Cambodia Cold Aisle Cabinet Design Scheme

Overview

Aisle containment in the data center requires that cabinets are aligned in a hot aisle/cold aisle layout.

Key Takeaways

A cold aisle containment system in Cambodia should focus on modular, scalable cabinet layouts that isolate cold supply air, improve cooling efficiency, and reduce energy costs.

Core Design Principles

Cold aisle containment involves creating an enclosed corridor in front of server cabinets to ensure that the coldest air is delivered directly to equipment intakes, preventing mixing with hot exhaust air. This improves cooling efficiency, reduces hotspots, and extends equipment lifespan. Cabinets should be aligned in a hot aisle/cold aisle layout, with containment panels or strips forming the physical barrier.

Modular and Scalable Solutions

Modular Panels and Doors: Use modular top panels and end-of-row doors to cap cold aisles and direct airflow efficiently. Sliding or swinging doors with soft-close mechanisms can be installed at aisle ends. Customizable Dimensions: Aisle widths typically range from 36” to 96”, and top panels can extend above cabinet tops to create a uniform corridor.

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Modular designs allow for future expansion and reconfiguration as server density increases. Tool-less Installation Options: Some systems, like AisleLok®, offer tool-less installation with magnetic attachments, reducing labor costs and enabling rapid deployment.

Airflow and Cooling Efficiency

Positive Pressure in Cold Aisle: Angled rack top baffles or containment panels create slight positive pressure, preventing hot exhaust air from entering the cold aisle. Integration with Cooling Systems: Efficiency is maximized when containment works with variable-speed fans and a clear return air path. Proper installation can reduce cooling costs by 20–50%.

Energy Savings: By isolating cold air, the system reduces wasted cooling and allows CRAC units to operate more efficiently, lowering operating costs.

Site-

Specific Considerations for CambodiaClimate Adaptation: Cambodia's tropical climate requires careful attention to humidity and high ambient temperatures. Ensure containment systems are compatible with local CRAC units and airflow requirements. Custom Engineering: Work with vendors to design solutions that fit your data center's layout, rack density, and cooling infrastructure.

Custom panels, end doors, and top baffles can be tailored to local site conditions. Scalability and Maintenance: Modular systems allow for phased deployment and easy maintenance, which is critical for growing data centers in urban Cambodian locations.

Recommended Components

Cold aisle top panels with even roof structure, extending above cabinet tops. End-of-row doors (sliding or swinging) with optional hold-open features. Angled rack top baffles to maintain positive pressure.

Modular frame design for easy installation and future expansion. Optional custom colors to match facility aesthetics. By following these principles, a Cambodian data center can achieve optimized cooling efficiency, reduced energy costs, and improved equipment reliability while maintaining flexibility for future growth.

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Article Content

AISLE CONTAINMENT

Aisle containment in the data center requires that cabinets are aligned in a hot aisle/cold aisle layout. Containment panels or strips create a partition to isolate either the server supply air (cold aisle

Altimir – Data Center Solutions

Altimir designs, fabricates, and installs energy-efficient, custom-engineered Hot Aisle and Cold Aisle Containment Systems. Recognized for the quality of its products, the company''s products are

CONTAINMENT SYSTEM

High energy costs and accelerated energy consumption has forced data center managers to implement strategies to achieve separation between the hot and cold air in the data center.

Lepin Network | Cold Aisle Containment system

The aisle containment system is a modular rowbased thermal containment solution, which separates cold and hot data center air streams to and from equipment. It manages airflow at the source,

Cold & Hot Aisle Containment

The Cold & Hot Aisle Containment system is retrofitable – making it ideal for improving the performance of older server rooms facing upgrades. It''s also modular and scalable, which helps future-proof

Cold Aisle Containment System | Contech Solutions

Designed to meet the unique needs and preferences of each installation, CAC can span a continuous row of cabinets up to 52?L (15.8 m), aisles that are two or

Aisle Containment Solutions | KabinPLUS

This new approach eliminates the need for large dedicated caged areas by installing fence modules directly on the cabinets'' front and/or rear sides, even when the cabinets are only a small part of a row.

CSMD_CONTAINMENT#HOT_COLD AISLE

As an addition to a conventional precision cooling system, Cold Aisle Containment consistently separates cold and warm areas without requiring structural changes to the Data Center.

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KabinPLUS Aisle Containment Solutions

Cold Aisle Containment for rack cabinets with single or double sliding doors and sliding roof frame units fabricated out of aluminium, with polycarbonate panel material and fire nozzle entry sections.

AisleFrame™ Containment System

The AisleFrame System delivers freestanding containment for hot aisle and cold aisle data center configurations without relying on ceiling infrastructure or raised floors.

Cold Chain in Cambodia

This baseline assessment examines the existing cold chain practices in Cambodia, with specific focus on identifying gaps and constraints as temperature-controlled products arrive at ports and are then

Move to a Hot Aisle/Cold Aisle Layout

A Time-tested Technique The hot aisle /cold aisle data center layout was originated by IBM in 1992 and it is one of the oldest ways to save energy in the data center. 1 Hot aisle/cold aisle layout involves

Cold Aisle Containment in Data Centers | Subzero

Minimize your data center''s footprint, establish optimal operating efficiencies and save money with cold aisle containment. Learn more here!

KabinPLUS Aisle Containment Solutions

Aisle Containment Solution - Cold Aisle Cold Aisle Containment for rack cabinets with single or double sliding doors and sliding roof frame units fabricated out of

Aisle Containment Systems Physical Containment Systems ...

Aisle Containment Systems by VertivTM Aisle Containment is the logical extension of the hot aisle/cold aisle concept of data center design.

Containment Strategies in High Density Data Centers

Cold Aisle vs Hot Aisle One of the most asked questions and “hotly” debated answers to the Cold Aisle vs Hot Aisle containment which is better question are: Cold, Hot or the classic “it

Cold Aisle Containment

Retrofitting Cold Aisle Containment System From EDP Europe EDP provides custom Cold Aisle Containment solutions for existing data centres. These

Basics of Aisle Containment: Exploring Doors, Panels ...

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Aisle containment is a proven method of improving cooling efficiency in the data center. It builds upon the concept of “hot aisles,” where the rears of cabinets face each other, and “cold aisles,”

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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