

# 5 - 60kW



## > EasiCool

### Typical Applications

- > Telecommunications & ISP facilities
- > Computer rooms
- > Clean rooms
- > Switching stations
- > Laboratories

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

# EasiCool Range

## Specifications

### EasiCool

The newly developed EasiCool range is designed in a fully configured package to be quiet and easy to install. The EasiCool is capable of maintaining a precisely controlled air conditioned space within the smallest possible footprint. High efficiency condenser and evaporator coils combined with carefully selected components ensure the lowest possible life-cycle costs in an excellent value package. The EasiCool range is ideal for high-tech environments where performance and reliability are essential.

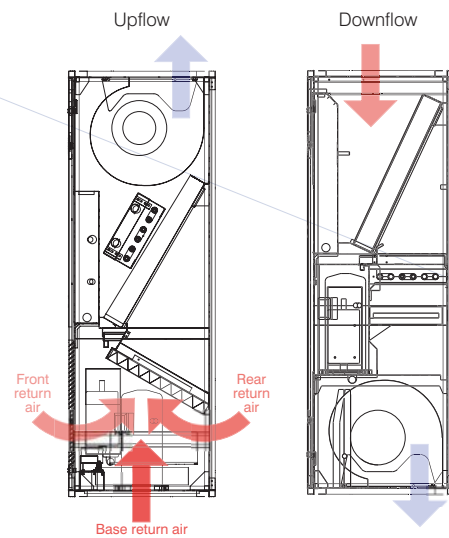
The EasiCool design incorporates an anodised aluminium exo-frame that is both aesthetically appealing and exceptionally rigid, allowing for full service from the front while at the same time allowing for full 360° unit service and maintenance access via detachable access panels.

Standard features such as direct drive anti-vibration mounted fans (V/DF6-25), tandem compressors (V/DF 22-25 & DF50-60) and AireTronix controls with intelligent head pressure control keeps the EasiCool range at the forefront of market technology whilst the modular construction and extended range of options ensures there is a unit for every application.

The range includes seventeen DX and seventeen CW units with capacities ranging from 5kW to 60kW, incorporating full function (heating and humidification) or cooling only variations.



EasiCool range available in upflow and downflow variants



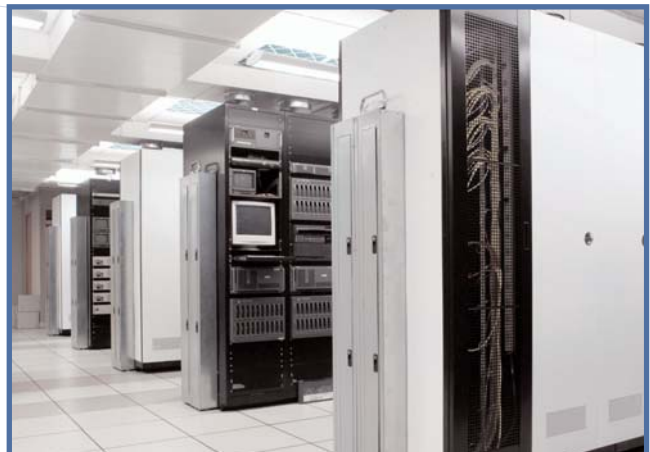
### Key Technical Data

- > 5kW to 60kW nominal cooling capacity
- > 17 CW and 17 DX cooling capacities
- > 6 Case sizes (6-10, 13-17, 22-25, 26-31, 35-45, 50-60)
- > Single circuit DX systems throughout
- > Advanced AireTronix controls technology
- > AV mounted direct drive forward curved fans
- > Modular construction
- > Low installation cost
- > Low noise
- > Full 360° service and maintenance access
- > Hydrophilic fin cooling coil
- > Upflow (Models V6-25 only) and downflow configuration
- > Optional integrated plenum (Upflow only)

### Typical Applications



Laboratories



Computer Rooms

## Standard Features

Through its use of carefully selected components and advanced technological features, the EasiCool provides a wide range of technical advantages in an excellent value package. AireTronix controls are fitted as standard, to allow for full intelligent control that maximises system efficiency and minimises unit life-cycle costs.

- > 30mm acoustic insulation on all panels minimises case noise breakout for quieter operation
- > AV mounted direct drive fans allow for easy on site airflow adjustment and reduced noise vibration transmission (Models DF/V 6-25 only)
- > Low noise sickle bladed axial condenser fans are housed in a bellmouth for improved efficiency and reduced noise breakout
- > Attenuated compressor housing reduces case noise breakout for quieter operation
- > Back lit 4 x 20 character display allows for password protection along with on-site adjustment and interrogation of all major components
- > Multilingual display (French, German, Spanish and English)
- > Intelligent variable head pressure control ensures energy efficient operation of the condenser fans while protecting the system during low ambient conditions
- > Monitoring and adjustment of the head pressure from the AireTronix display for quick and simple on site commissioning
- > AireTronix controller allows for intelligent unit control and full communication to BMS systems
- > Single circuit direct expansion system for quick and simple low cost installation
- > Tandem compressors for two stage DX cooling strategy for improved EER during part load operation (Models V/DF 22-25 and DF 50-60 only)
- > Sight glass and filter drier included for system reliability
- > G4 rated pleated disposable filters give superior high performance with lower airside pressure drops
- > 360° unit access via fully detachable panels
- > Front access to all major components facilitates quicker and easier service and maintenance
- > Optimised evaporator coils for maximum capacity ensures lowest cost per kW output
- > Factory fitted mains isolator conforms to International safety standards
- > 670mm (depth) x 1940mm (height) EasiCool dimensions enables the unit to pass through a standard size door frame (Models DF/V 6-25 only)
- > 750mm (depth) x 1940mm (height) (Models DF 26-60 only) ensures the entire range has a compact footprint
- > Standard RAL 7035 colour ensures an aesthetic match to almost all applications

## Options

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

- > Modbus, Trend, Lonworks and Carel BMS interface cards ensure full network connectability
- > GSM modem kit for remote alarm monitoring via specified mobile telephones
- > Clock card for date and time tagging of alarms
- > Night time set-back reduces condenser fan speed at pre-set hours during the day or night for noise sensitive applications
- > High efficiency and pre filters for applications where high levels of filtration are required (models DF26-60 only)
- > Front, Rear and Base return airflow configurations (upflow only) for application versatility
- > Electronic expansion valves provide up to a 30% increase in operational efficiency (fully adjustable from the display) further reducing operating costs
- > Integrated variable humidifiers (adjustable from display), 20%-100% output
- > Low, medium and high conductivity humidification bottles to suit all water types and maximise bottle life
- > Upgradeable condensers for reduced noise, improved energy efficiency, reduced operating costs and high ambient applications
- > 0-10 volt DC chilled water regulating valve for optimum system control
- > Chilled water bypass balancing valve for simple onsite water side balancing
- > Dual purpose condensate pump for the humidifier and condensate drains (4.5m head @ 4Ltr/min)
- > Electric heating
- > Thyristor (variable) controlled electric heating
- > Low pressure hot water (LPHW) heating
- > Fire, flood and smoke detection
- > Phase rotation detection
- > Duct extensions, constructed and finished to match the unit to enhance aesthetics
- > Open and enclosed floor stands
- > Side pipe access for solid floors
- > Integrated plenum constructed from anodised aluminium extrusion (Upflow only)



**EasiCool**  
Designed to fit in one piece through a standard door frame

# EasiCool Range

## Features & Options

### Key Feature : Direct drive supply air fans (Models DF/V 6-25 only)

Direct drive forward curved impeller fans are fitted with rubber AV mounts as standard across the EasiCool range. A key feature of the direct drive fan is its high performance impeller that is dynamically balanced for maximum efficiency, offering easy set-up and speed adjustment.

The belt free operation of the direct drive fans ensures minimal maintenance and eliminates belt particles from contaminating the airflow, and being fully adjustable from the microprocessor display allows for simple alteration of air flow and static pressure reducing commissioning time to a minimum.



EasiCool – Downflow  
Front view detailing the direct drive supply air fans and the tandem scroll compressors

### Key Feature : Tandem scroll compressors

The EasiCool range utilises tandem hermetic scroll compressors on a single circuit refrigeration system. This arrangement optimises the evaporator and condenser when in part load conditions, providing enhanced cooling performance with lower input powers and greater energy efficiency. This configuration also allows for two stages of cooling enabling capacity to more precisely match the application.

### Key Feature : Modular design

The modular design of the EasiCool range allows same size or differing models to be installed side by side in a variety of configurations (see right). All units in the range are single circuit meaning that two or more units can run together as a group to provide DX/DX, DX/CW or CW/CW multi-circuit functionality.

Running from one display a maximum of 6 units can be grouped in this arrangement, creating a 6 stage DX or CW system in capacities up to 360kW(1). If each unit is fitted with its own display, there is no limit to the grouping number, only the network configuration(2). In the case of the DF50/60X2-EZ tandem machines a 6 unit grouping can provide up to 360kW(3) of cooling in a 6 circuit 12 stage installation.



EasiCool 2 x DF25X2-EZ  
Side by side installation demonstrating the modular design functionality

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

All major components, such as the expansion valves, compressor, humidifier and chilled water valve are accessible from the front of the unit and in the downflow (models 6-25 only) are housed in a specially enclosed section. Isolated from the airflow this area, along with the control panel, can be worked on with the unit in operation, helping to simplify commissioning and maintenance.

Designed as a single circuit system throughout the range, the need for multiple pipe work connections is minimised. This has the benefit of reducing installation costs in terms of both materials and time.

An anodised aluminum exo-frame combined with removable access panels allows for 360° unit access if required. Filter maintenance is software managed and can be adjusted from the display to suit each application. A default factory set value is installed on all units prior to dispatch.



EasiCool - DF45X-EZ  
Front corner view detailing the optimised evaporator and easy access to all major components

<sup>1</sup> CW Capacity using 6 x DF60CW-EZ @ 24°C/45% RH and water in/out @ 7°/12°C

<sup>2</sup> A maximum of 6 units can be networked together to give Run/Standby or Master/Slave operation.

<sup>3</sup> Using a DF60X2-EZ @ 24°C/45 %RH with an ambient of 35°C.

## Key Feature : Optimised evaporator

The “slab” designed evaporator and chilled water coils combine a new fin technology with optimised coil configuration to maximise cooling capacity. Made from punched and pressed aluminium, each coil fin is coated in a special non-stick film that greatly reduces the surface tension of water. With the coating in place beads of water forming on the fin surface quickly disperse and are drained away at the base of the coil.

The effect is that design air flows and subsequent cooling capacities can be much greater than traditional fin materials will allow. Together, the special fin coating and optimised configuration mean that the EasiCool can provide high levels of cooling in an extremely compact footprint.

Standard Al Fin.



Hydrophilic Al Fin.



## Option : Low noise condenser fan

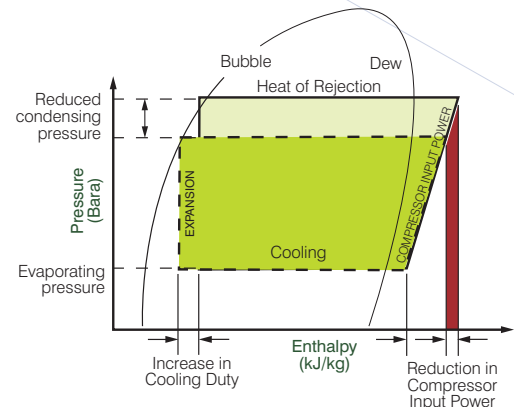
Specifically designed for night time operation as optimum low noise levels are achieved with reduced ambient temperature and room loads. This feature is also ideal for residential and other outdoor noise critical applications.



## Option : Electronic expansion valves

Whilst offering versatile control at the full design duty of the unit, standard Thermostatic Expansion Valves (TEV) do not automatically optimise themselves to all operating conditions. Therefore, if the refrigeration system is operating at 40% or 50% of full load, especially at a lower ambient temperature than that for which the valve was sized, the conventional TEV must have the design head pressure available to ensure good refrigerant control. Maintaining an artificially high condensing pressure is normal in conventional systems.

Using an Electronic Expansion Valve (EEV) allows for good refrigeration control whilst operating at part load and lower ambient conditions with a reduced condensing pressure. By fitting an EEV and reducing the head pressure control setting an increase in the system EER (Energy Efficiency Ratio) of up to 30% can typically be seen. The Mollier diagram shown right helps to illustrate how this increase in efficiency is achieved.



## Option : Intelligent modulating humidification

Fitted as an option across the range, the humidifier offers variable humidification (20-100%), in an integrated package. Connected to the microprocessor, humidification rates are matched precisely to requirement allowing for tight %RH control of the conditioned space. All operational parameters and alarms are accessible from the display, meaning that values such as supply water conductivity level or steam production rate can be viewed and adjusted as required. Specific alarms allow for quick and simple fault finding.

A range of high, medium and low conductivity bottles means that the traditional problems of short bottle lifetime or poor conductivity levels are all but eliminated for applications with abnormal supply water conditions.



EasiCool downflow and upflow  
Front view detailing the intelligent modulating humidifier and AireTronix microprocessor

# EasiCool Range

AireTronix Controls

## AIRETronix Controller

EasiCool 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 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 backlit display
- > Multi-Language (French, German, Spanish & English)
- > 14MHz 16 bit CPU
- > 1MB FLASH program memory
- > 128kB RAM data memory
- > Remote on / off capability
- > Compressor anti-cycle control
- > Compressor hours run log and reset
- > Duty rotation (networked units)
- > Temperature and humidity sensor (return air)
- > Visual alarm display
- > Password protection

## AIRETronix Duty / Standby

AireTronix microprocessors can be set-up for duty / standby operation without the requirement for an external sequence panel. Up to six EasiCool units can be networked together using proprietary Belden 2-core communication cable.



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.

## 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 EasiCool systems and Chillers managed by AireTronix controllers. It enables the user to monitor plant or building services, and make changes to the way systems are 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 EasiCool 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 personnel.

### 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.

EasiCool												
Model No.	Nominal Total Cooling Capacity		Nominal Sensible Cooling Capacity		Dimensions (H x W x D) (mm)	Weights (Kg)		Air Flow (m <sup>3</sup> /s)	Electric Heat Capacity (kW) <sup>2</sup>	Humidification kg/hr <sup>3</sup>	Rec Mains Fuse (A) <sup>4</sup>	Sound Pressure @ 3m (dBA) <sup>5</sup>
	DX Cooling capacity (kW) <sup>1</sup>		DX Cooling capacity (kW) <sup>1</sup>			DF	UF					
	DF	UF	DF	UF								
DF/V6X-EZ	6.2	6.1	6.2	6.1	1940 x 670 x 670	185	165	0.55	7.5	3	20	43
DF/V8X-EZ	8.7	8.5	8.3	8.2	1940 x 670 x 670	196	174	0.75	7.5	3	32	48
DF/V10X-EZ	10.0	9.7	9.8	9.7	1940 x 670 x 670	200	178	0.95	7.5	3	32	51
DF/V13X-EZ	12.9	12.7	12.0	11.9	1940 x 990 x 670	222	216	1.00	7.5	3	32	48
DF/V15X-EZ	15.6	15.3	14.4	14.2	1940 x 990 x 670	235	229	1.20	7.5	3	40	47
DF/V17X-EZ	18.7	18.2	18.0	17.8	1940 x 990 x 670	238	232	1.40	7.5	3	40	50
DF/V22X2-EZ	23.9	23.3	21.2	20.9	1940 x 1310 x 670	332	324	1.70	15	3	50	52
DF/V25X2-EZ	24.6	23.9	23.1	22.9	1940 x 1310 x 670	332	324	2.00	15	3	63	56
DF26X-EZ	25.7	*	25.4	*	1940 x 1460 x 750	452	*	2.10	15	8	63	53
DF28X-EZ	26.2	*	26.2	*	1940 x 1460 x 750	452	*	2.40	15	8	63	55
DF31X-EZ	30.2	*	30.2	*	1940 x 1460 x 750	459	*	2.80	15	8	63	58
DF35X-EZ	36.0	*	36.0	*	1940 x 1835 x 750	501	*	3.30	15	15	63	58
DF40X-EZ	40.3	*	40.3	*	1940 x 1835 x 750	522	*	3.70	15	15	80	60
DF45X-EZ	43.5	*	43.5	*	1940 x 1835 x 750	550	*	3.70	15	15	80	60
DF50X-EZ	49.8	*	49.8	*	1940 x 2170 x 750	665	*	4.20	15	22.5	80	56
DF55X-EZ	56.9	*	53.7	*	1940 x 2170 x 750	678	*	4.20	15	22.5	80	57
DF60X-EZ	59.9	*	57.6	*	1940 x 2170 x 750	674	*	4.60	15	22.5	80	58
Model No.	CW Cooling capacity (kW) <sup>1</sup>		CW Cooling capacity (kW) <sup>1</sup>		Dimensions (H x W x D) (mm)	Weights (Kg)		Air Flow (m <sup>3</sup> /s)	Electric Heat Capacity (kW) <sup>2</sup>	Humidification kg/hr <sup>3</sup>	Rec Mains Fuse (A) <sup>4</sup>	Sound Pressure @ 3m (dBA) <sup>5</sup>
	DX Cooling capacity (kW) <sup>1</sup>		DX Cooling capacity (kW) <sup>1</sup>			DF	UF					
	DF	UF	DF	UF								
DF/V6CW-EZ	8.0	7.8	7.1	7.0	1940 x 670 x 670	155	138	0.55	7.5	3	25	43
DF/V8CW-EZ	9.2	9.0	9.2	9.0	1940 x 670 x 670	165	147	0.75	7.5	3	32	48
DF/V10CW-EZ	11.1	10.8	11.1	10.8	1940 x 670 x 670	168	150	0.95	7.5	3	32	51
DF/V13CW-EZ	14.8	14.5	13.5	13.3	1940 x 990 x 670	195	190	1.00	7.5	3	32	48
DF/V15CW-EZ	17.5	17.1	15.6	15.3	1940 x 990 x 670	200	195	1.20	7.5	3	32	46
DF/V17CW-EZ	19.6	19.2	17.7	17.4	1940 x 990 x 670	200	195	1.40	7.5	3	32	50
DF/V22CW-EZ	24.6	24.1	22.0	21.6	1940 x 1310 x 670	252	246	1.70	15	3	50	52
DF/V25CW-EZ	27.8	27.2	25.1	24.6	1940 x 1310 x 670	252	246	2.00	15	3	50	56
DF26CW-EZ	31.3	*	27.9	*	1940 x 1460 x 750	351	*	2.10	15	8	40	52
DF28CW-EZ	34.5	*	31.1	*	1940 x 1460 x 750	351	*	2.40	15	8	40	55
DF31CW-EZ	38.4	*	35.3	*	1940 x 1460 x 750	354	*	2.80	15	8	50	58
DF35CW-EZ	44.8	*	42.1	*	1940 x 1835 x 750	410	*	3.30	15	15	63	58
DF40CW-EZ	50.8	*	45.8	*	1940 x 1835 x 750	431	*	3.70	15	15	63	60
DF45CW-EZ	53.6	*	48.5	*	1940 x 1835 x 750	442	*	3.70	15	15	80	60
DF50CW-EZ	51.9	*	51.9	*	1940 x 2170 x 750	486	*	4.20	22.5	15	63	56
DF55CW-EZ	59.0	*	55.1	*	1940 x 2170 x 750	499	*	4.20	22.5	15	63	56
DF60CW-EZ	59.2	*	59.2	*	1940 x 2170 x 750	495	*	4.60	22.5	15	80	58

- (1) Room condition @ 24°C / 45% RH, Chilled Water 7°C / 12° water in/out, DX Ambient @ 35°C (with standard outdoor unit match)
- (2) Standard Electric Heating Option, Larger Size available on Models 26-60
- (3) Variable humidification Maximum ie 0.6-3, 1.6-8 & 3-15 kg/Hr
- (4) Values given for full function units (incl. electric heating and humidification) at ARI conditions with standard fan assembly and filters, for optional data, please contact Airedale.
- (5) Sound data based on downflow variants

\* Available 2006

- > For the latest information on our 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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