

# 10 - 48kW



Authorised User No. 00007

## **BluCube**

High efficiency heat pump condensing unit  
Cooling-only models qualify for ECA

## **Typical applications**

- > Precision air conditioning
- > Comfort

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

Heat pump  
or cooling only

## BluCube: Efficiently matches industry standard AHUs

The BluCube high efficiency R410A condensing unit with heat pump variant provides heating and cooling for industry standard air handling units across a wide range of ambients in split system applications. Energy saving options include EC fans, variable capacity control and modulating head pressure control. The BluCube is optimised to operate with the Remote Electronic Expansion Valve (REEV) which offers up to 30% increase in efficiency.

## Versatility of heat pump or cooling-only

The BluCube range offers the choice of a heat pump unit, ideal for a wide range of comfort applications, or as a cooling-only system which can be matched with selected manufacturers' CRAC units in a data centre cooling application. The cooling-only option offers a favourable cost advantage and is included on the Energy Technology List (ETL), thereby qualifying for the Carbon Trust ECA scheme - details at [www.etl.decc.gov.uk/etl](http://www.etl.decc.gov.uk/etl)

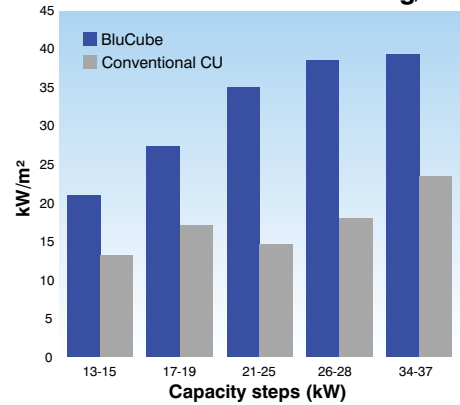
## Minimal space claim

Benefiting from an extremely compact and modular design, the BluCube will fit into a standard lift and ensures minimal space claim on rooftops and in plant rooms. As a two pipe system, the BluCube offers reduced installation costs and less brazing on site.

## Key technical data

- > Integrates with industry standard air handling units
- > Choice of heat pump (14 – 48kW) or cooling only (13 – 45kW)
- > 2 case sizes; 6 cooling and 6 heating capacities; 24 models across the whole range
- > Operating envelope -20°C to +25°C in heating or -20°C to +48°C in cooling
- > Two pipe system reducing installation time and cost
- > Compact, modular design for minimum space claim
- > Fits into a standard lift facilitating easy installation
- > Short cased axial fan to overcome external static pressure when ductwork is required
- > Strong, galvanised steel case design for durability
- > Compressor attenuation reduces sound by up to 12 dBA (option)
- > Pump down and refrigerant leak detection options for safe working
- > Integrated drip tray and trace heating in heat pump units for increased reliability (option)
- > Built-in LCD in microprocessor or hand-held display (options)
- > pCOWeb supervisory plug-in card for easy online communication with multiple BluCube units

### BluCube: 44%\* more cooling/m<sup>2</sup>



\*Average % compared with a conventional condensing unit system

## Key energy saving benefits

- > Scroll compressors with optional variable capacity offering 16 – 100% modulation for precise cooling/heating; reduced power consumption and lower operating costs
- > AC axial fans with optional EC fan technology for more efficiency at part load
- > R410A designed and optimised
- > Remote Electronic Expansion Valve (REEV) for up to 30% increase in efficiency (option)
- > Modulating head pressure control for increased efficiency
- > Intelligent microprocessor control and ACIS BMS for optimisation and reliability
- > Power factor correction on fixed capacity units reduces the power threshold (option)
- > Compressor soft starts for power reduction (option)

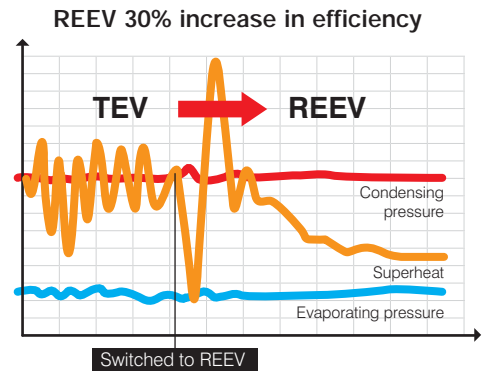
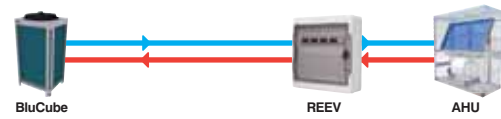
## Typical applications



**Key option: REEV offers up to 30% increase in split system efficiency**

When configured with a digital scroll compressor, the BluCube is optimised to operate with the Remote Electronic Expansion Valve (REEV). The REEV offers up to 30% increase in efficiency by providing stable and accurate control of the refrigeration system superheat. In a split system application, the REEV is located remotely in relation to the BluCube and as close as possible to the evaporator, for most efficient control of the system. The REEV is offered as an option on fixed capacity models.

The REEV's ability to operate at low condensing pressures, as well as to manage precise superheat control, enables operators to see a reduced carbon footprint compared with a thermostatic expansion valve (TEV). Benefiting from a wider operating range than a TEV, the REEV will manage up to four circuit configurations. When retrofitted to an existing BluCube unit, the full efficiency of the REEV can be realised, without the costs of installing a new system. The REEV offers simple installation and retrofit.



**Key option: 16 – 100% variable capacity for precise cooling**

Driven by intelligent controls and the REEV, the BluCube's optional digital scroll compressor technology offers reliable, modulating control of the unit's DX capacity. The combined efficiencies of modulating control and up to 30% increase in efficiency achieved by the REEV, allows for precise cooling or heating, reduced power consumption, lower operating costs.

The digital scroll compressor also benefits from no electromagnetic interference; no leap in power, as with on/off modulation, and offers simple oil management.

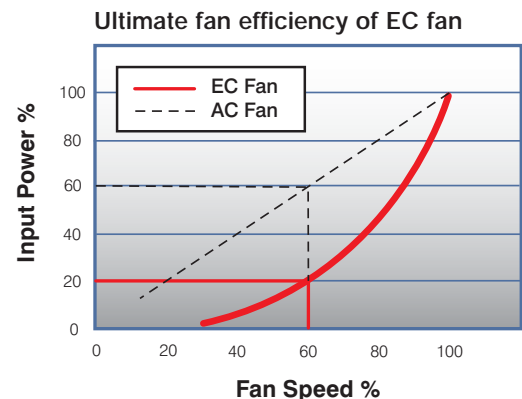
Pulsing refrigerant around the system, the BluCube's digital compressor cycles between 0% and 100% load allowing variable capacity control from 16-100%. Sizing of pipework is considerably simplified, with one optimum size for full load and part load conditions.



**Key option: EC fans for ultimate fan efficiency**

Offered as an option in the BluCube for ultimate condenser efficiency at full and part load, cleverly-designed axial fans use the latest electronically commutated (EC) motor technology. EC technology combines AC and DC voltages to bring the best of both technologies and give increased performance at reduced power input. At certain conditions an EC fan gives energy savings of more than 80% compared with an AC fan.

Featuring low motor temperature, the EC fan has a longer life than an AC equivalent; electronic and power transformation are completely integrated within the motor and fan control is simple and precise, based on exact feedback from the motor.



**High efficiency performance driven by smart control logic**

**Intelligent Controls**

BluCube units are equipped with very latest, intelligent microprocessors specially developed by Airedale to facilitate automation and optimisation of the system. The fully programmable microprocessors are linked with key components within the cooling system, allowing sophisticated, modulating and self-optimising control for increased energy efficiency.



PCOWeb ethernet plug-in card

**ACIS: Remote supervision**



ACIS is an intelligent, latest technology BMS software programme which links multi-unit systems located on one or more sites, into a single, proactive control platform. With the click of a button, information can be pulled back automatically and used for remote monitoring and control, including 24/7 alarm indication, time scheduling and adjustment of temperature setpoints for increased energy efficiency.

### BluCube unit identification

<b>CUR</b>	R410A Condensing Units
<b>092</b>	Case width: 092 = 920mm case / 122 = 1220mm case
<b>V</b>	Air Configuration: V - Vertical Airflow
<b>16</b>	Nominal Cooling Capacity (kW): @ 7°C evaporating & 35°C ambient
<b>1 / V</b>	Compressor Type: Fixed speed / Variable capacity
<b>HP / CO</b>	Mode of Operation: Heat Pump / Cooling Only
<b>0</b>	Power Supply: 400V/3~/50Hz

Example CUR 092 V 16 - V HP - 0

Cooling Only Units					
Model no.	Nominal cooling capacity (kW)	Nominal unit input power (kW)	EER	Dimensions (H x W x L)(mm)	Weight (kg)
CUR092V16-1CO-0	14.5	4.1	3.5	1750 x 764 x 922	218
CUR092V20-1CO-0	21.3	6.2	3.4	1750 x 764 x 922	219
CUR092V25-1CO-0	27.3	8.4	3.3	1750 x 764 x 922	246
CUR092V29-1CO-0	30.0	9.5	3.2	1750 x 764 x 922	247
CUR122V35-1CO-0	40.7	12.5	3.3	1750 x 764 x 1222	299
CUR122V40-1CO-0	45.6	14.5	3.2	1750 x 764 x 1222	303
CUR092V16-VCO-0	16.4	4.5	3.7	1750 x 764 x 922	225
CUR092V20-VCO-0	21.3	6.2	3.4	1750 x 764 x 922	226
CUR092V25-VCO-0	26.0	7.6	3.4	1750 x 764 x 922	247
CUR092V29-VCO-0	29.8	9.2	3.2	1750 x 764 x 922	249
CUR122V35-VCO-0	39.0	12.0	3.2	1750 x 764 x 1222	301
CUR122V40-VCO-0	44.7	14.3	3.1	1750 x 764 x 1222	303

In cooling, 7°C evaporating, 35°C ambient (standard AC axial fan at maximum speed)  
 Input power includes compressor and fan  
 EMC testing pending  
 Performance data calculated in accordance with BSEN 14511-2011 and Eurovent 6/6



The BluCube fits in one piece through a standard door frame or lift and allows for full service from the front as well as 360° unit maintenance

Heat Pump Units								
Model no.	Nominal cooling capacity (kW)	Nominal unit input power (kW)	EER	Nominal heating capacity (kW)	Nominal unit input power (kW)	EER	Dimensions (H x W x L)(mm)	Weight (kg)
CUR092V16-1HP-0	15.3	4.4	3.5	14.4	5.1	2.8	1750 x 764 x 922	240
CUR092V20-1HP-0	22.2	6.7	3.3	20.4	7.2	2.8	1750 x 764 x 922	241
CUR092V25-1HP-0	27.8	9.3	3.0	25.4	9.1	2.8	1750 x 764 x 922	275
CUR092V29-1HP-0	30.1	10.6	2.8	27.7	10.2	2.7	1750 x 764 x 922	276
CUR122V35-1HP-0	41.7	13.7	3.0	37.3	14.3	2.6	1750 x 764 x 1222	331
CUR122V40-1HP-0	46.3	15.9	2.9	41.2	15.6	2.6	1750 x 764 x 1222	343
CUR092V16-VHP-0	17.2	4.9	3.5	15.8	5.5	2.9	1750 x 764 x 922	248
CUR092V20-VHP-0	22.1	6.8	3.2	20.4	7.2	2.8	1750 x 764 x 922	248
CUR092V25-VHP-0	26.6	8.4	3.2	24.4	8.8	2.8	1750 x 764 x 922	275
CUR092V29-VHP-0	29.8	10.4	2.9	27.8	10.3	2.7	1750 x 764 x 922	277
CUR122V35-VHP-0	40.0	13.1	3.1	36.1	13.6	2.7	1750 x 764 x 1222	333
CUR122V40-VHP-0	45.7	15.7	2.9	42.0	15.7	2.7	1750 x 764 x 1222	343

In cooling, 7°C evaporating, 35°C ambient (standard AC axial fan at maximum speed)  
 In heating, 50°C condensing, 5°C ambient (standard AC axial fan at maximum speed)  
 Input power includes compressor and fan  
 EMC testing pending  
 Performance data calculated in accordance with BSEN 14511-2011 and Eurovent 6/6

### SafeCool Service Plan – maintaining your condensing unit's efficiency

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

The BluCube is a highly efficient system. To make sure its full efficiency is realised after leaving our factory, we recommend a **SafeCool** Service Plan. This provides a planned, preventative maintenance package to sustain the optimum efficiency of the BluCube and enable the user to see real savings in energy costs and reduced carbon emissions. A priority, 24/7 emergency helpline; professional support and call-out service is on hand throughout the year with guaranteed response by a fully qualified Airedale engineer. **SafeCool** also ensures you are F Gas compliant. For customers outside the UK, our international distributors trained by Airedale would be pleased to offer service on Airedale units.



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