Net-Access™ Vertical Exhaust System (VES)

PANDUIT®

SPECIFICATION SHEET

specifications

Vertical exhaust system shall channel heat from server exhaust directly to the data center return plenum. The system shall increase CRAH unit cooling efficiency and lower operating expenses. The vertical exhaust system shall leverage existing server fans to direct the flow of hot exhaust air, reducing energy costs and noise levels. The system shall be passive, containing no moving parts resulting in a more energy efficient solution than comparable forced-air options. The vertical exhaust system shall address high heat loads per cabinet to enable dense server applications and eliminate data center hot spots. The vertical exhaust system shall be modular, capable of being added without disrupting existing in-cabinet equipment and cabling to enable a migration path.[1]

technical information

Dimensions:	CVED32:	84.0"H x 31.4"W x 6.5"D (2134mm x 798mm x 165mm)
	CVED32VE:	42.0 – 70.0"H x 31.5"W x 18.0"D (1067mm – 1778mm x 800mm x 457mm)
	CVED32VES:	20.0 - 36.0"H x 31.5"W x 18.0"D (508mm – 914mm x 800mm x 457mm)

key features and benefits

Transfers input heat load directly to return plenum to reduce the number of CRAH units	Lowers energy costs up to 25% and capital construction expenditures for increased network reliability and lowest cost of ownership
Prevents hot spots and allows installation of high-density server cabinets close together in new builds or existing data centers	Reduces the need for extra real estate and additional CRAH units for increased data center cooling
Works with leading server suppliers (HP, IBM, Dell, Sun) via uniform and proper air flow distribution within servers	Verified interoperability, minimizes risk of overheating for increased network reliability
Contains no moving parts to passively direct the heated air out of the data center	Eliminates acoustical noise and failure points for increased network reliability
Reduces the need for flow balancing in raised floor and return plenums	Minimizes local hot spots within the data center and improves CPU/network reliability
Modular design enables replacement to an existing door on a Panduit server cabinet	Eliminates the requirement to replace cabinets and existing infrastructure for lower capital expenditures
Infinitely adjustable within specified range of vertical exhaust system	Allows for variable ceiling heights and ease of of installation

applications

Net-Access™ Vertical Exhaust Server Cabinets optimize data center airflow for a highly efficient passive thermal management solution by channeling heat from the cabinet directly to the overhead ceiling return plenum increasing cooling efficiency and significantly lowering operating expenses. This passive exhaust system removes heated air without additional moving parts and enables increased server densities by preventing hot and cold air mixing and eliminating hot spots. The vertical exhaust system can be utilized during an initial installation or can be added when required as heat densities increase.

[1]Proper clearance for air delivery and removal must be maintained to and from the VES cabinet.

Net-Access™ Vertical Exhaust System Kits	
Vertical extender:	CVED32
Variable duct 42-70" (1068mm-1778mm):	CVED32VE
Variable short duct 20-36" (508mm-914mm):	CVED32VES

Net-Access™ Server Cabinet (CS Family)*	
Server cabinet with side panels:	CS1
Server cabinet without side panels:	CS2
Server cabinet without side panels or doors:	CS3

Net-Access™ Cabinet Accessories	
Single hinge door:	CNDSH
Solid side panel:	CNPS
Bracket to vertically mount 19" equipment:	CVPPB
End mount slack spool:	CNSPE
Center mount slack spool:	CNSPCA
Set of 4 casters:	CNCSTR
POU mounting bracket:	CVPDUB

*For additional information on Net-Access™ Cabinets, refer to brochure SA-RKCB16.

Net-Access™ Vertical Exhaust System (VES)

Innovative Net-Access™ Vertical Exhaust System channels heat from server exhaust directly to the data center return plenum. By managing heat at the source, the duct increases CRAC unit cooling efficiency and significantly lowers operating expenses.

Delivers Energy Efficiency

The vertical exhaust system leverages existing server fans to direct the flow of hot exhaust air, reducing energy costs and noise levels. This passive system contains no moving parts resulting in a more energy efficient solution than comparable forced-air options.

Enables Increased Server Densities

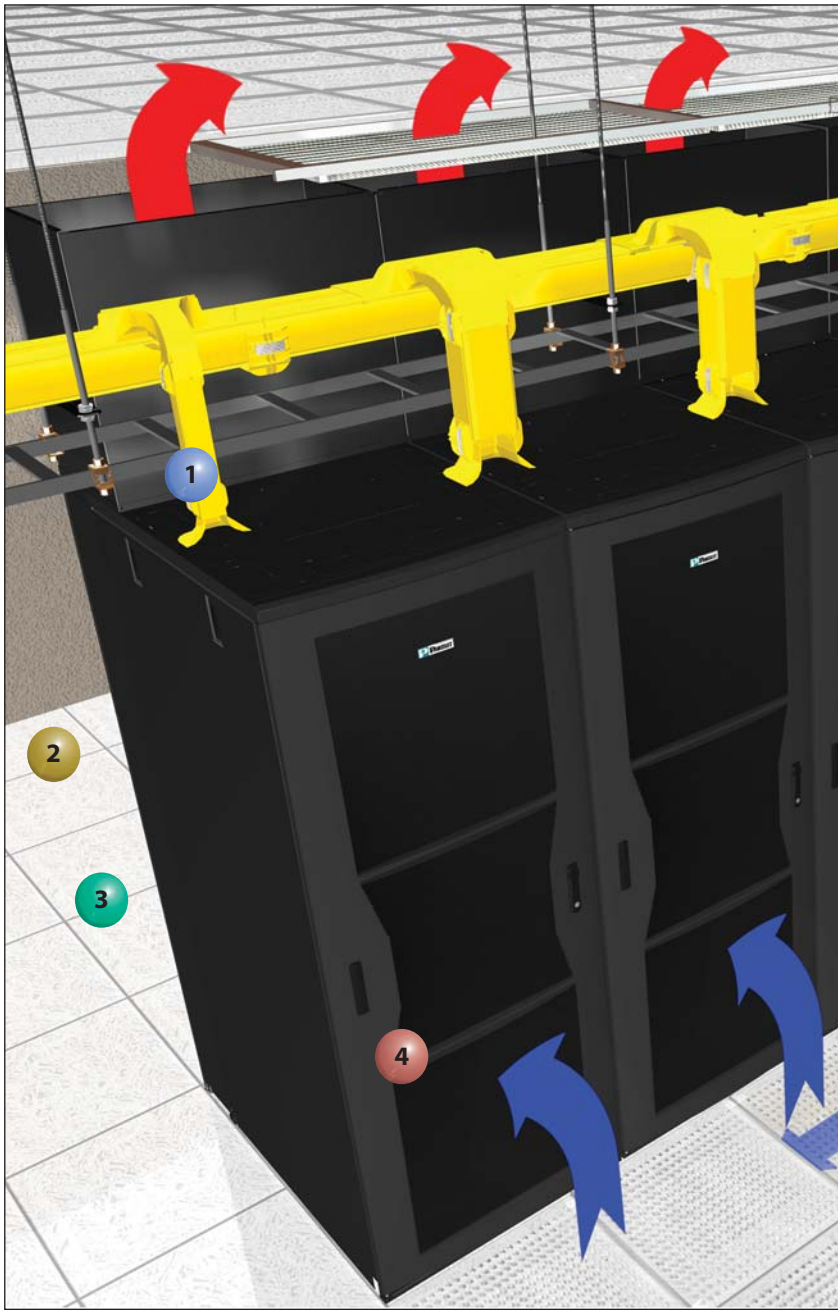
Conventional raised floor cooling systems manage heat loads up to 10 kW/cabinet, but cannot effectively manage high-density server applications. The vertical exhaust system addresses high heat loads per cabinet to enable dense server applications and eliminate data center hot spots.

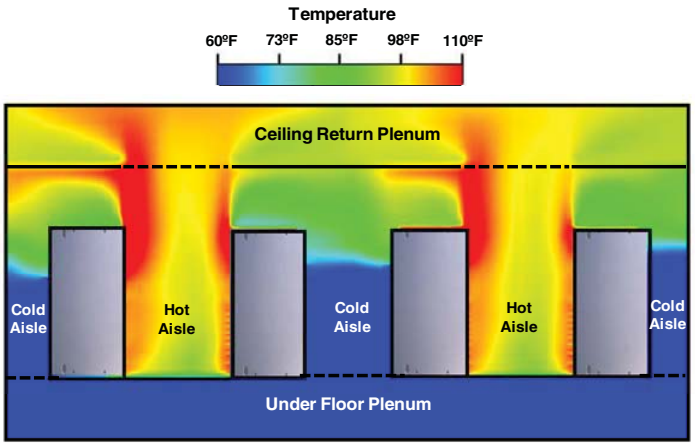
Scales to Meet Thermal Requirements

The modular vertical exhaust system can be added without disrupting existing in-cabinet equipment and cabling to enable a migration path that scales over the life of your data center.

Proven Performance

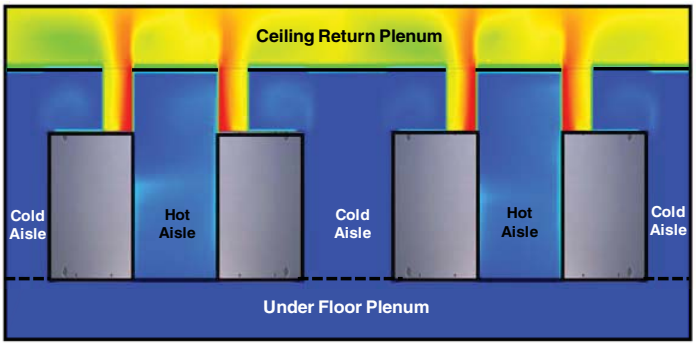
Panduit Laboratories uses CFD modeling and actual lab verification to design and optimize the thermal efficiency of the data center physical infrastructure.





Hot Spots Develop Without VES

In a traditional raised floor with ceiling returns configuration (hot aisle/cold aisle) hot air can recirculate to the front of the enclosure, heating the top portion of the rack.



VES Deployed

The Panduit VES optimizes thermal efficiency by moving hot air through vertical ducts directly to the return plenum.

Net-Access™ Vertical Exhaust System (VES)

1 Net-Access™ Vertical Exhaust Duct

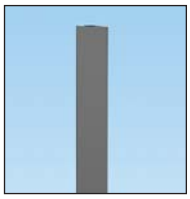
- Directs hot exhaust air to the plenum, enabling greater cooling efficiency

2 Split Rear Door

- Solid split rear door includes keyed swing handles and two point latches
- Seals vertical exhaust system to channel heat

3 Side Panels

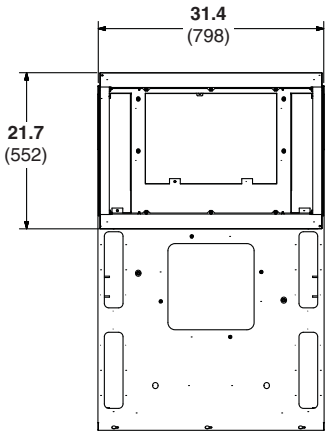
- Removable solid side panels allow shared plenums and higher efficiency in vented cabinets

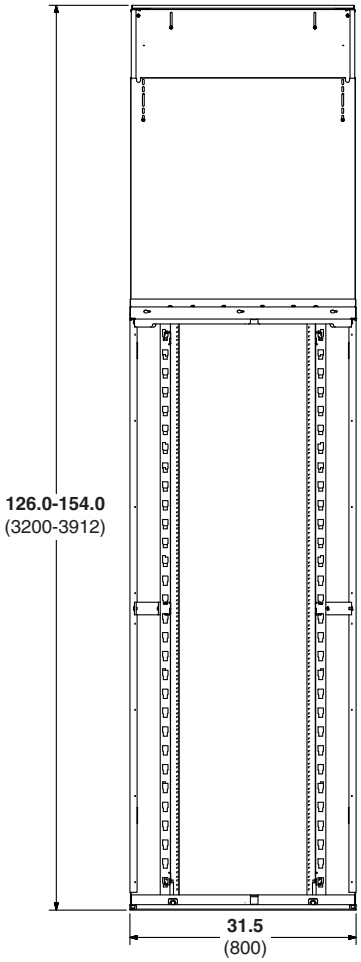


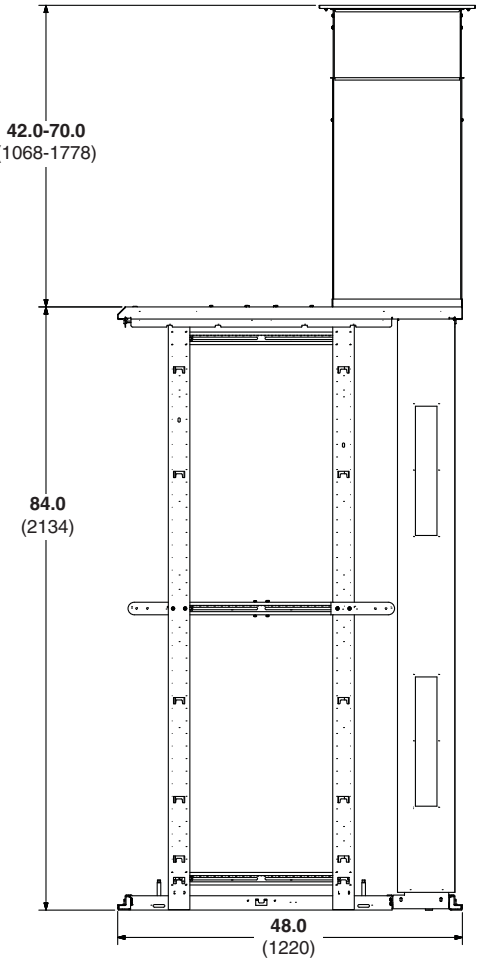
4 Net-Access™ Server Cabinet

- Engineered thermal management
- Superior cable management

Net-Access™ Vertical Exhaust System (VES)







Shown without doors,
side panels and vertical air dams

Dimensions are in inches. [Dimensions in brackets are metric].

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