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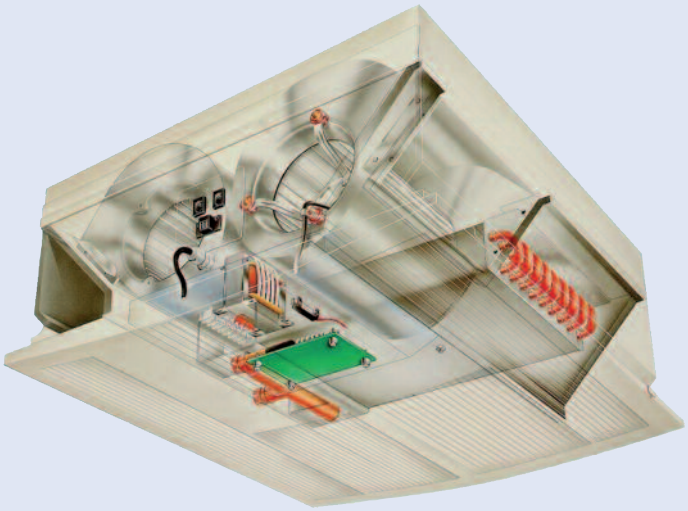

Cassettair™

CASSETTE FAN CONVECTORS

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The Concept

A Europe-wide research and development programme identified the need for a high performance cassette fan convector, powered by low pressure hot water and compatible with universal suspended ceiling systems. The result is the award-winning Cassettair ceiling fan convector from the European leader in climate control - Biddle Air Systems.

How Cassettair can benefit you

- Instant directional heat
- Increased environment comfort levels
- ErP Directive compliant
- Allows optimum usage of ground and wall space
- Available for up to 3.5m high ceilings
- Suitable for use with condensing boilers
- Easy to specify and install
- Low maintenance unit
- Stand-alone or multi-unit system
- Compliments other Biddle systems for total package solution
- Wall mounted touch controls

Applications

Cassettair is the ideal heating solution for the widest range of applications. In fact, anywhere that requires instant, unobtrusive, trouble-free heating can benefit from Cassettair.

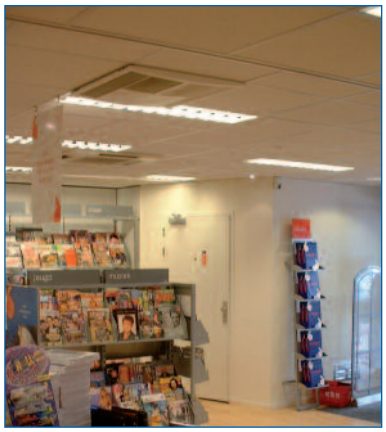
Thousands of Cassettair units are in use throughout Europe in applications that include:

- Schools
- Shops
- Supermarkets
- Sales kiosks
- Showrooms
- Waiting and reception rooms

Selecting Cassettair

Cassettair operates at one of three fan speeds. These three fan speeds should be selected at the time of ordering from the seven available, as detailed in the Performance Data table, to give low/medium/high fan speeds which best suit your application. Typically 100V is selected as low, 120V is selected as medium and 150V is selected as high. And state whether standard air side control or alternative water side control is required.
Of course, if a condensing boiler (with water temperatures of 60/40°C, 50/30°C, or similar) is being used then select the CB variant which has a 4-row coil.

Compatible with Universal Suspended Ceilings



Cassettair offers full compatibility with universal suspended ceiling grids. Designed to fit as a direct replacement for ceiling tiles in the sizes 600 x 600 to 625 x 625mm, it provides high performance heating in an aesthetically pleasing, unobtrusive manner.

Additionally, Cassettair is only 280mm deep and fits comfortably within virtually all ceiling voids.

Cassettair can be installed before or after installation of the ceiling system. The unit incorporates two adjustable hanging rails, allowing movement of the unit in one direction. Where the hanging rails are used in conjunction with FLAMCO or UNISTRUT rails already installed in the ceiling, units can be adjusted in any direction to enable accurate final positioning.

Unique Profiled Ceiling Grille

Cassettair's unique profiled inlet/outlet grille has been sympathetically designed to maintain the symmetry and aesthetic appeal of suspended ceiling installations. The combined inlet and discharge grilles are white (RAL 9010) and incorporate fixed plastic blades to give optimum warm air penetration.

Fast and Simple Installation

For ease of access and convenient installation and maintenance, the Cassettair water and electrical connections are located on the side panel of the unit. Connecting the electrical supply could not be simpler. Each unit incorporates a fixed cable with moulded, earthed plug for connection of mains power.

The relative light weight and compactness of Cassettair means that installation of the KLV-1 unit can be carried out by a single person. The system's hanging rails allow the installer to position the unit in the ceiling and then adjust to fit the final position required. The height of the unit within the ceiling recess can be adjusted to the position of the false ceiling.

Easy Maintenance

Routine maintenance or inspection of the Cassettair does not require the removal of ceiling tiles. The convenient hinged design of the plastic grille panel allows fast and simple access to all components

The unit's filter can easily be removed once the grille has been opened. Cleaning using a vacuum cleaner is usually all that is required.

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Performance, Efficiency and Control

Cassettair has been designed with the air inlet and discharge located on the profiled face of the grille. Air entering the unit passes over the heating elements and is immediately redistributed through the outlet grille by 2 high performance, double inlet centrifugal fans. The configuration is exceptionally energy efficient as minimal “air handling” is required. All components in the Cassettair are selected for optimum output with minimal input energy requirement.

Further efficiencies are gained through the use of advanced control technologies using a remote mounted, touch sensitive electronic controller which simply plugs into the unit for single or group control.

Standard Air Side Control

width = 95mm, height = 130mm, depth = 35mm

Standard control, each unit having:

- a wall controller to enable manual selection of fan speed
- low voltage cable, with plugs, to connect wall controller to unit
- an adjustable low limit water thermostat (pipe ‘stat) used to turn the unit on when it detects hot water and to turn the unit off when there is no hot water
- a summer/winter switch used to override the pipe ‘stat in the summer months when the boiler is off
- a remote on/off thermostat to turn the fans off when set point temperature is reached

Alternative Water Side Control

width = 95mm, height = 130mm, depth = 35mm

Alternative control, each unit having:

- a return air temperature sensor
- a 3-port diverting valve
- an ECONTROL wall controller to enable manual selection of fan speed and automatic or manual control of heat output
- low voltage cable, with plugs, to connect ECONTROL wall controller to unit

In ‘Auto’ mode ECONTROL will automatically adjust the unit’s heat output to control the space at the selected set point temperature (range = 18 - 25°C) and minimise energy usage.

In ‘Manual’ mode ECONTROL simply enables selection of either half or full heat. Regardless of whether ‘Auto’ or ‘Manual’ mode is selected the user can:

- select fan speed
- turn the heating off and operate the unit as an ambient unit

Performance Data

KLV1 with 2-row coil

Voltage (V)	Air Volume (l/s)	Noise Rating	Water at 82/71°C					Water at 80/60°C				
			Heat Output (kW)	Leaving Air Temperature (°C)	Water Flow Rate (l/s)	Coil Pressure Drop (kPa)	Combined Coil & Valve Pressure Drop (kPa)	Heat Output (kW)	Leaving Air Temperature (°C)	Water Flow Rate (l/s)	Coil Pressure Drop (kPa)	Combined Coil & Valve Pressure Drop (kPa)
100	99	30	5.0	59	0.11	1.9	4.8	4.1	52	0.05	0.5	2.3
120	123	34	5.8	57	0.13	2.6	5.6	4.8	50	0.06	0.6	2.6
150	163	40	7.1	54	0.16	3.6	7.2	5.8	47	0.07	0.9	3.3
170	183	42	7.7	52	0.17	4.2	7.6	6.3	46	0.08	1.0	3.6
190	207	44	8.4	51	0.19	4.9	8.2	6.8	45	0.08	1.2	3.8
210	228	46	8.9	50	0.20	5.5	9.0	7.2	44	0.09	1.3	4.1
230	243	48	9.3	49	0.21	5.9	9.4	7.5	43	0.09	1.4	4.2

Noise rating is measured 4m from unit
Entering Air Temperature = 18°C

KLV1-CB with 4-row coil

Voltage (V)	Air Volume (l/s)	Noise Rating	Water at 60/40°C					Water at 50/30°C				
			Heat Output (kW)	Leaving Air Temperature (°C)	Water Flow Rate (l/s)	Coil Pressure Drop (kPa)	Combined Coil & Valve Pressure Drop (kPa)	Heat Output (kW)	Leaving Air Temperature (°C)	Water Flow Rate (l/s)	Coil Pressure Drop (kPa)	Combined Coil & Valve Pressure Drop (kPa)
100	99	30	3.8	49	0.05	0.9	2.7	2.5	38	0.03	0.4	1.4
120	123	34	4.5	48	0.05	1.2	3.0	2.9	37	0.04	0.6	1.8
150	163	40	5.6	46	0.07	1.8	4.2	3.6	36	0.04	0.8	2.0
170	183	42	6.1	45	0.07	2.1	4.5	3.9	35	0.05	0.9	2.7
190	207	44	6.7	44	0.08	2.5	5.1	4.2	35	0.05	1.1	2.9
210	228	46	7.2	44	0.09	2.8	5.6	4.5	34	0.05	1.2	3.0
230	243	48	7.5	43	0.09	3.0	5.8	4.7	34	0.06	1.3	3.3

Noise rating is measured 4m from unit
Entering Air Temperature = 18°C

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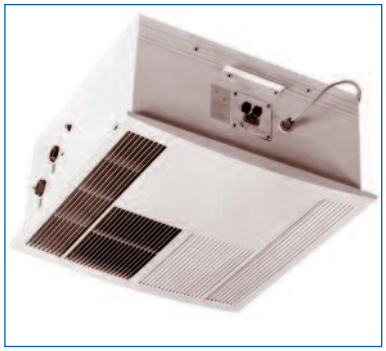
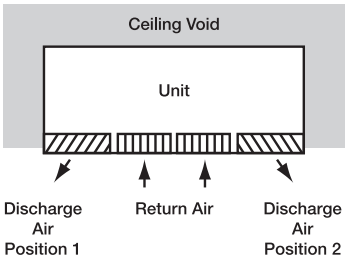
Key Dimensions

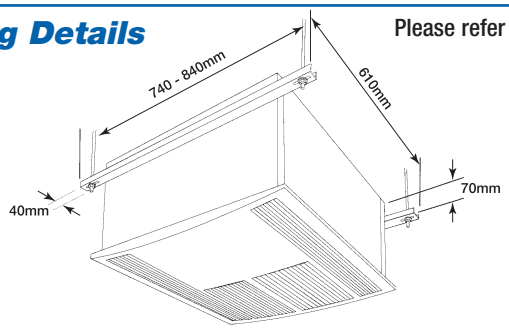


1: Styling Data KLV1



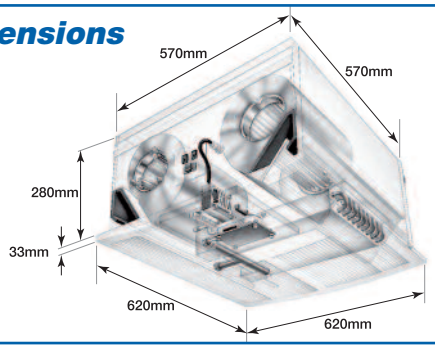
2: Fixing Details

Please refer to diagram 3 for unit dimensions

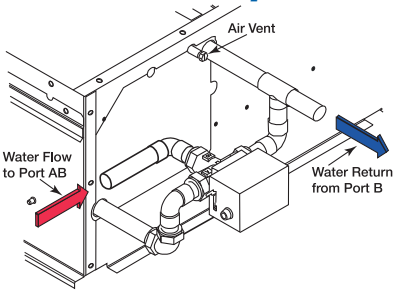


3: Dimensions

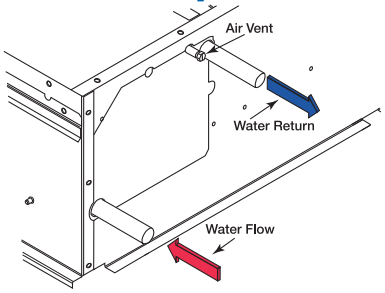
Weight = 36kg



4: Water Side Control Pipework Connections



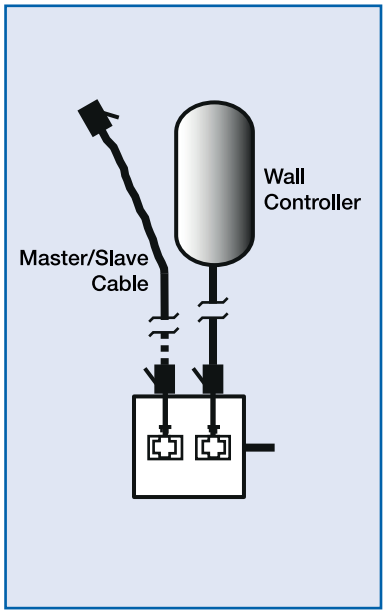
5: Air Side Control Pipework Connections



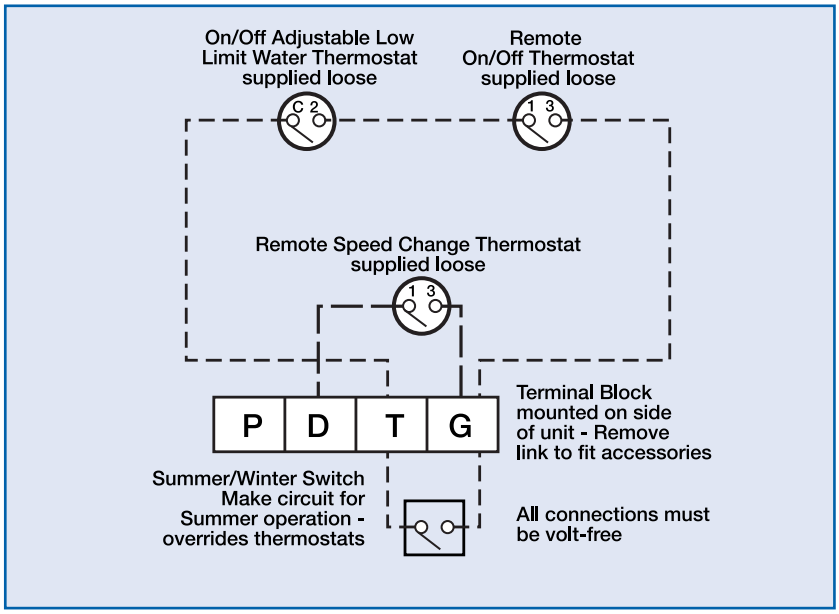
All dimensions are for general information only. For more specific details, fully dimensioned drawings are available on request.

Wiring Schematics

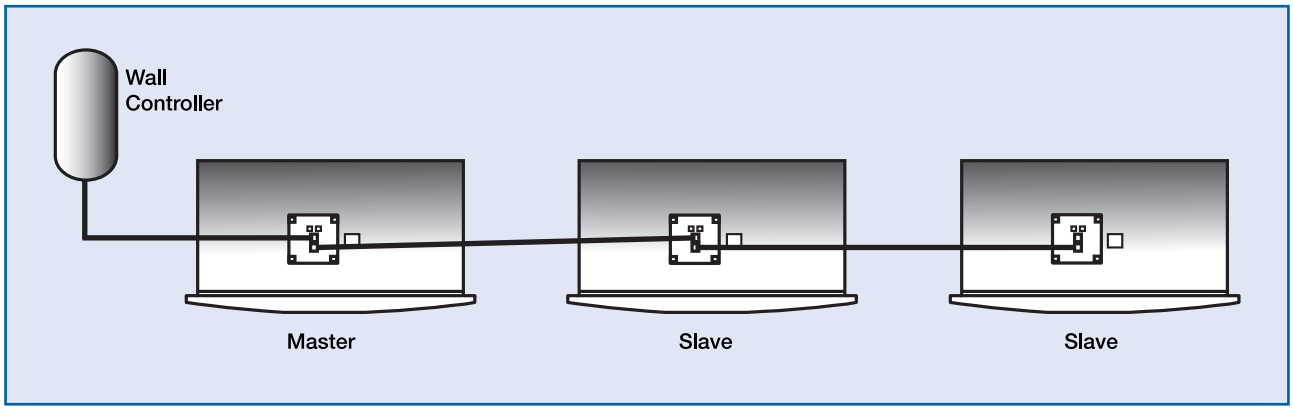
Connecting Wall Controller & Master/Slave Cable



Air Side Control - Connecting Thermostats and Summer/Winter Switch



Master/Slave Arrangement



Electrical Data

Electrical supply required is 230V/1ph/50Hz

Power consumption at an input voltage of 230V is 354W, whereas at 150V it is 180W

Running current at an input voltage of 230V is 1.7A, whereas at 150V it is 1.2A

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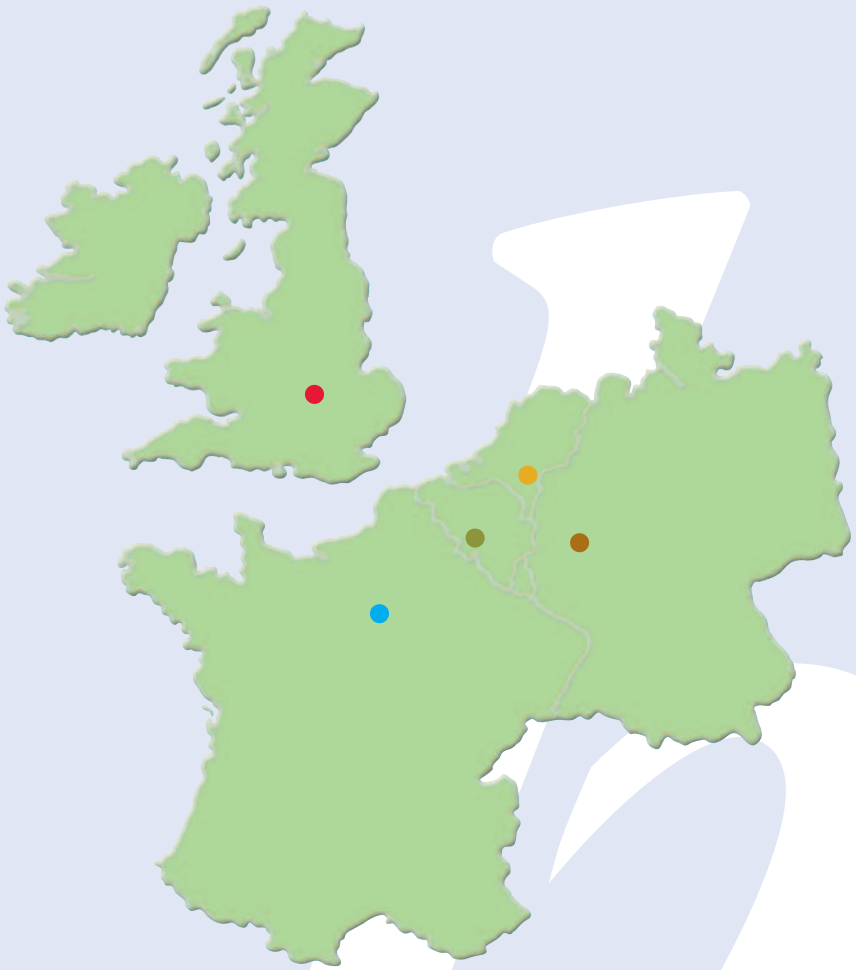

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