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Modular Data Center Solution



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About Vericom

Vericom Global Solutions is a leading provider of network infrastructure and connectivity solutions for enterprise, government, and operator markets. With global headquarters in Knoxville, TN, we provide best-in-class solutions to more than 30 countries worldwide.

We deliver a comprehensive product portfolio designed to meet Vericom customers' network infrastructure needs in an increasingly connected world through our global network of distributors and integrators.

In addition to Vericom innovative design, engineering and manufacturing capabilities, we are the relationship of choice for a diverse family of clients worldwide who are confident in our ability to consistently perform to a standard of excellence that is without equal in the industries we serve.



Industry Compliant Manufacturing Capabilities

- 5+ Major Manufacturing Facilities (3.5M sq. ft)
- State-of-art Research and Development Center
- 4k+ Employees
- EC/ETL Verified
- ISO Certified
- UL Listed

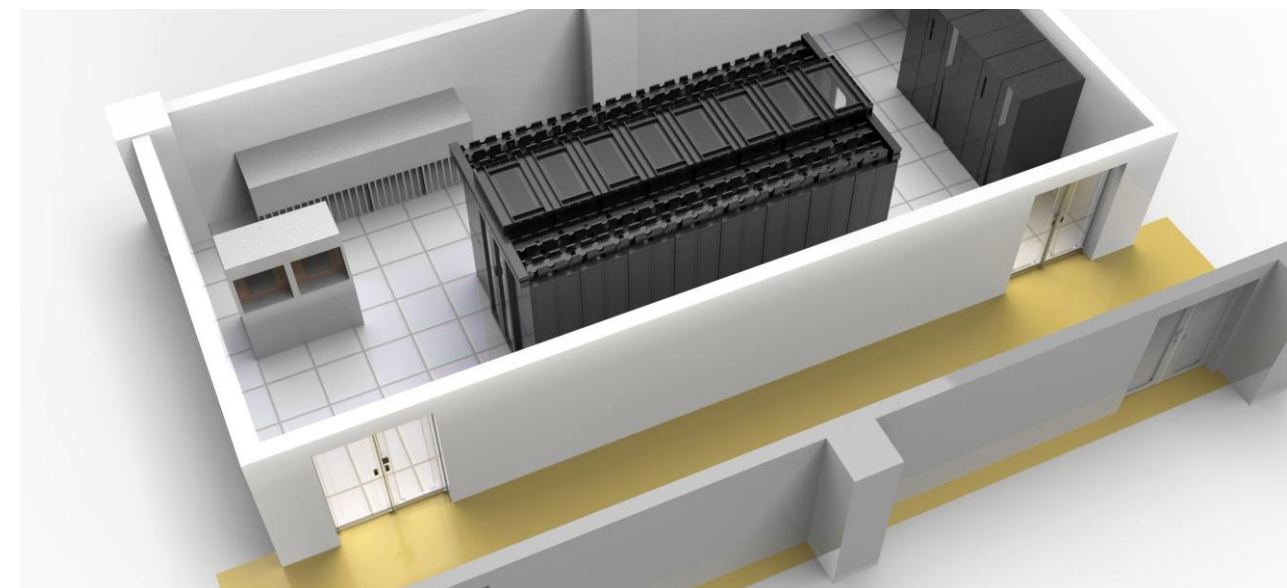


Custom Configuration-Build To Suit

- Pre-installation Support and Solutions
- Data Center Design
- On-site Installation Support
- Technical Training and Service



Vericom Aisle Containment Solution



Vericom Aisle Containment Solution Offers Increase In Energy Efficiency

With the growths of explosive data processing, Data Center constructions have to consider multiple and competing demands: reducing operational costs, improving energy efficiency, and optimizing available capacity, while sustaining a low total cost.

To meet these demands while minimizing the risk to service levels, Vericom has created an outstanding modular solution to help you overcome the various challenges associated with data centers, such as increasing cabinet densities, budgetary constraints, lack of airflow management, and high energy costs. We offer you a turnkey solution that provides maximum flexibility in design, operation, and upgrades.

The Vericom Aisle Containment Solution can support single or double rows, as well as multiple hot and cold channels, which effectively eliminates the mixing of hot and cold air to maximize energy efficiency and lower operating costs. A single containment module can support up to 40 cabinets, including IT cabinets, network cabinets, PDCs (an integrated UPS cabinet), and battery cabinets, as well as air conditioners, skylights, doors, cable troughs, and other necessary components. Power density of a single cabinet can range from 1 kw to 20kw.

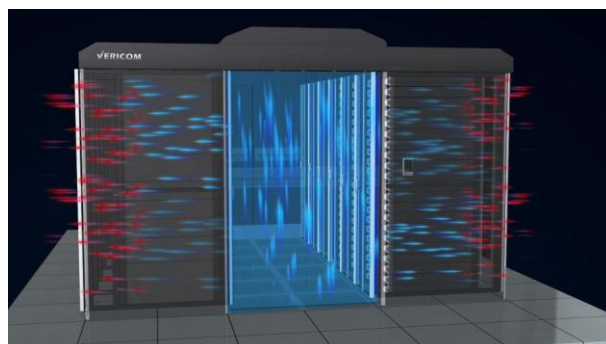
Ideally Suited For

- Data centers with raised floor utilizing underfloor cooling methodology
- Data centers with non-raised floor utilizing row based air-conditioning system
- Data centers with hybrid cooling architecture
- Flexible deployment with existing data center infrastructure retrofitting or new construction
- Flexible installation and fixture, supporting most neutral racks from other vendors
- Retractable roof panels with fire system integration capability, which opens automatically to allow suppression gas to enter the aisle containment

Cooling Methodologies of Vericom Aisle Containment Solution

Cold Aisle configuration for equipment rows is considered to be the best practice for separating hot and cold air. The goal is to achieve energy conservation and lower cooling cost by managing air flow.

The Vericom's Aisle Containment Solution offers a physical barrier and improved sealing to isolate hot air and from cold air, and prevents them from mixing during to recirculation, and accordingly provide superior energy savings compared to competitive offerings.

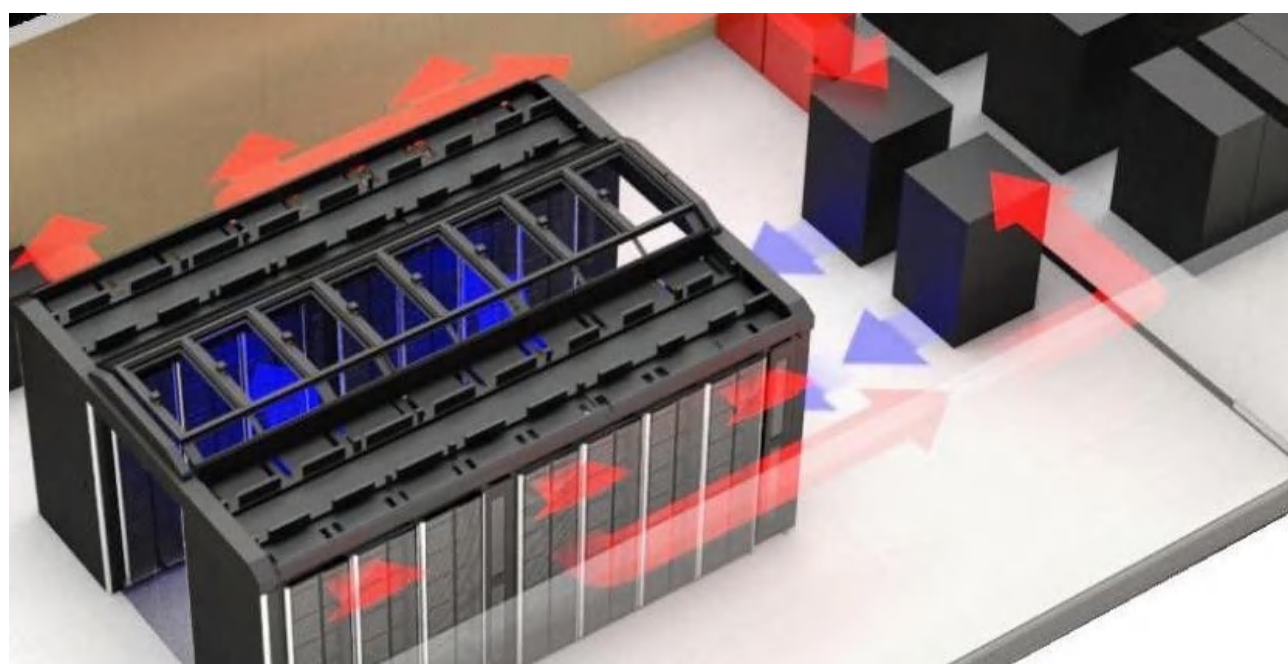


Vericom Cold Aisle Containment Solution Offers a Flexible Approach While Utilizing Hybrid Cooling Methodologies

It is always a challenge for retrofitting of an existing data center where air mixing is high and a demand for aisle separation arises. Data centers can be designed with a mix of cooling methodologies, such as row and room based cooling, to address various equipment densities.

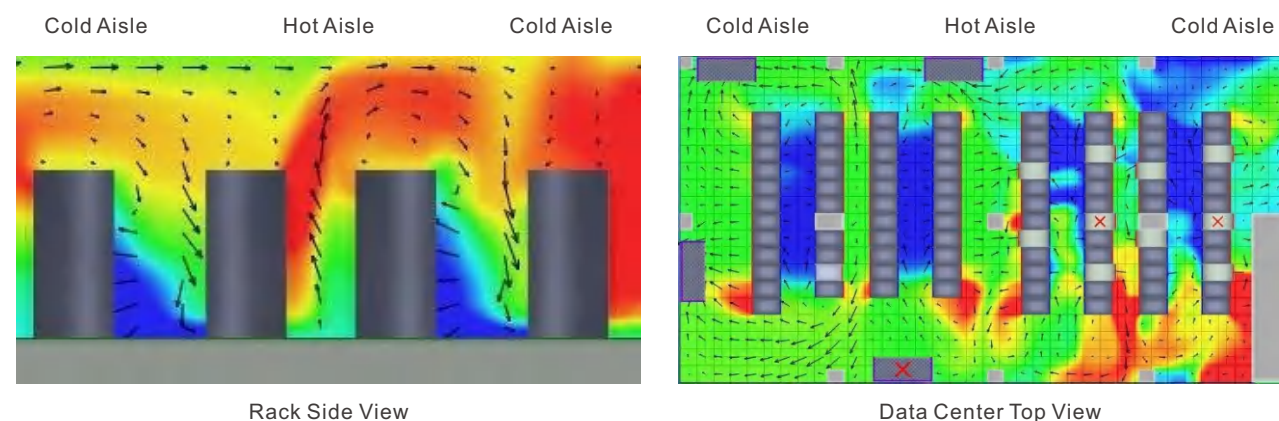
Room and row based cooling systems take the approach of providing cold air near the equipment and capturing the hot air return. Cold Aisle Containment Solution supports both of these cooling methodologies and provides good containment of cold air within the aisle.

The Vericom Cold Aisle Containment Solution seals the cold aisle, so the cold air is not mixed with the hot air in the data center, which is typically accomplished by using roof skylights above the aisle between adjoining racks and installing doors at the two ends of the aisle.



CFD Analysis of A Traditional Data Center Vs A Data Center With Cold Aisle Containment

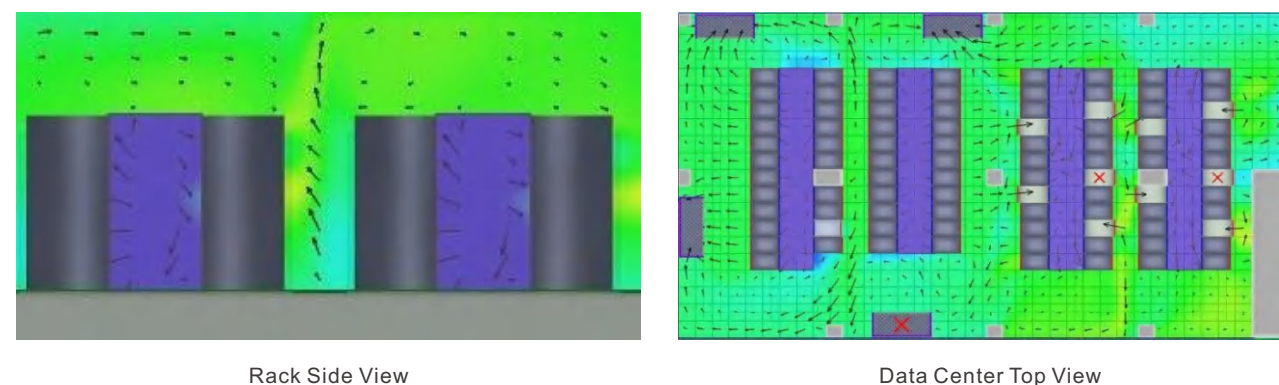
Traditional Data Center without Cold Aisle Containment



Problem:

Temperature billboard for a traditional data center without cold aisle containment shows a number of hot spots, cold and hot air mixing, variation in rack inlet temperature, high inlet temperature for equipment mounted on top of racks, and higher exhaust temperatures. This results in wastage of cold air, a lower return temperature for CRAC units, higher inlet temperature for equipment (thus leading to higher exhaust hot air), and an increase in equipment power consumption due to higher fan speed and inefficient performance by CRACs.

Data Center with Cold Aisle Containment



Solution:

Temperature bill board for a data center with cold aisle containment shows a significant decrease in hot exhaust air from equipment while receiving lower temperatures in the cold aisle. Hot and cold air mixing has been all but eliminated, allowing the cold aisle to maintain the required temperature and reducing energy usage.

Vericom Modular Data Center Solutions

Intelligent Infrastructure Management Platform

- Detection module collects key information on temperature, humidity, smoke, magnetic door, water ingress, UPS, power distribution level, air conditioning provides a unified management and centralized monitoring of resources;
- No need for physical checks and improve overall management efficiency and reduces operational costs.

Cold Aisle Roof System

- Comprise of side plate, top frame and rotatable roof, linking two cabinets as a single unit;
- The cold aisle can be installed with temperature and smoke sensor, roof controller, electromagnetic switch. During emergency, the rotating roof will open under gravity automatically, ensuring fire extinguishing gas can enter the aisle.

Structured Cabling System



Cold Aisle Door System

- Two options are available for hermitically sealed doors-manual operated or electric door depending on customer requirements;
- Door panel are made of tempered glass, guarantee the visibility of the aisle as well as meeting the requirements of fire emergencies;

Cooling System



- Using a modular approach, precision air conditioning are grouped together with equipment cabinets to form a cold (hot) aisle, ensuring cold and hot air isolation;
- Horizontal airflow cooling design is suitable for non-raised or raised floors.

Power Supply Distribution System

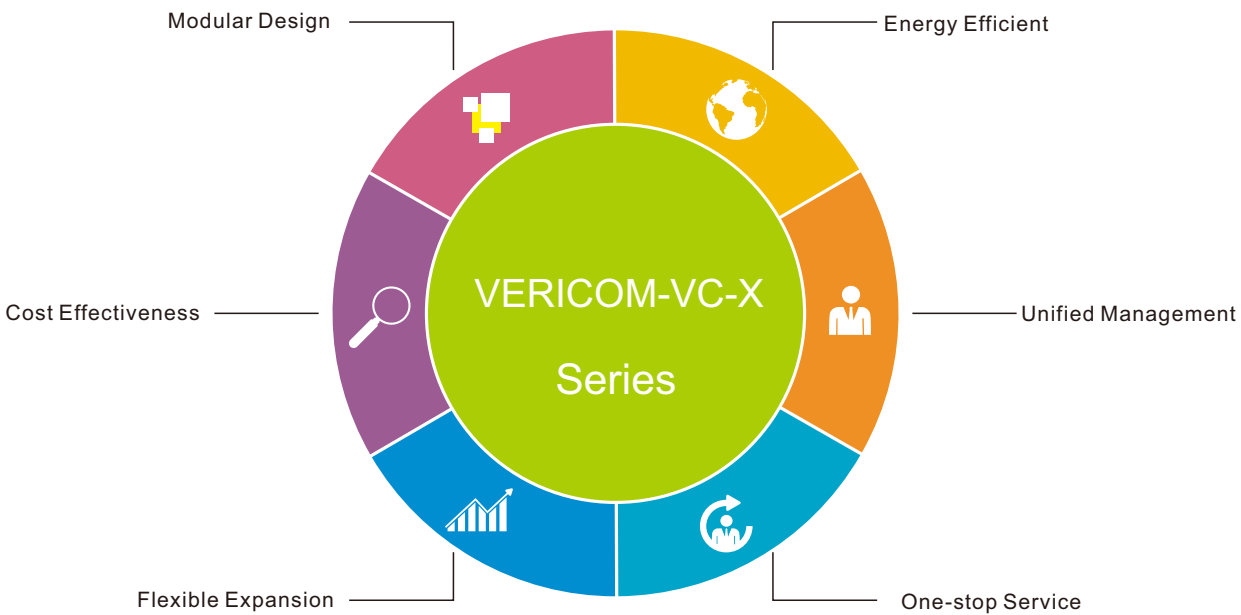
- Modular power distribution cabinets, power distribution system with spare capacities;
- UPS provides uninterrupted power supply to the modular data center and can be customized according to customer requirements.

Cabinet System



- 19-inch standard rack fitted with 70% perforated front and back doors;
- Carrying Capacity: Static load up to 1500 kg. Cabinets can be factory-installed before delivery to facilitate rapid deployment at site.

Features of Modular Data Center Solution



◎Modular Design

Based on a flexible modular architecture, customer can select from a choice of different modular systems such as cabling system, power distribution, cooling systems, centralized monitoring solution to meet their application requirements. Factory prefabricated parts can allow for, rapid deployment over a wide range of applications; reducing the difficulty as well as the time required for construction.

◎Energy Efficient

Cold / hot aisles solution can effectively isolate crossing of cold and hot air flow and optimize cooling can dramatically reduce energy consumption, conforming to the requirements of the modern green datacenter requirements. Energy consumption are reduced as much as 30 percent when compared with traditional cooling for data centers.

◎Flexible Expansion

Modular components using standard unified interface allows for easy expansion or migration in the future. You can now choose to between the option of upgrading with the cabinet as a whole unit or partial upgrade via our modular modules depending on your requirements.

◎Unified Management

Unified monitoring and management of power, environment, security and other aspects of the data centre infrastructure.

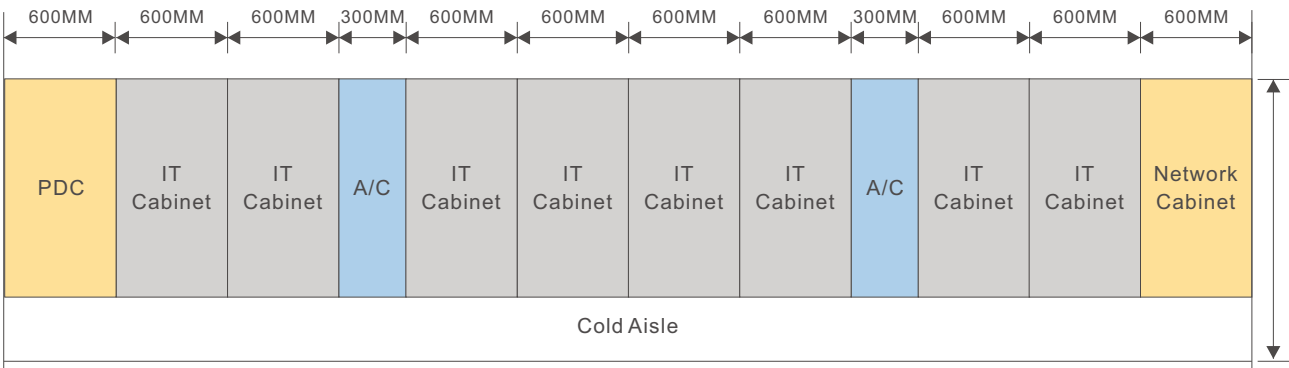
◎Cost Effectiveness

Cost effective design, lower cost of deployment and maintenance.

◎One-stop Service

Whole solution design, factory complete pre-installation, on site rapid assembling and following maintenance.

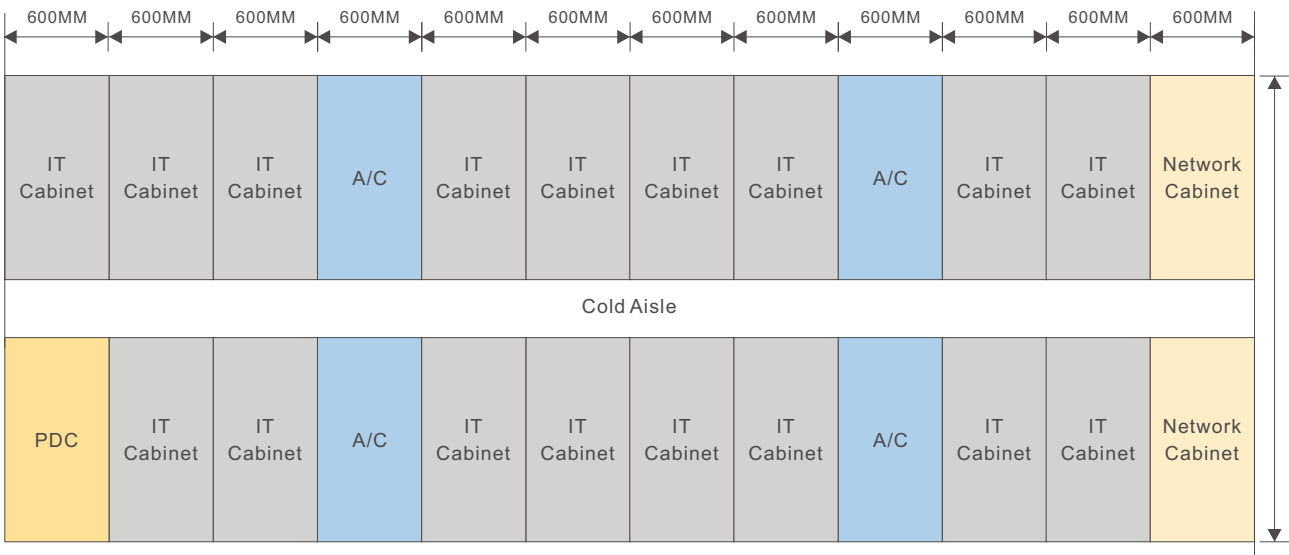
Single Row Aisle Containment Configuration



Features & Benefits

- Sliding entrance doors at both ends
- Active roof skylight integrated with fire suppression system
- Designed for continuous rack row without any obstruction, opening, missing rack or columns
- Easy to install and integrate with most neutral racks from other vendors
- Access control feature with IC card, fingerprint, and password

Double Row Aisle Containment Configuration



Features & Benefits

- Sliding entrance door at both ends
- Active roof skylight integrated with fire suppression system
- Both sides attach to rack cabinet and require uniform rack height, width and row length
- Designed for continuous rack row without any obstruction, opening, missing rack or columns
- Easy to install and integrate with most neutral racks from other vendors
- Access control feature with IC card, fingerprint, and password

VC5 Data Center Cabinets

Vericom VC5 Cabinets provide a customizable solution for data center build-outs, network rooms, or IT closets. The feature-rich, robust design can be shipped flat packed or as a custom-configured solution that is fully assembled with Vericom accessories pre-installed.

Vericom VC5 Cabinets offer multiple size combinations and abundant accessories to meet your specific needs.



Compliance

- ANSI/EIA RS-310D
- IEC60297-2
- DIN41494; Part 1
- DIN41494; Part 7

LOAD CAPACITY

RAISED HEIGHT

Benefits

Security & Protection

- Locking doors and side panels prevent unauthorized access to equipment
- Two pairs of adjustable 19" EIA rails provide a stable mounting structure

Flexibility

- Vertical zero-U PDU lacing panel pre-installed in rear corners for PDU mounting and easy cable management
- Multiple cable entry options provide greater flexibility during installation
- Removable and lockable half height side panels

Multi-Use

- Adaptable for use in data center build outs, computer rooms or data closets

Key Features

- Recessed casters combine convenient mobility with minimal added height to provide additional stability
- Brush cable entry slots at front and back of top panel and sliding panels on bottom

VC5 Data Center Cabinets

Specifications

Standard Configuration of Front & Rear Door	Removable, Reversible & Lockable Opens Full 180°, 2 Point Latch
Side Panels	Half Height, Removable (2 Per Side)
Top Panel	(1) Removable Vented Panel for Optional Fan Unit (2) Brush Cable Managers
Bottom Panel	Sliding / Removable Panels
Equipment Support	2 Pair of Mounting Rails 1.75" RU Spacing, Marked and Numbered on Rails 19" W, EIA-310-D Universal Hole Spacing

Grounding	14 AWG Ground Wire Connects Doors and Side Panels to Cabinet Frame
Static Loading Capacity	1363kgs/3000 lbs.
Included Accessories	(50) Sets of M6 Screws & Cage Nuts (4) Adjustable Leveling Feet (4) Casters (1) Grounding Kits (2) Keys

Definition of Code

WIDTH	600mm	6	VC5	-	6	2	42	-	A	B	V	1	F	-	0	0	0	Without RGB lights
	800mm	8															2	With RGB lights
DEPTH	1000mm	0	A	B	V	1	F	-	0	0	0	Without cabinet side panels						
	1100mm	1									2	With cabinet side panels						
	1200mm	2																
HEIGHT	42U	42	A	Assembled		PACK												
	47U	47		F	Flat Packed													
TOP	Vented	V	0	White RAL7035		COLOR												
	Solid	S		1	Black RAL9005													
					2		White RAL9002											

Ordering Information

Part No.	Capacity (U)	Height mm[inch]	Width mm[inch]	Depth mm[inch]
VC5-6042-■■■■■■■	42	2000[78.75]	600[23.62]	1000[39.37]
VC5-6047-■■■■■■■	47	2220[87.40]		
VC5-6142-■■■■■■■	42	2000[78.75]		1100[43.31]
VC5-6147-■■■■■■■	47	2220[87.40]		
VC5-6242-■■■■■■■	42	2000[78.75]		1200[47.24]
VC5-6247-■■■■■■■	47	2220[87.40]		
VC5-8042-■■■■■■■	42	2000[78.75]	800[31.50]	1000[39.37]
VC5-8047-■■■■■■■	47	2220[87.40]		
VC5-8142-■■■■■■■	42	2000[78.75]		1100[43.31]
VC5-8147-■■■■■■■	47	2220[87.40]		
VC5-8242-■■■■■■■	42	2000[78.75]		1200[47.24]
VC5-8247-■■■■■■■	47	2220[87.40]		
VC5SS-■■■■(Side Panel)	/	/	/	Same as cabinet depth

Note: Not all the available part No. are listed. For more information, please contact your Vericom Representative.

Skylights

End Roof Skylight



Arc Type With Flat Cable Trough



Flat Type With M-shape Cable Trough

Active Roof Skylight (Flat Type)



Single Glass Panel



Split Glass Panel

Active Roof Skylight (Arc Type)



Single Glass Panel



Split Glass Panel

Vericom Skylight Product Guide

- Cold aisle containment roof skylight panels for vendor neutral racks
- Tempered glass in center enclosed within powder coated steel frames
- Skylight available in flat and arc designs
- Fixed end roof skylight with optional availability of cable troughs
- Active skylight for center aisle containment automatically opens in case of fire via an electromagnetic lock, which is seamlessly integrated with existing room-based fire suppression system
- No plumbing extension or extra work required in areas with existing fire suppression system
- Active skylight available with single or split glass panel
- LED strip lighting within the containment provides sufficient light for access and maintenance
- Optional infrared motion sensor based lighting control
- Quick deployment and easy changes/moves

Material

- High Quality Cold Rolled Steel Plate

Aisle Width

- 1200mm Width
- 1800mm Width

Finish

- RAL9005 Black Powder Coated Finish

Rack Size

- 600mm Width
- 800mm Width

Skylights

Ordering Information

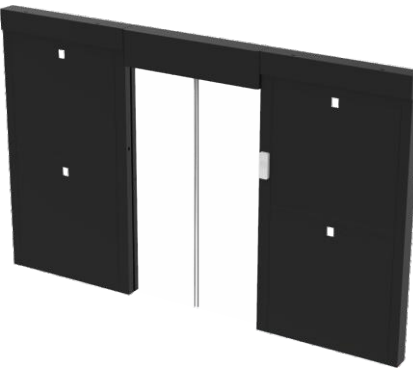
Part No.	Description	Supporting Panel Height mm[inch]	Cabinet Width mm[inch]	Aisle Width mm[inch]	Roof Skylight Type
VR06-3612X-1	End Roof Skylight with M-shape Cable Trough	300[11.81]	600[23.62]	1200[47.24]	Flat
VR06-3612X-2					Arc
VR06-3812X-1			800[31.50]	1200[47.24]	Flat
VR06-3812X-2					Arc
VR06-3612G-1	End Roof Skylight with Flat Cable Trough	300[11.81]	600[23.62]	1200[47.24]	Flat
VR06-3612G-2					Arc
VR06-3812G-1			800[31.50]	1200[47.24]	Flat
VR06-3812G-2					Arc
VR06-3612S-1	Active Roof Skylight with Single Glass Panel	300[11.81]	600[23.62]	1200[47.24]	Flat
VR06-3612S-2					Arc
VR06-3812S-1			800[31.50]	1200[47.24]	Flat
VR06-3812S-2					Arc
VR06-3612D-1	Active Roof Skylight with Split Glass Panel	300[11.81]	600[23.62]	1200[47.24]	Flat
VR06-3612D-2					Arc

Note: Not all the available part No. are listed. For more information, please contact your Vericom Representative.

Sliding Doors



Single Row



Double Row

Vericom Sliding Doors Product Guide

- Motorized cold aisle containment sliding access door
- Provides easy access with state-of-the-art access control integration
- Suitable for both double and single row cold aisle containment
- Sliding door provides greater concealment with matching material and color of Vericom cabinets to provide unified look
- Automatic door opening and closing
- Brush grommets to provide optimum sealing and preventing leakage of cold air
- Optional access control or push button for exit
- Containment access with IC card, fingerprint and password control
- 12mm thickness tempered glass
- Optional monitoring touch screen
- Infrared sensor on the two sides of door for anti-pinch function
- Quick, convenient and easy installation

Material

- High Quality Cold Rolled Steel Plate

Aisle Type

- Single Row Aisle
- Double Row Aisle

Finish

- RAL9005 Black Powder Coated Finish

Aisle Width

- 1200mm
- 1800mm

Ordering Information

Part No.	Description	Aisle Width mm[inch]	Cabinet Depth mm[inch]	Height mm[inch]	Feature
VR08-121242S-0	Sliding Door for Single Row Aisle Containment	1200[47.24]	1200[47.24]	2000[78.75]	/
VR08-121242S-1				2200[86.62]	Monitoring touch screen position reserved
VR08-121247S-0					/
VR08-121247S-1				Monitoring touch screen position reserved	
VR08-121242D-0	Sliding Door for Double Row Aisle Containment	1200[47.24]	1200[47.24]	2000[78.75]	/
VR08-121242D-1				2200[86.62]	Monitoring touch screen position reserved
VR08-121247D-0					/
VR08-121247D-1				Monitoring touch screen position reserved	

Note: Not all the available part No. are listed. For more information, please contact your Vericom Representative.

Cable Trough / Rear Cover Plate / Single Row Aisle Panel



Cable Trough



Rear Cover Plate

Vericom Cable Trough Product Guide

- Cable troughs are provided with tools and accessories which allow convenient and quick installation
- Convenient installation and provide ease of cable installation, routing and maintenance
- Rear cover plates are used for better protection of cables and structure appearance

Material

- High Quality Cold Rolled Steel Plate

Size

- 300/600/800mm Length

Finish

- RAL9005 Black Powder Coated Finish

Ordering Information

Part No.	Description	Length mm[inch]	Width mm[inch]	Height mm[inch]
VR07-M3	Cable Trough	300[11.81]	320[12.60]	200[7.87]
VR07-M6		600[23.62]		
VR07-M8		800[31.50]		
VR07-3	Rear Cover Plate	300[11.81]	240[9.45]	40[1.57]
VR07-6		600[23.62]		
VR07-8		800[31.50]		



Single Row Aisle Panel

Vericom Single Row Aisle Panel Product Guide

- Suitable for scenarios with only single row aisle
- Tempered glass enclosed in powder coated steel frame
- Provide support for cabinet roof skylight
- Support sliding glass door for containment access

Material

- High Quality Cold Rolled Steel Plate

Width

- 300/600/800mm Width

Finish

- RAL9005 Black Powder Coated Finish

Rack Size

- 42U & 47U

Ordering Information

Part No.	Description	Width mm[inch]	Height mm[inch]
VR09-847	Single Row Cold Aisle Panel	800[31.50]	2200[86.61]
VR09-647		600[23.62]	
VR09-347		300[11.81]	
VR09-842	Single Row Cold Aisle Panel	800[31.50]	2000[78.75]
VR09-642		600[23.62]	
VR09-342		300[11.81]	

Power Distribution Box / Gang Clips



Power Distribution Box

Vericom Power Distribution Box Product Guide

Distribution acquisition box mainly converts the AC power to the low-voltage DC power, and finally offer power supply and control to the DC equipment or components within a cold aisle or modular data center.

- Voltage transformation: convert AC to DC, for example, 12V DC.
- Power supply: power supply for the DC equipment or components, including electromagnetic lock, LED strip, lighting, access control components, etc.
- Control: control the DC equipment or components, for example, power on and off for electromagnetic lock and LED strip.
- Linkage control: link with other external signals, for example, link with the fire control system to control the electromagnetic lock to open the active skylight, to ensure that the fire-extinguishing gas can enter the aisle.

Material

- High Quality Cold Rolled Steel Plate

Finish

- RAL9005 Black Powder Coated Finish

Input Voltage

- 88-264V AC

Output Voltage

- 12V DC

Ordering Information

Part No.	Description	Aisle Width mm[inch]	Cabinet Depth mm[inch]	Height mm[inch]	Feature
VR10-12-320W-V	Power Distribution Box	482[18.98]	300[11.81]	88[3.46]	12V switching power supply (320W, dual power supply), 12-position terminal board, active fire signal 24V DC.

Note: Not all the available part No. are listed. For more information, please contact your Vericom Representative.



Gang Clips

Vericom offers this 4 pack of ganging clips that are designed for Server and Network Cabinets.

Ordering Information

Part No.	Description	Feature
RAGAN04	Ganging Clips, 4 Pack	VC5 Server Cabinets

Not all available items listed are pictured. For more information contact your Vericom Representative.

Power Supply and Distribution System



Modular UPS

Modular UPS

- Digital control, high system stability, self protection and fault diagnosis ability Standard 19" rack mount (Customized by the actual demand) and perfect match with computer room, to save space.
- Modular design available in capacity of 6 KVA/10 KVA/15 KVA/20 KVA
- System is composed of 1 to 10 modules in parallel, maximum power 200 KVA, which can be customized according to actual requirements
- Ease of management, LCD display panel, provide maintenance



PDM

Precise Distribution

- Intelligent power distribution cabinets, modular, high reliability, power insulation, all in one Power monitoring system, large screen LCD touchscreen and accurate sensor modules for detection potential safety hazard providing early detection and risk aversion made possible with accurate data.
- Standard 19" cabinet with good compatibility and stable structure
- Ergonomic design, front management access, front or rear side maintenance with upload capability connected with central



PDU

PDU

- Standard PDU with input current 10A/16A/32A, output current 10A/16A. Optional national standard/universal/IEC socket available.
- Intelligent PDU, input current 10A/16A/32A, output current 10A/16A, optional national standard/IEC socket. With the function of current, voltage, power and other parameters monitoring, MODBUS or TCP/IP protocol is optional

Ordering Information

Part No.	Description	Feature
DPF01-200A	Integrated UPS Distribution Cabinet	General input power supply: 1*200A/3P. Including 40 KVA UPS host with 2 pcs 20KVA power modules and UPS/IT branch/air conditioner and other breakers.
VPM32A7-20S4N/5L-T20	PDU	Rating: 32A 8KW/Outp250V ut: 20 *10A C13 and 4 *16A C19 sockets With IP management interface
VPM32A7-20S4N/5R-T20		

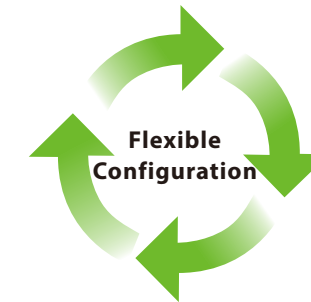
Not all available items listed are pictured. For more information contact your Vericom Representative.

Cooling System

Air Cooling Row Based Cooling



Air Cooling Room Based Cooling



Room Precision Air Conditioning

- Room precision air conditioning, range from 25 KW to 150 KW, single machine can be extended to more than 200 KW
- Modular structure design covers smaller area, modular analysis
- Various refrigeration option, with the advanced and reliable intelligent control system
- Personalized tailored, flexible expand space, meet the personalized requirements

Row Level Precision Air Conditioning

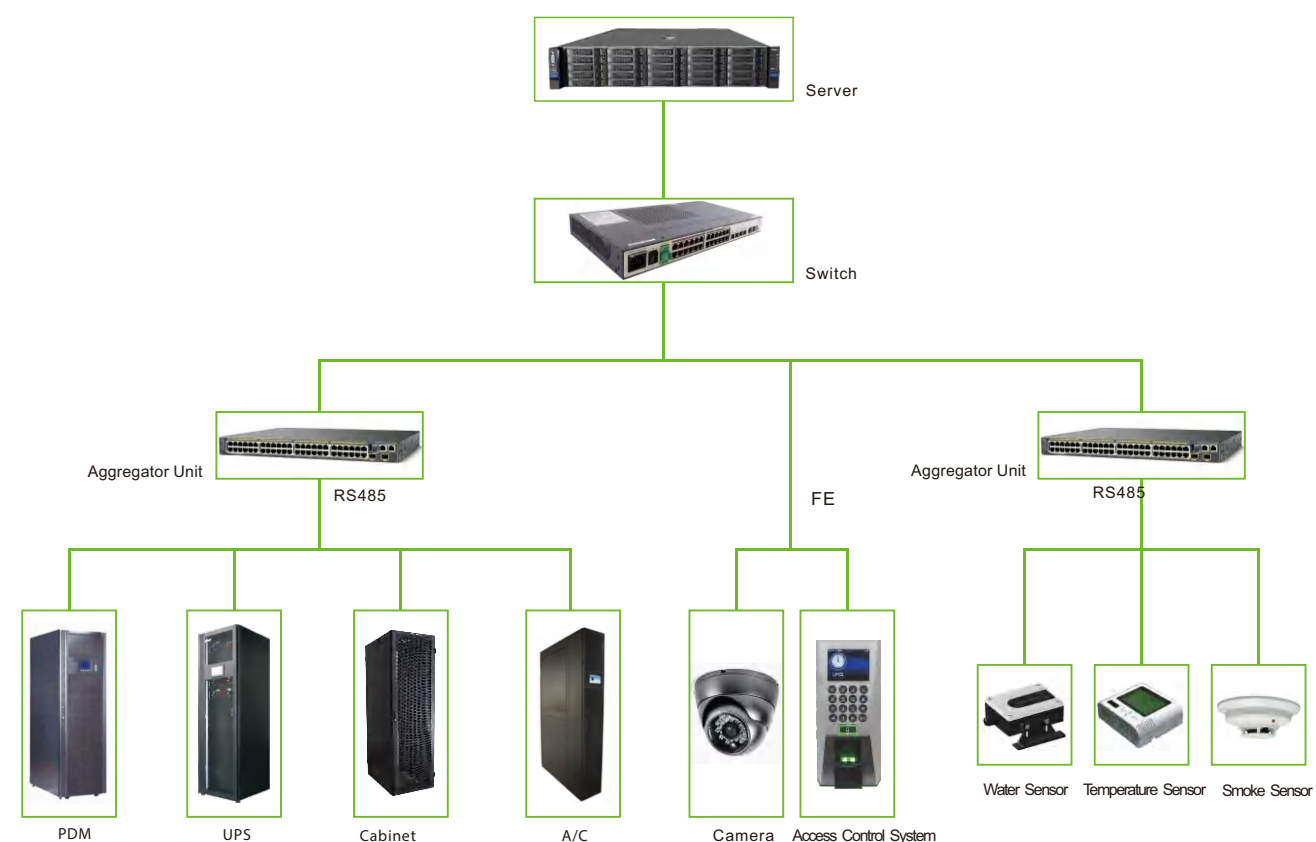
- Solve the problem of high heat density data center cooling, close to the heat source design, shorten the air way and prevent cold and heat overlap
- Reasonably accurate flow control, refrigerating capacity loss minimum, refrigeration system planning is more reasonable
- Compatible with multiple sets of temperature sensor, real-time monitoring of heat load change, safe and reliable, energy conservation and environmental protection
- Space application more flexible and compatible without elevated anti-static floor applications
- According to heat load changes, dynamic coordination unit refrigerating capacity and output of air volume output reality and real-time matching load change

Ordering Information

Part No.	Description	Feature
VEK25-A3FQP2-S	Row-Air-Cooled Precision A/C	Refrigeration capacity 25.8kW, 380V/50Hz, Dimension W300*D1200*H2000mm, Heating and humidification
VEK40-A3FQP2-S	Row-Air-Cooled Precision A/C	Refrigeration capacity 40kW, 380V/50Hz, Dimension W600*D1200*H2000mm, Heating and humidification

Not all available items listed are pictured. For more information contact your Vericom Representative.

Continuous monitoring of key parameters, real-time detection, and site video feeds provide an efficient and effective way to identify faults and isolate problems quickly and can avoid lengthy downtime that can be both expensive and disastrous.



Ordering Information

Part No.	Description	Feature
/	Data Center Infrastructure Management System	Included Server and Host, Sensors and Collector, Alarm Equipment, Collector Mounting Box, Software Management,etc.

Not all available items listed are pictured. For more information contact your Vericom Representative.

Notes

This image shows a full page of a handwriting practice worksheet. It consists of multiple sets of three horizontal lines each, spanning the width of the page. Each set includes a solid top line, a dashed middle line, and a solid bottom line, providing a guide for letter height and placement. The lines are evenly spaced and extend across the entire width of the document.