.7	124.5	92.9	90.0	123.6
	26/40	98.3	98.3	126.6	98.3	98.3	126.6	98.3	98.3	126.6	94.8	94.8	125.6
SC31D100-W2W2-0 2 x DR70	22/50	95.8	86.2	124.1	95.8	86.2	124.1	95.8	86.2	124.1	92.1	84.4	122.8
	24/45	98.3	92.5	126.6	98.3	92.5	126.6	98.3	92.5	126.6	94.5	90.7	125.3
	26/40	100.3	99.3	128.7	100.3	99.3	128.7	100.3	99.3	128.7	96.5	96.5	127.3
SC31D120-W2W2-0 2 x DR95	22/50	109.6	99.1	141.7	109.6	99.1	141.7	109.6	99.1	141.7	105.0	96.9	140.2
	24/45	112.4	106.4	144.6	112.4	106.4	144.6	112.4	106.4	144.6	107.7	104.3	143.0
	26/40	114.8	114.4	147.0	114.8	114.4	147.0	114.8	114.4	147.0	109.9	109.9	145.3
SC31D130-W2W2-0 2 x DR95	22/50	117.2	105.7	151.6	117.2	105.7	151.6	117.2	105.7	151.6	112.2	103.4	150.2
	24/45	120.2	113.4	154.7	120.2	113.4	154.7	120.2	113.4	154.7	115.0	111.1	153.1
	26/40	122.8	122.1	157.4	122.8	122.1	157.4	122.8	122.1	157.4	117.5	117.5	155.7

TC=Total Cooling SC=Sensible Cooling THR=Total Heat of Rejection
(1) All data quoted is gross
(2) Deduct fan gain for net duties, refer to **Mechanical Data**
(3) **Interpolate for water temperatures between those quoted, do not extrapolate**
(4) Water flow rate (l/s)= THR/(4.19 x ΔT) at 100% Water

Mechanical Data – W2W2

			SC19D055-W2W2	SC19D070-W2W2	SC19D080-W2W2
Standard Dry Cooler Match			**2 x DR40**	**2 x DR55**	**2 x DR55**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	53.0	66.9	76.1
Total Heat of Rejection – W2		kW	68.2	85.6	97.7
Capacity Steps			4	4	4
Fan Gain	(5)	kW	0.55	1.12	1.7
Dimensions – W x D x H		mm	1985 x 890 x 1980	1985 x 890 x 1980	1985 x 890 x 1980
Weight – Machine / Operating	(2)	Kg	940 / 940	970 / 980	970 / 980
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			4/1	4/1	4/1
Condenser			Stainless Steel Brazed Plate		
Water Volume		L	4.1	10	10
water Flow		l/s	1.65	2.08	2.39
Pressure Drop Condenser		kPa	71.9	35.3	35.3
Dry Cooler					
Water Volume		L	23.1	43.2	43.2
Flowrate		l/s	1.65	2.08	2.39
Pressure drop		kPa	35	25	30
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 2.2	2 x 2.2	2 x 2.2
Speed @25Pa / Maximum ESP		RPM	906 / 1360	1160 / 1360	1280 / 1360
Maximum ESP		Pa	490	260	110
Nominal Airflow		m^3/s	3.5	4.4	5.1
Compressor – Scroll					
Configuration – W2W2			Dual Circuit– Circuit 1 Tandem Compressors (Water Cooled) Circuit 2 Tandem Compressors (Water Cooled)		
Quantity – W2W2			2	2	2
Oil Charge Volume – W2W2		l	4 x 1.57	4 x 1.57	4 x 1.57
Oil Type			Polyolvinyl		
Refrigeration			Dual Circuit		
Refrigerant control and type			Thermostatic Expansion Valve (Optional EEV)		
Refrigerant type			R410A		
Holding Charge			Inert Gas		
Charge (Per circuit)		kg	5.75	7.32	7.32
Connections					
Water Inlet / Outlet –W2		mm	35	35	35
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			3	3	3
OPTIONAL EXTRAS					
Hot Gas Reheat -	(3)				
Nom Heating (Gross)		kW	8.1	8.9	9.5
Electric Heating (Total)		kW	21	21	21
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	922 / 1500	1187 / 1520	1364 / 1520
Maximum ESP		Pa	640	411	215
Fan Gain	(5)	kW	0.55	1.14	1.73
Second upgrade Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(5)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(4)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	22.16	24.45	26
Water Flow (Nominal)		l/s	0.49	0.54	0.58
Pressure drop		kPa	9.4	9.7	10.1
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH condensing water in / out: 35/40°C
(2) Machine weight Includes a refrigerant charge / Operating weight includes calculated water volume
(3) Based on air temperature of 15.5 °C leaving the evaporator coil
(4) Based upon low pressure hot water 82 °C inlet / 71°C outlet. Air on 20°C.
(5) Fan gain based on 25 Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data – W2W2 Continued

			SC25D080-W2W2	SC25D090-W2W2	SC25D0100-W2W2
Standard Dry Cooler Match			**2 x DR55**	**2 x DR70**	**2 x DR70**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	77.6	84.6	96.3
Total Heat of Rejection – W2		kW	99.2	109.1	124.5
Capacity Steps			4	4	6
Fan Gain	(5)	kW	2.16	2.61	3.01
Dimensions – W x D x H		Mm	2549 x 890 x 1980	2549 x 890 x 1980	2549 x 890 x 1980
Weight – Machine / Operating	(2)	Kg	1090 / 1110	1220 / 1230	1230 / 1250
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			4/1	4/1	6/1
Condenser			Stainless Steel Brazed Plate		
Water Volume		l	11	16.7	16.7
Water Flow		l/s	2.43	2.69	3.09
Pressure Drop Condenser		kPa	47.45	21.32	27.78
Dry Cooler					
Water Volume		L	43.2	55.9	55.9
Flowrate		l/s	2.43	2.69	3.09
Pressure drop		kPa	29.8	42	50
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			AC	AC	AC
Quantity x Motor Size		kW	3 x 2.38	3 x 2.38	3 x 2.38
Speed @25Pa / Maximum ESP		RPM	1066 / 1364	1207 / 1360	1360 / 1360
Maximum ESP		Pa	353	203	20
Nominal Airflow		m^3/s	5.2	5.9	6.5
Compressor – Scroll					
Configuration – W2W2			Dual Circuit – Circuit 1 Tandem Compressors (Water Cooled) Circuit 2 Tandem Compressors (Water Cooled)		
Quantity – W2W2			4	2	2
Oil Charge Volume – W2W2		l	4 x 1.57	4 x 3	4 x 3
Oil Type			Polyolvinyl	Polyolester	
Refrigeration			Dual Circuit		
Refrigerant control and type			Thermostatic Expansion Valve (Optional EEV)		
Refrigerant type			R410A		
Holding Charge			Inert Gas		
Charge (Per Circuit		kg	8.51	10.85	10.85
Connections					
Water Inlet / Outlet –W2		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat -	(3)				
Nom Heating (Gross)		kW	11.5	12.2	12.2
Electric Heating (Total)		kW	21	21	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Speed @ 25Pa / Maximum ESP		rpm	1050 / 1360	1187/ 1360	1337 / 1360
Maximum ESP		Pa	337	202	45
Fan Gain	(5)	kW	1.32	1.86	2.6
Second upgrade Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	1069 / 1510	1212 / 1510	1354 / 1510
Maximum ESP		Pa	487	351	195
Fan Gain	(5)	kW	1.3	1.85	2.6
Low Pressure Hot Water	(4)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	32.5	34.1	35.7
Water Flow (Nominal)		l/s	0.72	0.76	0.79
Pressure drop		kPa	37.4	21	21.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH condensing water in / out: 35/40°C
(2) Machine weight Includes a refrigerant charge / Operating weight includes calculated water volume
(3) Based on air temperature of 15.5 °C leaving the evaporator coil
(4) Based upon low pressure hot water 82 °C inlet / 71°C outlet. Air on 20°C.
(5) Fan gain based on 25 Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data – W2W2 Continued

			SC31D100-W2W2	SC31D120-W2W2	SC31D130-W2W2
			2 x DR70	2 x DR95	2 x DR95
Capacity	(1)				
Nom Cooling (Gross) – W2		kW	98.6	112.4	120.2
Total Heat of Rejection – W2		kW	126.6	144.6	154.7
Capacity Steps			6	4	6
Fan Gain	(5)	kW	1.46	2.51	3.22
Dimensions – W x D x H		Mm	3113 x 890 x 1980	3113 x 890 x 1980	3113 x 890 x 1980
Weight – Machine / Operating		Kg	1390 / 1400	1400 / 1410	1400 / 1420
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame:Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			6/1	4/1	6/1
Condenser			Stainless Steel Brazed Plate		
Water Volume		l	16.7	16.7	16.7
Water Flow		l/s	3.09	3.53	3.78
Pressure Drop Condenser		kPa	27.88	35.79	40.63
Dry Cooler					
Water Volume		l	55.9	55.9	55.9
Flowrate		l/s	3.09	3.53	3.78
Pressure drop		kPa	52	62	70.2
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @25Pa / Maximum ESP		RPM	1116 / 1510	1347 / 1520	1480 /1510
Maximum ESP		Pa	478	232	77
Nominal Airflow		m³/s	6.1	7.3	7.9
Compressor – Scroll					
Configuration – W2W2			Dual Circuit - Circuit 1 Tandem Compressors (Refrigeration) Circuit 2 Tandem Compressors (Refrigeration)		
Quantity – W2W2			2	2	2
Oil Charge Volume – W2W2		l	2 x 3 + 2 x 3.3	2 x 3.3	2 x 3.3
Oil Type			Polyolester		
Refrigeration			Dual Circuit		
Refrigerant control and type			Thermostatic Expansion Valve (Optional EEV)		
Refrigerant type			R410A		
Holding Charge			Inert Gas		
Charge (Per Circuit)		kg	12	12	12
Connections					
Water Inlet / Outlet –W2		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat -	(3)				
Nom Heating (Gross)		kW	14.6	15.8	16.3
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain		kW	N/A	N/A	N/A
Second upgrade Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(5)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(4)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	40.6	43.8	45.2
Water Flow (Nominal)		l/s	0.9	0.97	1.01
Pressure drop		kPa	35.9	37.4	38.8
LPHW Connection Sizes	(5)	mm	22	22	22

(1) Entering air 24°C/45% RH condensing water in / out: 35/40°C
(2) Machine weight Includes a refrigerant charge / Operating weight includes calculated water volume
(3) Based on air temperature of 15.5 °C leaving the evaporator coil
(4) Based upon low pressure hot water 82 °Cinlet/71°C outlet. Air on 20°C.
(5) Fan gain based on 25 Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Electrical Data – W2W2

			SC19D055-W2W2	SC19D070-W2W2	SC19D080-W2W2
Standard Dry Cooler Match			**2 x DR40**	**2 x DR55**	**2 x DR55**
Unit Data –Full Function W2W2	(1)				
Nominal Run Amps		A	65.7	77.2	84.7
Maximum Start Amps		A	127.2	152.8	171.5
Recommended Mains Fuse Size		A	80	100	100
Max Mains Incoming Cable Size		mm²	70	70	70
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only – W2W2					
Nominal Run Amps		A	49.6	61	68.5
Maximum Start Amps		A	111	136.6	155.3
Recommended Mains Fuse Size		A	63	80	80
Evaporator Fan Motor – Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	2 x 2.2	2 x 2.2	2 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Compressor – Compressor 1 , Circuit 1 & 2	(3)				
Motor Size		kW	4.58	5.55	6.31
Nominal Run Amps		A	8.5	11.39	13.27
Locked Rotor Amps		A	70	87	100
Type of Start				Direct On Line	
Compressor – Compressor 2, Circuit 1 & 2	(3)				
Motor Size		kW	4.58	5.55	6.31
Nominal Run Amps		A	8.5	11.39	13.27
Locked Rotor Amps		A	70	87	100
Type of Start				Direct On Line	
Standard Dry Cooler Match – AC Motor Per Fan					
Quantity x Motor Size		kW	2 x 0.6	3 x 0.6	3 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			2	2	2
Number of Elements			6	6	6
Rating (Total)		kW	21	21	21
Current Per Phase		A	30.31	30.31	30.31
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
Standard Size Fan Motor – EC Motor – Per Fan					
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Larger Size Motor – EC Motor – Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Condenser Match – EC Motor-Per Fan					
Quantity x Motor Size		kW	2 x 0.73	3 x 0.73	3 x 0.73
Full Load Amps		A	3.3	3.3	3.3
SCAF Condenser Match – Motor- Per Fan					
Quantity x Motor Size		kW	2 x 1.4	3 x 1.4	3 x 1.4
Full Load Amps		A	6	6	6

(1) Values given for full function units with standard selections for heating, humidification, supply air fans and at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – W2W2 Continued

			SC25D080-W2W2	SC25D090-W2W2	SC25D100-W2W2
Standard Dry Cooler Match			**2 x DR55**	**2 x DR70**	**2 x DR70**
Unit Data Full Function – W2W2	(1)				
Nominal Run Amps		A	93.1	95.2	103.3
Maximum Start Amps		A	179.9	174.3	216.4
Recommended Mains Fuse Size		A	125	125	125
Max Mains Incoming Cable Size		mm²	70	70	70
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only – W2W2					
Nominal Run Amps		A	76.9	79	87.2
Maximum Start Amps		A	163.7	158.1	200.2
Recommended Mains Fuse Size		A	100	100	100
Evaporator Fan Motor – Per Fan					
Motor Type			AC	AC	AC
Quantity x Motor Size	(2)	kW	3 x 2.38	3 x 2.38	3 x 2.38
Full Load Amps		A	5	5	5
Locked Rotor Amps		A	17.5	17.5	17.5
Compressor – Compressor 1 , Circuit 1 & 2	(3)				
Motor Size		kW	6.31	7.19	7.19
Nominal Run Amps		A	13.3	12.9	12.9
Locked Rotor Amps		A	100	92	92
Type of Start				Direct On Line	
Compressor – Compressor 2, Circuit 1 & 2	(3)				
Motor Size		kW	6.31	7.19	9.46
Nominal Run Amps		A	13.3	12.9	16.9
Locked Rotor Amps		A	100	92	130
Type of Start				Direct On Line	
Standard Dry Cooler Match – AC Motor Per Fan					
Quantity x Motor Size		kW	3 x 0.6	4 x 0.6	4 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			2	3	2
Number of Elements			6	9	6
Rating (Total)		kW	21	31.5	21
Current Per Phase		A	30.31	30.31	45.47
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
Standard Size Fan Motor – EC Motor – Per Fan					
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Larger Size Motor – EC Motor – Per Fan					
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Standard Condenser Match – EC Motor-Per Fan					
Quantity x Motor Size		kW	3 x 0.73	4 x 0.73	4 x 0.73
Full Load Amps		A	3.3	3.3	3.3
SCAF Condenser Match – Motor- Per Fan					
Quantity x Motor Size		kW	3 x 1.4	4 x 1.4	4 x 4.1
Full Load Amps		A	6	6	6

(1) Values given for full function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – W2W2 Continued

			SCD31D100-W2W2	SC31D120-W2W2	SC31D130-W2W2
Standard Dry Cooler Match			**2 x DR70**	**2 x DR95**	**2 x DR95**
Unit Data - W2W2	(1)				
Nominal Run Amps		A	102.7	113.5	118.1
Maximum Start Amps		A	216.0	215.8	226.6
Recommended Mains Fuse Size		A	125	125	125
Max Mains Incoming Cable Size		mm²	70	70	70
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only – W2W2					
Nominal Run Amps		A	86.5	97.3	101.9
Maximum Start Amps		A	199.6	210.4	245.7
Recommended Mains Fuse Size		A	100	125	125
Evaporator Fan Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Compressor 1 , Circuit 1 & 2	(3)				
Motor Size		kW	7.19	9.46	9.46
Nominal Run Amps		A	12.9	16.9	16.9
Locked Rotor Amps		A	92	130	130
Type of Start				Direct On Line	
Compressor 2, Circuit 1 & 2	(3)				
Motor Size		kW	9.5	9.5	10.9
Nominal Run Amps		A	16.9	16.9	19.2
Locked Rotor Amps		A	130	130	163
Type of Start				Direct On Line	
Standard Dry Cooler Match - AC Motor Per Fan					
Quantity x Motor Size		kW	3 x 0.6	4 x 0.88	4 x 0.88
Full Load Amps		A	2.62	1.65	1.65
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.47	45.47	45.47
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
Standard Size Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Larger Size Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size		kW	3 x 0.73	4 x 1.68	4 x 1.68
Full Load Amps		A	3.3	2.6	2.6
SCAF Dry Cooler Match – Motor – Per Fan					
Quantity x Motor Size		kW	3 x 1.4	4 x 1.94	4 x 1.94
Full Load Amps		A	6	3.4	3.4

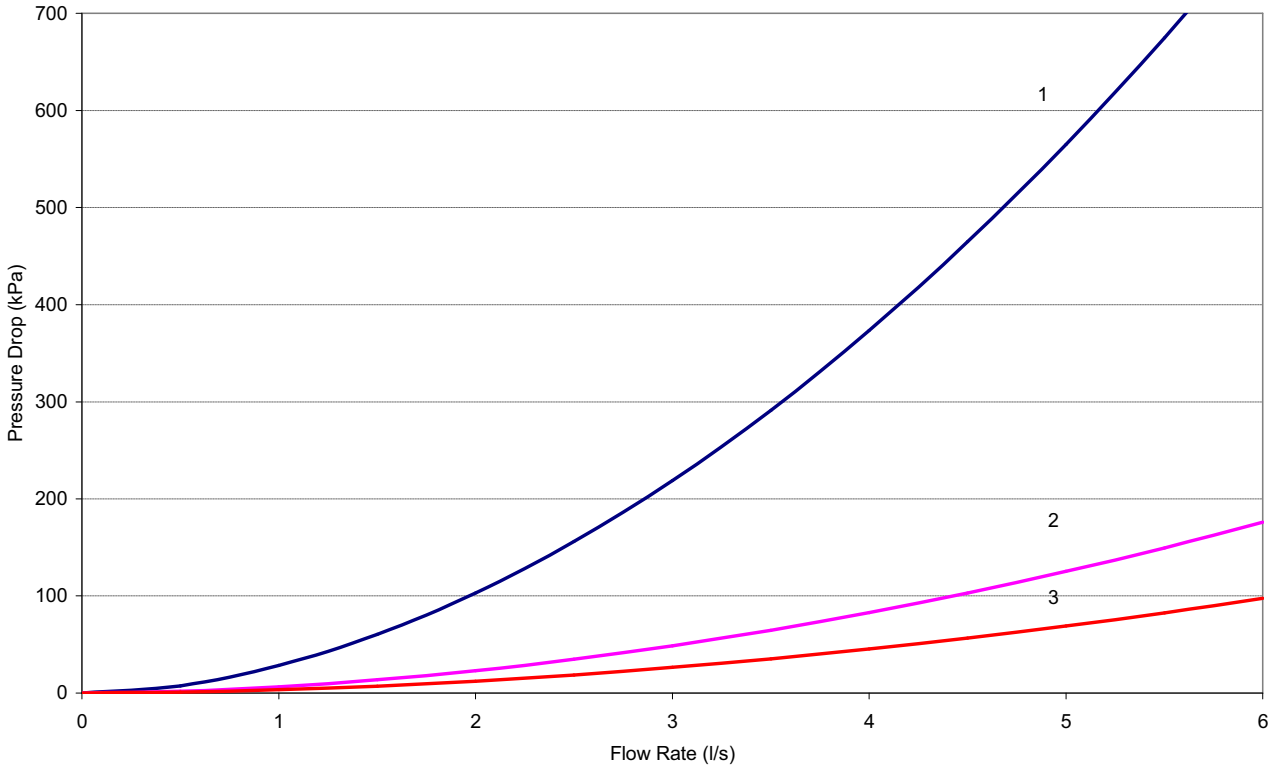
(1) Values given for full function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Sound Data - Water Cooled Models

Sound Measurement		Overall dB(A)	Frequency (Hz)dB							
			63	125	250	500	1000	2000	4000	8000
SC19D055-W2W2-0	Discharge Air	77	91	82	72	69	72	73	65	58
	Return Air	69	67	73	69	65	64	61	55	48
	Case Breakout	57	80	64	56	48	50	43	35	33
	Sound Pressure @ 3m	51	74	58	50	42	44	37	29	27
SC19D070-W2W2-0	Discharge Air	79	91	86	78	71	74	73	64	59
	Return Air	76	71	80	76	72	70	69	63	57
	Case Breakout	59	81	66	58	50	51	46	37	34
	Sound Pressure @ 3m	53	75	60	52	44	45	40	31	28
SC19D080-W2W2-0	Discharge Air	81	93	88	82	74	76	74	66	62
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	61	83	68	61	53	52	49	38	35
	Sound Pressure @ 3m	55	77	62	55	47	46	43	32	29
SC25D080-W2W2-0	Discharge Air	82	94	89	82	75	76	75	66	62
	Return Air	80	75	84	81	76	74	73	68	62
	Case Breakout	61	83	69	62	54	53	49	38	35
	Sound Pressure @ 3m	55	77	63	56	48	47	43	32	29
SC25D090-W2W2-0	Discharge Air	84	99	92	85	76	78	76	67	64
	Return Air	83	77	87	84	78	77	76	71	64
	Case Breakout	64	87	71	64	56	54	52	39	37
	Sound Pressure @ 3m	58	81	65	58	50	48	46	33	31
SC25D100-W2W2-0	Discharge Air	86	100	94	87	79	80	78	69	67
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	66	88	73	66	58	56	54	39	38
	Sound Pressure @ 3m	60	82	67	60	52	50	48	32	32
SC31D100-W2W2-0	Discharge Air	85	99	93	86	78	79	77	68	65
	Return Air	84	78	88	85	79	78	77	72	65
	Case Breakout	65	87	72	65	57	55	53	38	37
	Sound Pressure @ 3m	59	81	66	59	51	49	47	32	31
SC31D120-W2W2-0	Discharge Air	88	102	97	89	81	82	81	72	70
	Return Air	88	82	92	89	83	81	81	76	69
	Case Breakout	68	90	76	69	61	59	56	38	40
	Sound Pressure @ 3m	62	84	70	63	55	53	50	32	34
SC31D130-W2W2-0	Discharge Air	90	107	98	91	82	83	82	72	70
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	70	94	77	70	62	59	56	40	42
	Sound Pressure @ 3m	64	88	71	64	56	53	50	34	36

(1) dB(A) is the overall sound level, measured on the A scale
(2) All sound data measured at nominal conditions, Discharge Air, Return air and case breakout is sound power.

Waterside pressure drop - W2W2
Water cooled condenser



Condenser pressure drop. (Per circuit)

1 SC19D055 2 SC19D070 – SC25D080 3 SC25D080 – SC31D130

(1) Includes condenser plate, 3 port valve and pipework.
(2) To calculate 3 port valve pressure drop:

ΔP valve = $\left(\frac{Q}{M}\right)^2$ where ΔP = Pressure Drop in kPa, Q = Water Flow Rate in l/s and M = $\left(\frac{Kv}{36}\right)$

(3) Fluid 100% water

M Values

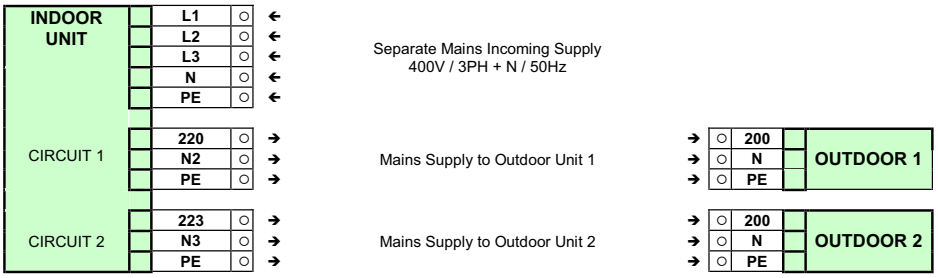
Model Sizes	SC19D055	SC19D70-SC25D080	SC25D080 – SC31D130
Chilled Water Valve	0.69	1.11	1.75

Interconnecting Wiring – W2W2

Single Phase AC & SCAF Dry Coolers (FSC Indoor)

(DR10, 15, 25, 35, 40, 55 and 70 AC Models) (DR10, 15, 25 and 35 SCAF Models)

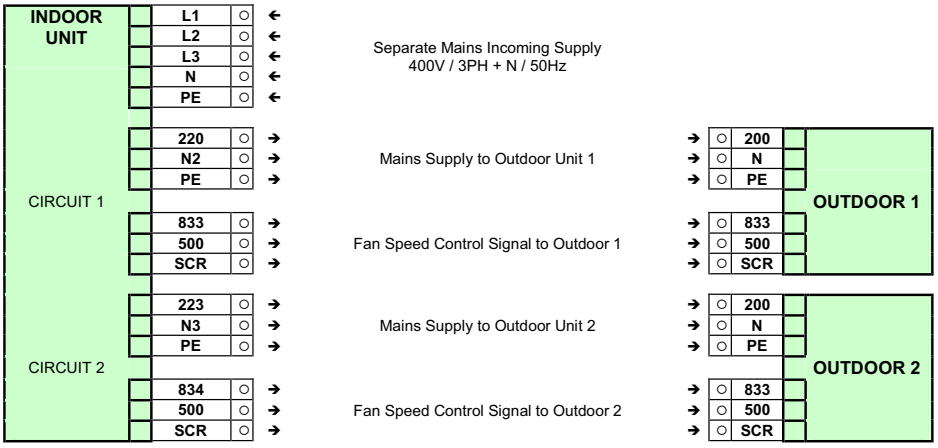
Fan Speed Control Fitted to Indoor Unit (With sub fusing supplied)



Single Phase EC & SCAF Dry Coolers (FSC Outdoor)

(DR10, 15, 25, 35, 40, 55 and 70 EC Models), (DR40 and 55 SCAF Models)

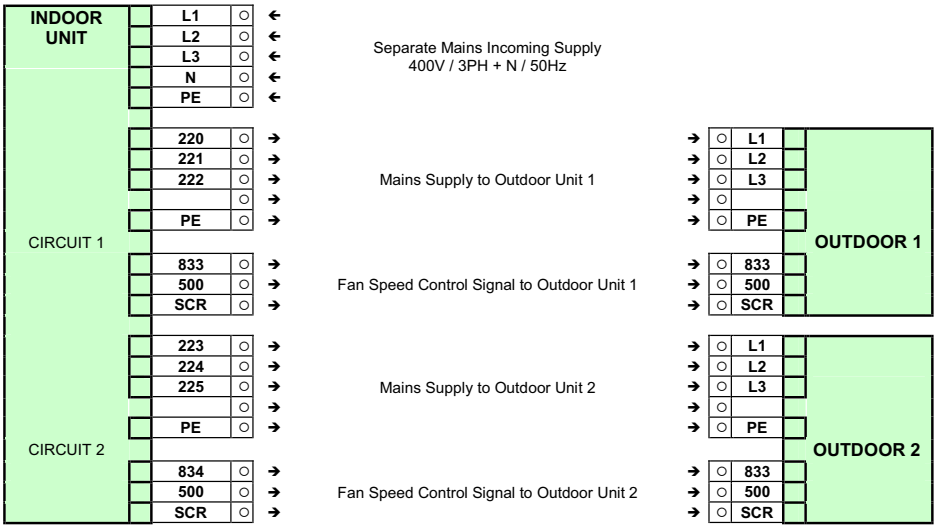
Fan Speed Control Fitted to Outdoor Unit (With sub fusing supplied)



Three Phase AC, EC and SCAF Dry Coolers

(DR12, 20, 30, 45, 50 and 75 and 95 AC/EC models), (DR12, 20, 30, 45, 50, 75 SCAF models)

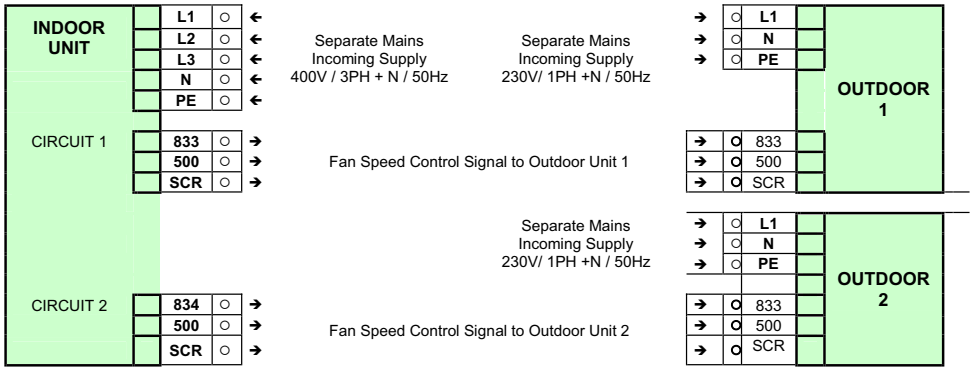
Fan Speed Control Fitted to Outdoor Unit (With sub fusing supplied)



W2W2

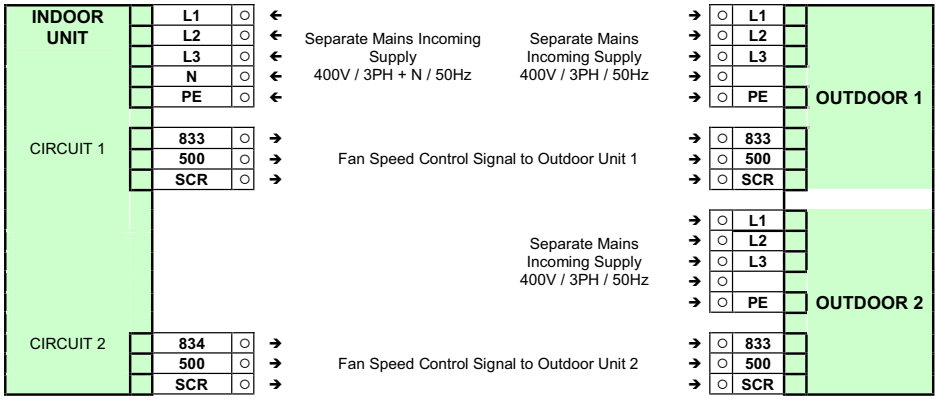
Non Sub Fused Single Phase SCAF Dry Cooler (DR70)

Fan Speed Control Fitted to Outdoor Unit (No sub fusing available)

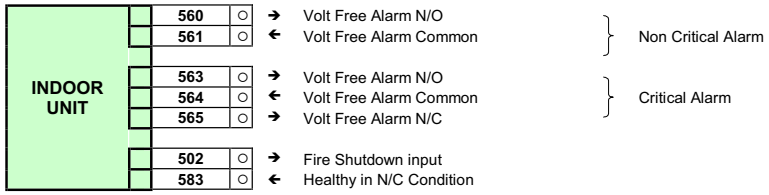


Non Sub Fused Three Phase SCAF Dry Cooler (DR95)

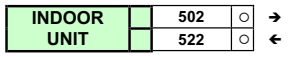
Fan Speed Control Fitted to Outdoor Unit (No sub fusing available)



Indoor Controls Only



Remote On/Off



Run/Standby Network

CABLE INSTALLATION

In line with IEE Wiring Regulations, the following should be observed:

- Extra low voltage control cables (ELV) and mains power cable should be segregated by a minimum distance of 50mm
- If cables must cross, it is recommended that they cross at right angles
- Airedale recommends that ELV cables are screened at one end to earthed enclosures

Water Cooled and Chilled Water models (W2C0)

Performance Data –Water Cooled & Chilled Water Models

Cooling Duties

		Chilled Water Inlet and Outlet Temperatures											
Model	Air On	25 / 30°C			30 / 35°C			35 / 40°C			40 / 45°C		
	Temp. (°C) %RH	TC (kW)	SC (kW)	THR (kW)	TC (kW)	SC (kW)	THR (kW)	TC (kW)	SC (kW)	THR (kW)	TC (kW)	SC (kW)	THR (kW)
SC19D033-W2C0-0	22 / 50	28.4	28.4	35.8	28.4	28.4	35.8	28.1	28.1	35.6	26.7	26.7	35.2
	24 / 45	29.4	29.4	36.8	29.4	29.4	36.8	29.1	29.1	36.7	27.7	27.7	36.3
	26 / 40	30.5	30.5	37.8	30.5	30.5	37.8	30.2	30.2	37.7	28.8	28.8	37.3
SC19D038-W2C0-0	22 / 50	35.4	35.4	44.7	35.4	35.4	44.7	35.4	35.4	44.7	34.2	34.2	44.3
	24 / 45	36.8	36.8	46.0	36.8	36.8	46.0	36.8	36.8	46.0	35.5	35.5	45.6
	26 / 40	38.4	38.4	47.6	38.4	38.4	47.6	38.4	38.4	47.6	37.1	37.1	47.2
SC19D045-W2C0-0	22 / 50	40.7	40.7	51.5	40.7	40.7	51.5	40.7	40.7	51.5	39.1	39.1	50.8
	24 / 45	42.3	42.3	53.1	42.3	42.3	53.1	42.3	42.3	53.1	40.7	40.7	52.4
	26 / 40	44.2	44.2	54.9	44.2	44.2	54.9	44.2	44.2	54.9	42.5	42.5	54.2
SC19D064-W2C0-0	22 / 50	61.7	59.5	80.1	61.7	59.5	80.1	61.7	59.5	80.1	58.9	58.4	79.3
	24 / 45	63.2	63.2	81.6	63.2	63.2	81.6	63.2	63.2	81.6	60.4	60.4	80.8
	26 / 40	64.6	64.6	83.0	64.6	64.6	83.0	64.5	64.5	83.0	61.7	61.7	82.1
SC19D070-W2C0-0	22 / 50	67.2	61.6	87.6	67.2	61.6	87.6	67.0	61.5	87.5	63.9	60.3	86.7
	24 / 45	68.9	66.2	89.3	68.9	66.2	89.3	68.7	66.1	89.2	65.4	64.9	88.3
	26 / 40	70.4	70.4	90.8	70.4	70.4	90.8	70.1	70.1	90.7	66.8	66.8	89.8
SC19D076-W2C0-0	22 / 50	74.0	64.8	97.3	74.0	64.8	97.3	73.4	64.5	97.2	69.7	62.6	95.8
	24 / 45	75.9	69.3	99.3	75.9	69.3	99.3	75.3	69.0	99.1	71.4	67.1	97.7
	26 / 40	77.5	74.3	101.0	77.5	74.3	101.0	76.8	74.0	100.7	72.9	72.3	99.2
SC25D045-W2C0-0	22 / 50	42.1	42.1	52.8	42.1	42.1	52.8	42.1	42.1	52.8	40.2	40.2	51.9
	24 / 45	43.8	43.8	54.5	43.8	43.8	54.5	43.8	43.8	54.5	42.0	42.0	53.7
	26 / 40	45.7	45.7	56.4	45.7	45.7	56.4	45.7	45.7	56.4	43.9	43.9	55.6
SC25D050-W2C0-0	22 / 50	46.0	46.0	58.3	46.0	46.0	58.3	46.0	46.0	58.3	44.2	44.2	57.5
	24 / 45	47.8	47.8	60.2	47.8	47.8	60.2	47.8	47.8	60.2	46.1	46.1	59.5
	26 / 40	50.0	50.0	62.3	50.0	50.0	62.3	50.0	50.0	62.3	48.2	48.2	61.6
SC25D055-W2C0-0	22 / 50	52.9	52.9	67.1	52.9	52.9	67.1	52.9	52.9	67.1	50.6	50.6	66.2
	24 / 45	54.6	54.6	68.9	54.6	54.6	68.9	54.6	54.6	68.9	52.5	52.5	68.1
	26 / 40	57.1	57.1	71.3	57.1	57.1	71.3	57.1	57.1	71.3	54.9	54.9	70.5
SC25D067-W2C0-0	22 / 50	65.5	65.5	83.9	65.5	65.5	83.9	65.4	65.4	83.9	62.3	62.3	82.9
	24 / 45	67.0	67.0	85.5	67.0	67.0	85.5	66.9	66.9	85.4	63.7	63.7	84.3
	26 / 40	68.9	68.9	87.4	68.9	68.9	87.4	68.7	68.7	87.3	65.6	65.6	86.3
SC25D073-W2C0-0	22 / 50	71.7	71.3	92.1	71.7	71.3	92.1	71.4	71.1	92.0	67.8	67.8	90.8
	24 / 45	73.5	73.5	94.0	73.5	73.5	94.0	73.1	73.1	93.8	69.5	69.5	92.5
	26 / 40	75.2	75.2	95.7	75.2	75.2	95.7	74.8	74.8	95.5	71.2	71.2	94.4
SC25D080-W2C0-0	22 / 50	79.2	74.6	102.7	79.2	74.6	102.7	78.4	74.2	102.4	74.3	72.3	100.7
	24 / 45	81.2	80.4	104.8	81.2	80.4	104.8	80.4	80.0	104.4	76.2	76.2	102.7
	26 / 40	82.9	82.9	106.6	82.9	82.9	106.6	82.1	82.1	106.2	77.8	77.8	104.4
SC31D055-W2C0-0	22 / 50	52.7	52.7	66.9	52.7	52.7	66.9	52.7	52.7	66.9	50.4	50.4	65.9
	24 / 45	54.5	54.5	68.7	54.5	54.5	68.7	54.5	54.5	68.7	52.2	52.2	67.7
	26 / 40	56.1	56.1	70.4	56.1	56.1	70.4	56.1	56.1	70.4	54.0	54.0	69.6
SC31D065-W2C0-0	22 / 50	60.1	60.1	76.3	60.1	60.1	76.3	60.1	60.1	76.3	57.3	57.3	75.0
	24 / 45	61.8	61.8	78.0	61.8	61.8	78.0	61.8	61.8	78.0	59.2	59.2	77.0
	26 / 40	64.2	64.2	80.4	64.2	64.2	80.4	64.2	64.2	80.4	61.5	61.5	79.5
SC31D075-W2C0-0	22 / 50	64.8	64.8	82.2	64.8	64.8	82.2	64.8	64.8	82.1	61.8	61.8	81.0
	24 / 45	66.9	66.9	84.2	66.9	66.9	84.2	66.8	66.8	84.2	64.0	64.0	83.3
	26 / 40	69.8	69.8	87.2	69.8	69.8	87.2	69.7	69.7	87.1	66.8	66.8	86.2
SC31D077-W2C0-0	22 / 50	74.6	74.6	95.1	74.6	74.6	95.1	74.2	74.2	94.9	70.6	70.6	93.6
	24 / 45	76.5	76.5	96.9	76.5	76.5	96.9	75.9	75.9	96.7	72.2	72.2	95.4
	26 / 40	79.0	79.0	99.5	79.0	79.0	99.5	78.4	78.4	99.3	75.1	75.1	98.3
SC31D080-W2C0-0	22 / 50	78.8	78.8	100.8	78.8	78.8	100.8	78.1	78.1	100.5	73.7	73.7	98.6
	24 / 45	80.7	80.7	102.8	80.7	80.7	102.8	79.9	79.9	102.4	75.5	75.5	100.4
	26 / 40	83.1	83.1	105.2	83.1	83.1	105.2	82.2	82.2	104.8	78.0	78.0	103.0
SC31D083-W2C0-0	22 / 50	82.6	82.6	106.2	82.6	82.6	106.2	81.7	81.7	105.8	77.3	77.3	103.8
	24 / 45	84.7	84.7	108.3	84.7	84.7	108.3	83.7	83.7	107.9	79.2	79.2	105.8
	26 / 40	86.8	86.8	110.5	86.8	86.8	110.5	85.8	85.8	110.1	81.5	81.5	108.2

TC = Total Cooling, SC =Sensible Cooling, THR = Total Heat Rejection
(1) All data quoted is gross
(2) Deduct fan gain for net duties, refer to ***Mechanical Data,***
(3) Water Flow rate (l/s)= TC/(4.19 x ΔT) at 100% Water

Cooling Duties

Model	Air On	Chilled Water Inlet and Outlet Temperatures									
		5 / 10 °C		7 / 12 °C		8 / 14 °C		10 / 16 °C		5.5 / 14.5°C	
	Temp. (°C) / %RH	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)
SC19D033-W2C0-0 1 x DR40	22 / 50	68.2	54.8	49.3	44.9	40.2	40.2	31.4	31.4	21.3	21.3
	24 / 45	77.8	63.1	61.6	55.9	49.1	49.1	40.9	40.9	48.1	48.1
	26 / 40	86.2	71.4	70.0	64.3	57.7	57.7	49.7	49.7	58.1	58.1
SC19D038-W2C0-0 1 x DR55	22 / 50	75.5	61.7	55.1	51.3	45.4	45.4	35.6	35.6	22.2	22.2
	24 / 45	86.2	71.1	67.9	63.1	55.3	55.3	46.1	46.1	54.8	54.8
	26 / 40	95.5	80.6	74.7	68.8	65.0	65.0	56.0	56.0	65.8	65.8
SC19D045-W2C0-0 1 x DR55	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC19D064-W2C0-0 1 x DR95	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC19D070-W2C0-0 1 x DR95	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC19D076-W2C0-0 1 x DR95 (EC)	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC25D045-W2C0-0 1 x DR65	22 / 50	100.7	79.5	78.0	69.4	60.3	60.3	48.6	48.6	62.0	62.0
	24 / 45	114.1	91.2	91.4	81.1	72.4	72.4	61.0	61.0	79.5	76.0
	26 / 40	126.0	103.0	103.1	92.9	84.3	84.3	73.1	73.1	91.3	84.7
SC25D050-W2C0-0 1 x DR70	22 / 50	109.2	86.9	84.2	75.8	65.8	65.8	53.0	53.0	67.8	67.8
	24 / 45	123.8	99.7	98.8	88.7	79.0	79.0	66.5	66.5	84.5	80.3
	26 / 40	136.7	112.6	111.6	101.6	92.0	92.0	79.8	79.8	98.9	93.5
SC25D055-W2C0-0 1 x DR70	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC25D067-W2C0-0 1 x DR95	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC25D073-W2C0-0 1 x DR95	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC25D080-W2C0-0 1 x DR95 (EC)	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC31D055-W2C0-0 1 x DR70	22 / 50	117.0	90.1	92.1	78.7	71.1	67.7	56.6	56.6	82.6	73.8
	24 / 45	132.0	103.0	107.0	91.6	91.0	91.0	70.1	70.1	99.8	88.0
	26 / 40	145.2	116.1	120.1	104.7	98.7	91.8	83.4	83.4	114.5	101.9
SC31D065-W2C0-0 1 x DR95	22 / 50	133.3	103.7	104.5	90.6	79.8	79.8	64.9	64.9	93.1	84.8
	24 / 45	150.5	118.7	121.6	105.6	97.4	92.6	80.5	80.5	112.6	101.0
	26 / 40	165.8	133.8	136.7	120.8	112.7	107.8	95.9	95.9	129.3	117.1
SC31D075-W2C0-0 1 x DR95	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7
SC31D077-W2C0-0 1 x DR95	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7
SC31D080-W2C0-0 1 x DR95 (EC)	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7
SC31D083-W2C0-0 1 x DR95 (EC)	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7

TC = Total Cooling, SC =Sensible Cooling, THR = Total Heat Rejection
(1) All data quoted is gross
(2) Deduct fan gain for net duties, refer to ***Mechanical Data,***
(3) Water Flow rate (l/s)= TC/(4.19 x ΔT) at 100% Water

Mechanical Data – W2C0

			SC19D033-W2C0	SC19D038-W2C0	SC19D045-W2C0
Standard Dry Cooler Match			**1 x DR40**	**1 x DR55**	**1 x DR55**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	29.1	36.8	42.3
Nom Cooling (Gross) – C0	(2)	kW	61.6	67.9	74.4
Total Heat of Rejection – W2		kW	36.7	46.0	53.1
Capacity Steps			2	2	2
Fan Gain	(6)	kW	0.66	1.0	1.7
Dimensions – W x D x H		Mm	1985 x 890 x 1980	1985 x 890 x 1980	1985 x 890 x 1980
Weight – Machine / Operating	(3)	Kg	850 / 880	860 / 890	860 / 890
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	2/1	2/1
Cooling Coil – C0			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling /Dehum Stages			1 (Modulated) / 1		
Water Volume		l	29.4	32.4	32.4
Water Flow		l/s	2.44	2.72	3.14
Pressure Drop C0		kPa	30.9	27.8	35.0
Condenser			Stainless steel Brazed Plate		
Water Volume		l			
Glycol Flow		l/s	1.78	2.25	2.6
Pressure Drop Condenser		kPa	86.13	50.48	66.22
Dry Cooler					
Water Volume		L	23.1	43.2	43.2
Flowrate		l/s	1.78	2.25	2.6
Pressure Drop		kPa	40.8	27	31.9
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 2.2	2 x 2.2	2 x 2.2
Speed @25Pa / Maximum ESP		RPM	964 / 1360	1117 / 1360	1340 / 1360
Maximum ESP		Pa	438	302	49
Nominal Airflow		m³/s	3.7	4.3	5.1
Compressor – Scroll					
Configuration – W2C0			Dual Cool – Circuit 1 Tandem Compressors (Water Cooled) / Circuit 2 Chilled Water		
Quantity – W2C0			2	2	2
Oil Charge Volume – W2C0		l	2 x 1.57	2 x 1.57	2 x 1.57
Oil Type			Polyolester		
Connections					
Water Inlet / Outlet –W2		mm	35	35	35
Water Inlet / Outlet – C0		mm	35	35	35
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			3	3	3
OPTIONAL EXTRAS					
Hot Gas Reheat -					
Nom Heating (Gross)		kW	8.1	8.9	9.5
Electric Heating (Total)		kW	21	21	21
Humidifier					
Capacity		kg/hr	8	8	8
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	986 / 1510	1145 / 1520	1364 / 1510
Maximum ESP		Pa	589	453	216
Fan Gain	(6)	kW	0.65	1.03	1.73
Second upgrade Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(6)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(5)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	22.16	24.45	26
Water Flow (Nominal)		l/s	0.49	0.54	0.58
Pressure drop		kPa	9.4	9.7	10.1
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH condensing water in / out: 35/40°C
(2) Entering air 24°C/45% RH water 7°C/12°C
(3) Machine weight Includes a refrigerant charge / Operating weight includes calculated water volume
(4) Based on air temperature of 15.5 °C leaving the evaporator coil
(5) Based upon low pressure hot water 82 °C inlet / 71°C outlet. Air on 20°C.
(6) Fan gain based on 25 Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data- W2C0 Continued

			SC19D064-W2C0	SC19D070-W2C0	SC19D076-W2C0
Standard Dry Cooler Match			**1 x DR95**	**1 x DR95**	**1 x DR95 (EC)**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	63.2	68.7	75.3
Nom Cooling (Gross) – C0	(2)	kW	74.4	74.4	74.4
Total Heat of Rejection – W2		kW	81.6	89.2	99.1
Capacity Steps			2	2	2
Fan Gain	(6)	kW	1.7	1.7	1.7
Dimensions – W x D x H		Mm	1985 x 890 x 1980	1985 x 890 x 1980	1985 x 890 x 1980
Weight – Machine / Operating	(3)	Kg	950 / 980	950 / 980	960 / 990
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021) /		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	2/1	2/1
Cooling Coil – C0			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling /Dehum Stages			1 (Modulated) / 1		
Water Volume		l	32.4	32.4	32.4
Water Flow		l/s	3.14	3.14	3.14
Pressure Drop FC		kPa	30.25	30.25	30.25
Condenser			Stainless steel Brazed Plate		
Water Volume		l	4.1	4.1	4.1
Water Flow		l/s	3.98	4.36	4.85
Pressure Drop Condenser		kPa	52.76	62.75	76.85
Dry Cooler					
Water Volume		L	55.9	55.9	55.9
Flowrate		l/s	3.98	4.36	4.85
Pressure Drop		kPa	76.8	77.9	105.1
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 2.2	2 x 2.2	2 x 2.2
Speed @25Pa / Maximum ESP		RPM	1340 / 1360	1340 / 1360	1340 / 1360
Maximum ESP		Pa	49	49	49
Nominal Airflow		m³/s	5.1	5.1	5.1
Compressor – Scroll					
Configuration – W2C0			Dual Cool – Circuit 1 Tandem Compressors (Water Cooled) / Circuit 2 Chilled Water		
Quantity – W2C0			2	2	2
Oil Charge Volume – W2C0		l	2 x 3.3	2 x 3.3	2 x 3.3
Oil Type			Polyolester		
Connections					
Water Inlet / Outlet –W2		mm	35	35	35
Water Inlet / Outlet – C0		mm	35	35	35
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			3	3	3
OPTIONAL EXTRAS					
Hot Gas Reheat -	(4)				
Nom Heating (Gross)		kW	9.7	9.7	9.7
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	1340 /1520	1364 / 1520	1364 / 1520
Maximum ESP		Pa	216	216	216
Fan Gain	(6)	kW	1.73	1.73	1.73
Second upgrade Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(6)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(5)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	26	26	26
Water Flow (Nominal)		l/s	0.58	0.58	0.58
Pressure drop		kPa	10.1	10.1	10.1
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH condensing water in / out: 35/40°C
(2) Entering air 24°C/45% RH water 7°C/12°C
(3) Machine weight Includes a refrigerant charge / Operating weight includes calculated water volume
(4) Based on air temperature of 15.5 °C leaving the evaporator coil
(5) Based upon low pressure hot water 82 °C inlet / 71°C outlet. Air on 20°C.
(6) Fan gain based on 25 Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data- W2C0 Continued

			SC25D045-W2C0	SC25D050-W2C0	SC25D055-W2C0
Standard Dry Cooler Match			**1 x DR55**	**1 x DR70**	**1 x DR70**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	43.8	47.8	54.6
Nom Cooling (Gross) – C0	(2)	kW	71.2	74.8	79.8
Total Heat of Rejection – W2		kW	54.5	60.2	68.9
Capacity Steps			2	2	3
Fan Gain	(6)	kW	2.24	2.65	3.01
Dimensions – W x D x H		Mm	2549 x 890 x 1980	2549 x 890 x 1980	2549 x 890 x 1980
Weight – Machine / Operating	(3)	Kg	980 / 1020	1050 / 1090	1050 / 1100
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	2/1	2/1
Cooling Coil – C0			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling /Dehum Stages			1 (Modulated) / 1		
Water Volume		l	42.2	42.2	42.2
Water Flow		l/s	3.81	4.02	4.32
Pressure Drop FC		kPa	57.4	55.2	61.68
Condenser			Stainless steel Brazed Plate		
Water Volume		l	6.1	9.9	9.9
Water Flow		l/s	2.66	2.95	3.38
Pressure Drop Condenser		kPa	69.06	29.79	38.50
Dry Cooler					
Water Volume		L	43.2	55.9	55.9
Flowrate		l/s	2.66	2.95	3.38
Pressure Drop		kPa	33.7	41.8	58.8
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			AC	AC	AC
Quantity x Motor Size		kW	3 x 2.38	3 x 2.38	3 x 2.38
Speed @25Pa / Maximum ESP		RPM	1092 / 1364	1220 / 1360	1360 /1360
Maximum ESP		Pa	328	188	20
Nominal Airflow		m^3/s	5.3	5.9	6.5
Compressor – Scroll					
Configuration – W2C0			Dual Cool – Circuit 1 Tandem Compressors (Water Cooled) / Circuit 2 Chilled Water		
Quantity – W2C0			2	2	2
Oil Charge Volume – W2C0		l	2 x 1.57	2 x 3	2 x 3
Oil Type			Polyolvinyl	Polyolester	
Connections					
Water Inlet / Outlet –W2		mm	42	42	42
Water Inlet / Outlet – C0		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat -	(4)				
Nom Heating (Gross)		kW	11.5	12.2	12.2
Electric Heating (Total)		kW	21	21	31.5
Humidifier					
Capacity		kg/hr	8	8	8
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Speed @ 25Pa / Maximum ESP		rpm	1074 / 1360	1200 / 1360	1337 / 1360
Maximum ESP		Pa	314	188	45
Fan Gain	(6)	kW	1.4	1.92	2.6
Second upgrade Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	1095 / 1510	1225 / 1510	1254 / 1510
Maximum ESP		Pa	464	337	195
Fan Gain	(6)	kW	1.4	1.92	2.6
Low Pressure Hot Water	(5)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	32.5	35.7	35.7
Water Flow (Nominal)		l/s	0.72	0.79	0.79
Pressure drop		kPa	20.2	21.8	21.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH condensing water in / out: 35/40°C
(2) Entering air 24°C/45% RH water 7°C/12°C
(3) Machine weight Includes a refrigerant charge / Operating weight includes calculated water volume
(4) Based on air temperature of 15.5 °C leaving the evaporator coil
(5) Based upon low pressure hot water 82 °C inlet / 71°C outlet. Air on 20°C.
(6) Fan gain based on 25 Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data- W2C0 Continued

			SC25D067-W2C0	SC25D073-W2C0	SC25D080-W2C0
Standard Dry Cooler Match			**1 x DR95**	**1 x DR95**	**1 x DR95 (EC)**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	66.9	73.1	80.4
Nom Cooling (Gross) – C0	(2)	kW	105.8	105.8	105.8
Total Heat of Rejection – W2		kW	85.4	93.8	104.4
Capacity Steps			2	2	2
Fan Gain	(6)	kW	3.01	3.01	3.01
Dimensions – W x D x H		Mm	2549 x 890 x 1980	2549 x 890 x 1980	2549 x 890 x 1980
Weight – Machine / Operating	(3)	Kg	1070 / 1110	1070 / 1120	1080 / 1120
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint – Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	2/1	2/1
Cooling Coil – C0			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling /Dehum Stages			1 (Modulated) / 1		
Water Volume		l	42.2	42.2	42.2
Water Flow		l/s	4.32	4.32	4.32
Pressure Drop		kPa	61.68	61.68	61.7
Condenser			Stainless steel Brazed Plate		
Water Volume		l			
Water Flow		l/s	4.15	4.56	5.1
Pressure Drop Condenser		kPa	56.74	67.92	83.87
Dry Cooler					
Water Volume		L	55.9	55.9	55.9
Flowrate		l/s	4.15	4.56	5.10
Pressure Drop		kPa	81.63	92.5	114
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			AC	AC	AC
Quantity x Motor Size		kW	3 x 2.38	3 x 2.38	3 x 2.38
Speed @25Pa / Maximum ESP		RPM	1360 / 1360	1364 / 1360	1364 / 1360
Maximum ESP		Pa	20	20	20
Nominal Airflow		m³/s	6.5	6.5	6.5
Compressor – Scroll					
Configuration – W2C0			Dual Cool – Circuit 1 Tandem Compressors (Water Cooled) / Circuit 2 Chilled Water		
Quantity – W2C0			2	2	2
Oil Charge Volume – W2C0		l	2 x 3.3	2 x 3.3	2 x 3.3
Oil Type			Polyolester		
Connections					
Water Inlet / Outlet –W2		mm	42	42	42
Water Inlet / Outlet – C0		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat -	(4)				
Nom Heating (Gross)		kW	12.2	12.2	12.2
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Speed @ 25Pa / Maximum ESP		rpm	1337 / 1360	1337 / 1360	1220 / 1360
Maximum ESP		Pa	45	45	45
Fan Gain	(6)	kW	2.6	2.6	2.6
Second upgrade Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	1354 / 1520	1354 / 1520	1354 / 1520
Maximum ESP		Pa	195	195	195
Fan Gain	(6)	kW	2.6	2.6	2.6
Low Pressure Hot Water	(5)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	35.7	35.7	35.7
Water Flow (Nominal)		l/s	0.79	0.79	0.79
Pressure drop		kPa	21.8	21.8	21.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH condensing water in / out: 35/40°C
(2) Entering air 24°C/45% RH water 7°C/12°C
(3) Machine weight Includes a refrigerant charge / Operating weight includes calculated water volume
(4) Based on air temperature of 15.5 °C leaving the evaporator coil
(5) Based upon low pressure hot water 82 °C inlet / 71°C outlet. Air on 20°C.
(6) Fan gain based on 25 Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data- W2C0 Continued

			SC31D055-W2C0	SC31D065-W2C0	SC31D075-W2C0
Standard Dry Cooler Match			**1 x DR70**	**1 x DR95**	**1 x DR95**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	54.5	61.8	66.8
Nom Cooling (Gross) – C0	(2)	kW	107.0	121.6	135.2
Total Heat of Rejection – W2		kW	68.7	78.0	84.2
Capacity Steps			2	2	3
Fan Gain	(6)	kW	1.25	2.06	3.22
Dimensions – W x D x H		Mm	3113 x 890 x 1980	3113 x 890 x 1980	3113 x 890 x 1980
Weight – Machine / Operating	(3)	Kg	1210 / 1260	1220 / 1270	1220 / 1270
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			3/1	2/1	2/1
Cooling Coil – C0			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling /Dehum Stages			1 (Modulated) / 1		
Water Volume		l	52.3	52.3	52.3
Water Flow		l/s	4.18	4.7	5.16
Pressure Drop C0		kPa	38.3	45.4	52.31
Condenser			Stainless steel Brazed Plate		
Water Volume		l	9.9	9.9	9.9
Water Flow		l/s	3.35	3.82	4.13
Pressure Drop Condenser		kPa	38.12	48.83	56.61
Dry Cooler					
Water Volume		l	55.9	55.9	55.9
Flowrate		l/s	3.35	3.82	64.85
Pressure Drop		kPa	82.5	73.3	80.9
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @25Pa / Maximum ESP		RPM	1061 / 1520	1261 / 1520	1479 /1520
Maximum ESP		Pa	528	330	77
Nominal Airflow		m³/s	5.8	6.9	7.9
Compressor – Scroll					
Configuration – W2C0			Dual Cool - Circuit 1 Tandem Compressors (Refrigeration) / Circuit 2 Chilled water		
Quantity – W2C0			2	2	2
Oil Charge Volume – W2C0		l	3 x 3.3	2 x 3.3	2 x 3.3
Oil Type			Polyolester		
Connections					
Water Inlet / Outlet –W2		mm	42	42	42
Water Inlet / Outlet – C0		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat -	(4)				
Nom Heating (Gross)		kW	14.6	16.1	16.1
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	8	8	8
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(6)	kW	N/A	N/A	N/A
Second upgrade Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(6)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(5)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	40.6	43.8	45.2
Water Flow (Nominal)		l/s	0.9	0.97	1.01
Pressure drop		kPa		35.9	37.4
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH condensing water in / out: 35/40°C
(2) Entering air 24°C/45% RH water 7°C/12°C
(3) Machine weight Includes a refrigerant charge / Operating weight includes calculated water volume
(4) Based on air temperature of 15.5 °C leaving the evaporator coil
(5) Based upon low pressure hot water 82 °C inlet / 71°C outlet. Air on 20°C.
(6) Fan gain based on 25 Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data- W2C0 Continued

			SC31D077-W2C0	SC31D080-W2C0	SC31D083-W2C0
			1 x DR95	1 x DR95 (EC)	1 x DR95 (EC)
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	75.9	79.9	83.7
Nom Cooling (Gross) – C0	(2)	kW	135.2	135.2	135.2
Total Heat of Rejection – W2		kW	96.7	102.4	107.9
Capacity Steps			2	3	2
Fan Gain	(6)	kW	3.22	3.22	3.22
Dimensions – W x D x H		Mm	3113 x 890 x 1980	3113 x 890 x 1980	3113 x 890 x 1980
Weight – Machine / Operating	(3)	Kg	1230 / 1280	1230 / 1280	1230 / 1290
Construction Material/Colour			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021) / Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	3/1	2/1
Cooling Coil – C0			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling /Dehum Stages			1 (Modulated) / 1		
Water Volume		l	52.3	52.3	52.3
Water Flow		l/s	5.16	5.16	5.16
Pressure Drop C0		kPa	65.18	65.18	65.18
Condenser			Stainless steel Brazed Plate		
Water Volume		l	4.1	4.1	4.1
Water Flow		l/s	4.72	4.99	5.16
Pressure Drop Condenser		kPa	72.96	80.96	89.44
Dry Cooler					
Water Volume		l	55.9	55.9	55.9
Flowrate		l/s	4.72	4.99	5.16
Pressure Drop		kPa	93.23	110	116.3
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @25Pa / Maximum ESP		RPM	1479 / 1520	1479 / 1520	1479 / 1520
Maximum ESP		Pa	77	70	70
Nominal Airflow		m³/s	7.9	7.9	7.9
Compressor – Scroll					
Configuration – W2C0			Dual Cool - Circuit 1 Tandem Compressors (Refrigeration) / Circuit 2 Chilled water		
Quantity – W2C0			2	2	2
Oil Charge Volume – W2C0		l	2 x 3.3	(1 x 3.3)+(1 x 3.6)	2 x 3.6
Oil Type				Polyolester	
Connections					
Water Inlet / Outlet –W2		mm	42	42	42
Water Inlet / Outlet – C0		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration				**Disposable to BS EN 779-G4**	
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat -	(4)				
Nom Heating (Gross)		kW	16.1	16.1	16.1
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless steel Stub Connection		
First upgrade Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Second upgrade Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(6)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(5)			Copper Tube/Aluminium Fin	
Capacity Gross		kW	45.2	45.2	45.2
Water Flow (Nominal)		l/s	1.01	1.01	1.01
Pressure drop		kPa	38.8	38.8	38.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/45% RH condensing water in / out: 35/40°C
(2) Entering air 24°C/45% RH water 7°C/12°C
(3) Machine weight Includes a refrigerant charge / Operating weight includes calculated water volume
(4) Based on air temperature of 15.5 °C leaving the evaporator coil
(5) Based upon low pressure hot water 82 °C inlet / 71°C outlet. Air on 20°C.
(6) Fan gain based on 25 Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Electrical Data- W2C0

			SC19D033-W2C0	SC19D038-W2C0	SC19D045-W2C0
Standard Dry Cooler Match			**1 x DR40**	**1 x DR55**	**1 x DR55**
Unit Data Full Function- W2C0					
Nominal Run Amps	(1)	A	54.3	57.2	59
Maximum Start Amps		A	115.8	132.8	145.8
Recommended Mains Fuse Size		A	63	80	80
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only – W2C0					
Nominal Run Amps		A	32.5	38.2	42
Maximum Start Amps		A	94	113.9	128.7
Recommended Mains Fuse Size		A	40	50	50
Evaporator Fan Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	2 x 2.2	2 x 2.2	2 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Compressor 1 , Circuit 1	(3)				
Motor Size		kW	4.58	5.55	6.3
Nominal Run Amps		A	8.5	11.4	13.3
Locked Rotor Amps		A	70	87	100
Type of Start				Direct On Line	
Compressor 2, Circuit 1	(3)				
Motor Size		kW	4.58	5.55	6.3
Nominal Run Amps		A	8.5	11.4	13.3
Locked Rotor Amps		A	70	87	100
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	AC	EC
Quantity x Motor Size		kW	3 x 0.6	3 x 0.6	3 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			2	2	2
Number of Elements			6	6	6
Rating (Total)		kW	21	21	21
Current Per Phase		A	30.3	30.3	30.3
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	8.7	8.7	8.7
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size		kW	3 x 0.73	3 x 0.73	3 x 0.73
Full Load Amps		A	3.3	3.3	3.3
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size		kW	3 x 1.4	3 x 1.4	3 x 1.4
Full Load Amps		A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data- W2C0 Continued

			SC19D064-W2C0-0	SC19D070-W2C0-0	SC19D076-W2C0-0
Standard Dry Cooler Match			**1 x DR95**	**1 x DR95**	**1 x DR95 (EC)**
Unit Data - W2C0					
Nominal Run Amps	(1)	A	78.9	80.3	88
Maximum Start Amps		A	222.7	217.6	260.5
Recommended Mains Fuse Size		A	100	100	100
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data – Cooling Only - w2C0					
Nominal Run Amps		A	53.1	56	67.5
Maximum Start Amps		A	196.9	193.4	240
Recommended Mains Fuse Size		A	63	80	80
Evaporator Fan Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 2.2	2 x 2.2	2 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Compressor 1 , Circuit 1					
Motor Size	(3)	kW	10.86	12.15	13.73
Nominal Run Amps		A	19.2	20.7	24.5
Locked Rotor Amps		A	163	158	197
Type of Start				Direct On Line	
Compressor 2, Circuit 1					
Motor Size	(3)	kW	10.86	12.15	13.73
Nominal Run Amps		A	19.2	20.7	24.5
Locked Rotor Amps		A	163	158	197
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	AC	EC
Quantity x Motor Size		kW	4 x 0.88	4 x 0.88	4 x 1.68
Full Load Amps		A	1.65	1.65	2.6
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.5	45.5	45.5
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size		kW	4 x 1.68	4 x 1.68	N/A
Full Load Amps		A	2.6	2.6	N/A
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size		kW	4 x 1.94	4 x 1.94	4 x 1.94
Full Load Amps		A	3.4	3.4	3.4

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data- W2C0 Continued

			SC25D045-W2C0-0	SC25D050-W2C0-0	SC25D055-W2C0-0
Standard Dry Cooler Match			**1 x DR55**	**1 x DR70**	**1 x DR70**
Unit Data Full Function - W2C0					
Nominal Run Amps	(1)	A	67.4	69.7	84.8
Maximum Start Amps		A	154.2	149	178.6
Recommended Mains Fuse Size		A	80	80	100
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data –Cooling Only - W2C0					
Nominal Run Amps		A	50.4	52.7	56.8
Maximum Start Amps		A	137.1	131.9	169.9
Recommended Mains Fuse Size		A	63	63	80
Evaporator Fan Motor - Per Fan					
Motor Type			AC	AC	AC
Quantity x Motor Size	(2)	kW	3 x 2.38	3 x 2.38	3 x 2.38
Full Load Amps		A	5	5	5
Locked Rotor Amps		A	17.5	17.5	17.5
Compressor 1 , Circuit 1					
Motor Size	(3)	kW	6.31	7.2	7.19
Nominal Run Amps		A	13.3	12.9	12.9
Locked Rotor Amps		A	100	92	92
Type of Start				Direct On Line	
Compressor 2, Circuit 1					
Motor Size	(3)	kW	6.3	7.2	9.5
Nominal Run Amps		A	13.3	12.9	16.9
Locked Rotor Amps		A	100	92	130
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	AC	EC
Quantity x Motor Size		kW	3 x 0.6	4 x 0.6	4 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			2	2	3
Number of Elements			6	6	9
Rating (Total)		kW	21	21	31.5
Current Per Phase		A	30.3	30.3	45.47
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	8.7	8.7	8.7
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size		kW	3 x 0.73	4 x 0.73	4 x 0.73
Full Load Amps		A	3.3	3.3	3.3
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size		kW	3 x 1.4	4 x 1.4	4 x 1.4
Full Load Amps		A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data- W2C0 Continued

			SC25D067-W2C0	SC25D073-W2C0	SC25D080-W2C0
Standard Dry Cooler Match			**1 x DR95**	**1 x DR95**	**1 x DR95 (EC)**
Unit Data Full Function- W2C0					
Nominal Run Amps	(1)	A	87.3	88.7	96.4
Maximum Start Amps		A	231.1	226.1	268.9
Recommended Mains Fuse Size		A	100	100	125
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only- W2C0					
Nominal Run Amps		A	61.5	64.4	75.9
Maximum Start Amps		A	205.3	201.8	248.4
Recommended Mains Fuse Size		A	80	80	100
Evaporator Fan Motor - Per Fan					
Motor Type			AC	AC	AC
Quantity x Motor Size	(2)	kW	3 x 2.38	3 x 2.38	3 x 2.38
Full Load Amps		A	5	5	5
Locked Rotor Amps		A	17.5	17.5	17.5
Compressor 1 , Circuit 1					
Motor Size	(3)	kW	10.86	12.15	13.73
Nominal Run Amps		A	19.2	20.7	24.5
Locked Rotor Amps		A	163	158	197
Type of Start				Direct On Line	
Compressor 2, Circuit 1					
Motor Size	(3)	kW	10.86	12.15	13.73
Nominal Run Amps		A	19.2	20.7	24.5
Locked Rotor Amps		A	163	158	197
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	AC	EC
Quantity x Motor Size		kW	4 x 0.88	4 x 0.88	4 x 1.68
Full Load Amps		A	1.65	1.65	2.6
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.5	45.5	45.5
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	3 x 2.2	3 x 2.2	3 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size	(2)	kW	4 x 1.68	4 x 1.68	N/A
Full Load Amps		A	2.6	2.6	N/A
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size		kW	4 x 1.94	4 x 1.94	4 x 1.94
Full Load Amps		A	3.4	3.4	3.4

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data- W2C0 Continued

			SC31D055-W2C0-0	SC31D065-W2C0-0	SC31D075-W2C0-0
Standard Dry Cooler Match			**1 x DR70**	**1 x DR95**	**1 x DR95**
Unit Data Full Function- W2C0					
Nominal Run Amps	(1)	A	84.2	84.4	84.4
Maximum Start Amps		A	177.9	197.5	211.1
Recommended Mains Fuse Size		A	100	100	100
Max Mains Incoming Cable Size		mm²	35	70	70
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only - W2C0					
Nominal Run Amps		A	56.2	56.4	58.7
Maximum Start Amps		A	169.3	169.4	202.4
Recommended Mains Fuse Size		A	63	63	80
Evaporator Fan Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Compressor 1 , Circuit 1					
Motor Size	(3)	kW	7.2	9.5	9.5
Nominal Run Amps		A	12.9	16.9	16.9
Locked Rotor Amps		A	92	130	130
Type of Start				Direct On Line	
Compressor 2, Circuit 1					
Motor Size		kW	9.5	9.5	10.86
Nominal Run Amps		A	16.9	16.9	19.2
Locked Rotor Amps		A	130	130	163
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	EC	EC
Quantity x Motor Size	(2)	kW	4 x 0.6	4 x 0.88	4 x 0.88
Full Load Amps		A	2.62	1.65	1.65
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.5	45.5	45.5
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	8.7	8.7	8.7
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size	(2)	kW	4 x 0.73	4 x 1.68	4 x 1.68
Full Load Amps		A	3.3	2.6	2.6
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size	(2)	kW	4 x 1.4	4 x 1.94	4 x 1.94
Full Load Amps		A	6	3.4	3.4

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data- W2C0 Continued

			SC31D077-W2C0-0	SC31D080-W2C0-0	SC31D083-W2C0-0
Standard Dry Cooler Match			**1 x DR95**	**1 x DR95 (EC)**	**1 x DR95 (EC)**
Unit Data Full Function-W2C0					
Nominal Run Amps	(1)	A	88.1	91.9	95.8
Maximum Start Amps		A	225.5	260.2	268.3
Recommended Mains Fuse Size		A	100	125	125
Max Mains Incoming Cable Size		mm²	35	70	70
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only - W2C0					
Nominal Run Amps			63.8	71.5	75.3
Maximum Start Amps			201.2	244.0	247.8
Recommended Mains Fuse Size			80	80	100
Evaporator Fan Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Compressor 1 , Circuit 1					
Motor Size		kW	12.15	12.15	13.73
Nominal Run Amps		A	20.7	20.7	24.5
Locked Rotor Amps		A	158	158	197
Type of Start				Direct On Line	
Compressor 2, Circuit 1					
Motor Size	(3)	kW	12.15	13.73	13.73
Nominal Run Amps		A	20.7	24.5	24.5
Locked Rotor Amps		A	158	197	197
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	EC	EC
Quantity x Motor Size		kW	4 x 0.88	4 x 1.68	4 x 1.68
Full Load Amps		A	1.65	2.6	2.6
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.47	45.47	45.47
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size	(2)	kW	4 x 1.68	N/A	N/A
Full Load Amps		A	2.6	N/A	N/A
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size	(2)	kW	4 x 1.94	4 x 1.94	4 x 1.94
Full Load Amps		A	3.4	3.4	3.4

(1) Values given for function units with standard selections for heating, humidification, supply air fans and matched condenser at 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

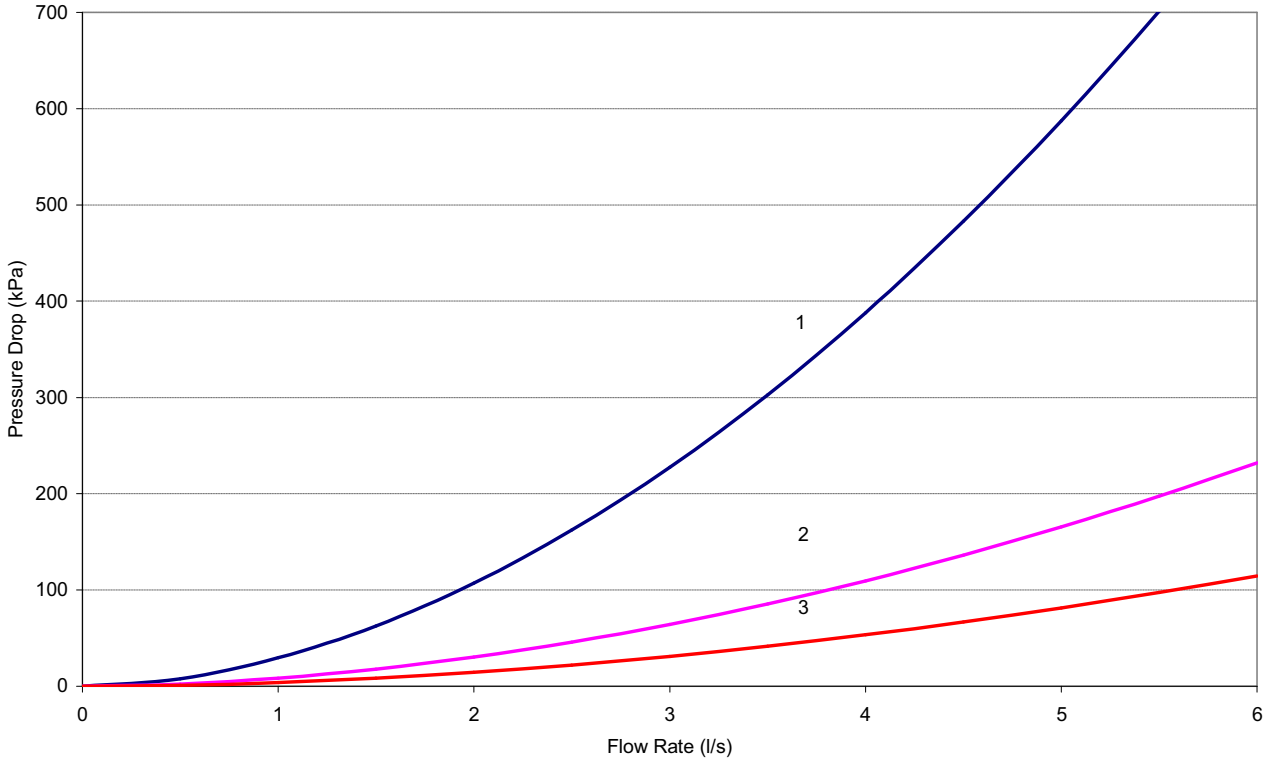
Sound Data – W2C0

			Frequency (Hz)							
		Overall dB(A)	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*
SC19D033-W2C0	Discharge Air	75	82	83	73	65	70	69	61	54
	Return Air	71	68	75	70	67	65	63	57	51
	Case Breakout	53	72	64	52	45	46	41	32	32
	Sound Pressure @ 3m	47	66	58	46	39	40	35	26	26
SC19D038-W2C0	Discharge Air	76	84	85	77	68	71	70	61	54
	Return Air	75	70	79	75	71	69	68	62	56
	Case Breakout	55	73	66	54	47	47	43	34	32
	Sound Pressure @ 3m	49	67	60	48	41	41	37	28	26
SC19D045-W2C0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	70	83	80	75	74	73	67	61
	Case Breakout	58	74	69	58	51	50	47	37	33
	Sound Pressure @ 3m	52	67	63	52	45	44	41	31	27
SC19D064-W2C0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	70	83	80	75	74	73	67	61
	Case Breakout	57	74	68	58	51	50	47	37	33
	Sound Pressure @ 3m	51	67	62	52	45	44	41	31	27
SC19D070-W2C0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	70	83	80	75	74	73	67	61
	Case Breakout	57	74	69	58	51	50	47	37	33
	Sound Pressure @ 3m	51	67	63	52	45	44	41	31	27
SC19D076-W2C0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	70	83	80	75	74	73	67	61
	Case Breakout	57	74	68	58	51	50	47	37	33
	Sound Pressure @ 3m	51	67	62	52	45	44	41	31	27
SC25D045-W2C0	Discharge Air	81	90	88	83	74	75	73	64	58
	Return Air	81	70	84	82	76	75	74	69	62
	Case Breakout	59	74	70	60	52	51	48	37	34
	Sound Pressure @ 3m	53	67	64	54	46	45	42	31	27
SC25D050-W2C0	Discharge Air	83	92	91	85	76	77	74	66	60
	Return Air	83	70	87	84	79	77	76	71	65
	Case Breakout	62	72	70	66	57	55	52	41	37
	Sound Pressure @ 3m	56	67	64	60	51	48	46	35	31
SC25D055-W2C0	Discharge Air	85	95	93	87	79	79	77	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	74	73	66	57	56	53	40	37
	Sound Pressure @ 3m	57	68	67	60	51	50	47	34	31
SC25D067-W2C0	Discharge Air	85	94	93	87	79	79	77	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	71	72	67	59	56	54	44	35
	Sound Pressure @ 3m	57	65	66	61	53	50	48	38	29
SC25D073-W2C0	Discharge Air	85	95	94	87	79	79	77	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	71	72	67	59	56	54	44	35
	Sound Pressure @ 3m	57	65	66	61	53	50	48	38	29
SC25D080-W2C0	Discharge Air	85	94	93	87	79	79	76	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	69	72	67	59	56	54	44	35
	Sound Pressure @ 3m	57	63	66	61	53	50	48	38	29
SC31D055-W2C0	Discharge Air	83	92	90	85	76	77	74	66	60
	Return Air	83	77	87	84	78	77	76	71	64
	Case Breakout	61	73	71	63	55	54	51	40	36
	Sound Pressure @ 3m	55	67	65	57	49	47	45	34	30
SC31D065-W2C0	Discharge Air	86	96	94	88	80	81	78	69	63
	Return Air	86	80	90	87	82	80	79	74	68
	Case Breakout	64	77	75	65	57	56	54	40	36
	Sound Pressure @ 3m	58	71	69	59	51	50	48	34	29
SC31D075-W2C0	Discharge Air	89	99	96	91	83	83	81	72	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	67	78	78	68	59	59	57	46	37
	Sound Pressure @ 3m	61	72	72	62	53	53	51	40	31
SC31D077-W2C0	Discharge Air	89	99	97	91	83	83	81	72	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	66	78	78	68	59	59	57	46	37
	Sound Pressure @ 3m	60	72	72	62	53	53	51	40	31
SC31D080-W2C0	Discharge Air	89	99	97	91	83	83	81	72	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	67	80	80	68	60	58	57	46	37
	Sound Pressure @ 3m	61	74	74	62	54	52	51	40	31
SC31D083-W2C0	Discharge Air	89	98	97	91	83	83	81	71	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	67	79	79	68	60	58	57	46	37
	Sound Pressure @ 3m	61	73	73	62	54	52	51	40	31

(1) dB(A) is the overall sound level, measured on the A scale at nominal conditions. Discharge, Return and case breakout are sound power.

Waterside Pressure Drops W2C0

Water Cooled condenser (W2_ _)



1	SC19D033	2	SC19D038 – SC19D045, SC25D045	3	SC19D064 – SC19D076 SC25D050 – SC31D083

(1) Includes plate condenser, 3 port valve and pipework.
(2) To calculate 3 port valve pressure drop:

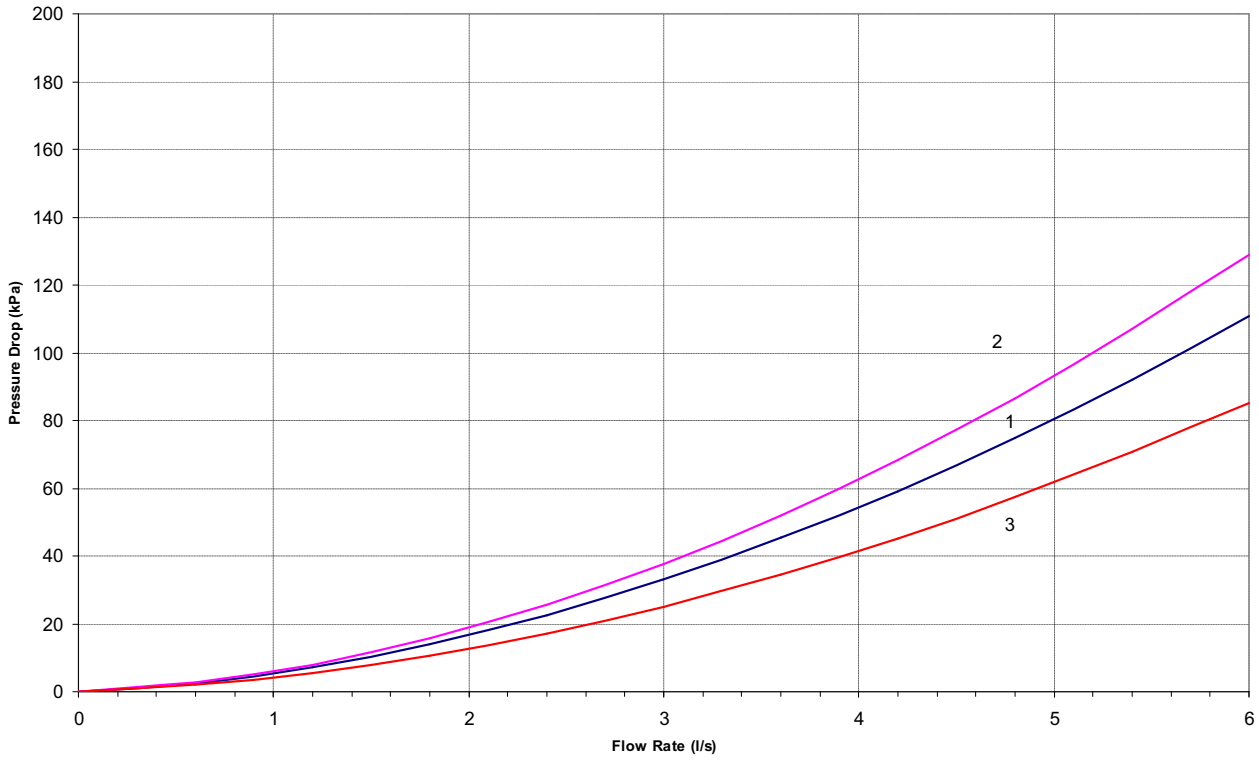
ΔP valve = $\left(\frac{Q}{M}\right)^2$ where ΔP = Pressure Drop in kPa, Q = Water Flow Rate in l/s and M = $\left(\frac{Kv}{36}\right)$

(3) Fluid 100% water, for glycol use.

M Values

Model Sizes	SC19D33-76	SC25D45-55	SC31D55-75
Water Valve (W2)	1.11	0.8	0.8

Chilled water coil (_ _ C0)



Key

1 SC19D033 - 045 2 SC25D045 - 080 3 SC31D055 - 075

Pressured drop including Coil and valve

(1) Includes coil, 3 port valve and pipework.
(2) To calculate 3 port valve pressure drop:

ΔP valve = $\left(\frac{Q}{M}\right)^2$ where ΔP = Pressure Drop in kPa, Q = Water Flow Rate in l/s and M = $\left(\frac{Kv}{36}\right)$

(3) Fluid 100% water.

***M* Values**

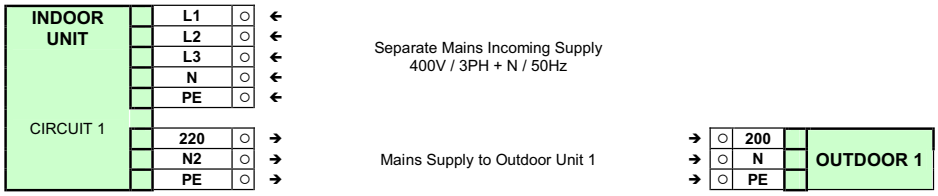
Model Sizes	SC19D033	SC19D038-D045	SC19D038-SC19D045	SC19D045	SC19D064-D076	SC25D050-D080	SC31D055-D083
Water Valve (C0)	0.69	1.11	1.11	1.11	1.75	1.75	1.75

Interconnecting Wiring – W2C0

Single Phase AC & SCAF Dry Coolers (FSC Indoor)

(DR10, 15, 25, 35, 40, 55 and 70 AC Models) (DR10, 15, 25 and 35 SCAF Models)

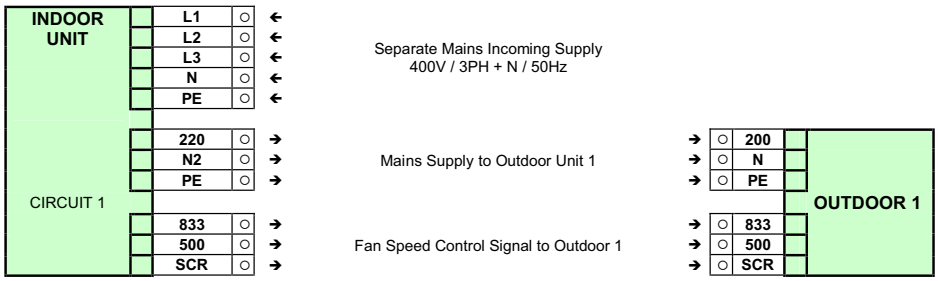
Fan Speed Control Fitted to Indoor Unit (With sub fusing supplied)



Single Phase EC & SCAF Dry Coolers (FSC Outdoor)

(DR10, 15, 25, 35, 40, 55 and 70 EC Models), (DR40 and 55 SCAF Models)

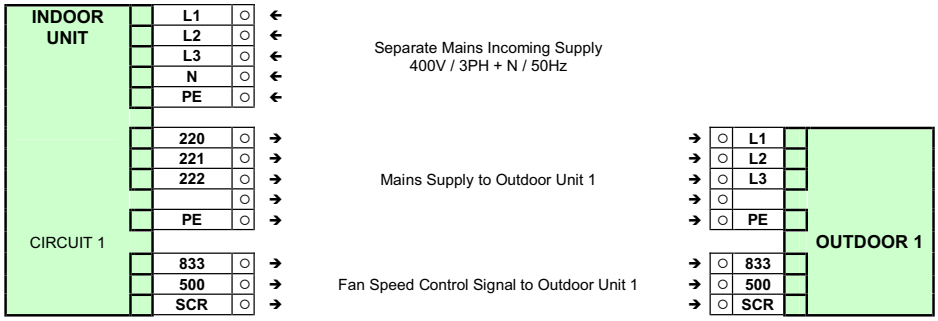
Fan Speed Control Fitted to Outdoor Unit (With sub fusing supplied)



Three Phase AC, EC & SCAF Dry Coolers

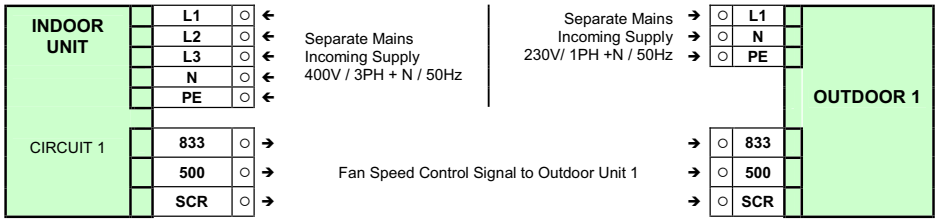
(DR12, 20, 30, 45, 50 and 75 and 95 AC/EC models), (DR12, 20, 30, 45, 50, 75 SCAF models)

Fan Speed Control Fitted to Outdoor Unit (With sub fusing supplied)



Non Sub Fused Single Phase SCAF Dry Cooler (DR70)

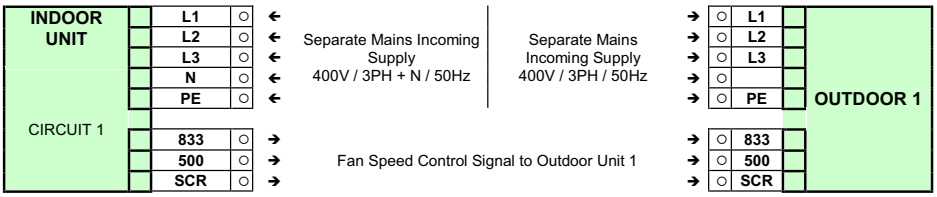
Fan Speed Control Fitted to Outdoor Unit (No sub fusing available)



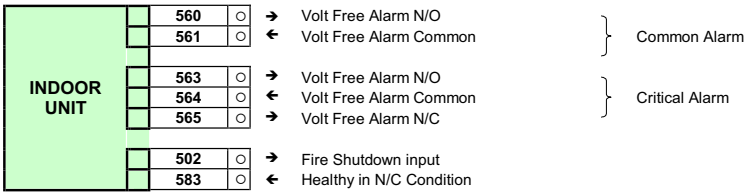
W2C0

Non Sub Fused Three Phase SCAF Dry Cooler (DR95)

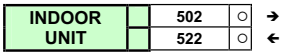
Fan Speed Control Fitted to Outdoor Unit (No sub fusing available)



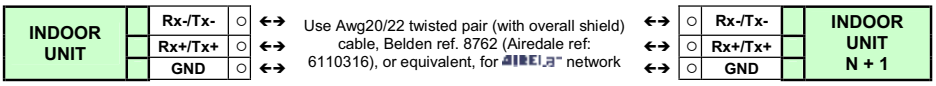
Indoor Controls Only



Remote On/Off



Run/Standby Network



CABLE INSTALLATION

In line with IEE Wiring Regulations, the following should be observed:

- Extra low voltage control cables (ELV) and mains power cable should be segregated by a minimum distance of 50mm
- If cables must cross, it is recommended that they cross at right angles
- Airedale recommends that ELV cables are screened at one end to earthed enclosures

W2C0

Water Cooled and Free Cooling (W2F0)

Performance Data – Water Cooled & Free Cooling

Cooling Duties –Water Cooled

		Chilled Water Inlet and Outlet Temperatures											
Model	Air On Temp. (°C) %RH	25 / 30°C TC (kW)	SC (kW)	THR (kW)	30 / 35°C TC (kW)	SC (kW)	THR (kW)	35 / 40°C TC (kW)	SC (kW)	THR (kW)	40 / 45°C TC (kW)	SC (kW)	THR (kW)
SC19D033-W2F0-0	22 50	28.4	28.4	35.8	28.4	28.4	35.8	28.1	28.1	35.6	26.7	26.7	35.2
	24 45	29.4	29.4	36.8	29.4	29.4	36.8	29.1	29.1	36.7	27.7	27.7	36.3
	26 40	30.5	30.5	37.8	30.5	30.5	37.8	30.2	30.2	37.7	28.8	28.8	37.3
SC19D038-W2F0-0	22 50	35.4	35.4	44.7	35.4	35.4	44.7	35.4	35.4	44.7	34.2	34.2	44.3
	24 45	36.8	36.8	46.0	36.8	36.8	46.0	36.8	36.8	46.0	35.5	35.5	45.6
	26 40	38.4	38.4	47.6	38.4	38.4	47.6	38.4	38.4	47.6	37.1	37.1	47.2
SC19D045-W2F0-0	22 50	40.7	40.7	51.5	40.7	40.7	51.5	40.7	40.7	51.5	39.1	39.1	50.8
	24 45	42.3	42.3	53.1	42.3	42.3	53.1	42.3	42.3	53.1	40.7	40.7	52.4
	26 40	44.2	44.2	54.9	44.2	44.2	54.9	44.2	44.2	54.9	42.5	42.5	54.2
SC19D064-W2F0-0	22 50	61.7	59.5	80.1	61.7	59.5	80.1	61.7	59.5	80.1	58.9	58.4	79.3
	24 45	63.2	63.2	81.6	63.2	63.2	81.6	63.2	63.2	81.6	60.4	60.4	80.8
	26 40	64.6	64.6	83.0	64.6	64.6	83.0	64.5	64.5	83.0	61.7	61.7	82.1
SC19D070-W2F0-0	22 50	67.2	61.6	87.6	67.2	61.6	87.6	67.0	61.5	87.5	63.9	60.3	86.7
	24 45	68.9	66.2	89.3	68.9	66.2	89.3	68.7	66.1	89.2	65.4	64.9	88.3
	26 40	70.4	70.4	90.8	70.4	70.4	90.8	70.1	70.1	90.7	66.8	66.8	89.8
SC19D076-W2F0-0	22 50	74.0	64.8	97.3	74.0	64.8	97.3	73.4	64.5	97.2	69.7	62.6	95.8
	24 45	75.9	69.3	99.3	75.9	69.3	99.3	75.3	69.0	99.1	71.4	67.1	97.7
	26 40	77.5	74.3	101.0	77.5	74.3	101.0	76.8	74.0	100.7	72.9	72.3	99.2
SC25D045-W2F0-0	22 50	42.1	42.1	52.8	42.1	42.1	52.8	42.1	42.1	52.8	40.2	40.2	51.9
	24 45	43.8	43.8	54.5	43.8	43.8	54.5	43.8	43.8	54.5	42.0	42.0	53.7
	26 40	45.7	45.7	56.4	45.7	45.7	56.4	45.7	45.7	56.4	43.9	43.9	55.6
SC25D050-W2F0-0	22 50	46.0	46.0	58.3	46.0	46.0	58.3	46.0	46.0	58.3	44.2	44.2	57.5
	24 45	47.8	47.8	60.2	47.8	47.8	60.2	47.8	47.8	60.2	46.1	46.1	59.5
	26 40	50.0	50.0	62.3	50.0	50.0	62.3	50.0	50.0	62.3	48.2	48.2	61.6
SC25D055-W2F0-0	22 50	52.9	52.9	67.1	52.9	52.9	67.1	52.9	52.9	67.1	50.6	50.6	66.2
	24 45	54.6	54.6	68.9	54.6	54.6	68.9	54.6	54.6	68.9	52.5	52.5	68.1
	26 40	57.1	57.1	71.3	57.1	57.1	71.3	57.1	57.1	71.3	54.9	54.9	70.5
SC25D067-W2F0-0	22 50	65.5	65.5	83.9	65.5	65.5	83.9	65.4	65.4	83.9	62.3	62.3	82.9
	24 45	67.0	67.0	85.5	67.0	67.0	85.5	66.9	66.9	85.4	63.7	63.7	84.3
	26 40	68.9	68.9	87.4	68.9	68.9	87.4	68.7	68.7	87.3	65.6	65.6	86.3
SC25D073-W2F0-0	22 50	71.7	71.3	92.1	71.7	71.3	92.1	71.4	71.1	92.0	67.8	67.8	90.8
	24 45	73.5	73.5	94.0	73.5	73.5	94.0	73.1	73.1	93.8	69.5	69.5	92.5
	26 40	75.2	75.2	95.7	75.2	75.2	95.7	74.8	74.8	95.5	71.2	71.2	94.4
SC25D080-W2F0-0	22 50	79.2	74.6	102.7	79.2	74.6	102.7	78.4	74.2	102.4	74.3	72.3	100.7
	24 45	81.2	80.4	104.8	81.2	80.4	104.8	80.4	80.0	104.4	76.2	76.2	102.7
	26 40	82.9	82.9	106.6	82.9	82.9	106.6	82.1	82.1	106.2	77.8	77.8	104.4
SC31D055-W2F0-0	22 50	52.7	52.7	66.9	52.7	52.7	66.9	52.7	52.7	66.9	50.4	50.4	65.9
	24 45	54.5	54.5	68.7	54.5	54.5	68.7	54.5	54.5	68.7	52.2	52.2	67.7
	26 40	56.1	56.1	70.4	56.1	56.1	70.4	56.1	56.1	70.4	54.0	54.0	69.6
SC31D065-W2F0-0	22 50	60.1	60.1	76.3	60.1	60.1	76.3	60.1	60.1	76.3	57.3	57.3	75.0
	24 45	61.8	61.8	78.0	61.8	61.8	78.0	61.8	61.8	78.0	59.2	59.2	77.0
	26 40	64.2	64.2	80.4	64.2	64.2	80.4	64.2	64.2	80.4	61.5	61.5	79.5
SC31D075-W2F0-0	22 50	64.8	64.8	82.2	64.8	64.8	82.2	64.8	64.8	82.1	61.8	61.8	81.0
	24 45	66.9	66.9	84.2	66.9	66.9	84.2	66.8	66.8	84.2	64.0	64.0	83.3
	26 40	69.8	69.8	87.2	69.8	69.8	87.2	69.7	69.7	87.1	66.8	66.8	86.2
SC31D077-W2F0-0	22 50	74.6	74.6	95.1	74.6	74.6	95.1	74.2	74.2	94.9	70.6	70.6	93.6
	24 45	76.5	76.5	96.9	76.5	76.5	96.9	75.9	75.9	96.7	72.2	72.2	95.4
	26 40	79.0	79.0	99.5	79.0	79.0	99.5	78.4	78.4	99.3	75.1	75.1	98.3
SC31D080-W2F0-0	22 50	78.8	78.8	100.8	78.8	78.8	100.8	78.1	78.1	100.5	73.7	73.7	98.6
	24 45	80.7	80.7	102.8	80.7	80.7	102.8	79.9	79.9	102.4	75.5	75.5	100.4
	26 40	83.1	83.1	105.2	83.1	83.1	105.2	82.2	82.2	104.8	78.0	78.0	103.0
SC31D083-W2F0-0	22 50	82.6	82.6	106.2	82.6	82.6	106.2	81.7	81.7	105.8	77.3	77.3	103.8
	24 45	84.7	84.7	108.3	84.7	84.7	108.3	83.7	83.7	107.9	79.2	79.2	105.8
	26 40	86.8	86.8	110.5	86.8	86.8	110.5	85.8	85.8	110.1	81.5	81.5	108.2

TC = Total Cooling, SC =Sensible Cooling, THR= Total Heat of Rejection
(1) All data quoted is gross
(2) Deduct fan gain for net duties, refer to ***Mechanical Data***
(3) All data quoted is based upon 100% water.

Cooling Duties – Free cooling

Model	Air On	Chilled Water Inlet Temperatures									
		5 °C /10°C		7°C /12°C		8°C / 14°C		10°C / 16°C		5.5°C/ 14.5°C	
	Temp (°C) %RH	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)
SC19D033-W2F0-0 1 x DR40	22 / 50	68.2	54.8	49.3	44.9	40.2	40.2	31.4	31.4	21.3	21.3
	24 / 45	77.8	63.1	61.6	55.9	49.1	49.1	40.9	40.9	48.1	48.1
	26 / 40	86.2	71.4	70.0	64.3	57.7	57.7	49.7	49.7	58.1	58.1
SC19D038-W2F0-0 1 x DR55	22 / 50	75.5	61.7	55.1	51.3	45.4	45.4	35.6	35.6	22.2	22.2
	24 / 45	86.2	71.1	67.9	63.1	55.3	55.3	46.1	46.1	54.8	54.8
	26 / 40	95.5	80.6	74.7	68.8	65.0	65.0	56.0	56.0	65.8	65.8
SC19D045-W2F0-0 1 x DR55	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC19D064-W2F0-0 1 x DR95	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC19D070-W2F0-0 1 x DR95 (EC)	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC19D076-W2F0-0 1 x DR95 (EC)	22 / 50	85.0	71.1	62.3	62.3	52.2	52.2	41.2	41.2	50.0	50.0
	24 / 45	97.3	81.9	74.4	69.8	63.6	63.6	53.0	53.0	63.5	63.5
	26 / 40	108.1	92.9	85.2	80.8	74.7	74.7	64.3	64.3	75.8	75.8
SC25D045-W2F0-0 1 x DR55	22 / 50	100.7	79.5	78.0	69.4	60.3	60.3	48.6	48.6	62.0	62.0
	24 / 45	114.1	91.2	91.4	81.1	72.4	72.4	61.0	61.0	79.5	76.0
	26 / 40	126.0	103.0	103.1	92.9	84.3	84.3	73.1	73.1	91.3	84.7
SC25D050-W2F0-0 1 x DR70	22 / 50	109.2	86.9	84.2	75.8	65.8	65.8	53.0	53.0	67.8	67.8
	24 / 45	123.8	99.7	98.8	88.7	79.0	79.0	66.5	66.5	84.5	80.3
	26 / 40	136.7	112.6	111.6	101.6	92.0	92.0	79.8	79.8	98.9	93.5
SC25D055-W2F0-0 1 x DR70	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC25D067-W2F0-0 1 x DR95	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC25D073-W2F0-0 1 x DR95	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC25D080-W2F0-0 1 x DR95 (EC)	22 / 50	117.2	94.0	90.1	82.1	71.1	71.1	57.3	57.3	73.4	73.4
	24 / 45	132.9	107.9	105.8	96.0	85.4	85.4	71.9	71.9	90.6	87.8
	26 / 40	147.0	122.0	119.7	110.1	99.6	99.6	86.3	86.3	106.1	102.2
SC31D055-W2F0-0 1 x DR70	22 / 50	117.0	90.1	92.1	78.7	71.1	67.7	56.6	56.6	82.6	73.8
	24 / 45	132.0	103.0	107.0	91.6	91.0	91.0	70.1	70.1	99.8	88.0
	26 / 40	145.2	116.1	120.1	104.7	98.7	91.8	83.4	83.4	114.5	101.9
SC31D065-W2F0-0 1 x DR95	22 / 50	133.3	103.7	104.5	90.6	79.8	79.8	64.9	64.9	93.1	84.8
	24 / 45	150.5	118.7	121.6	105.6	97.4	92.6	80.5	80.5	112.6	101.0
	26 / 40	165.8	133.8	136.7	120.8	112.7	107.8	95.9	95.9	129.3	117.1
SC31D075-W2F0-0 1 x DR95	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7
SC31D077-W2F0-0 1 x DR95	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7
SC31D080-W2F0-0 1 x DR95 (EC)	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7
SC31D083-W2F0-0 1 x DR95 (EC)	22 / 50	148.7	116.8	116.1	102.1	89.6	89.6	72.8	72.8	102.8	95.2
	24 / 45	168.0	133.7	135.2	119.1	107.0	107.0	90.5	90.5	124.4	113.6
	26 / 40	185.1	151.0	152.1	136.3	124.2	124.2	107.9	107.9	143.1	131.7

TC = Total Cooling, SC =Sensible Cooling, THR= Total Heat of Rejection
(1) All data quoted is gross, Capacities based on water ΔT stated. With Constant water flow systems the free cooling performance may be reduced if the flow through the condenser is lower than required for the free cooling. Please contact Airedale for performance figures.
(2) Deduct fan gain for net duties, refer to ***Mechanical Data***
(3) All data quoted is based upon 100% water.

Mechanical Data – W2F0

			SC19D033-W2F0	SC19D038-W2F0	SC19D045-W2F0
Standard Dry Cooler Match			**1 x DR40**	**1 x DR55**	**1 x DR55**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	29.1	36.8	42.3
Nom Cooling (Gross) - F0 (Free Cooling)	(2)	kW	61.6	67.9	74.4
Total Heat of Rejection –W2		kW	36.7	46.0	53.1
Capacity Steps			2	2	2
Fan Gain	(5)	kW	0.66	1.0	1.7
Dimensions - W x D x H		mm	1985 x 890 x 1980	1985 x 890 x 1980	1985 x 890 x 1980
Weight - Machine / Operating		kg	850 / 880	860 / 890	860 / 890
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	2/1	2/1
Condenser	(3)		Stainless steel Brazed Plate		
Water Volume		l	2.5	6.1	6.1
Glycol Flow		l/s	1.8	2.26	2.6
Pressure Drop Condenser		kPa	76.8	55.5	72.8
Glycol Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Water Volume		l	29.4	32.4	32.4
Glycol Flow		l/s	2.3	2.26	2.95
Pressure Drop F0		kPa	31.6	47.2	60.1
Unit					
Water flow		l/s	1.8	2.26	2.6
Pressure drop		kPa	108.44	102.7	132.86
Dry Cooler					
Water Volume		L	23.1	43.2	43.2
Flowrate		l/s	1.8	2.26	2.6
Pressure Drop		kPa	40.8	27.5	33.7
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 2.2	2 x 2.2	2 x 2.2
Speed @25Pa ESP/ maximum ESP		rpm	964 / 1360	1117 /1360	1340 /1360
Maximum ESP		Pa	438	302	49
Nominal Airflow		m³/s	3.7	4.3	5.1
Compressor - Scroll					
Configuration			Dual Cool - Circuit 1 Tandem Compressors (Water Cooled) Circuit 2 Free Cooling		
Quantity - W2			2	2	2
Oil Charge Volume - W2		l	2 x 1.57	2 x 1.57	2 x 1.57
Oil Type			Polyolvinyl		
Connections					
Inlet/Outlet		mm	35	35	35
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			3	3	3
OPTIONAL EXTRAS					
Hot Gas Reheat - X					
Nom Heating (Gross)		kW	8.3	9.2	9.7
Electric Heating (Total)		kW	21	21	21
Humidifier					
Capacity		kg/hr	8	8	8
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @ 25Pa		rpm	986 / 1520	1145 /1520	1364 / 1520
Maximum ESP		Pa	589	453	216
Fan Gain	(5)	kW	0.65	1.03	1.73
Second upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(5)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(4)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	22.2	24.5	26
Water Flow (Nominal)		l/s	0.49	0.54	0.58
Pressure Drop		kPA	9.4	9.7	10.1
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/ 45% RH condenser water in / out 35 / 40°C
(2) Entering air 24°C/ 45% RH condenser water in / out 7/12°C and based on water.
(3) Pressure drop through condenser, free cooling coil, 3 port valve, Head pressure control valve and unit pipe work
(4) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(5) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain will change as airflow and ESP change.

Mechanical Data – W2F0 Continued

			SC19D064-W2F0	SC19D070-W2F0	SC19D076-W2F0
Standard Dry Cooler Match			**1 x DR95**	**1 x DR95**	**1 x DR95 (EC)**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	63.2	68.7	75.3
Nom Cooling (Gross) - F0 (Free Cooling)	(2)	kW	74.4	74.4	74.4
Total Heat of Rejection –W2		kW	81.6	89.2	99.1
Capacity Steps			2	2	2
Fan Gain	(5)	kW	1.7	1.7	1.7
Dimensions - W x D x H		mm	1985 x 890 x 1980	1985 x 890 x 1980	1985 x 890 x 1980
Weight - Machine / Operating		kg	950 / 980	950 / 980	960 / 990
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	2/1	2/1
Condenser	(3)		Stainless steel Brazed Plate		
Water Volume		l			
Glycol Flow		l/s	4	4.4	4.9
Pressure Drop Condenser		kPa	59.6	70.8	86.7
Glycol Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Water Volume		l	29.4	32.4	32.4
Glycol Flow		l/s	2.93	2.93	2.93
Pressure Drop F0		kPa	125.8	147.8	178.6
Unit					
Water flow		l/s	4	4.4	4.85
Pressure drop		kPa	185.42	218.66	265.34
Dry Cooler					
Water Volume		l	55.9	55.9	55.9
Flowrate		l/s	4	4.4	4.9
Pressure Drop		kPa	76.8	89.7	106.8
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 2.2	2 x 2.2	2 x 2.2
Speed @25Pa ESP/ maximum ESP		rpm	1340 /1360	1340 /1360	1340 /1360
Maximum ESP		Pa	49	49	49
Nominal Airflow		m³/s	5.1	5.1	5.1
Compressor - Scroll					
Configuration			Dual Cool - Circuit 1 Tandem Compressors (Water Cooled) Circuit 2 Free Cooling		
Quantity - W2			2	2	2
Oil Charge Volume - W2		l	2 x 3.3	2 x 3.3	2 x 3.3
Oil Type			Polyolester		
Connections					
Water Inlet / Outlet – W2		mm	42	42	42
Glycol Connections Inlet/Outlet – F0		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			3	3	3
OPTIONAL EXTRAS					
Hot Gas Reheat - X					
Nom Heating (Gross)		kW	9.7	9.7	9.7
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @ 25Pa		rpm	1364 / 1520	1364 / 1520	1364 / 1520
Maximum ESP		Pa	216	216	216
Fan Gain	(5)	kW	1.73	1.73	1.73
Second upgrade Fan Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(5)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(4)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	26	26	26
Water Flow (Nominal)		l/s	0.58	0.58	0.58
Pressure Drop		kPA	10.1	10.1	10.1
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/ 45% RH condenser water in / out 35 / 40°C
(2) Entering air 24°C/ 45% RH condenser water in / out 7/12°C and based on water.
(3) Pressure drop through condenser, free cooling coil, 3 port valve, Head pressure control valve and unit pipe work
(4) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(5) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain will change as airflow and ESP change.

Mechanical Data – W2F0 Continued

			SC25D045-W2F0	SC25D050-W2F0	SC25D055-W2F0
Standard Dry Cooler Match			**1 x DR55**	**1 x DR70**	**1 x DR70**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	43.8	47.8	54.6
Nom Cooling (Gross) - F0 (Free Cooling)	(2)	kW	91.4	98.8	105.8
Total Heat of Rejection –W2		kW	54.5	60.2	68.9
Capacity Steps			2	2	3
Fan Gain	(5)	kW	2.24	2.65	3.01
Dimensions - W x D x H		mm	2549 x 890 x 1980	2549 x 890 x 1980	2549 x 890 x 1980
Weight - Machine / Operating		kg	980 / 1020	1050 / 1090	1050 / 1100
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	3/1	3/1
Condenser	(3)		Stainless steel Brazed Plate		
Water Volume		l	6.1	9.9	9.9
Glycol Flow		l/s	2.66	3.0	3.4
Pressure Drop Condenser		kPa	69	29.8	38.4
Glycol Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Water Volume		l	42.2	42.2	42.2
Glycol Flow		l/s	3.6	3.8	4
Pressure Drop F0		kPa	75.8	90.3	114.4
Unit					
Water flow		l/s	2.66	3.0	3.4
Pressure drop		kPa	144.8	120.1	152.8
Dry Cooler					
Water Volume		L	55.9	55.9	55.9
Flowrate		l/s	2.66	3.0	3.4
Pressure Drop		kPa	35.7	48.6	59.3
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			AC	AC	AC
Quantity x Motor Size		kW	3 x 2.38	3 x 2.38	3 x 2.38
Speed @25Pa ESP/ maximum ESP		rpm	1092 / 1364	1220 / 1364	1364 / 1364
Maximum ESP		Pa	328	188	20
Nominal Airflow		m³/s	5.3	5.9	6.5
Compressor - Scroll					
Configuration			Dual Cool - Circuit 1 Tandem Compressors (Water Cooled) Circuit 2 Free Cooling		
Quantity - W2			2		
Oil Charge Volume - W2		l	2 x 1.57	2 x 3	2 x 3
Oil Type			Polyolvinyl	Polyolester	
Connections					
Water Inlet / Outlet – W2		mm	42	42	42
Glycol Connections Inlet/Outlet – F0		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	3	3
OPTIONAL EXTRAS					
Hot Gas Reheat - X					
Nom Heating (Gross)		kW	11.9	12.2	12.2
Electric Heating (Total)		kW	21	21	21
Humidifier					
Capacity		kg/hr	8	8	8
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Speed @ 25Pa / maximum ESP		rpm	1074 / 1360	1200 / 1360	1337 / 1360
Maximum ESP		Pa	314	188	45
Fan Gain	(5)	kW	1.4	1.92	2.6
Second upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / maximum ESP		rpm	1095 / 1520	1225 / 1520	1354 / 1520
Maximum ESP		Pa	464	337	195
Fan Gain	(5)	kW	1.4	1.92	2.6
Low Pressure Hot Water	(4)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	32.5	34.1	35.7
Water Flow (Nominal)		l/s	0.72	0.76	0.79
Pressure Drop		kPA	20.2	21	21.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/ 45% RH condenser water in / out 35 / 40°C
(2) Entering air 24°C/ 45% RH condenser water in / out 7/12°C and based on water.
(3) Pressure drop through condenser, free cooling coil, 3 port valve, Head pressure control valve and unit pipe work
(4) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(5) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain will change as airflow and ESP change.

Mechanical Data – W2F0 Continued

			SC25D067-W2F0-0	SC25D073-W2F0-0	SC25D080-W2F0-0
Standard Dry Cooler Match			**1 x DR95**	**1 x DR95**	**1 x DR95 (EC)**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	66.9	73.1	80.4
Nom Cooling (Gross) - F0 (Free Cooling)	(2)	kW	105.8	105.8	105.8
Total Heat of Rejection –W2		kW	85.4	93.8	104.4
Capacity Steps			2	2	2
Fan Gain	(5)	kW	3.01	3.01	3.01
Dimensions - W x D x H		mm	2549 x 890 x 1980	2549 x 890 x 1980	2549 x 890 x 1980
Weight - Machine / Operating		kg	1070 / 1110	1070 / 1120	1080 / 1120
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	2/1	2/1
Condenser	(4)		Stainless steel Brazed Plate		
Water Volume		l			
Glycol Flow		l/s	4.2	4.6	5.1
Pressure Drop Condenser		kPa	45.2	54.2	67
Glycol Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Water Volume		l	42.2	42.2	42.2
Glycol Flow		l/s	4	4	4
Pressure Drop F0		kPa	155.5	183.6	223.3
Unit					
Water flow		l/s	4.15	4.6	5.1
Pressure drop		kPa	200.69	237.76	290.28
Dry Cooler					
Water Volume		L	55.9	55.9	55.9
Flowrate		l/s	4.15	4.6	5.1
Pressure Drop		kPa	83.2	96.4	114
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			AC	AC	AC
Quantity x Motor Size		kW	3 x 2.38	3 x 2.38	3 x 2.38
Speed @25Pa ESP / maximum ESP		rpm	1364 / 1364	1364 / 1364	1364 / 1364
Maximum ESP		Pa	20	20	20
Nominal Airflow		m³/s	6.5	6.5	6.5
Compressor - Scroll					
Configuration			Dual Cool - Circuit 1 Tandem Compressors (Water Cooled) Circuit 2 Free Cooling		
Quantity - W2			2	2	2
Oil Charge Volume - W2		l	2 x 3.3	2 x 3.3	2 x 3.3
Oil Type			Polyolester		
Connections					
Glycol Connections Inlet/Outlet – F0		mm	54	54	54
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	3	3
OPTIONAL EXTRAS					
Hot Gas Reheat - X					
Nom Heating (Gross)		kW	12.2	12.2	12.2
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Speed @ 25Pa / maximum ESP		rpm	1337 / 1360	1337/ 1360	1337 / 1360
Maximum ESP		Pa	45	45	45
Fan Gain	(6)	kW	2.6	2.6	2.6
Second upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / maximum ESP		rpm	1354 / 1520	1354 / 1520	1354 / 1520
Maximum ESP		Pa	195	195	195
Fan Gain	(6)	kW	2.6	2.6	2.6
Low Pressure Hot Water	(5)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	35.7	35.7	35.7
Water Flow (Nominal)		l/s	0.79	0.79	0.79
Pressure Drop		kPA	21.8	21.8	21.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/ 45% RH condenser water in / out 35 / 40°C
(2) Entering air 24°C/ 45% RH condenser water in / out 7/12°C and based on water.
(3) Outlines 10% ethylene glycol solution content
(4) Pressure drop through condenser, free cooling coil, 3 port valve, Head pressure control valve and unit pipe work
(5) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(6) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain will change as airflow and ESP change.

Mechanical Data – W2F0 Continued

			SC31D055-W2F0-0	SC31D065-W2F0-0	SC31D075-W2F0-0
Standard Dry Cooler Match			**1 x DR70**	**1 x DR95**	**1 x DR95**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	54.5	61.8	66.8
Nom Cooling (Gross) - F0 (Free Cooling)	(2)	kW	107.0	121.6	135.2
Total Heat of Rejection –W2		kW	68.7	78.0	84.2
Capacity Steps			3	3	2
Fan Gain	(5)	kW	1.25	2.06	3.22
Dimensions - W x D x H		mm	3113 x 890 x 1980	3113 x 890 x 1980	3113 x 890 x 1980
Weight - Machine / Operating		kg	1210 / 1260	1220 / 1270	1220 / 1270
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			3/1	2/1	2/1
Condenser	(3)		Stainless steel Brazed Plate		
Water Volume		l	9.9	9.9	9.9
Glycol Flow		l/s	2.7	3.9	4.1
Pressure Drop Condenser		kPa	38.2	48.9	45
Glycol Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Water Volume		l	52.3	52.3	52.3
Glycol Flow		l/s	3.4	5	5.3
Pressure Drop F0		kPa	64.2	80	91.5
Unit					
Water flow		l/s	3.4	5.0	4.1
Pressure drop		kPa	102.32	128.96	136.38
Dry Cooler					
Water Volume		L	55.9	55.9	55.9
Flowrate		l/s	3.4	5	5.3
Pressure Drop		kPa	59.3	110.3	121.5
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @25Pa ESP/ maximum ESP		rpm	1061 / 1520	1261 / 1520	1479 / 1520
Maximum ESP		Pa	528	330	77
Nominal Airflow		m³/s	5.8	6.9	7.9
Compressor - Scroll					
Configuration			Dual Cool - Circuit 1 Tandem Compressors (Water Cooled) Circuit 2 Free Cooling		
Quantity - W2			2	2	2
Oil Charge Volume - W2		l	2 x 3.3	2 x 3.3	2 x 3.3
Oil Type			Polyolester		
Connections					
Glycol Connections Inlet/Outlet – F0		mm	42	42	54
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat - X					
Nom Heating (Gross)		kW	14.6	16.1	16.1
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	8	8	8
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(5)	kW	N/A	N/A	N/A
Second upgrade Fan Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(5)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(4)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	40.6	43.8	45.2
Water Flow (Nominal)		l/s	0.9	0.97	1.01
Pressure Drop		kPA	35.9	37.4	38.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/ 45% RH condenser water in / out 35 / 40°C
(2) Entering air 24°C/ 45% RH condenser water in / out 7/12°C and based on water.
(3) Pressure drop through condenser, free cooling coil, 3 port valve, Head pressure control valve and unit pipe work
(4) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(5) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain will change as airflow and ESP change.

Mechanical Data – W2F0 Continued

			SC31D077-W2F0-0	SC31D080-W2F0-0	SC31D083-W2F0-0
Standard Dry Cooler Match			**1 x DR95**	**1 x DR95 (EC)**	**1 x DR95 (EC)**
Capacity					
Nom Cooling (Gross) – W2	(1)	kW	75.9	79.9	83.7
Nom Cooling (Gross) - F0 (Free Cooling)	(2)	kW	135.2	135.2	135.2
Total Heat of Rejection –W2		kW	96.7	102.4	107.9
Capacity Steps			2	3	2
Fan Gain		kW	3.22	3.22	3.22
Dimensions - W x D x H		mm	3113 x 890 x 1980	3113 x 890 x 1980	3113 x 890 x 1980
Weight - Machine / Operating		kg	1230 / 1280	1230 / 1280	1230 / 1290
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Evaporator			Rifled Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			2/1	3/1	2/1
Condenser	(3)		Stainless steel Brazed Plate		
Water Volume		l			
Glycol Flow		l/s	4.7	5	5.3
Pressure Drop Condenser		kPa	58	64.4	71.2
Glycol Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Water Volume		l	52.3	52.3	52.3
Glycol Flow		l/s	4.7	4.7	4.7
Pressure Drop F0		kPa	115.2	126.7	138.8
Unit					
Water flow		l/s	4.7	5	5.3
Pressure drop		kPa	173.21	191.13	210.04
Dry Cooler					
Water Volume		L	55.9	55.9	55.9
Flowrate		l/s	4.7	5	5.3
Pressure Drop		kPa	100	110.3	121.5
Fan Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @25Pa ESP/ maximum ESP		rpm	1479 / 1520	1479 / 1520	1479/ 1520
Maximum ESP		Pa	77	77	77
Nominal Airflow		m³/s	7.9	7.9	7.9
Compressor - Scroll					
Configuration			Dual Cool - Circuit 1 Tandem Compressors (Water Cooled) Circuit 2 Free Cooling		
Quantity - W2			2	2	2
Oil Charge Volume - W2		l	2 x 3.3	(1 x 3.3)+(1 x 3.6)	2 x 3.6
Oil Type			Polyolester		
Connections					
Water Inlet / Outlet – W2		mm	54	54	54
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Hot Gas Reheat - X					
Nom Heating (Gross)		kW	16.1	16.1	16.1
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(5)	kW	N/A	N/A	N/A
Second upgrade Fan Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(5)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(4)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	45.2	45.2	45.2
Water Flow (Nominal)		l/s	1.01	1.01	1.01
Pressure Drop		kPA	38.8	38.8	38.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/ 45% RH condenser water in / out 35 / 40°C
(2) Entering air 24°C/ 45% RH condenser water in / out 7/12°C and based on water.
(3) Pressure drop through condenser, free cooling coil, 3 port valve, Head pressure control valve and unit pipe work
(4) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(5) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain will change as airflow and ESP change.

Electrical Data – W2F0

			SC19D033-W2F0-0	SC19D038-W2F0-0	SC19D045-W2F0-0
Standard Dry Cooler Match			**1 x DR40**	**1 x DR55**	**1 x DR55**
Unit Data Full Function- W2F0					
Nominal Run Amps	(1)	A	54.3	57.2	59
Maximum Start Amps		A	115.8	132.8	145.8
Recommended Mains Fuse Size		A	63	80	80
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only - W2F0					
Nominal Run Amps		A	32.5	38.2	42
Maximum Start Amps		A	94	113.9	128.7
Recommended Mains Fuse Size		A	40	50	50
Evaporator Fan Motor - Per Fan					
Motor Type	(2)		EC	EC	EC
Quantity x Motor Size		kW	2 x 2.2	2 x 2.2	2 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Compressor 1, Circuit 1					
Motor Size	(3)	kW	4.6	5.55	6.31
Nominal Run Amps		A	8.5	11.4	13.3
Locked Rotor Amps		A	70	87	100
Type of Start				Direct On Line	
Compressor 2, Circuit 1					
Motor Size	(3)	kW	4.6	5.55	6.3
Nominal Run Amps		A	8.5	11.4	13.3
Locked Rotor Amps		A	70	87	100
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	AC	EC
Quantity x Motor Size		kW	2 x 0.6	3 x 0.6	3 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			2	2	2
Number of Elements			6	6	6
Rating (Total)		kW	21	21	21
Current Per Phase		A	30.3	30.3	30.3
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	8.7	8.7	8.7
First upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size	(2)	kW	2 x 0.73	3 x 0.73	3 x 0.73
Full Load Amps		A	3.3	3.3	3.3
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size	(2)	kW	2 x 1.4	3 x 1.4	3 x 1.4
Full Load Amps		A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – W2F0 Continued

			SC19D064-W2F0-0	SC19D070-W2F0-0	SC19D076-W2F0-0
Standard Dry Cooler Match			**1 x DR95**	**1 x DR95**	**1 x DR95 (EC)**
Unit Data Full Function - W2F0					
Nominal Run Amps	(1)	A	78.9	80.3	88
Maximum Start Amps		A	222.7	217.6	260.5
Recommended Mains Fuse Size		A	100	100	100
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only - W2F0					
Nominal Run Amps		A	52.6	56	67.5
Maximum Start Amps		A	196.6	193.4	240
Recommended Mains Fuse Size		A	63	80	80
Evaporator Fan Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	2 x 2.2	2 x 2.2	2 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Compressor 1 , Circuit 1					
Motor Size	(3)	kW	10.86	12.15	13.73
Nominal Run Amps		A	19.2	20.7	24.5
Locked Rotor Amps		A	163	158	197
Type of Start				Direct On Line	
Compressor 2, Circuit 1					
Motor Size	(3)	kW	10.86	12.15	13.73
Nominal Run Amps		A	19.2	20.7	24.5
Locked Rotor Amps		A	163	158	197
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	AC	EC
Quantity x Motor Size		kW	4 x 0.88	4 x 0.88	4 x 1.68
Full Load Amps		A	1.65	1.65	2.6
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.47	45.47	45.47
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size	(2)	kW	4 x 1.68	4 x 1.68	N/A
Full Load Amps		A	2.6	2.6	N/A
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size	(2)	kW	4 x 1.94	4 x 1.94	4 x 1.94
Full Load Amps		A	3.4	3.4	3.4

(1) Values given for function units with standard selections for heating, humidification, supply air fans 7°C evaporating and 54.4°C condensing.
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – W2F0 Continued

			SC25D045-W2F0-0	SC25D050-W2F0-0	SC25D055-W2F0-0
Standard Dry Cooler Match			**1 x DR55**	**1 x DR70**	**1 x DR70**
Unit Data Full Function- W2F0					
Nominal Run Amps	(1)	A	67.44	69.7	84.5
Maximum Start Amps		A	154.2	148.8	174.4
Recommended Mains Fuse Size		A	80	80	100
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only- W2F0					
Nominal Run Amps		A	50.4	52.7	56.8
Maximum Start Amps		A	137.1	131.9	169.9
Recommended Mains Fuse Size		A	63	63	80
Evaporator Fan Motor - Per Fan					
Motor Type			AC	AC	EC
Quantity x Motor Size	(2)	kW	3 x 2.38	3 x 2.38	3 x 2.38
Full Load Amps		A	5	5	5
Locked Rotor Amps		A	17.5	17.5	17.5
Compressor 1 , Circuit 1					
Motor Size	(3)	kW	6.3	7.2	7.2
Nominal Run Amps		A	13.3	12.9	12.9
Locked Rotor Amps		A	100	92	92
Type of Start				Direct On Line	
Compressor 2, Circuit 1					
Motor Size	(3)	kW	6.3	7.2	9.5
Nominal Run Amps		A	13.3	12.9	16.9
Locked Rotor Amps		A	100	92	130
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	AC	EC
Quantity x Motor Size		kW	3 x 0.6	4 x 0.6	4 x 0.6
Full Load Amps		A	2.62	2.62	2.62
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			2	2	3
Number of Elements			6	6	9
Rating (Total)		kW	21	21	31.5
Current Per Phase		A	30.3	30.3	45.47
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	8.7	8.7	8.67
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	3 x 2.2	3 x 2.2	3 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size	(2)	kW	3 x 0.73	4 x 0.73	4 x 0.73
Full Load Amps		A	3.3	3.3	3.3
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size	(2)	kW	3 x 1.4	4 x 1.4	4 x 1.4
Full Load Amps		A	6	6	6

(1) Values given for function units with standard selections for heating, humidification, supply air fans 7°C evaporating and 54.4°C condensing.
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – W2F0 Continued

			SC25D067-W2F0-0	SC25D073-W2F0-0	SC25D080-W2F0-0
Standard Dry Cooler Match			**1 x DR95**	**1 x DR95**	**1 x DR95 (EC)**
Unit Data Full Function - W2F0					
Nominal Run Amps	(1)	A	87.3	88.7	96.4
Maximum Start Amps		A	231.1	226.1	268.9
Recommended Mains Fuse Size		A	100	100	125
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only- W2F0					
Nominal Run Amps		A	61.5	64.4	75.9
Maximum Start Amps		A	205.3	201.8	248.4
Recommended Mains Fuse Size		A	80	80	100
Evaporator Fan Motor - Per Fan					
Motor Type			AC	AC	AC
Quantity x Motor Size	(2)	kW	3 x 2.38	3 x 2.38	3 x 2.38
Full Load Amps		A	5	5	5
Locked Rotor Amps		A	17.5	17.5	17.5
Compressor 1 , Circuit 1					
Motor Size	(3)	kW	10.86	12.15	13.73
Nominal Run Amps		A	19.2	20.7	24.5
Locked Rotor Amps		A	163	158	197
Type of Start				Direct On Line	
Compressor 2, Circuit 1					
Motor Size	(3)	kW	10.86	12.15	13.73
Nominal Run Amps		A	19.2	20.7	24.5
Locked Rotor Amps		A	163	158	197
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	AC	EC
Quantity x Motor Size		kW	4 x 0.88	4 x 0.88	4 x 1.68
Full Load Amps		A	1.65	1.65	2.6
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.47	45.47	45.47
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	3 x 2.2	3 x 2.2	3 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size	(2)	kW	4 x 1.68	4 x 1.68	N/A
Full Load Amps		A	2.6	2.6	N/A
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size	(2)	kW	4 x 1.94	4 x 1.94	4 x 1.94
Full Load Amps		A	3.4	3.4	3.4

(1) Values given for function units with standard selections for heating, humidification, supply air fans 7°C evaporating and 54.4°C condensing.
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – W2F0 Continued

			SC31D055-W2F0-0	SC31D065-W2F0-0	SC31D075-W2F0-0
Standard Dry Cooler Match			**1 x DR70**	**1 x DR95**	**1 x DR95**
Unit Data Full Function - W2F0					
Nominal Run Amps	(1)	A	84.22	84.4	84.4
Maximum Start Amps		A	177.95	197.5	211.1
Recommended Mains Fuse Size		A	100	100	100
Max Mains Incoming Cable Size		mm²	35	70	70
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only- W2F0					
Nominal Run Amps		A	56.2	56.4	58.7
Maximum Start Amps		A	169.3	169.4	202.4
Recommended Mains Fuse Size		A	63	63	80
Evaporator Fan Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Compressor 1 , Circuit 1					
Motor Size	(3)	kW	7.2	9.46	9.46
Nominal Run Amps		A	12.9	16.93	16.93
Locked Rotor Amps		A	92	130	130
Type of Start				Direct On Line	
Compressor 2, Circuit 1					
Motor Size	(3)	kW	9.46	9.46	10.9
Nominal Run Amps		A	16.9	16.9	19.2
Locked Rotor Amps		A	130	130	163
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	EC	EC
Quantity x Motor Size		kW	4 x 0.6	4 x 0.88	4 x 0.88
Full Load Amps		A	2.62	1.65	1.65
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.5	45.5	45.5
Humidifier					
Capacity		kg/hr	8	8	8
Rating		kW	6	6	6
Full Load Amps		A	8.7	8.7	8.7
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size	(2)	kW	4 x 0.73	4 x 1.68	4 x 1.68
Full Load Amps		A	3.3	2.6	2.6
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size	(2)	kW	4 x 1.4	4 x 1.4	4 x 1.94
Full Load Amps		A	6	3.4	3.4

(1) Values given for function units with standard selections for heating, humidification, supply air fans 7°C evaporating and 54.4°C condensing.
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

Electrical Data – W2F0 Continued

			SC31D077-W2F0-0	SC31D080-W2F0-0	SC31D083-W2F0-0
Standard Dry Cooler Match			**1 x DR95**	**1 x DR95 (EC)**	**1 x DR95 (EC)**
Unit Data Full Function- W2F0					
Nominal Run Amps	(1)	A	88.1	91.9	95.8
Maximum Start Amps		A	225.5	260.2	268.3
Recommended Mains Fuse Size		A	100	125	125
Max Mains Incoming Cable Size		mm²	35	70	70
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only- W2F0					
Nominal Run Amps		A	63.8	71.5	75.3
Maximum Start Amps		A	201.2	244.0	247.8
Recommended Mains Fuse Size		A	80	80	100
Evaporator Fan Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Compressor 1 , Circuit 1					
Motor Size		kW	12.2	12.2	13.7
Nominal Run Amps		A	20.7	20.7	24.5
Locked Rotor Amps		A	158	158	197
Type of Start				Direct On Line	
Compressor 2, Circuit 1					
Motor Size	(3)	kW	12.2	13.7	13.7
Nominal Run Amps		A	20.7	24.5	24.5
Locked Rotor Amps		A	158	197	197
Type of Start				Direct On Line	
Standard Dry Cooler Match - Motor Per Fan			AC	EC	EC
Quantity x Motor Size		kW	4 x 0.88	4 x 1.68	4 x 1.68
Full Load Amps		A	1.65	2.6	2.6
OPTIONAL EXTRAS					
Electric Heating					
Number of stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.47	45.47	45.47
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size	(2)	kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Standard Dry Cooler Match - EC Motor-Per Fan					
Quantity x Motor Size	(2)	kW	4 x 1.68	N/A	N/A
Full Load Amps		A	2.6	N/A	N/A
Dry Cooler Match - SCAF Fan					
Quantity x Motor Size	(2)	kW	4 x 1.94	4 x 1.94	4 x 1.94
Full Load Amps		A	3.4	3.4	3.4

(1) Values given for function units with standard selections for heating, humidification, supply air fans 7°C evaporating and 54.4°C condensing
(2) Stated motor power is based on maximum electrical power absorbed
(3) Values are per compressor

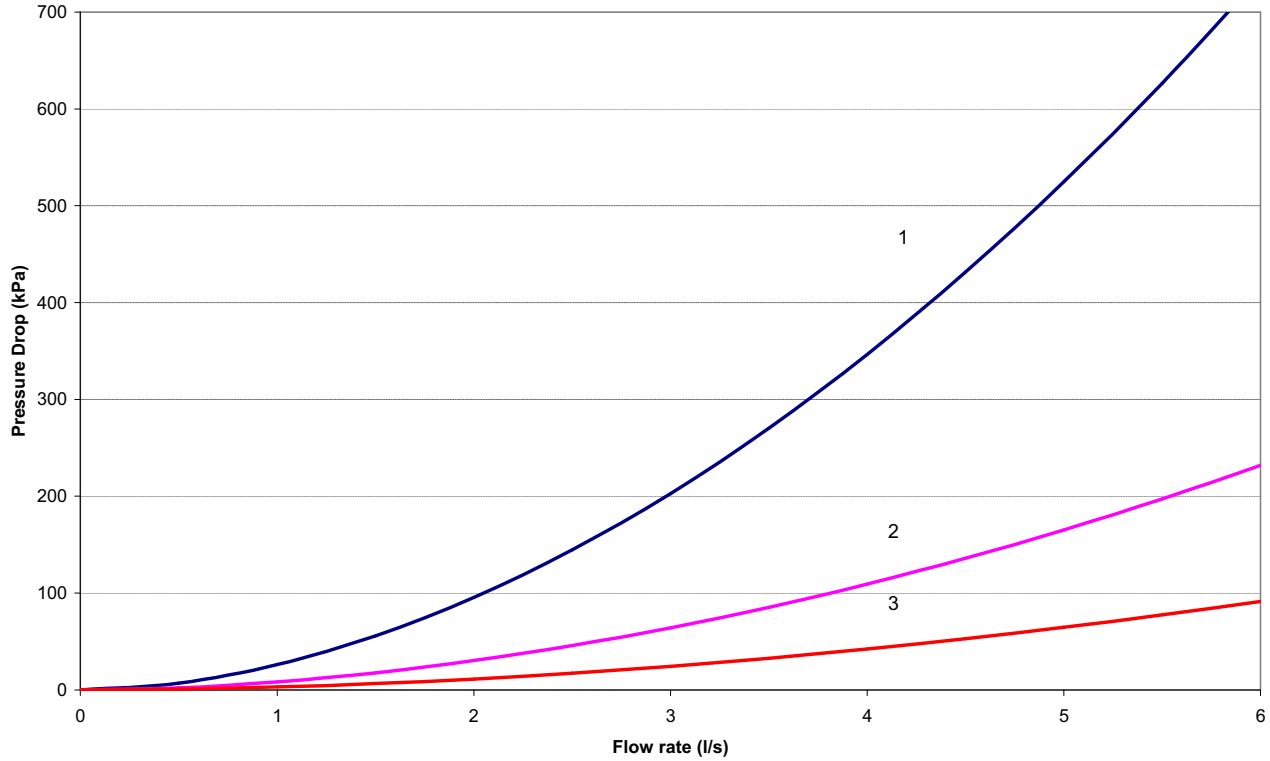
Sound Data – W2F0

			Frequency(Hz)							
		Overall dB(A)	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*
SC19D033-W2F0	Discharge Air	75	82	83	73	65	70	69	61	54
	Return Air	71	68	75	70	67	65	63	57	51
	Case Breakout	53	72	64	52	45	46	41	32	32
	Sound Pressure @ 3m	47	66	58	46	39	40	35	26	26
SC19D038-W2F0	Discharge Air	76	84	85	77	68	71	70	61	54
	Return Air	75	70	79	75	71	69	68	62	56
	Case Breakout	55	73	66	54	47	47	43	34	32
	Sound Pressure @ 3m	49	67	60	48	41	41	37	28	26
SC19D045-W2F0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	58	74	69	58	51	50	47	37	33
	Sound Pressure @ 3m	52	68	63	52	45	44	41	31	27
SC19D064-W2F0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	57	74	68	58	51	50	47	37	33
	Sound Pressure @ 3m	51	68	62	52	45	44	41	31	27
SC19D070-W2F0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	57	74	69	58	51	50	47	37	33
	Sound Pressure @ 3m	51	68	63	52	45	44	41	31	27
SC19D076-W2F0	Discharge Air	80	89	87	81	73	74	72	63	57
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	57	74	68	58	51	50	47	37	33
	Sound Pressure @ 3m	51	68	62	52	45	44	41	31	27
SC25D045-W2F0	Discharge Air	81	90	88	83	74	75	73	64	58
	Return Air	81	75	84	82	76	75	74	69	62
	Case Breakout	59	74	70	60	52	51	48	37	34
	Sound Pressure @ 3m	53	68	64	54	46	45	42	31	27
SC25D050-W2F0	Discharge Air	83	92	91	85	76	77	74	66	60
	Return Air	83	77	87	84	79	77	76	71	65
	Case Breakout	62	72	70	66	57	55	52	41	37
	Sound Pressure @ 3m	56	66	64	60	51	48	46	35	31
SC25D055-W2F0	Discharge Air	85	95	93	87	79	79	77	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	74	73	66	57	56	53	40	37
	Sound Pressure @ 3m	57	68	67	60	51	50	47	34	31
SC25D067-W2F0	Discharge Air	85	94	93	87	79	79	77	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	71	72	67	59	56	54	44	35
	Sound Pressure @ 3m	57	65	66	61	53	50	48	38	29
Sc25D073-W2F0	Discharge Air	85	95	94	87	79	79	77	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	71	72	67	59	56	54	44	35
	Sound Pressure @ 3m	57	65	66	61	53	50	48	38	29
SC25D080-W2F0	Discharge Air	85	94	93	87	79	79	76	68	62
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	69	72	67	59	56	54	44	35
	Sound Pressure @ 3m	57	63	66	61	53	50	48	38	29
SC31D055-W2F0	Discharge Air	83	92	90	85	76	77	74	66	60
	Return Air	83	77	87	84	78	77	76	71	64
	Case Breakout	61	73	71	63	55	54	51	40	36
	Sound Pressure @ 3m	55	67	65	57	49	47	45	34	30
SC31D065-W2F0	Discharge Air	86	96	94	88	80	81	78	69	63
	Return Air	86	80	90	87	82	80	79	74	68
	Case Breakout	64	77	75	65	57	56	54	40	36
	Sound Pressure @ 3m	58	71	69	59	51	50	48	34	29
SC31D075-W2F0	Discharge Air	89	99	96	91	83	83	81	72	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	67	78	78	68	59	59	57	46	37
	Sound Pressure @ 3m	61	72	72	62	53	53	51	40	31
SC31D077-W2F0	Discharge Air	89	99	97	91	83	83	81	72	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	66	78	78	68	59	59	57	46	37
	Sound Pressure @ 3m	60	72	72	62	53	53	51	40	31
SC31D080-W2F0	Discharge Air	89	99	97	91	83	83	81	72	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	67	80	80	68	60	58	57	46	37
	Sound Pressure @ 3m	61	74	74	62	54	52	51	40	31
SC31D083-W2F0	Discharge Air	89	98	97	91	83	83	81	71	66
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	67	79	79	68	60	58	57	46	37
	Sound Pressure @ 3m	61	73	73	62	54	52	51	40	31

(1) dB(A) is the overall sound level, measured on the A scale
(2) All sound data measured at nominal conditions, Discharge Air, Return Air and Case Breakout is sound power.

Waterside Pressure Drops W2F0

Water Cooled Condenser



Key

1	SC19D033	2	SC19D038 – SC19D045, SC25D045	3	SC19D064 – SC19D76 SC25D050 – SC31D083

(1) Includes plate condenser, 3 port valve and pipework.
(2) To calculate 3 port valve pressure drop:

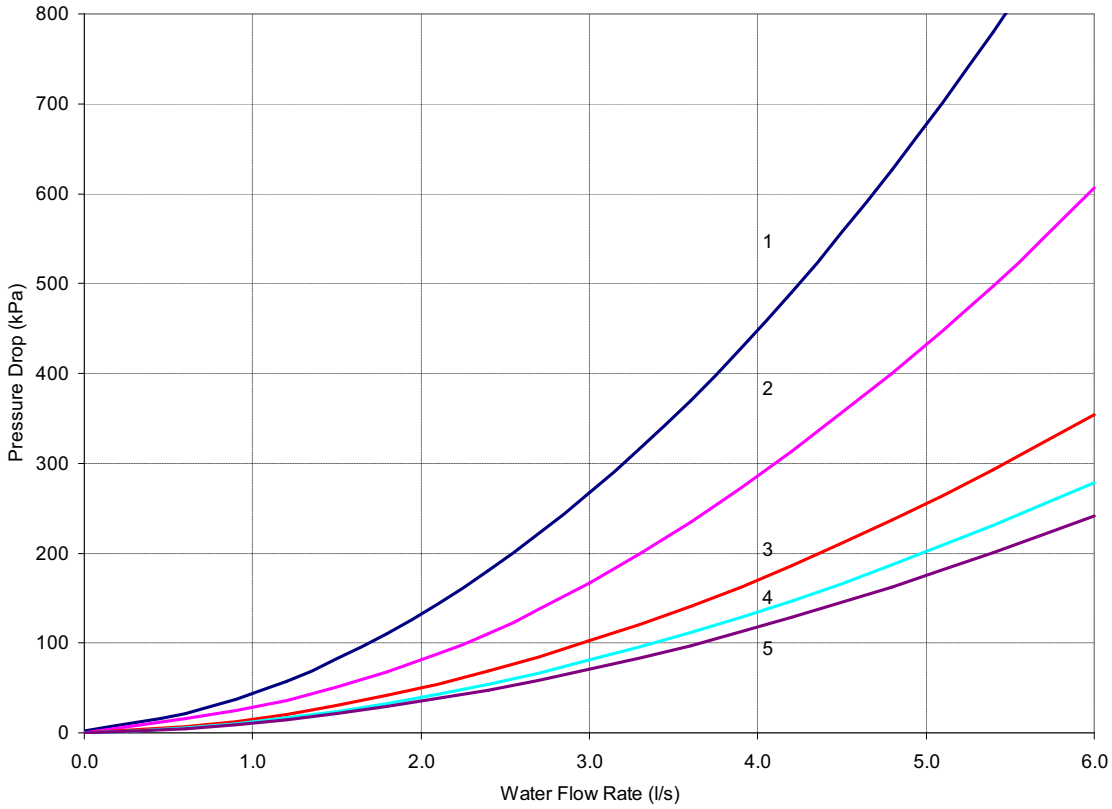
ΔP valve = $\left(\frac{Q}{M}\right)^2$ where ΔP = Pressure Drop in kPa, Q = Water Flow Rate in l/s and M = $\left(\frac{Kv}{36}\right)$

(3) Fluid 100% water

M Values

Model Sizes	SC19D33	SC19D38 – D045	SC19D064-D076	SC25D45	SC25D50- D055	SC31D55-65	SC31D075-D083
Chilled Water Valve	0.51	1.11	1.75	1.11	1.75	1.75	1.75

Free Cooling Coil



Key

1 SC19D033
2 SC19D038 – 045, SC25D045
3 SC19D064 - 075, SC25D050 – 080
4 SC31D055 – 065
5 SC31D075 083

(1) Includes coil, 3 port valve and pipework.

(2) To calculate 3 port valve pressure drop:

ΔP valve = $\left(\frac{Q}{M}\right)^2$ where ΔP = Pressure Drop in kPa, Q = Water Flow Rate in l/s and M = $\left(\frac{Kv}{36}\right)$

(3) Fluid 100% water.

***M* Values**

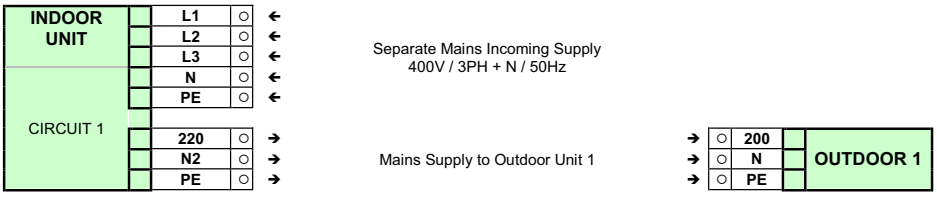
Model Sizes	SC19D33	SC19D038- D045	SC25D45	SC19D064-D075	SC25D050-D055	SC31D55-65	SC31D075 –D083
Chilled Water Valve	1.11	1.11	1.11	1.75	1.75	1.75	1.75

W2F0

Interconnecting Wiring – W2F0

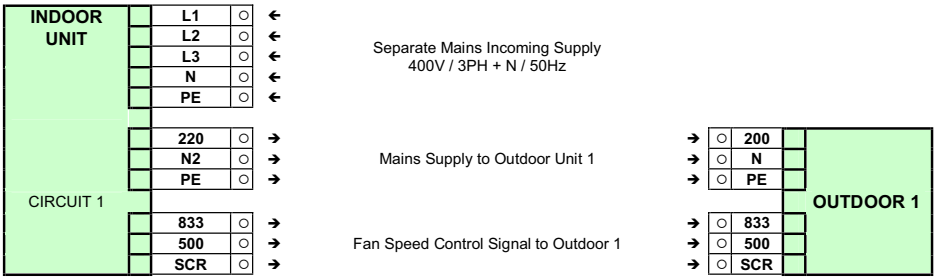
Single Phase AC & SCAF Dry Coolers (FSC Indoor)
(DR10, 15, 25, 35, 40, 55 and 70 AC Models) (DR10, 15, 25 and 35 SCAF Models)

Fan Speed Control Fitted to Indoor Unit (With sub fusing supplied)



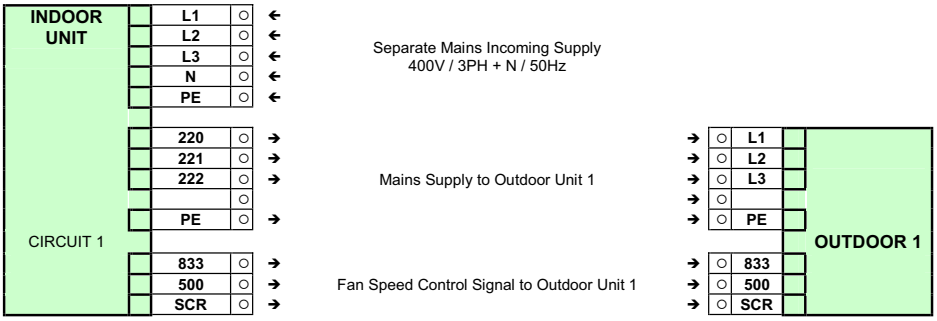
Single Phase EC & SCAF Dry Coolers (FSC Outdoor)
(DR10, 15, 25, 35, 40, 55 and 70 EC Models), (DR40 and 55 SCAF Models)

Fan Speed Control Fitted to Outdoor Unit (With sub fusing supplied)



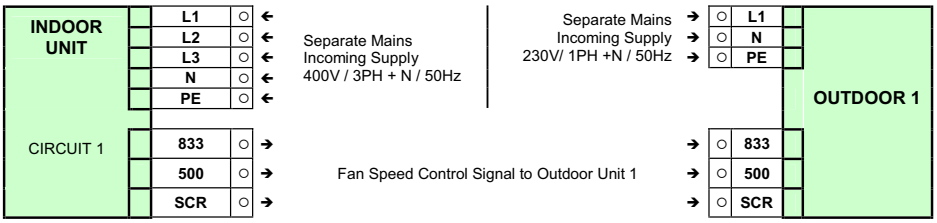
Three Phase AC, EC & SCAF Dry Coolers
(DR12, 20, 30, 45, 50 and 75 and 95 AC /EC models), (DR12, 20, 30, 45, 50, 75 SCAF models)

Fan Speed Control Fitted to Outdoor Unit (With sub fusing supplied)



Non Sub Fused Single Phase SCAF Dry Cooler (DR70)

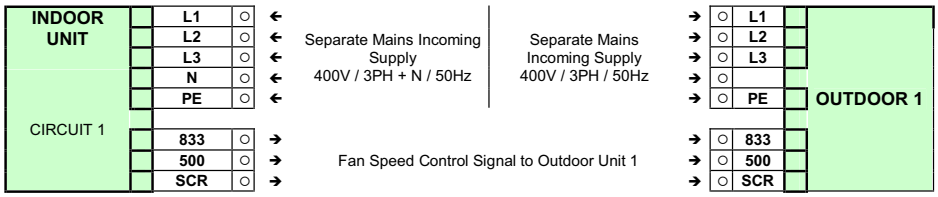
Fan Speed Control Fitted to Outdoor Unit (No sub fusing available)



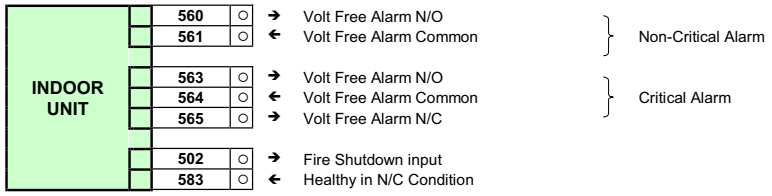
W2F0

Non Sub Fused Three Phase SCAF Dry Cooler (DR95)

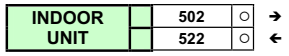
Fan Speed Control Fitted to Outdoor Unit (No sub fusing available)



Indoor Controls Only



Remote On/Off



Run/Standby Network

CABLE INSTALLATION

In line with IEE Wiring Regulations, the following should be observed:

- Extra low voltage control cables (ELV) and mains power cable should be segregated by a minimum distance of 50mm
- If cables must cross, it is recommended that they cross at right angles
- Airedale recommends that ELV cables are screened at one end to earthed enclosures

W2F0

Chilled Water Single Circuit (C000)

Performance Data – Chilled Water – Single Circuit

Cooling Duties

		Water Inlet / Outlet Temperatures									
Model	Air On	5°C / 10°C		7°C / 12°C		8°C / 14°C		10°C / 16°C		5.5°C / 14.5°C	
	Temp (°C)/ %RH	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)
SC19D065-C000-0	22 / 50	78.8	61.3	62.6	53.5	47.5	43.9	37.0	37.0	55.4	49.5
	24 / 45	88.6	69.9	72.5	62.1	60.1	56.4	46.1	46.1	67.8	59.5
	26 / 40	97.4	78.6	81.2	70.8	69.1	65.3	54.7	54.7	78.0	69.0
SC19D075-C000-0	22 / 50	88.9	69.6	70.5	60.7	53.8	50.4	42.0	42.0	62.7	56.4
	24 / 45	100.1	79.4	81.7	70.6	67.5	64.1	52.3	52.3	76.4	67.5
	26 / 40	110.1	89.4	91.6	80.6	77.8	74.2	62.2	62.2	87.9	78.3
SC19D090-C000-0	22 / 50	103.5	81.6	81.7	71.3	62.8	60.0	49.3	49.3	72.9	66.2
	24 / 45	116.7	93.3	94.9	82.9	78.1	75.2	61.2	61.2	88.5	79.2
	26 / 40	128.3	105.1	106.6	94.7	86.9	81.5	72.9	72.9	101.7	91.8
SC25D090-C000-0	22 / 50	111.3	87.5	87.8	76.3	66.4	64.2	51.9	51.9	74.0	70.3
	24 / 45	125.5	100.0	102.1	88.9	80.2	74.7	65.2	65.2	92.0	83.6
	26 / 40	138.2	112.7	114.7	101.5	92.8	86.6	77.9	77.9	107.3	97.6
SC25D100-C000-0	22 / 50	121.6	96.1	95.7	83.7	72.7	71.0	57.1	57.1	81.5	77.4
	24 / 45	137.2	109.8	111.4	97.6	87.9	82.8	71.6	71.6	100.5	91.9
	26 / 40	151.2	123.8	125.3	111.5	101.7	96.0	85.5	85.5	117.1	107.2
SC25D110-C000-0	22 / 50	131.6	104.4	103.4	91.0	78.7	77.7	62.1	62.1	88.6	84.3
	24 / 45	148.7	119.5	120.5	106.2	95.3	90.7	77.8	77.8	108.8	99.9
	26 / 40	163.7	134.7	135.5	121.4	110.4	105.4	93.0	93.0	126.4	116.6
SC31D110-C000-0	22 / 50	127.4	98.5	101.7	86.0	81.8	76.7	60.2	60.2	93.7	81.2
	24 / 45	143.1	112.3	117.4	99.8	98.3	90.9	74.4	74.4	112.5	96.7
	26 / 40	157.0	126.1	131.3	113.7	112.7	105.0	88.2	88.2	128.5	111.7
SC31D130-C000-0	22 / 50	146.8	114.3	116.9	99.8	93.8	88.9	69.8	69.8	107.7	94.2
	24 / 45	165.1	130.3	135.2	115.9	112.8	105.5	86.3	86.3	129.1	112.0
	26 / 40	181.3	146.5	151.3	132.1	129.3	122.0	102.4	102.4	147.4	129.5
SC31D150-C000-0	22 / 50	165.5	129.6	131.5	113.2	101.1	93.9	79.1	79.1	120.9	106.7
	24 / 45	186.3	147.9	152.2	131.6	126.5	119.6	97.8	97.8	144.9	126.8
	26 / 40	204.7	166.4	170.5	150.1	145.2	138.5	116.1	116.1	165.4	146.7

TC = Total Cooling, SC =Sensible Cooling
(1) All data quoted is gross
(2) Deduct fan gain for net duties, refer to ***Mechanical Data***
(3) Water Flow rate (l/s)= TC/(4.19 x ΔT) at 100% Water
(4) Refer to **Waterside pressure Drop (kPa)**

Mechanical Data – C000

			SC19D065-C000-0	SC19D075-C000-0	SC19D090-C000-0
Capacity	(1)				
Nom Cooling (Gross)		kW	72.5	81.7	94.9
Fan Gain	(3)	kW	0.64	0.95	1.7
Dimensions - W x D x H		mm	1985 x 890 x 1980	1985 x 890 x 1980	1985 x 890 x 1980
Weight - Machine / operating		kg	725 / 780	725 / 780	730 / 780
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Cooling Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			1 (Modulated) / 1		
Water volume		l	52.2	52.2	71.5
Water flow rate		l/s	3.32	3.67	4.13
Pressure drop		kPa	34.06	35.99	30.62
Fan & Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 2.2	2 x 2.2	2 x 2.2
Speed @25Pa ESP / Maximum ESP		rpm	950 / 1360	1101/ 1360	1340 / 1360
Maximum ESP		Pa	450	317	49
Nominal Airflow		m³/s	3.7	4.2	5.1
Connections					
Water Inlet / Outlet -		mm	42	42	54
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			3	3	3
OPTIONAL EXTRAS					
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	980 / 1520	1130 / 1520	1364 / 1520
Maximum ESP		Pa	601	490	216
Fan Gain	(3)	kW	0.63	1.0	1.73
Second upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(3)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(2)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	22.7	23.9	26.1
Water Flow (Nominal)		l/s	0.51	0.53	0.58
Pressure drop		kPa	9.4	9.7	10.1
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/ 45% RH water 7°C/ 12°C
(2) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(3) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data - C000 Continued

			SC25D090-C000-0	SC25D100-C000-0	SC25D110-C000-0
Capacity	(1)				
Nom Cooling (Gross)		kW	102.1	111.4	120.5
Fan Gain	(3)	kW	2.24	2.65	3.01
Dimensions - W x D x H		mm	2549 x 890 x 1980	2549 x 890 x 1980	2549 x 890 x 1980
Weight - Machine / operating		kg	840 / 920	840 / 920	840 / 920
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Cooling Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum stages			1 (Modulated) / 1		
Water volume		l	71.5	71.5	85.9
Water flow rate		l/s	4.34	4.61	4.86
Pressure drop		kPa	18.02	18.79	19.54
Fan & Motor			Centrifugal direct drive		
Motor Type			AC	AC	AC
Quantity x Motor Size		kW	3 x 2.38	3 x 2.38	3 x 2.38
Speed @25Pa ESP Maximum ESP		rpm	1092 / 1364	1220 / 1364	1364 / 1364
Maximum ESP		Pa	328	188	20
Nominal Airflow		m³/s	5.3	5.9	6.5
Connections					
Water Inlet / Outlet -		mm	54	54	54
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Electric Heating (Total)		kW	31.5		31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10	10	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor			Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Speed @ 25Pa / Maximum ESP		rpm	1074 / 1360	1200 / 1360	1337 / 1360
Maximum ESP		Pa	314	188	45
Fan Gain	(3)	kW	1.4	1.92	2.6
Second upgrade Fan Motor - EC Motor			Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	1095 / 1520	1225 / 1520	1354 / 1520
Maximum ESP		Pa	464	337	195
Fan Gain	(3)	kW	1.4	1.92	2.6
Low Pressure Hot Water	(2)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	32.7	34.2	36.6
Water Flow (Nominal)		l/s		0.76	0.73
Pressure drop		kPa		21.0	20.2
LPHW Connection Sizes		mm		22	22

(1) Entering air 24°C/ 45% RH water 7°C/ 12°C
(2) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(3) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data - C000 Continued

			SC31D110-C000-0	SC31D130-C000-0	SC31D150-C000-0
Capacity	(1)				
Nom Cooling (Gross)		kW	117.4	135.2	152.2
Fan Gain	(3)	kW	1.25	2.06	3.22
Dimensions - W x D x H		mm	3113 x 890 x 1980	3113 x 890 x 1980	3113 x 890 x 1980
Weight - Machine		kg	1000 / 1080	1000 / 1080	1000 / 1080
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Cooling Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			1 (Modulated) / 1		
Water volume		l	85.9	85.9	85.9
Water flow		l/s	4.81	5.33	5.77
Pressure drop		kPa	21.2	22.88	24.46
Fan & Motor			Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @25Pa / Maximum ESP		RPM	1061 / 1520	1261 / 1520	1479 / 1520
Maximum ESP		Pa	528	330	77
Nominal Airflow		m³/s	5.8	6.9	7.9
Connections					
Water Inlet / Outlet		mm	54	54	54
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10	10	10
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(3)	kW	N/A	N/A	N/A
Second upgrade Fan Motor - EC Motor					
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(3)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(2)				
Capacity Gross		kW	39.8	42.7	45.2
Water Flow (Nominal)		l/s	0.88	0.95	1.01
Pressure drop		kPa	35.9	37.4	38.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/ 45% RH water 7°C/ 12°C
(2) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(3) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Electrical Data - C000

			SC19D065-C000-0	SC19D075-C000-0	SC19D090-C000-0
Unit Data Full Function C000	(1)				
Nominal Run Amps		A	69.3	69.3	69.3
Maximum Start Amps		A	69.3	69.3	69.3
Recommended Mains Fuse Size		A	80	80	80
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only C000					
Nominal Run Amps		A	7.6	7.6	7.6
Maximum Start Amps		A	7.6	7.6	7.6
Recommended Main Fuse Size		A	10	10	10
Evaporator Fan - Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	2 x 2.2	2 x 2.2	2 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.5	45.5	45.5
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade EC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Second upgrade EC Motor - Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A

(1) Values given for function units with standard selections for heating, humidification, supply air fans.
(2) Stated motor power is based on maximum electrical power absorbed

			SC25D090-C000-0	SC25D100-C000-0	SC25D110-C000-0
Unit Data Full Function C000	(1)				
Nominal Run Amps		A	77.7	77.7	77.7
Maximum Start Amps		A	115.2	115.2	115.2
Recommended Mains Fuse Size		A	100	100	100
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only C000					
Nominal Run Amps		A	16	16	16
Maximum Start Amps		A	53.5	53.5	53.5
Recommended Main Fuse Size		A	32	32	32
Evaporator Fan - Motor - Per Fan					
Motor Type			AC	AC	AC
Quantity x Motor Size	(2)	kW	3 x 2.38	3 x 2.38	3 x 2.38
Full Load Amps		A	5	5	5
Locked Rotor Amps		A	17.5	17.5	17.5
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.47	45.47	45.47
Humidifier					
Capacity		Kg	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8

(1) Values given for function units with standard selections for heating, humidification, supply air fans.
(2) Stated motor power is based on maximum electrical power absorbed

Electrical Data - C000 Continued

			SC31D110-C000-0	SC31D130-C000-0	SC31D150-C000-0
Unit Data Full Function C000	(1)				
Nominal Run Amps		A	77.1	77.1	77.1
Maximum Start Amps		A	77.1	77.1	77.1
Recommended Mains Fuse Size		A	100	100	100
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only– C000					
Nominal Run Amps		A	15.4	15.4	15.4
Maximum Start Amps		A	15.4	15.4	15.4
Recommended Mains Fuse Size		A	25	25	25
Evaporator Fan - Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.5	45.5	45.5
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A

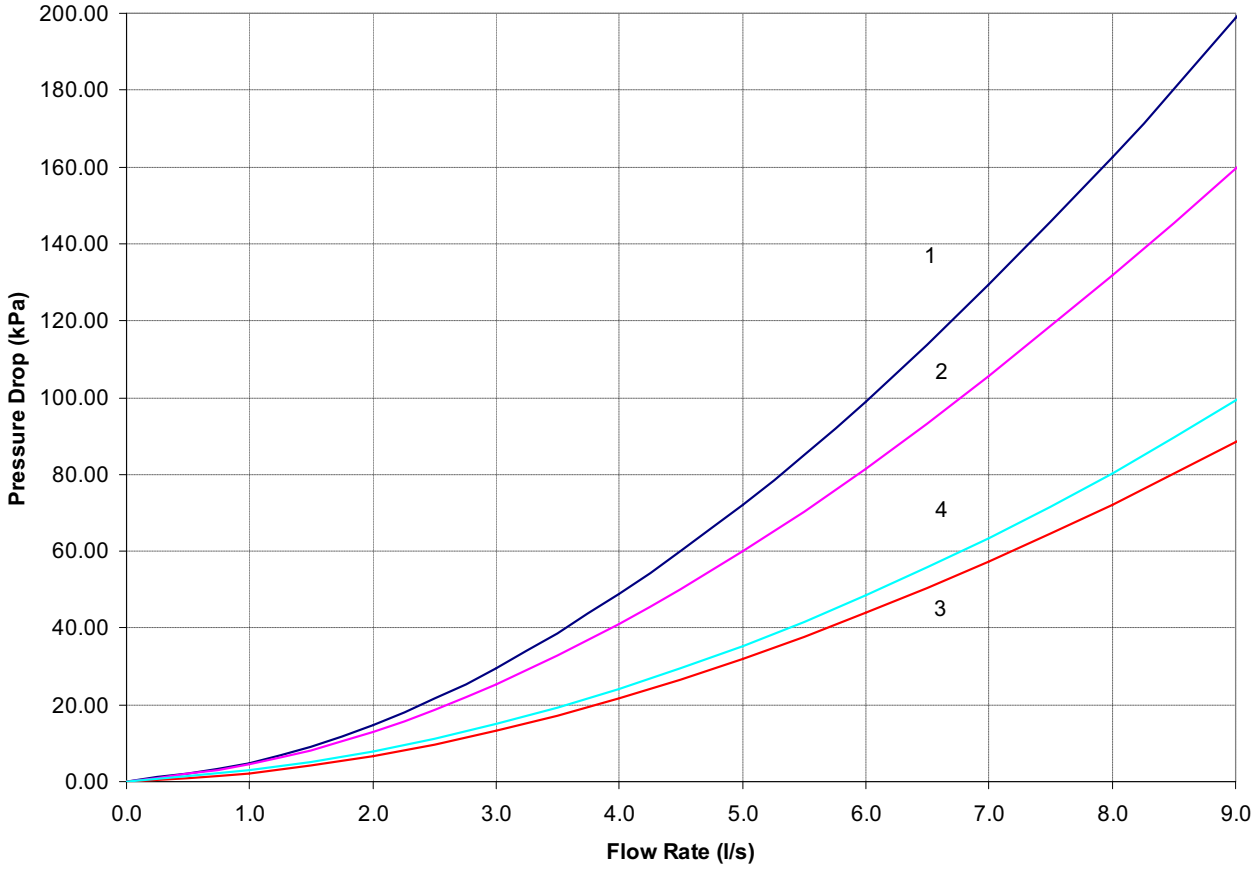
(1) Values given for function units with standard selections for heating, humidification, supply air fans.

Sound Data – C000

Sound Measurement		Overall dB(A)	Frequency (Hz)dB 63	125	250	500	1000	2000	4000	8000
SC19D065-C000-0	Discharge Air	70	81	81	72	63	63	57	49	40
	Return Air	70	68	75	70	66	65	63	57	50
	Case Breakout	49	65	59	50	43	41	37	32	32
	Sound Pressure @ 3m	43	59	53	44	37	35	31	26	26
SC19D075-C000-0	Discharge Air	73	84	84	76	67	67	62	54	46
	Return Air	74	70	79	74	70	69	67	62	55
	Case Breakout	52	68	63	54	47	45	41	34	33
	Sound Pressure @ 3m	46	62	57	48	41	39	35	28	27
SC19D090-C000-0	Discharge Air	78	88	87	81	72	72	67	60	52
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	57	71	68	59	51	49	46	39	35
	Sound Pressure @ 3m	51	65	62	53	45	43	40	33	29
SC25D090-C000-0	Discharge Air	79	89	88	82	73	73	69	62	53
	Return Air	81	75	84	82	76	75	74	69	62
	Case Breakout	58	71	69	61	52	50	48	40	36
	Sound Pressure @ 3m	52	65	63	55	46	44	42	34	30
SC25D100-C000-0	Discharge Air	81	92	90	84	76	76	71	64	56
	Return Air	83	77	87	84	79	77	76	71	65
	Case Breakout	61	72	72	63	54	52	50	42	38
	Sound Pressure @ 3m	55	66	66	57	48	46	44	36	32
SC25D110-C000-0	Discharge Air	83	94	92	86	78	78	73	66	58
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	73	74	65	57	54	52	45	40
	Sound Pressure @ 3m	57	67	68	59	51	48	46	39	34
SC31D110-C000-0	Discharge Air	81	92	90	84	75	75	71	64	55
	Return Air	83	77	87	84	78	77	76	71	64
	Case Breakout	60	72	71	63	54	52	50	42	38
	Sound Pressure @ 3m	54	66	65	57	48	46	44	36	32
SC31D130-C000-0	Discharge Air	84	95	93	87	79	79	74	68	59
	Return Air	86	80	90	87	82	80	79	74	68
	Case Breakout	64	74	75	66	58	55	53	46	41
	Sound Pressure @ 3m	58	68	69	60	52	49	47	40	35
SC31D150-C000-0	Discharge Air	87	98	96	89	82	81	77	70	62
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	66	76	78	69	60	58	56	49	44
	Sound Pressure @ 3m	60	70	72	63	54	52	50	43	38

(1) dB(A) is the overall sound level, measured on the A scale
(2) All sound data measured at nominal conditions, Discharge Air, Return air and case breakout is sound power.

Waterside Pressure Drop C000



1 SC19D065 – 075 2 SC19D090 3 SC25D090 – 110 4 SC31D110 - 150

(1) Includes coil, 3 port valve and pipework.
(2) To calculate 3 port valve pressure drop:

ΔP valve = $\left(\frac{Q}{M}\right)^2$ where ΔP = Pressure Drop in kPa, Q = Water Flow Rate in l/s and M = $\left(\frac{Kv}{36}\right)$

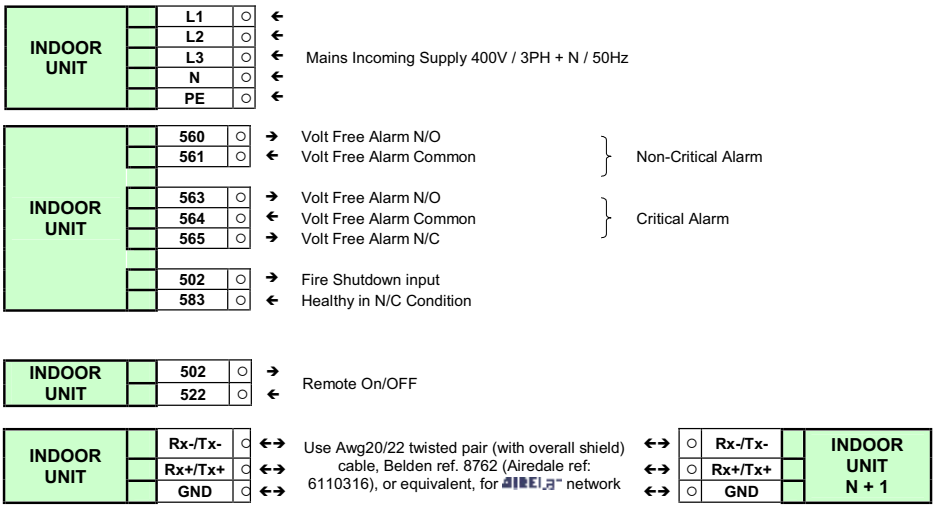
(3) Fluid 100% water.

M Values

Model Sizes	SC19D65-75	SC19D90	SC25D90-110	SC31D110-150
Chilled Water "M" Valve	0.8	1.11	1.11	1.11

C000

Interconnecting Wiring – C000



CABLE INSTALLATION In line with IEE Wiring Regulations, the following should be observed:

- Extra low voltage control cables (ELV) and mains power cable should be segregated by a minimum distance of 50mm
- If cables must cross, it is recommended that they cross at right angles
- Airedale recommends that ELV cables are screened at one end to earthed enclosures

C000

Chilled Water Dual Circuit (C0C0)

Performance Data – Chilled Water – Dual Circuit

Cooling Duties

C0C0		Chilled Water Inlet / Outlet Temperatures									
Model	Air On db °C %RH	*5 / 10°C*		*7 / 12 °C*		*8 / 14 °C*		*10 /16 °C*		*5.5 / 14.5°C*	
		TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)
SC19D033-C0C0-0	22 / 50	53.9	47.6	39.5	39.5	33.6	33.6	26.5	26.5	32.3	32.3
	24 / 45	60.9	54.3	46.5	46.5	40.5	40.5	33.8	33.8	40.5	40.5
	26 / 40	67.0	61.0	52.4	52.4	47.1	47.1	40.5	40.5	47.8	47.8
SC19D038-C0C0-0	22 / 50	59.1	53.3	44.1	44.1	37.6	37.6	29.7	29.7	36.6	36.6
	24 / 45	67.1	60.8	51.4	51.4	45.2	45.2	37.7	37.7	45.4	45.4
	26 / 40	73.8	68.3	58.6	58.6	52.6	52.6	45.3	45.3	53.4	53.4
SC19D045-C0C0-0	22 / 50	65.9	60.9	50.3	50.3	42.7	42.7	33.8	33.8	42.0	42.0
	24 / 45	74.9	69.5	58.6	58.6	51.5	51.5	42.9	42.9	51.8	51.8
	26 / 40	82.4	78.2	66.9	66.9	59.9	59.9	51.6	51.6	60.9	60.9
SC25D045-C0C0-0	22 / 50	80.3	68.7	59.7	57.2	49.8	49.8	40.1	40.1	51.5	51.5
	24 / 45	90.3	78.1	71.2	69.5	59.3	59.3	49.9	49.9	61.7	61.7
	26 / 40	98.8	87.5	78.1	75.4	68.4	68.4	59.2	59.2	73.7	73.7
SC25D050-C0C0-0	22 / 50	86.3	74.7	64.3	63.0	54.1	54.1	43.5	43.5	55.8	55.8
	24 / 45	97.1	84.9	74.8	72.5	64.3	64.3	54.1	54.1	66.8	66.8
	26 / 40	106.3	95.2	84.2	83.2	74.3	74.3	64.2	64.2	77.3	77.3
SC25D055-C0C0-0	22 / 50	92.0	80.5	67.1	67.1	58.1	58.1	46.7	46.7	60.0	60.0
	24 / 45	103.6	91.6	79.8	79.1	69.2	69.2	58.1	58.1	71.9	71.9
	26 / 40	113.4	102.7	89.9	89.9	80.0	80.0	69.1	69.1	83.1	83.1
SC31D055-C0C0-0	22 / 50	89.4	76.6	66.2	63.8	55.2	55.2	44.2	44.2	55.9	55.9
	24 / 45	100.6	87.1	79.1	77.5	65.8	65.8	55.3	55.3	67.7	67.7
	26 / 40	110.3	97.5	86.9	83.9	76.1	76.1	65.8	65.8	78.7	78.7
SC31D065-C0C0-0	22 / 50	100.3	87.5	72.9	72.9	62.9	62.9	50.3	50.3	63.9	63.9
	24 / 45	113.1	99.6	87.0	85.6	75.0	75.0	62.9	62.9	77.2	77.2
	26 / 40	124.1	111.7	98.2	98.2	86.9	86.9	75.0	75.0	89.8	89.8
SC31D075-C0C0-0	22 / 50	110.4	97.9	81.5	81.5	70.1	70.1	56.1	56.1	71.4	71.4
	24 / 45	124.6	111.5	94.6	94.6	83.8	83.8	70.2	70.2	86.2	86.2
	26 / 40	136.7	125.1	107.5	107.5	97.1	97.1	83.8	83.8	100.2	100.2

TC = Total Cooling, SC =sensible cooling,
(1) All data quoted is gross
(2) Deduct fan gain for net duties, refer to ***Mechanical Data***
(3) Water Flow rate (l/s)= TC/(4.19 x ΔT) at 100% Water
(4) Refer to **Waterside pressure Drop (kPa)** on page

Mechanical Data – C0C0

			SC19D033-C0C0-0	SC19D038-C0C0-0	SC19D045-C0C0-0
Capacity	(1)				
Nom Cooling (Gross)		kW	46.5	51.4	58.6
Fan Gain	(3)	kW	0.66	1.0	1.7
Dimensions - W x D x H		mm	1985 x 890 x 1980	1985 x 890 x 1980	1985 x 890 x 1980
Weight - Machine / Operating		kg	730 / 790	730 / 790	730 / 790
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Cooling Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			1 (Modulated) / 1		
Water volume		l	54.5	54.5	54.5
Water flow rate		l/s	2.67	2.85	3.16
Pressure drop		kPa	34.83	35.63	37.12
Fan & Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	2 x 2.3	2 x 2.3	2 x 2.3
Speed @25Pa ESP/maximum ESP		rpm	964 / 1360	1117 / 1360	1340 / 1360
Maximum ESP		Pa	438	302	49
Nominal Airflow		m³/s	3.7	4.3	5.1
Connections					
Water Inlet / Outlet		mm	35	35	35
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4-600**		
Quantity			3	3	3
OPTIONAL EXTRAS					
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			3/4" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	986 / 1520	1145 / 1520	1364 / 1520
Maximum ESP		Pa	589	453	216
Fan Gain	(3)	kW	0.65	1.03	1.73
Second upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain	(3)	kW	N/A	N/A	N/A
Low Pressure Hot Water	(2)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	22.7	23.9	26.1
Water Flow (Nominal)		l/s	0.51	0.53	0.58
Pressure drop		kPa	9.4	9.7	10.1
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/ 45% RH water 7°C/ 12°C
(2) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(3) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data - C0C0 Continued

			SC25D045-C0C0-0	SC25D050-C0C0-0	SC25D055-C0C0-0
Capacity	(1)				
Nom Cooling (Gross)		kW	71.2	74.8	79.8
Fan Gain	(3)	kW	2.24	2.65	3.01
Dimensions - W x D x H		mm	2549 x 890 x 1980	2549 x 890 x 1980	2549x 890 x 1980
Weight - Machine / Operating		kg	850 / 930	850 / 930	850 / 930
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame: Anodised Aluminium Frame with Black Nylon Corners		
Cooling Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			1 (Modulated) / 1		
Water volume		L	73.4	73.4	73.4
Water flow		l/s	3.60	3.79	4.04
Pressure drop		kPa	45.92	47.00	48.54
Fan & Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	3 x 2.38	3 x 2.38	3 x 2.38
Speed @25Pa ESP/maximum ESP		rpm	1092 / 1360	1220 / 1360	1364 / 1364
Maximum ESP		Pa	328	188	20
Nominal Airflow		m³/s	5.3	5.9	6.5
Connections					
Water Inlet / Outlet		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4-600**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			¾" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10.8	10.8	10.8
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
First upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 2.3	3 x 2.3	3 x 2.3
Speed @ 25Pa / Maximum ESP		rpm	1074 / 1360	1200 / 1360	1337 / 1360
Maximum ESP		Pa	314	188	45
Fan Gain	(3)	kW	1.4	1.92	2.6
Second upgrade Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @ 25Pa / Maximum ESP		rpm	1095 / 1520	1225 / 1520	1354 / 1520
Maximum ESP		Pa	464	337	195
Fan Gain	(3)	kW	1.4	1.92	2.6
Low Pressure Hot Water	(2)		Copper Tube/Aluminium Fin		
Capacity Gross		kW	32.7	34.2	36.6
Water Flow (Nominal)		l/s	0.73	0.76	0.76
Pressure drop		kPa	20.2	21.0	21.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/ 45% RH water 7°C/ 12°C
(2) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(3) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Mechanical Data - C0C0 Continued

			SC31D055-C0C0-0	SC31D065-C0C0-0	SC31D075-C0C0-0
Capacity	(1)				
Nom Cooling (Gross)		kW	79.1	87.0	94.6
Fan Gain		kW	1.25	2.06	3.22
Dimensions - H x D x W		mm	3113 x 890 x 1980	3113 x 890 x 1980	3113 x 890 x 1980
Weight - Machine / Operating		kg	1010 / 1100	1010 / 1100	1010 / 1100
Construction			Panels: Galvanised Sheet Steel, Epoxy Baked Powder Paint - Black Grey (RAL 7021)		
Material/Colour			Frame:Anodised Aluminium Frame with Black Nylon Corners		
Cooling Coil			Copper Tube/Turbulated Hydrophilic Coated Aluminium Fins		
Cooling/Dehum Stages			1 (Modulated) / 1		
Water volume		L	87.9	87.9	87.9
Water flow rate		l/s	3.79	4.27	4.71
Pressure drop		kPa	33.13	36.25	39.40
Fan & Motor			Backwards Curved, Centrifugal direct drive		
Motor Type			EC	EC	EC
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Speed @25Pa ESP/ Maximum ESP		Rpm	1061 / 1520	1261 / 1520	1479 / 1520
Maximum ESP		Pa	528	330	77
Nominal Airflow		m³/s	5.8	6.9	7.9
Connections					
Water Inlet / Outlet		mm	42	42	42
Condensate Drain Hose		mm	22	22	22
Filtration			**Disposable to BS EN 779-G4-741**		
Quantity			4	4	4
OPTIONAL EXTRAS					
Electric Heating (Total)		kW	31.5	31.5	31.5
Humidifier					
Capacity		kg/hr	15	15	15
Feed/Drain			¾" BSPF Braided flexible hose / 19mm hose connection		
Condensate Pump					
Head		m	10	10	10
Flow		l/m	5	5	5
Drain			10mm Stainless Steel Stub Connection		
Standard Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain		kW	N/A	N/A	N/A
Larger Fan Motor - EC Motor			Backwards Curved, Centrifugal direct drive		
Quantity x Motor Size		kW	N/A	N/A	N/A
Speed @ 25Pa / Maximum ESP		rpm	N/A	N/A	N/A
Maximum ESP		Pa	N/A	N/A	N/A
Fan Gain		kW	N/A	N/A	N/A
Low Pressure Hot Water	(2)				
Capacity Gross		kW	39.8	42.7	45.2
Water Flow (Nominal)		l/s	0.81	0.88	0.95
Pressure drop		Kpa	35.9	37.4	38.8
LPHW Connection Sizes		mm	22	22	22

(1) Entering air 24°C/ 45% RH water 7°C/ 12°C
(2) Based upon low pressure hot water 82°C inlet/71°C outlet. Air on 20°C
(3) Fan gain based on 25Pa ESP @ nominal air volume. Fan gain figure will change as airflow and ESP change.

Electrical Data - C0C0

			SC19D033-C0C0-0	SC19D038-C0C0-0	SC19D045-C0C0-0
Unit Data Full Function C0C0	(1)				
Nominal Run Amps		A	69.3	69.3	69.3
Maximum Start Amps		A	69.3	69.3	69.3
Recommended Mains Fuse Size		A	80	80	80
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only C0C0					
Nominal Run Amps		A	7.6	7.6	7.6
Maximum Start Amps		A	7.6	7.6	7.6
Recommended Mains Fuse Size		A	10	10	10
Evaporator Fan - Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	2 x 2.2	2 x 2.2	2 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.47	45.47	45.47
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade EC Motor - Per Fan					
Quantity x Motor Size		kW	2 x 3.1	2 x 3.1	2 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
Second upgrade EC Motor - Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A

(1) Values given for function units with standard selections for heating, humidification, supply air fans.
(2) Stated motor power is based on maximum electrical power absorbed

			SC25D045-C0C0-0	SC25D50-C0C0-0	SC25D55-C0C0-0
Unit Data Full Function – C0C0	(1)				
Nominal Run Amps		A	77.7	77.7	77.7
Maximum Start Amps		A	115.2	115.2	115.2
Recommended Mains Fuse Size		A	100	100	100
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only C0C0					
Nominal Run Amps		A	16.00	16.00	16.00
Maximum Start Amps		A	53.5	53.5	53.5
Recommended Mains Fuse Size		A	25	25	25
Evaporator Fan - Motor - Per Fan					
Motor Type			AC	AC	AC
Quantity x Motor Size	(2)	kW	3 x 2.38	3 x 2.38	3 x 2.38
Full Load Amps		A	5	5	5
Locked Rotor Amps		A	17.5	17.5	17.5
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.	45.5	45.5
Humidifier					
Capacity		Kg/hr	15	15	15
Rating		A	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan				Backwards Curved, Centrifugal direct drive	
Quantity x Motor Size		kW	3 x 2.2	3 x 2.2	3 x 2.2
Full Load Amps		A	3.3	3.3	3.3
Locked Rotor Amps		A	3.3	3.3	3.3
Second upgrade Motor - EC Motor - Per Fan				Backwards Curved, Centrifugal direct drive	
Quantity x Motor Size		kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8

(1) Values given for function units with standard selections for heating, humidification, supply air fans.
(2) Stated motor power is based on maximum electrical power absorbed

Electrical Data - C0C0 Continued

			SC31D55-C0C0-0	SC31D65-C0C0-0	SC31D75-C0C0-0
Unit Data Full function – C0C0	(1)				
Nominal Run Amps		A	77.1	77.1	77.1
Maximum Start Amps		A	77.1	77.1	77.1
Recommended Mains Fuse Size		A	100	100	100
Max Mains Incoming Cable Size		mm²	35	35	35
Mains Supply		V		400V / 3PH + N / 50Hz	
Control circuit		VAC	24	24	24
Unit Data Cooling Only – C0C0					
Nominal Run Amps		A	15.4	15.4	15.4
Maximum Start Amps		A	15.4	15.4	15.4
Recommended Mains Fuse Size		A	25	25	25
Evaporator Fan - Motor - Per Fan					
Motor Type			EC	EC	EC
Quantity x Motor Size	(2)	kW	3 x 3.1	3 x 3.1	3 x 3.1
Full Load Amps		A	4.8	4.8	4.8
Locked Rotor Amps		A	4.8	4.8	4.8
OPTIONAL EXTRAS					
Electric Heating					
Stage of Reheat			3	3	3
Number of Elements			9	9	9
Rating (Total)		kW	31.5	31.5	31.5
Current Per Phase		A	45.5	45.5	45.5
Humidifier					
Capacity		kg/hr	15	15	15
Rating		kW	11.25	11.25	11.25
Full Load Amps		A	16.2	16.2	16.2
First upgrade Fan Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A
Second upgrade Motor - EC Motor - Per Fan					
Quantity x Motor Size		kW	N/A	N/A	N/A
Full Load Amps		A	N/A	N/A	N/A
Locked Rotor Amps		A	N/A	N/A	N/A

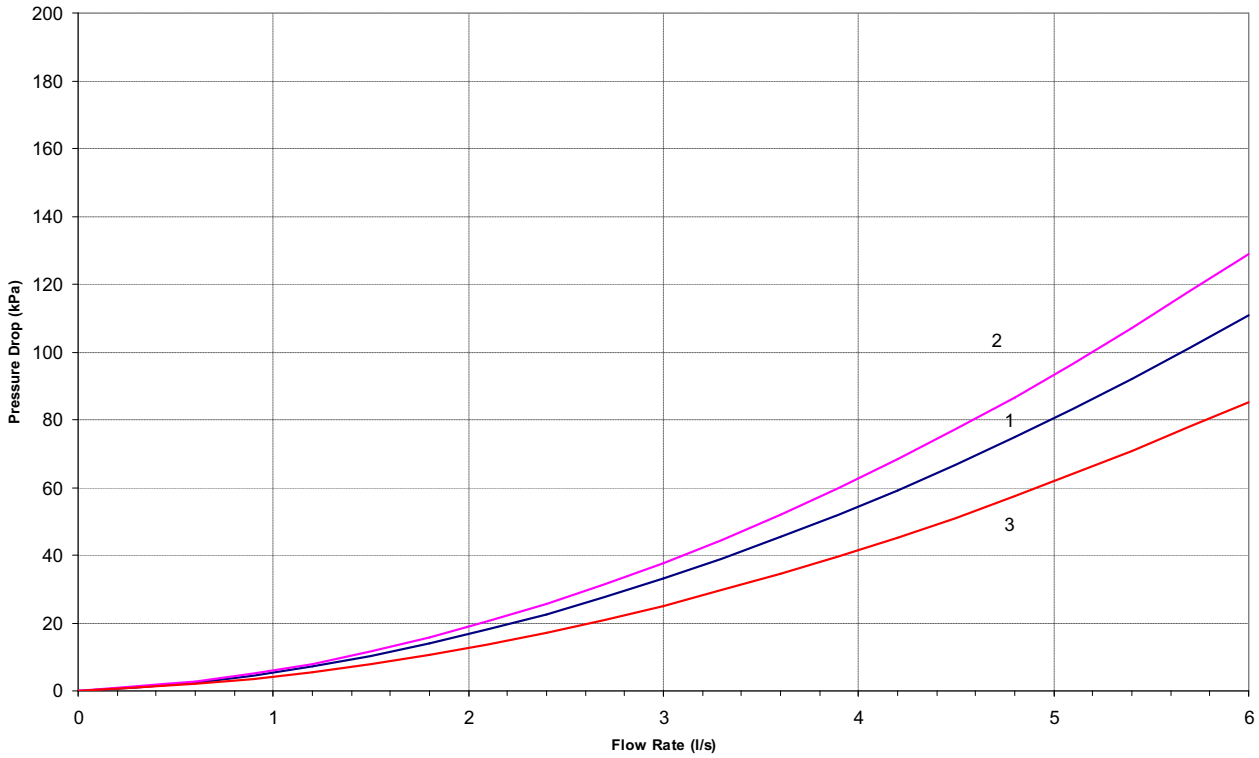
(1) Values given for function units with standard selections for heating, humidification, supply air fans.
(2) Stated motor power is based on maximum electrical power absorbed

Sound Data- C0C0

	Sound Measurement	Overall dB(A)	Frequency (Hz)dB							
			63	125	250	500	1000	2000	4000	8000
SC19D033-C0C0-0	Discharge Air	70	81	82	73	63	63	57	49	41
	Return Air	71	68	75	70	67	65	63	57	51
	Case Breakout	49	66	59	51	44	41	38	32	32
	Sound Pressure @ 3m	43	60	53	45	37	35	32	26	26
SC19D038-C0C0-0	Discharge Air	74	84	84	76	68	67	62	55	46
	Return Air	75	70	79	75	71	69	68	62	56
	Case Breakout	53	68	63	55	47	45	42	35	33
	Sound Pressure @ 3m	47	62	57	49	41	39	36	29	27
SC19D033-C0C0-0	Discharge Air	78	88	87	81	72	72	67	60	52
	Return Air	80	74	83	80	75	74	73	67	61
	Case Breakout	57	71	68	59	51	49	46	39	35
	Sound Pressure @ 3m	51	65	62	53	45	43	40	33	29
SC25D045-C0C0-0	Discharge Air	79	89	88	82	73	73	69	62	53
	Return Air	81	75	84	82	76	75	74	69	62
	Case Breakout	58	71	69	61	52	50	48	40	36
	Sound Pressure @ 3m	52	65	63	55	46	44	42	34	30
SC25D050-C0C0-0	Discharge Air	81	92	90	84	76	76	71	64	56
	Return Air	83	77	87	84	79	77	76	71	65
	Case Breakout	61	72	72	63	54	52	50	42	38
	Sound Pressure @ 3m	55	66	66	57	48	46	44	36	32
SC25D055-C0C0-0	Discharge Air	83	94	92	86	78	78	73	66	58
	Return Air	85	79	89	86	81	79	78	73	67
	Case Breakout	63	73	74	65	57	54	52	45	40
	Sound Pressure @ 3m	57	67	68	59	51	48	46	39	34
SC31D055-C0C0-0	Discharge Air	81	92	90	84	75	75	71	64	55
	Return Air	83	77	87	84	78	77	76	71	64
	Case Breakout	60	72	71	63	54	52	50	42	38
	Sound Pressure @ 3m	54	66	65	57	48	46	44	36	32
SC31D065-C0C0-0	Discharge Air	84	95	93	87	79	79	74	68	59
	Return Air	86	80	90	87	82	80	79	74	68
	Case Breakout	64	74	75	66	58	55	53	46	41
	Sound Pressure @ 3m	58	68	69	60	52	49	47	40	35
SC31D075-C0C0-0	Discharge Air	87	98	96	89	82	81	77	70	62
	Return Air	89	83	93	90	84	83	82	77	71
	Case Breakout	66	76	78	69	60	58	56	49	44
	Sound Pressure @ 3m	60	70	72	63	54	52	50	43	38

(1) dB(A) is the overall sound level, measured on the A scale
(2) All sound data measured at nominal conditions, Discharge Air, Return air and case breakout is sound power.

Waterside pressure drop - C0C0



Key

1 SC19D033 - 045 2 SC25D045 - 055 3 SC31D055 - 075

(1) Includes coil, 3 port valve and pipework.

(2) To calculate 3 port valve pressure drop:

ΔP valve = $\left(\frac{Q}{M}\right)^2$ where ΔP = Pressure Drop in kPa, Q = Water Flow Rate in l/s and M = $\left(\frac{Kv}{36}\right)$

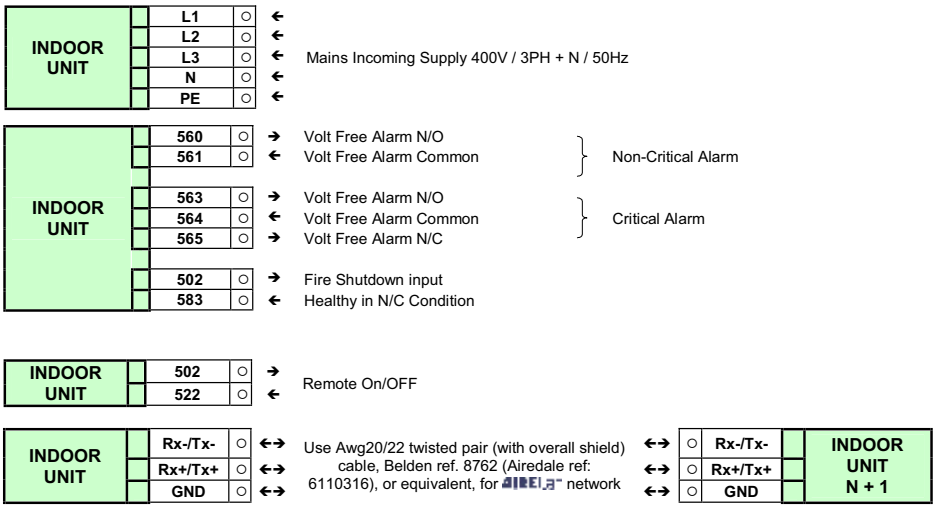
(3) Fluid 100% water.

M Values

Model Sizes	SC19D33-45	SC25D45-55	SC31D55-75
Chilled Water "M" Valves	1.11	0.8	0.8

C0C0

Interconnecting Wiring – C0C0



CABLE INSTALLATION

In line with IEE Wiring Regulations, the following should be observed:

- Extra low voltage control cables (ELV) and mains power cable should be segregated by a minimum distance of 50mm
- If cables must cross, it is recommended that they cross at right angles
- Airedale recommends that ELV cables are screened at one end to earthed enclosures

C0C0

Commissioning Data

Humidifier (Optional Extra)

General Description

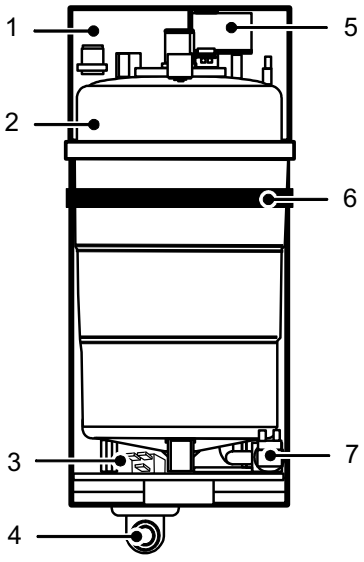
Humidification is provided by an electrode boiler. The sealed humidifier design ensures that only clean sterile steam is supplied to the conditioned area and corrosive salts and minerals are held in the disposable bottle. The steam is distributed through a sparge pipe fitted to the coil assembly.

Featuring modulating capacity output control as standard, the system provides continuous modulation of steam output in response to a proportional control signal. The output control range is 20%-100% of the humidifier rated value and is designed to give an approximate steam output of +/- 3%, thus ensuring precise control of the conditioned space.

The cylinder operating life time is automatically optimised via the integrated water conductivity sensor, which combined with the AIRETronix controls monitors and regulates the water refill cycle to reduce excessive salt deposits and the progressive wear of the cylinder.

All humidifier parameters and alarms are accessible and adjustable via the microprocessor display keypad unit, main features include:

- Supply water conductivity (μS/cm)
- Actual steam output (kg/h)
- Required steam output (kg/h)
- Actual current rating (A)
- Required current rating (A)
- Status mode (Start Up, Running, Filling, Draining)



1 Bearing Frame
2 Cylinder
3 Drain solenoid valve
4 Drain connection
5 Fill tank & conductivity meter
6 Rubber Securing Belt
7 Fill solenoid valve

Humidifier Bottle Reconnection

A) Firmly push the humidifier bottle into place and fasten the rubber belt round waist until secure.

B) Reconnect the sparge pipe, ensuring the Jubilee clips and plastic connection are tight.

Commissioning Data

Humidifier

Initial Start-up

Initially the humidifier cylinder will be empty. The cylinder will then fill with water from the tundish until sufficient current is passed between the electrodes, at which point the feed solenoid valve will close.

During the start up phase, the current will remain low until either;

there is a sufficient concentration of conductive salts built up within the bottle

Or

the immersion level of the electrodes is enough to pass the required current.

As a guide, 1 amp of current passed between the electrodes will generate approximately 1kg/hr of steam.

The desired operating current is reached; the process taking a few minutes or several hours according to the hardness of the water. This time period may take several hours in soft water areas or a matter of minutes in hard water areas. The water conductivity levels (hardness/softness) can be viewed from the AIRE Tronix display keypad.

It is important to have the correct bottle conductivity range selected in the AIRE Tronix controller. Mismatched information may cause the humidifier to malfunction.

		Sizes 6 - 26	Sizes 28 - 31	Sizes 35 - 60
Humidifier Capacity	kg/hr	0.6 - 3.0	1.6 - 8.0	3.0 - 15.0

Normal Operation

Once the start-up period has been completed, the cylinder will operate automatically, ensuring the correct quantity of steam is delivered.

CAUTION **All AIRE Tronix humidifiers provide variable steam production as standard.**

Once this current value is exceeded with a cylinder in normal operation, the drain solenoid energises to allow the high salt content water to drain. During this process the power supply to the bottle is cut.

After this pre-set time the drain solenoid will close and the feed valve will open until the correct water operating level is reached. The water being below its boiling point will then re-heat and continue to produce steam at the correct output.

The humidifier will then operate to the humidifier setpoint.

As the electrodes become scaled the electronic sensing device allows the conductivity (mineral content of the water in the cylinder) to gradually rise keeping the current reasonably static at the desired value.

Once the electrodes become badly corroded or there is sufficient build up of scale, an alarm (bottle change) will be initiated to the microprocessor necessitating a bottle change. When this has been carried out the initial start-up sequence is repeated and normal running resumed.

Commissioning Data

Humidifier (Optional Extra)

Water Conductivity & Cylinder Type

Conductivity is a measure of the ability of water to pass an electric current, measured in micro Siemens / centimetre (μS/cm). 3 different cylinders are available which correspond to the supply water conductivity.

Matching the correct cylinder type with the conductivity of the supply water ensures optimum performance and increases the life span of the cylinder.

1	Low Conductivity	(Soft Water)	100 to 350 μS/cm
2	Standard Conductivity	(Moderate/Hard Water)	350 to 750 μS/cm
3	High Conductivity	(Very Hard Water)	750 to 1250 μS/cm

As standard the humidifier is fitted with the standard conductivity cylinder which covers the majority of water supplies. Where the water conductivity is known, this should be specified at the time of order.

Humidifier Pre Start Checks

1 Ensure a water supply is available to the humidifier at the correct pressure and quality.

IMPORTANT **2 Ensure security and tightness of connections.**

3 Ensure the drain line is connected and that water flows away freely. This can be carried out by first checking free draining from the tundish, prior to filling then draining the cylinder.

4 Ensure that the steam distribution pipe is connected securely at both the distribution and cylinder ends and is not kinked or damaged.

Commissioning

1 Open the (customer supplied) water supply valve adjacent to the unit.

2 With the bottle in operation and the feed solenoid valve (Yellow) activated, ensure the water is feeding via the tundish to the humidifier. Watch the initial start-up procedure commence. Fit clamp on ammeter onto 1 of the wires feeding the electrodes and observe the current.

3 The current can also be viewed through the microprocessor display keypad. Compare the clamp on ammeter with the display reading to ensure they concur (0.5 amp tolerance).

4 The steam output can be reduced by changing the output demand through the microprocessor display menu.

IMPORTANT **5 Record humidifier bottle type, supply water conductivity and supply water pressure on the commissioning sheet provided.**

Condensate Pump Priming

Prior to unit start up the condensate pump reservoir should be slowly filled with clean tap water, until the pump activates. Keep filling the pump and check that the discharge is properly pumping through. This will prime the system for normal operation.

Commissioning Data

Electronic Expansion Valves (EEV) (Optional extra)

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 keypad.

Low Noise Feature for Condenser Fan (Optional Extra) (X Models)

Specifically designed for night time operation as optimum low noise levels are achieved with reduced ambient temperature and room loads, this feature is also ideal for residential and other outdoor noise critical applications.

Initiated by setting the microprocessor programmable time clock (optional), the head pressure set point changes from the standard 26 barg (377 psig) (TEV) or 22 barg (319 psig) (optional EEV) to 34 barg (493 psig), reducing the outdoor unit fan speed and corresponding operating sound levels.

Head Pressure Control

Head Pressure Control - Intelligent Modulation (X Models)

The system is fitted with a voltage regulating fan speed controller which allows set point adjustment and system monitoring via the indoor unit AIRETronix 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.

Head Pressure Control (WX Models)

The head pressure is controlled by a combination of 3 way regulating valve and dry cooler fan speed over two varying stages of control.

The 3 way valve operates at the first stage of head pressure control; allowing water to flow to the condenser, bypass or both, to maintain correct refrigerant head pressure.

As the pressure increases the 3 way valve opens further rejecting the heat from the condenser to the dry cooler.
The valve reaches the maximum position for stage one of head pressure control at which point the Dry cooler fan speeds up to assist in heat rejection by means of further free cooling from the ambient temperature.

The 3 way valve then continues to open fully with the control based upon the dry cooler fan speed.

The dry cooler fan controls the available cooling potential based upon head pressure rather than the conventional method of water temperature. This makes the dry cooler capable of varying heat rejection capacities.

A pressure transducer is fitted to the liquid line which enables the head pressure to be monitored via the display keypad.

Dry coolers do not have any legionnaires risk as they are dry systems unlike cooling towers.

Factory Setting

Units fitted with thermostatic expansion valves (TEV) have the head pressure factory set to 26 barg (377 psig).

Units fitted with optional electronic expansion valves (EEV) have the head pressure factory set to 22 barg (319 psig).

Commissioning Data

Electronically Commutated (EC) Fan Motor

Backward curved impellers, direct drive centrifugal fan assemblies with integral rotor mounted motor which is statically and dynamically balanced for quiet operation.

Designed for high corrosion resistance, the impellers are laser welded aluminium with a galvanised rotor and die cast aluminium EC power module.

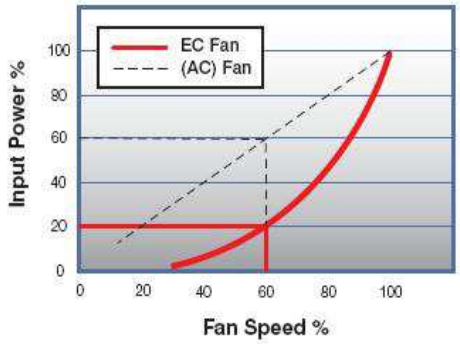
EC motors incorporate integrated electronics to convert AC power to DC for efficient and accurate speed control and are adjustable via the microprocessor display keypad.

The fans offer maximum airflow performance while keeping sound levels to a minimum.

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 offers significant power reduction in comparison with 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 fans modulating range is typically 40-100% of full fan speed.

The EC fan presents superior energy efficiency at full and reduced fan speed compared to the equivalent AC fan motor.

Standard Voltage Regulated fan speed controllers offer a linear response. By comparison the EC fan is adjusted on demand via the unit microprocessor with precision, offering substantial energy savings. The following illustration shows a comparison of the typical power input required by each method



EC Fan interrogation

The EC fans can be interrogated by connecting a hardware interface kit to the fan and PC. The kit comprises of a USB to RS232 9-pin “D-type” adapter. This should be installed on the PC with the software supplied with the kit. The “COM” port of the USB to RS232 adapter should be assigned to a free COM port between COM 1 and COM 4 via the system device manager.

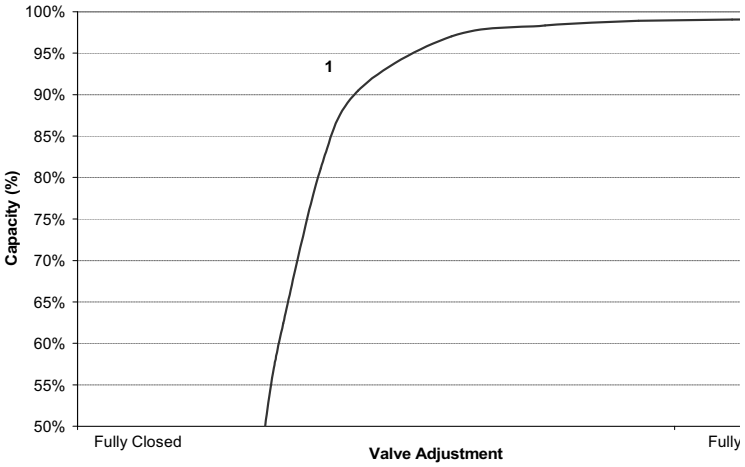
Connect the RS232 to RS485 interface converter to the USB port of your PC via the USB to RS232 serial interface lead and connect the RS485 output to the Fan.

Tx += RS A
Tx - = RS B
The switch on the RS232 to RS485 should be set to RS485.

Commissioning Data

Suction Throttle Valve
(X2X2, X2C0 W2W2, W2C0 & W2F0 Models)

An electrically operated suction throttle valve can be fitted to provide accurate capacity control from 50% to 100% depending on the room load. Precise temperature control is obtained as a result of modulating the refrigerant flow in the evaporator by throttling the valve on the suction line.



1 Capacity @ 24°C / 45% RH return air conditions

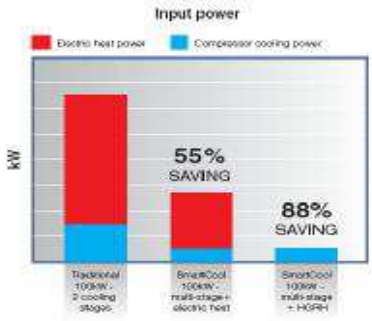
The suction throttle valve in essence reduces the flow of refrigerant back to the compressor. Reducing the cooling effect of the system. With this reduced quantity of refrigerant returning to the compressor the superheat is increased causing the discharge temperature to also increase. The discharge temperature must be monitored to ensure that the compressor does not get too hot (reduced cooling from the suction gas). Also with the reduced flow of refrigerant the oil level returned to the compressor has to be monitored very closely. Low level of oil in a system can cause compressor failure.

Hot Gas Re-Heat (HGRH)
(DX Models fitted with Humidification)

During dehumidification, the hot gas re-heat coil re-heats the cooled air from the evaporator coil using hot gas from the discharge line to maintain the room setpoint. Normally reheating of the air during dehumidification is performed by electric heating which requires additional power input. By utilising the available hot gas, the HGRH option does not require additional power input and is therefore far more energy efficient than electric heating.

Only the lowest stage of compressor operation is required for de-humidification in the smartcool. This further reduces power consumption.

Energy Input Comparison during de-humidification
HGRH vs. Electric Heating



Commissioning procedure

General To be read in conjunction with the commissioning sheets provided.

CAUTION **Please ensure all documents have been completed correctly and return to Airedale Technical Support immediately to validate warranty.**

Commissioning Checklist

CAUTION **ALL work MUST be carried out by technically trained competent personnel.**

The equipment contains live electrical and moving parts, ISOLATE prior to maintenance or repair work.

Pre Commissioning checks

Pressure test Ensure that the system has been pressure tested for pipework soundness and leaks. This not only ensures a correctly operating system but also reduces potential leaks in the future.

Triple evacuation A good evacuated system will reduce the potential of breakdown. Any moisture within refrigeration systems can affect the oil within the unit, causing acid to form.

If the triple evacuation is proving to be difficult, where the evacuation levels keep changing try changing the liquid line filter drier. Filter driers can trap and then release moisture back into the system.

Don't forget to check pipework integrity with a pressure test.

Electrical Connections Prior to turning on the power supply to the unit ensure that all electrical connections are tight and correctly terminated.

Solenoid Valve Heads Ensure that any solenoid valve heads are re-attached if removed for evacuation purposes. Failure to do so could cause the coils to burn out.

External Fuses/ MCB's Check that the correct electrical supply rating is available to the unit.

Electrical Continuity Before electrical power is applied to the unit, Electrical continuity must be carried out on the 3 phase power.

Phase Rotation Check that the phase rotation is correct. Components in the unit will malfunction with incorrect phase rotation. Check with a phase rotation meter.

Electrical Earthing Check that the earth is correctly bonded.

Remote ON / OFF To ensure that the unit does not start doing the pre-commissioning checks the remote on/off should be in the OFF state.

Voltage Measure the voltage at the following points and record on the commissioning sheet

- Voltage at main incoming
- Dedicated power supply
- Voltage at permanent supply
- Control voltage at transformer (min 22.5V, max 25V)

Commissioning procedure

Fan Section

AHU fan motor

Record the following information on the commissioning sheet.

- Fan motor size
- Drive type
- Is the rotation correct
- Motor currents (L1, L2 and L3)
- Fan speed
- Overload settings
- Phase voltage

Airflow Failure Switch

As standard the air flow fail switch is set for the fans to operate at the standard design airflow and external static.

However in instances where the operating conditions are to be varied from the standard then the following procedure to set up the switch(s) must be followed:

1 Set airflow to required airflow (dehumidification mode) with the use of microprocessor.
2 Open only doors to the control panel section ensure blanking plate is in place.
3 Turn air flow switch to maximum setting causing failure at the design air flow
4 Adjust switch downwards until the control circuit is reactivated.
5 Switch off fan(s), input to the controller should switch off.
6 Turn on fan and reset unit.

Filter Change Switch

Ensure that the filter change switch is operating. Check that at reduced air volume (dehumidification) the filter alarm does not cause nuisance alarms.
If the air flow failure switch is not set up in dehumidification mode (reduced air volume) nuisance alarms can be generated.

Commissioning procedure

Chiller /Glycol units

Glycol Type/ Concentration	Check and record the glycol type and strength. Low levels of glycol can cause freeze up problems when operating at low temperatures or during the unit off state during cold ambient conditions. Glycol concentration is measured by use of a Refractometer. High concentrations of glycol can increase the system pressure drop and impair heat exchanger performance.
Water Flow Rate	Record on the commissioning sheet the water flow rate.
Water Pressure Drop	Record the water solution pressure drop at full flow to the coil. Binder insertion points are fitted to the unit for this purpose.
3 Way Water Bypass Valve	Change the valve position to full bypass; record the waterside pressure drop of the unit. Using the balancing valve (if fitted) ensure that the waterside pressure drop is the same as the coil pressure drop. This will ensure correct water flow throughout your system irrespective of valve position.

Heating

Electric	Record the following information regarding the electric heat. • Total heater rating • Thyristor size (if fitted) • Current/ phase Check that the overheat cut-out operates satisfactory. The procedure for this is to enable the unit with electric heat enabled. With full heating active turn off the MCB for the fans. The unit should go into alarm disabling the electric heat. If the overheat cut-out does not cause an alarm within 3 minutes slight adjustment to the position of the OHCO capillary must be carried out. The Auto reset cut-out must trip before the manual reset. Auto trip time 2.5 minutes Manual reset 3 minutes Care must be taken to ensure that the overheat cut-out does not become active when the unit is at reduced airflow (such as in dehumidification)
Low Pressure Hot Water	Check operation of the Low pressure hot water coil valve. This can be done by changing the heating setpoint causing the valve to open allowing hot water into the coil.
Hot Gas Re-heat	Check operation of the hot gas reheat control valves. During installation the solenoid valves will be energised with magnetic coil lifters. The coils should have already been put back on the valve body prior to energising the valve.
CAUTION	**Failure to replace the solenoid head can cause component failure (overheating and deforming)**

Commissioning procedure

Humidification

Water Supply Feed

Indicate on the commissioning sheet how the water is fed to the unit.

- Mains
- Feed tank
- Supply water pressure

Water System

Indicate what features are fitted to the installation.

- Water strainer
- Shut off valve

Bottle

Indicate on the commissioning sheet information regarding the humidifier bottle

- Type
- Size
- Code (e.g. BL0T3A00H0)

Measured

Measure the following information whilst the humidifier is operating.

- Conductivity
- Current L1,L2 and L3

1 Amp current approximates to about 1kg/hr of steam output.

Valve Operation

Ensure that the humidifier solenoid valve operates in the following states. Record on commissioning sheet.

- Fill
- Drain

Drain Installation

Check that the humidifier drain is operating satisfactory and that there are no leaks.

Condenser

Check the fan operation on the condenser or dry cooler is correct. Record on the commissioning sheet the following information.

- Correct rotation
- Motor current L1, L2 and L3 (AC Fans only)
- Fan Speed

Water cooled condenser

Record on the commissioning sheet the following

- Flow rate
- Pressure drop

Commissioning procedure

Refrigeration circuit

Expansion Valve

Record on the commissioning sheet the type of expansion valve fitted to the unit. i.e.

- Electronic Expansion Valve (EEV)
- Thermostatic expansion Valve (TEV)

Pressure Switch Settings

Record the design pressure switch settings.

- High pressure Out
- Low pressure In
- Low pressure differential

System Pressure Readings

Record on the actual system operating pressures.(Barg)

- Suction pressure
- Discharge pressure
- Liquid pressure

Superheat / Sub cooling

Record the superheat and sub cooling readings, typically 6°C superheat and 3°C Sub-cooling.

Superheat protects the compressor from liquid flood back and the amount of sub cooling ensures enough liquid refrigerant to enter the expansion device.

Long pipe runs may require additional sub cooling to overcome the pressure drop of these lines. This could cause the unit to operate at a reduced capacity.

Compressor currents

Record on the commissioning sheet the operating currents of the compressor. The current reading is to be taken when the unit is running at full load.

Sight Glass

Check the condition of the sight glass. References on the commissioning sheet are

- Wet or Dry
- Clear or Bubbles

The sight glass is used to indicate

- the condition of the refrigerant in the system
- lack of sub-cooling
- refrigerant deficiency
- Moisture content of the refrigerant.

The colour of the sight glass depends on the moisture content of the refrigerant. The recommended moisture levels of a system should be between 30 and 75ppm.
An indication of green/dry are to be considered as perfect conditions meaning full protection by the filter drier against effects from moisture.

If the green colour starts to fade, the colour change from green to yellow has begun and the indicator should therefore be watched carefully. If the colour changes to yellow it is a clear signal that the capacity of the filer drier is exceeded and should be replaced as soon as possible.

CAUTION Be aware that Polyolester (POE) oil for HFC refrigerants (R134a, R404A, R407C and R410A) reacts with moisture in a hydrolysis generating acid. Polyolvinyl ether (PVE) oil does not have the same problem with acid but still requires good refrigeration practice.

Filter Drier

The filter drier ensures that any moisture / debris are captured. The drier should be installed last in any system prior to evacuation. It should be installed as close to the expansion valve as possible. If the drier is allowed to be in contact with moisture it can be difficult to evacuate the system; making the installation time longer.
Airedale recommends that a quality filter drier is used to ensure that the performance of the system is not reduced.

Commissioning procedure

Compressor Oil Level (Full and part load)

Check the compressor oil level at full load. (Record oil level). The oil level should be checked after 1 hour of operation and must be between 1/3 rd and 2/3 rd.

Additional Oil Added

Additional oil to refrigeration systems is extremely critical. Too much can be as crucial as too little.

A compressors oil charge will migrate to other parts of the system and may be unable to return, depending on pipework design. The velocity of the refrigerant in the pipework may be reduced causing the oil not to return.

As a guideline around 2% of a system refrigerant charge is required as the oil quantity. The oil in a system will coat all internal components (pipework and oil traps) making the need for additional oil in the compressor.

Additional features within the SmartCool can also inhibit oil return to the compressors. Hot Gas Reheat coils and Suction throttle valves can cause this problem although close oil management will enable these features to be used correctly.

Poor superheat control (liquid flood back) can also wash oil out of a compressor so the importance of correct installation / commissioning is paramount.

Record any additional oil added to the system.

Oil Separator

Specify whether there Is an oil separator fitted to the unit.

RECORD **Don't forget to record refrigeration charges in your F-Gas record.**

Indoor unit optional extras

Condensate Pump

Ensure that the condensate pump operates. Manually add water to the condensate drain to prime the pump. Ensure that the pump is not full of debris.

Firestat

Check that the firestat operates correctly.

The firestat is set to 110°C. (Range 0 – 150°C)

To test the device, lower the setpoint (towards 0°C) until the alarm is generated.

Once satisfied with the operation return the setpoint to the original position.
Record on commissioning sheet.

Water / Flood Detector

The water detector can be tested by applying a small controlled water leak.

Smoke Detector

The smoke detector is tested by simply pressing the smoke alarm “test” button. An alarm will be generated on the unit controls.

Suction Throttle Valve

The suction throttle valve (STV) in full cooling is fully open.

To check operation the STV can be forced partially closed through the maintenance section of the controller.

The following checks must be made to ensure that the refrigeration system is safe.

The oil within the system returns back to the compressor when the valve is set at minimum position. Check the oil sight glass for correct levels (min 1/3 and max 2/3)

There is no liquid refrigerant coming back to the compressor. Check superheat. If liquid is flooding back to the compressor the oil sight glass could look very foamy. The compressor could start to form condensation on the body or even frost formation.

With the suction throttle valve operating check that the compressor operating limit is not exceeded.

Pay particular attention to the suction pressure (the STV is reducing the amount of refrigerant back to the compressor) and also the discharge temperature.

The discharge temperature will be increased due to the reduced cooling effect of the refrigerant with it operating at a higher superheat. The microprocessor limits the superheat at the compressor when operated normally but will need to monitor the condition of the compressor during the commissioning stage.

High discharge temperature can cause the internal motor temperature protection to be enabled.

Commissioning procedure

Controls

Record the following final control variables.

- Controller type
- Controller address
- Boot version
- Bios version
- Display address
- Display type
- Strategy reference
- Room setpoint
- Room limits (Temperature/ Humidity – High/ low)
- Proportional band
- Dead band
- Compressor off time

IMPORTANT Ensure that the controls are reset back to auto. Acknowledge this on the commissioning sheet.

Maintenance

CAUTION **ALL work MUST be carried out by technically trained competent personnel.**

The equipment contains live electrical and moving parts, ISOLATE remotely prior to maintenance or repair work. Ensure Electrical lock-off procedures are carried out.

IMPORTANT **Ensure relevant F-Gas Regulation checks are carried out at the appropriate period.**

General Maintenance

The maintenance schedule indicates the time period between maintenance operations. Access to the various components is via the doors to the front of the unit.

Service Indicator

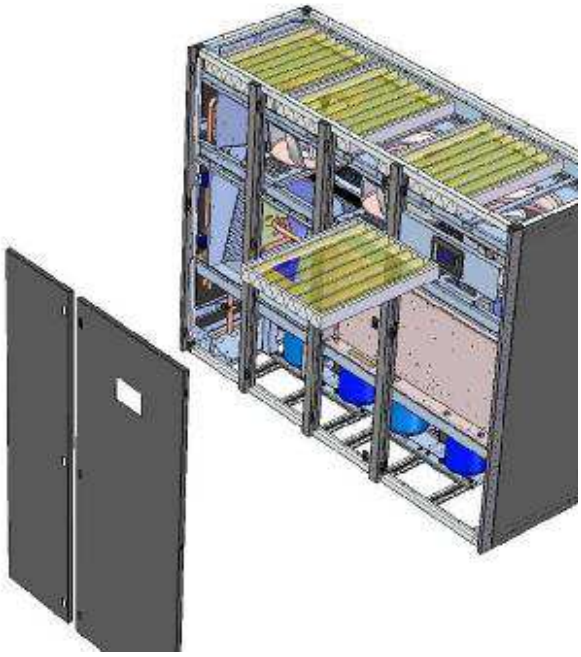
A visual indication of the service status of major components is provided for convenience.

Filters

CAUTION **It is good practice to check filters at each maintenance visit.**

Unit filter condition is monitored via the microprocessor. The operational time is indicated along with the operational setpoint. This can be obtained through the maintenance sub menu of the controller

Filter Changing



- The filters are changed by sliding each filter through the right hand door of the unit.

Compressors

The compressor oil sight glass (where fitted) should indicate a level of between 1/3 and 2/3 to ensure correct operation.

3 Monthly

General

1 Check condition of filters - replace as necessary.
2 Check condensate drain is free from dirt or obstructions. Check water runs away freely.
3 Check humidifier operation and that the drain and bottle are both free from significant debris/scale.

Refrigeration Circuits

1 Check the suction and discharge pressures using a service gauge manifold and compare them with the commissioning sheet. If there is any significant variation, then the fault should be found and corrected.
2 Check that the high and low pressure switches are cutting out the compressors at the correct settings.
3 Ensure the fan head pressure controller is controlling the head pressure at the required setting as shown on the commissioning sheets.
4 The gauges can then be removed from the system. Do not forget to replace the security caps on the Schrader valves.
5 Check the compressor oil sight glass (if fitted) for correct oil level.

Controls

1 Check operation of control system.
2 Check any alarms registered and take action as necessary.

Electrical

1 Check all electrical connections for signs of overheating or arcing.
2 Check all cables for signs of chafing or physical damage.

Cabinet

1 Wash down cabinet using a mild detergent.
2 Treat any paint damage or rust as necessary.

6 Monthly

As 3 monthly plus the following

1. Check and clean condensate pump reservoir and float switches. Unscrew the pump lid and check the pump reservoir for debris or residue, clean out with clean tap water, DO NOT use detergent

2. Check the 2.5mm purging hole in the impeller casing is clear and free of debris, to clear use a narrow implement (2.5mm drill bit) to clear the blockage

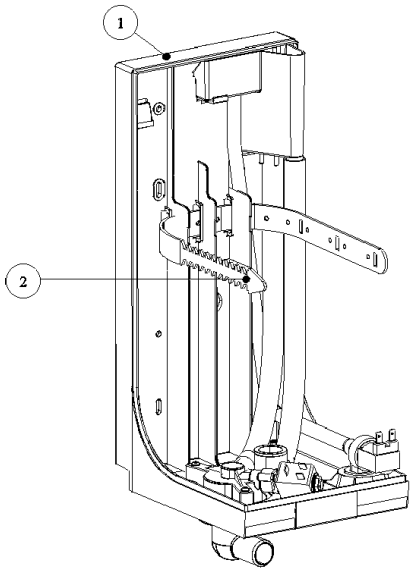
3. Check the float switches are free running, if not, clean the shafts with a damp cloth

12 Monthly

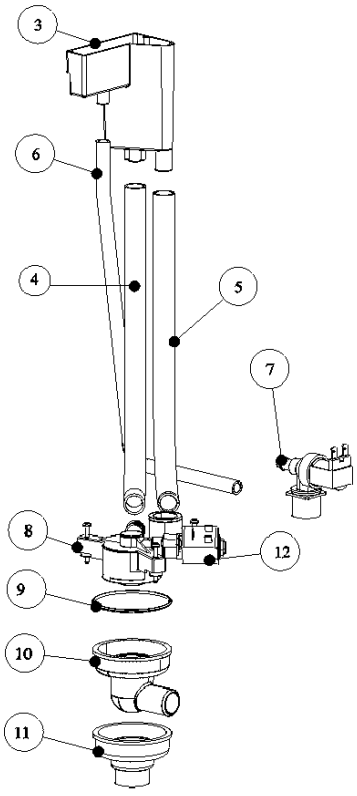
As 3 monthly plus the following:

1 Check all electrical connections for tightness.
2 Check all refrigeration connections with leak detector.
3 Check system readings against those recorded on original commissioning sheet and investigate significant differences.

Humidifier Bottle Change



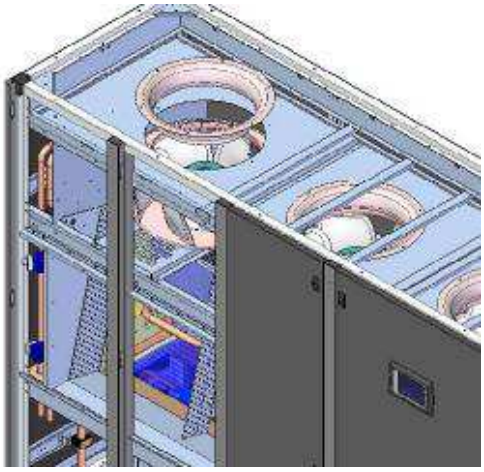
1 Load-bearing frame
2 Cylinder locking strap
3 Supply tank + conductivity meter
4 Overflow pipe
5 Cylinder fill hose
6 Tank fill hose
7 Fill solenoid valve
8 Supply/drain assembly
9 Gasket
10 90° drain connector
11 Straight drain connector (supplied)
12 Drain solenoid valve



Fill solenoid valve (7, 5)
After having disconnected the cables and the pipe, remove the solenoid valve and check the condition of the inlet filter; clean if necessary using water and a soft brush.
Supply and drain manifold (8, 2)
Check that there are no solid residues in the cylinder attachment, remove any impurities. Check that the seal (O-ring) not is damaged or cracked; if necessary, replace it.
Drain solenoid valve / drain pump (part no. 12, 4)
Disconnect the power supply, remove the coil, unscrew the fastening screws and remove the valve body; remove any impurities and rinse.
Supply tank + conductivity meter (3, 6)
Check that there are no obstructions or solid particles and that the electrodes for measuring the conductivity are clean, remove any impurities and rinse.
Supply, fill, overflow pipes (4, 5, 6 – 8, 9, 10, 11)
Check that these are free and do not contain impurities; remove any impurities and rinse.

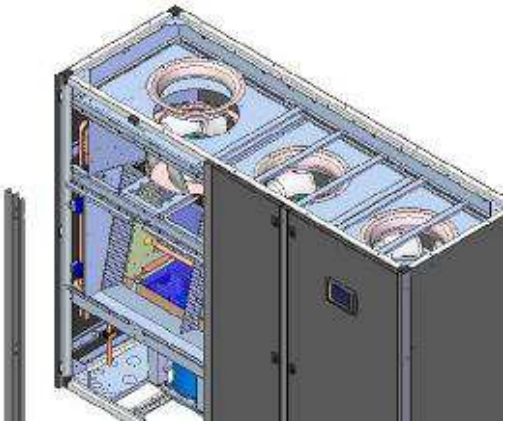
Evaporator Fan removal

Stage 1 Inlet Ring



- Remove door panel – 6 off M6 Countersunk screws.
- Unscrew 6 off M5 bolts that retain inlet ring in position.
- Lift inlet ring free of aperture.

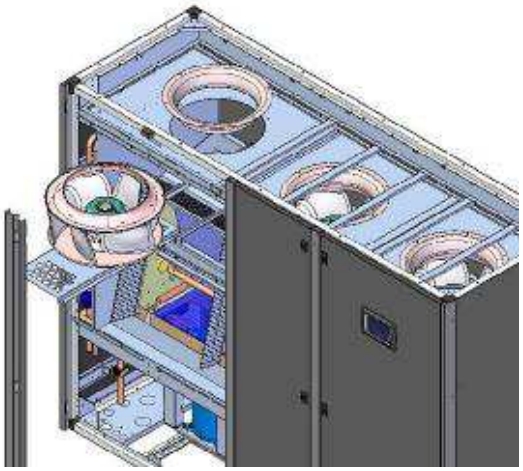
Stage 2 Remove Door Divider Rail



- Remove door divider assembly.

(Fixed top and bottom.)

Stage 3 Slide Fan Forward



- Disconnect fan loom from electrical control panel.
- Remove 4 off M6 bolts that hold the fan support.
- Slide fan assembly towards the front of the unit (along fan support guide rails.
- Carefully lift out the fan assembly taking care not to damage the fan loom.

		Standard AC Fan	EC Fan	Upgraded EC Fan
Fan Weights	kg	28	23.5	27.5

Note: Weights not including base plate.

Troubleshooting Indoor Unit

CAUTION **ALL work MUST be carried out by technically trained and competent personnel.**

The equipment contains live electrical and moving parts, ISOLATE prior to maintenance or repair work. Ensure electrical lock-off procedures are conducted

FAULT	POSSIBLE CAUSE	REMEDY / ACTION
Compressor not operating	No power to compressor.	Check isolator, fuses, MCBs, contactor and control circuit wiring.
	Seized compressor, possibly due to lack of oil, broken valve.	Replace compressor - investigate oil trapping and general installation.
	Defective compressor motor.	Check winding resistances - replace compressor. If burnt out follow burn out procedure using suction line burn-out drier.
	Compressor phase loss.	Check 3 phase supply to compressor.
	Klixon out and does not reset.	Sometimes it takes up to 4 hours to reset. Replace compressor if necessary.
	Low pressure switch operated (large or complete loss of refrigerant charge).	Repair leak and recharge system - if completely out evacuate before charging.
	Condenser fan motor thermal trip open circuit	Investigate and correct.
Noisy compressor	Lack of oil.	Repair leaks if any, add oil if required but not too much - remember too much is as bad as too little. Investigate pipe system and trapping.
		Best method to pump down to see if oil can be encouraged back. If no oil still, drain compressor and measure in correct quantity.
	Expansion valve stuck in open position (abnormally cold suction line).	Ensure bulb is tight on suction and superheat is correct (normally 5 to 6°C).
		Replace power assembly or valve as necessary.
	Damaged or worn compressor bearing (excessive knocking).	Replace compressor.
Head pressure too high	Condenser coil clogged or dirty.	Clean condenser coil.
	Air or other non-condensable gas in system.	Evacuate system and re-charge with new refrigerant.
	Overcharge of refrigerant.	Always install new drier before evacuating.
		Reclaim excess refrigerant from system (liquid only).
	Head pressure controller faulty.	Check fan speed controller - if faulty - replace.
	Fan not operating or operating inefficiently.	Check motor - if faulty - replace.
Head pressure too low	Fan operating too fast in low ambient conditions.	Check fan speed controller adjustment - if faulty - replace.
Compressor short cycles or LP cut-out operated	Dirty filters.	Replace.
	Dirty or icing evaporator (reduced airflow).	Defrost and/or clean. Check gas charge and expansion valve.
	Lack of refrigerant (bubbles in sight glass only as indication).	Check for leaks - repair and recharge system.
	Clogged filter drier (pressure / temperature drop across it).	Replace.
	Condenser fan running at full speed in winter (full airflow).	Check fan speed controller setting - if faulty - replace.
	Start up problems in very low ambient.	Check for low suction pressures on start-up and fit a low ambient start kit if required, or check operation of system if already fitted.

Troubleshooting

FAULT	POSSIBLE CAUSE	REMEDY / ACTION
Suction pressure too low	Low evaporator airflow.	Depending on model: Check fan motor speed set point
	Flash gas (bubbles in sight glass) at expansion valve.	Investigate for refrigerant leaks, repair and re-charge system.
	Clogged filter drier (pressure / temperature drop across it).	Replace.
	Obstruction in expansion valve.	Inspect, clean or replace.
	Suction throttle valve closed	Check that the STV operates correctly and is not stuck shut.
Condenser fan not operating - power on	Motor / fan assembly jammed.	Isolate unit and check free rotation of motor / fan assembly. If faulty - replace.
	Fault at motor terminal box supply terminals.	Isolate and check electrical connections are secure.
	Motor internal overheat protector tripped.	Carry out continuity check at terminals “TK” in motor terminal box. If tripped and motor hot - check bearings. If tripped and motor cold - replace motor.
	Power supply failure.	Check power supply at circuit breaker.
	Wiring to motor.	Check voltage at motor terminals.
	Faulty motor windings / capacitor.	Motor humming would indicate fault in motor or capacitor.
	Minimum speed set too low.	Adjust head pressure controller to suit.
	Faulty pressure sensor.	Check electrical connections are secure at controller and pressure sensor. Replace controller and sensor (as they are matched sets).
	Faulty Controller.	Link wires “line” and “load” to bypass controller. If motor runs full speed - replace unit.
Condenser fan runs too fast	High ambient condition or excessive recirculation of air around condenser coil.	Check installation against design.
Condenser fans runs only slowly	Minimum set speed setting incorrect.	Adjust as necessary.
	Incorrect pressure setting.	Adjust sensor screw as necessary.
	Faulty Fan Speed Controller.	Replace controller and sensor (as they are matched sets).
	Faulty pressure sensor.	Replace controller and sensor (as they are matched sets).
	Motor wired incorrectly.	Check against wiring diagram - correct as required.
	Motor / capacitor faulty.	Replace.

Troubleshooting

Suction throttle valve (STV)

FAULT	POSSIBLE CAUSE	REMEDY / ACTION
Suction pressure too low	Suction throttle valve fully shut.	Check valve opens fully at 100% cooling demand. Inspect, clean or replace.
High discharge temperature	Suction throttle valve in operation.	Check suction throttle valve operation. Inspect, clean or replace. Open suction throttle valve to reduce discharge temperature.
	Large or complete loss of refrigerant charge.	Investigate for refrigerant leaks, repair and re-charge system.
High compressor superheat	Suction throttle valve shut.	Check suction throttle valve operation. Inspect, clean or replace.
	Large or complete loss of refrigerant charge.	Investigate for refrigerant leaks, repair and re-charge system.
Cooling output insufficient	Suction throttle valve in operation.	Check supply air setpoint and unit cooling demand.

Hot Gas Re-heat (HGRH)

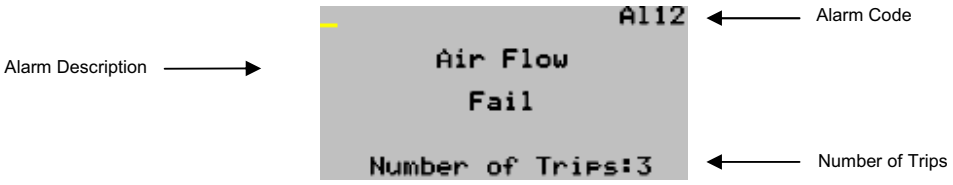
FAULT	POSSIBLE CAUSE	REMEDY / ACTION
Cooling insufficient	Hot gas re-heat coil in operation.	Check cooling demand and ensure hot gas re-heat valve is open.
		Check hot gas re-heat valve operation. Inspect, clean or replace.
Re-heat output insufficient	Faulty hot gas re-heat valve.	Check hot has re-heat valve operation. Inspect, clean or replace.

Humidifier

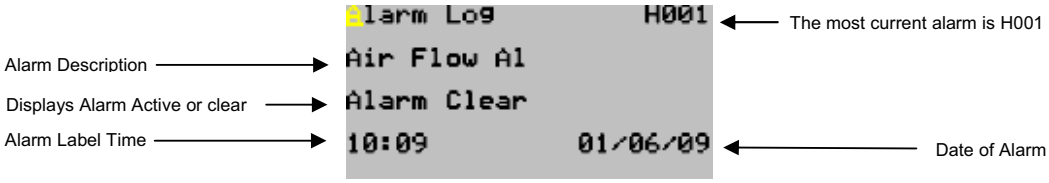
FAULT	POSSIBLE CAUSE	REMEDY / ACTION
Main fuses / MCB trips when initially switched on	Cylinder damage (shorted electrode(s)).	Test with Megger - Replace cylinder.
Humidifier 'called for' but not filling	Water not available at cylinder.	Check all mains cold water valves. Check any strainers fitted.
		Check inlet solenoid valve (yellow) strainer - clean as necessary.
		Inlet water solenoid not operating - check for feed. Replace solenoid / control board as necessary.
		Mains water pressure over 8 Bar - fit pressure reducing device.
The humidifier loads with water but does not produce steam	Too high steam delivery back pressures.	Check steam delivery pipe is not blocked with debris.
	Cylinder inlet filter clogged.	Clean the filter.
	Limescale inside the supply tank.	Clean the supply tank.
	Drain solenoid valve faulty.	Check 24 Vac anomalous presence on the drain solenoid valve and/or replacement of drain solenoid valve.
The humidifier wets the underlying floor	Supply or overflow hydraulic circuit leaking.	Check the entire hydraulic circuit.
	Steam delivery pipe not properly fastened to the cylinder.	Check fastening of the clamp on the steam delivery pipe.
Cylinder operating - Low Current / Low output	Humidifier in start-up phase.	Wait for impurity concentration to build up through natural drain cycle. This will allow an increase in passed current.
	Cylinder nearing end of useful life.	Strip and clean or replace.

Unit Alarms:

Pressing the alarm button will enter the alarm page where any currently active alarms will be displayed. The alarms will be displayed in a scroll type menu for ease of viewing when more than one alarm is active.



Alarm Log



To access the Alarm Log menu press the Prg button and use the ↑ + ↓ keys to navigate. Press ↵ when the cursor is in the position shown right

The alarm log offers a list of the last 100 alarm messages in a scrolling log. Consequently the most recent alarm has the lowest log number (001) and will be displayed upon entering the alarm page. As another alarm occurs, the alarm number increases until 100 alarms have occurred. From this point on, alarm 001 moves to 002 and any new alarm will reside in position 001. As new alarms are generated and cleared, the highest number logs (100) in the scroll will be lost.

Viewing the Alarm Log

By using the arrow keys, the last 100 alarms generated can be reviewed in chronological order. The display provides the alarm type information and the time and date of each alarm occurrence.

Alarm Detection

When the controller detects an alarm an output is generated to the relevant alarm relay which in turn illuminates the button. To see which alarm has accrued press the button and the most recent alarm will be displayed. If the alarm light is on, the alarm page can be interrogated to identify which alarm is active.

Resetting the Alarm

Once the alarm condition has cleared and if the alarm is not an auto-reset type the alarm can be reset by the alarm button on the display keypad, where the alarm red light will go out to indicate the alarm is clear.

Erasing the Alarm Log

The alarm history log can be erased by selecting Erase Alarm Log (V1) in Manufacturer parameters.

Code	Description	Auto Reset	Unit Disabled	Component Disabled	Cause	Action
AL003	Humidity Probe Alarm	•		•	Indicates that there is a fault with the corresponding probe, possible causes are the sensor going open circuit or there is a wiring fault. All sensor alarms are auto reset once the fault has been rectified.	Humidity control will be disabled until the sensor fault is rectified.
AL004	Differential Pressure Sensor Alarm	•		•		Constant Air Volume will be disabled and fan speed will revert to fixed speed set point
AL004	Floor Void Differential Pressure Sensor Alarm	•		•		Constant Pressure Control will be disabled and fan will revert back to fixed fan speed set point
AL005	Liquid Pressure Circuit 1 Probe Alarm	•		•		Head Pressure Control is disabled on circuit 1 and the condenser fans is increased to 100%
AL005	Inlet Chilled Water Temperature Probe Alarm	•		•		Alarm will be generated
AL006	Return Air Temperature Sensor Alarm	•		•		Cooling and Heating control is disabled until the sensor is fixed
AL007	Supply Air Temperature Probe Alarm	•		•		Supply air control is disabled and unit controls to return air control
AL008	Circuit 1 Discharge Temp Probe Alarm	•		•		Alarm will be generated
AL009	Liquid Pressure Circuit 2 Probe Alarm	•		•		Head Pressure Control is disabled on circuit 2 and the condenser fans are increased to 100%
AL009	Supply Water Temperature Alarm	•		•		Alarm is generated
AL010	Coil Temperature Probe Alarm	•		•		Alarm is generated
AL010	Circuit 2 Discharge Temp Probe Alarm	•		•		Alarm is generated
AL011	Circuit 1 Supply Water Temp Probe Alarm	•		•		Free cooling is disabled
AL012	Circuit 2 Supply Water Temp Probe Alarm	•		•		Alarm is generated
AL012	Ambient Temperature Probe Alarm	•		•		Free cooling is disabled
AL013	Air Flow Fail	✘	•	•	Indicates the air flow switch has not detected any airflow for 60 seconds once the main fan is switched on.	The alarm will auto reset 3 times and lock out to a manual reset
AL014	Circuit 1 Compressor 1 Status	•		•	This alarm indicates the status of compressor. The alarm is generated if the controller output is active but the feed back from the contactor has not changed.	The alarm will de-activate the corresponding compressor.
AL015	Circuit 1 Compressor 2 Status	•		•		
AL016	Circuit 1 Inverter Compressor Status	•		•		
AL017	Circuit 2 Compressor 1 Status	•		•		
AL018	Circuit 2 Compressor 2 Status	•		•		
AL019	Circuit 2 Inverter Compressor Status	•		•		
AL020	Filter Change Alarm				Indicates that the filters on the unit possibly need changing.	Alarm will need to be manually reset once the filter has been changed.

Code	Description	Auto Reset	Unit Disabled	Component Disabled	Cause	Action
AL021	Phase Failure Alarm	•	•	•	The power meter / phase failure relay has detected a phase rotation / fail loss	Alarm is automatically reset once the phase failure has cleared.
AL022	Water Flood / Condensate Pump Alarm	•			Indicates that excess Water (or a leak) has been detected by the unit.	Alarm is generated
AL023	Fire / Smoke Alarm	•	•	•	Indicates that Fire or smoke has been detected	Alarm is generated
AL024	Leak Detector Alarm	•		•	Indicates the unit has detected a refrigerant leak.	Once the refrigerant level in the air has fallen below set point the alarm will reset
AL025	Over Heat Cut Out Alarm	•		•	This indicates that the auto / manual overheat cut-out has tripped and has switched off all stages of electric heating	This alarm can be auto reset once temperatures have returned to a normal operating range. The manual is by a switch in the unit
AL026	Low Pressure Alarm Circuit 1	•		•	Indicates that the low pressure safety switch has been tripped and the controller has switched off circuit 1	Alarm can be manually reset
AL027	Low Pressure Alarm Circuit 2	•		•	Indicates that the low pressure safety switch has been tripped and the controller has switched off circuit 2	Alarm can be manually reset
AL028	Circuit 1 Compressor 1 Maintenance Alarm	•			Indicates that the run hours for the particular component has exceeded the limit set for its maintenance alarm.	Once Maintenance has been performed, the hors run for the component can be reset, which will reset the alarm.
AL029	Circuit 1 Compressor 2 Maintenance Alarm	•				
AL030	Circuit 1 Inverter Compressor Maintenance Alarm	•				
AL031	Circuit 2 Compressor 1 Maintenance Alarm	•				
AL032	Circuit 2 Compressor 2 Maintenance Alarm	•				
AL033	Circuit 2 Inverter Compressor Maintenance Alarm	•				
AL034	Supply Fans Maintenance Alarm	•				
AL035	High Humidity Alarm	•			Indicates that the particular valve has exceeded the high / low limit. This alarm is delayed for 2 minutes on start-up to prevent nuisance alarms. The cooling or heat demand is disabled	Once the return air humidity returns below the high / low limit the alarm is automatically reset.
AL036	Low Humidity Alarm	•				
AL037	High Return Air Temperature	•	•	•		

Code	Description	Auto Reset	Unit Disabled	Component Disabled	Cause	Action
AL038	Low Return Air Temperature	•	•	•		
AL039	High Supply Air Temperature	•	•	•		
AL040	Low Supply Air Temperature	•	•	•		
AL041	Circuit 1 High Pressure			•	Indicates that circuit 1 has been exposed to high pressure. Circuit 1 will be shut down,	Once the pressure within circuit 1 has decreased to a safe level the alarm can be manually reset
AL042	Circuit 2 High Pressure			•	Indicates that circuit 2 has been exposed to high pressure. Circuit 2 will be shut down.	Once the pressure within circuit 2 has decreased to a safe level the alarm can be manually reset
AL043	EEV Driver 1 Motor Error			•	Indicates an motor error within EEV driver 1. During this alarm circuit 1 is switched off.	This alarm can be manually reset once the problem with the EEV is resolved

Code	Description	Auto Reset	Unit Disabled	Component Disabled	Cause	Action
AL045	EEV Driver 1 MOP Alarm			•	Indicates that the evaporating temperature has exceeded the MOP limit. During alarm the EEV modulates the valve closed to reduce the operating pressure whilst maintaining superheat.	This alarm can be manually reset once the system has brought the evaporating temperature below the MOP limit.
AL046	EEV Driver 1 LOP Alarm			•	Indicates that the evaporating temperature has exceeded the LOP limit. During alarm the EEV modulates the valve open to increase the operating pressure whilst maintaining superheat.	This alarm can be manually reset once the system has brought the evaporating temperature below the LOP limit.
AL047	EEV Driver 1 Low Superheat Alarm			•	Indicates the superheat has exceeded the low superheat limit. During the alarm compressor 1 is switched off.	This alarm can be manually reset once the system has brought the superheat above the low super heat limit.
AL048	EEV Driver 1 EEV Not Closed After Power Fail			•	Indicates that the EEV did not close once power was restored, during alarm compressor 1 is switched off.	This alarm is manually reset.
AL049	EEV Driver 1 High Superheat Alarm			•	Indicates the superheat has exceeded the high superheat limit. During the alarm compressor 1 is switched off.	This alarm can be manually reset once the system has brought the superheat below the high super heat limit.
AL050	EEV Driver 1 S1 Probe Error Evap. Pressure			•	Indicates an error with the evaporating pressure sensor. During alarm the controller will automatically switch off the compressor.	This alarm can be manually reset once the sensor is proven to be working correctly.
AL051	EEV Driver 1 S2 Probe Suction Line Temp			•	Indicates an error with the suction line temperature sensor. During alarm the controller will automatically switch off the compressor.	This alarm can be manually reset once the sensor is proven to be working correctly.
AL052	EEV Driver 1 S3 Probe Error Suction Line Temp			•	Indicates an error with the suction line temperature sensor. During alarm the controller will automatically switch off the compressor.	This alarm can be manually reset once the sensor is proven to be working correctly.
AL053	EEV Driver 2 Motor Error			•	Indicates an motor error within EEV diver 2. During this alarm compressor 2 is switched off.	This alarm can be manually reset once the problem with the EEV is resolved
AL054	EEV Driver 2 EEPROMM Error			•	Indicates that there has been an error between the data stored within the eeprom memory and the data stored in the controller. During the alarm the EEV is closed and compressor 2 is switched off.	This alarm can be manually reset once the problem with the EEV is resolved

Code	Description	Auto Reset	Unit Disabled	Component Disabled	Cause	Action
AL055	EEV Driver 2 MOP Alarm			•	Indicates that the evaporating temperature has exceeded the MOP limit. During alarm the EEV modulates the valve closed to reduce the operating pressure whilst maintaining superheat.	This alarm can be manually reset once the system has brought the evaporating temperature below the MOP limit.
AL056	EEV Driver 2 LOP Alarm			•	Indicates that the evaporating temperature has exceeded the LOP limit. During alarm the EEV modulates the valve open to increase the operating pressure whilst maintaining superheat.	This alarm can be manually reset once the system has brought the evaporating temperature below the LOP limit.
AL057	EEV Driver 2 Low Superheat Alarm			•	Indicates the superheat has exceeded the low superheat limit. During the alarm compressor 2 is switched off.	This alarm can be manually reset once the system has brought the superheat above the low super heat limit.
AL058	EEV Driver 2 EEV Not Closed After Power Fail			•	Indicates that the EEV did not close once power was restored, during alarm compressor 2 is switched off.	This alarm is manually reset.
AL059	EEV Driver 2 High Superheat Alarm			•	Indicates the superheat has exceeded the high superheat limit. During the alarm compressor 2 is switched off.	This alarm can be manually reset once the system has brought the superheat below the high super heat limit.
AL060	EEV Driver 2 S1 Probe Error Evap. Pressure			•	Indicates an error with the evaporating pressure sensor. During alarm the controller will automatically switch off the compressor.	This alarm can be manually reset once the sensor is proven to be working correctly.
AL061	EEV Driver 2 S2 Probe Error Suction Line Temp			•	Indicates an error with the suction line temperature sensor. During alarm the controller will automatically switch off the compressor.	This alarm can be manually reset once the sensor is proven to be working correctly.
AL062	EEV Driver 2 S3 Probe Suction Line Temp			•	Indicates an error with the suction line temperature sensor. During alarm the controller will automatically switch off the compressor.	This alarm can be manually reset once the sensor is proven to be working correctly.
AL063	EEV Driver 3 Motor Error			•	Indicates an motor error within EEV diver 2. During this alarm compressor 2 is switched off.	This alarm can be manually reset once the problem with the EEV is resolved
AL064	EEV Driver 3 EEPROMM Error			•	Indicates that there has been an error between the data stored within the eeprom memory and the data stored in the controller. During the alarm the EEV is closed and compressor 2 is switched off.	This alarm can be manually reset once the problem with the EEV is resolved

Code	Description	Auto Reset	Unit Disabled	Component Disabled	Cause	Action
AL065	EEV Driver 3 MOP Alarm			•	Indicates that the evaporating temperature has exceeded the MOP limit. During alarm the EEV modulates the valve closed to reduce the operating pressure whilst maintaining superheat.	This alarm is manually reset once the system has brought the evaporating temperature below the MOP limit.
AL066	EEV Driver 3 LOP Alarm			•	Indicates that the evaporating temperature has exceeded the LOP limit. During alarm the EEV modulates the valve open to increase the operating pressure whilst maintaining superheat.	This alarm is manually reset once the system has brought the evaporating temperature below the LOP limit.
AL067	EEV Driver 3 Low Superheat Alarm			•	Indicates the superheat has exceeded the low superheat limit. During the alarm compressor 2 is switched off.	This alarm is manually reset once the system has brought the superheat above the low super heat limit.
AL068	EEV Driver 3 EEV Not Closed After Power Fail			•	Indicates that the EEV did not close once power was restored, during alarm compressor 2 is switched off.	This alarm is manually reset.
AL069	EVD1 pLAN Communications Offline	•		•	Indicates an error with the pLAN connection which the controller communicates with EVD1. This alarm will shut circuit 1 down.	This alarm is automatically reset once the pLAN fault is rectified.
AL070	EVD2 pLAN Communications Offline	•		•	Indicates an error with the pLAN connection which the controller communicates with EVD2. This alarm will shut circuit 1 down.	This alarm is automatically reset once the pLAN fault is rectified.
AL071	EVD3 pLAN Communications Offline	•		•	Indicates an error with the pLAN connection which the controller communicates with EVD3. This alarm will shut circuit 2 down.	This alarm is automatically reset once the pLAN fault is rectified.
AL072	EVD4 pLAN Communications Offline	•		•	Indicates an error with the pLAN connection which the controller communicates with EVD4. This alarm will shut circuit 2 down.	This alarm is automatically reset once the pLAN fault is rectified.
AL073	Clock Alarm	•		•	Indicates an error with the real time clock on-board the controller. During alarm any time zones set up would be ignored.	Once the clock returns to functioning correctly the alarm will be automatically reset and any time ones setup will be restored.
AL074	Frost Protection Alarm	•		•	Indicates that the controller has disabled any dx cooling to prevent damaging the coils from frost.	This alarm is automatically reset once any danger of damage is removed.
AL075	High Supply Water Temperature	•		•	Indicates that the supply water temperature is above the maximum value of supply water temperature permitted.	Alarm is automatically reset once the value of supply water temperature is lower than the maximum value. This enables a circuit change over on dual cool units

Code	Description	Auto Reset	Unit Disabled	Component Disabled	Cause	Action
AL076	Power Meter Offline	•	•	•	Indicates the controller cannot communicate with the power meter leading it to believe the power meter is switched off.	The alarm is automatically reset once communications between the controller and the power meter has been re-established.
AL077	LAN Disconnected	•			Indicates that there is a network fault between the units. If the unit is configured as standby then the unit will become active until the network fault is corrected.	The alarm will automatically reset once the network fault is corrected.
Humidifier Alarms numbers 78 to 97 are detailed further into the report inside the humidification chapter						
AL098	CPY Offline	•		•	Indicates the controller cannot communicate with the CPY controller leading it to believe the CPY board is switched off.	The alarm is automatically reset once communications between the controller and the cpy board has been re-established.
AL099	Air Flow Calculation Internal Error	•		•	The air flow calculation has gone out of bounds	Constant air volume disabled
AL100	High Discharge Temperature Alarm (C1)	•		•	The discharge temperature on circuit 1 is over the threshold, Circuit 1 is disabled after 3 occurrences in 24 hours	Alarm will reset once the temperature is below threshold
AL101	High Discharge Temperature Alarm (C2)	•		•	The discharge temperature on circuit 2 is over the threshold. Circuit 2 is disabled after 3 occurrences in 24 hours	Alarm will reset once the temperature is below threshold
AL102	No Alarms Active	•			Indicates no Alarms are currently active	-

Specifier's Guide Outdoor unit

CR50H (shown with top legs removed)

Unit Identification

		CR	12	H
CR	Condenser - R410A			
DR	Dry Cooler – Water / Glycol			
10 - 165	Model Size (expressed as Total Heat Rejection in kW)			
H	Horizontal Air Discharge			
V	Vertical Air Discharge			

Introduction

This range comprises 16 Air Cooled Condenser models sizes with total heat rejection 12 - 165kW and 14 air cooled dry cooler models with total heat rejection 10 – 95 kW

Custom designed for a small footprint, low sound level, slimline and aesthetically pleasing appearance.

Available in either horizontal or vertical air discharge orientation, ***please specify at order***.

All units are despatched following extensive leak and pressure testing and carry a holding charge of inert gas.

The condenser range has been designed and optimised for operation with ozone benign refrigerant **R410A**.

CE Directive

CE Airedale certify that the equipment detailed in this manual conforms with the following EC Directives:

Electromagnetic Compatibility Directive (EMC)	**2004/108/EC**
Low Voltage Directive (LVD)	**2006/95/EC**
Machinery Directive (MD)	**89/392/EEC in the version 2006/42/EC**
Pressure Equipment Directive (PED)	**97/23/EC**

To comply with these directives appropriate national & harmonised standards have been applied. These are listed on the Declaration of Conformity, supplied with each product.

Standard Features

Construction

Unit cabinets shall be manufactured from galvanised sheet steel coated with epoxy baked powder paint to provide a durable finish.

Standard unit colour shall be Light Grey (RAL 7035).

Dual position fixing legs shall be supplied attached to the unit via captive bolts and shake proof washers.

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.

IMPORTANT **Only 2 units may be stacked together.**

Vertical Air Discharge

As standard, unit legs shall be attached and delivered in the horizontal air discharge mode and shall be repositioned on site to offer vertical air discharge mode, refer to ***Dimensions / Weights / Positioning***, for details.

IMPORTANT **To ensure the unit isolator and fan speed controller are in the correct orientation for vertical air discharge *please specify at order*.**

Condenser

Large surface area coil ideally positioned to optimise airflow and heat transfer, shall be manufactured from refrigeration quality copper tube with mechanically bonded aluminium fins.

The copper tube shall be internally rifled for improved heat transfer.

The factory test pressure shall not be less than 45Bar

Sweat copper pipe for brazed connection shall be provided

Standard Features

Fan & Motor Assembly

CR12 - CR16

Axial flow fan assembly with low noise sickle type blades shall be supplied

CR22 - CR165
DR10 – DR95

Axial flow fan assembly with low noise sickle type blades and bellmouth.

All Models

The external rotor AC motor shall allow the use of a low power output, single phase, and speed controllable motor to power the fan.

The motor shall have inbuilt thermal overload protection and the assembly shall be supplied complete with a finger guard for protection.

Shall be available in either horizontal or vertical air discharge orientation, ***please specify at order***.

Refer to ***Optional Extras***, for fan options.

Refrigeration

Each unit shall feature as standard:
Holding Charge of inert gas

Electrical

All electrical components shall be rated for all year round outdoor use.

All wiring shall be colour coded and numbered for identification. All units shall be wired in accordance with current local and European standards.

Head Pressure Control (Variable)

Variable head pressure control shall be provided by the indoor unit when standard fans or optional EC fans are selected.

For optional short case axial fan selection, the head pressure control shall be provided by the outdoor unit; refer to ***Short Case Axial Fans***.

Main Electric Isolator

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

Optional Extras - Energy Saving

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. 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 0-100%, the modulating range of a standard AC fan is typically 40-100% of full fan speed.

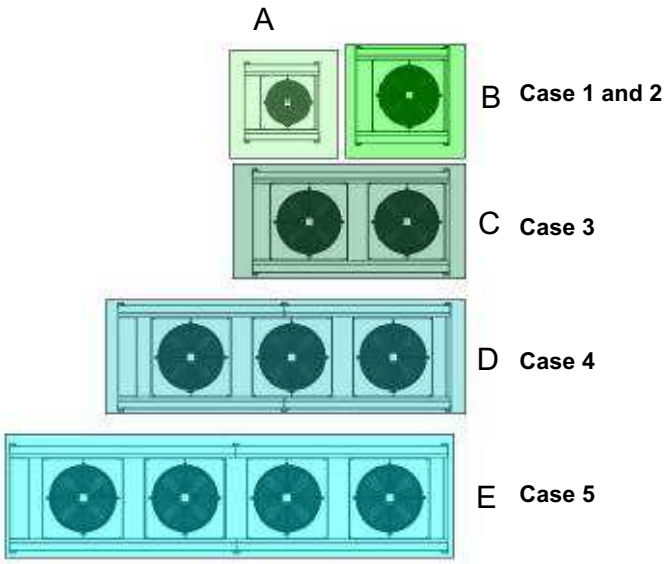
Optional Extras – General

Short Case Axial Fans	Short case axial fans shall be supplied for indoor installations where discharge air requires to be ducted to an outdoor location. The fans shall meet duty plus nominal 75Pa of external static pressure. Head pressure control shall be maintained by a modulating fan speed controller fitted to the outdoor unit. The controller shall be rated to IP54 for outdoor use and operate accurately in ambient temperatures down to a minimum of -20°C.
Corrosion Resistant Coated Coils	For aggressive atmospheres a corrosion resistant coating shall be applied to the aluminium fins.
Shut Off Valves	Where unit isolation for easier maintenance is required, shut off valves shall be supplied loose for on site fitment.
Coil Guards	Protective mesh guards can be fitted to each of the outer coils to protect against damage.

Installation data

The range of condensers and dry coolers are grouped together for easier identification.
Case sizes 1-5 (16 Condensers, 14 Dry coolers)

Outdoor Unit			
CR12H-0	A	DR10H-0	B
CR16H-0		DR12H-0	
CR22H-0	B	DR15H-0	
CR26H-0		DR20H-0	
CR30H-0		DR25H-0	C
CR35H-0		DR30H-0	
CR50H-0	C	DR35H-0	
CR60H-0		DR40H-0	D
CR65H-0		DR45H-0	
CR75H-0	D	DR50H-0	
CR80H-0		DR55H-0	E
CR95H-0		DR70H-0	
CR105H-0		DR75H-0	
CR130H-0	E	DR95H-0	
CR140H-0		-	
CR165H-0		-	



Dimensions / Weights / Positioning

IMPORTANT **Unit diagrams can be supplied on request.**

The following illustrations show the unit following fixing leg re-orientation, instructions are provided for this at delivery.

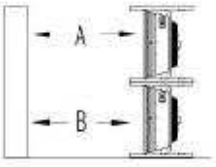
IMPORTANT

The legs attached to the top of the unit are for lifting and stacking and may be removed and stored safely if not required.

Stacking units

Only 2 units may be stacked together. In addition to the standard minimum clearances around the unit further space is required.

Positioning condensers on top of each other can cause the bottom unit to be starved of air.



A= 1.5m (Two stacked units)
B= 0.5m (For single unit)

Horizontal case size 1 and 2(1 fan)

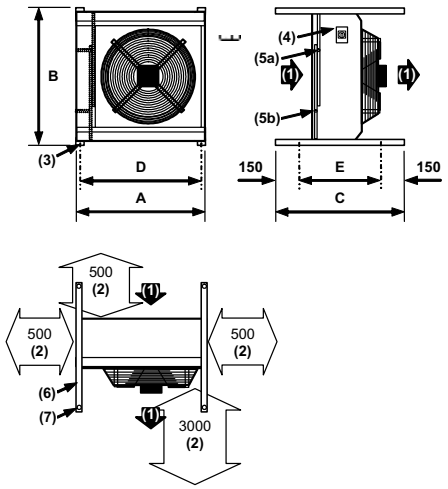


Diagram illustrated in mm

(1) Airflow
(2) Minimum clearances
(3) 12.7mm fixing hole
(4) Mains electric isolator
(5) Service connections to left hand side of the unit:
a = Discharge gas inlet (ALWAYS above (b))
b = Liquid outlet
(6) Top brackets may be used to secure unit of similar size on top, using, 2 x 12.7mm fixing holes
(7) 40mm lifting holes

Horizontal case size1 (1 fan)

	DIMENSIONS (mm)					WEIGHTS (kg)		
	Standard Fan					Standard AC Fan	Optional EC Fan	Optional SCAF
	A	B	C	D	E			
CR12	907	972	1000	845	700	62	67	67
CR16	907	972	1000	845	700	70	76	75
CR22/DR10	1102	1167	1000	1040	700	77	83	88
CR26/DR12	1102	1167	1000	1040	700	93	105	90
CR30/DR15	1102	1167	1000	1040	700	90	96	101
CR35/DR20	1102	1167	1000	1040	700	106	118	103

Vertical case size 1 and 2 (1 Fan)

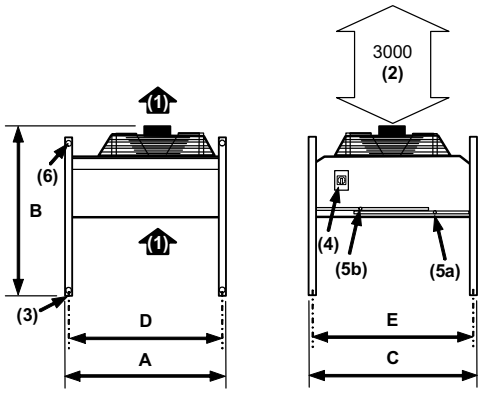


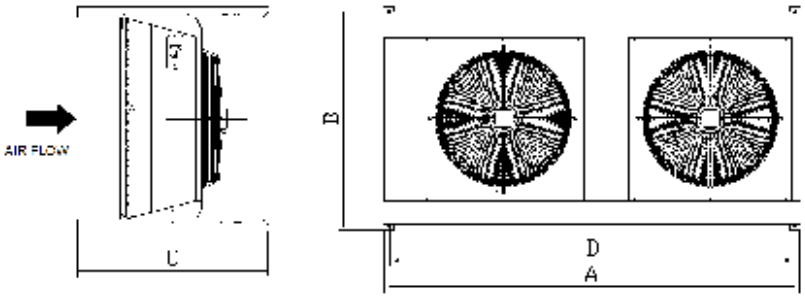
Diagram illustrated in mm

(1) Airflow
(2) Minimum clearances
(3) 12.7mm fixing hole
(4) Mains electric isolator
(5) Service connections to left hand side of the unit:
a = Liquid outlet
b = Discharge gas inlet
(6) 40mm lifting holes

Vertical case size1 (1 fan)

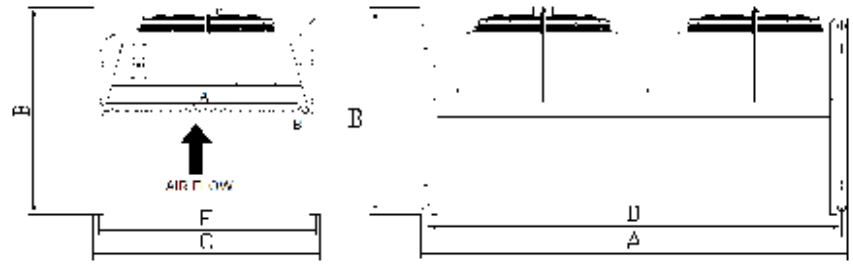
	DIMENSIONS (mm)							WEIGHTS (kg)		
	Standard Fan					Fan Options		Standard AC Fan	Optional EC Fan	Optional SCAF
						SCAF	EC			
	A	B	C	D	E	B	B			
CR12	907	1076	972	847	912	1080	1065	62	67	67
CR16	907	1076	972	847	912	1080	1065	70	76	75
CR22/DR10	1102	1090	1167	1042	1107	1130	1127	77	83	88
CR26/DR12	1102	1155	1167	1042	1107	1140	1170	93	105	90
CR30/DR15	1102	1090	1167	1042	1107	1130	1127	90	96	101
CR35/DR20	1102	1155	1167	1042	1107	1140	1170	106	118	103

Horizontal case size 3 (2 Fans)



	DIMENSIONS (mm)					WEIGHTS (kg)		
	Standard Fan					Standard AC Fan	Optional EC Fan	Optional SCAF
	A	B	C	D	E			
CR50/DR25	2184	1167	1000	2121	700	132	145	154
CR60/DR30	2184	1167	1000	2121	700	165	188	159
CR65/DR35	2184	1167	1000	2121	700	162	175	184
CR75/DR45	2184	1167	1000	2121	700	195	218	189

Vertical case size 3 (2 Fans)



	DIMENSIONS (mm)							WEIGHTS (kg)		
	Standard Fan					Fan Options		Standard AC Fan	Optional EC Fan	Optional SCAF
						SCAF	EC			
	A	B	C	D	E	B	B			
CR50/DR25	2184	1090	1167	2124	1107	1130	1127	132	145	154
CR60/DR30	2184	1155	1167	2124	1107	1140	1170	165	188	159
CR65/DR35	2184	1090	1167	2124	1107	1130	1127	162	175	184
CR75/DR45	2184	1155	1167	2124	1107	1140	1170	195	218	189

Horizontal case size 4 (3 Fans)

Optional Short Case Axial Fan (SCAF)

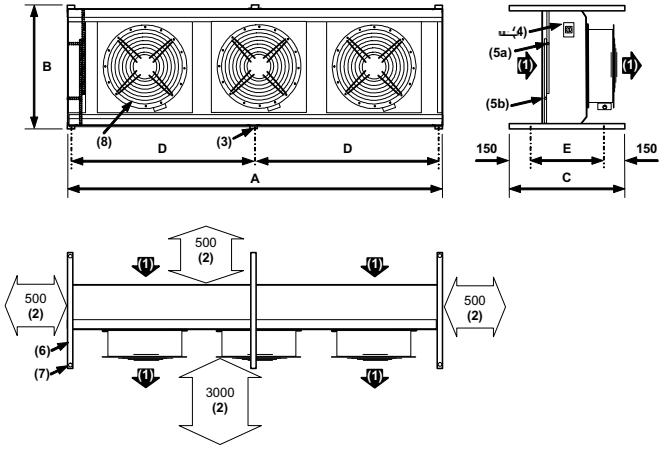


Diagram illustrated in mm

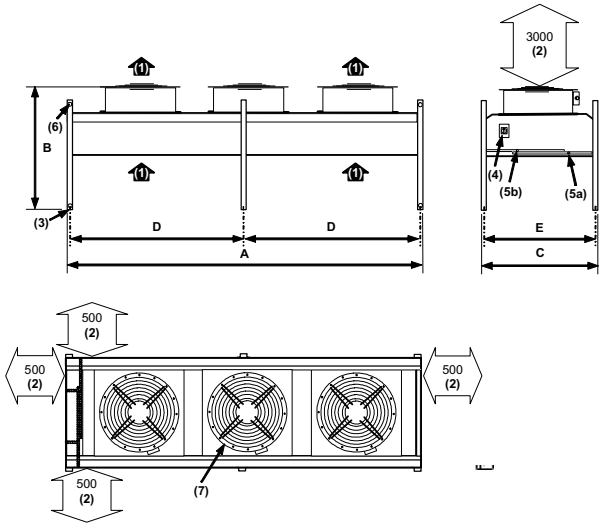
(1) Airflow
(2) Minimum clearances
(3) 12.7mm fixing hole
(4) Mains electric isolator
(5) Service connections to left hand side of the unit:
a = Discharge gas inlet (ALWAYS above (b))
b = Liquid outlet
(6) Top brackets may be used to secure unit of similar size on top, using, 2 x 12.7mm fixing holes
(7) 40mm lifting holes
(8) Optional Short Case Axial Fan with integral duct fixing holes

	DIMENSIONS (mm)					WEIGHTS (kg)		
	Standard Fan					Standard AC Fan	Optional EC Fan	Optional SCAF
	A	B	C	D	E			
CR80/DR40	3565	1167	1000	1752	700	208	228	242
CR95/DR50	3565	1167	1000	1752	700	258	293	249
CR105/DR55	3565	1167	1000	1752	700	260	280	294
CR130/DR75	3565	1140	1167	1752	1107	310	345	301

The SCAF fans in the horizontal mode do not obtrude past the mounting feet.

Vertical case size 4 (3 fans)

Optional Short Case Axial Fan (SCAF)



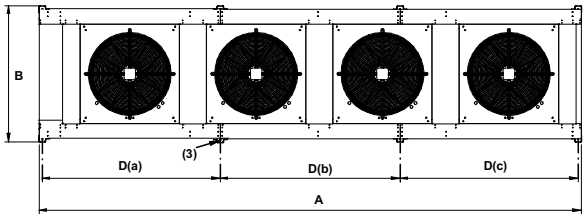
Vertical case size 3 (3 fans)

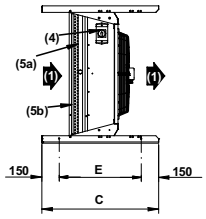
Diagram illustrated in mm

(1) Airflow
(2) Minimum clearances
(3) 12.7mm fixing hole
(4) Mains electric isolator
(5) Service connections to left hand side of the unit:
a = Liquid outlet
b = Discharge gas inlet
(6) 40mm lifting holes
(7) Optional short case axial fan with integral duct fixing holes

	DIMENSIONS (mm)							WEIGHTS (kg)		
	Standard Fan					Fan Options		Standard AC Fan	Optional EC Fan	Optional SCAF
						SCAF	EC			
	A	B	C	D	E	B	B			
CR80/DR40	3565	1090	1167	1753	1107	1130	1127	208	228	242
CR95/DR50	3565	1155	1167	1753	1107	1140	1170	258	293	249
CR105/DR155	3565	1090	1167	1753	1107	1130	1127	260	280	294
CR130/DR75	3565	1155	1167	1753	1107	1140	1170	310	345	301

Horizontal case size 5 (4 fans)





For Minimum Clearances (2) see previous outdoor units in horizontal configuration

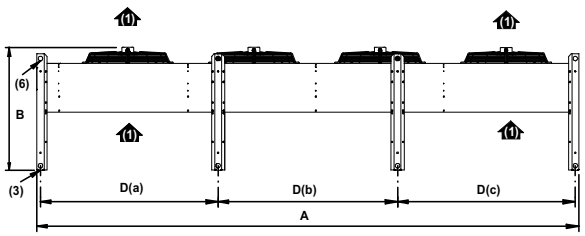
Diagram illustrated in mm

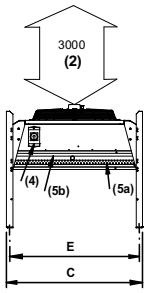
(1) Airflow
(2) Minimum clearances
(3) 12.7mm fixing hole
(4) Mains electric isolator
(5) Service connections to left hand side of the unit:
a = Discharge gas inlet (ALWAYS above (b))
b = Liquid outlet
(6) Top brackets may be used to secure unit of similar size on top, using, 2 x 12.7mm fixing holes
(7) 40mm lifting holes

	DIMENSIONS (mm)							WEIGHTS (kg)		
	Standard Fan							Standard AC Fan	Optional EC Fan	Optional SCAF
	A	B	C	D(a)	D(b)	D(c)	E			
CR140/DR70	4641	1167	1000	1524	1539	1524	700			
CR165/DR95	4641	1167	1000	1524	1539	1524	700			

CAUTION **A vertical air discharge unit is recommended for installation in windy locations or wherever a horizontal airflow would be obstructed.**

Vertical case size 5 (4 fans)





For minimum clearances (2) see previous outdoor units in vertical configuration

Diagram illustrated in mm

(1) Air flow
(2) Minimum clearances
(3) 12.7mm fixing hole
(4) Mains electric isolator
(5) Service connections to left hand side of the unit:
a = Liquid outlet
b = Discharge gas inlet
(6) 40mm lifting holes
(7) Optional short case axial fan with integral duct fixing holes

	DIMENSIONS (mm)									WEIGHTS (kg)		
	Standard Fan							Fan Options		Standard AC Fan	Optional EC Fan	Optional SCAF
								SCAF	EC			
	A	B	C	D(a)	D(b)	D(c)	E	B	B			
CR140/DR70	4641	1090	1167	1524	1539	1524	1107			349	375	394
CR165/DR95	4641	1155	1167	1524	1539	1524	1107			415	462	404

Unit Lifting

General

Employ lifting specialists
Local codes and regulations relating to the lifting of this type of equipment should be observed
Each chain/sling must be capable of lifting the whole unit
Lift the unit slowly and evenly

IMPORTANT

Only use lifting points provided.

Do not use 1 chain between 2 lifting points to avoid load shift.

Ensure that chains/slings DO NOT crush the casework, coil or fan assemblies.

If the unit is dropped it should immediately be checked for damage and reported to Airedale.

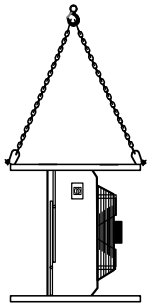
Airedale will accept no responsibility for mishandling during the positioning of the equipment.

CAUTION

Check the unit is as ordered, discrepancies or transit damage should be reported to Airedale immediately.

Horizontal Air Discharge

The unit is delivered in horizontal air discharge configuration secured to a pallet. Where possible the unit should be moved with the pallet in place.



Use 4 lifting eyes attached to 4 individual slings/chains (supplied by others) and attach 2 to each top leg using the holes provided as illustrated.

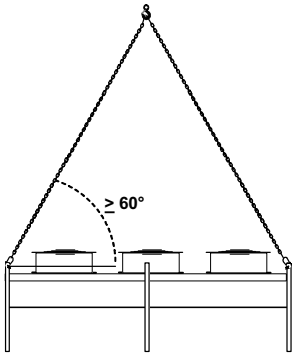
Vertical Air Discharge

The unit is delivered in horizontal air discharge configuration (with the mains isolator and fan speed controller already configured for vertical air discharge) secured to a pallet. Where possible the unit should be moved with the pallet in place.

Before lifting into final position, the unit legs should be re-orientated, refer to instructions provided at delivery.

CAUTION

Care should be taken to ensure the unit does not sustain damage before it is lifted into final position.



Use 4 lifting eyes attached to 4 individual slings/chains (supplied by others) and attach 1 to the top of each of the 4 corner legs using the holes provided as illustrated.

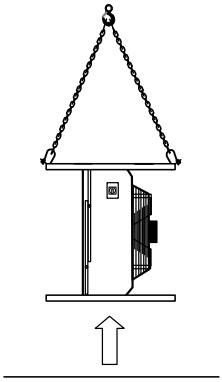
Installation Data

Re-orientation to Vertical Discharge

1 Remove the fixings securing the unit to the pallet.

2 In line with horizontal discharge lifting instructions, lift the unit sufficiently to gain access to the lower leg fixings as shown in Fig 1.

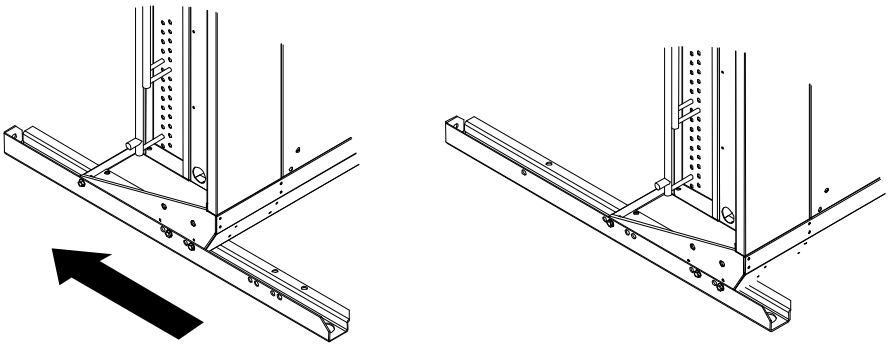
Fig 1



3 Reposition and secure the lower 2 legs to the corner of the unit using the fixings and hole positions provided to both faces, as Fig 2.

Note, model sizes CR80 & CR105 have an additional mid support leg, this should also be adjusted and secured.

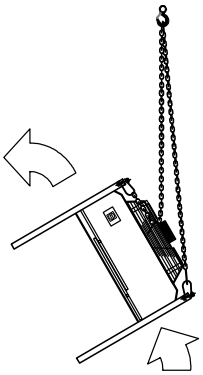
Fig 2



4 Lower and rest the unit down to floor and reposition and secure the upper legs as described in Step 3.

5 In line with vertical discharge lifting instructions lift the unit slowly into vertical orientation as Fig 3.

Fig 3



Care should be taken to ensure the unit does not drop into position and that damage is not sustained prior to lifting the unit into final position.

6 The unit may be lifted into its final position.

Positioning

- Unit must be positioned on an even base to ensure correct operation.
- Observe airflow and maintenance clearances.
- Where multiple units are installed, due care should be taken to avoid the discharge air from each unit adversely affecting other units in the vicinity.
- When mounting the units adjacent to a wall or other vertical surface the condenser should be positioned with the coil side facing the wall.
- Check all services are present and accessible.

Mounting

Fix the condenser down using the appropriate bolt holes in unit fixing legs.

Siting Recommendations

Horizontal Air Discharge

Avoid where possible siting the unit where wind and air re-circulation may interfere with the fan operation.

A vertical air discharge unit is recommended for installation in windy locations or wherever a horizontal air flow would be obstructed.

Pipework Connections

CAUTION **Take care that the service connections are correctly made and in particular do not invert the inlet and outlet connections.**

Pipework Connections sizes

		CR12	CR16	CR22	CR30
Connections					
Liquid Line - Sweat	in	5/8	5/8	5/8	3/4
Discharge Line - Sweat	in	5/8	5/8	5/8	3/4

		CR50	CR65	CR80	CR105
Connections					
Liquid Line - Sweat	in	3/4	3/4	7/8	7/8
Discharge Line - Sweat	in	1 1/8	1 1/8	1 3/8	1 3/8

		CR	CR	CR	CR
Connections					
Liquid Line - Sweat	in	3/4	3/4	7/8	7/8
Discharge Line - Sweat	in	1 1/8	1 1/8	1 3/8	1 3/8

Holding Charge

The units are shipped with a holding charge of inert gas to guard against contamination or moisture during shipping and storage.

CAUTION **The charge should be checked to indicate if leaks are present prior to evacuation.**

If the charge appears to be either partially or totally lost, then the unit should be carefully checked for signs of physical damage.

Pipework Installation - Good Practices

CAUTION **The following information is based on a complete matched Airedale system using R410A.**

General

Run the refrigeration lines taking care to ensure the following:
Use straight line routes where ever possible
Refrigerant lines should be insulated in areas of high/low temperature or when exposed to direct sunlight
When insulating refrigerant lines, cut approximately 30 - 50cm longer than the distance between the units to ensure the insulation goes right upto the unit, leave connections uncovered for leak testing
Remove burrs to the ends of the copper tube, holding the tube downward to avoid allowing dirt to contaminate the tube
Avoid any contact between the discharge line and the liquid line

Performance Data – Condensers

Standard Condenser Fan

Mean Condensing Temperature °C		Ambient					
		25°C	30°C	35°C	40°C	45°C	48°C
		Output (kW)	Output (kW)	Output (kW)	Output (kW)	Output (kW)	Output (kW)
	35	8.8	3.3	-	-	-	-
	40	13.8	8.8	3.4	-	-	-
CR12	45	19.0	14.0	8.9	3.6	-	-
	50	24.4	19.2	14.1	9.1	3.8	-
	55	29.8	24.7	19.5	14.4	9.3	4.1
	35	11.9	5.0	-	-	-	-
	40	18.2	12.0	5.2	-	-	-
CR16	45	24.7	18.4	12.1	5.4	-	-
	50	31.3	25.0	18.6	12.3	5.6	-
	55	38.2	31.8	25.4	19.0	12.6	6.5
	35	15.4	6.2	-	-	-	-
	40	24	15.5	6.4	-	-	-
CR22	45	32.8	24.2	15.7	6.7	-	-
	50	41.7	33.1	24.6	16.0	7.0	-
	55	51.0	42.3	33.7	25.1	16.4	7.7
	35	19.2	7.8	-	-	-	-
	40	29.9	19.4	8.0	-	-	-
CR26	45	40.9	30.3	19.6	8.4	-	-
	50	52.1	41.4	30.7	20.0	8.8	-
	55	63.5	52.9	42.1	31.4	20.5	9.9
	35	19.8	8.1	-	-	-	-
	40	30.6	20.0	8.4	-	-	-
CR30	45	41.7	30.9	20.2	8.7	-	-
	50	53.1	42.1	31.3	20.5	9.2	-
	55	64.8	53.8	42.8	31.9	21.0	9.8
	35	25.4	10.5	-	-	-	-
	40	39.4	25.7	10.9	-	-	-
CR35	45	53.6	39.7	26.0	11.3	-	-
	50	68.1	54.2	40.3	26.4	11.8	-
	55	83.1	69.0	55.0	41.1	27	12.9
	35	33.7	13.7	-	-	-	-
	40	52.6	34.0	14.2	-	-	-
CR50	45	71.7	53.1	34.4	14.8	-	-
	50	91.3	72.5	53.8	35.1	15.5	-
	55	111.5	92.6	73.7	54.8	35.9	16.9
	35	42.3	65.9	-	-	-	-
	40	65.9	42.7	17.9	-	-	-
CR60	45	89.8	66.6	43.2	18.6	-	-
	50	114..3	91.0	67.6	44.0	19.5	-
	55	139.5	116.0	92.5	68.9	45.1	20.3

(1) Output kW refers to the condenser heat rejection.

CAPACITY DATA

Standard Condenser Fan

Mean Condensing Temperature °C		Ambient					
		25°C	30°C	35°C	40°C	45°C	48°C
		Output (kW)	Output (kW	Output (kW	Output (kW	Output (kW	Output (kW
CR65	35	44.9	18.6	-	-	-	-
	40	69.1	45.2	19.3	-	-	-
	45	93.8	69.7	45.6	20	-	-
	50	119.2	94.8	70.6	46.4	21	-
	55	145.5	120.9	96.4	72	47.5	22.6
CR75	35	58.2	24.6	-	-	-	-
	40	89.5	58.6	25.4	-	-	-
	45	121.4	90.3	59.3	26.3	-	-
	50	154.1	122.8	91.6	60.3	27.5	-
	55	187.8	156.3	124.8	93.4	61.7	30.1
CR80	35	55.3	23	-	-	-	-
	40	85.8	55.8	23.8	-	-	-
	45	116.7	86.6	56.5	24.7	-	-
	50	148.4	118.1	87.8	57.5	25.8	-
	55	180.9	150.4	120	89.5	58.9	28.3
CR95	35	69.7	29.2	-	-	-	-
	40	108	70.4	30.2	-	-	-
	45	147	109.3	71.3	31.4	-	-
	50	186.7	148.9	110.9	72.6	32.8	-
	55	227.6	189.5	151.4	113.1	74.5	37
CR105	35	72.1	30	-	-	-	-
	40	110.8	72.6	31	-	-	-
	45	150.4	111.7	73.3	32.2	-	-
	50	191.1	152.1	113.2	74.5	33.8	-
	55	233.3	193.8	154.6	115.5	76.3	36.4
CR130	35	95.3	40.5	-	-	-	-
	40	146.3	95.9	41.7	-	-	-
	45	198.3	147.6	97	43.2	-	-
	50	251.6	200.6	149.7	98.6	45.1	-
	55	306.6	255.2	203.9	152.6	101	50.6
CR140	35	95.8	40.2	-	-	-	-
	40	147.2	96.3	41.5	-	-	-
	45	199.6	148.3	97.2	43	-	-
	50	253.5	201.6	150.1	98.7	44.9	-
	55	309	256.8	204.8	152.9	101	48.3
CR165	35	124.8	53.5	-	-	-	-
	40	191.6	125.6	55	-	-	-
	45	259.6	193.2	126.9	56.9	-	-
	50	329	262.3	195.7	128.9	59.2	-
	55	400.6	333.4	266.4	199.3	131.8	66.6

(1) Output kW refers to the total heat rejection

Performance Data – Dry Coolers

Standard Dry Cooler Fan

	Water Entering / Leaving Temperature °C	Ambient				
		25°C	30°C	35°C	40°C	45°C
		Output (kW)	Output (kW)	Output (kW)	Output (kW)	Output (kW)
DR10	35°C/30°C	11	-	-	-	-
	40°C/35°C	19.6	11	-	-	-
	45°C/40°C	28.1	19.6	11.1	-	-
	50°C/45°C	36.6	28	19.6	11.1	-
	55°C/50°C	45	36.4	27.9	19.5	11.1
DR12	35°C/30°C	13.6	-	-	-	-
	40°C/35°C	24.5	13.7	-	-	-
	45°C/40°C	35.2	24.5	13.7	-	-
	50°C/45°C	45.9	35.1	24.5	13.8	-
	55°C/50°C	56.6	45.7	35.05	4.4	13.8
DR15	35°C/30°C	15..4	-	-	-	-
	40°C/35°C	25.6	15.3	-	-	-
	45°C/40°C	35.6	25.4	15.3	-	-
	50°C/45°C	45.4	35.2	25.2	15.2	-
	55°C/50°C	55.2	44.9	34.9	25	15.1
DR20	35°C/30°C	18.3	-	-	-	-
	40°C/35°C	31.9	18.3	-	-	-
	45°C/40°C	45.1	31.7	18.3	-	-
	50°C/45°C	58.1	44.8	31.6	18.3	-
	55°C/50°C	71.5	57.7	44.4	31.4	18.3
DR25	35°C/30°C	24.4	-	-	-	-
	40°C/35°C	43.1	24.5	-	-	-
	45°C/40°C	61.5	43	24.5	-	-
	50°C/45°C	79.7	61.2	42.9	24.5	-
	55°C/50°C	98	79.3	60.9	42.8	24.6
DR30	35°C/30°C	30.6	-	-	-	-
	40°C/35°C	54.5	30.7	-	-	-
	45°C/40°C	78	54.5	30.8	-	-
	50°C/45°C	101.4	77.8	54.4	30.9	-
	55°C/50°C	124.9	101	77.5	54.3	30.9
DR35	35°C/30°C	34.8	-	-	-	-
	40°C/35°C	57.4	34.6	-	-	-
	45°C/40°C	79.5	56.9	34.3	-	-
	50°C/45°C	101.4	78.7	56.4	34.1	-
	55°C/50°C	123.3	100.4	77.9	55.9	33.9
DR40	35°C/30°C	42	-	-	-	-
	40°C/35°C	72	41.9	-	-	-
	45°C/40°C	101.5	71.7	41.8	-	-
	50°C/45°C	130.8	101	71.4	41.8	-
	55°C/50°C	160.2	130	100.3	71	41.6
DR45	35°C/30°C	44.6	-	-	-	-
	40°C/35°C	74.4	44.4	-	-	-
	45°C/40°C	103.4	73.8	44.2	-	-
	50°C/45°C	132.3	102.5	73.2	43.9	-
	55°C/50°C	161.2	131.1	101.6	72.6	43.6
DR50	35°C/30°C	53.1	-	-	-	-
	40°C/35°C	91.7	53.1	-	-	-
	45°C/40°C	129.7	91.4	53.	-	-
	50°C/45°C	167.6	129.2	91.1	53	-
	55°C/50°C	205.5	166.8	128.6	90.8	52.9

(1) Output kW refers to the dry cooler heat rejection

CAPACITY DATA
Standard Dry Cooler Fan

	Water Entering / Leaving Temperature °C	Ambient				
		25°C	30°C	35°C	40°C	45°C
		Output (kW)	Output (kW)	Output (kW)	Output (kW)	Output (kW)
DR55	35°C/30°C	55	-	-	-	-
	40°C/35°C	91.2	54.8	-	-	-
	45°C/40°C	126.3	90.4	54.4	-	-
	50°C/45°C	161.2	125.1	89.6	54	-
	55°C/50°C	196	159.5	123.8	88.7	53.7
DR70	35°C/30°C	74.7	-	-	-	-
	40°C/35°C	122.6	74.2	-	-	-
	45°C/40°C	169.4	121.5	73.7	-	-
	50°C/45°C	215.8	167.6	120.3	73.1	-
	55°C/50°C	262.1	213.4	165.8	119.2	72.6
DR75	35°C/30°C	72.6	-	-	-	-
	40°C/35°C	121.5	72.3	-	-	-
	45°C/40°C	169.2	120.6	72	-	-
	50°C/45°C	216.6	167.7	119.6	71.6	-
	55°C/50°C	263.8	214.5	166.2	118.7	71.2
DR95	35°C/30°C	98.5	-	-	-	-
	40°C/35°C	163.3	97.9	-	-	-
	45°C/40°C	226.7	162	97.4	-	-
	50°C/45°C	289.7	224.6	160.6	96.7	-
	55°C/50°C	352.6	286.9	222.5	159.3	96.1

(1) Output kW refers to the dry cooler heat rejection

Operating Limits

Standard Variable Speed Head Pressure Control	
Minimum Ambient Air DB °C	-20°C
Maximum Ambient Air DB °C	+48

Optional On/Off Head Pressure Control	
Minimum Ambient Air DB °C	-0°C
Maximum Ambient Air DB °C	+48

(1) For conditions outside those quoted, please contact Airedale.
(2) Low ambient kits are available for applications with temperatures below those quoted, please contact Airedale.

Sound Data

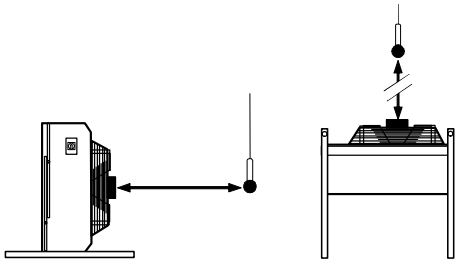
Method of Sound Measurement

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: 1995.

All Sound Power Levels quoted are calculated from measured sound intensity according BS EN ISO9614 Part 1: 1995.

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.



Sound Data - STANDARD FAN

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.

Horizontal

	Sound Measurement		Overall dB(A)	Frequency (Hz) dB							
				63	125	250	500	1000	2000	4000	8000
	Power		74	72	83	76	68	68	65	60	50
CR12	Pressure	@10m	46	44	55	48	40	40	37	32	22
	Power		74	72	83	76	68	68	65	60	50
CR16	Pressure	@10m	46	44	55	48	40	40	37	32	22
	Power		78	82	87	74	74	73	70	63	62
CR22/DR10	Pressure	@10m	50	54	59	46	46	45	42	35	34
	Power		82	83	80	82	79	78	74	67	59
CR26/DR12	Pressure	@10m	54	55	52	54	51	50	46	39	31
	Power		78	82	87	74	74	73	70	63	62
CR30/DR15	Pressure	@10m	50	54	59	46	46	45	42	35	34
	Power		82	83	80	82	79	78	74	67	59
CR35/DR20	Pressure	@10m	54	55	52	54	51	50	46	39	31
	Power		81	85	90	77	77	76	73	66	65
CR50/DR25	Pressure	@10m	53	57	62	49	49	48	45	38	37
	Power		85	86	83	85	82	81	77	70	62
CR60/DR30	Pressure	@10m	57	58	55	57	54	53	49	42	34
	Power		81	85	90	77	77	76	73	66	65
CR65/DR35	Pressure	@10m	53	57	62	49	49	48	45	38	37
	Power		85	86	83	85	82	81	77	70	62
CR75/DR45	Pressure	@10m	57	58	55	57	54	53	49	42	34
	Power		83	80	90	80	77	79	75	68	67
CR80/DR40	Pressure	@10m	55	52	62	52	49	51	47	40	39
	Power		87	88	85	87	84	83	79	72	64
CR95/DR50	Pressure	@10m	59	60	57	59	56	55	51	44	36
	Power		82	80	90	80	77	79	75	68	67
CR105/DR55	Pressure	@10m	55	52	62	52	49	51	47	40	39
	Power		87	88	85	87	84	83	79	72	64
CR130/DR70	Pressure	@10m	59	60	57	59	56	55	51	44	36
	Power		84	81	90	81	78	81	77	70	69
CR140/DR75	Pressure	@10m	56	53	62	53	50	53	49	42	41
	Power		88	89	86	88	85	84	80	73	65
CR165/DR95	Pressure	@10m	60	61	58	60	57	56	52	45	37

OUTDOOR

Vertical

	Sound Measurement	Overall dB(A)	Frequency (Hz) dB							
			63	125	250	500	1000	2000	4000	8000
	Power	75	69	86	75	68	69	65	61	51
CR12	Pressure @ 10m	47	41	58	47	40	41	37	33	23
	Power	75	69	86	75	68	69	65	61	51
CR16	Pressure @ 10m	47	41	58	47	40	41	37	33	23
	Power	79	80	90	73	74	74	70	64	63
CR22/DR10	Pressure @ 10m	51	52	62	45	46	46	42	36	35
	Power	83	80	83	82	79	79	73	68	60
CR26/DR12	Pressure @ 10m	55	52	55	54	51	51	45	40	32
	Power	79	80	90	73	74	74	70	64	63
CR30/DR15	Pressure @ 10m	51	52	62	45	46	46	42	36	35
	Power	83	80	83	82	79	79	73	68	60
CR35/DR20	Pressure @ 10m	55	52	55	54	51	51	45	40	32
	Power	82	83	93	76	77	77	73	67	66
CR50/DR25	Pressure @ 10m	54	55	65	48	49	49	45	39	38
	Power	86	83	86	85	82	82	76	71	63
CR60/DR30	Pressure @ 10m	58	55	58	57	54	54	48	43	35
	Power	82	83	93	76	77	77	73	67	66
CR65/DR35	Pressure @ 10m	54	55	65	48	49	49	45	39	38
	Power	86	83	86	85	82	82	76	71	63
CR75/DR45	Pressure @ 10m	58	55	58	57	54	54	48	43	35
	Power	84	78	93	79	78	80	75	69	68
CR80/DR40	Pressure @ 10m	56	50	65	51	50	52	47	41	40
	Power	88	85	88	87	84	84	78	73	65
CR95/DR50	Pressure @ 10m	60	57	60	59	56	56	50	45	37
	Power	84	78	93	79	78	80	75	69	68
CR105/DR55	Pressure @ 10m	56	50	65	51	50	52	47	41	40
	Power	88	85	88	87	84	84	78	73	65
CR130/DR70	Pressure @ 10m	60	57	60	59	56	56	50	45	37
	Power	85	78	94	81	78	81	77	71	70
CR140/DR75	Pressure @ 10m	57	50	66	53	50	53	49	43	42
	Power	89	86	89	88	85	85	79	74	66
CR165/DR95	Pressure @ 10m	61	58	61	60	57	57	51	46	38

General Specification

Mechanical Data – Condensers and Dry Coolers

			CR12	CR16	CR22 DR10	CR26 DR12	CR30 DR15
Total Heat of Rejection CR	(1)	kW	14.1	18.6	24.6	30.7	31.3
Total Heat of Rejection DR	(2)	kW	N/A	N/A	11.1	13.7	15.3
Dimensions - Horizontal	(3)						
H x W x L		mm	972 x 1000 x 907	972 x 1000 x 907	1167 x 1000 x 1102	1167 x 1000 x 1102	1167 x 1000 x 1102
Dimensions – Vertical	(3)						
H x W x L		mm	1076 x 972 x 907	1076 x 972 x 907	1090 x 1167 x 1102	1155 x 1000 x 1102	1090 x 1167 x 1102
Weight							
Machine		kg	62	70	77	93	90
Construction							
Material/Colour			Galvanised Sheet Steel, Epoxy Baked Powder Paint - Light Grey (RAL 7035)				
Condenser			Air Cooled - Rifled Copper Tube/Turbulated Aluminium Fins				
Dry Cooler			Air Cooled - Copper Tube/Turbulated Aluminium Fins				
Total Face Area		m²	0.58	0.58	0.91	0.91	0.91
Nominal Airflow		m³/s	1.3	1.1	2.3	3.3	1.9
Discharge			**-H** Horizontal or **-V** Vertical (***Please Specify at Order***)				
Fan & Motor			Axial				
Quantity			1	1	1	1	1
Diameter		mm	500	500	630	710	630
Maximum Speed		rpm	910	910	895	930	895
Refrigeration - CR			Single Circuit				
Refrigerant Type			R410A				
Holding Charge			Inert Gas				
Coil Volume		l	3.0	6.0	4.7	4.7	9.3
Refrigerant Charge	(4)	kg	1.4	2.7	2.2	2.2	4.3
Dry Cooler							
Internal Water Volume		L			6.6	6.6	11.9
Nominal Flowrate		l/s			0.53	0.65	0.7
Pressure Drop		kPa			11.9	17.8	20.7
Connections							
Liquid Line – Sweat		in	5/8	5/8	5/8	5/8	3/4
Discharge Line – Sweat		in	5/8	5/8	5/8	5/8	3/4
OPTIONAL EXTRAS							
Short Case Axial Fan			Designed to 75 Pa ESP				
Dimensions - Horizontal							
H x W x L		mm	972 x 1000 x 907	972 x 1000 x 907	1167 x 1000 x 1102	1167 x 1000 x 1102	1167 x 1000 x 1102
Dimensions - Vertical							
H x W x L		mm	1080 x 972 x 907	1080 x 972 x 907	1130 x 1167 x 1102	1140 x 1167 x 1102	1130 x 1167 x 1102
Weight							
Machine		kg	67	75	88	105	101
EC Fan							
Dimensions - Horizontal							
H x W x L		mm	972 x 1000 x 907	972 x 1000 x 907	1167 x 1000 x 1102	1167 x 1000 x 1102	1167 x 1000 x 1102
Dimensions - Vertical							
H x W x L		mm	1065 x 972 x 907	1065 x 972 x 907	1127 x 1167 x 1102	1170 x 1167 x 1102	1127 x 1167 x 1102
Weight							
Machine		kg	67	76	83	90	96

(1) Nominal data based on 35°C ambient and a 50°C mean condensing temperature and using standard fan.
(2) Nominal data based on 35°C ambient and 45/40°C Water entering / leaving.
(3) Overall dimensions for clearance;.
(4) For guidance only.

Mechanical Data- Condensers and Dry Coolers

			CR35 DR20	CR50 DR25	CR60 DR30	CR65 DR35	CR75 DR45
Total Heat of Rejection CR	(1)	kW	40.3	53.8	67.6	70.6	91.6
Total Heat of Rejection DR	(2)	kW	18.34	24.5	30.8	34.3	44.2
Dimensions - Horizontal	(3)						
H x W x L		mm	1167 x 1000 x 1102	1167 x 1000 x 2184	1167 x 1000 x2184	1167 x 1000 x 2184	1167 x 1000 x 2184
Dimensions - Vertical	(3)						
H x W x L		mm	1155 x 1167 x 1102	1090 x 1167 x 2184	1155 x 1167 x 2184	1090 x 1167 x 2184	1155 x 1167 x 2184
Weight							
Machine		kg	106	132	165	162	195
Construction							
Material/Colour			Galvanised Sheet Steel, Epoxy Baked Powder Paint - Light Grey (RAL 7035)				
Condenser			Air Cooled - Rifled Copper Tube/Turbulated Aluminium Fins				
Dry Cooler			Air Cooled - Copper Tube/Turbulated Aluminium Fins				
Total Face Area		m²	0.91	2.11	2.11	2.11	2.11
Nominal Airflow		m³/s	2.6	4.8	7	4.2	5.7
Discharge			**-H** Horizontal or **-V** Vertical (***Please Specify at Order***)				
Fan & Motor					Axial		
Quantity			1	2	2	2	2
Diameter		mm	710	630	710	630	710
Maximum Speed		rpm	930	895	930	895	930
Refrigeration-CR					Single Circuit		
Refrigerant Type					R410A		
Holding Charge					Inert Gas		
Coil Volume		l	9.3	10.7	10.7	21.4	21.4
Refrigerant Charge	(4)	kg	4.3	4.9	4.9	9.8	9.8
Dry Cooler							
Internal Water Volume		L	11.9	14.8	14.8	26.7	26.7
Nominal Flowrate		l/s	0.9	1.2	1.47	1.64	2.1
Pressure Drop		kPa	46.4	15.3	20.5	38.5	60.4
Connections							
Liquid Line - Sweat		in	¾	3/4	¾	3/4	¾
Discharge Line - Sweat		in	¾	1 1/8	1 1/8	1 1/8	1 1/8
OPTIONAL EXTRAS							
Short Case Axial Fan					Designed to 75 Pa ESP		
Dimensions – Horizontal							
H x W x L		mm	1167 x 1000 x 1102	1167 x 1000 x 2184	1167 x 1000 x 2184	1167 x 1000 x 2184	1167 x 1000 x 2184
Dimensions – Vertical							
H x W x L		mm	1140 x 1167 x 1102	1130 x 1167 x 2184	1140 x 1167 x 2184	1130 x 1167 x 2184	1140 x 1167 x 2184
Weight							
Machine		kg	118	154	188	184	218
EC Fan							
Dimensions – Horizontal							
H x W x L		mm	1167 x 1000 x 1102	1167 x 1000 x 2184	1167 x 1000 x 2184	1167 x 1000 x 2184	1167 x 1000 x 2184
Dimensions – Vertical							
H x W x L		mm	1170 x 1167 x 1102	1127 x 1167 x 2184	1170 x 1167 x 2184	1127 x 1167 x 2184	1170 x 1167 x 2184
Weight							
Machine		kg	103	145	159	175	189

(1) Nominal data based on 35°C ambient and a 50°C mean condensing temperature and using standard fan.
(2) Nominal data based on 35°C ambient and a 45/40°C Water entering / leaving.
(3) Overall dimensions for clearance.
(4) For guidance only.

Mechanical Data- Condensers and Dry Coolers

			CR80 DR40	CR95 DR50	CR105 DR55
Total Heat of Rejection CR	(1)	kW	87.8	110.9	113.2
Total Heat of Rejection DR	(2)	kW	41.8	53	54.4
Dimensions - Horizontal	(3)				
H x W x L		mm	1167 x 1000 x 3565	1167 x 1000 x 3565	1167 x 1000 x 3565
Dimensions - Vertical	(3)				
H x W x L		mm	1090 x 1167 x 3565	1155 x 1167 x 3565	1090 x 1167 x 3565
Weight					
Machine		kg	208	258	260
Construction					
Material/Colour			Galvanised Sheet Steel, Epoxy Baked Powder Paint - Light Grey (RAL 7035)		
Condenser			Air Cooled - Rifled Copper Tube/Turbulated Aluminium Fins		
Dry Cooler			Air Cooled - Copper Tube/Turbulated Aluminium Fins		
Total Face Area		m^2	3.63	3.63	3.63
Nominal Airflow		m^3/s	7.5	10.8	6.6
Discharge			**-H** Horizontal or **-V** Vertical (***Please Specify at Order***)		
Fan & Motor				Axial	
Quantity			3	3	3
Diameter		mm	630	710	630
Maximum Speed		rpm	895	930	895
Refrigeration - CR				Single Circuit	
Refrigerant Type				R410A	
Holding Charge				Inert Gas	
Coil Volume		l	18.3	18.3	36.6
Refrigerant Charge	(4)	kg	8.4	8.4	16.7
Dry Cooler					
Internal Water Volume		L	23.1	23.1	43.2
Water flowrate		l/s	2.0	2.5	2.6
Pressure Drop		kPa	48.5	70	32
Connections					
Liquid Line - Sweat		in	7/8	7/8	7/8
Discharge Line - Sweat		in	1 3/8	1 3/8	1 3/8
OPTIONAL EXTRAS					
Short Case Axial Fan				Designed to 75 Pa ESP	
Dimensions - Horizontal					
H x W x L		mm	1167 x 1000 x 3565	1167 x 1000 x 3565	1167 x 1000 x 3565
Dimensions - Vertical					
H x W x L		mm	1130 x 1167 x 3565	1140 x 1167 x 3565	1130 x 1167 x 3565
Weight					
Machine		kg	242	249	294
EC Fan					
Dimensions - Horizontal					
H x W x L		mm	1167 x 1000 x 3565	1167 x 1000 x 3565	1167 x 1000 x 3565
Dimensions - Vertical					
H x W x L		mm	1127 x 1167 x 3565	1170 x 1167 x 3565	1127 x 1167 x 3565
Weight					
Machine		kg	228	293	280

(1) Nominal data based on 35°C ambient and a 50°C mean condensing temperature and using standard fan.
(2) Nominal data based on 35°C ambient and a 45/40°C Water entering / leaving.
(3) Overall dimensions for clearance; refer to ***Dimensional & Installation Data***, for detail.
(4) For guidance only.

OUTDOOR

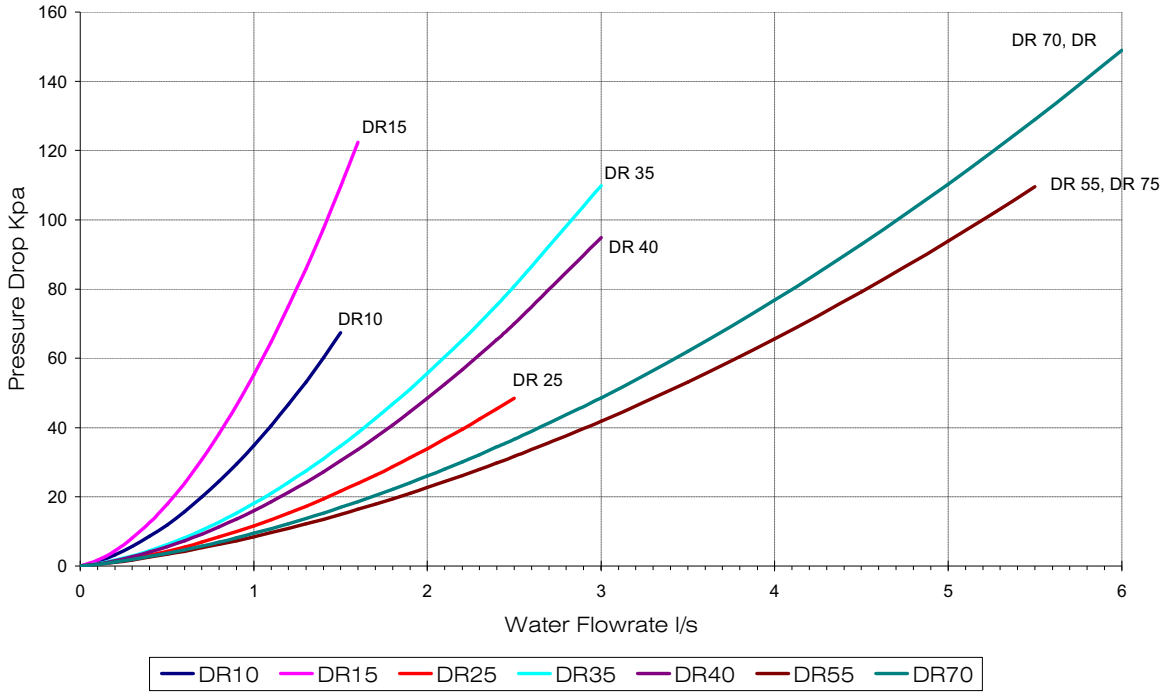
Mechanical Data- Condensers and Dry Coolers

			CR130 DR75	CR140 DR70	CR165 DR95
Total Heat of Rejection CR	(1)	kW	149.7	150.1	195.7
Total Heat of Rejection DR	(2)	kW	72	73.7	97.4
Dimensions - Horizontal	(3)				
H x W x L		mm	1167 x 1000 x 3565	1167 x 1000 x 4641	1167 x 1000 x 4641
Dimensions - Vertical	(3)				
H x W x L		mm	1155 x 1167 x 3565	1090 x 1167 x 4641	1155 x 1167 x 4641
Weight					
Machine		kg	310	349	415
Construction					
Material/Colour			Galvanised Sheet Steel, Epoxy Baked Powder Paint - Light Grey (RAL 7035)		
Condenser			Air Cooled - Rifled Copper Tube/Turbulated Aluminium Fins		
Dry Cooler			Air Cooled - Copper Tube/Turbulated Aluminium Fins		
Total Face Area		m^2	3.63	4.8	4.8
Nominal Airflow		m^3/s	9.3	8.7	12.4
Discharge			**-H** Horizontal or **-V** Vertical (***Please Specify at Order***)		
Fan & Motor				Axial	
Quantity			3	4	4
Diameter		mm	710	630	710
Maximum Speed		rpm	930	895	930
Refrigeration - CR				Single Circuit	
Refrigerant Type				R410A	
Holding Charge				Inert Gas	
Coil Volume		l	36.6	TBC	TBC
Refrigerant Charge	(4)	kg	16.7	TBC	TBC
Dry Cooler					
Internal Water Volume		L	43.2	55.9	55.9
Water flowrate		l/s	3.4	3.5	4.6
Pressure Drop		kPa	53	62	94
Connections					
Liquid Line - Sweat		in	7/8	7/8	7/8
Discharge Line - Sweat		in	1 3/8	1 3/8	1 3/8
OPTIONAL EXTRAS					
Short Case Axial Fan				Designed to 75 Pa ESP	
Dimensions – Horizontal					
H x W x L		mm	1140 x 1000 x 3565	1167 x 1000 x 4641	1167 x 1000 x 4641
Dimensions – Vertical					
H x W x L		mm	1140 x 1167 x 3565	1130 x 1167 x 4641	1140 x 1167 x 4641
Weight					
Machine		kg	345	394	404
EC Fan					
Dimensions – Horizontal					
H x W x L		mm	1167 x 1000 x 3565	1167 x 1000 x 4641	1167 x 1000 x 4641
Dimensions – Vertical					
H x W x L		mm	1170 x 1167 x 3565	1127 x 1167 x 4641	1170 x 1167 x 4641
Weight					
Machine		kg	301	375	462

(1) Nominal data based on 35°C ambient and a 50°C mean condensing temperature and using standard fan.
(2) Nominal data based on 35°C ambient and a 45/40°C Water entering/leaving.
(2) Overall dimensions for clearance; refer to ***Dimensional & Installation Data***, for detail.
(3) For guidance only.

OUTDOOR

Dry Cooler Waterside Pressure Drop



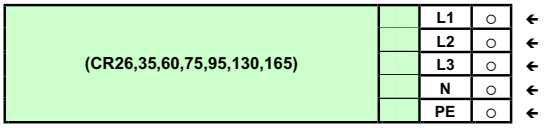
Electrical Data

Condenser Dry Cooler		CR12	CR16	CR22 DR10	CR26 DR12	CR30 DR15	CR35 DR20	CR50 DR25	CR60 DR30	CR65 DR35
Unit Data (1)										
Nominal Run Amps	A	1.18	1.18	2.62	1.65	2.62	1.65	5.24	3.3	5.24
Maximum Start Amps	A	4.13	4.13	9.17	6.1	9.17	6.1	18.34	12.2	18.34
Recommended Mains Fuse	A	6	6	6	6	6	6	10	6	10
Max Mains Cable Incoming	mm²	6	6	6	6	6	6	6	6	6
Mains Supply 50Hz			230V/1Ph		400V/3Ph	230V/1Ph	400V/3Ph	230V/1Ph	400V/3Ph	230V/1Ph
Fan - Per Fan										
Quantity		1	1	1	1	1	1	2	2	2
Motor Size	kW	0.27	0.27	0.6	0.88	0.6	0.88	0.6	0.88	0.6
Full Load Amps	A	1.18	1.18	2.62	1.65	2.62	1.65	2.62	1.65	2.62
Locked Rotor Amps	A	4.13	4.13	9.17	6.1	9.17	6.1	9.17	6.1	9.17
OPTIONAL EXTRAS										
Short Case Axial Fan - Per Fan										
Quantity		1	1	1	1	1	1	2	2	2
Motor Size	kW	0.61	0.61	1.4	1.94	1.4	1.94	1.4	1.94	1.4
Full Load Amps	A	2.8	2.8	6	3.4	6	3.4	6	3.4	6
Locked Rotor Amps	A	7	7	18	11.9	18	11.9	18	11.9	18
EC Condenser Fan - Per Fan										
Quantity		1	1	1	1	1	1	2	2	2
Motor Size	kW	0.69	0.69	0.73	1.68	0.73	1.68	0.73	1.68	0.73
Full Load Amps	A	3.1	3.1	3.3	2.6	3.3	2.6	3.3	2.6	3.3

Condenser Dry Cooler		CR75 DR45	CR80 DR40	CR95 DR50	CR105 DR55	CR130 DR75	CR140 DR70	CR165 DR95
Unit Data (1)								
Nominal Run Amps	A	3.3	7.86	4.95	7.86	4.95	10.48	6.6
Maximum Start Amps	A	12.2	27.51	18.3	27.51	18.3	36.68	24.4
Recommended Mains Fuse	A	6	16	10	16	10	16	10
Max Mains Cable Incoming	mm²	6	6	6	6	6	6	6
Mains Supply 50Hz		400V/3Ph	230V/1Ph	400V/3Ph	230V/1Ph	400V/3Ph	230V/1Ph	400V/3Ph
Fan - Per Fan								
Quantity		2	3	3	3	3	4	4
Motor Size	kW	0.88	0.6	0.88	0.6	0.88	0.6	0.88
Full Load Amps	A	1.65	2.62	1.65	2.62	1.65	2.62	1.65
Locked Rotor Amps	A	6.1	9.17	6.1	9.17	6.1	9.17	6.1
OPTIONAL EXTRAS								
Short Case Axial Fan - Per Fan								
Quantity		2	3	3	3	3	4	4
Motor Size	kW	1.94	1.4	1.94	1.4	1.94	1.4	1.94
Full Load Amps	A	3.4	6	3.4	6	3.4	6	3.4
Locked Rotor Amps	A	11.9	18	11.9	18	11.9	18	11.9
EC Condenser Fan - Per Fan								
Quantity		2	3	3	3	3	4	4
Motor Size	kW	1.68	0.73	1.68	0.73	1.68	0.73	1.68
Full Load Amps	A	2.6	3.3	2.6	3.3	2.6	3.3	2.6

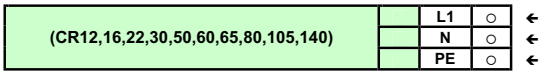
(1) Nominal data based on 35°C ambient and a 50°C mean condensing temperature and using standard fan.

Interconnecting Wiring



Mains Incoming 400V / 3Ph + N / 50Hz

Interconnecting wiring



Mains Incoming 230V / 1Ph + N / 50Hz

Troubleshooting –
Unmatched Outdoor Units

FAULT	POSSIBLE CAUSE	REMEDY/ACTION
Unit will not start	No power	Check power supply to the controller
	Wired incorrectly	Check wire connections in accordance with wiring diagram on control box lid
	Loose wires	Check all wires, connections, terminals etc
Head pressure too high	Condenser coil clogged or dirty	Clean condenser
	Overcharge of refrigerant, normally troublesome in warm weather	Reclaim excess refrigerant from system
	Air or other non-condensable gas in system	Evacuate system and re-charge with new refrigerant
	Head pressure controller faulty	Check fan speed controller - if faulty - replace
	Fan not operating or operating inefficiently	Check motor - if faulty - replace
Head pressure too low	Fan operating too fast in low ambient conditions	Check fan speed controller adjustment - if faulty - replace
Condenser fan not operating - power on	Power supply failure	Check power supply at circuit breaker
	Wiring to motor	Check voltage at motor terminals
	Motor / fan assembly jammed	Isolate unit and check free rotation of motor/fan assembly, if faulty - replace
	Motor internal overheat protector tripped	Carry out continuity check at terminals “TK” in motor terminal box, if tripped and motor hot - check bearings, if tripped and motor cold - replace motor
	Faulty motor windings/capacitor	Motor humming would indicate fault in motor or capacitor, check windings for continuity and if OK replace capacitor
	Minimum speed set too low	Adjust head pressure controller to suit
	Faulty pressure sensor	Check electrical connections are secure at controller and pressure sensor, replace controller and sensor (as they are matched sets)
	Faulty fan speed controller	Link wires “line” and “load” to bypass controller, if motor runs full speed - replace unit
Condenser fan runs too fast	High ambient condition or excessive re-circulation of air around condenser coil	Check installation against design
	Minimum set speed setting incorrect	Adjust as necessary
	Incorrect pressure sensor setting	Adjust sensor screw as necessary
	Faulty fan speed controller	Replace controller and sensor (as they are matched sets)
	Faulty pressure sensor	Replace controller and sensor (as they are matched sets)
Condenser fans runs only slowly	Incorrect pressure setting	Adjust sensor screw as necessary
	Faulty fan speed controller	Replace controller and sensor (as they are matched sets)
	Faulty pressure sensor	Replace controller and sensor (as they are matched sets)
	Motor/capacitor faulty	Replace

Troubleshooting

Airedale Matched Outdoor Units

FAULT	POSSIBLE CAUSE	REMEDY/ACTION
Unit will not start	No power	Check power supply to the controller
	Wired incorrectly	Check wire connections in accordance with wiring diagram on control box lid
	Loose wires	Check all wires, connections, terminals etc
Head pressure too high	Condenser coil clogged or dirty	Clean condenser
	Overcharge of refrigerant, normally troublesome in warm weather	Reclaim excess refrigerant from system
	Air or other non-condensable gas in system	Evacuate system and re-charge with new refrigerant
	Head pressure controller faulty	Refer to Indoor unit
	Fan not operating or operating inefficiently	Refer to Indoor unit
Head pressure too low	Fan operating too fast in low ambient conditions	Refer to Indoor unit
Condenser fan not operating - power on	Power supply failure	Check power supply at circuit breaker
	Wiring to motor	Check voltage at motor terminals
	Motor / fan assembly jammed	Isolate unit and check free rotation of motor/fan assembly, if faulty - replace
	Motor internal overheat protector tripped	Carry out continuity check at terminals “TK” in motor terminal box, if tripped and motor hot - check bearings, if tripped and motor cold - replace motor
	Faulty motor windings/capacitor	Motor humming would indicate fault in motor or capacitor, check windings for continuity and if OK replace capacitor
	Minimum speed set too low	Refer to Indoor unit
	Faulty pressure sensor	Check electrical connections are secure at controller and pressure sensor, replace controller and sensor (as they are matched sets)
	Faulty fan speed controller	Refer to Indoor unit
Condenser fan runs too fast	High ambient condition or excessive re-circulation of air around condenser coil	Check installation against design
	Minimum set speed setting incorrect	Adjust as necessary
	Incorrect pressure sensor setting	Adjust sensor screw as necessary
	Faulty fan speed controller	Refer to Indoor unit
	Faulty pressure sensor	Refer to Indoor unit
Condenser fans runs only slowly	Incorrect pressure setting	Adjust sensor screw as necessary
	Faulty fan speed controller	Refer to Indoor unit
	Faulty pressure sensor	Refer to Indoor unit
	Motor/capacitor faulty	Replace

Maintenance

CAUTION **ALL work MUST be carried out by technically trained competent personnel.**

The equipment contains live electrical and moving parts, ISOLATE prior to maintenance or repair work.

IMPORTANT **Ensure relevant F-Gas Regulation checks are carried out at the appropriate period.**

General Maintenance The maintenance schedule indicates the time period between maintenance operations.

3 Months At every service visit the following checks should be carried out:

Fan & Motor Assembly

1 Examine the fan and motor assemblies for lateral and end play in the bearings.
2 Ensure that no water is entering the motor via the electrical gland plate.
3 Check fan blades for damage and corrosion.

Refrigeration Circuits

1 Visually examine pipework and components for damage, wear and tear and oil patches, the latter being indicative of a system leak.
2 Ensure the fan head pressure controller is controlling the head pressure at the required setting as indicated on the commissioning sheets provided.

The gauges can then be removed from the system. Do not forget to replace the security caps on the Schrader valves.

Condenser Coil

Clean the condenser coil with a stiff bristled hand brush. If dirt has accumulated over a long period or the coil is greasy or sticky, then it may be necessary to use a water hose or chemical pressure hose. Take care not to damage the fins and comb out if they have become damaged in any way.

For epoxy coated coils use a suitable cleaning fluid and soft bristle brush.

CAUTION **Do not use steam for cleaning condenser coils otherwise damage or danger may result from excessive internal pressures**

Electrical

1 Check all electrical connections for signs of overheating or arcing.
2 Check all cables for signs of chafing or physical damage.

Cabinet

1 Clean the cabinets using a mild detergent.
2 Treat any paint damage or rust as necessary.

12 months **As per 3 months plus the following:**

1 Check all electrical connections for security.
2 Check all refrigeration connections with a leak detector.

NOTES

Head Office:

Airedale International Air Conditioning Ltd
Leeds Road
Rawdon
Leeds LS19 6JY
United Kingdom

Tel: **+44 (0) 113 239 1000**
Fax: +44 (0) 113 250 7219

e-mail: ***enquiries@airedale.com***
website: ***www.airedale.com***

A MODINE Company

SYSTEMY HVAC Sp. z o.o.
ul.Rydygiera 8, 01-793 Warszawa
tel.: +48 22 101 74 00
fax: +48 22 101 74 01
e-mail: biuro@systemy-hvac.pl
www.systemy-hvac.pl

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