75 - 450kW

> Ultima Water Cooled & Ultima Remote Air Cooled Chiller Ranges

Typical Applications

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

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Ultima Water Cooled &
Ultima Remote Air Cooled Chiller Ranges

Specifications

Ultima Water Cooled Chiller &
Ultima Remote Air Cooled Chiller

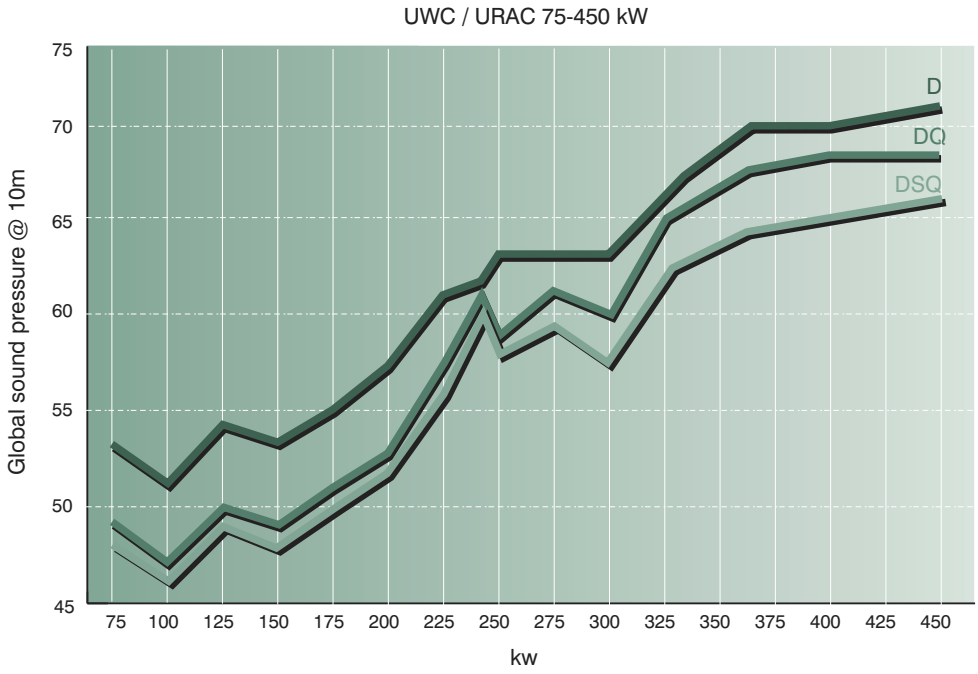
The Ultima Water Cooled (UWC) and Ultima Remote Air Cooled Chillers (URAC) are some of the most advanced chillers ever produced by Airedale, thanks to our on-going programme of extensive development and technical innovation. The new ranges have been designed specifically for use in plant room applications with energy efficiency, low sound levels, cost effectiveness and the environment in mind. Heat rejection can be achieved through either water or refrigerant by means of a dry cooler or remote condenser.

Key Technical Data

- 75kW to 450kW nominal cooling capacity
- 45 model sizes
- Standard, Quiet and Super Quiet variations
- Dual independent refrigeration circuit
- All Scroll compressor technology
- Compact unit footprint
- Optimised for R407C refrigerant

Key Feature : 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 UWC and URAC have been developed with low sound levels as a key factor in their design.



Standard Features

Through it's use of AireTronix controls the UWC and URAC offer a wealth of energy saving, cost effective features. These features help to provide the necessary internal environment and services expected within an energy efficient, environmentally sound building.

- Electronic expansion valves offer significant energy savings
- Evaporator pad heater provides frost protection and prevents refrigerant migration when compressors are not in operation
- Dual independent refrigeration circuits
- High efficiency integrated dual circuit brazed plate evaporator
- Advanced AireTronix controller allows intelligent chiller control and full communication to BMS systems
- Multiple scroll compressors provide staged capacity control enabling system water volumes to be reduced and part load efficiencies to be increased
- Designed and optimised for R407C refrigerant
- Liquid and discharge line shut off valves
- High efficiency brazed plate condensers (UWC only)
- Dedicated compressor enclosure provides good maintenance access while helping to keep noise levels to a minimum (DQ / DSQ models only)
- Integral pressure relief valve assembly with indicator gauge (UWC only, option on the URAC)
- 0-10V output for control of expansion valves (URAC only) and fans to provide head pressure control
- Output to external head pressure controller (FSC or modulating 3-way valve) (UWC only)
- Victaulic connections on evaporator (& condenser on UWC) provide low noise, cost savings and a significant reduction in installation & maintenance time

Options

In addition to their wide range of standard features the UWC and URAC offer a number of enhanced options that can be specified to create a bespoke product that meets each individual customers unique application requirements.

- Anti vibration mounts (pad or spring type) for noise sensitive installations
- Power factor correction
- Electronic soft start significantly reduces the compressor starting current
- Evaporator (& condenser on UWC) water filter
- Leak detection kit (DQ / DSQ models only) provides an indication of any refrigerant leak within the chiller
- Sequence controller for multiple chiller applications
- Dual pressure relief valve allows inspection of pressure relief assembly without the requirement to reclaim the system refrigerant
- Remote set-point adjust
- Evaporator (& condenser on UWC) flow switch (supplied loose) to protect the chiller from damage caused by reduced water flow
- Matching dry coolers and air cooled condensers are available for each model size

Ultima Water Cooled Chiller DQ / DSQ model with panels removed

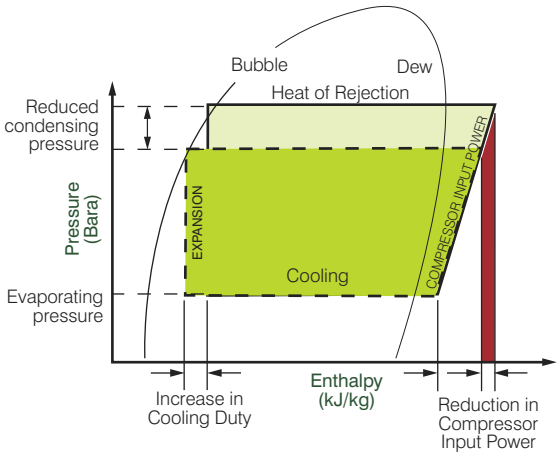
Ultima Water Cooled &
Ultima Remote Air Cooled Chiller Range

Key Features

Key Feature : Electronic Expansion Valves

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

The UWC and URAC use electronic expansion valves as standard. The valve can operate at much lower condensing temperatures, reducing the need for unnecessarily high head pressures, and as a result significant compressor energy savings can be achieved whenever the ambient temperature and / or cooling requirements are below design conditions.



Key Feature : Multiple Scroll Compressor Technology

Airedale are utilising multiple scroll compressor technology for the very first time to achieve cooling capacities of up to 450kW on dual circuit machines. The use of this technology brings with it greater flexibility to the Ultima Chiller range.

The vertical orientation of the compressors means the UWC and URAC have a more compact footprint than other 450kW chillers, and lower vibration levels means they are quieter than other chillers in this capacity range.

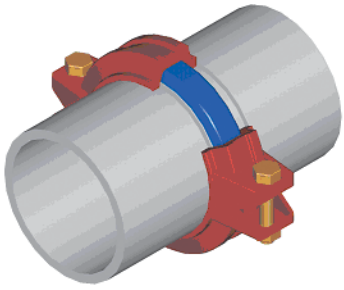
The multiple scroll compressors are also considerably more efficient achieving EER values of above 4.0* at nominal conditions, as well as being more resistant to liquid flood back which enhances unit reliability and life cycle costs.

* Based on nominal water cooled conditions.

Key Feature : Victaulic Pipe work Connections

Airedale utilise Victaulic pipe work on the UWC and URAC as standard. These (cost option) 'clamp type' connections have a range of additional features and benefits over the flanges traditionally used on all water connections.

- Flexible joint – This can accommodate pipe expansion and contraction due to changes in temperature, as well slight misalignments in pipe work, often removing the requirement for expensive on site re-work
- Easy maintenance – Just two simple bolted connections to make a joint
- Noise dampening – Through the use of the integrated rubber gasket section of the joint
- Even pressure – This is evenly applied around the entire pipe, unlike a flanged connection where pressure is focussed on the 10-12 bolt holes
- Reduced welding – the Victaulic connections greatly reduce time spent welding, and the variety of fittings available can also reduce the amount of welding that is required



Cut away section of a victaulic pipework connection

AIRETronix Controller

Ultima Water Cooled and Ultima Remote Air Cooled Chillers 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

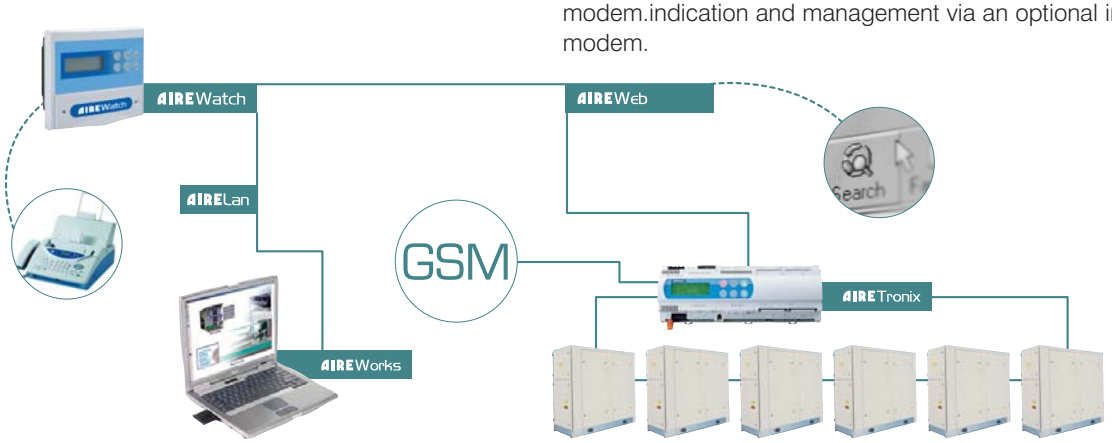
The AireWeb device is a gateway for interfacing AireTronix controllers to an Ethernet network. The web pages are created based on specific parameters to the installation, be it Airedale Chillers or Air Conditioning units. The user can then display and modify parameters of the installation using standard 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 Water Cooled &
Ultima Remote Air Cooled Chiller Range

Technical Specifications

Ultima Water Cooled Chiller						
Model No.	Nom. Cooling Capacity (kW)	Nominal Input Power (kW)	EER	Global Sound Pressure @ 10m (dB(A))	Dimensions (HxLxW), (mm)	Operating Weight (kg)
UWC75D	87.5	22.0	4.0	53	1850 x 1800 x 760	810
UWC100D	118.9	29.3	4.1	51	1850 x 1800 x 760	875
UWC125D	152.0	37.4	4.1	54	1850 x 1800 x 760	910
UWC150D	184.2	45.0	4.1	53	1850 x 2000 x 760	1280
UWC175D	213.1	50.7	4.2	55	1850 x 2000 x 760	1385
UWC200D	242.9	56.9	4.2	57	1850 x 2000 x 760	1490
UWC225D	273.7	64.5	4.2	61	1850 x 2000 x 760	1585
UWC240D	262.2	62.9	4.2	62	1900 x 3200 x 900	1800
UWC250D	306.3	72.0	4.3	63	1850 x 2000 x 760	1660
UWC270D	305.9	72.2	4.2	63	1900 x 3200 x 900	1980
UWC300D	351.4	81.5	4.3	63	1900 x 3200 x 900	2180
UWC330D	396.1	92.4	4.3	67	1900 x 3200 x 900	2300
UWC360D	441.6	103.3	4.3	70	1900 x 3200 x 900	2420
UWC400D	486.0	116.1	4.2	70	1900 x 3200 x 900	2620
UWC450D	528.6	128.7	4.1	71	1900 x 3200 x 900	2820
UWC75DQ	87.5	22.0	4.0	49	1850 x 1800 x 760	840
UWC100DQ	118.9	29.3	4.1	47	1850 x 1800 x 760	905
UWC125DQ	152.0	37.4	4.1	50	1850 x 1800 x 760	940
UWC150DQ	184.2	45.0	4.1	49	1850 x 2000 x 760	1310
UWC175DQ	213.1	50.7	4.2	51	1850 x 2000 x 760	1415
UWC200DQ	242.9	56.9	4.3	53	1850 x 2000 x 760	1520
UWC225DQ	273.7	64.5	4.2	57	1850 x 2000 x 760	1625
UWC240DQ	262.2	62.9	4.2	61	1900 x 3200 x 900	1880
UWC250DQ	306.3	72.0	4.3	59	1850 x 2000 x 760	1690
UWC270DQ	305.9	72.2	4.2	61	1900 x 3200 x 900	2060
UWC300DQ	351.4	81.5	4.3	60	1900 x 3200 x 900	2240
UWC330DQ	396.1	92.4	4.3	65	1900 x 3200 x 900	2380
UWC360DQ	441.6	103.3	4.3	67	1900 x 3200 x 900	2500
UWC400DQ	486.0	116.1	4.2	68	1900 x 3200 x 900	2680
UWC450DQ	528.6	128.7	4.1	68	1900 x 3200 x 900	2900
UWC75DSQ	87.5	22.0	4.0	48	1850 x 1800 x 760	880
UWC100DSQ	118.9	29.3	4.1	46	1850 x 1800 x 760	945
UWC125DSQ	118.9	37.4	3.2	49	1850 x 1800 x 760	970
UWC150DSQ	184.2	45.0	4.1	48	1850 x 2000 x 760	1350
UWC175DSQ	213.1	50.7	4.2	50	1850 x 2000 x 760	1455
UWC200DSQ	242.9	56.9	4.3	52	1850 x 2000 x 760	1560
UWC225DSQ	273.7	64.5	4.2	56	1850 x 2000 x 760	1655
UWC240DSQ	262.2	62.9	4.2	60	1900 x 3200 x 900	1900
UWC250DSQ	306.3	72.0	4.3	58	1850 x 2000 x 760	1730
UWC270DSQ	305.9	72.2	4.2	59	1900 x 3200 x 900	2080
UWC300DSQ	351.4	81.5	4.3	57	1900 x 3200 x 900	2280
UWC330DSQ	396.1	92.4	4.3	62	1900 x 3200 x 900	2380
UWC360DSQ	441.6	103.3	4.3	64	1900 x 3200 x 900	2500
UWC400DSQ	486.0	116.1	4.2	65	1900 x 3200 x 900	2720
UWC450DSQ	528.6	128.7	4.1	66	1900 x 3200 x 900	2900

Nominal capacities based on evaporating 7/12°C, 30/35°C condenser water, 100% water

Ultima Remote Air Cooled Chiller

Model No.	Nom. Cooling Capacity (kW)	Nominal Input Power (kW)	EER	Global Sound Pressure @ 10m (dB(A))	Dimensions (HxLxW), (mm)	Operating Weight (kg)
URAC75D	83.2	23.4	3.6	53	1850 x 1800 x 760	790
URAC100D	113.4	31.2	3.6	51	1850 x 1800 x 760	830
URAC125D	145.3	39.4	3.7	54	1850 x 1800 x 760	860
URAC150D	175.6	47.7	3.7	53	1850 x 2000 x 760	1190
URAC175D	202.5	54.3	3.7	55	1850 x 2000 x 760	1290
URAC200D	230.6	61.1	3.8	57	1850 x 2000 x 760	1380
URAC225D	258.8	69.3	3.7	61	1850 x 2000 x 760	1450
URAC240D	248.2	70.1	3.5	62	1900 x 3200 x 900	1540
URAC250D	287.3	77.2	3.7	63	1850 x 2000 x 760	1520
URAC270D	289.5	80.7	3.6	63	1900 x 3200 x 900	1680
URAC300D	331.5	91.3	3.6	63	1900 x 3200 x 900	1820
URAC330D	373.3	102.8	3.6	67	1900 x 3200 x 900	1900
URAC360D	415.8	114.4	3.6	70	1900 x 3200 x 900	1980
URAC400D	459.0	128.7	3.6	70	1900 x 3200 x 900	2120
URAC450D	502.4	143.1	3.5	71	1900 x 3200 x 900	2280
URAC75DQ	83.2	23.4	3.6	49	1850 x 1800 x 760	810
URAC100DQ	113.4	31.2	3.6	47	1850 x 1800 x 760	855
URAC125DQ	145.3	39.4	3.7	50	1850 x 1800 x 760	880
URAC150DQ	175.6	47.7	3.7	49	1850 x 2000 x 760	1230
URAC175DQ	202.5	54.3	3.7	51	1850 x 2000 x 760	1325
URAC200DQ	230.6	61.1	3.8	53	1850 x 2000 x 760	1425
URAC225DQ	258.8	69.3	3.7	57	1850 x 2000 x 760	1490
URAC240DQ	248.2	70.1	3.5	61	1900 x 3200 x 900	1620
URAC250DQ	287.3	77.2	3.7	59	1850 x 2000 x 760	1555
URAC270DQ	289.5	80.7	3.6	61	1900 x 3200 x 900	1760
URAC300DQ	331.5	91.3	3.6	60	1900 x 3200 x 900	1900
URAC330DQ	373.3	102.8	3.6	65	1900 x 3200 x 900	1960
URAC360DQ	415.8	114.4	3.6	67	1900 x 3200 x 900	2060
URAC400DQ	459.0	128.7	3.6	68	1900 x 3200 x 900	2180
URAC450DQ	502.4	143.1	3.5	68	1900 x 3200 x 900	2340
URAC75DSQ	83.2	23.4	3.6	48	1850 x 1800 x 760	845
URAC100DSQ	113.4	31.2	3.6	46	1850 x 1800 x 760	890
URAC125DSQ	145.3	39.4	3.7	49	1850 x 1800 x 760	915
URAC150DSQ	175.6	47.7	3.7	48	1850 x 2000 x 760	1265
URAC175DSQ	202.5	54.3	3.7	50	1850 x 2000 x 760	1360
URAC200DSQ	230.6	61.1	3.8	52	1850 x 2000 x 760	1455
URAC225DSQ	258.8	69.3	3.7	56	1850 x 2000 x 760	1525
URAC240DSQ	248.2	70.1	3.5	60	1900 x 3200 x 900	1620
URAC250DSQ	287.3	77.2	3.7	58	1850 x 2000 x 760	1590
URAC270DSQ	289.5	80.7	3.6	59	1900 x 3200 x 900	1780
URAC300DSQ	331.5	91.3	3.6	57	1900 x 3200 x 900	1900
URAC330DSQ	373.3	102.8	3.6	62	1900 x 3200 x 900	2000
URAC360DSQ	415.8	114.4	3.6	64	1900 x 3200 x 900	2060
URAC400DSQ	459.0	128.7	3.6	65	1900 x 3200 x 900	2220
URAC450DSQ	502.4	143.1	3.5	66	1900 x 3200 x 900	2360

Nominal capacities based on 7/12°C, 100% water 45°C dew condensing temperature.

> For the latest information on our products please visit : www.airedale.com
> Please refer to the technical manuals for more detailed information

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