



# The Critical Cooling Specialists

[airedale.com](http://airedale.com)





**In industries where cooling is critical, you need a critical cooling specialist. Airedale is a world leader in the delivery of innovative thermal management solutions in mission critical environments like data centres, healthcare and telecoms. As part of the US-based Modine group, our global organisation aims to engineer a cleaner, healthier world.**

At Airedale, we believe that air conditioning has a critical role to play in an ever-changing world. We also passionately believe that air conditioning manufacturers must play a responsible role in an era where sustainability is key to the preservation of our planet.

Airedale's core focus is the data centre market, where uptime and energy efficiency are absolutely critical to success. Marginal gains in this arena can make all the difference and Airedale seeks to push the envelope each time we embark on a new project.

Airedale's success is built on our unrivalled pedigree in providing flexible, high-efficiency cooling solutions. Our systems approach and ability to combine hardware and software ensure that HVAC systems work smarter, not harder, to deliver more cooling for less power and ensure a stable environment and availability 24/7.

Airedale's product pedigree is backed up with significant software capabilities, providing complete visibility, harmony and autonomy of our installations.

Our design and integration of building management systems and HVAC controls, paired with a keen eye on operational energy efficiencies at product level, delivers some of the most sustainable and reliable precision cooling solutions to the most demanding applications on the planet.

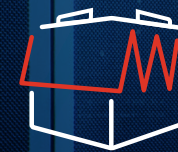
All Airedale solutions are backed by a full suite of support services, including commissioning, maintenance, refurbishment, spares and training, delivered by experts with many years' industry experience.

With headquarters at our state-of-the-art 2,000m<sup>2</sup>, research, development, manufacturing, training and office facility in Leeds, UK, Airedale also has additional production sites in Consett (UK), Guadalajara (Spain), Buena Vista (US) and Grenada (US). Airedale employs approximately 600 people and is owned by the US-based Modine Manufacturing Company.



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Free-Cooling Chillers  
30-2000kW



Precision Air Conditioning  
DX/CW 5-1000kW



IT Cooling  
In-Row / On-Row 3-67kW



Software Solutions  
Cloud Monitoring / BMS / Optimisation



Air Handlers / Fan Walls  
180-400kW



Condensers / Dry coolers  
3-1900kW



Complete system design  
& project management



Tailored maintenance packages /  
Spares / Tech Support



Industry accredited  
HVAC training



# We are trusted

CyrusOne

EDF

vodafone

VIRTUS





John Lewis

corus



BAE SYSTEMS













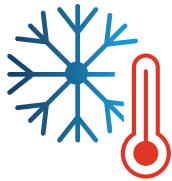


# We are global

Airedale by Modine is a global superpower in mission critical cooling, manufacturing out of Leeds (UK), Consett (UK), Guadalajara (Spain), Grenada (US) and Rockbridge (US).

We have invested in a multi-million pound, 23,000m<sup>2</sup>, purpose-built facility that sets the standard as one of the most advanced air conditioning product testing centres of its kind, and one of the biggest in Europe.

This facility is integral to our development process and ensures guaranteed accuracy of our data and performance. We also offer on-site and remote witness tests to provide our customers with complete peace of mind, prior to installation.



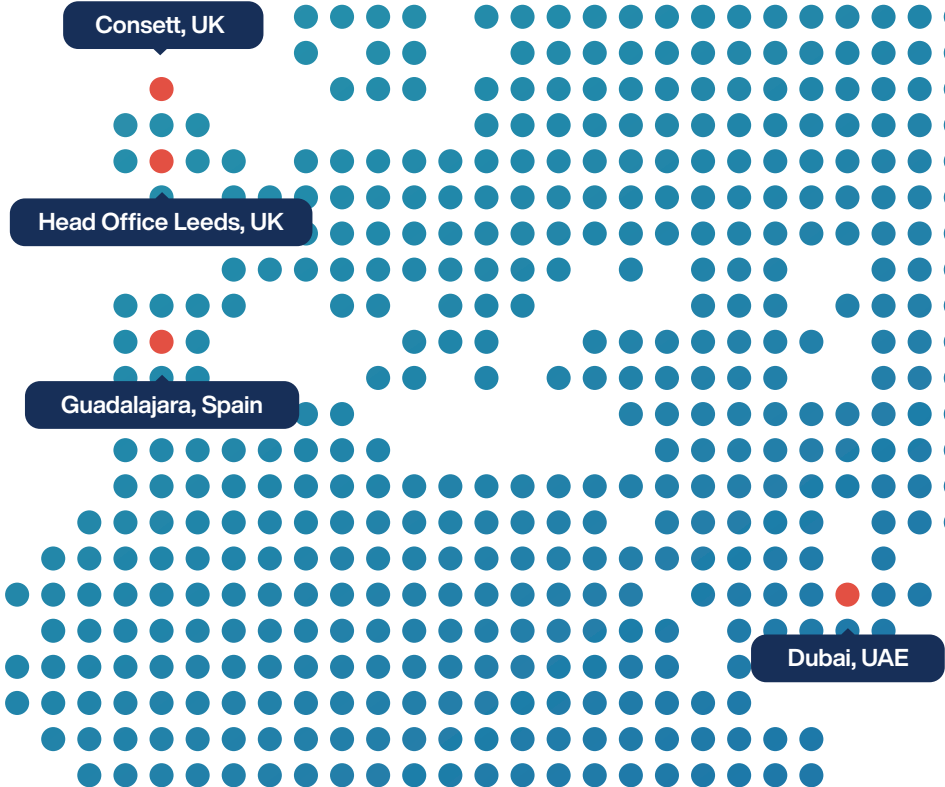
**-20 +50**

Testing capabilities from -20°C up to +50°C



**2MW**

Air cooled water chillers up to 2MW





# We are solutions specialists



Vertical Farming



Offices



Education



Data Centres



Healthcare



Banking



Pharmaceuticals

Airedale

We are solutions specialists

Airedale delivers a tailored solution that incorporates world class products, industry-leading engineering support, intelligent software and unrivalled end-to-end on-site care.

## Our approach

Our long history of supplying cooling systems to industries where temperature controlled environments are critical to business operations has given us deep sector experience. We are not just HVAC experts, we are experts in industries where climate control is key, including data centres, telecoms, pharmaceuticals, healthcare, defence and nuclear.

We understand your business and the metrics that drive you. We work best by getting involved in projects at the very start, consulting on designs and working with clients right the way through a project life cycle.

### 1. Scope and Design

We work with you to understand your project objectives and can propose a complete system design using our specialist project engineers and energy performance software.

### 2. Project Management

We work with you from start to finish, with office and site teams working alongside you to get the job done on time and in full.

### 3. Manufacturing

Our state-of-the-art facilities, supported by our global HQ in Leeds UK, are where your solution comes to life, tested and validated by our highly skilled production teams.

### 4. Witness Testing

Our test labs in Leeds offer full witness testing, either in-person or remote, with capabilities up to 2MW and +50°C.

### 5. Install & Commissioning

Our experienced site teams will get your full cooling system up and running... we won't leave until you sign the job off as complete.

### 6. Optimisation

Our software solutions ensure that even once the job is delivered, Airedale is working in the background to keep everything online and as efficient as possible.

### 7. Service, Maintenance & Spares

Our strength is our people. Our flexible maintenance contracts mean we are always available with round-the-clock service agreements and fast-track spare part deliveries.



# We cool the internet

Cooling IT has been Airedale's core focus since 1974. As the digital world has grown, so too has Airedale's ability to provide cooling solutions that keep critical data safe.

We are now a global brand, with an unrivalled pedigree in providing flexible, high-efficiency cooling solutions. Our systems approach and ability to combine hardware and software ensures that your data centre works smarter, not harder, to give you more cooling for less power and ensure a stable environment and availability 24/7.



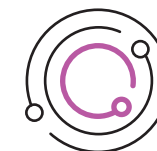
## Raise your Data Centre's IQ™

IQity™ is Airedale's IoT-enabled technology framework, revolutionising how cooling is connected, controlled and automated at critical facilities.

It delivers unparalleled uptime and efficiency benefits by connecting smart building software and remarkable hardware in an entirely unique way.

IQity works at a product, system, and site level to make sense of your critical systems and step in when you need a hand.

It is the only framework that manages normal building cooling 24/7, an emergency in real-time, and gives the breadth of data necessary to prevent threats and protect your bottom line.



Intelligent products flex with their environment, optimise their own operation and let you know if they need repairs.



Intelligent systems work as a team, taking into account multiple variables to operate in the most efficient and effective manner.



Intelligent sites work in harmony with their operators to manage multiple systems and products, delivering holistic improvement and accurate reporting data.



# CyrusOne

In 2019 Airedale announced an agreement with CyrusOne, the global data centre real estate investment trust (REIT). CyrusOne specialise in highly reliable enterprise class, carrier-neutral data centre properties, and Airedale has been selected to supply cooling solutions for several data centre projects in Europe, including Amsterdam and Dublin.

Airedale will supply complete cooling solutions for multiple CyrusOne data centres over an initial two-year period. A number of sites are covered by the agreement, including CyrusOne's Dublin I facility, located within Grange Castle Business Park South and comprising 33,445 m<sup>2</sup> with an IT load of 54 MW across three separate buildings.

The cooling solutions will consist of specifically engineered SmartCool™ chilled water PAC systems and OptiChill™ free cooling chillers, designed to maximise free cooling. This process is an alternative method to adiabatic cooling, thus avoiding significant water costs whilst still delivering quality Power Usage Effectiveness (PUE).





# Engineered in Britain, applied worldwide

With British engineering as the hallmark of our solutions, Airedale products can be produced across several continents to be applied by our clients worldwide.

Promising the same impeccable quality from our facilities in Europe and the US as you would expect from the UK, when you buy Airedale, you can be reassured of quality, reliability and efficiency.





# Museum of the Future, Dubai

The Museum of the Future will create a platform to demonstrate and test the latest inventions and prototypes from both innovative start-ups and the world's greatest technology giants.

Airedale has once again been recognised for quality engineering, and has been selected to supply the cooling systems for this incredible project. We supplied a total of 5 SmartCool dual fluid systems, customising our units with special outdoor fans to meet extremely high ESP requirements due to the unusual installation.





# We care for the future

*“We passionately believe that air conditioning manufacturers and equipment must play a responsible role in an era where sustainability is key to the preservation of our planet.”*

As the global deployment of air conditioning increases, the industry must do a lot more to ensure the products and solutions we supply are as energy efficient as possible in order to play our part in combatting climate change. As a leading manufacturer of precision air conditioning equipment and chillers, with close to 50 years' experience, Airedale is one of the companies spearheading the drive towards greater energy efficiency in HVAC products and systems.

Airedale invests significantly in research and development. Energy efficiency is one of three core pillars that make up our R&D ethos, along with the environment and the deployment of leading edge technology. We encourage component manufacturers to come to us with ideas that can make a difference to the energy efficiency and environmental impact of our products. For example, we worked closely with Turbocor during the development of their revolutionary centrifugal compressor.





## Refrigerants

As with Ecodesign, Airedale take both the F-Gas legislation and our commitment to the environment seriously. Much of our R&D resource is focused on ensuring our solutions are compatible with lower GWP (Global Warming Potential) refrigerants such as R32. We have precedent in this area too. We led the market years ago with the change from R22 to R407C refrigerant in 1994 on the ACC range of chillers and we were the first to market with a range of chillers utilising R1234ze in 2013.

Newer refrigerants in many cases are classified as mildly flammable, so care has to be taken when designing, testing, installing and servicing air conditioning systems that use them. Airedale is already investing heavily in our ability to design and manufacture such systems and are always on hand to offer advice to clients who are also on this journey.



## Energy Efficiency

Legislation like the European Ecodesign Directive rightly encourages manufacturers and end users to consider the environmental impact of a system over the lifetime of the product. We recognise that providing our customers with energy efficient solutions is a critical sustainable development opportunity for us all.

We are driven by quality and efficiency at every stage of our research, development and manufacturing process and are committed to our environmental responsibility and limiting the environmental impact of our units. We welcome and relish legislation that supports a more sustainable planet.

## John Lewis

We installed the very first UK manufactured, BSI approved chiller incorporating the low GWP HFO refrigerant R1234ze at the £15m John Lewis store, which opened in York on April 10 2014.

Airedale's TurboChill™ TCC R1234ze, which incorporates the Danfoss Turbocor® oil-free centrifugal compressor, is being employed to help keep customers cool at the new 92,000ft² flagship store.

TurboChill chillers have since become synonymous for efficiency, quality and performance and are installed all over the world.





# We build people as well as products

Airedale offers a range of training courses, ensuring engineers and specifiers are perfectly placed to design, install, commission and maintain modern HVAC systems. Our state-of-the-art training facility opened in April 2016, providing delegates with the perfect environment to learn, develop and grow their air conditioning and refrigeration skills. We also offer Continuous Professional Development (CPD) presentations, which can be delivered online or at client sites.

## The training centre features:

- The training classroom, featuring the latest conferencing technology.
- Various air conditioning and refrigeration training rigs, demonstrating different refrigerants and the latest in measurement and testing technology – including air ducting, measurement and chilled water systems.
- The brazing area, equipped to provide new and experienced learners with the necessary skills required to correctly install refrigerant pipework.
- The electrical area, designed to give a practical understanding of safe working when designing, wiring and testing electrical assemblies as well as the correct fault finding techniques.





# We are there when you need us

## Life cycle support for critical cooling

Our UK based 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. Guaranteed emergency response times mean that a qualified Airedale engineer will be with you in an agreed timeframe, therefore maximising your system's uptime.

For non-UK clients, we offer a service partner network across Europe and the Middle East.

## Choose the right service and maintenance contract for you

Our air conditioning service plans offer a preventative air conditioning maintenance service solution to improve system resilience and increase the longevity of your cooling system.

Planned maintenance not only assists in preventing unit breakdowns in business-critical environments, but also helps to improve energy efficiency and enhance system optimisation for improved performance. Over the life cycle of the product this can lead to reduced running costs, improved carbon footprint and quicker returns on investment.

**With over £1.5 million worth of stock on site at its Leeds headquarters, Airedale is the UK's largest stockist for air conditioning parts and specialist HVAC spares and can deliver worldwide.**



**Vodafone data centre update**

*"Reliability and the level of service that Airedale offers are key issues for a business critical location such as this. The project ran very smoothly."*



# We are powered by technology



## ACIS

### More than just a BMS

ACIS™ provides a scalable, future proof building management system that operates and optimises a wide range of building services across multiple platforms and protocols. ACIS provides a simple and intuitive interface that facilitates a wide range of monitoring, reporting and diagnostic tools, putting the customer in complete control.

Airedale's 45 years' experience in air conditioning allows ACIS to go far beyond other BMS solutions in selecting optimised operating conditions for HVAC systems. ACIS can also manage a facility's power infrastructure and provide insights into usage and faults.

## helix

### Integrated, Intelligent Controls

Helix™ is a controls platform developed in house by a team of dedicated controls engineers. Helix represents the bonding of hardware, software and innovation provided as standard within every Airedale product, combining the most appropriate hardware and software to provide efficient and effective control.

These software features deliver optimised efficiency, self-diagnostics of faults and compliance with standards and directives; including Ecodesign. Accurate, efficient and safe, Helix is tested and qualified in Airedale's state-of-the-art research and development laboratory.

## Airedale <sup>DX</sup> CLOUD DIAGNOSTICS

### Remote Monitoring & Diagnostics

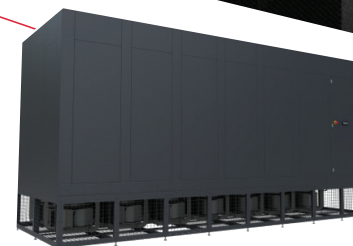
Airedale Cloud Diagnostics™ is highly secure cloud-based monitoring and diagnostics platform developed for owners of mission critical HVAC plants.

Easy to install, with intelligent algorithms and continuous improvements to data models, Airedale Cloud Diagnostics puts the power and the data in your hands via live dashboards with visual analysis.

Ground-breaking early detection of refrigerant leaks and anomalous behaviour is instantly reported; minimising downtime, increasing efficiency and reducing maintenance costs.



# Precision Cooling



## SmartCool™ *i-drive*

SmartCool just got smarter. This inverter-driven iteration of the versatile SmartCool range offers exact control and superior efficiency

5-83kW

Inverter DX  
(Scroll compressors, R410A)

EER up to 6.54

Downflow

Optimised for hot and cold aisle containment

Inverter compressors for exact control & efficiency

Supply temperatures up to 26°C

A wide ambient envelope of -20°C to 50°C

Up to 21% more cooling kW/m<sup>2</sup> than similar leading competitor units.

## SmartCool™ DX

Airedale's flagship range of precision air conditioners. Developed for applications where precise temperature and humidity control are key to operations

16-140kW

DX (Scroll compressors, R410A), Dual Cool

EER up to 41.34 (Dual Cool)

Downflow

EC Fans

Dual cool option with glycol free cooling

Flexible range offers 100 models across 8 case sizes

Maximised coil surface areas reduce fan power and improve air flow

Fixed speed tandem compressors offer four stages of cooling.

## SmartCool™ Chilled Water

SmartCool CW meets the increasing demand for ultra-efficient, large capacity precision cooling that delivers quiet and accurate climate control in data centres

11-233kW

Chilled Water

EER up to 51.3

Downflow

EC Fans

Up to 95% free cooling with an Airedale chiller

Maximised coil surface areas reduce fan power and improve air flow

Optional PICV delivers precise flow control

Flexible range offers 42 models across 11 case sizes.

## SmartCool™ ONE

A large capacity Computer Room Air Handler (CRAH) designed to meet the needs of colocation and hyperscale data centres

35-1000kW

Chilled Water

EER up to 36.1

Downflow

Large surface area slab coils reduce pressure drop and maximise heat transfer

High capacity backward curved EC fans under floor to enhance airflow delivery and efficiency

Various control valve options LH/RH fluid connections

Designed for close approach and wide waterside TD's

Helix intelligent unit controls.

## EasiCool™ evo<sup>2</sup>

EasiCool evo2 is a compact and flexible precision cooling system unit that has been designed to build on the global success of the EasiCool product family

6-98kW

Chilled Water, DX (Scroll compressors, R410A), Dual Cool

EER up to 26.9

Upflow / downflow

EC fans

Return air temperatures ranging from 18°C to 40°C

Ambient temperatures of -20°C to +52°C

Variable heating options

Flexible air discharge / return options

Revamped Helix controls.

## AireWall™

Powerful cooling and intelligent control are combined in this low-energy fan wall system developed specifically for high-density data centre environments

170-400kW

Chilled Water

EER up to 11.9

Inline horizontal flow

EC fans

Low velocity air cooling for solid floor, high-density data centre applications

Available in a 4, 6 or 8 fan configuration

Integrated intelligent controls enable dynamic cooling output variation

Designed to operate at low SFP to help achieve low installation PUE.





# IT Cooling AHU's



## InRak™

High performance in-row solution which provides industry-leading cooling for its footprint

10-67kW

Available in DX (scroll compressor, R410A)

EER up to 3.10 (full load) and 5.82 (part load)

Transmits cooled air horizontally across the front of the server racks

Up to 83% more cooling compared with conventional CRAC units.



## Barkell AHU

We design and manufacture a varied and diverse range of bespoke Air Handling Units (AHUs), including indoor, outdoor, side-by-side, stacked, roof or floor-mounted

0.2m<sup>3</sup>/s – 50m<sup>3</sup>/s

EnviroPack™ R410A refrigeration package available providing cooling (10kW – 235kW) and heating (9kW – 218kW)

Various filtration options

Modulating or shut off damper

Mixing/exhaust box

Plate heat exchanger

Thermal wheel

Run around coils

Integrated controls

Acoustically and thermally insulated

Integrated air to air heat pump for cooling or reverse cycle operation.

# Cabin Coolers



## Ecotel™ DX

A self-contained, outdoor close control cabin cooler developed to provide precise climate control for telecommunication cabins and cabins, kiosks and modular buildings

5-15kW

DX (Scroll Compressor, R410A)

EER up to 3.41

Downflow

Single or dual system offers up to three stages of cooling

Mounts externally – suits applications with limited floorspace

Quick and easy to install

Up to 70% energy saving with free-cooling

Four model sizes available.



## Ecotel™ Free Cool

Versatile indoor / outdoor free cooling cabin cooler

170-400kW

Fresh Air

EER up to 11.9

Downflow

Two case sizes and three capacities (5kW, 10kW, 15kW)

Removable centrifugal EC fan for efficiency and extra quiet operation

G4 filtration

Cabin temperature control

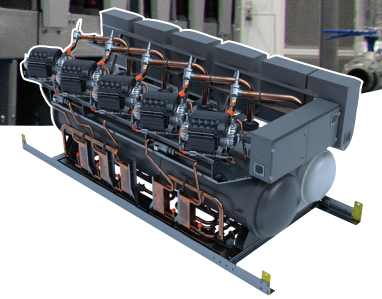
Remote display

Operating temperatures –20°C to +40°C.





# Chiller Ranges



## TurboChill™

Air-cooled, high efficiency, high-capacity chiller with Turbocor® oil-free centrifugal compressors

200-1830kW

Turbocor® oil-free centrifugal compressors

EER up to 4.35

R134a / R1234ze

Free-cooling available, including Enhanced Free Cooling™ on DCS models

Three BREEAM points

Near silent, oil-free compressor operation

Exact match for load requirements

Spray evaporator option with reduced refrigerant charge

Helix intelligent controls

DCS version available, specifically engineered for data centres.

## DeltaChill™

Air-cooled, high efficiency scroll chiller offering free cool and wide range of cooling capacities. Range features the highest capacity R32 air-cooled chiller in the world

110-1010kW

Scroll compressors

EER up to 3.6

R410A / R32

Free-cooling available, including Enhanced Free Cooling on DCS models

Three BREEAM points

Extremely energy efficient and compact

A huge range of 282 models provides exceptional flexibility

Quiet, cost effective scroll compressors and the latest fan technology

Helix intelligent controls

DCS version available, specifically engineered for data centres.

## Ultima Compact

The Ultima Compact Chiller is an air-cooled, high efficiency, compact chiller, offering exceptional ESEER and EER ratings

30-150kW

Scroll compressors

EER > 3.42, ESEER > 4.42

R32

Latest DSH scroll compressor technology

Multiple scroll compressors provide staged capacity control, enabling system water volumes to be reduced and part load efficiencies to be optimised

Compact design

Low sound levels

Full hydraulic pump options

Single and dual circuit models

Helix intelligent controls.

## OptiChill™

Airedale's original data centre chiller platform is based on a screw compressor and has been optimised with a V-block evaporator condenser for high capacity cooling

1800kW

Screw compressor

EER up to 3.86

R134a

High free-cooling capability due to high airflow EC fans and high efficiency heat exchangers

Twin screw compressors increase reliability, efficiency and improve overall chiller performance

Optional inverter-controlled pump, combined with flow monitoring, provides effective water management

Helix intelligent controls.

## EcoChill

An energy efficient, R410A optimised compact air-cooled chiller range with heat pump variants

6-200kW

Scroll compressor

EER > 3.39 (cooling only)

EER > 3.23 (heat pump)

R410A

Available as cooling only or as a heat pump variant

Small footprint makes it ideal for solutions with limited space

Available in eleven sizes

ESEER up to 4.00

Requires minimum refrigerant charge and has a high heat transfer coefficient.

## TurboChill™ Hydro

High capacity, water-cooled, Turbocor® chiller with flexible arrangements and great energy efficiencies

200-3000kW

Turbocor® oil-free centrifugal compressors

EER > 5.79, ESEER > 8.98

R134a / R513A

Near silent, oil-free compressor operation

Flexible configuration – fit into tight spaces with vertical options, all units fit into standard width containers for easy shipping

Electronic expansion valves – maximum efficiency through the operating envelope of the unit

Variable flow options

Helix intelligent controls.







## Sales Offices:

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