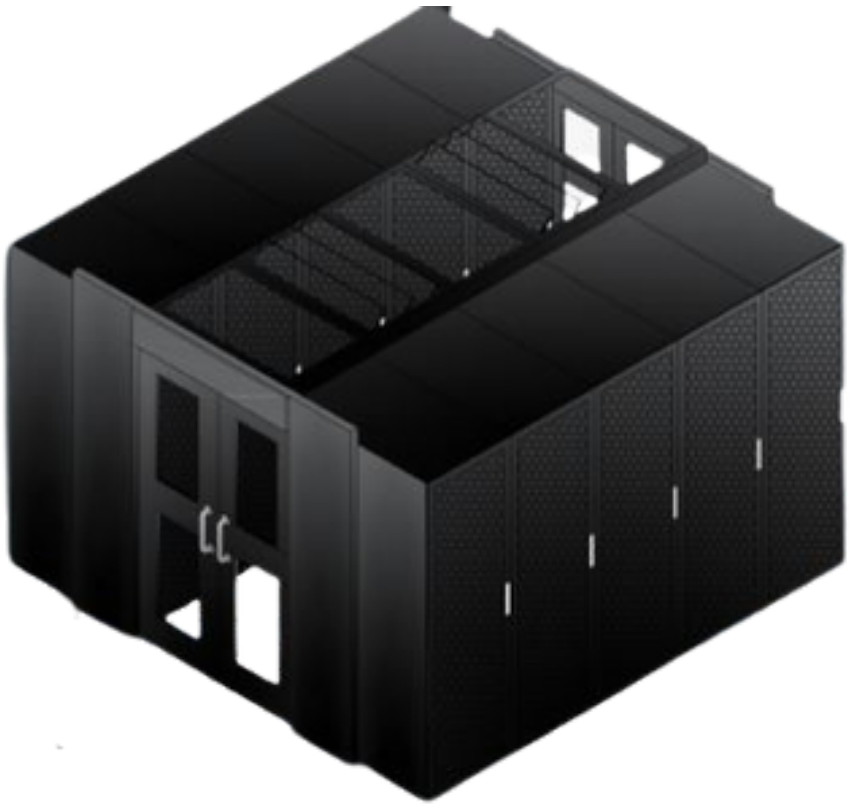
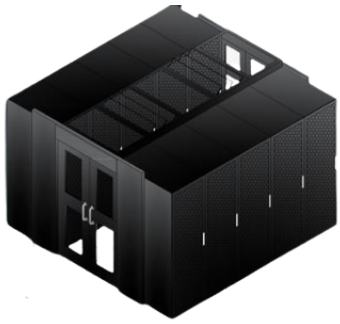
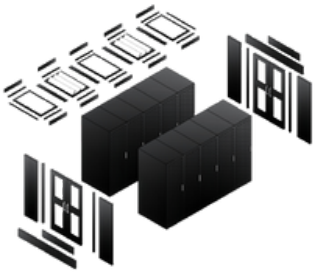
COLD AND HOT AISLE CONTAINMENT SYSTEM



CSM Distribution Sdn Bhd (1030516-T)
26, Jalan BP 5/9, Bandar Bukit Puchong,
47120 Puchong, Selangor Darul Ehsan.
www.csmd.my

COLD AND HOT AISLE CONTAINMENT





GENERAL INFORMATION

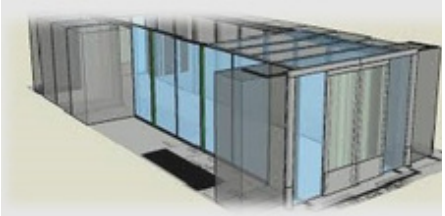
- Aisle Containment System are designed to allow Cool-Air to rise from the plenum under the Raise Floor through the perforated tiles. In the Cold Aisle, the Server and Equipment Rack and arranged to face each other so that the Cool-Air through the Perforated Floor Tiles are drawn into equipment cooling inlets in the rack. Hot-Air is expelled at the rear of the rack and direct back to the Air-Conditioning System within the Data Center.

PRODUCT INFORMATION

- Cooling is the hot topic in Data Center circles today. As heat densities and cooling costs rise, Data Center professionals are looking for more efficient cooling solutions. Aisle Containment can improve cooling performance of a Data Center, assuming it is arranged in a Hot/Cold Aisle configuration. Gartner reports that a 2007 Pacific Gas and Electric study estimated that containment could save 20 percent in chiller operating costs. Further, a 2007 study by Lawrence Berkeley National Laboratory found that the electricity used to move the cold supply air could be reduced 75 percent by implementing Cold Aisle Containment. 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. A Cold Aisle Aisle retrofit can be implemented easily and quickly, carries a payback time from weeks to a few months depending on whether energy utility rebates were available to help with funding and can reduce cooling related energy costs by as much as 30 percent.

COLD AND HOT AISLE CONTAINMENT

• SOLUTIONS



Standard

- Aisle Width: 1200mm, 1500mm, 1800mm
- Rack Height: 2000mm, 2200mm

Features

- Precisely fitted to cabinets and cabinet positions.
- Suitable for retrofitting non-homogenous Data Center.
- Combination with HAIRF Aisle Standard.

Customised

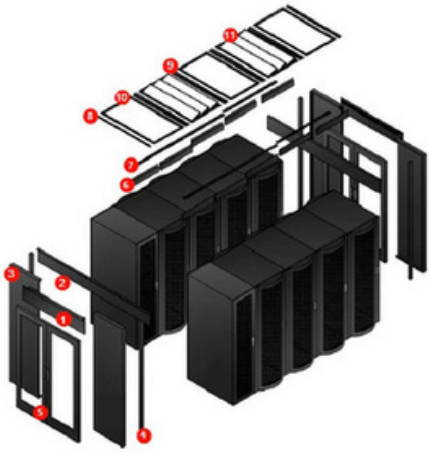
- Precisely fitted to cabinets and cabinet positions.
- Suitable for retrofitting non-homogenous Data Center.
- Combination with HAIRF Aisle Standard.

Free Standing

- Precisely fitted to cabinets and cabinet positions.
- Suitable for retrofitting non-homogenous Data Center.
- Combination with HAIRF Aisle Standard.

COLD AND HOT AISLE CONTAINMENT

- ## EXAMPLE OF DESIGN



Controlled by Smoke and Fire Alarm System, Containment panels angle away to ensure early and immediate obstruction of critical Fire Suppression System.

- Prevents the potential for hazards or equipment damage
- Works with all types of Fire Suppression Systems
- Panels are fully resettable after an alarm event or testing

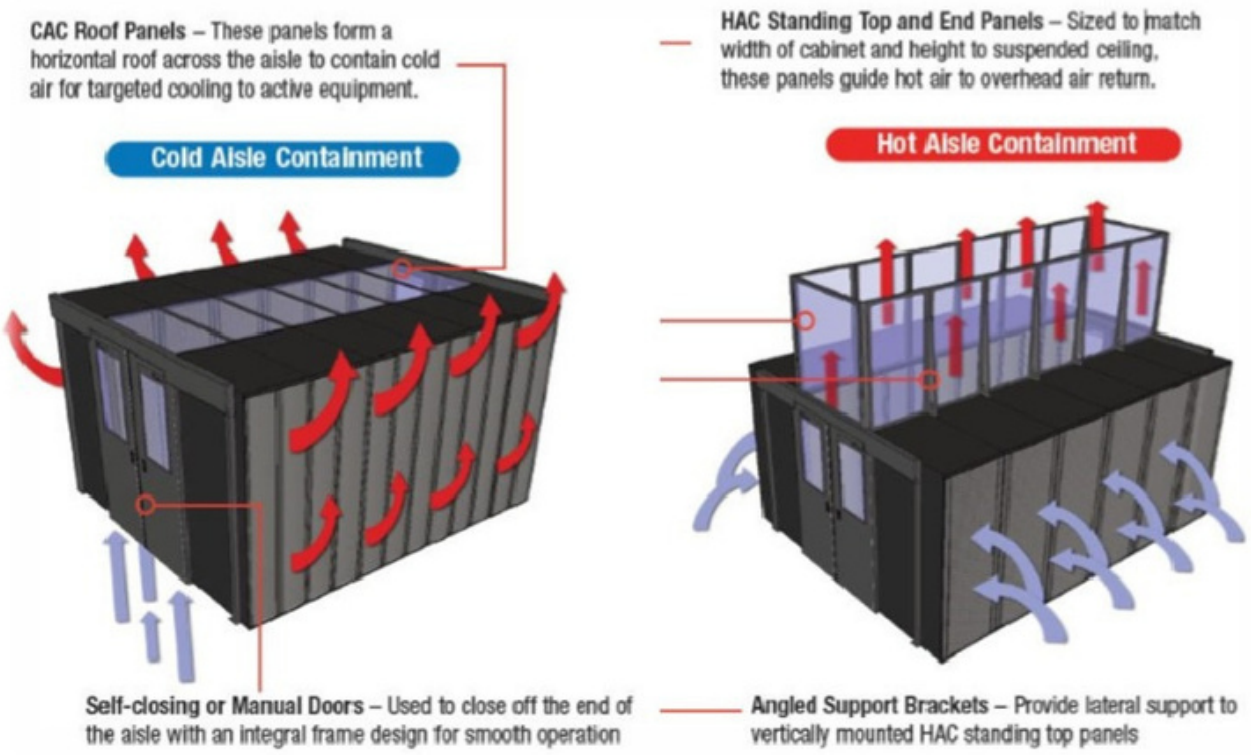
CODE	Description	Quantity
1	Top Cover Door	2
2	Door Rail	2
3	Side Cover Door	4
4	Hollow Support	4
5	Sliding Door Assembly	4
6	Side Cover Panels Support	N
7	Top Cover Panels Support	N
8	L Cover Panel Support	N
9	T Cover Panel Support	N
10	Roof Acrylic Panel	N
11	Roof Acrylic Panel With Fire Damper	N

COLD AND HOT AISLE CONTAINMENT

• TYPE OF AISLE CONTAINMENT

Aisle Containment can be implemented in to method as either Cold Aisle Containment (CAC) or Hot Aisle Containment (HAC) configured as shown in figure. Both Cold Aisle Containment can be accomplished in two principally different ways:-

- With the external cooling method, the cooling unit is located outside the containment (typically a Raised Floor System with perimeter-located CRAC units).
- With the internal cooling method, the cooling unit is located inside the containment (typically above or between the racks).



COLD AND HOT AISLE CONTAINMENT

- **TECHNICAL DATA**

FEATURES

- Design for new Data Center (Small, Medium and Large Size DC).
- Fast Development and Flexible Expansion - Future Upgrade.
- Easy and Cost Effective - Reduced Energy Consumption and Increased Cooling Capacity.
- Able to customized, build and design or re-design (existing) - Don't have to changes your Building Infrastructure.
- Flexible to fit all type of racks (Standard or Non-Standard Size).
- Able to integrated or add-on with all applications - Cooling, UPS, EMS, PDU and MMR.
- Modular Containment System.
- Complete solution to Meet DC Requirements - Option for Active Components.

TECHNICAL DATA

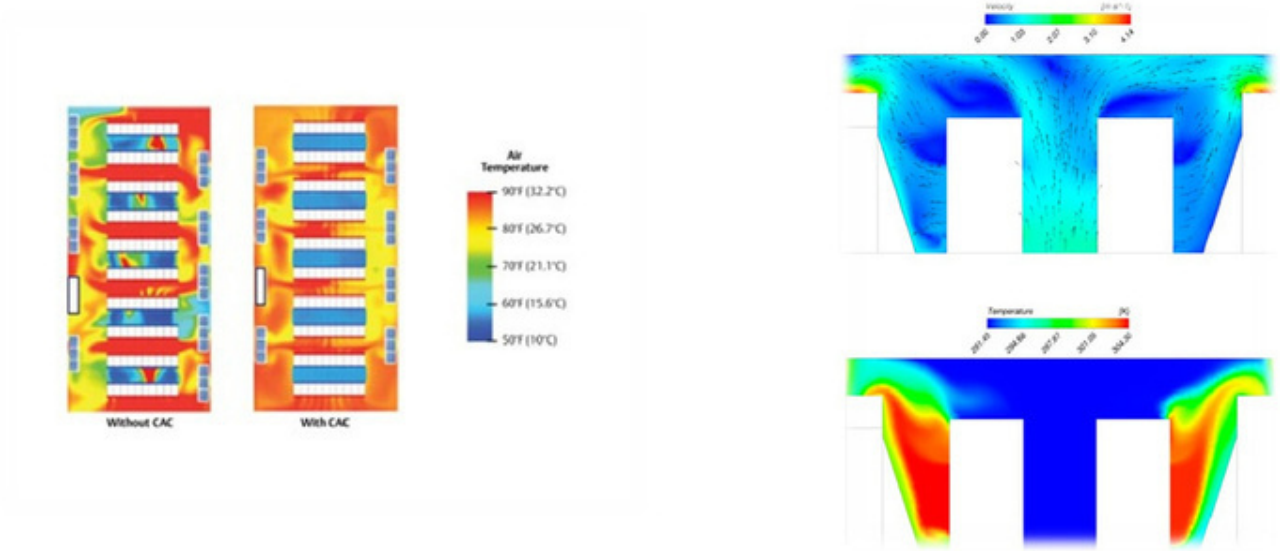
- Aisle Width: 1200mm, 1500mm and 1800mm +/- 50mm
- Rack Height / Standard Dimension: 2000mm and 2200mm
- Aisle Length: Customized
- Color: 792 / CT (Black)
- Front Door Element: Sliding Door, Double Door and Front Panel
- Front Door Closer: Mechanical, Motorized
- Rear Door Element: Sliding Door, Double Door and Front Panel Rear
- Door Closer: Mechanical, Motorized
- Roof Element
- End Separator Strip
- Protector Bracket
- DCM (R) Balancing Sheet Metal
- Height Panel
- Sealing Set

COLD AND HOT AISLE CONTAINMENT

- **SPECIFICATION**

TEMPERATURE COMPARISON

- Computational Fluid Dynamic (CFD) of Air Temperatures with and without Containment.
- Figure shows the improvements in Air Temperatures accomplished with containment in a Room with high heat density racks cooled by traditional Raised Flooring Cooling.



FEATURES

- Prevent "Air Short Circuit" (Mixing of Cold-Air and Hot-Air)
- Uniform Temperature Across Cabinet Height (within Containment)
- Increased Heat Dissipation and Better Heat Management
- Reduction of Operational Expenditure (OPEX)
- Cost effective for Long Run Performance
- Eliminating Hot Spot Issue

COLD AND HOT AISLE CONTAINMENT

- **GENERAL DISCLAIMER**

- There are a number of factors that could cause actual results and Developments to differ materially from those expressed or implied in the predictive statements. Therefore, such information is provided for references purpose only and constitutes neither and offer nor an acceptance. Information may change at any time without notices.