



EDGE-7

Side Cooler Micro Data Center



We engineer for a sustainable tomorrow.

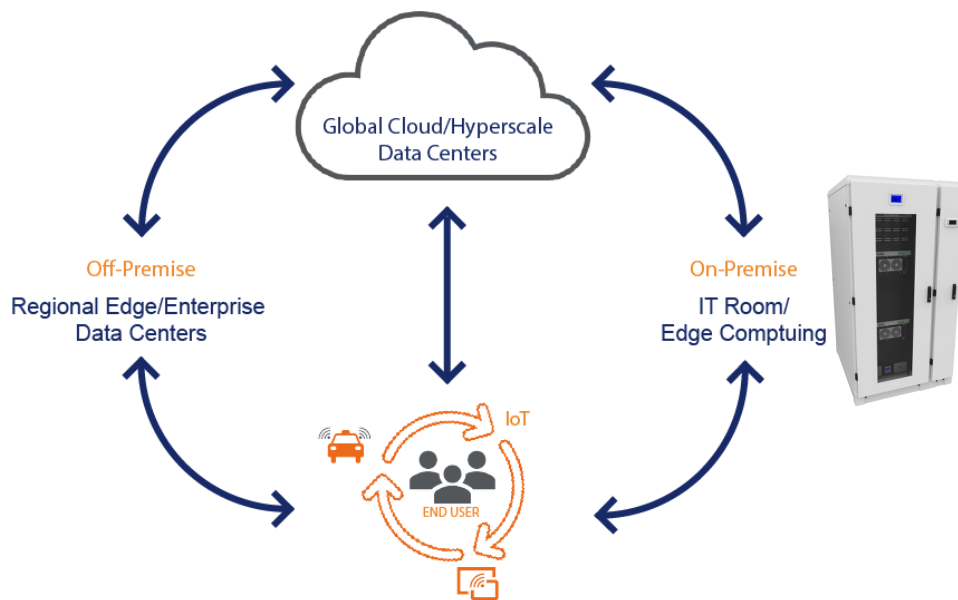
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Why EDGE ?

In our digital age more devices are connected to the internet utilising cloud based storage. The number of devices and users continue to increase which puts a strain on bandwidth causing latency.

This can be done in an environment other than a traditional data room thereby saving real estate and comms/data room build expense.



The reduction in user bandwidth availability and the increase in latency could have dire consequences depending upon the application being used.

This latency and decrease in bandwidth can be overcome by introducing on-premise edge computing. This allows the user to access immediate computer power locally whilst using the cloud simply to store information.

USystems offer a broad range of self contained intelligent modular systems called EDGE to house localised computing, which can be deployed directly into factories, warehouses, offices, M2M, multiple users, businesses etc., either as a standalone cabinet or bayed together in a dedicated room.

Rapid deployment Micro Data Centre

The EDGE range is fully factory configured to enable rapid deployment and has models to suit most applications and environments.

One of these being the EDGE-7, which completely removes the need for building an expensive dedicated space, such as an IT/Comms room or even a complete data center.

EDGE-7 is modular in design and can be deployed as a standalone solution or scaled up into multiple bays – so, as your business grows so can the *EDGE-7* solution, allowing you to keep the CAP-EX down.

The rack space is cooled by the multi-award winning ColdLogik cooling solution and can deal with low density computing/networking or high density such as 70kW per cabinet. The other major benefit of the liquid cooling solution is the opportunity to get free cooling for most of the year, thereby saving on energy bills and providing an excellent return on investment 'ROI'.

Peace of mind is provided by an on board environmental and security monitoring system, complete with a built in IP camera. Real time alarms and alerts which can be viewed via a WebUI, so you know what's going on and see who's coming and going 24/7.

Advanced configurations are available for enhanced levels of security and redundancy.



Alarms and alerts in real time will notify you or anyone added to the emailing alarms of any issues with the cabinet. The LCD touch display on the cabinet doors will change colour if the cabinet status changes, alerts (amber) or alarm (red). It will remain blue when working correctly. Touching the display will show environmental data from each temperature/humidity sensors or in the event of an alarm what that alarm specifically is.

Typical application spaces:

- Un-staffed offices,
- IT/comms rooms,
- Warehouse,
- Data centers



Features and benefits



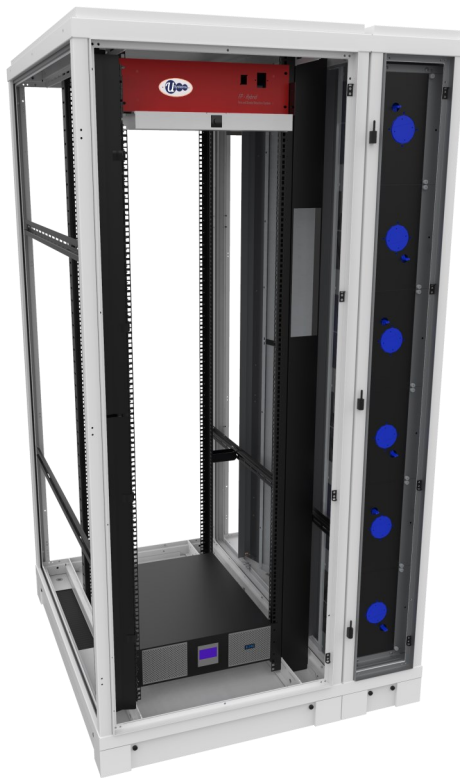
Anti air recirculation kit

The anti-air recirculation foam sealing kit seals gaps in the cabinet to stop recirculation of airflow.



EDGE Management System EMS

Providing real time environmental monitoring



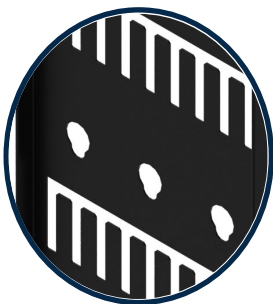
Cable management fingers with hinged cable tidy cover

Ideal for tidy cabling and patching, with hinged tidy for added protection



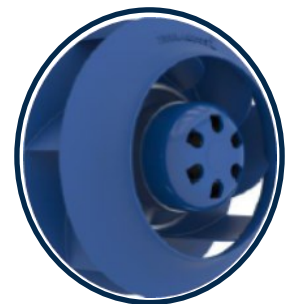
Security Camera (optional upgrade)

Captures video and images automatically when the door opens



Cable tray on both sides

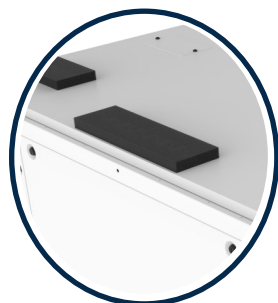
Ensure best cabling practice



EC fan technology

Energy saving and hot swappable

Features and benefits



Cable entry brush strip at rear

Allows for easy and flexible cable egress through the rack top whilst minimising air leakage



CL90 LX side cooler

Offering choice of performance, 23kW, 47kW and 70kW



Dynamic load
750kg

**Static load
1500kg



Heavy duty castors, Plinth Panels, levelling feet (standard)

For safe rapid deployment



Four point locking

High security manual and electronic upgrades are available



Dust free environment

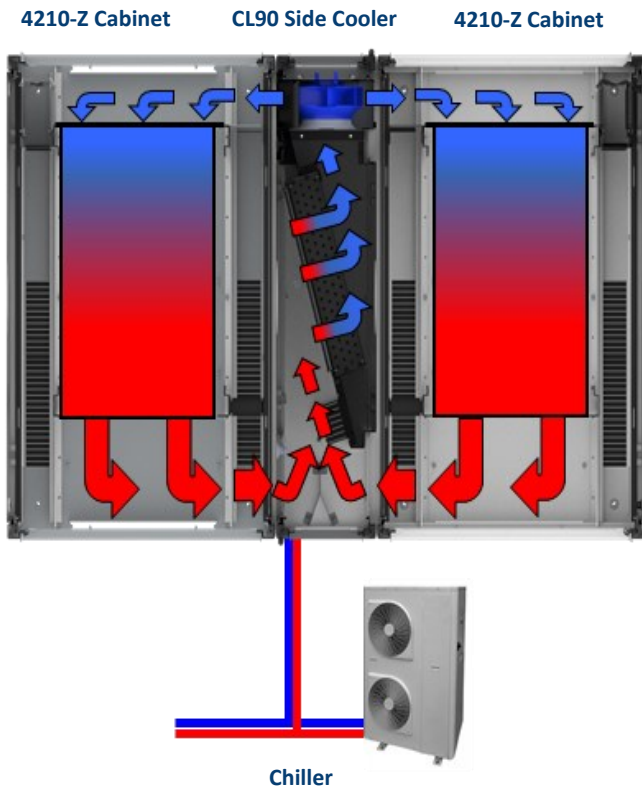
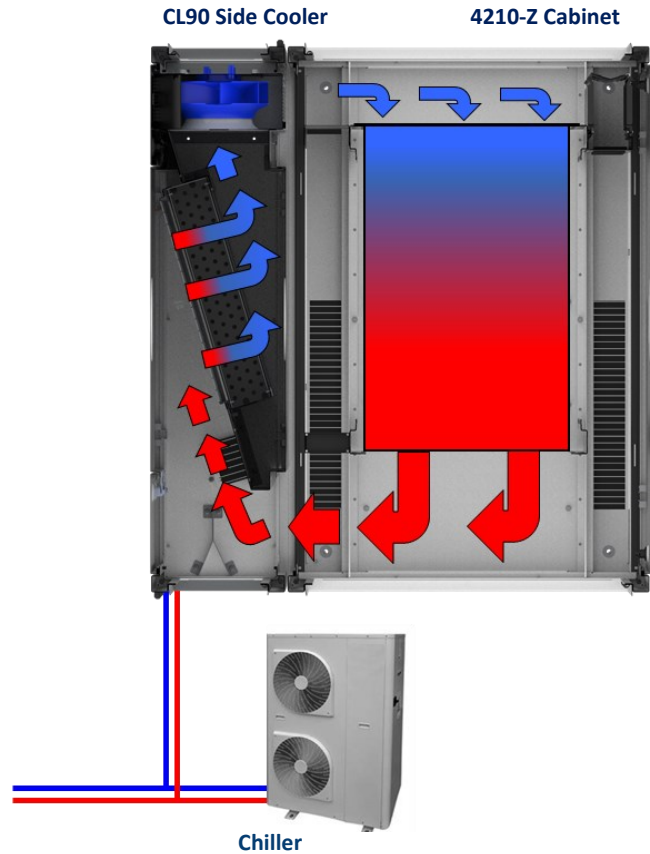
Sealed for dust free operational environment

How it works

The *EDGE-7* is a closed loop system, meaning expelled hot air from the IT equipment is pulled through a liquid cooled heat exchange matrix via a series of EC fans - resulting in a constant stream of cool air to the intake of the IT equipment.

The micro data centre temperature is maintained by the award winning ColdLogik management systems 'CMS', which is fully autonomous and once set requires no user input.

Cold air continuously flows on to the front of the IT equipment, which in turn heats, the air before being pulled through the heat exchanger matrix via a series of EC fans.



The CL90 fan cooling modules direct a constant laminar airflow to the front of each adjacent cabinet creating a cold plenum – these fan modules can be set up to direct the air to specifically the left or right, alternatively the airflow guide can be removed allowing the air to disperse in both directions.

Chilled liquid cooling can be provided by a number of options, the example shown here is an energy efficient 30kW midi-chiller, this can be paired up with a dry-air cooler, which when paired together can then provide redundancy and free-cooling for over 90% of the year .

Alternative LX plant is available for low to high density and larger installations.

Deployment

Truly modular in design *EDGE-7* allows you expand one cabinet or side cooler at a time – so, as demand grows so does *EDGE-7*, keeping CAPEX to a minimum.

Protecting and prolonging the life of your IT equipment is paramount so the *EDGE-7* provides a safe constant dust free working temperature.

0.1kW to 70kW per side cooler



Capable of 70kW of sensible cooling per cabinet or as low 0.1kW, the *EDGE-7* can provide a complete data center requirement all in one space and being a self-contained solution *EDGE-7* can be deployed into any suitable space, be that in a warehouse, staffed offices, semi-open spaces such as stadiums or even remote site locations.

Heavy duty castors and levelling feet make siting and deployment easier, once positioned, the cabinet can be levelled, which is especially useful on uneven floors. The plinth system allows easy access for cabling to pass underneath, once commissioned, plinth panels complete the look.

Specification

4210-Z Cabinet

Cabinet useable height	42U		48U	
Overall height (including plinth and levelling feet)	2100mm		2367mm	
	85.7"		93.19"	
Width	600mm	800mm	600mm	800mm
	23.62"	31.5"	23.62"	31.5"
Depth	1200mm	1400mm	1200mm	1400mm
	47.24"	55.12"	47.24"	55.12"
Maximum static load capacity (on plinth and levelling feet)	1500kg			
	3307lbs			
Dynamic load capacity	800kg			
	1763lbs			

**Dynamic Load Rating is the total rolling mass of the rack and includes the rack frame, cladding and any fitted equipment and accessories and is subject to the load being evenly distributed at 20U height and below. Dynamic load relates to the movement of a rack within the same data centre on a smooth floor clear of any obstacles. Not suitable for transportation on a vehicle when loaded to this weight.*

Materials and finish

Frame

1.5mm CR4 steel

Glass door

1.0mm, 1.2 & 2.0mm CR4 steel 4mm clear toughened glass

Side panels and top cover

1.2mm CR4 steel

Mounting angles

2.0mm CR4 steel

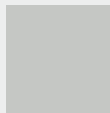
Cooling

CL90 Side cooler

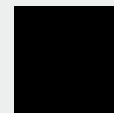
Intelligence

Edge Management System

Semi gloss powder coat



Light grey
RAL 7035



Black RAL 9005
Optional

Compliance statement: Manufactured to IEC 602973 and EIA STD 310 for panels and racks housing electronic equipment

CL90 Side Cooler

General specification	
Height	42U
Width	11.81"/300mm
Depth	39.37"/1000mm or 47.24"/1200mm
Weight - dry	309lb/140kg
Weight - wet	342lb/155kg
Volume capacity	2.82 US gallons pm/11 litres
Power requirement	Phase to phase(208v)/phase to neutral(230v)
Fans	
Backward curved centrifugal fans Incorporating EC technology,	
IP44 rated	6 fans
Current consumption, each fan	1.25A maximum
Air flow, each fan	839cfm/1,425 m ³ /hr
Sound pressure—noise per fan	70dba@1 metre/3.3'

Materials and finish

Frame

1.5mm CR4 steel

Side panels and top cover

1.2mm CR4 steel

Solid steel door

1.2mm CR4 steel

Mounting angles

2.0mm CR4 steel

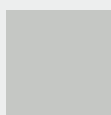
Cooling

CL90 Side cooler

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Semi gloss powder coat

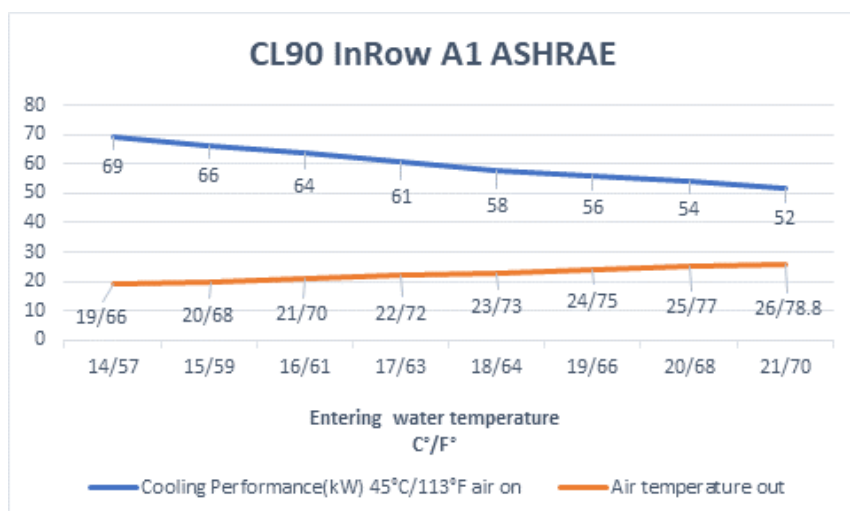


Light grey
RAL 7035



Black RAL 9005
Optional

Compliance statement: Manufactured to IEC 602973 and EIA STD 310 for panels and racks housing electronic equipment



EDGE Management System 'EMS'

Providing complete peace of mind

A standard feature of the EDGE-3 is the inclusion of the Edge Management System EMS controlling the 2x EC Fans and the environmental status of the cabinet with up to 4 temperature and humidity reporting and alarming if over threshold is reached.

Additional contact sensors to notify of door access. Displayed on a easy to view Webui with SNMP trap send, V1, 2 and 3 available to send out data and alarms.

Because you need to know

Whilst it is the EMS which takes care of the energy efficient cooling, it is also the EMS which brings together the whole solution.

Alarms and alerts in real time will notify you of any issues with your cabinet. The LCD screen on the cabinet will also show an alarm status, touch will provide sensor data, fan status and contact sensor triggers.



Front View

EDGE Pack Options

Intelligent power

A full suite of fully specified intelligent power strips in a variety of entry levels



Security

A full electronic access and security system, key pad, bio metric etc.



Uninterruptible power supplies

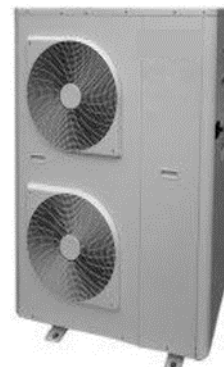
Protection for hardware from unexpected power disruption



EDGE LX Plant

EDGE Mini Chillers

A product specially purposed for the EDGE market, the mini-chiller is an inverter driven chiller with a single water pump. Capable of up to 30kW cooling the system is suitable for the vast majority of EDGE deployments and is compatible with the USystems EDGE solutions.



ColdLogik Chillers

The ColdLogik chiller is designed to help keep your data center within the ASHRAE A1 recommended temperature guidelines. By utilising dual water pumps for N+1 design and adhering to the USystems sensible cooling philosophy, a significantly higher water temperature than traditional cooling systems can be implemented, the chiller both improves energy usage and versatility by comparison to its traditional counterparts.



The Free Cooling ColdLogik chiller is designed from the ground up to help keep your data center within the ASHRAE A1 recommended temperature guidelines whilst also absorbing as much free cooling as the local environment allows. By utilising dual water pumps for N+1 design and adhering to the USystems sensible cooling philosophy, a significantly higher water temperature than traditional cooling systems can be used, as a result, the chiller both excels in energy usage and redundancy providing optimum ROI for the end user. Its also possible that the mechanical chiller may never need to be run in ideal conditions.

Other free cooling options

Dry air coolers

Work by providing the cooling source during the times of the year when the ambient is below the temperature required by the cooling system. Fans in the dry air coolers draw in ambient air and use this to cool the water. As the temperature drops, intelligent controls reduce the load on other cooling plant if being used in tandem (chillers), switching them off altogether when the ambient reaches a certain temperature. Up to 100% direct air-cooling can be achieved this way, with the result that the inherent high operating costs of the chiller are reduced and its lifespan greatly extended

Adiabatic cooling

Adiabatic Cooling option on dry coolers enables water to be cooled to within 6 °C of ambient wet bulb, water is used to increase the cooling effect when the ambient dry bulb is 3°C above the design wet bulb – for most of the year the unit operates as a conventional Dry Air Cooler. U Systems uses these hydride type coolers to provide cooling solutions that make data centers operate without any mechanical cooling at all!

Further Documentation

For additional information, please refer to the below. Available through your USystems representative, or our central inquires line at sales@usystems.com

Complete Product Range	Available at www.usystems.com
Operations and Maintenance Manual	Please contact sales@usystems.com
Troubleshooting Guide	Please contact sales@usystems.com
Product Datasheet	Available at www.usystems.com

EDGE MDCs



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