

# Compact, intelligent cooling for your Edge Data Center

## Uniflair Rack Mounted Room Cooling

3.5kW, 5U, direct expansion split solution



**Fiber Cabling Services**

Tél. : +33 (0)1 30 79 94 20

Mail : [info@fcsgroup.fr](mailto:info@fcsgroup.fr)

Web : [www.fcsgroup.fr](http://www.fcsgroup.fr)

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# Addressing Challenges at the Edge

## Flexibility and performance

Our world is increasingly dependent on data centers due to the explosion in IoT connected devices and the resulting large amounts of data being generated by business and consumer applications. This evolution is leading to an exponential increase of Edge data center environments.

Edge computing is an IT deployment designed to put applications and data as close as possible to the users or “things” that need them. To do this, edge computing leverages distributed micro data centers at the edge of the network where data is used closer to where it is generated.

## Edge applications

The digital revolution and the consequent need to locally manage large amounts of data is impacting most companies and industries. Healthcare, retail, finance and education are some of the vertical industries that are emerging as early adopters of IoT technology to develop new revenue streams as well as improve customer experiences and operational efficiency.

## Micro Data Centers requirements

Edge data centers can be located literally anywhere: in a wiring closet or server room, in an office populated with employees, in a retail establishment full of employees and customers, or in a harsh outdoor environment. This represents a challenge because the performance and reliability if these micro data centers must be up to the exigencies of an increasingly digitized world.

Edge data center characteristics include:

- tight floorspace
- high resiliency (due to being unmanned sites)
- remote control and cybersecure
- scalability and repeatability across multisite deployments



E-Commerce



Education



Finance



Retail



Transport



Industry



Healthcare



Telecommunications

# Uniflair Rack Mounted keeps Edge Cooling simple and seamless

When thinking about data center infrastructure you inevitably have to include how to efficiently cool your IT equipment. For Cooling not to become one of the issues to face, it should be developed on the special exigencies of Edge data centers.

Uniflair Rack Mounted, a 3.5kW, 5U, Direct expansion solution

- **FLEXIBILITY:** easy to install and maintain; designed to be seamlessly integrated into new and retrofit Micro Data Centers
- **SPACE SAVING:** frees up valuable IT floor space by placing the IT cooling at the bottom of any IT rack
- **SIMPLE MANAGEMENT:** EcoStruxure™ Ready, enabling the global visibility of performance and status



## Variable speed control

Uniflair Rack Mounted ensures precise  $\pm 1^{\circ}\text{C}$  temperature control within the rack and infinitely adjustable capacity modulation between 30-100%. The system automatically adjusts cooling output according to changes in IT load which boosts energy efficiency.

## High adaptability for edge Micro Data Centers

Uniflair Rack Mounted is designed to fit into virtually any IT rack and is therefore perfect for both new and retrofit Micro Data Centers. One 5U unit can provide enough cooling capacity to cool most single racks, which reduces the cost and complexity of overprovisioned room based cooling.

## Seamless installation and integration

The Uniflair Rack Mounted solution has been designed to be transportable with rack and easily installed and positioned into place. It ensures maximum available U space for the user and the ability to connect to MODBUS serial connection.

## Built for mission critical operation

Designed for 24x7 continuous operation, Uniflair Rack Mounted critical components can be maintained outside the IT space. It supports extreme climates as low as  $-40^{\circ}\text{C}$ .

## Applications

### Existing small server rooms / network closets

- Rooms with no cooling or cooling from building HVAC that does not operate on weekends
- Rooms with excessive, expensive, over provisioned, and/or inefficient room cooling
- Any new or existing rack without available cooling

### New micro data centers

- Standard IT racks with open, perforated doors
- Contained IT racks that have air barriers to keep out debris
- Ruggedized racks with NEMA/IP rating
- Any new or existing rack with bottom 5U available

### Supplement unpredictable non-IT cooling

- Replacement of non-mission critical, comfort cooling units
- Provide redundancy or a primary cooling source with existing cooling as backup

### System integrators

- Pre-package or assemble-on-site the total micro data center rack cooling piece. Evaporator section can be pre-installed in rack

## Wide installation possibilities

Uniflair Rack Mounted is a flexible, vendor-neutral solution that can be used in any IT rack with different applications.

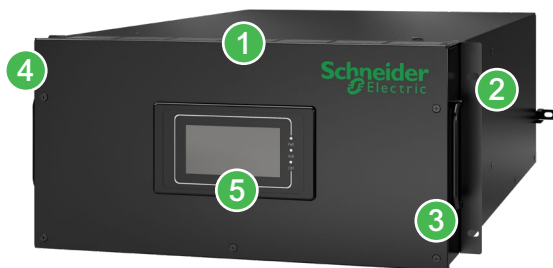


Example 1  
Open rack application



Example 2  
Semisealed or sealed  
rack application

# Main features - Internal unit

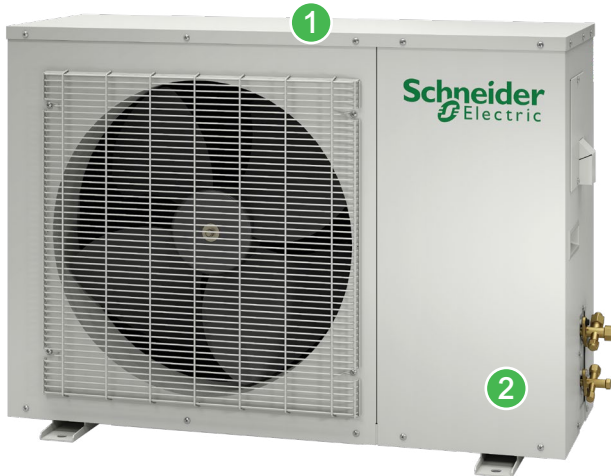


- 1 Variable Speed DC Fan**  
Designed for 24x7 mission critical operation and high airflow output. Quickly responds to heat loads and lowers energy consumption.
- 2 Electronic Expansion Valve**  
Quick and accurate response to control the refrigerant flow once the IT load changes to ensure rack always stays at constant cold temperature.
- 3 Front mounting flanges**  
Discrete, easy installation with any rack.
- 4 Upward air plenum**  
Ensures even cooling distribution to the entire height of the rack.
- 5 Optional embedded user interface**  
Color touchscreen display ensures easy temperature control and system monitoring.

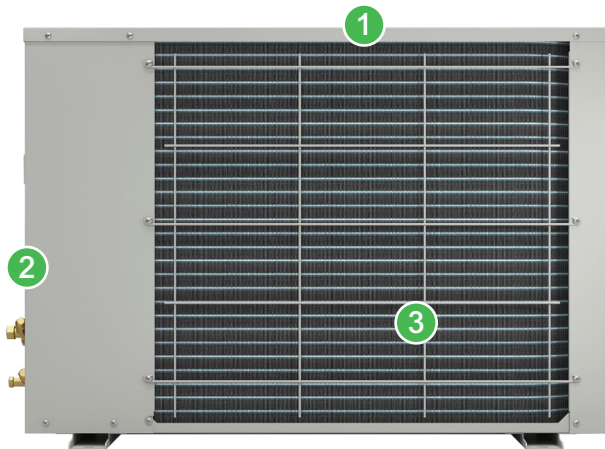


- 1 Refrigerant pipe connection**  
Pipe kits for top or bottom connection and quick installation. Optional winter kit available.
- 2 Return Air Filters**  
Aluminum filter easy to remove and washable.
- 3 MODBUS and power connections**  
MODBUS 485 serial connection for remote BMS control and hardwired power connections.
- 4 Condensate connection**  
Removes condensation by draining it out and away from the IT. Optional condensate pump available.

# Main features - External unit



- 1 Compact design**  
Condensing unit can be placed almost anywhere: on the ground, on a wall, or even on top of the rack.
- 2 Robust design**  
Built for 24x7 mission critical operation.



- 1 20m equivalent piping distance and up to 5m above or below**  
Overcome building constraints and obstacles by placing the cooling almost anywhere.
- 2 Inverter driven compressor**  
Ensures very precise temperature control inside the rack and automatically responds to dynamic IT operation. 3.5kW rated cooling capacity.
- 3 Coil guard**  
Outdoor coil impact protection from debris.

# Technical specifications

INDOOR UNIT	60 Hz ETL version	50 Hz CE version
Commercial References	ACRMD4KT-1	ACRMD4KI-1
Total Cooling Capacity	3.6 kW (12,300 BTU/hr)	3.6 kW (12,300 BTU/hr)
Sensible Cooling Capacity*	3.25 kW (11,088 BTU/hr)	3.5 kW (11,900 BTU/hr)
Rated Power Input	208 V~, 1 Ph, 60 Hz	200-240 V~, 1 Ph, 50 Hz
Rated Air Volume	750 m <sup>3</sup> /h (441 SCFM)	700 m <sup>3</sup> /h (410 SCFM)
Number of Fans	1	1
IDU Fan Input Power	0.2 kW	0.43 kW
Size of Liquid Pipe/Air Pipe Connection	9.52/12.7 mm (0.37/0.50 in.)	9.52/12.7 mm (0.37/0.50 in.)
Energy Efficiency Ratio (EER)	2.8	2.5
Sound Pressure Level	74.0 dB(A)	62.5 dB(A)

OUTDOOR UNIT	60 Hz ETL version	50 Hz CE version
Commercial References	ACRMD4KT-2	ACRMD4KI-2 (precharged) ACRMD4KI-3 (non-precharged)
Heat Exchange	6.3 kW	6.3 kW
Rated Air Volume	1700 m <sup>3</sup> /h (1000 SCFM)	1700 m <sup>3</sup> /h (1000 SCFM)
Input Power	0.95 kW	1.00 kW
Number of Fans	1	1
Number of Compressors	1	1
Sound Pressure Level	57.8 dB(A)	51.1 dB(A)

\*Data at 35°C (95°F) RAT, 23%RH, outdoor air temperature 35°C (95°F).

NOTE: Refer to Unicalc for information on capacity at different conditions.

Sensible cooling capacity is approximately 3.0 kW @ 737 m<sup>3</sup>/h (434

SCFM) for stacked unit. Total sensible cooling capacity for a stacked application is 6.25 kW (21,300 BTU/hr).

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**About Schneider Electric** At Schneider Electric, we believe access to energy and digital is a basic human right. We empower all to make the most of their energy and resources, ensuring Life Is On everywhere, for everyone, at every moment. We provide energy and automation digital solutions for efficiency and sustainability. We combine world-leading energy technologies, real-time automation, software and services into integrated solutions for Homes, Buildings, Data Centers, Infrastructure and Industries. We are committed to unleash the infinite possibilities of an open, global, innovative community that is passionate about our Meaningful Purpose, Inclusive and Empowered values.