



Product Guide













Quick reference

Find the right solution for your application

Six product ranges supported by an extensive number of models and exceptional configuration flexibility means that when selecting an Airedale system, your choice of variants is considerable, enabling you to precisely match your application.

We apply the latest technology led by smart control logic to ensure our products offer you the highest efficiency, resilience and quality. First and foremost, they are designed to be stand-alone, but when integrated, they share intelligence and further reduce energy through combined efficiencies.

Our breadth of expertise enables us to engineer innovative, integrated cooling solutions across commercial and public sectors - in data centres and other critical environments; industrial process cooling or comfort cooling in retail, leisure and office applications.

Airedale - Your first choice

Airedale is a British manufacturer with over 40 years industry experience. As the UK's number one provider of chillers, precision air conditioning and IT cooling solutions and at the forefront of controls software design and optimisation, we are experts in integrating our products to reduce your total cost of ownership.

We can help you select the optimum specification tailored to your application and provide the support which will enable you to manage your cooling system for best performance, maximum longevity and lower operating costs.

Global company

Airedale is a world leader in the design and manufacture of innovative, high efficiency cooling solutions. We manufacture in three continents and export to customers in over sixty countries through a network of more than seventy business partners.

Chillers





TurboChill™ Water Cooled 150 - 1576kW













OptiChill™ 500 - 1365kW











OptiChill™ FreeCool 750 - 1365kW









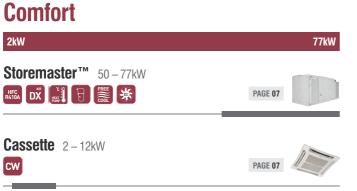


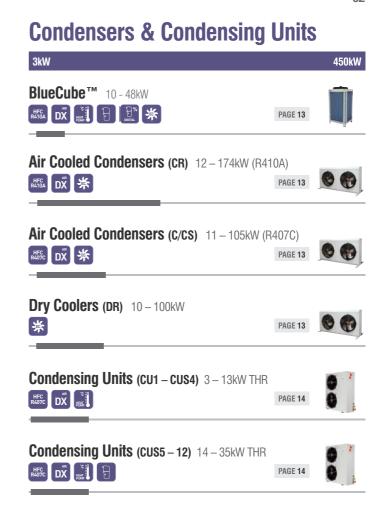
Precision Air Conditioning



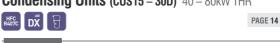
IT Cooling

2kW	67kW
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ACE (ECHO) 2 – 20kW per rack	PAGE 06
AireTile™ Up to 1.2m³/s	PAGE 06









Ultima™ Compact Condensing Unit 30 – 450kW THR



Air Handling Units

100kW	440kW
AireFlow [™] 100 – 440kW	PAGE 08

PRODUCT KEY

See product pages 3 - 14 inclusive for a reference to which icons represent standard or optional





















SCREW COMPRESSOR



CENTRIFUGAL COMPRESSOR



EC INVERTER COMPRESSOR







SCROLL COMPRESSOR









Precision Air Conditioning





SmartCool™ 11 - 233kW



















SmartCool™ Inverter Compressor 5 - 83kW











- 21% energy saving in free-cooling dual cool
- Up to 30% more cooling kW/m² compared to similar leading competitor units (CW range)
- EER up to 52.4 (CW range)
- Single or dual circuit featuring: DX air cooled (16kW -140kW); DX air cooled with chilled water (60 - 127kW), DX water cooled (60kW - 127kW); DX water cooled with glycol free-cooling (60 – 127kW); Chilled water (11kW – 233kW)
- Up to 4 stages of tandem compressor DX cooling
- Compliant scroll compressors for increased reliability and extended operating envelope
- Variable humidification
- Large surface area filters for lower airside pressure drop and increased system efficiency
- EC fans as standard
- Minimum space claim
- Front access to all major components for easy service and maintenance
- Constant air volume control (option)
- Constant pressure control (option)

- Up to 21% more cooling kW/m² compared with nearest competitor units
 - Up to 45% more cooling kW/m² compared to fixed speed compressor systems
 - 11 models, 4 case sizes
 - Inverter driven compressors for exact capacity match saving substantial energy at part load
 - Slab coil design for reduced airside pressure drop
 - Optimised for hot and cold aisle containment with return air temperatures of up to 40°C
 - Accurate supply air temperature control (up to 26°C)
 - Suitable for long pipe runs up to 100m
 - ETL listed
 - Ambient operating envelope from -20°C to +50°C for flexible installation
 - Full 360° unit access for service and maintenance
 - Large surface area filters for increased performance and reduced fan power usage
 - Constant pressure control (option)
 - Constant air volume control (option)





Commercial Building Services Product of the Year Data Energy Efficiency Product of the Year



EasiCool TM 6 - 64kW







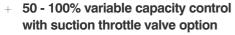












Up to 70% more efficiency with EC fans optional upgrade on all indoor and outdoor units

- 76 DX (38 air cooled and 38 water cooled) and 34 chilled water models, in 6 case sizes
- Tandem scroll compressors for reduced sound and part load efficiencies (models 20 - 64kW)
- AV mounted, direct drive, speed controllable EC fan technology (models 6 - 27kW)
- Variable humidification for precisely conditioned air
- Full 360° service and maintenance access
- Hot gas re-heat efficiently re-heats cool air during dehumidification (option)
- Electric heating can be upgraded with thyristor control
- Direct drive backward curved EC fan upgrade for all indoor and outdoor units (option)





EcotelTM 5 - 15kW Ecotel™ Free Cool 5 - 15kW















Ecotel™

- Fresh air free cooling with 100% mechanical backup with annual running costs of just £357
- 4 modes of operation (heating, free cooling, concurrent, mechanical cooling)
- 80 models in 4 case sizes
- Less than 3kg of refrigerant per circuit no need for annual leak detection inspections
- Low and high ambient capability
- Fault code alarm display option

Ecotel™ Free Cool

- Fresh air free-cooling for 100% of the year (UK)
- Self-contained compact outdoor cabin cooler
- Two case sizes
- -48V DC supply option
- Easy serviceability with front component access
- Secure, tamper proof fixings

IT Cooling





OnRak[™] 3 - 35kW





- 88% saving in power input an OnRak™ with EC fan and an EER of 144.7
- EER 114.45 (n); 183.02 (n+1). n+1 fan configuration for increased efficiency and
- Over 50% saving in energy when integrated with a free-cooling chiller
- Efficient rear door heat exchanger with 200mm footprint
- Two configurations: (n) 35kW cooling (100% air volume); optional (n+1) 30kW cooling (75% air volume)
- Designed to fit 42 47U racks
- Supplied with integrated rack or adapted to fit a customer specific rack, with simple connections
- Pressure differential management maintaining pressure in the rear of the rack within the server design envelope
- Flexible water connections maintain cooling when door is
- Hot swappable fan management
- Water detection and automatic isolation
- Self-regulating constant flow control eases commissioning
- + High efficiency aluminium fin heat exchanger with integral coil guard

InRak™

10 - 67kW











- EER up to 108.03 n + 1, CW
- 70% energy saving p.a. with EC fan
- 17 100% fully modulated cooling for substantial energy savings when operating at part load
- Efficient in-row cooling solution for medium to high density applications
- Positioned next to a single rack or within a row of racks
- Directs cool air horizontally to the front of the racks, maintaining even cooling
- n+1 fan configuration for increased efficiency and resilience
- Aisle differential pressure control for resilience
- Hot swappable fan management
- Over 50% saving in energy when integrated with a freecooling chiller
- Up to 70% more efficiency with EC fans
- Compact design for increased cooling per square metre
- Dual power supply/static transfer switch (option)





ECHO 2-20kW per rack





- 67% energy saving compared with a conventional downflow system
- 50% less air volume, using less power by varying the air volume
- + Up to 95% free-cooling per annum
- + Ensures the correct air quantity, temperature and pressure is fed to the server inlet
- + Variable rack load densities to a maximum of 20kW per rack
- + No chilled water/refrigerant connections at the rack or in the IT space
- + Control is led from rack level, rescheduling the Airedale ECHO CRAC and free-cooling chiller to optimise performance
- + n + 1 fans for complete confidence
- + Pressure differential management so ACE fans mirror the server fans
- + Eliminates hot spots
- + With no hot/cold aisle configuration, the technical space available for IT equipment is increased

AireTile™ Up to 1.2m³/s



- Dynamic fan floor tile boosts cooling efficiency via active air distribution
- Four model types with different levels of functionality
- Two fan types; low air flow EC fan (<0.74m³/s) and high air flow EC fan (1.2m³/s)
- + Active air distribution maximises cooling efficiency
- + Eliminates hot spots, cool air directly targets heat load
- + Ideal pre or retrofit solution for additional cooling of high density racks and aisle containment
- + Reduces system running costs
- + Easy installation units sit on raised access floor pedestals within floor void, minimum floor depth of 300mm (temperature control) or 400mm (constant air volume) required
- + Units can be standalone or networked (up to 64 units) via intelligent controls
- Two power supplies as standard 0 (230V /1ph/ 50H3), -1 (220V / 1ph / 60H3)

Comfort





StoreMasterTM 50 - 77kW













Cassette 2 - 12kW



- Up to 70% more efficiency with EC fans
- 0 100% free-cooling as standard using full design air volume
- ETL listed (models featuring an inverter-driven condenser fan and return air fan)
- Cooling and heat pump variants
- 57 75kW heating capacity with reverse cycle (dual circuit heat pump variant only)
- + Packaged or split modules (evaporator / condenser)
- Tandem scroll compressors on a single circuit for improved efficiency at part load (cooling-only version)

- Smaller models fit the space of a standard ceiling tile measuring 600mm²
- 11 models for flexibility in heating, cooling and air flow
- Available in 2 pipe and 4 pipe configurations
- Efficient AC backward curved fan technology
- Low sound
- Neat, compact design
- Smart, unobtrusive
- Fresh air connection
- Heating based on a LPHW heating coil (option)
- Electric heating (two pipe variant only) (option)

Air Handling Units



AireFlowTM 100 – 440kW













100% free-cooling 365 days a year (UK) Significantly decreases operating costs

PUE below 1.1

- Available in five footprints between 100 and 440kW with either
- Two case sizes available: 65kW 4.1m x 5m x 2.3m (h x l x w) and 220kW 4.1m x 5m x 3.4m (h x I x w) - units can be matched to 440kW
- Air flow rates of between 3m³/s and 21m³/s
- Integrated inlet for fresh air for room pressurisation and air quality (F7 contaminant filtration available)
- Wetted media adiabatic system, with UV sterilisation, requires low water consumption and no water treatment
- Adiabatic activation temperature can be specified by user to prioritise energy consumption or water consumption
- No air mixing within the system prevents contaminants entering your environment and eliminates need for 100% DX back-up cooling
- If water supply fails, DX or CW system has the capability to provide total required cooling load which removes need for water storage on site
- G3 / G4 filtration
- High efficiency EC fans with optimised control

Chillers



DeltaChill™ 110 - 1010kW DeltaChill™ FreeCool 140 - 1080kW





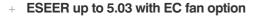








SCROLL



- + Class A EER up to 3.60
- + 282 models: 151 models (DCC) and 131 models (DCF)
- Single, dual or triple independent refrigeration circuits, allowing 2 - 9 stages of cooling
- + Up to 95% free-cooling with DCF
- Up to 38% more cooling/m² than Airedale's previous generation free-cooling chillers
- + Low sound ranges: Quiet and Extra Quiet
- + E-coated micro-channel coils reduce life cycle costs and footprint (all DCF models and DCC 450 960kW)
- + Modular, efficient 'V' frame fan coil module
- + Direct Effect Life Cycle (DELC) CO₂ equivalent emissions of ≤1000 kgCO₂e/kW cooling capacity enable the DCC and DCF to contribute to a building achieving 1 BREEAM point
- + Inverter-controlled pump ensures constant water flow (option)
- Automatic refrigerant pump down combined with leak detection enable the DCC and DCF to contribute to a building achieving 1 BREEAM point (option)

DCC = DeltaChill
DCF = DeltaChill FreeCool



TurboChill™ 200 - 1800kW TurboChill™ FreeCool 200 - 1830kW













CENTRIFUGAL

- + ESEER up to 6.23
- + Free-cooling for up to 95% per annum with TCF
- + EER over 15.0 at part load an increase of 22%
- Up to 23% saved in operating costs p.a compared to the leading competitor screw chiller (based on an annual cycle in Leeds, UK at 50% load)
- + More than 230 models to choose from
- + TurboChill™ range designed for use with both R134a and the new low Global Warming Potential refrigerant R1234ze
- + Latest EC fan technology provides up to 20% energy savings
- + TT300, TT350 and TG310 oil-free compressors for enhanced heat exchange and variable speed control
- + Flooded evaporator for optimum system efficiency
- + Modular V-frame coil design and large surface area of micro channel heat exchangers
- + ETL listed

TCF = TurboChill FreeCool



Energy Saving Product of the Year



TurboChill™ Water Cooled 150 – 1576kW









CENTRIFUGAL

- + **ESEER up to 8.86**
- + Class A EER up to 5.4
- Up to 111% more cooling kW/m²compared with leading competitor units
- + 3 module variants (R134a TT300 & TT350, R1234ze TG310)
- + 1 compact case size 2000mm (H) x 1000 (W) x 1956mm (L)
- Centrifugal TurboCor compressor 30 100% variable speed control for tighter setpoint management and unbeatable efficiencies at part load
- + FTI listed
- Compact spray type evaporator with integral subcooler 67% reduced space claim (m²)
- + Scalable modular design
- + Range available with R134a refrigerant (1 BREEAM credit) and with R1234ze refrigerant (2 BREEAM credits)
- + Two sound variants; Regular Quiet (R), Extra Quiet (X)



OptiChill™ 500 - 1365kW OptiChill™ FreeCool 750 - 1365kW











- + ESEER up to 4.21 with OPC, for optimum operating efficiency
- Up to 30% increase in system efficiency with electronic expansion valves (option)
- + 52 models (OPC) and over 200 models (OFC)
- + Quiet and Extra Quiet ranges
- + Dual independent refrigeration circuits for resilience
- + Up to 95% free-cooling with OFC
- + 12.5°C increase in operational evaporating temperature range allowing supply water temperatures to be increased, thus raising the free-cooling threshold and giving enhanced compressor efficiency and reduced power input (OFC)
- + Intelligent head pressure control, optimises performance (OFC only)
- + Latest fan technology reduces sound and power input
- + 8 stages of cooling for more precise capacity match
- + Large surface area condensing coils
- + High efficiency shell and tube evaporator

Chillers



LogiCool™ FreeCool 20kW / 40kW











- Up to 95% free-cooling per annum
- Over 50% saving in energy compared with a conventional chiller
- Compact footprint from 1.5m² minimises space claim
- + Variable capacity control for exact capacity match
- + Exceptional part load efficiencies
- + Direct-drive axial fan
- + Efficient plate evaporator with EEV refrigerant controls
- Large surface area condensing coils maximise energy efficiency
- Connects to direct rack cooling systems (individual or multi-rack)
- + Expandable, flexible solution as load increases
- + Modular design plus condensing coils and water connections at the rear, allow close side-by-side positioning
- + Reduced minimum system water volumes



Ultima™ Remote Air Cooled** Ultima™ Water Cooled 75 - 450kW







- Up to 30% increase in system efficiency with optional electronic expansion valves
- + 75 450kW nominal cooling capacities
- + 45 models
- + Standard, Quiet and Extra Quiet variants
- + Dual independent refrigeration circuits
- + Compact unit footprint
- + High efficiency plate heat exchangers



Ultima™ Compact 30 - 450kW Ultima™ Compact FreeCool 75 - 450kW











Up to 62% free-cooling of UCFC DX performance

- + 75 models (UCC) and 45 models (UCFC)
- + Standard, Quiet and Super Quiet variants
- + Single and dual circuit models (UCC 30 80kW); dual circuit on UCFC and all larger UCC models
- + Modulating head pressure control
- + R410A variant available
- + Electronic expansion valves for up to 30% increase in system efficiency (option)

UCC = Ultima Compact

UCFC = Ultima Compact FreeCool

Condensers Condensing Units





BluCube™

Heat pump (10 - 48kW) Cooling only (13 - 40kW)



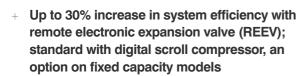












44% more cooling per m² average compared with a conventional CU system

- ETL listed (cooling only models)
- Integrates with industry standard air handling units
- 2 case sizes; 24 models
- Operating envelope -20°C to +25°C in heating or -20°C to +48°C in cooling
- Two pipe system reducing installation time and cost
- Digital scroll compressor for 16 100% variable capacity (model dependent)
- Modulating head pressure control for increased efficiency
- Short-cased axial fan to overcome external static pressure when ductwork is required
- Fits into a standard lift facilitating easy installation
- Compressor attenuation reducing compressor sound by up to 12dBA (option)
- Integrated condensate drip tray (heat pump models) (option)

Air Cooled Condensers & Dry Coolers See capacity below









Up to 70% more efficiency with EC fans option on R410A models

- + CR: 8 models (R410A)
- C/CS: 10 models (R407C)
- Dry coolers: 14 models
- Small footprint, low profile for minimum space claim
- Horizontal or vertical unit design for flexibility
- Coil guards
- Low sound levels
- Discharge and liquid shut-off valves

Capacity

CR: 12 - 174kW (R410A) C/CS: 11 - 105kW (R407C)

DR: 10 - 100kW



Condensing Units 3 - 80kW THR

CU1 - CUS4 3 - 13kW THR







- + 8 models: Cooling only and heat pump variants
- + Reciprocating compressor
- + Wall mountable, freeing up floor space
- + Small footprint with slimline design
- + Head pressure control optimising efficiency

CUS5 - 12 14 - 35kW THR









- + 5 models: Cooling only and heat pump variants
- + Floor mounted for external location
- + Low profile

CUS15 - 30D 40 - 80kW THR







- + 7 models: Cooling only
- + Scroll compressors for reduced sound, higher efficiency and lower electrical starting currents
- + Floor-mounted for external locations
- + Small footprint



Ultima™ Compact Condensing Unit 30 - 450kW THR











- Up to 30% increase in system efficiency with remote electronic expansion valve (REEV) option
- + 75 models for configuration flexibility
- + Standard, Quiet and Super Quiet variants
- Dual independent refrigeration circuit for resilience and reduced operating costs (single circuit option on 30 - 80kW)
- + R410A variant available

THR: Total Heat of Rejection

Performance tested

And proven

Quality is assured by our on-site, world-class testing facilities that set the standard as one of the most advanced testing centres of its kind within the global air conditioning industry. This facility is integral to our development process and ensures our team of designers and engineers conduct a rigorous test program to produce and improve each of our manufactured units.

Airedale's dedicated test facility is the only purpose-built Designed and built to exceed stringent international standards, our test centre is capable of testing a complete range of air conditioning equipment including precision air conditioning to 250kW and chillers up to 2MW.

We apply a consistent design philosophy which combines innovative sustainability with premium performance and efficiency across each range. Our state-of-the-art, on-site R&D laboratory is BS EN 14511 and BS EN 13053 compliant and allows us to test units for every application.

Our air conditioning units consistently offer some of the industry's leading proven environmental and cost performance figures, combined with the highest quality, reliability and service.





We have a positive, responsible partnership with Airedale in which we share knowledge

It is only through Airedale's continued site involvement that we can fine tune the system to such an extent. We don't mind spending capital expenditure to recoup such significant energy savings as these.

Paul Lovegrove - General Affairs Assistant Manager, Epson



Energy efficiency was the crucial factor

Airedale proved that its free-cooling chiller can save energy and is the right system for us. Anything that improves payback is of interest to the Society. We have also had good service from other Airedale products.

Steven Ward - Premises Engineer, Yorkshire Building Society



EDF Energy is already seeing a PUE of 1.2

I believe we are the first company in the world to install Airedale's advanced technology, the TurboChill™ FreeCool chiller. When the data centre is operating in free-cooling mode, the PUE has been measured at 1.2 and we expect that to reduce further as we install more equipment.

Bob Finn - Programme Manager, EDF Energy

Intelligent controls

Seamlessly managing your system

The control centre of each of our cooling systems is a sophisticated electronic microprocessor specially developed by Airedale. The intelligent microprocessor uses sensors which allow active components to interact. By integrating and sequencing components, the controller manages and optimises the system's performance, availability and power draw, giving the operator complete system control.

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

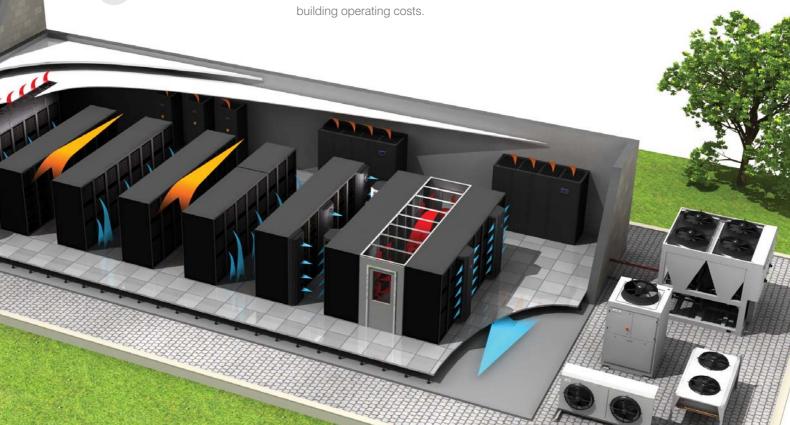


ACIS™

ACIS™ is a building management system developed, by Airedale, which enables smart cooling and other building services, from any manufacturer, to be managed through a single, integrated solution across multiple sites and communication protocols.

ACIS™ sits at the front end of a building management system and puts the operator in full control of reducing building operating costs

Through the click of a button on a PC, tablet or phone, intelligent information can be retrieved automatically allowing informed, data driven decisions to be made. With 24/7 access, ACIS™ provides an ideal solution for remote monitoring and maintenance, including live PUE, EER and COP calculations and power distribution monitoring.



Tailor-made for you

Working in partnership

Customer focus is central to our core principles at Airedale. We will work closely with you to adapt our flexible systems to fit exactly to your specific cooling needs and energy requirements.

Communication is key to understanding your requirements so we ensure you are kept informed and actively involved every step of the way.

Our ability to handle complex projects worldwide and meet the toughest of deadlines ensures we always deliver quality assured products and service, no matter how challenging the task.



London Data Exchange

£5m colocation facility

4 x 280kW DeltaChill™ FreeCool chillers supplying chiiled water to 10 x chilled water 110kW SmartCool™ precision air conditioning units, each providing under floor cold aisle delivery at a constant 22°C to contained aisles

Benefits:

- PUE less than 1.3
- Free-cooling for up to 95% of the year
- 13% less space claim
- N + 1 redundancy



National Gallery

6 x TurboChill™ chillers supplying chilled water to a primary circuit

The TurboChill™ replace existing R22 chillers with a bespoke, sequenced chiller solution, integrating new technologies; modern refrigerant and design criteria and increased control

Benefits:

- ESEER 5.87
- £16,000 energy saving in first year
- Enhanced reliability and less maintenance
- Matches existing rooftop space and connections



The University of Leeds HPC facility

3 x OnRak™ rear door heat exchangers each providing 28kW high density cooling

2 x 240kW Ultima™ Compact FreeCool chillers

Benefits:

- OnRak™ is ideal for high density HPC facilities
- Slots into existing cooling loop; expandable
- Eliminated need to build a new computer
 room
- Extremely compact 200mm profile
- Free-cooling for up to 95% of the year
- 35% savings in energy



Victoria & Albert Museum

Computer room

4 x 40kW EasiCool™ downflow precision air conditioning units

Each EasiCool™ provides under-floor cold aisle delivery of 120kW cooling and reliable environmental control of the data centre space.

Benefits:

- N+1 redundancy
- · Scalable and future proof

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 plansMaximising 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





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.









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