

20kW / 40kW



**LogiCool**  
Direct rack cooling solution for high density servers

Modular, outdoor free-cooling chiller ideal for IT environments  
Designed for R410A



Authorised User No. 00007

**Typical applications**

- > Server rooms and data centres
- > Business-critical environments
- > Clean rooms
- > Medical facilities and laboratories
- > Telecommunications
- > Switching stations
- > Process cooling
- > Comfort cooling

## LogiCool: Direct rack cooling solution

LogiCool is a packaged, outdoor, free-cooling chiller designed as an expandable, energy efficient solution for cooling the increasing heat loads of high density servers. It can supply chilled water directly to a rack-mounted air/water heat exchanger and be matched with other direct rack cooling solutions from leading rack producers. LogiCool can also be linked to Airedale/other manufacturers' airside cooling systems in business critical technical areas. LogiCool significantly reduces whole life cycle costs largely due to its integrated, 'simultaneous mechanical and free-cooling' solution and digital scroll compressor technology.

## Compact, modular design

A low capacity, packaged chiller, LogiCool is configured for outside installation, so freeing up valuable indoor space. Its compact footprint and modular design allow close, side-by-side positioning to optimise available space. Additional chillers can be simply designed in and added on as cooling load increases.

## Flexible, multi-rack cooling

LogiCool offers flexible, multi-rack cooling by an individual unit or by a number of units with run/standby and optional sequencing capability. The intelligent, integral controller is key to LogiCool's superior energy-efficient performance, reliability and infinitesimal variable capacity control.

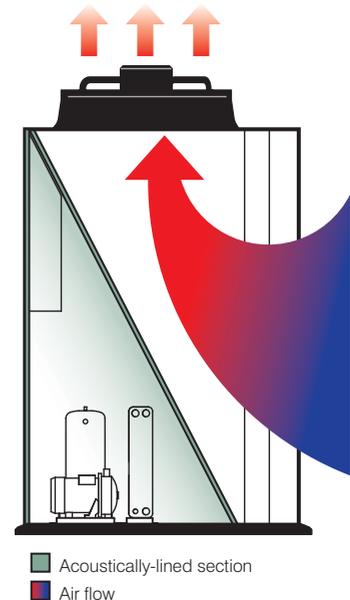
**Enhanced Capital Allowance scheme:** LogiCool is included on the Energy Technology List, offering the potential for investors to claim 100% first-year capital allowance. For details see [www.eca.gov.uk](http://www.eca.gov.uk).

## Key technical data

- > 20kW or 40kW cooling modules
- > Air cooled with integrated free-cooling capability
- > EERs up to 2.6, ESEERs\* up to 3.0 and FSEERs\*\* up to 4.2
- > Compact footprint (from 1.5m<sup>2</sup>) and modular design
- > Advanced AireTronix Controls and remote access from any BMS
- > Innovative digital-scroll compressor technology
- > Direct-drive axial fan with optional EC fan motor technology
- > Efficient plate evaporator with EEV refrigerant controls
- > Designed and optimised for R410A refrigerant

\* ESEER (European Seasonal Energy Efficiency Ratio) is based on the part load efficiency of LogiCool over a year and is a better indicator of real energy draw and running costs

\*\* FSEER (Free-cooling Seasonal Energy Efficiency Ratio) is an Airedale rating based on the part load efficiency of LogiCool over a year and incorporates the benefits of free-cooling



Unit layout showing acoustically-lined section away from unit air flow

## Typical applications



Direct rack cooling



Server rooms

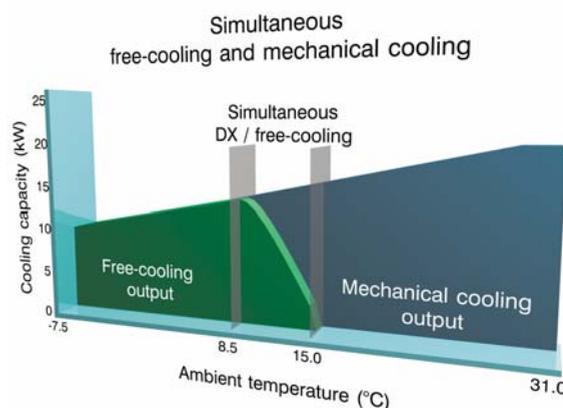


Clean rooms

## Key feature: Simultaneous mechanical / free-cooling reduces life-cycle costs

Continuous system operation and the high temperatures of a server environment in relation to cooler outdoor air, allow LogiCool to operate in free-cooling mode most of the time and virtually energy-free. Free-cooling operates with as little as 1°C differential between ambient and return fluid temperatures. LogiCool's integrated, simultaneous mechanical / free-cooling solution achieves 0-100% free-cooling and offers substantial energy savings throughout the year particularly as LogiCool will always use free-cooling first before initiating mechanical cooling. During any mechanical cooling, LogiCool retains its excellent EER, ESEER and FSEER\* values.

Fine-tuning of water setpoints by the AireTronix controls according to seasonal variations in ambient temperatures; the ability of LogiCool to self-optimize and the very large surface area cooling coils which lengthen the periods of free-cooling, all contribute to LogiCool typically saving more than 45%\*\* of the energy consumed by a conventional chiller.



\* FSEER (Free-cooling Seasonal Energy Efficiency Ratio) is an Airedale rating

\*\* Based on Met. Office average ambient figures for London, UK at 10/15°C, 20% ethylene glycol

## Key feature: Digital scroll compressors for best part load efficiencies

Innovative digital scroll compressor technology combined with intelligent AireTronix controls and electronic expansion valves offer full modulating control of the unit's DX capacity, achieving unmatched part load efficiencies reflected in high EERs.

Since LogiCool has a minimum turndown ratio of 10% (40kW unit), the required system water volume can be reduced. This negates the need for additional buffer vessels normally associated with a close coupled system and enables the unit to be connected directly to the rack.



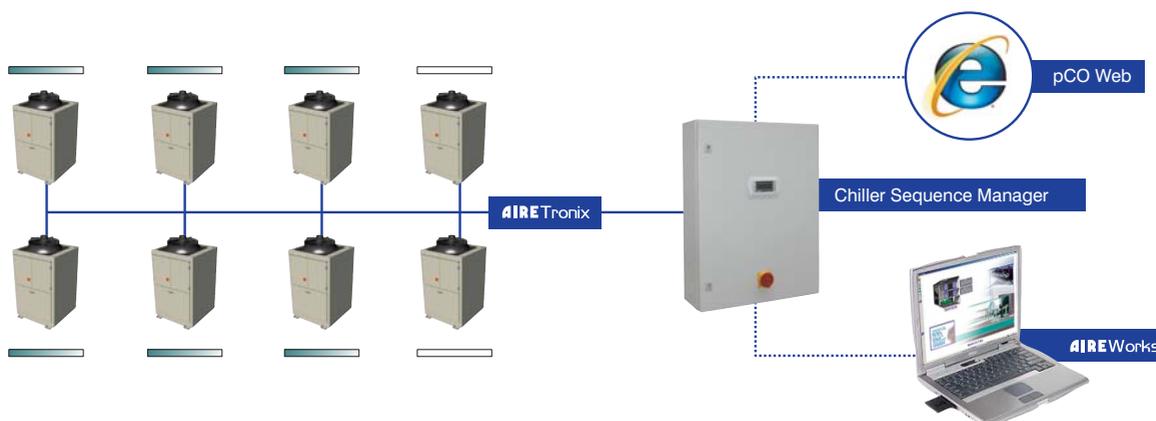
## Key feature: Compact and modular for close positioning

Use of R410A refrigerant and cutting-edge engineering has allowed components to be carefully sized down within a compact case. Condensing coils have been positioned at the rear, further minimising the footprint and allowing close, side-by-side positioning. All refrigeration and water components have been ingeniously contained within an acoustically-lined, fully-enclosed section away from the unit air flow. Part load operation, fan specification and R410A-induced thicker compressor shells also contribute to substantially reduced sound levels.

## Key option: Chiller Sequence Manager

A super-intelligent control system, the Chiller Sequence Manager integrates up to eight LogiCool units into a seamless operating system pre-programmed to run as master/slave or run/standby. The master controller will manage the cooling system for the most energy-efficient solution ensuring equal wear on compressors. It allows remote or time zone set point adjustment across the sequence and will react immediately to critical alarms and network failure.

As a further option, Airedale's supervisory plug-in card pCOWeb can be fitted. Communicating with the Chiller Sequence Manager is then simply a matter of logging onto the office Intranet or the web.



## **AIRETronix** High technology, modulating controls are key to energy efficiency

Pivotal to LogiCool's acute intelligence is advanced AireTronix control technology. Linked to key components within the cooling system, the fully-programmable AireTronix microprocessor manages and self-optimises the LogiCool chiller for maximum energy efficiency. Via the user-friendly, in-built display, the operator/end user has the power to further fine-tune the system.

Multiple chillers can be networked to work in unison and intelligently rotate cooling stages via the optional Chiller Sequence Manager.



## Supervision and integration

The network-capable AireTronix controller can be readily integrated with a wide range of BMS protocols including:

- > AireWorks intelligent software programme
- > Airedale's new generation of pCOWeb supervisory plug-in cards based on Ethernet TCP/IP technology
- > GSM plug-in card for simple remote alarm indication
- > Other commonly-used protocols include LonWorks®, Modbus®, BACnet™, TCP/IP, SNMP, TREND and METASYS®.

For more details of Airedale Controls services including:

- > Software program design
- > After-Sales service including chiller sequencing
- > Network setup and integration
- > Remote Monitoring Centre
- > Live Demonstration Centre

contact [enquiries@airedale.com](mailto:enquiries@airedale.com) or view [www.airedale.com](http://www.airedale.com)



## Technical specifications

									LogiCool
Model no.	Nominal cooling duty (kW) <sup>1</sup>	EER <sup>2</sup>	ESEER	Nominal free-cooling duty (kW) <sup>3</sup>	Free-cool EER	FSEER	Sound pressure @10m (dBA)	Dimensions (HxWxD) (mm)	Operating weight (kg)
LCC20	18.2	2.6	2.5	12	12.2	3.4	53	2060 x 1160 x 1290	540
LCC40	33.7	2.4	3.0	21	11.1	4.2	54	2230 x 1370 x 1400	635

<sup>1</sup> At nominal conditions of 12/7°C water in/out, 35°C ambient, 20% ethylene glycol  
<sup>2</sup> EER = DX (mechanical cooling) duty ÷ compressor and fan input power  
<sup>3</sup> Based on water in/water out 12/7°C, DX cooling water/flow rate, 20% ethylene glycol, ambient 5°C

## Easy to use

Rigorously tested before leaving our 25,000m<sup>2</sup> factory, LogiCool is easy to install and user-friendly, so that once on site it is immediately operational. To facilitate commissioning and maintenance, LogiCool is supplied ready to connect with front access, easily removable panels and hinged control panel doors for swing-open access.

## Maintaining efficiency and reliability

LogiCool is a highly efficient chiller. Airedale Service can provide a planned, preventative maintenance package to sustain the optimum efficiency of your machine and help you see real savings in energy. Good maintenance also ensures reliability, essential for the continuous system operation of a business-critical environment.

## Flexible warranty

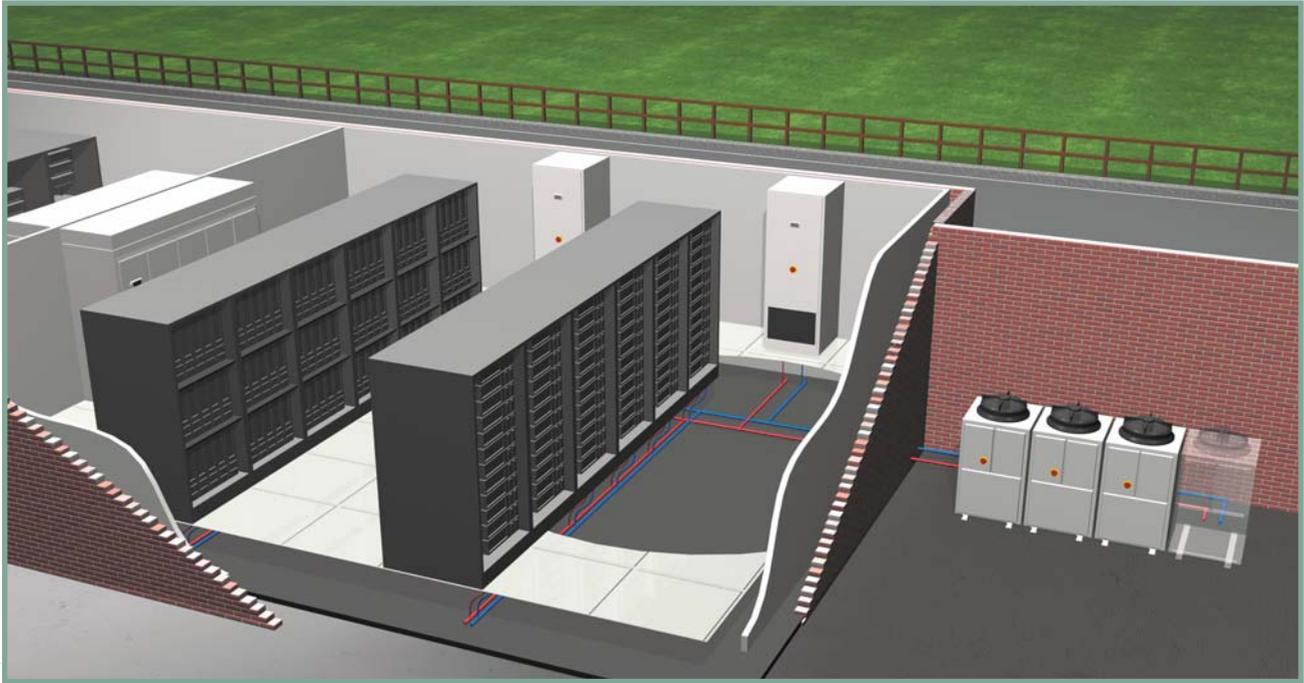
LogiCool is available with a 12 months parts and labour package, providing that it is properly maintained. An easier and more economical way to ensure you comply for the first year warranty is to protect your investment with Airedale's Chillerguard, which includes a guaranteed, priority 24/7 emergency helpline, professional support and call-out service throughout the year and it ensures Fgas compliance.

For more information visit [www.airedaleservice.com](http://www.airedaleservice.com)



# LogiCool

Features, benefits and options



Example of a typical Airedale data centre solution showing LogiCool free-cooling chillers supplying chilled water directly to server racks and Airedale perimeter cooling units

## Energy efficient features

- > Integrated, simultaneous free-cooling capability and large surface area free-cooling coil for optimum energy efficiency
- > Digital-scroll compressor technology for precise temperature control, increased efficiency at partial load and reduced system water volumes
- > AireTronix control system for intelligent and optimum system control, N+1 redundancy and full communication with BMS systems
- > Automatic rescheduling of chilled water setpoint for optimal control
- > Large surface area condensing coils maximise energy efficiency
- > High efficiency plate evaporator, with EEV refrigerant controls, gives raised evaporating temperature for enhanced compressor performance
- > Designed and optimised for R410A refrigerant for greater efficiency and lower refrigerant charge
- > Pre-charged, factory pressure and leak-tested to ensure F-gas compliance and greater efficiency

## Additional features

- > Compact footprint (from 1.5m<sup>2</sup>) and modular design for side-by-side positioning
- > Single DX circuit
- > Condensing coils and water connections located at the rear allowing close side-by-side positioning

## Energy efficient options

- > Cleverly-designed axial fans use latest EC motor technology for ultimate condenser efficiency at full and part load, giving increased performance at reduced power input
- > Intelligent Sequence Control of up to eight chillers
- > Power meter for internal energy monitoring

## Additional options

- > Optional run and standby water pumps
- > Factory-fitted, sealed system expansion tanks

## Key benefits

- > Connects to direct rack cooling systems
- > Modular, expandable solution as load increases
- > Simultaneous DX/free-cooling reduces life cycle costs
- > Flexible individual or multi-rack cooling
- > Latest, high technology AireTronix controller
- > Infinitesimal variable capacity control
- > Reduced minimum system water volumes
- > Exceptional part load efficiencies
- > Proven reliability for business critical applications
- > Easily linked to Airedale/other manufacturers' airside systems for high precision cooling

- > For the latest information on our chiller and close control products please visit : [www.airedale.com](http://www.airedale.com)
- > Please refer to the technical manuals for more detailed information
- > Airedale participates in the Eurovent Certification programme as a founder member. The performance data of certified products is independently verified and identified within the relevant sales literature

Your nearest Airedale distributor is:



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