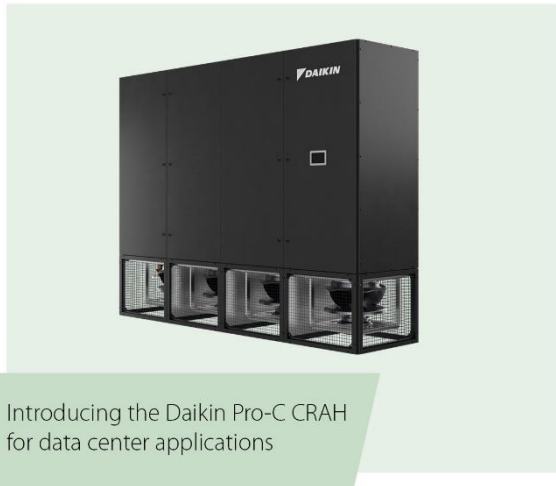


Daikin expands its data center cooling portfolio with the launch of the Pro-C CRAH range



Introducing the Daikin Pro-C CRAH for data center applications

Vienna, April 2025 – Daikin announces the launch of its new Pro-C computer room air handler (CRAH), extending Daikin data center product portfolio. Designed to meet any data center configurations cooling needs, this unit offers an optimized design and advanced control strategies. The product is manufactured in the two factories in Italy and UK ensuring best-in-class delivery time and low transport costs.

Daikin's Pro-C CRAH unit offers an ideal solution for thermal management in data centers. With its third-party certified performance, it delivers a cooling capacity ranging from 30 kW up to 210 kW. Thanks to its flexibility and modularity, the system can perfectly adapt to any data center layout and requirements. Pro-C CRAH is characterized by efficiency, supported by

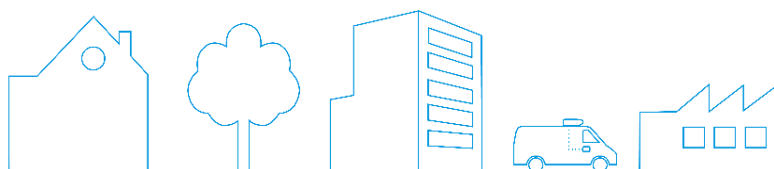
- optimized chilled water heat exchangers,
- the latest generation of EC fans,
- the integration of pressure-independent control valves (PICV) and
- active harmonic filters.

Its advanced control solution strategies and automatic transfer switches prevent power failures, making the system extremely reliable.

Unlocking Efficiency – Seven standout features of the Daikin Pro-C CRAH unit

1. Flexibility for any data center layout

This unit is available in two configurations: for hard floors and for raised floor. In the case of hard floors, either the split or compact configuration can be chosen. For raised floors, only the split configuration is available, which includes an optimized heat exchanger with high energy efficiency that recovers heat from the expelled air and transfers it to the inlet air. This reduces energy consumption.



2. Optimized heat exchanger for maximum efficiency

The features of the Pro-C CRAH ensure an efficient air-cooling system thanks to the heat exchanger and its part-load operation. This eliminates the need for condensate discharge management and air dehumidification, simplifying the system.

By operating at higher chilled water temperatures, this system prevents the formation of condensate that could damage data center equipment. Additionally, the high chilled water temperatures allow perfect adaptation to free cooling chillers, which use lower ambient temperatures to cool water without the use of compressors, thereby increasing the overall system efficiency.

Furthermore, the design of the Daikin Pro-C water coil circuiting has been optimized for higher efficiency, especially under conditions where the temperature differential is significant. The thick aluminium fins with 0.05 mm used for the water coil ensure more robustness and longer lifetime, as data centers operate 24/7.

3. EC fans with active power factor correction (PFC)

Thanks to highly efficient EC fans, the overall system efficiency is improved. These fans feature active power factor correction (PFC), which minimizes harmonic distortion¹⁾ during operation and corrects the power factor. The integrated variable frequency converter allows to be dynamically adjusted to match the cooling load variation of the data center. This enables precise temperature control and a reduction in energy consumption. Additionally, since the EC fans are equipped with brushless DC motors, they offer a longer lifespan compared to traditional fans.

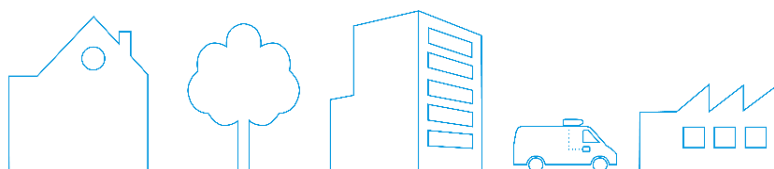
4. Integration of pressure-independent control valves

Pro-C CRAH can also be equipped with pressure-independent control valves (PICV) to balance and manage the water flow in the system. This positively impacts the total operating time of the air-cooling equipment and thus temperature control. Thanks to the built-in volumetric flow and temperature sensors and Modbus communication, the PICVs constantly exchange information with the Pro-C control system. In this way, Pro-C can actively control exchanged cooling capacity, ensure stable water flow, better temperature control, and thus lower operating costs.

5. Advanced control strategies for efficiency & reliability

Data centers typically need high cooling capacities, and thereby many Pro-C CRAH units to keep the air-cooling system continuously operating. Hence, it is important to use control systems that optimise performance and provide the necessary redundancy. This is essential to keep the system running and to maintain the desired temperature conditions.

Daikin's Teamwork feature – a software integrated in the unit – offers additional redundancy and safety during failures or critical states and can adjust capacity individually based on real-time data from the data center hall. Thanks to constant pressure monitoring in the data hall, Pro-C CRAH's control system ensure uniform distribution of cold air to prevent hot spots and guarantee efficient



cooling. The Daikin control systems are designed to adapt to trends evolving over time, keeping them in line with industry advancements.

6. Built-in protection against power failures

Given the complexity of managing a data center, the main requirement is to ensure continuous operation 24/7 even in the event of a power failure. Therefore, the reliability of Pro-C CRAH units is therefore crucial for the overall HVAC system. In this context, it is highly recommended to integrate automatic transfer switches (ATS) into the Pro-C CRAH unit assembly. Additionally, an uninterruptible power supply with an ultra-capacitor can be integrated, allowing it to activate fans immediately once the ATS restores power. Full fan speed is then reached in less than one minute.

7. Expertise from a specialized manufacturer in Europe

Data center projects are highly complex, often requiring specific air handling unit features, on-time delivery and reliable maintenance services. These requirements can only be met by specialised manufacturers with the expertise and capabilities that customers in this sector expect. Daikin, the world's leading air conditioning company, meets these needs with its global presence, including sales offices, product development and manufacturing facilities and its service network.

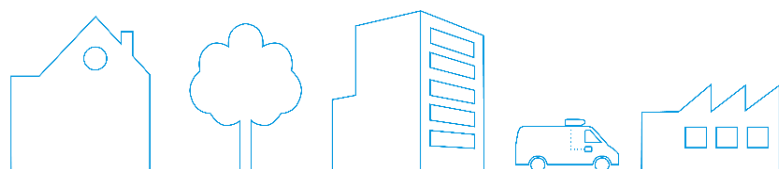
In Europe, Daikin's air handling and Pro-C CRAH units are designed and manufactured in Caleppio di Settala (Italy), and Cramlington (Northumberland, UK). This arrangement provides manufacturing flexibility and reduces transport costs due to the proximity of these facilities to installation sites across Europe.

In addition, Daikin's extensive global service network ensures prompt and competent service coverage for data centre installations, increasing reliability and customer satisfaction. Daikin also offers the opportunity to test the units before delivery to verify their performance and compliance with project specifications. This ensures reliability and optimal performance under the demanding conditions of data center operations.

Extensive product portfolio for data centers

Next to Pro-C Crah, Daikin's portfolio for data centers includes a variety of cutting-edge products and HVAC systems tailored to meet specific needs including:

- **Air-to-water free cooling chillers:** Daikin free cooling chillers utilize low ambient air temperatures to reduce the need for mechanical cooling. This lowers energy consumption and extends the equipment's lifespan. The series includes glycol-free options, which offer additional benefits such as reduced maintenance and improved efficiency. The series covers a range from 183 to 2,154 kW and is available with two compressor technologies: scroll, and VFD screw (Daikin-developed) for optimal part-load efficiency. Additionally, the Daikin-developed VFD is cooled by refrigerant, ensuring proper operation under all working conditions.
- **Intelligent data centre manager (iDCM) control system:** By leveraging AI-supported plant management, long-term optimal performance is ensured. The iDCM system monitors the system



and adjusts the operation of multiple chiller units, to always maintain maximum efficiency and reliability.

- **Pro-W fan array units** are designed for flexibility and scalability. These units are available in 4 sizes, covering a range from 175 to 700 kW. Thereby, Pro-W units can be employed to meet the cooling needs of data centers of all sizes, providing efficient and reliable cooling solutions.
- **After-sales services:** Daikin offers both preventive and corrective maintenance services to ensure the efficiency and reliability of cooling systems in data centers during ongoing operation. Additionally, the services of 'Daikin on Site (DoS)' provide real-time remote monitoring to identify and resolve issues before they affect system performance.

Reference

- 1) Harmonic distortion in EC (electronically commutated) fans happens when the electrical current drawn by the fan is not a smooth, perfect waveform. Instead of a clean sine wave, the current contains extra unwanted frequencies, called harmonics. These harmonics can interfere with other electrical equipment, cause overheating in wires, and reduce overall efficiency. This distortion mainly occurs because EC fans use electronic circuits (like inverters) to control motor speed, which can chop up and reshape the electrical signals. To minimize harmonic distortion, manufacturers use filters and other techniques to keep the electrical system stable and efficient.

Copyrights pictures: Daikin Europe

About

100 years Daikin

The story of Daikin has always been shaped by groundbreaking ideas, technological innovations, and dedicated people. It began in 1924 when the young Japanese engineer Akira Yamada founded an enterprise in Osaka to manufacture aircraft radiators with a 15-member team. Today, 100 years later, the Daikin Industries Ltd. group brings **future-proof solutions for heating, cooling, ventilation, air purification, and refrigeration to global markets**. More than 98,000 employees in 175 countries continue the company's legacy of leading technologies to advance low carbon heating and cooling, while ensuring the highest level of comfort. For its fiscal year 2023 the global Daikin Group reported a record sales result of € 28 billion sales (1 April 2023 – 31 March 2024).

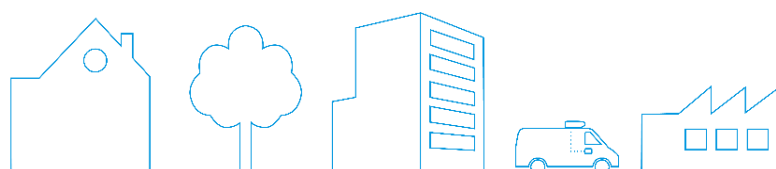
Read more on [100 Years Daikin](#)

Daikin Industries Ltd.

Daikin Industries is a **worldwide leader in heat pump, air conditioning, and air filtration technology**, employing more than 98,000 people. Founded in Osaka in 1924, it is the **only manufacturer in the world that develops and manufactures HVAC-R equipment, compressors and refrigerants in-house**. Daikin has been recognized as one of the world's top 100 most innovative companies by Clarivate (UK) and LexisNexis (USA) for its leadership in technology research and intellectual property patents. For its fiscal year 2023 (April 1, 2023 – March 31, 2024), the Daikin reported a record sales result of €28 billion.

Read more on www.daikin.com

Daikin Europe N.V.



The Daikin Europe Group is a **leading provider of heating, cooling, ventilation, air purification and refrigeration (HVAC-R) technology** across Europe, Middle East, and Africa. Daikin designs, manufactures, and offers customers a broad portfolio of products, maintenance services, and turnkey solutions **for residential, commercial, and industrial applications**. The group currently employs over 13,800 people across more than 59 subsidiaries and operates 14 manufacturing sites in Belgium, the Czech Republic, Germany, Italy, Spain, Austria, the United Kingdom, Turkey, the United Arab Emirates, and the Kingdom of Saudi Arabia. Headquartered in Ostend, Belgium, for over 50 years, the Daikin Europe Group is a subsidiary of Daikin Industries Ltd.

Read more on www.daikin.eu

Daikin Airconditioning Central Europe

Daikin Airconditioning Central Europe, founded in 1999 with its headquarters in Vienna, Austria, operates as a subsidiary of Daikin Europe. Its portfolio includes **products and total solutions for heating, cooling, ventilation, air purification, and refrigeration in residential, commercial, and industrial settings**. With over 700 employees and 3,400 partners, the company manages sales and service activities across **16 countries in Central and Eastern Europe**, including Austria, Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Hungary, Kosovo, Montenegro, Moldova, North Macedonia, Poland, Romania, Serbia, Slovakia, and Slovenia.

With 'Your Daikin World' at the Vienna headquarters and the 'Daikin Inspiration Park,' the HVAC-R industry and the construction sector have access to two state-of-the-art B2B-experience centers for co-creating tailor-made solutions for hotels, retail, offices, and large commercial applications. Across the CE-region Daikin runs 10 out of 116 B2B-trainings centers across Europe. Consumers and homeowners receive consultations at four B2C-Experience centers in Vienna, Belgrade, Bratislava and Budapest.

Read more on www.daikin-ce.com

Media contact

Doris Passler
Manager Corporate Communications Central Europe

Daikin Airconditioning Central Europe HandelsgmbH
Lemböckgasse 59/1/1, 1230 Vienna, Austria
T: +43 (0) 664 24 56 444
M: passler.d@daikin.at

