

# 30 - 450kW



Free-Cooling models  
up to 450kW  
Now Available

## > Ultima Compact Chiller Range

Typical Applications

- > Precision Air Conditioning Cooling
- > Comfort Cooling
- > Process Cooling

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# Ultima Compact Chiller Range

Designed for a better environment

## Designed for a better environment

The Ultima Compact Chiller is designed to help you create a better environment, now and for the future by providing increased energy efficiency, improved performance and lower sound levels.

So when it comes to refrigerant, the Ultima Compact really does leave you free to select an environmentally friendly chiller without compromising either capacity or efficiency.

To achieve the optimum capacity with R407C refrigerant, we adopted a new approach to chiller design. Individual components were independently tested during the design stages to ensure optimum overall performance and reliability. Newly tested components include:

- > Evaporators
- > Condenser coils
- > Scroll compressors
- > Sickle bladed fans

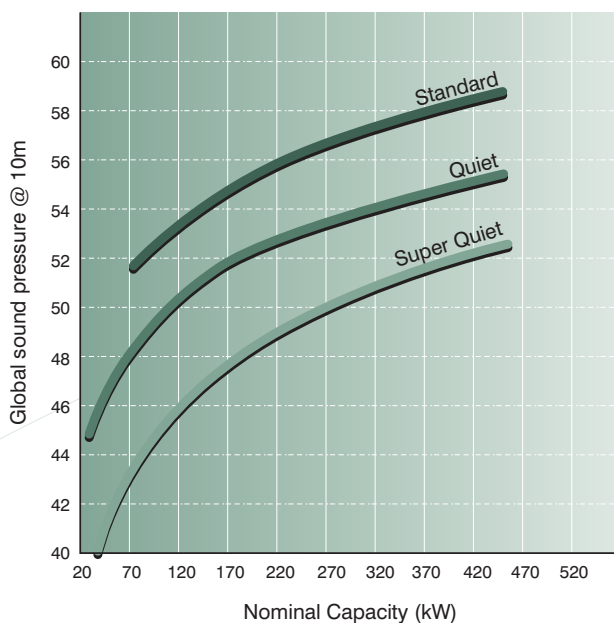
The Ultima Compact Chiller range is also included on the Energy Technology List due to its proven energy efficient performance. Under the Enhanced Capital Allowance scheme, businesses investing in energy saving products published in the approved list can claim 100% first-year capital allowances on their spending.



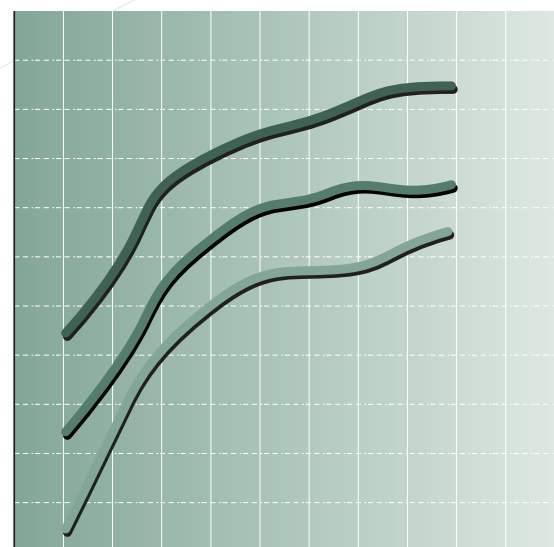
## Low sound levels

Airedale recognises that noise pollution is a very important issue in today's populated environments, with many urban areas having already introduced strict noise pollution regulations. The new Ultima Compact Chiller has been developed with low sound levels as a key factor in its design. The advanced design of the Compact Chiller is so highly developed that the sound levels of even the Standard (D) model are lower than previous Airedale chillers, while the Super Quiet (DSQ) model offers some of the lowest sound levels available in today's chiller market.

Ultima Compact 30 - 450kW



Ultima Compact FreeCool 75 - 450kW



## Ultima Compact Chiller

The Ultima is the most advanced range of chillers ever produced by Airedale, thanks to our on-going programme of extensive development and technical innovation. The new range has been designed with low sound levels, energy efficiency, cost effectiveness and the environment in mind. Larger models are available from 200 to 750kW in the Ultima Screw Chiller range.



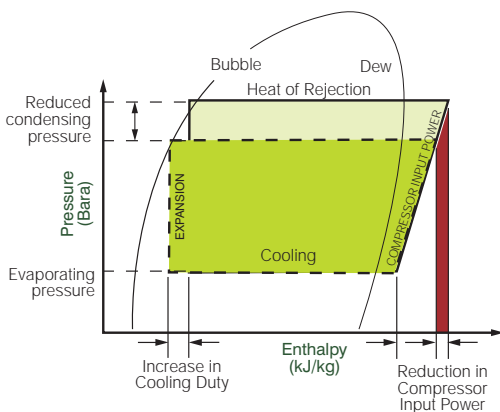
### Key technical data

- > 30kW to 450kW nominal cooling capacity
- > 75 model sizes offering flexible case configuration
- > Standard, Quiet and Super Quiet variants
- > Single and dual circuit models (UCC30-80 only, dual circuit on all larger models)
- > Free-cooling models available (75-450kW models)
- > Designed and optimised for R407C refrigerant

### Key Feature : Electronic expansion valves

A standard thermostatic expansion valve cannot control the refrigeration superheat and therefore prevent the flow of liquid refrigerant out of the evaporator at low condensing temperatures. Therefore a head pressure controller is fitted to maintain an artificially high head pressure so that the conventional chiller can operate reliably, but this means the chiller is not running as efficiently as it could do at lower ambient temperatures.

In contrast, an electronic expansion valve can operate at much lower condensing temperatures, reducing the need for unnecessarily high head pressures, and resulting in significant compressor energy savings whenever the ambient temperature and / or cooling requirement are below design conditions.



### Key Service : Flexible warranty options

Ultima Chillers are available with a standard warranty package that guarantees all parts and labour for 12 months. Additional customised Chillerguard packages are also available comprising commissioning plus the first 12 months service and maintenance.

To protect your investment in the Ultima Chiller after commissioning, we have introduced our exclusive planned maintenance programme. It includes nationwide service cover 24 hours a day, 365 days a year, plus regular planned maintenance visits from our highly qualified and experienced team of engineers.

Please note that Airedale Service can presently only offer Service and Maintenance to equipment installed on the UK mainland. However Airedale distributors overseas would be pleased to offer any service on Airedale units you may require.

For more information please see our [Service pack](#) or visit [www.airedaleservice.com](http://www.airedaleservice.com)



# Ultima Compact Chiller Range

## Specifications

### Ultima Compact FreeCool Chiller

The Ultima Compact is also available as a free-cooling chiller package with cooling capacities ranging from 75 to 450kW offering further enhanced energy savings of approximately 35%\* when compared with a conventional DX system. Larger FreeCool models are available from 200 to 750kW in the Ultima FreeCool range.

#### Key technical data

- > 75 to 450 kW nominal cooling capacity
- > 45 model sizes
- > Standard, Quiet and Super Quiet variants
- > Free-cooling system becomes active whenever the ambient temperature is lower than return water
- > Simultaneous DX and free-cooling, with free-cooling taking priority when available
- > Dual refrigeration circuit
- > Designed and optimised for R407C

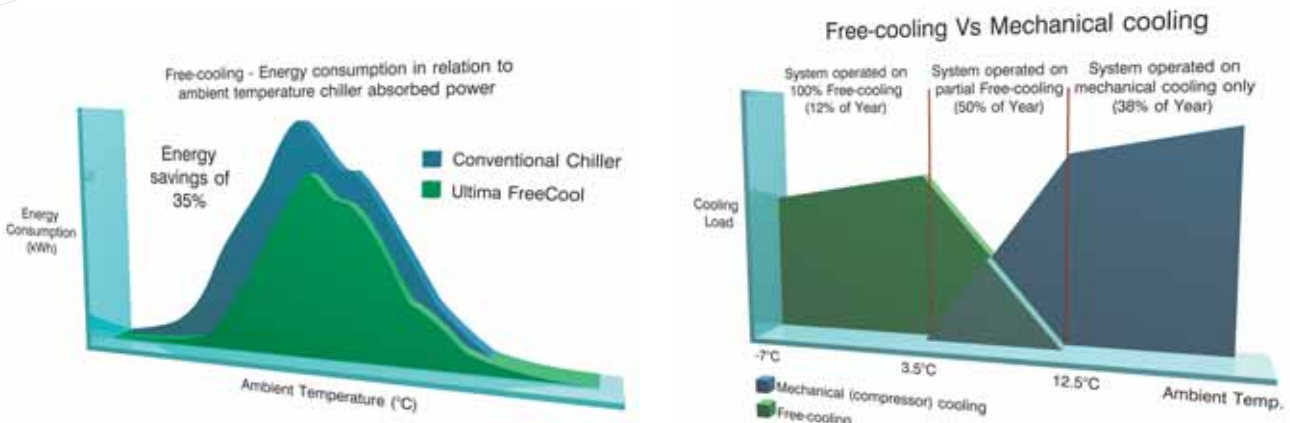


#### Key feature : Free-cooling

Where the need for cooling continues during colder ambient temperatures and when the ambient temperature is lower than the return liquid temperature, there is a large potential to reduce the energy consumption of the liquid chiller by utilising the benefit of these lower ambient temperatures for substantial proportions of the year. The Ultima Compact FreeCool has been designed as a free-cooling chiller and will provide a low energy consumption solution.

The return water temperature of most applications is higher than the actual outdoor temperature for more than 65% of the year and Airedale has paid specific attention to this factor when designing the Ultima Compact FreeCool. The chiller uses a free-cooling cycle which reduces the need for mechanical cooling and can even totally satisfy the cooling requirement for 10-15% of the year.

During periods where free-cooling cannot completely satisfy the cooling load, the Ultima Compact FreeCool will also operate on partial free-cooling which is topped up with an element of mechanical cooling to meet the cooling demand. This feature means that the Ultima Compact FreeCool only needs to operate completely on mechanical cooling for about 38% of the year and typically saves 35%\* of the energy consumed by a conventional air cooled liquid chiller.



#### FreeCool features

As well as incorporating all the Standard Ultima Compact features and options the Ultima Compact FreeCool also offers: -

- > Free-cooling coil arrangement incorporating 3-way mixing valve to bring in free-cooling when available
- > Optimised for use with R407C refrigerant and 20% ethylene glycol solution
- > Integral 20 mesh filter and flow switch

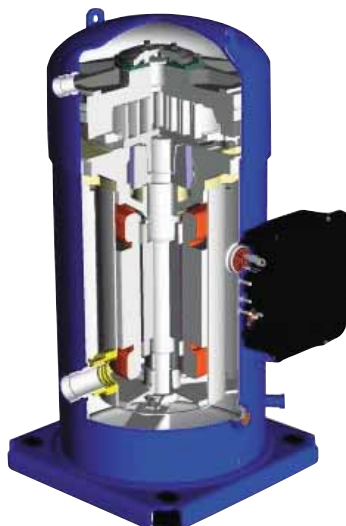
\* Based on Met. Office figures for London, UK

### Standard Features

Through its use of AireTronix controls the Ultima Compact is now able to offer a wealth of cost effective, energy saving features. These features help to provide the necessary internal environment and services expected within an energy efficient, environmentally sound building.

- > Electronic expansion valves offer an energy saving whenever the outdoor ambient is below design\*
- > Evaporator pad heater provides frost protection when compressors are not in operation
- > Modulating head pressure control on all models ensures energy efficient operation of the condenser fans whilst protecting the system during low ambient operation
- > Single (Models UCC 30-80 only) and dual independent refrigeration circuits
- > Condenser fan discharge plenum reduces noise
- > High efficiency, dual circuit brazed plate evaporator
- > Dedicated compressor enclosure provides good maintenance access while helping to keep noise levels to a minimum
- > Sickle-bladed fans with long bellmouth optimise airflow across the coils\*
- > New AireTronix controller allows intelligent chiller control and full communication to BMS systems
- > Unique design enhanced condenser coils ensure an even air distribution
- > Multiple scroll compressors provide staged capacity control enabling system water volumes to be reduced and part load efficiencies to be optimised
- > Designed and optimised for operation with R407C refrigerant
- > Liquid and discharge line shut-off valves\*
- > Pressure relief valve

\* not standard on every model



Scroll compressor

### Options

In addition to its wide range of standard features the Ultima Compact offers a number of enhanced options that can be specified to create a bespoke product that meets each individual's unique application requirements.

- > Expansion vessel
- > Sequence controller
- > Epoxy coated condenser coils
- > Coil guards
- > Anti-vibration mounts (pad or spring type)
- > Integrated water flow switch\*
- > Dual pressure relief valve
- > Flushing bypass filter valves and pipework (standard or regulating)
- > Internal pumps (single, twin head or run and standby) and filter
- > Extended condenser fan discharge plenum
- > Evaporator differential pressure switch
- > Remote set-point adjust
- > Buffer vessel\*
- > Electronic expansion valves (when not fitted as standard)
- > Power factor correction\*
- > Liquid and discharge line shut-off valves\*
- > Refrigerant leak detection
- > Electronic soft start
- > Mini pressurisation package
- > Water filter\*



Ultima Compact FreeCool interior



Dual pressure relief valve

# Ultima Compact Chiller Range

AireTronix Controls

## AIRETronix Controller

Ultima Compact units are equipped with the very latest microprocessors available from Airedale. These fully programmable controllers are specifically developed for use with Airedale air conditioning systems, offering powerful analogue and digital control to meet a wide range of monitoring and control features. The Controller's in-built display allows viewing of the unit's operating status and it's multi-button keypad allows adjustment to control parameters by allowing the operator easy access to a menu system.



Standard Microprocessor Features:

- > 4 x 20 LCD back lit display
- > 14MHz 16 bit CPU
- > 2MB FLASH program memory
- > 256kB RAM data memory
- > Remote on / off capability
- > Compressor anti-cycle control
- > Compressor rotation
- > Compressor hours run log and reset
- > Duty / standby operation
- > Duty rotation (network units)
- > Temperature sensors (supply & return)
- > Visual alarm display
- > Password protection

## AIRETronix Connections

The controller can be connected and integrated into a wide range of other BMS systems either by using additional internal plug-in serial cards or external gateways. The plug-in serial cards have options to communicate with the following systems – Carel, Modbus-Jbus, Trend, Echelon LonWorks devices and Metasys Johnson Controls. With the addition of external gateways the following integration is also available:

- > BACnet
- > Fax, SMS and GSM
- > SNMP (Simple Network Management Protocol)
  - used for Ethernet TCP IP

## AIRETronix Supervisory Options

### AireWorks

AireWorks is the software program for the Supervision and Monitoring of Chillers & Air-conditioning systems managed by AireTronix controllers. It enables the user to monitor plant or building services, and make changes to the way the building is controlled. AireWorks can act as a server allowing access to a graphical representation using a web browser such as Internet Explorer.

### AireWeb

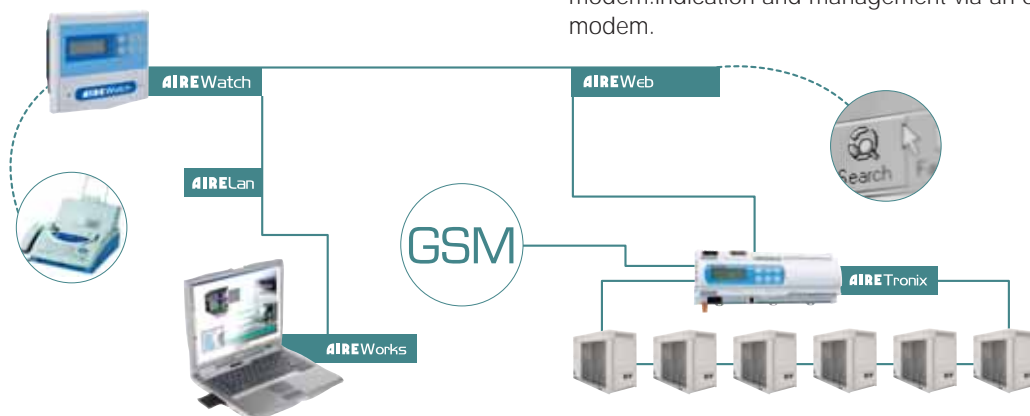
The AireWeb device is a gateway for interfacing AireTronix controllers to an Ethernet network. The web pages are created based on specific parameters to the installation, be it Airedale Chillers or Air Conditioning units. The user can then display and modify parameters of the installation using standard Internet browsers, by entering an IP address of the AireWeb device.

### GSM

For very simple remote alarm indication, the AireTronix controllers can be fitted with a modem serial card which allows connection to "dual band" type or GSM modems. A recipients mobile telephone number can be entered into the controller, allowing alarms to be sent to any required person.

### AireWatch

For more compact systems, with the same management and control needs as larger areas, AireWatch offers an integrated solution for monitoring, data logging and remote alarm indication and management via an optional inbuilt modem. indication and management via an optional inbuilt modem.



Airedale have developed an AireTronix Control Centre at it's corporate headquarters in Leeds. The Centre features live, working AireTronix controllers and AireLan local area networks, and fulfils many functions including full live technical presentations, as well as hands-on and pre-sales product demonstrations for customers. The facility also features a bureau which enables Airedale specialists to conduct remote site monitoring.

# Ultima Compact Chiller Range

## Technical Specifications

Ultima Compact Standard						
Model No.	Nom. Cooling Capacity (kW) <sup>1</sup>	Input (kW) <sup>1</sup>	EER <sup>2</sup>	Sound Pressure @ 10m dB(A)	Dimensions (HxWxD)mm	Operating Weight (kg)
UCC30-80						
Only available in Quiet and Super Quiet Models						
UCC75D-2/1	81.0	22.6	3.58	49	2000 x 1300 x 2800	960
UCC100D-2/1	104.3	31.1	3.35	49	2000 x 1300 x 2800	1040
UCC110D-4/2	113.9	27.9	4.09	56	2100 x 1850 x 2415	1300
UCC125D-3/1	136.0	38.5	3.54	52	2000 x 1300 x 3650	1260
UCC130D-4/2	137.9	37.4	3.68	56	2100 x 1850 x 2415	1360
UCC150D-3/1	161.7	47.8	3.38	52	2000 x 1300 x 3650	1380
UCC160D-4/2	163.3	47.9	3.41	56	2100 x 1850 x 2415	1430
UCC180D-6/2	200.5	52.6	3.81	58	2100 x 1850 x 3220	1745
UCC200D-6/2	222.0	60.9	3.64	58	2100 x 1850 x 3220	1775
UCC225D-6/2	245.3	72.1	3.40	58	2100 x 1850 x 3220	1945
UCC250D-6/2	269.2	79.2	3.40	58	2100 x 1850 x 3220	1955
UCC275D-8/2	294.0	92.4	3.18	56	2180 x 2200 x 4700	2680
UCC300D-8/2	319.7	103.5	3.09	57	2180 x 2200 x 4700	2820
UCC330D-10/2	358.5	104.2	3.44	58	2180 x 2200 x 5550	3020
UCC360D-10/2	392.2	115.5	3.40	58	2180 x 2200 x 5550	3240
UCC400D-12/2	439.1	127.6	3.44	59	2180 x 2200 x 6400	3640
UCC450D-12/2	486.5	143.7	3.39	59	2180 x 2200 x 6400	3770

1 At nominal conditions of 12/7°C water in/out, 30°C ambient

2 EER = Cooling duty / Compressor input power

Ultima Compact Quiet						
Model No.	Nom. Cooling Capacity <sup>1</sup>	Input (kW) <sup>1</sup>	EER <sup>2</sup>	Sound Pressure @ 10m dB(A)	Dimensions (HxWxD)mm	Operating Weight (kg)
UCC30(S/D)Q-1/1	34.0	10.8	3.15	46	1450 x 1310 x 1650	500
UCC40(S/D)Q-1/1	38.4	12.3	3.12	46	1450 x 1310 x 1650	580
UCC50(S/D)Q-2/1	52.4	14.9	3.52	48	1450 x 1310 x 2500	730
UCC60(S/D)Q-2/1	59.7	18.0	3.32	48	1450 x 1310 x 2500	780
UCC70(S/D)Q-2/1	67.1	21.5	3.12	48	1450 x 1310 x 2500	800
UCC75DQ-2/1	80.2	23.1	3.48	45	2000 x 1300 x 2800	1000
UCC80(S/D)Q-2/1	76.6	24.4	3.13	48	1450 x 1310 x 2500	890
<b>UCC100DQ-3/1</b>	<b>106.7</b>	<b>29.7</b>	<b>3.59</b>	<b>46</b>	<b>2000 x 1300 x 3650</b>	<b>1190</b>
UCC110DQ-4/2	111.6	29.1	3.83	51	2100 x 1850 x 2415	1300
UCC125DQ-3/1	134.1	39.5	3.39	48	2000 x 1300 x 3650	1320
UCC130DQ-4/2	134.5	39.3	3.42	51	2100 x 1850 x 2415	1360
UCC150DQ-3/1	163.3	46.9	3.48	49	2000 x 1300 x 4500	1570
UCC160DQ-6/2	169.7	44.5	3.82	53	2100 x 1850 x 3220	1660
UCC180DQ-6/2	195.8	55.2	3.55	53	2100 x 1850 x 3220	1775
UCC200DQ-6/2	216.5	64.3	3.37	54	2100 x 1850 x 3220	1815
UCC225DQ-8/2	250.2	69.2	3.62	55	2100 x 1850 x 4025	2115
UCC250DQ-8/2	270.8	78.2	3.46	55	2100 x 1850 x 4025	2190
UCC275DQ-8/2	289.7	93.5	3.10	53	2180 x 2200 x 4700	2730
UCC300DQ-10/2	318.5	103.8	3.07	54	2180 x 2200 x 5550	2990
UCC330DQ-10/2	355.7	105.9	3.36	54	2180 x 2200 x 5550	3220
UCC360DQ-12/2	392.1	115.5	3.39	55	2180 x 2200 x 6400	3410
UCC400DQ-12/2	432.5	131.5	3.29	55	2180 x 2200 x 6400	3690
UCC450DQ-14/2	485.2	144.4	3.36	55	2180 x 2200 x 7250	4090

1 At nominal conditions of 12/7°C water in/out, 30°C ambient

2 EER = Cooling duty / Compressor input power

- > For the latest information on our comfort products please visit : [www.airedale.com](http://www.airedale.com)
- > Please refer to the technical manuals for more detailed information

Your nearest Airedale distributor is:



**Airedale International  
Air Conditioning Limited**

Leeds Road, Rawdon  
Leeds, LS19 6JY, England

T : +44 (0) 113 239 1000  
F : + 44 (0) 113 250 7219  
E : [enquiries@airedale.com](mailto:enquiries@airedale.com)  
W : [www.airedale.com](http://www.airedale.com)



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All specifications are subject to change without prior notice  
ENG-CHIL-UCC-04-10