

# 110 - 136kW



## > AlphaCool<sup>Plus</sup>

Typical Applications

- > ISP facilities
- > Computer rooms

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

## Overview

The AlphaCool Plus is designed to provide specialist IT environments with maximum cooling capabilities and precise environmental control tolerances while reducing footprint and service downtime to an absolute minimum.

The AlphaCool Plus range is available in two models offering increased cooling capacities up to 136kW. Both units incorporate a dual housing construction that offers significant advantages in environments where raised floors are installed. The dual housing construction optimises interior space by hiding the fans discretely under the floor, this helps shrink the overall size. At the same time it enables an enhanced surface area coil. This coil maximises air flow and heat transfer, thereby significantly increasing total cooling capacity.

The units are supplied with a front directional fan discharge as standard with rear discharge available to suit individual requirements. Other standard features include AireTronix controls, voltage controllers to adjust fan speed (accessible via controller display), detachable filter box for easy access and backward curved centrifugal fan assemblies that can be removed from the unit without the need to remove any other major components.



## Key Technical Data

- > 95-136kW nominal cooling capacities (chilled water only)
- > 2 models in 2 case sizes
- > Downflow configuration
- > Advanced AireTronix controls technology
- > Direct drive, backward-curved fans (speed controllable)
- > Variable humidification for precisely conditioned air
- > Low noise and vibration emission levels
- > Constantly optimised air volume for trouble-free operation (Optional)
- > Dual housing construction. Fan section hidden in floor void
- > High efficiency slab coil design for optimum heat transfer
- > Minimal servicing due to self optimisation and efficient operation

## Typical Applications



## Standard Features

The AlphaCool Plus offers a wide range of standard features that enable it to provide precise environmental tolerances within a diverse range of applications.

- > Advanced AireTronix controls technology
- > Backlit display allows for password protection along with on-site adjustment and interrogation of all major components
- > AireTronix controller allows for intelligent unit control and full communication to BMS systems
- > Direct drive, speed-controllable, backward-curved fans allow for easy on site airflow adjustment and reduced noise vibration transmission
- > Fan speed, airflow and external static pressure are controlled by a voltage controller, improving efficiency by reducing energy consumption and optimising performance
- > Compact footprint
- > Front access to all major components facilitates quicker and easier service and maintenance
- > 20mm acoustic insulation on all panels minimises case noise breakout for quieter operation
- > G4-rated pleated disposable filters give superior high performance with lower airside pressure drops
- > All service connections located at one end of the unit to facilitate quicker and easier installation and maintenance
- > Multilingual display (French, German, Spanish and English)
- > Integrated clock card for date and time tagging of alarms
- > Optimised evaporator coils for maximum capacity ensures lowest cost per kW output
- > Factory-fitted mains isolator conforms to International safety standards
- > Standard RAL 7035 colour ensures an aesthetic match to almost all applications

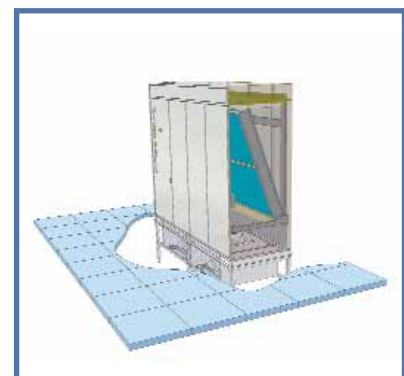
## Options

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

- > Modbus, Trend, Lonworks and Carel BMS interface cards ensure full network connectivity
- > GSM modem kit for remote alarm monitoring via specified mobile telephones
- > Fan speed can be modulated to maintain a constant air volume
- > High performance condensate pump, incorporating high level alarm contacts, enables greater volume flow and increases flood protection
- > Modulating capacity output control humidifier ensures precise control and optimised life-time via the integrated water conductivity sensor
- > Low, medium and high water conductivity bottles, for optimised operation and extended life
- > Electric heating
- > Fire, flood and smoke detection
- > Duct extensions, constructed and finished to match the unit to enhance aesthetics
- > Rear air discharge floor stands

### Key Feature: Easy to install, commission, maintain and service

All major components are accessible from the front of the unit. Isolated from the airflow, the control panel can be worked on with the unit in operation, helping to simplify commissioning and maintenance.

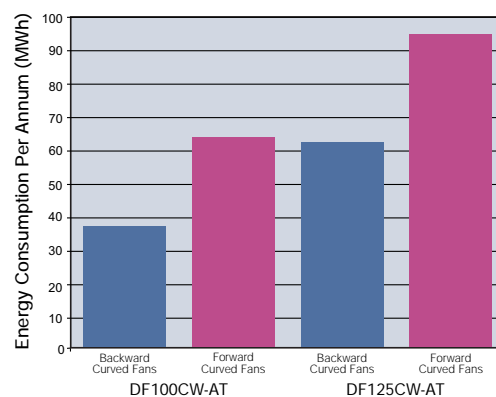


### Key Feature: Direct drive fans

Direct drive, backward-curved impeller fans are fitted as standard across the AlphaCool Plus range. A key feature of the direct drive fans is a high performance impeller that is dynamically balanced for maximum efficiency, offering significant typical energy savings of between 30 and 40% (see graph).

The direct drive fans have an integral shaft-mounted motor which is statically and dynamically balanced for quiet operation. The belt-free operation of the direct drive fans minimises the need for maintenance. Fan speed can be varied instantly through unit-mounted screen settings to maintain optimum unit performance, a benefit for any commissioning engineer because it eliminates the need for belt and pulley changes to achieve design air volume.

Fan Energy Consumption Comparison



### Option: Constant supply air volume control

The supply air fan speed can be modulated to maintain a constant air volume through monitoring of the differential pressure between the case and fan inlet ring. The input voltage signal to the supply air fans is automatically adjusted to maintain design unit air volume when static pressure increases, reducing commissioning set up times and increasing filter life, thus optimising overall unit performance. The supply air volume of the unit is displayed via the AireTronix display.



### Option: Variable humidification

The sealed humidifier design ensures that only clean sterile steam is supplied to the conditioned area and corrosive salts and minerals are held in the disposable bottle. The steam is distributed through a sparge pipe fitted to the coil assembly.

Featuring modulating capacity output control as standard, the system provides continuous modulation of steam output in response to a proportional control signal. The output control range is 20%-100% of the humidifier rated value and is designed to ensure precise control of the conditioned space.



## Performance Data

AlphaCool Plus								
Model No.	Total Cooling Capacity (kW) <sup>1</sup>	Sensible Cooling Capacity (kW)	Dimensions (H x W x D) (mm) <sup>2</sup>	Weights (Kg) <sup>3</sup>	Air Flow (m <sup>3</sup> /s)	Humidification kg/hr	Rec Mains Fuse (A) <sup>4</sup>	Sound Pressure @ 3m (dBA)
DF100CW	111.1	102	2140x2450x800	435	6.9	15	100	60.2
DF125CW	136.4	124	2400x2700x900	520	8.3	15	125	58.8

(1) Nominal cooling based on 24°Cdb / 45%RH / 7°C/12°C Water temperatures  
 (2) Dimensions are for cabinet only, for floorstand/fan information please contact Airedale  
 (3) Weights are for cabinet only, for floorstand/fan information please contact Airedale  
 (4) Values given for full function units at ARI conditions

## AIRETronix Controller

AlphaCool Plus units are equipped 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 door mounted 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:

- > LCD back-lit display
- > Multi-Language (French, German, Spanish & English)
- > 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 and 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

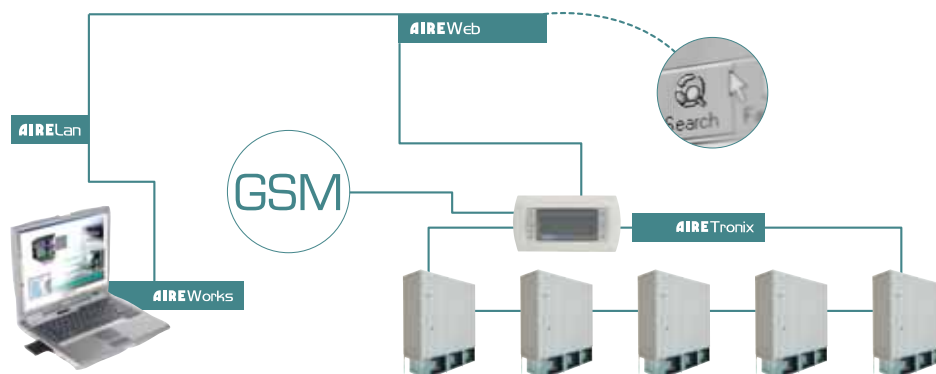
AireWorks is the software program for the supervision and monitoring of chillers and air-conditioning systems managed by AireTronix controllers. It enables the user to monitor plant or building services, and make changes to the way the building is controlled. AireWorks can act as a server allowing access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

### AireGate

The AireGate 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 AlphaCool Plus systems and Chillers. The user can then display and modify parameters of the installation using standard Internet browsers, by entering the IP address of the AireGate 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.



Airedale International 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.

- > For the latest information on our Precision Air Conditioning 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:



air conditioning for every environment

**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)

A **MODINE** Company

All specifications are subject to change without prior notice  
ENG-PR-CC-ALPHACP-04-10