

Featured Product

Aisle Containment Solutions by CPI

Inspired by a long history of solving complex problems with customized products, Aisle Containment Solutions by Chatsworth Products, Inc. (CPI) are engineered to personalize virtually any containment strategy. Rich in features like adjustable filler panels and designed to seal airflow 200% more efficiently than similar products, each Aisle Containment Solution offers a superior class of airflow management, flexibility, quality and above all—reduced operating costs. The IT infrastructure industry has never seen a more optimized union of flexibility and quality.

Available in Cabinet Supported systems for Hot Aisle Containment (HAC) and Cold Aisle Containment (CAC), as well as Frame Supported HAC, each of CPI's three standard solutions offers a complete Aisle Containment Solution with specific accessories to address any concern.



Why Choose CPI?

As the industry's earliest pioneers of using passive cooling strategies to promote "free cooling" in data centers, CPI brings an unmatched level of quality, experience and efficiency to airflow management. CPI Passive Cooling® was one of the first solutions to use comprehensive sealing strategies and a Vertical Exhaust Duct to maximize cooling efficiencies at the cabinet level. Now expanded to the aisle level, CPI Passive Cooling and Aisle Containment allow you to increase heat and power densities by as much as 4x their original level and increase cooling efficiency by nearly 3x.

Further improving this balance of power and cooling costs, Aisle Containment Solutions by CPI provide a built-in flexibility that adapts to challenges like limited ceiling height and complicated overhead pathways. This configurability results in an extremely energy efficient solution that's suitable for Greenfield applications, as well as extending the life of an existing facility.

Why is Aisle Containment the Right Choice for Your Data Center?

- ✓ Eliminates hot spots
- ✓ Supports 4x higher heat and power densities (6 kW to 30+ kW)
- ✓ Effectively utilizes 100% of supplied air and reduces chilled air waste
- ✓ Improves CRAC unit efficiency because of the higher supply-to-return temperature differences (Delta T's)
- ✓ Allows increased room temperature and higher set-points on cooling equipment for more free cooling hours using low-cost economizers
- ✓ Provides flexibility for supply air delivery through the ceiling, wall or floor



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Cabinet Supported Hot Aisle Containment (HAC) Solution

In CPI's Cabinet Supported Hot Aisle Containment (HAC) Solution, the hot exhaust air from IT equipment is isolated in the hot aisle and directed back to the CRAC/CRAH through a vertical exhaust duct. By keeping the hot exhaust air completely segregated from the cold air, cooling units are not working to regulate supply temperature increases from high density switches and servers.

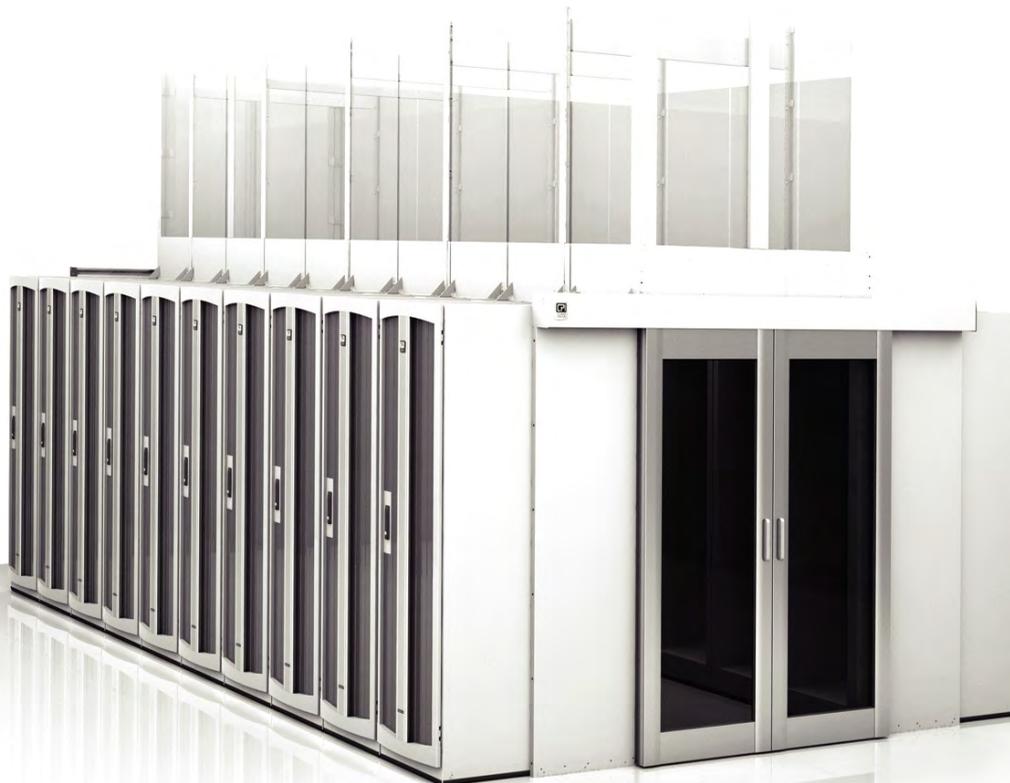
Because each installation is unique, the vertical exhaust duct component of our HAC solution has been engineered to adjust with your needs. The duct is assembled with individual vertical (duct) panels on the tops of each cabinet that are connected side-by-side to form a rectangular overhead duct. These panels are capable of extending up to 60" (1524 mm) in height and are translucent, ensuring a better-lit aisle when completed. Where cabinets vary in height, filler panels are available to seal space between shorter cabinets and the duct.

Fast Fact

- Compatible with concrete and slab floors

Key Features

- Attaches to the tops of cabinets to create a large exhaust duct over the contained aisle
- Translucent polycarbonate panels allow light to enter the aisle
- Accommodates different height cabinets
- Panels extend to a maximum height of 60" (1524 mm) from the cabinet
- Field fitted, sealing kit conforms to ceiling irregularities



In this example, CPI's Aisle Containment Doors are combined with the F-Series TeraFrame® Cabinet System and a Cabinet Supported Exhaust Duct to enclose the hot aisle between adjacent cabinet rows. Here you can also see how the overhead duct extends toward the ceiling, ensuring that all hot exhaust air is directed back to the CRAC/CRAH and completely isolated from the rest of the room.

Frame Supported Hot Aisle Containment (HAC) Solution

CPI's Frame Supported Hot Aisle Containment (HAC) Solution is ideal for colocation facilities and data centers requiring easy roll-in/roll-out capabilities. Similar to CPI's Cabinet Supported HAC, which includes doors at each end of the aisle and a vertical exhaust duct, the Frame Supported Solution uses an independent frame that can stand on its own, allowing cabinets with varying heights to be easily added and removed.

Ensuring that the Frame Supported HAC is capable of this flexibility, as well as its central task of isolating hot exhaust air from treated cool air, each system is approached as a total thermal design. Whether it's full height blanking panels or a 20'L (6 m) beam that can extend the aisle to a length of 10 cabinets, CPI's Frame Supported HAC provides the optimal fusion of performance, adjustability and durability.

Fast Fact

- Simplifies future moves, adds, changes
- Compatible with concrete and slab floors
- Suited for CPI and other brands of cabinets

Key Features

- Self-supporting structure allows cabinets to be added or removed without disturbing the duct or the other cabinets
- 20'L (6 m) beam spans up to 10 bayed 23.6"W (600 mm) cabinets
- Adjustable height blanking panels support cabinets of different heights (up to 52U)
- Translucent polycarbonate panels allow light to enter the aisle
- Full height blanking panels allow cabinets to be omitted when required



In this example, CPI's Aisle Containment Doors are combined with the F-Series TeraFrame® Cabinet System and a Frame Supported Exhaust Duct to enclose the hot aisle between adjacent cabinet rows. While CPI cabinets are used in this example, the Frame Supported HAC is also compatible with other cabinet brands. This example also shows how the overhead duct extends toward the ceiling, ensuring that all hot exhaust air is completely isolated from the rest of the room.

Cabinet Supported Cold Aisle Containment (CAC) Solution

CPI's Cabinet Supported Cold Aisle Containment (CAC) Solution isolates a room's cold air supply and confines it to an entirely closed off area targeted at cooling IT equipment instead of the room. With the fronts of cabinets facing each other as they would in a typical cold aisle design, the addition of CPI's doors on each end of the aisle and ceiling panels across those adjacent cabinet rows creates a complete segregation of hot and cold air.

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) long, aisles that are two or three raised access floor tiles wide, and elevates the ceiling 4"H (100 mm) to 12"H (300 mm) above the contained aisle for additional headroom. CAC is also equipped to support different cabinet heights through adjustable filler panels, ensuring that the performance and integrity of this isolation strategy reaches its fullest potential.

Fast Fact

- Easy choice for retrofits
- Leaves a small footprint
- Requires minimal ceiling height

Key Features

- Attaches to the tops of cabinets and elevates ceiling panels above cabinets
- Translucent polycarbonate panels allow light to enter the aisle
- Accommodates different height cabinets
- 4"H (100 mm), 8"H (200 mm) and 12"H (300 mm) elevations provide additional clearance above cabinets



In this example, CPI Aisle Containment Doors are combined with a Cabinet Supported Ceiling Panel Kit and the F-Series TeraFrame® Cabinet System to enclose the cold aisle between adjacent cabinet rows. The overhead ceiling traps cold air in the aisle so that it will be used to cool equipment, instead of the entire room.

Custom Aisle Containment Solutions

If you need a special design that we don't currently offer, CPI's Global Application Engineering Services Group will work with you to create a new Aisle Containment Solution that fits your requirements.



Aisle Containment Doors

CPI's Aisle Containment Doors are the most critical component of any aisle containment system. Aisle Containment Doors need to stand the test of time with continued sealing performance and durability over repeated use. Standing out in a marketplace filled with doors manufactured for baseline performance, CPI's Aisle Containment Doors offer a feature-rich alternative of performance, quality, usability and style.

Available as single or double doors, both options slide open and automatically close behind you with the signature ease of a quality engineered product. This attention to detail is more than a matter of convenience. Complemented by a vertical edge seal, adjustable floor seal and magnetic door seal, each door has an automatic closing feature that prevents doors from being accidentally left open. This unique feature not only minimizes airflow leakage and optimizes airflow containment, it reduces loads on cooling systems by minimizing the time it takes for an enclosed area to recover to its set temperature. And for times when maintenance needs to be performed in the enclosed aisle, CPI Aisle Containment Doors are engineered with a detent feature that holds the door open.



Fast Fact

- Available in single or double doors
- Single doors can be ordered to open from right or left

Key Features

- **Controlled open/close action**
Unlike hinged (cafeteria style) doors, sliding doors travel on a track which provides continuous contact on the top and bottom of the door for a smooth and controlled open and close action and require less aisle clearance to operate.
- **Detent**
Sometimes doors need to be left open for installing or removing large equipment. Doors can be detented open, but otherwise, the auto close mechanism helps assure minimal leakage by keeping the doors closed.
- **High quality seals**
There are seals around the top, sides and bottom of the door to minimize leakage when the door is closed. Additionally, a magnetic door seal keeps doors closed when pressure changes inside the contained aisle.
- **Convenience**
Doors are connected by a belt mechanism that is hidden in the overhead slide rail, so moving one door opens the other. Doors also close automatically with a mechanism that is dampered so the doors close smoothly and without slamming.
- **Durable**
Door frames are constructed of aluminum extrusion and the overhead track is also extruded aluminum, not sheet metal. Solid construction with extruded components equals durability for many years of use.
- **Practical**
Door panels are full height and transparent, allowing light to enter the aisle and making it easy to see inside the aisle for security and safety.
- **Adaptable**
CPI has simplified installation by designing adjustable filler panels to seal gaps above and around the door and cabinets and mounting brackets for cabinets, that range from 42U to 51U high. Adjustable panels save time by reducing the amount of field fabrication or special panels required to complete the installation.

- ✓ Door frames feature an integrated interior handle and vertical edge seal, adjustable floor seal and magnetic door seal
- ✓ Multi-seal design eliminates airflow leakage for maximum performance
- ✓ Sliding double doors or single door spans aisles that are two- to three-tiles wide
- ✓ Stylish anodized aluminum door frame with full-height, transparent polycarbonate panels
- ✓ Automatic close system minimizes isolation strategy disruption
- ✓ Speed damper controls closing speed to prevent doors from slamming
- ✓ Detent open feature maintains door in the open position for equipment installation or maintenance when required
- ✓ Concealed floor hardware with flush or offset mounting to align with raised floors

Comprehensive Thermal Solutions

Matching configurability with performance demands a precision approach to airflow isolation. Aisle Containment by CPI advances that approach with a comprehensive strategy that combines quality engineered containment systems with thermal accessories and support services. The result? Total airflow isolation at every level of infrastructure deployment.

Additional Thermal Accessories

- Cabinet to Floor Seal Kits
- Snap-In Filler Panels
- Air Dam Kits
- Top Panels with Brushed Cable Openings
- Top Panels with Vertical Exhaust Duct
- Bottom Panels with Brushed Cable Openings
- Side Panels with Brushed Cable Openings
- Baying and Seal Kits
- AisleLok™ Acrycell™ Sealing Tape
- AisleLok™ Under Rack Panels
- KoldLok® Raised Floor Grommets

To get started:

Contact your CPI Sales Representative

CPI will work with you to develop a personalized solution that includes a complete bill of materials and support drawings

For more information about CPI Aisle Containment Solutions visit www.chatsworth.com/aisle-containment, call 800-834-4969 or email techsupport@chatsworth.com



CPI Aisle Containment Services

Reaching the full potential of an Aisle Containment Solution requires a comprehensive strategy that integrates airflow containment with the facility and related infrastructure. Rather than leave these variables to chance, CPI recommends that customers maximize their performance with CPI Aisle Containment Services, an invaluable partner during any aisle containment installation.

✓ Pre-Installation Site Survey

A member of CPI's technical staff personally conducts an overall site inspection, which includes room layout and measurements. This process also helps identify architectural factors such as airflow delivery, overhead structures, uneven areas in the floor, sources of bypass airflow and other obstacles unique to each installation.

✓ On-Site Installation Supervision Support

CPI's On-Site Installation Supervision Support specialists deliver technical expertise and hands-on training to any Aisle Containment installation. Available on-site during a specified portion of the installation, this support includes initial training for the installation contractor, related technical support, inspection of delivered materials and a thorough examination of the assembled solution.

Both the Pre-Installation Site Survey and On-Site Installation Supervision Support are available in 8-hour blocks and can be expanded on a case-by-case basis. Additionally, all suggestions and performance statements are based on using an overall approach to airflow containment through the use of CPI Products and solutions.

