

ColdLogik™

'CAP' Controlled Air Path



Passive and active Controlled Air Path

incorporating **UTelligent** technology

Product overview and technical data



Overview and principle

To improve the efficiency of a CRAC-based data centre design, USystems' ColdLogik controlled air path CAP units isolate and guide hot air out of the top of the cabinet into a ceiling plenum.

Removing hot air from each cabinet by ducting the air through funnels on the top of the cabinet - in a controlled manner through the ceiling plenum - is a logical, simple and highly cost effective improvement to managing data centre cooling.

It meets the demand for greater efficiency in CRAC-based systems and helps to overcome the higher heat loads and increased packaging densities that have led to hot spots and recirculation issues - so saving money, improving reliability and reducing downtime.

The ColdLogik CAP system, both passive and active models, converts the cabinet into a ducted exhaust enclosure.

The unit is mounted on the top of the cabinet and connected to a dropped ceiling plenum, this isolates the hot air return path, prevents air recirculation and improves energy efficiency.

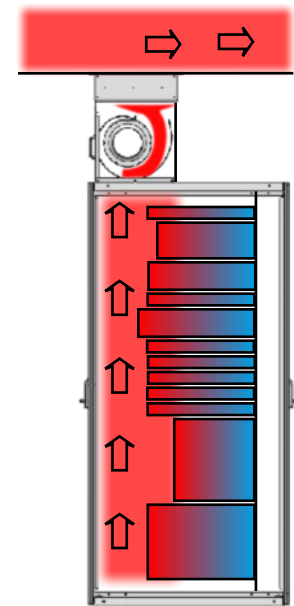
A CAP system can help future proof an infrastructure investment by allowing an upgrade from passive to active units - this enables higher heat loads to be added to the cabinets without compromising the data centre design.

The standard CAP unit is a passive system that relies solely upon the computer room air conditioning to draw the air away from the cabinet and into the ceiling plenum.

To assist the transfer of hot exhaust air into the plenum, you can upgrade the passive system to an active CAP system by replacing a panel in the front of the passive unit with up to three self-contained fan cassettes, each with a purpose designed controller.

To gain the full benefit of the CAP system – active or passive – you should use the 4210 sealing kit and, if there are gaps between active or passive 19 inch equipment, quick-fit blanking panels.

The 4210 server cabinet will then be an efficient front-to-top airflow management system.



Side view of a cabinet showing the path taken by hot air from the back of the cabinet through an active CAP unit and into the ceiling plenum



An active ColdLogik CAP controlled air path duct unit on a 42U high USystems 4210 cabinet



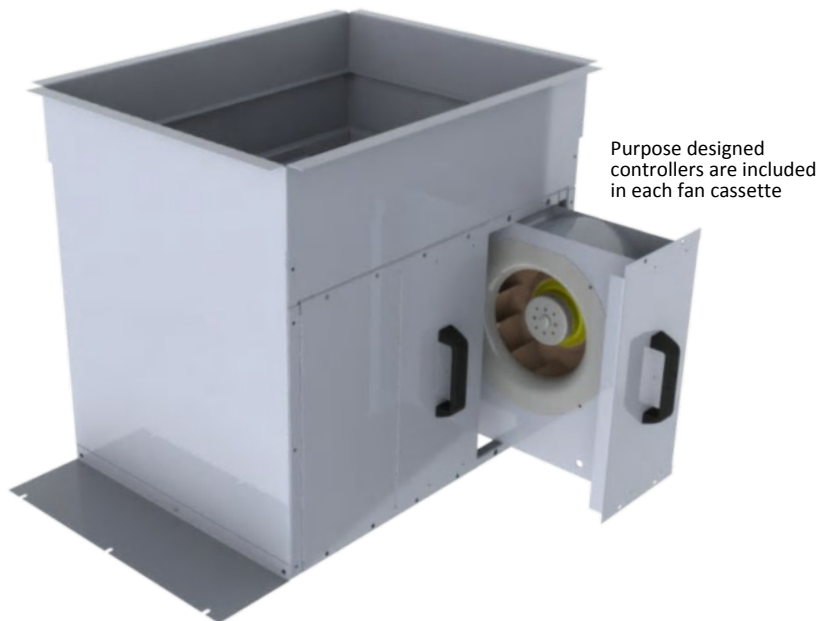
Controlled air path systems

The active CAP system can be ordered pre-configured or by upgrading a previously installed passive CAP. Either one, two or three fans (with purpose designed controllers) can be fitted – depending upon your airflow and duty requirements – to assist the transfer of hot exhaust air into the plenum.

A panel in the front of the main duct of the passive unit is replaced with the self-contained fan cassettes and, if required, blanking plates. The cassettes are fitted vertically – if only one or two are being used, they can be fitted left, middle or right to suit your requirements.



An active ColdLogik CAP unit fitted with one fan unit and two blanking panels.

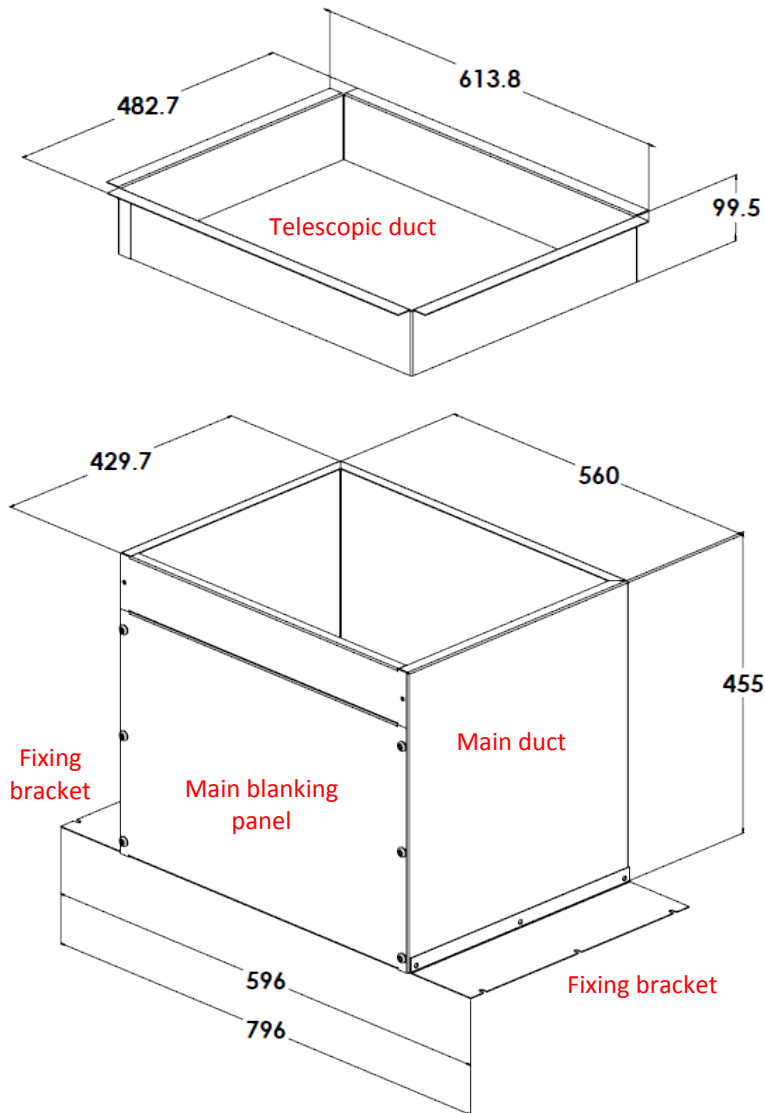


An active ColdLogik CAP unit fitted with two fan units and one blanking panel.



Dimensions and technical information

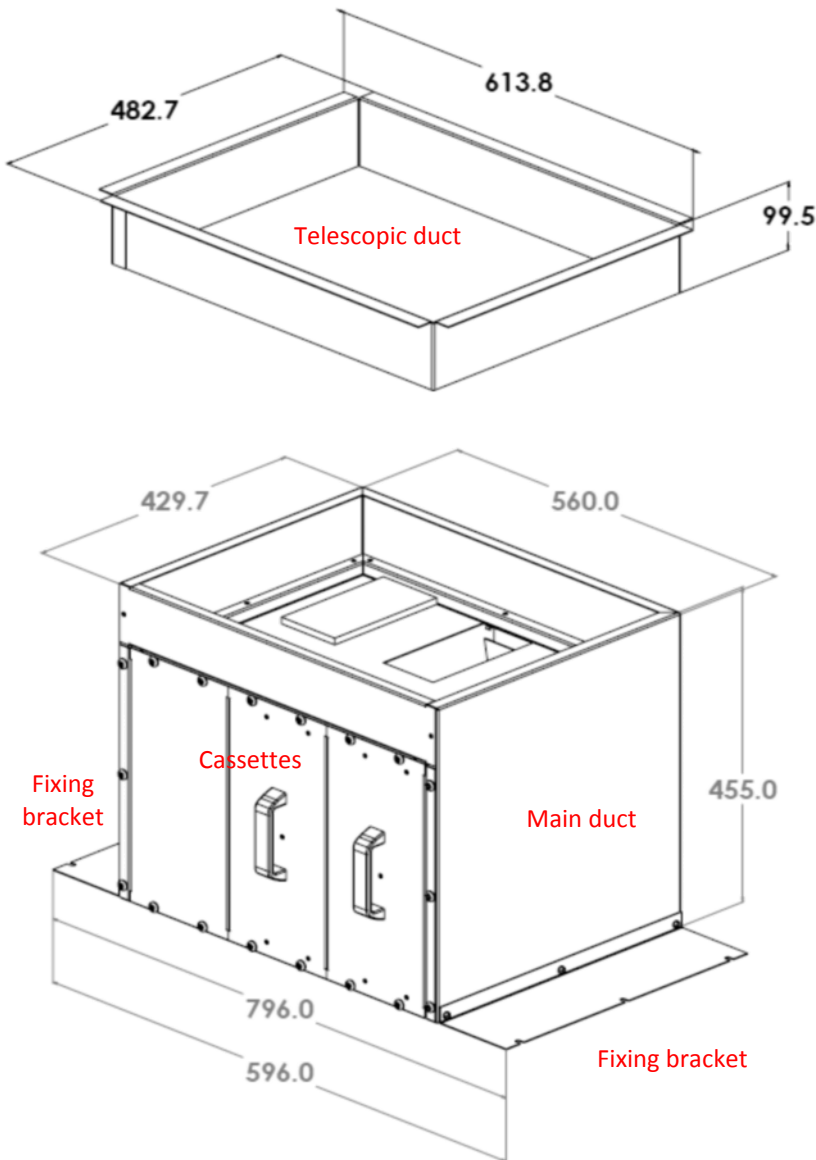
Passive model



Sealing kit – for inside cabinet: please consult factory.
Blanking panels – for inside cabinet: please consult factory.

Material	1.2 mm CR4 steel.
Finish	Textured powder paint Light grey RAL 7035 or USpace Black, RAL 9005.
Weight	12 kg (combined weight of main duct body and telescopic duct).

Active model



Power

Fitted with IEC C13 socket
110V, 50 / 60 Hz, 3.3A – for three fans
240V, 50 / 60 Hz, 2.4A – for three fans

Fan cassette

Self-contained modular unit fitted within a sub-rack comprising:
1 x fan housing
1 x EC centrifugal fan
1 x electronic controller
1 x temperature sensor and wiring loom

Fans

Backward curved centrifugal fans incorporating EC technology
Air flow – 1,050 m³/h

Sealing kit – for inside cabinet: please consult factory.
Blanking panels – for inside cabinet: please consult factory.

Material 1.2 mm CR4 steel.
Finish Textured powder paint Light grey RAL 7035 or USpace Black, RAL 9005.
Weight 12 kg (combined weight of main duct body and telescopic duct).

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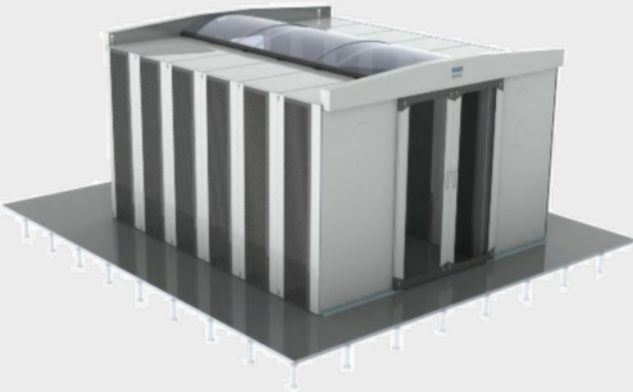
ColdLogik rear coolers



ColdLogik rear coolers economically maintain the ambient air temperature within a data and communications room while minimising the energy required to cool IT equipment.

The coolers are fitted to the back on an enclosure typically being IEC297 and EIA 310 compliant. They have been designed to remove heat generated by the IT equipment directly at source thus preventing hot air entering into the room.

ColdLogik aisle containment



Aisle Containment solutions suitable for new builds and is also fully retrofittable onto both USystems and OEM cabinets for new build or existing data centres without affecting day to day operations, where the cold aisle can be contained to maximise cooling efficiency.

The USystems Aisle Containment systems are available to suit various aisle widths and for aisle to walk configurations. Aisle Containment can also be installed on mixed height aisles.

ColdLogik DAX system



The primary function of the Directional Airflow Exhaust 'DAX' system, is the removal and distribution of heat from the rear of a 19" cabinet in an energy efficient and controlled way. This leads to a substantial reduction in power consumption by reducing air conditioning usage, reclaiming heat to warm spaces, optimises hardware performance. Extended life span on room air conditioning and active equipment means a capital cost reduction.

An ideal solution for many issues raised with heat produced from active equipment in 19" cabinets with an emphasis of energy efficiency.

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