

Product	Uniflair Rack Mounted Room Cooling ACRMD4K series
Application	Rack Mounted cooling solution to meet the specific needs of Micro Data Center and Edge computing solutions
Document:	Product Technical Specification
Object:	This document describes the general specification text of the ACRMD4K series cooling unit

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Introduction

The Uniflair Rack Mounted ACRMD4K series is a 3.5kW, 5U, DX split solution meets the specific needs of Micro Data Center and Edge Computing. (PUO' ANDAR BENE?)

Glossary

General Wording

Shall refers to an obligation to be met
Should refers to a strong advice / suggestion

Documents of Reference / Applicable standards

Products shall comply to the following National & International standards and certificates

The unit shall comply with the following directives: (NON E' SPECIFICATO NULLA NELLA GUIDE SPEC DI PARTENZA)

Specific requirements

The unit has to be built according to the following criteria: (NON E' SPECIFICATO NULLA NELLA GUIDE SPEC DI PARTENZA)

- Electrical supply: _____ [V], _____ [ph], _____ [Hz]
- Cooling capacity: _____ [kW]
- External air temperature: _____ [°C]
- Inlet water temperature: _____ [°C]
- Outlet water temperature: _____ [°C]
- Glycol: _____ [type] _____ [%]
- Fouling factor: _____ [m°C/kW]
- Noise pressure level at 10 meters in free field conditions: _____ [dB(A)]
- Noise power level _____ [dB(A)]
- Available head pressure (only for units with pumps): _____ [kPa]
- Maximum external air temperature: _____ [°C]
- Minimum external air temperature: _____ [°C]
- Heat recovery inlet water temperature (if present): . _____ [°C]
- Heat recovery outlet water temperature (if present): _____ [°C]
- Reference model (or similar): _____ [model name and brand]

Complete Key Specifications

Rack Mounted DX Based Cooling Validation

- Rack heat load should be min. 0.5 kW to max. 3.5 kW
- Min. 5U space will be require from Bottom of the rack
- Cooling unit is powered from rack PDU?
 - Yes → We need to include cooling input power within the rack
 - Indoor is (0.9kW) and Outdoor is (0.8kW) bot has a separate power connection
 - No → Ensure there is a power source from outside for the cooling units (indoor and outdoor)
- Rack front and rear door is perforated?
 - Yes → Please refer white paper xxxx for more details about the performance

- Yes → Select front door Rack air containment OR blank off (using acrylic sheet or similar) to avoid the air leakage from and to room
- No → Note: ensure there is no opening to air leak from the door
- Recommendation / Note for emergence ventilation / free cooling
In case cooling unit not working / fails then there is no emergence cooling available, so need to take care separately.
If we use perforated doors then the room / outside air will be taken by the server in case of cooling fail, ensure the room / outside air temp. is less than 27 Deg C
Based on the rack and the available space we recommend to have SE Rack Air Distribution Unit and Roof Fan Tray to support the emergence cooling
Netbotz 250 is used to automated roof fan tray

Rack Mounted DX Based Cooling- Accessories

- User display: User display is recommended as standard option if not please contact technical team to connect the cooling unit in BMS / rack controller
- Condensate pump: drain is planned to take below the inrack cooling unit?
 - Yes → Condensate pump is necessary, if drain pipe is planned to lift above the inrack cooler level then it is recommended to have a pump
 - No → Need condensate pump
- Low temp kit: minimum outdoor ambient is below -15C (5F)?
 - Yes → select the Low temp kit, minim ambient temp. with low temp. kit is -40C (-40F)
 - No → No need to select
- Pipe kit: refrigerant pipe is planned to take from top of the rack?
 - Yes → Rack is taller than 42U?
 - Yes → use custom piping, (clarify with service "Gio")
 - No → Select top pipe kit, mention note: "ensure rack has enough opening for the pipe (space require for suction and discharge pipes with insulation), ~~for more clarification lease contact technical team~~
 - No → refrigerant pipe is planned to take below raised floor?
 - Yes → select Bottom installation pipe kit (Long Z type) mention note: "ensure rack has enough opening for the pipe (space require for suction and discharge pipes with insulation), ~~for more clarification lease contact technical team~~
 - No → Bottom installation pipe kit (Short Z type) mention note: "ensure rack has enough opening for the pipe (space require for suction and discharge pipes with insulation), ~~for more clarification lease contact technical team~~

Mention general note for piping, note: "ensure pipe is laid properly inside and outside of the rack and there is no exposer for any physical damage. Total equivalent pipe length is 20m and vertical is 5m (for both conditions, condensing unit above and below)"

All the accessories are based on the region, please refer the list of SKU's

QUALITY ASSURANCE (NON E' SPECIFICATO NULLA NELLA GUIDE SPEC DI PARTENZA)

The unit/s is to be completely factory-tested prior to shipment. Testing is to include, but not be limited to the following: complete pressure and leak testing to ensure unit integrity, hipot test, and controls calibration and setting. Each unit is to be shipped with a completed test report to verify completion of factory testing procedure. Refer to dedicated section for required certifications.

Hydraulical circuits must be completely tested, pre-charged with nitrogen and isolated before shipping

Operations & Maintenance

InstallLING cooling units (NON E' SPECIFICATO NULLA NELLA GUIDE SPEC DI PARTENZA)

General

1. Install cooling units in accordance with manufacturers unpacking and installation instructions and guidelines. Install units plumb and level and securely attach in locations indicated. Maintain manufacturers recommended service clearances.

Electrical

1. Install and connect electrical devices furnished by manufacturer that are field installed per installation instructions and wiring diagrams supplied with the equipment. Ensure the electrical schematic of the system is submitted to electrical contractor for reference.

Piping connections

1. Equipment mechanical connections need to be made per the installation documentation provided by manufacturer. Ensure the mechanical piping schematic of the system is submitted to the mechanical contractor for reference.

FIELD QUALITY CONTROL (NON E' SPECIFICATO NULLA NELLA GUIDE SPEC DI PARTENZA)

Startup cooling units per guidance provided with manufacturers operation and maintenance documentation. Test controls and operation of system to demonstrate compliance with site requirements and specifications.

End
