Airedale
APPLIED THERMAL INNOVATION

Precision Air Conditioning DX / CW / Dual cool



SmartCool™

16 - 233kW

INCLUDES NEW 16 – 60KW RANGE:

+ 17% more cooling kW/m²
+ EER 34% more efficient*

* Compared with our previous generation CRAC units

Qualified for Energy Technology List www.eca.gov.uk TM
Authorised User No. 00007

HFC R410A – HFC R410A
AIR DX – AIR COOLED
WATER DX – WATER COOLED
CW – CHILLED WATER
DOWNFLOW
SCROLL COMPRESSOR
INVERTER COMPRESSOR
DUAL COOL
FREE COOL – FREE-COOLING
EC FAN

www.airedale.com

BRITISH MANUFACTURER
ENERGY EFFICIENCY
CONTROLS
SERVICE
TRAINING

Precision air conditioning

Taking efficiency even further

The SmartCool™ is a next generation, highly efficient, indoor packaged unit providing extremely precise, reliable climate control.

Applied cutting edge technology enables the SmartCool™ to quietly and precisely control room temperature, humidity and air quality to ensure efficient, reliable, 24/7 operation of sensitive systems in data centres and other critical applications.

Optimise your unit selection

The SmartCool™ gives you the flexibility to optimise unit selection to match the considerations of your specific project – whether a new or retrofit application or driven by cost, efficiency, space, noise, resilience and/or ambient conditions.

Choose from 138 downflow models available in:

- 8 system types
- 10 case sizes
- Single or dual circuit featuring:
  - DX air cooled (16 – 137kW)
  - DX water cooled (60 – 137kW)
  - Chilled water (16 – 233kW)
  - Dual cool with a free-cooling variant

16 - 60kW DX range

EER 34% more efficient*

Enhanced by tandem/dual compressors; EC motors; electronic expansion valves and the latest EC plug fan technology

*compared with our previous generation precision air conditioning

Staged cooling

Precise capacity match

High level of capacity control with up to six stages of DX cooling across single and dual circuits (model dependent)

30-90Hz inverter compressors

17 – 100% variable cooling

React to system load fluctuations and exactly match cooling load (option on 60 – 180kW models)

EC backward curved fans

Up to 70% more efficient*

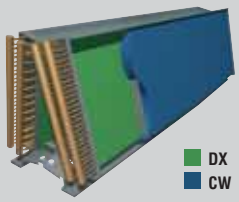
Particularly at part load between 30% and 100%; EC fans respond seamlessly to load fluctuations

* than an AC fan at part load; standard on 16 - 60kW models

Variable humidification

Up to 80% less power

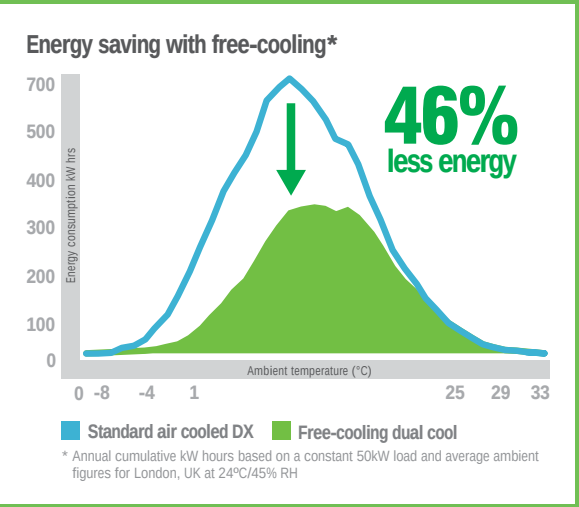
Efficient de-humidification uses less mechanical cooling and minimum re-heat whilst maintaining precise de-humidification control



Efficient 'A' frames incorporating dual cool

2N redundancy and free-cooling variant

Two independent cooling mediums in the same case, with automatic changeover and duty share (option on 60 – 150kW models)



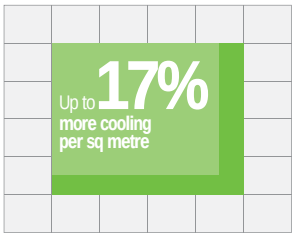
Free-cooling, dual cool SmartCool™

Saving up to £8,000/year or 31,000kg of CO_2 compared with a standard DX system (£0.11/kWhr)

The SmartCool™ makes use of the ambient air for cooling whenever the outdoor temperature is lower than the room. High room temperatures and the large surface area coils of the SmartCool™ increase the opportunity for free-cooling.

Saving energy and carbon, reducing operating costs

Designed for maximum efficiency, SmartCool™ precision air conditioning pays for itself by reducing operating costs and carbon footprint. Whether the data centre is new and under-populated or density and heat loads are increasing, the SmartCool™ intelligently takes control, switching to the best operating mode and minimising energy consumption whilst maintaining a stable environment.



Less space claim

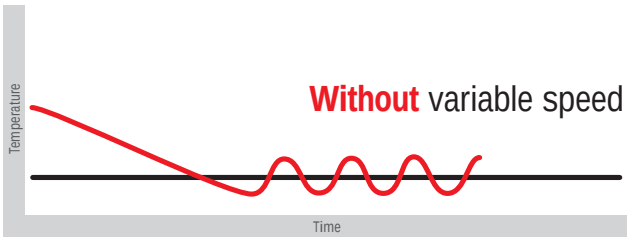
SmartCool™16 – 60kW DX models typically offer up to 17%* more cooling kW/m²

* than our previous generation precision air conditioning systems

Qualified for Energy Technology List
www.eca.gov.uk
TM
Authorised User No. 00007

Virtually all models in the SmartCool™ 16 - 60kW range are included on the Energy Technology List, offering the potential for investors to claim 100% first-year capital allowance. For details see www.eca.gov.uk

Supply air temperature is closer to setpoint. Zone temperature is kept tightly near setpoint at all times by continuous load-matching operation.



Supply air temperature will be colder than needed due to excess capacity. Zone setpoint is maintained by on-off cycling.

Exact capacity match

INVERTER COMPRESSOR
EC FAN

10% reduction in running costs representing £1,162 p.a.*

30 – 90Hz inverter-driven compressor offering 17 – 100% modulation (SC XVXV)

* compared with a comparable unit with a fixed speed compressor, over a year

Intelligent controls identify the optimised operating point for the system so that the inverter-driven compressor and variable speed fans are always running at the most efficient point for the room load. The inverter compressor also offers reduced sound levels during part load operation of the compressors and a starting current equivalent to 10% of a traditional fixed speed scroll compressor.

Precise conditioning

Intuitive climate control

Sensitive computer equipment operates best within tight environmental tolerances, yet thermal loads in data centres are continually fluctuating and many servers are under-utilised. Rather than wasting power by working at full load, the SmartCool™ anticipates and responds immediately to expected or unforeseen load variations, managing specific temperatures within ± 1°C accuracy.

Balancing room temperature and humidity

The balance between temperature and relative humidity is intrinsically linked. By precisely controlling temperature, the SmartCool™ accurately controls humidity. Its control-led, advanced components work in harmony, simultaneously balancing temperature, humidity and air flow to precisely match load.

CW CHILLED WATER

Chilled water units

The chilled water valve position and the fan speed can be varied to give precise and variable cooling. If this is combined with a variable flow water system, pump power can be minimised to further enhance the system efficiency.

Circuit 1 Circuit 2

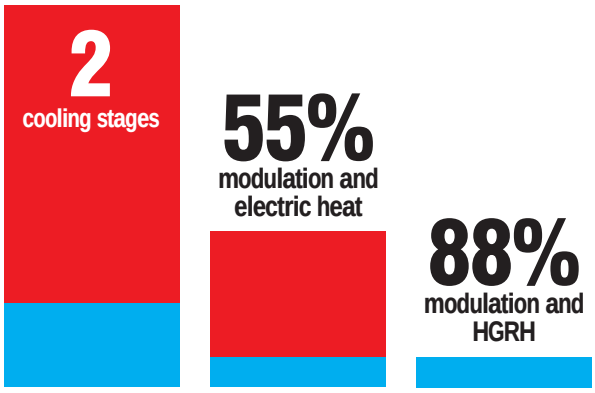
Dissimilar size compressors
6 stages

5% increase in part load efficiency and precise capacity match with staged DX cooling*

Staged cooling continually utilises the maximum coil area within the space enabling capacity to more precisely match the application, reducing power input

* compared with our previous generation precision air conditioning units

Up to 88% energy saving with modulation and hot gas re-heat (HGRH)



SmartCool 100kW

Electric heat power Compressor cooling power

88% less power is absorbed during the de-humidification cycle with sensible heat ratio control and minimum re-heat

Efficient de-humidification with hot gas re-heat (HGRH) uses less mechanical cooling

The SmartCool™ removes moisture from the room by using only one stage of cooling and slowing down the air so it spends more time on the coil. Where heating is used during the cooling de-humidification process, HGRH offers an energy efficient way of providing re-heat capability by utilising energy that would normally be rejected outside by the condenser. Since the SmartCool™ provides precise control of room conditions, re-humidification is rarely necessary. HGRH is available on SmartCool™ 60 – 150kW models.

Optimised
Air flow management

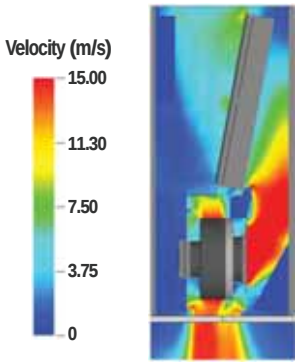
The SmartCool™ delivers cold air through floor-mounted grilles directly to the front of the server racks. By presenting the right amount of air flow, at the correct temperature to the server inlet, the SmartCool™ ensures optimum air flow management and eliminates hot spots.

Typically a 50% drop in air volume results in an 83% reduction in fan power input

SmartCool™ 60 – 233kW CW models

Ideal for large data centre applications, these models offer up to 10% more cooling/m² for the same footprint*. The air flow design with large slab coil and fans located in the base of the unit give an even air distribution on the coil and in the floor void.

* compared to Airedale previous generation precision air conditioning



Smartcool™ D16 - 60kW DX models

CFD analysis showing improved air flow path

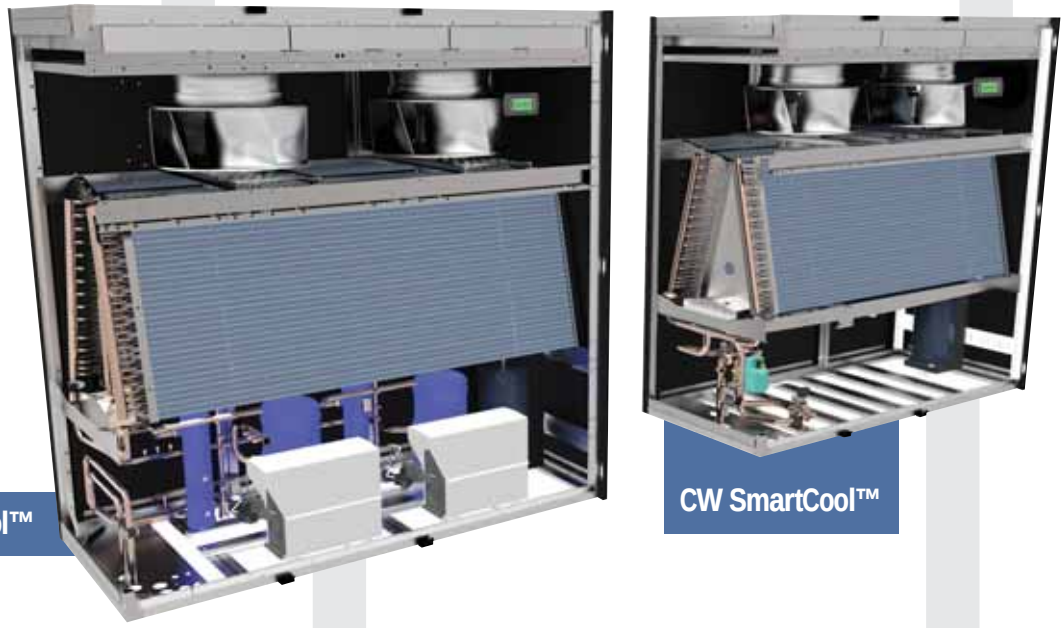
Smart Options

Constant air volume

Controls air flow through the unit: EC fans speed up to prevent system performance dropping off due to resistance such as dirty filters or ductwork extensions.

Capacity control

Based on cooling demand, it allows the chilled water unit to modulate air volume using minimum power. The fan speed is only increased when the chilled water valve has been modulated up to 100%.



Variable speed compressors

Room temperature is kept tightly near setpoint by continuous load matching and 17 – 100% modulated cooling over a dual circuit for higher precision, part load efficiency and low starting current.

Constant pressure control

Adapts to changes in the room in hot aisle and cold aisle configurations. Air pressure within the floor void is controlled using a variable speed fan to maintain positive air pressure and setpoint.

Intelligent controls

Seamlessly managing your system

CONTROLS

The control centre of each of our cooling systems is a sophisticated electronic microprocessor with control logic specially developed by Airedale.

The microprocessor uses sensors to send and receive messages to and from active components such as compressors, fans and pumps so they interact with each other, balancing cooling duty, temperature, air flow and pressure to exactly match the application.

By integrating intelligent components, the controller manages and optimises the system's performance and reduces power draw.

Smart networking solutions:
Fully-programmable via the control panel's user-friendly display, the microprocessor can be linked with all standard BMS protocols to:

- **Trigger alarm messages**
- **Send alarm/service messages via email or SMS using an interface**
- **Operate time scheduling**
- **Allow adjustment of temperature setpoints**

Future-proof, flexible, 24/7
As an intelligent stand-alone unit or when networked with up to eight units, the SmartCool™ adapts to your data centre's particular requirements. Its compact, modular design makes it easy for multiple units of different size and capacity to be added as load increases or to eliminate hot spots. Smartly networked standby units ensure 24/7 availability.

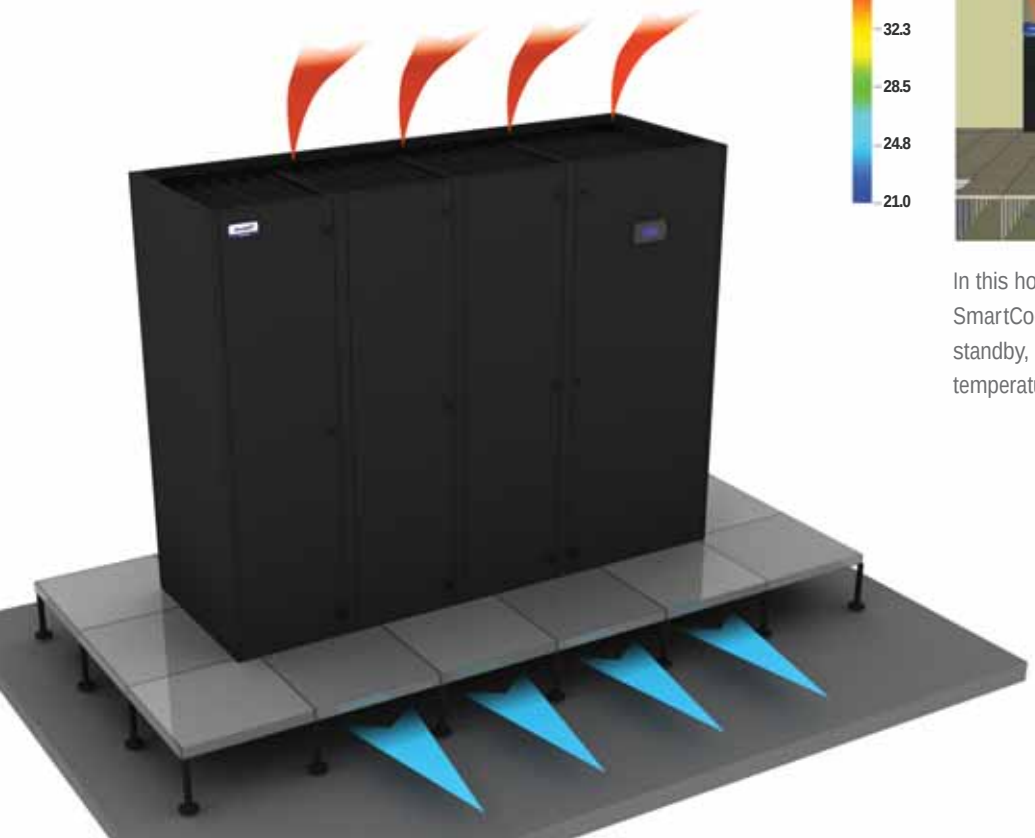
Integration protocols

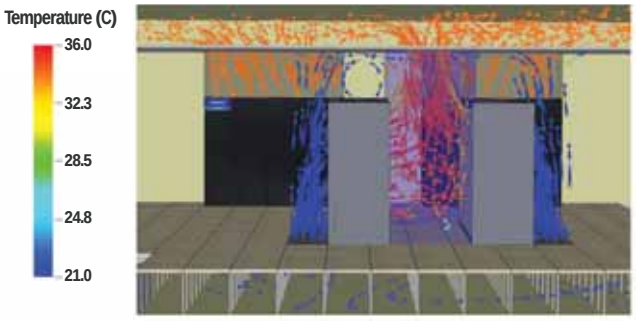
Modbus® BACnet™ SNMP ECHELON The LonWorks Company

30% increase in cooling duty

Typically where the return temperature increases from 24°C to 35°C, the same SmartCool™ unit will increase its cooling duty from 60 to 80kW.

Latest touch screen technology allows the display to be viewed in full colour and in graphical format (available as an option)





In this hot aisle containment system, three SmartCool™ units, configured as 2 run/1 standby, are cooling 10 x 20kW racks; cold aisle temperature is at 21°C and the hot aisle 36°C

Ideal for low / medium density areas
When integrated with hot aisle containment, the performance and efficiency of the SmartCool™ is significantly enhanced and its duty increases in the higher return temperatures.

Building management
Taken to another level

ACIS™ building management system developed by Airedale, enables you to manage smart cooling and other building services, from any manufacturer, in a single, integrated system across multiple sites and communication protocols. ACIS™ sits at the front end of a building system, putting you in control of reducing operating costs.

With the click of a button on a PC, tablet or phone, valuable and intelligent information can be pulled back automatically for remote 24/7 monitoring and maintenance; enhanced system operation and improved decisions.

ACIS

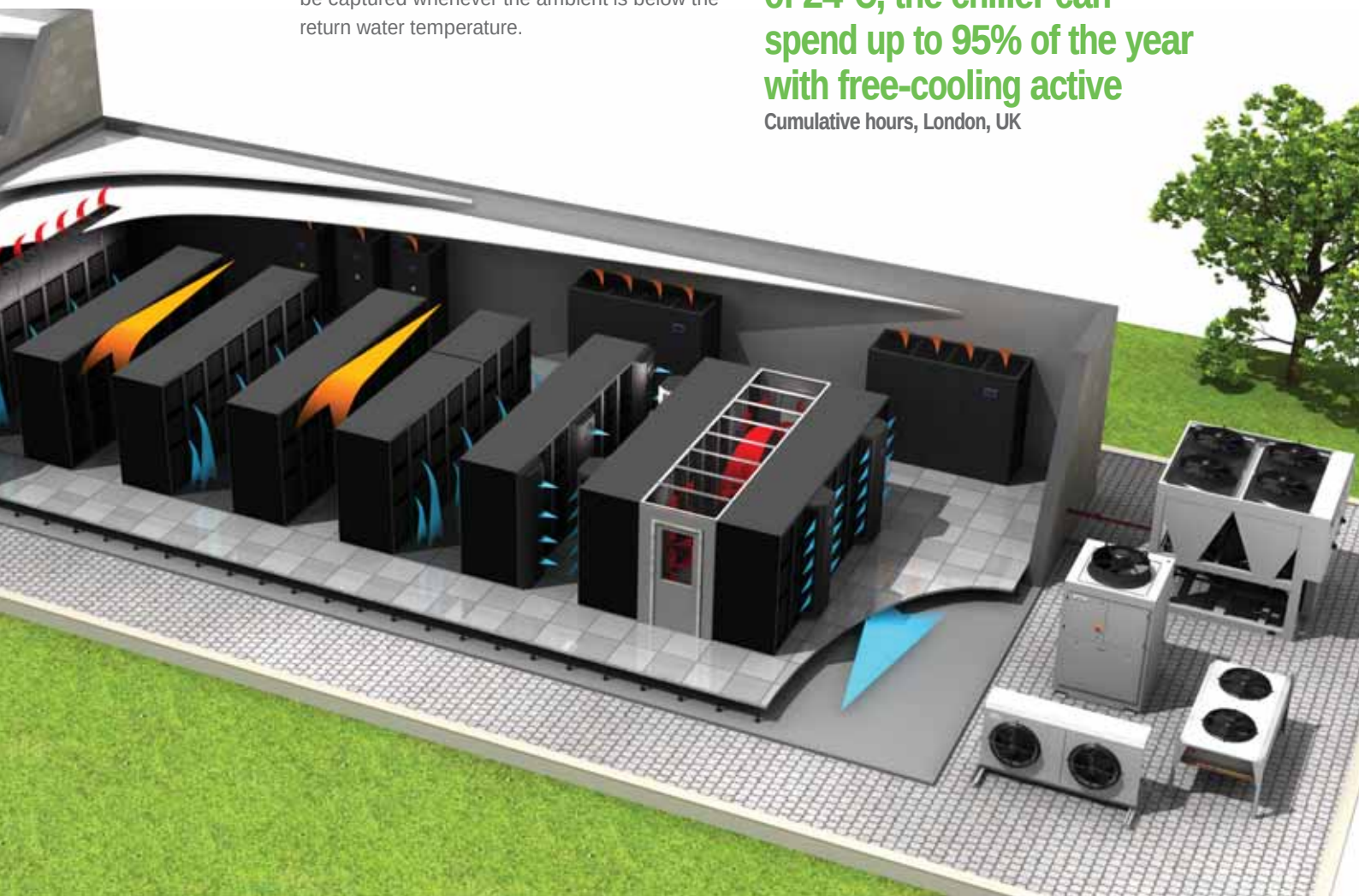
FREE COOL
FREE-COOLING

Integration with a free-cooling chiller

Chilled water models of the SmartCool™ provide even greater efficiency when integrated with one or more Airedale free-cooling chillers which offer concurrent free-cooling - enabling free-cooling to be captured whenever the ambient is below the return water temperature.

When the SmartCool™ unit is in a 24/7 data centre with a typical room temperature of 24°C, the chiller can spend up to 95% of the year with free-cooling active

Cumulative hours, London, UK



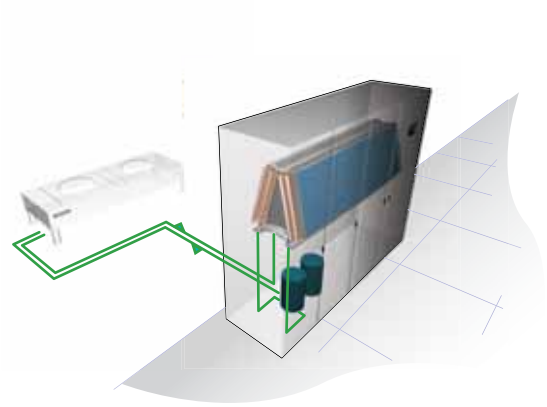
Flexible systems

To fit your specific operation

Single circuit

DX air cooled (X100, X200)

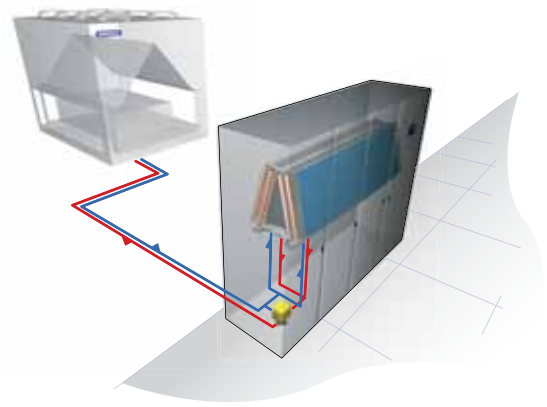
The SmartCool™ X100/X200 is an air cooled, direct expansion (DX), single circuit system linked to a separate, remotely mounted air cooled condenser. Optimised for heat transfer using energy efficient refrigerant R410A in each circuit, the SmartCool™ system is located within the conditioned space, absorbing room heat and transferring it outside to the condenser. By using one or more same/dissimilar sized scroll compressors across the circuit, part load efficiency can be maximised and capacity more precisely matched to application.



Single circuit

Chilled water (C000)

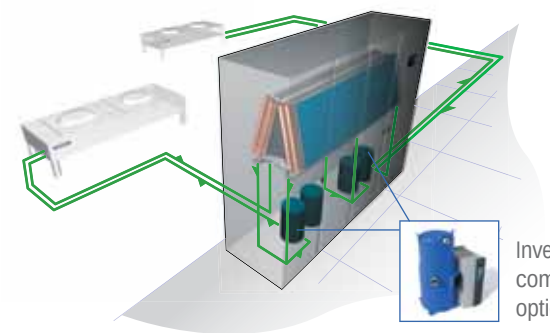
Where a chilled water single circuit system is preferred, warm room air is blown across the efficient cooling coils of the SmartCool™ C000 and the heat transferred to a chilled water system such as Airedale's high efficiency TurboChill™. By controlling the 3-way water regulating valve, the intelligent AireTronix microprocessor can achieve precise control of temperature and humidity. Chilled water also has better heat transfer properties.



Dual circuit

DX air cooled (X1X1/X2X2)

An air cooled, R410A double circuit system, the SmartCool™ X1X1/X2X2 is linked to two separate, remotely mounted air cooled condensers. The X1X1/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 both circuits, part load efficiency can be maximised and capacity more precisely matched to application..

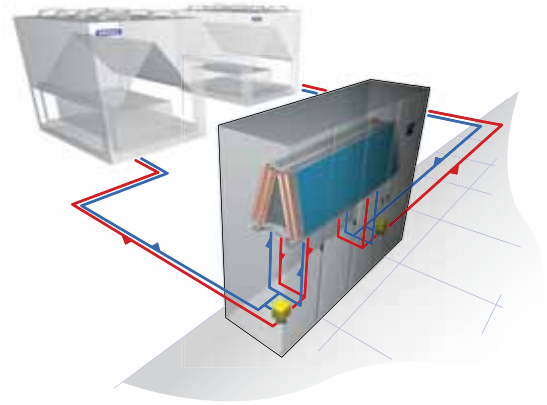


Inverter compressor option (XVXV)

Dual circuit

Chilled water (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.



KEY


Airedale chiller

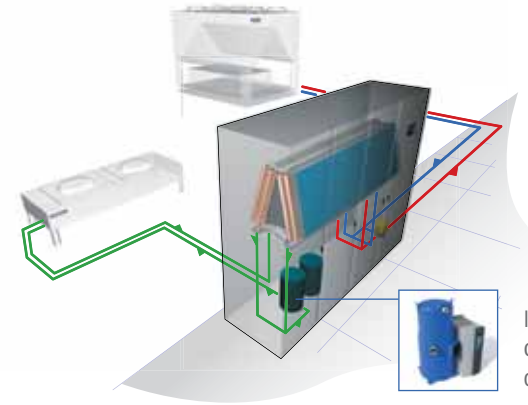

Airedale dry cooler


Airedale condenser

Dual cool

DX air cooled and chilled water (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.

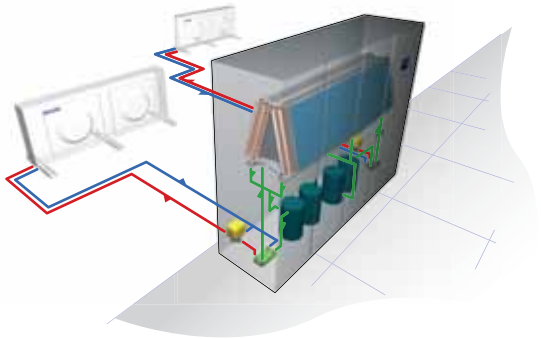


Inverter compressor option (XVC0)

Dual circuit

DX water cooled (W2W2)

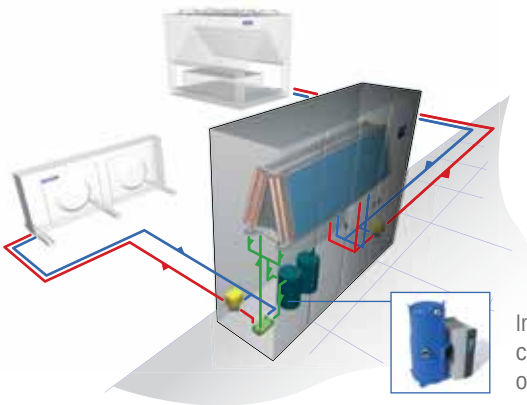
Suitable for applications favouring reduced refrigerant charges, the SmartCool™ W2W2 is a double circuit system featuring DX cooling within the case and dry coolers outside. Warm room air is passed through two completely independent chilled water coils and an integral plate condenser transfers the heat load to the glycol solution which is then channelled outside to two air cooled dry coolers.



Dual cool

DX water cooled and chilled water (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.



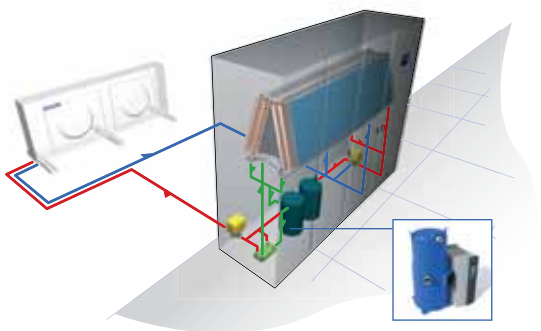
Inverter compressor option (WVC0)

Dual cool

DX water cooled and free-cooling (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.

* Based on Met Office average ambient figures for London, UK at 24ºC/45%RH



Inverter compressor option (WVF0)

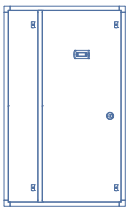
Specifications at a glance

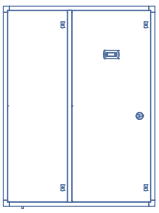
SmartCool™: Optimising the key drivers in efficient building operation

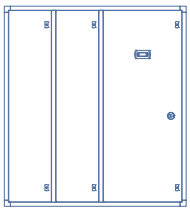
- Excellent part load performance from staged cooling
- Minimum space claim
- Low sound minimised by scroll compressors and optimised setpoint management particularly during part load
- Resilience ensuring 24/7 availability
- Fans and all main components accessible from front for easy access / maintenance
- Preconfigured, packaged units with optional, colour touch screen microprocessor display for seamless fine-tuning
- Fits through a standard door (16 – 150kW) units

DX or CW

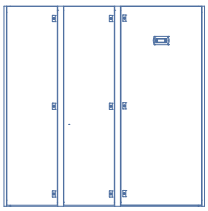

SC09

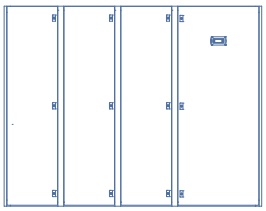

SC12


SC15


SC18

DX, CW or Dual Cool


SC19


SC25

Environment

- Free-cooling dual cool variant uses 46% less energy
- Designed and optimised for R410A which requires only a minimum refrigerant charge and high heat transfer coefficient
- Scroll compressors minimise sound
- Direct drive, speed controllable, AC/EC backward curved fans (indoor) and axial fans (outdoor) for low sound and power input

Optional

- Refrigerant leak detection for F Gas compliance
- Night-time set-back limits sound emissions in noise sensitive applications by reducing condenser fan speed at pre-set hours

Mechanical

- 138 models: DX air cooled (16 – 137kW); DX water cooled (60 - 137kW), chilled water (16 - 233kW)
- Single circuit: CW or DX
  Dual circuit DX/DX or CW/CW
  Dual cool: DX/CW; WC/WC; WC/CW; WC/Free-cooling (All are model dependent)
- Downflow configuration
- Dual cool with automatic change-over and duty share, for built-in 2N redundancy and flexibility (60 – 130kW)
- Slab coil with hydrophilic coated fins (16 – 60kW DX & CW / 150 – 233kW CW); both offer two circuits configured to reduce downtime (model dependent)
- Efficient A-frame coil design maximises the heat exchange area (60 – 150kW)
- Sight glass and filter drier for system reliability
- Front access to all major components for quick and easy service and maintenance
- 360° unit access via fully detachable panels as well as all service connections located at one end of the unit facilitates installation and maintenance
- Clean and uncluttered case design

Optional:

- Dual purpose condensate pump for humidifier and condensate drains

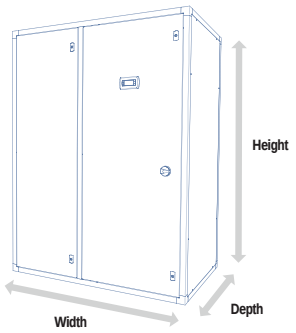
Precision

- Tandem scroll compressor DX cooling across single and dual circuits offers 2 stages of cooling and up to 6 stages using dissimilar size compressors, increasing part load efficiency by 5%
- ‘Blow through’ air flow design minimises sound emission (60 – 150kW) and delivers even air flow under floor
- ‘Draw through’ configuration for maximum heat exchanger efficiency (16 – 60kW / 150 – 233kW)

Optional:

- 30 - 90Hz inverter driven compressors for 17 – 100% modulation and exact capacity match, saving substantial energy at part load
- Constant air volume control whereby fans speed changes if faced with system resistance
- Variable air flow in response to changes in room demand (dependent on application)
- Variable humidification control (adjustable from display), for precise relative humidity control
- High efficiency de-humidification uses less mechanical cooling
- Staged electric heating during de-humidification to ensure thermal balance
- Suction throttle valve technology for 50 – 100% variable capacity and precise setpoint control
- Thyristor-controlled electric heating for precise control

Case size	Height (mm)	Width (mm)	Depth (mm)
1	1980	684	600
2	1980	900	890
3	1980	963	600
4	1980	963	890
5	1980	1200	890
6	1980	1242	600
7	1980	1242	890
8	1980	1500	890
9	1980	1521	890
10	1980	1800	890
11	1980	1985	890
12	1980	2200	890
13	1980	2500	890
14	1980	2549	890
15	1980	3100	890
16	1980	3113	890
17	1980	3500	890
18	2300	1985	890
19	2300	2549	890
20	2300	3113	890

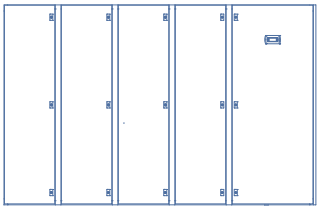


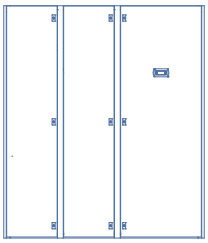
Nomenclature explained

SC	19	D	033	-	X	2	C	0	-	0

	SC/SL/SN/SR/SD	SmartCool / SmartCool long coil
	09 – 35	Decimetre case width (dm)
	D	Downflow
	16 – 233kW	Nominal capacity (kW)
Mono / Dual (CIRCUIT 1)	X/W	Air cooled (R410A) / Water cooled (R410A)
	C	Chilled water
	0/1/2	Compressors per circuit
	V	Inverter compressor
Mono / Dual (CIRCUIT 2)	0	No option
	X/W	Air cooled (R410A) / Water cooled (R410A)
	F/C	Free-cooling / Chilled water
	0/1/2	Compressors per circuit
	V	Inverter compressor
	0	400/230V 3PH/1PH 50Hz

CW


SC31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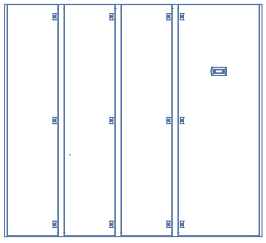
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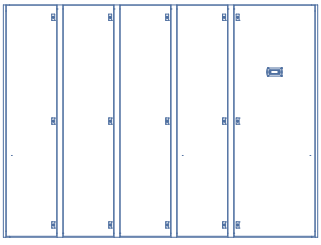
SL31

Electrical & Controls

- Advanced AireTronix controls technology managing and optimising the system's performance

Optional

- ACIS™ building management integrates cooling and other building services, improves data and reduces operating costs
- Dual power supply for redundancy and flexibility
- Electrical supply phase rotation protection
- Electronic soft start for minimal full load current (DX models)
- Power monitoring to manage energy consumption
- Ultracap UPS option to backup power to the controller in the event of a power failure (D16 - 60kW)
- Drip tray level sensor (D16 – 60kW)

Energy-saving

- EC fans (indoor and outdoor) for up to 70% more efficiency; improving room air distribution and air management (option on 60 – 233kW)
- Up to 17% more cooling/m^2
- Intelligent, variable head pressure control for increased efficiency (adjustable from display)
- Electronic expansion valves for 30% increase in efficiency (16 – 60kW)
- High efficiency G4 (EU4) rated, pleated disposable filters give superior high performance with lower airside pressure drops

Optional

- Hot gas re-heat for up to 88% saving in power input (60 – 150kW)
- Electronic expansion valves for 30% increase in efficiency (60 – 150kW)
- Energy Manager for local and remote energy analysis and monitoring

SmartCool™ technical specifications:

Case size (mm)		Model no.	Nominal cooling (kW) TC	Nominal cooling (kW) SC	EER	No. of fans	Air volume m^3/s	Sound pressure @ 3m (dBA)*
		Single circuit						
	H x W x D	C000 - chilled water						
1	1980 x 684 x 600	SN06D010-C000-0	13.1	11.6	52.41	1	0.7	56
		SN06D015-C000-0	17.1	15.6	27.61	1	0.95	67
3	1980 x 963 x 600	SN09D020-C000-0	22.1	19.9	34.05	1	1.2	56
		SN09D025-C000-0	27.4	25.3	20.71	1	1.55	63
6	1980 x 1242 x 600	SN12D030-C000-0	31.9	28.9	32.14	1	1.75	56
		SN12D035-C000-0	37.0	34.2	21.07	1	2.1	60
4	1980 x 963 x 890	SR09D030-C000-0	32.7	28.4	50.59	1	1.7	60
		SR09D040-C000-0	43.1	38.5	29.74	1	2.3	66
7	1980 x 1242 x 890	SR12D045-C000-0	51.3	45.2	41.15	1	2.7	63
		SR12D055-C000-0	61.3	55.0	26.21	1	3.3	68
9	1980 x 1521 x 890	SR15D065-C000-0	71.4	63.6	33.67	2	3.8	66
		SR15D075-C000-0	77.8	70.0	27.91	2	4.2	68
10	1980 x 1800 x 890	SR18D080-C000-0	86.3	77.0	38.88	2	4.6	64
		SR18D095-C000-0	100.2	91.0	26.33	2	5.5	69
		SD18D110-CH00-0	107.2	96.4	41.59	2	5.7	50
		SD18D115-CL00-0	114.8	98.9	44.54	2	5.7	50
12	1980 x 2200 x 890	SD22D140-CH00-0	134.8	116.4	38.23	2	6.7	53
		SD22D145-CL00-0	141.3	118.7	40.06	2	6.7	53
13	1980 x 2500 x 890	SD25D175-CH00-0	178.0	153.0	37.92	3	8.8	53
		SD25D180-CL00-0	185.2	155.5	39.45	3	8.8	53
15	1980 x 3100 x 890	SD31D215-CH00-0	220.6	195.4	37.34	4	11.3	54
		SD31D235-CL00-0	238.2	201.4	40.33	4	11.3	54
17	1980 x 3500 x 890	SD35D255-CH00-0	259.9	226.6	33.15	4	13.0	57
		SD35D270-CL00-0	277.1	232.5	35.34	4	13.0	57
		X100 - DX air cooled						
2	1980 x 900 x 890	SC09D016-X100-0	18.3	18.2	3.89	1	1.6	64
		SC09D019-X100-0	20.9	20.8	3.68	1	1.8	66
		SC09D023-X100-0	24.7	24.6	3.57	1	1.9	67
		SC09D026-X100-0	27.5	26.4	3.57	1	1.9	67
		X200 - DX air cooled						
5	1980 x 1200 x 890	SC12D020-X200-0	23.5	23.4	3.89	1	1.7	59
		SC12D023-X200-0	29.3	29.1	3.78	1	2.1	62
		SC12D029-X200-0	32.9	32.2	3.57	1	2.3	67
		SC12D033-X200-0	37.8	35.8	3.47	1	2.5	68
		SC12D036-X200-0	42.3	38.0	3.47	1	2.5	69
8	1980 x 1500 x 890	SC15D027-X200-0	31.0	30.8	3.99	2	2.4	61
		SC15D030-X200-0	35.2	35.0	3.89	2	2.8	69
		SC15D035-X200-0	40.7	40.5	3.57	2	3.3	69
		SC15D040-X200-0	45.0	44.7	3.47	2	3.3	70
		SC15D044-X200-0	47.9	46.4	3.57	2	3.3	70
10	1980 x 1800 x 890	SC18D037-X200-0	41.2	41.0	3.78	2	3.3	71
		SC18D040-X200-0	46.6	46.3	3.68	2	3.6	72
		SC18D044-X200-0	50.6	50.3	3.57	2	4	74
		Dual circuit						
		C0C0 - chilled water						
4	1980 x 963 x 890	SR09D020-C0C0-0	24.2	24.2	37.07	1	1.7	61
		SR09D025-C0C0-0	31.1	31.1	21.22	1	2.3	66
7	1980 x 1242 x 890	SR12D030-C0C0-0	37.2	37.2	29.56	1	2.7	63
		SR12D035-C0C0-0	44.0	44.0	18.63	1	3.3	68
9	1980 x 1521 x 890	SR15D040-C0C0-0	51.5	51.5	23.99	2	3.8	66
		SR15D045-C0C0-0	55.8	55.8	19.77	2	4.2	68
10	1980 x 1800 x 890	SR18D050-C0C0-0	62.2	62.2	27.63	2	4.6	64
		SR18D060-C0C0-0	71.5	71.5	18.52	2	5.5	69
		SD18D085-CHCH-0	76.6	76.6	33.15	2	5.3	49
		SD18D090-CLCL-0	83.5	79.1	36.16	2	5.3	49
12	1980 x 2200 x 890	SD22D105-CHCH-0	100.1	100.1	28.64	2	6.5	53
		SD22D120-CLCL-0	114.8	104.9	32.82	2	6.5	53
13	1980 x 2500 x 890	SD25D135-CHCH-0	128.5	120.6	31.02	3	8.2	52
		SD25D140-CLCL-0	130.7	123.3	31.54	3	8.2	52
15	1980 x 3100 x 890	SD31D165-CHCH-0	157.9	157.9	29.09	4	10.7	53
		SD31D190-CLCL-0	187.2	172.9	34.49	4	10.7	53
17	1980 x 3500 x 890	SD35D195-CHCH-0	187.0	187.0	25.96	4	12.4	56
		SD35D225-CLCL-0	222.3	201.5	30.86	4	12.4	56
		X - DX air cooled						
10	1980 x 1800 x 890	SC18D048-X1X1-0	56.4	56.1	3.47	2	4.1	75
		SC18D055-X1X1-0	63.8	59.3	3.57	2	4.1	75
11	1980 x 1985 x 890	SC19D055-X2X2-0	55.8	54.8	3.36	2	3.5	51
		SC19D070-X2X2-0	69.7	67.3	3.15	2	4.4	53
		SC19D080-X2X2-0	79.3	75.5	2.94	2	5.1	55
14	1980 x 2549 x 890	SC25D080-X2X2-0	80.9	78.6	2.94	3	5.2	55
		SC25D090-X2X2-0	88.1	86.1	2.84	3	5.9	58
		SC25D100-X2X2-0	100.4	96.0	2.73	3	6.5	60
16	1980 x 3113 x 890	SC31D100-X2X2-0	102.3	96.8	3.15	3	6.1	59
		SC31D120-X2X2-0	117.1	111.4	2.94	3	7.3	58
		SC31D130-X2X2-0	125.3	118.7	2.84	3	7.9	60

SmartCool™ technical specifications continued:

Case size (mm)		Model no.	Nominal cooling (kW) TC	Nominal cooling (kW) SC	EER	No. of fans	Air volume m^3/s	Sound pressure @ 3m (dBA)*
		Single circuit						
	H x W x D	W2W2 - DX water cooled						
5	1980 x 1985 x 890	SC31D100-W2W2-0	55.8	54.8	3.36	2	3.5	51
		SC31D120-W2W2-0	69.7	67.3	3.15	2	4.4	53
		SC31D130-W2W2-0	79.3	75.5	2.94	2	5.1	55
6	1980 x 2549 x 890	SC19D055-W2W2-0	80.9	78.6	2.94	3	5.2	55
		SC19D070-W2W2-0	88.1	86.1	2.84	3	5.9	58
		SC19D080-W2W2-0	100.4	96.0	2.73	3	6.5	60
7	1980 x 3113 x 890	SC25D080-W2W2-0	102.3	96.8	3.15	3	6.1	59
		SC25D090-W2W2-0	117.1	111.4	2.94	3	7.3	58
		SC25D100-W2W2-0	125.3	118.7	2.84	3	7.9	60

Case size (mm)		Model no.	DX cooling (kW) TC	DX cooling (kW) SC	EER	TC	SC	EER	No. of fans	Air volume m^3/s	Sound pressure @ 3m (dBA)*
		Dual cool									
	H x W x D	X2C0 - DX air cooled / chilled water									
11	1980 x 1985 x 890	SC19D033-X2C0-0	30.7	30.7	3.30	63.8	60.1	37.07	2	3.7	47
		SC19D038-X2C0-0	38.3	38.3	3.14	70.4	67.8	26.78	2	4.3	49
		SC19D045-X2C0-0	44.1	44.1	2.84	77.2	75.1	17.12	2	5.1	52
		SC19D064-X2C0-0	65.8	65.8	2.81	77.2	75.1	17.12	2	5.1	51
		SC19D070-X2C0-0	71.7	69.4	2.84	77.2	75.1	17.12	2	5.1	51
		SC19D076-X2C0-0	79.0	72.5	2.78	77.2	75.1	17.12	2	5.1	51
14	1980 x 2549 x 890	SC25D045-X2C0-0	45.6	45.6	2.79	94.7	87.2	17.54	3	5.3	53
		SC25D050-X2C0-0	49.8	49.8	2.63	102.4	95.3	15.96	3	5.9	56
		SC25D055-X2C0-0	56.9	56.9	2.60	109.7	103.2	15.02	3	6.5	57
		SC25D067-X2C0-0	69.8	69.8	2.67	109.7	103.2	15.02	3	6.5	57
		SC25D073-X2C0-0	76.5	76.5	2.71	109.7	103.2	15.02	3	6.5	57
		SC25D080-X2C0-0	84.5	84.2	2.70	109.7	103.2	15.02	3	6.5	57
16	1980 x 3113 x 890	SC31D055-X2C0-0	56.7	56.7	3.18	110.9	98.5	33.71	3	5.8	55
		SC31D065-X2C0-0	64.5	64.5	2.94	126.0	113.5	23.00	3	6.9	58
		SC31D075-X2C0-0	69.7	69.7	2.66	140.2	128.0	16.38	3	7.9	61
		SC31D077-X2C0-0	79.6	79.6	2.70	140.2	128.0	16.38	3	7.9	60
		SC31D080-X2C0-0	83.9	83.9	2.70	140.2	128.0	16.38	3	7.9	60
		SC31D083-X2C0-0	88.1	88.1	2.70	140.2	128.0	16.38	3	7.9	61
		W2C0 - DX water cooled / chilled water									
11	1980 x 1985 x 890	SC19D033-W2C0-0	30.7	30.7	3.30	63.8	60.1	37.07	2	3.7	47
		SC19D038-W2C0-0	38.3	38.3	3.14	70.4	67.8	26.78	2	4.3	49
		SC19D045-W2C0-0	44.1	44.1	2.84	77.2	75.1	17.12	2	5.1	52
		SC19D064-W2C0-0	65.8	65.8	2.81	77.2	75.1	17.12	2	5.1	51
		SC19D070-W2C0-0	71.7	69.4	2.84	77.2	75.1	17.12	2	5.1	51
		SC19D076-W2C0-0	79.0	72.5	2.78	77.2	75.1	17.12	2	5.1	51
14	1980 x 2549 x 890	SC25D045-W2C0-0	45.6	45.6	2.79	94.7	87.2	17.54	3	5.3	53
		SC25D050-W2C0-0	49.8	49.8	2.63	102.4	95.3	15.96	3	5.9	56
		SC25D055-W2C0-0	56.9	56.9	2.60	109.7	103.2	15.02	3	6.5	57
		SC25D067-W2C0-0	69.8	69.8	2.67	109.7	103.2	15.02	3	6.5	57
		SC25D073-W2C0-0	76.5	76.5	2.71	109.7	103.2	15.02	3	6.5	57
		SC25D080-W2C0-0	84.5	84.2	2.70	109.7	103.2	15.02	3	6.5	57
16	1980 x 3113 x 890	SC31D055-W2C0-0	56.7	56.7	3.18	110.9	98.5	33.71	3	5.8	55
		SC31D065-W2C0-0	64.5	64.5	2.94	126.0	113.5	23.00	3	6.9	58
		SC31D075-W2C0-0	69.7	69.7	2.66	140.2	128.0	16.49	3	7.9	61
		SC31D077-W2C0-0	79.6	79.6	2.70	140.2	128.0	16.49	3	7.9	60
		SC31D080-W2C0-0	83.9	83.9	2.70	140.2	128.0	16.49	3	7.9	60
		SC31D083-W2C0-0	88.1	88.1	2.70	140.2	128.0	16.49	3	7.9	61
		W2F0 - DX water cooled / free cooling									
11	1980 x 1985 x 890	SC19D033-W2F0-0	30.7	30.7	3.30	63.8	60.1	37.07	2	3.7	47
		SC19D038-W2F0-0	38.3	38.3	3.14	70.4	67.8	26.78	2	4.3	49
		SC19D045-W2F0-0	44.1	44.1	2.84	77.2	75.1	17.12	2	5.1	52
		SC19D064-W2F0-0	65.8	65.8	2.81	77.2	75.1	17.12	2	5.1	51
		SC19D070-W2F0-0	71.7	69.4	2.84	77.2	75.1	17.12	2	5.1	51
		SC19D076-W2F0-0	79.0	72.5	2.78	77.2	75.1	17.12	2	5.1	51
14	1980 x 2549 x 890	SC25D045-W2F0-0	45.6	45.6	2.79	94.7	87.2	17.54	3	5.3	53
		SC25D050-W2F0-0	49.8	49.8	2.63	102.4	95.3	15.96	3	5.9	56
		SC25D055-W2F0-0	56.9	56.9	2.60	109.7	103.2	15.02	3	6.5	57
		SC25D067-W2F0-0	69.8	69.8	2.67	109.7	103.2	15.02	3	6.5	57
		SC25D073-W2F0-0	76.5	76.5	2.71	109.7	103.2	15.02	3	6.5	57
		SC25D080-W2F0-0	84.5	84.2	2.70	109.7	103.2	15.02	3	6.5	57
16	1980 x 3113 x 890	SC31D055-W2F0-0	56.7	56.7	3.18	110.9	98.5	33.71	3	5.8	55
		SC31D065-W2F0-0	64.5	64.5	2.94	126.0	113.5	23.00	3	6.9	58
		SC31D075-W2F0-0	69.7	69.7	2.66	140.2	128.0	16.38	3	7.9	61
		SC31D077-W2F0-0	79.6	79.6	2.70	140.2	128.0	16.38	3	7.9	60
		SC31D080-W2F0-0	83.9	83.9	2.70	140.2	128.0	16.38	3	7.9	60
		SC31D083-W2F0-0	88.1	88.1	2.70	140.2	128.0	16.38	3	7.9	61

SmartCool™ technical specifications continued:

Case size (mm)		Model no.	Nominal cooling (kW) TC	Nominal cooling (kW)SC	Nominal cooling (kW) EER (Standard)	No. of fans	Air volume m^3/s	Sound pressure @ 3m (dBA)*
Inverter compressor option:		**Dual circuit**						
	H x W x D	XVXV - DX inverter air cooled						
11	**1980 x 1985 x 890**	SC19D080-XVXV-0	84.6	84.6	2.84	2	5.1	52
14	**1980 x 2549 x 890**	SC25D100-XVXV-0	110.8	110.8	2.73	3	6.5	57
16	**1980 x 3113 x 890**	SC31D110-XVXV-0	117.2	117.2	2.84	3	7.9	61

Case size (mm)		Model no.	DX cooling (kW)			CW cooling (kW)			No. of fans	Air volume	Sound pressure @ 3m (dBA)*
			TC	SC	EER (Std)	TC	SC	EER			
Inverter compressor option:		**Dual cool**									
	H x W x D	XVC0 - DX inverter air cooled / chilled water									
11	**1980 x 1985 x 890**	SC19D055-XVC0	54.9	48.1	3.05	61.3	57.1	40.53	2	3.5	45
14	**1980 x 2549 x 890**	SC25D060-XVC0	57.8	52.7	2.84	76.4	68.3	49.46	3	4	48
16	**1980 x 3113 x 890**	SC31D065-XVC0	61.2	61.0	3.36	90.5	78.8	57.75	3	4.5	50
		WVC0 - DX inverter water cooled / chilled water									
11	**1980 x 1985 x 890**	SC19D055-WVC0	54.9	48.1	3.05	61.3	57.1	40.53	2	3.5	45
14	**1980 x 2549 x 890**	SC25D060-WVC0	57.8	52.7	2.84	76.4	68.3	49.46	3	4	48
16	**1980 x 3113 x 890**	SC31D065-WVC0	61.2	61.0	3.36	90.5	78.8	57.75	3	4.5	50
		WVF0 - DX inverter air cooled / free-cooling									
11	**1980 x 1985 x 890**	SC19D055-WVF0	54.9	48.1	3.05	61.3	57.1	40.53	2	3.5	45
14	**1980 x 2549 x 890**	SC25D060-WVF0	57.8	52.7	2.84	76.4	68.3	49.46	3	4	48
16	**1980 x 3113 x 890**	SC31D065-WVF0	61.2	61.0	3.36	90.5	78.8	57.75	3	4.5	50

DX data is based on nominal cooling at 24°C/45%RH 45°C condensing temperatures.
Chilled water data is based on nominal cooling at 24°C/45% return air condition and 7/12°C water temperatures (0% glycol).
TC = Total Cooling
SC = Sensible Cooling
EER = Energy Efficiency Ratio based on TOTAL input power of compressors and fans
Performance data calculated in accordance with BSEN 14511-2011 and Eurovent 6/6

Performance tested

And proven

Quality is assured by our on-site, world-class testing and production facilities and the application of the latest manufacturing techniques and continuous improvement.

"A factor influencing selection of Airedale was its transparency and facility to witness test. We prefer working with a UK manufacturer who is carrying out product development work and can give us support and reassurance throughout."

Steve Vandyke
Head of Technical Services
National Gallery

We are targeting a PUE of 1.3 or less

"We have invested in four SmartCool™ precision air conditioning units linked with condensers, enabling us to target PUE of less than 1.3. Airedale provides us with a fully integrated cooling solution designed for maximum efficiency and critical redundancy."

Rob Garbutt
CEO, LDeX

Delivering the right environment

"Airedale appreciates the principles of energy efficient cooling i.e. the intelligent interaction of temperature, humidity and air and water flows and pressure and the need to deliver only as much air as the servers want to draw."

John Board
Operations manager, Keysource

Free-cooling makes sense

"Our target is to reduce building energy costs by 7% annually which we have achieved over the past two years. Airedale's free-cooling chillers are already contributing to 3% of this annual saving."

Paul Lovegrove
General Affairs Assistant Manager
Epson

Iceland Frozen Foods has realised savings of £1.5m to date

"By using an Airedale Controls solution, over 500 stores have been upgraded to date, with energy costs reduced on average by £3,000 per store p.a.. Across the whole group this equates to a saving of over £1.5m and a CO_2 reduction of 9,890 tonnes."

Graham Ireland
Building Services Manager
Iceland Frozen Foods

Total support
Whenever you need it

At Airedale, we don't just manufacture and supply cooling and refrigeration products; we also provide a broad range of supporting services to ensure our customers receive the best possible aftersales care.

With more than 40 years' experience in business critical cooling, investing in an Airedale cooling or refrigeration solution means that you can benefit from our advice, expertise and technical support too. From design and selection, through to commissioning and beyond, we make sure your system reduces your total cost of ownership, whilst providing maximum availability and longevity.

Service plans
Maximising your system's effectiveness 24/7

An Airedale service plan provides a planned, preventative maintenance package to sustain the optimum efficiency of your system, enabling the user to see real savings in energy costs and reduced carbon emissions.

With Airedale, you can rest assured that help is never far away. Our 24/7 emergency helpline and call out service is available 365 days of the year, ensuring that we are always on hand to provide expert advice and immediate help, day or night.

A guaranteed emergency response time means that a qualified Airedale engineer will be with you in no time, therefore maximising your system's uptime. Service plans also ensure F Gas compliance and incorporate a full parts and labour warranty for the first 12 months.

For more information visit
www.airedale.com

* For customers outside the UK, our international distributors trained by Airedale would be pleased to offer service on Airedale units

Talk directly with an experienced engineer

Find out how we design our systems to reduce your whole life costs. Our highly experienced engineers are adept at tailoring our systems to suit your requirements.

+44 (0)113 239 1000

Have complete control of your site

Customers with critical sites can benefit from our remote monitoring facility. Aftersales services include chiller sequencing, network setup and integration as well as a live demonstration and training centre at our head office.

24/7 support; maintenance and spares

Immediate help on hand to keep your critical cooling system operational. Realise the full potential of your system; improve its longevity and efficiency and be F Gas compliant. Avoid downtime with our fast, efficient spares service.

Develop your skills

Learn more about your cooling system by attending an air conditioning and refrigeration course in our purpose-built training school. Train on high-tech cooling systems and fully operational rigs in our dedicated workshops. Industry recognised courses also available. Email **training@airedale.com** for further details.

Distributed by:

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A MODINE Company