

How to return air in a cold aisle of a micro-module



Overview

Traditional open aisle data centers use perimeter PAC (precision air conditioning) or CRAC (computer room air conditioning) units to channel cold air up through a raised floor void via grilles positioned in front of the IT cabinets. Data center operators seeking cost-effective cooling improvements are turning to cold aisle containment as the most retrofit-friendly solution for immediate efficiency gains. An enormous amount of energy is used every day to maintain an acceptable intake temperature to the IT equipment. This has significant disadvantages as there is no separation. Cold aisle containment is one solution to prevent the cold supply air and hot return air from mixing and increasing airflow issues in your aisles. The prevalent design involves directing cold supply air into the contained aisle, either from underneath a raised floor or from the top in constructions. Aisle containment prevents hot exhaust air and cold supply air from mixing, improving the efficiency and consistency of data centre cooling. Cold aisle containment encloses the cold air supply path; hot aisle containment captures and redirects exhaust air before it can re-circulate.

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In this guide, we'll break down how hot aisle and cold aisle configurations work, what containment systems do, and why airflow management is critical in today's high-density data centers.



Discover how hot and cold aisle containment improves cooling efficiency, cuts energy costs, and supports uptime in modern data centres.



This study proposes the container data center with the featured cold aisle containment (CAC) as effective thermal control strategy. In design, the overhead downward flow system is ...



This week we're going to do a deep dive into cold aisle ...



Complete cold aisle containment guide for data centers. Learn CAC benefits, implementation steps, and achieve 35% cooling cost reduction.



When utilizing a cold aisle system, the rest of the data center becomes hot, resulting in high return air temperatures. It also may create operational issues if any non-contained equipment such as low ...



Cold aisle containment works in virtually any data center using traditional air cooling, but some facilities see faster returns than others. If you're delivering cold air through a raised floor with perforated tiles, ...



In cold aisle configurations the supply air is contained and the hot discharge air allowed to return to the CRAC unit. Because the supply and return air are kept separate, the room temperature can be ...



Panels are critical to aisle containment performance by creating airtight barriers that prevent hot and cold air mixing, ensuring optimal airflow and maximizing cooling efficiency.



Learn how cold and hot aisle containment improves airflow, reduces energy use, and boosts reliability in data centers. Backed by CFD insights from EXPERIQS.



This week we're going to do a deep dive into cold aisle containment - what it is, how to manage it post-installation and what to look out for. Cold aisle containment is one solution to prevent ...

Contact Us

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