![Chipsmall logo]

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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# Cabinet Systems

## Energy Efficient Data Center Cabinet and Containment Systems

**PANDUIT**®

Using the Panduit Energy Efficient Data Center Cabinet System, you can greatly improve the energy efficiency of your data center while confidently increasing your kW per cabinet density to increase utilization of your data center space.

## Factors Effecting Efficiency
• Inlet temperatures
• ΔT across heat exchanger
• Capacity utilization

## Efficiency Influencers
• Inlet temperatures
• Set points
• Hot air/cold air leakage and recirculation
• Server/CRAH fan speeds
• kW per cabinet density

## Enabling Improved Efficiency
• Seal every gap for complete separation of cooling and exhaust air
• Direct cold air to where it needs to go
• Contain cooling and exhaust air for maximum cooling capacity efficiency
• Monitor to maintain operational and energy efficiency

# Reduce Operational Costs, Improve Capacity Utilization, and Lower Power Usage Effectiveness (PUE)*

Driven by explosive data processing growth, Data Center Managers face multiple, competing demands: reducing operational costs, improving energy efficiency, and optimizing available capacity, while sustaining a low total cost of ownership.

To meet these demands while minimizing the risk to service levels, the available data center space is often underutilized while being overprovisioned with excess power and cooling capacity regardless of actual IT equipment and space utilization. Today, a typical data center consumes about 3-5kW per cabinet due to power and cooling concerns, while the available cabinet space can accommodate 15kW or more per cabinet if managed effectively.

As energy and construction costs continue to rise, over-provisioning and under-utilization are no longer sustainable. Energy costs related to cooling account for approximately 37% of the overall data center power consumption[1] and are one of the fastest rising data center operational costs[2].

Air Movement 12%

Electricity Transformer UPS 10%

Lighting Etc., 3%

IT Equipment 50%

Cooling 25%
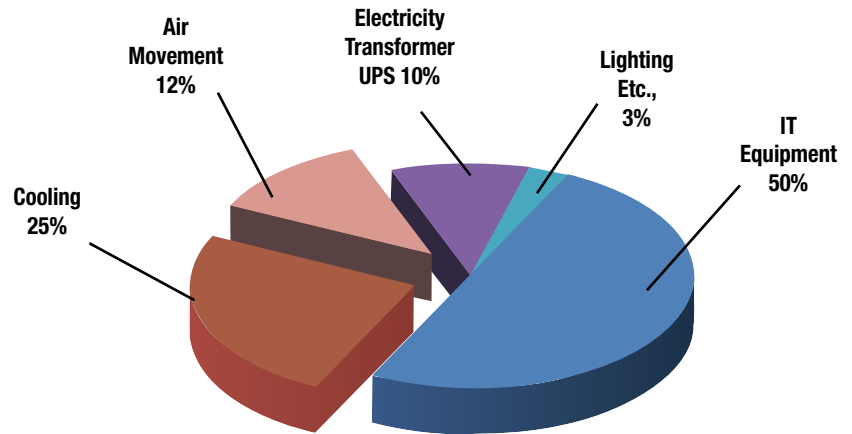
Average data center energy usage allocation[1]

Power and cooling capacity remain the top targets for efficiency improvement and optimization of cooling capacity is often the simplest way for data center operators to realize short term savings and directly impact PUE[3].

Panduit Labs research confirms that raising the supply air temperature in a data center is one of the most effective means to reduce energy consumption. In addition, higher return temperatures enable a higher CRAH ΔT across the heat exchangers allowing the cooling system to operate more efficiently.

A key way to realize this energy efficiency potential and enable maximum capacity utilization is to eliminate the mixing of cold and hot air within the cabinet and at the room level delivering higher return air temperatures to the cooling system and allowing higher room set points.

## 1°C rise in chiller water temperature translates into 3-4% cooling system energy savings[4].

3 How To Measure Energy Consumption In Your Data Center, Gartner Core RAS Research Note G00205428, 8 September 2010
4 Design Considerations for Datacom Equipment Centers ASHRAE 2005, ISBN 1-931862-94-X. Page 138

# Complete Hot Air/Cold Air Separation is Critical to Energy Efficiency and Capacity Utilization
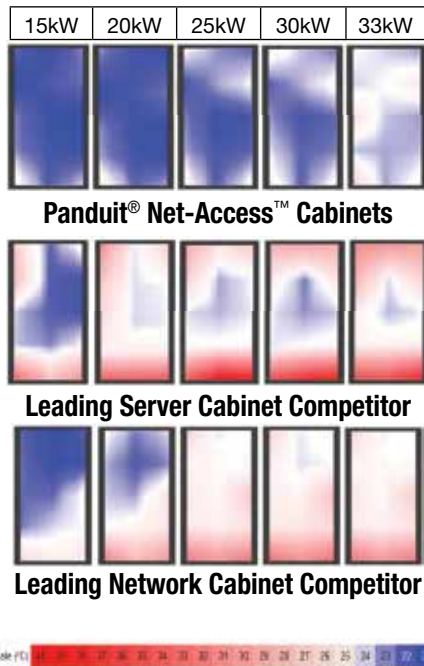
Panduit's Energy Efficient Data Center Cabinet System offers containment, in-cabinet ducting, and improved sealing that optimizes air separation and provide superior energy savings compared to competitive offerings.

Optimized energy efficiency and capacity utilization begin with improved sealing. Even small air leaks within a cabinet will impact data center energy efficiency, regardless of the heat load. Leaks allow hot air recirculation forcing IT equipment inlet fans to work harder and consume more energy, limiting per cabinet power utilization. Panduit® Net-Access™ Cabinets reduce the air leakage typical in competitive cabinets by as much as 80%.

The graphics below illustrate the impact these leaks have on inlet temperatures. By preventing hot air recirculation, a more consistent inlet temperature gradient can be realized across the entire front of the cabinet allowing the data center set point to be raised. This results in reduced cooling expense leading to the ability to increase density power usage per cabinet, and increase available capacity.

> **Improved sealing coupled with containment leads to a $500 annual savings in cooling costs per cabinet for high density applications at $ .10 per kWh at 15kW per cabinet[7].**

### Inlet Air Temperature Gradients at Front of Cabinets Comparison[7]



Panduit® Net-Access™ Cabinets

Leading Server Cabinet Competitor

Leading Network Cabinet Competitor

### Impact of Net-Access™ Cabinet with Net-Contain™ Containment System on Cooling Energy Costs vs. Competition[7]
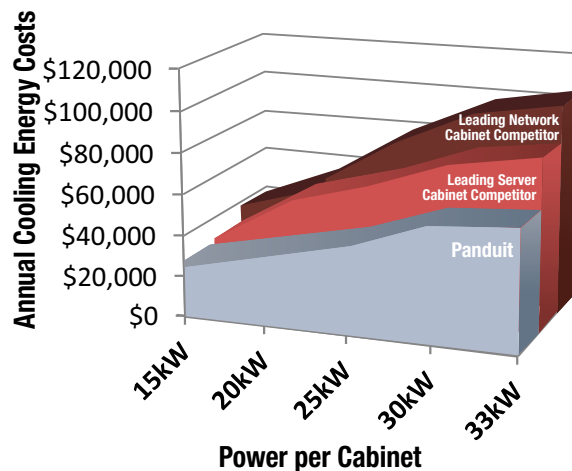


> **Scan to learn how Panduit delivered a 27% energy savings with Energy Efficient Cabinets and Containment.**
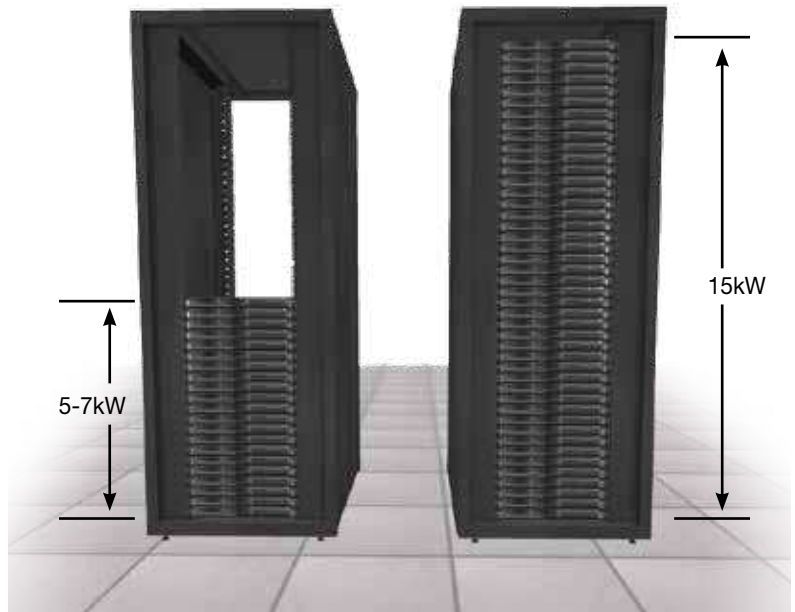
**With improved cabinet *sealing, in-cabinet ducting, containment, and monitoring,* the results show you can significantly increase energy efficiency by raising the set point temperature in the entire data center.**

# Increase Density to Optimize Data Center Capacity

Panduit Net-Access™ PDUs, integrated into thermally optimized Net-Access™ Cabinets, enable data center managers to realize higher capacity utilization and reduced OpEx and CapEx costs.
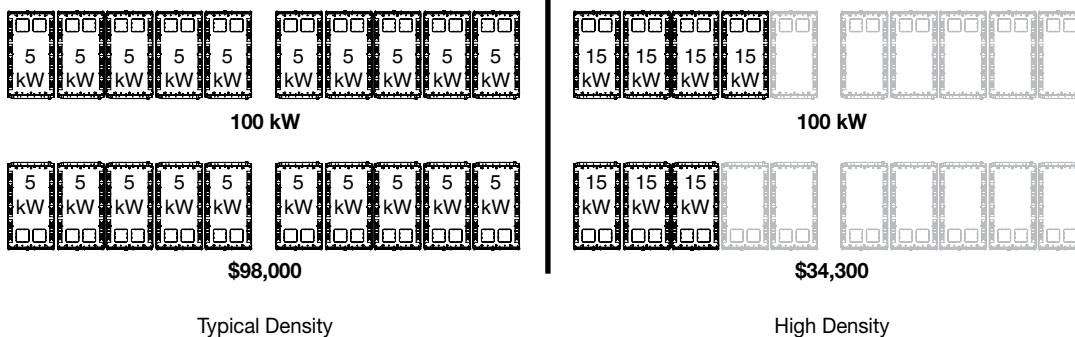
Typical cabinets are loaded to 5 to 7kW on average, which is often far less than the physical space available within the cabinet resulting in overprovisioning or the need to build expensive new whitespace.

**Gartner estimates that data center floor space costs $4,900 per cabinet annually in CapEx and OpEx (excluding power and cooling) regardless of capacity utilization.***

15kW

5-7kW

**$4,900 per Cabinet Space**

# Impact of Increasing Density

| 5 kW | 5 kW | 5 kW | 5 kW | 5 kW | 5 kW | 5 kW | 5 kW | 5 kW | 5 kW |

**100 kW**

| 15 kW | 15 kW | 15 kW | 15 kW |

**100 kW**

| 5 kW | 5 kW | 5 kW | 5 kW | 5 kW | 5 kW | 5 kW | 5 kW | 5 kW | 5 kW |

**$98,000**

| 15 kW | 15 kW | 15 kW |

**$34,300**

Typical Density

High Density

**Increasing the density of a 100kW data center can reduce floor space costs from $98,000 to $34,300 and yield up to $63,700 in annual savings versus competitive offerings.**

# Seal, Direct, Contain, and Monitor to Improve your PUE

**Panduit Energy Efficient Data Center Cabinet System provides total separation allowing higher data center set points and reduced cooling system energy consumption by up to 40%.[5]**

## Seal every gap for complete separation of cooling and exhaust air

Net-Access™ Cabinets and Sealing Accessories eliminate leakage through the cabinet structure preventing re-circulation of hot exhaust air back into equipment inlets.

## Direct cold air to where it needs to go

Net-Access™ In-Cabinet Ducting directs cool air directly into the intake fans preventing recirculation and reducing inlet air temperature by as much as 14°C, lowering fan energy consumption[6].

## Contain cooling and exhaust air for maximum cooling capacity efficiency

Net-Contain™ Vertical Exhaust Duct and Cold Aisle Containment Systems eliminate hot air recirculation and mixing with cold air allowing room and chilled water temperature set points to be raised and PUE to be lowered.

## Monitor to maintain operational and energy efficiency

Once the physical infrastructure has been optimized for thermal efficiency, Panduit® SmartZone™ Solutions allow continuous monitoring of highly accurate, granular PUE measurements in real-time to maintain thermal efficiency in dynamic data center environments.

5 Impact of Air Containment Systems, Panduit White Paper #WP-20, June 2012
6 The Use of In-Cabinet Ducting to Improve Inlet Air Temperatures, Panduit White Paper RKAT02--WW-ENG, December 2012
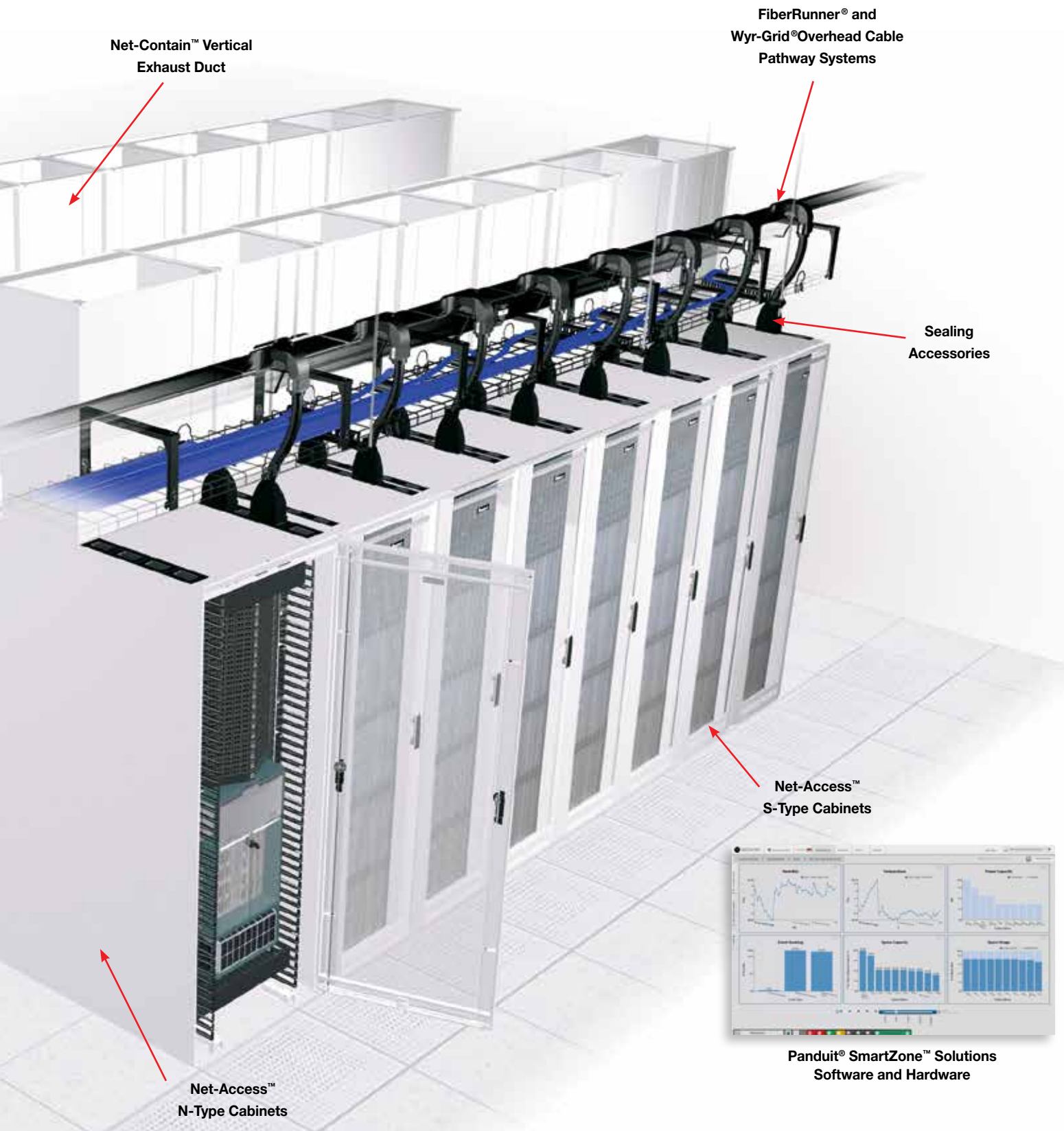
**Net-Contain™ Vertical Exhaust Duct**

**FiberRunner® and Wyr-Grid®Overhead Cable Pathway Systems**

**Sealing Accessories**

**Net-Access™ S-Type Cabinets**

**Panduit® SmartZone™ Solutions Software and Hardware**

**Net-Access™ N-Type Cabinets**

The Energy Efficient Data Center Cabinet System can be seamlessly integrated with all elements of the Panduit Converged Infrastructure Solutions, including Overhead Cable Pathway Systems, High Speed Data Transport (HSDT) Cabling, Grounding and Bonding and Physical Infrastructure Systems.

# Seal Every Gap for Complete Separation of Cold Intake and Hot Exhaust Air



**Complete Air Seal Features Reduce Air Leakage Throughout the Cabinet Structure by as much as 25%[7]**
Net-Access™ Cabinets have been designed to eliminate every possible air gap other than those needed to mount equipment. This minimizes by-pass air and recirculation in the cabinet providing lower inlet temperatures.

**Cabinet Top Seal**
Net-Access™ Cabinets are provided with pre-installed 1.5" x 5" or 3.5" x 5" cabinet top covers and cable protection bezels to eliminate air leakage from unused cable entry holes.

**Cool Boot® Cabinet Top Air Sealing Fitting**
Eliminate air leakage where data cable bundles enter the cabinet.

**Tool-Less Blanking Panels**
Snap-In Panels optimize cooling efficiency by eliminating bypass airflow and hot air mixing in cabinets.

**Cool Boot® Raised Floor Grommet**
Stop bypass air in new or retrofit raised floor applications where power and data cable pass through a cutout into a rack or cabinet, saving $46 per floor tile cutout annually[8].

**Scan to learn more about the Cool Boot® product overview.**

7 Maximizing Cooling Energy Efficiency with Effective Cabinet Sealing, Panduit White Paper RKAT01-WW-ENG, March 2013
8 The Importance of Air Sealing Grommets to Improving Smart Data Center Cooling Efficiency, Panduit White Paper #WW-CPWP-04, August 2008

# Direct Cold Air To Where It Is Needed

## Net-Direct™ Inlet Ducts enable optimized containment by effectively directing airflow to improve network reliability

- Inlet duct solutions deliver cooling air directly from the cold aisle into the intake fans of switches
- Inlet ducts are completely passive, requiring no energy to operate and eliminating a point of failure
- Ensures front to back cooling airflow which enables an effective deployment of network switches with a Net-Contain™ Cold Aisle Containment deployment
- Inlet ducts enable reduced fan power energy consumption by allowing lower fan speeds, improving the reliability of the switch

Available for: Cisco^ Nexus, Catalyst and MDS Switches and Juniper EX Series Switches

# Direct Hot Air To Where It Needs To Exhaust

## Net-Direct™ Exhaust Ducts direct hot exhaust air out of a cabinet away from adjacent devices within non-contained environments

- Exhaust duct solutions channel hot exhaust air directly to the hot aisle, away from the cold air inlet of adjacent switches
- Exhaust ducts are completely passive, requiring no energy to operate and eliminating a point of failure
- Ensures switch exhaust airflow is directed to the hot aisle enabling effective deployment of network switches with a standard hot aisle/cold aisle configuration
- Exhaust ducts enable reduced fan power energy consumption by allowing lower fan speeds, improving the reliability of the switch

Patented[9] In-Cabinet Ducting optimizes cooling system efficiency by establishing front-to-back airflow patterns through the cabinet.

Available for: Cisco^ Nexus and Catalyst Switches

^Cisco is a registered trademark of Cisco Technology, Inc.

# Contain Cold Air or Hot Air to Maximize Cooling and Space Capacity Utilization

## Net-Contain™ Aisle Containment Systems
## Deliver Efficient Cooling for High Density Applications

Data Center Managers, challenged to maximize the utilization of available rack-space and cooling capacity, often increase the power density per cabinet. As cabinet power densities rise, containment architectures are the optimal approach, ensuring uniform cooling air temperature is delivered to equipment in high density PODs allowing full utilization of available cabinet space and cooling capacity.
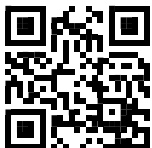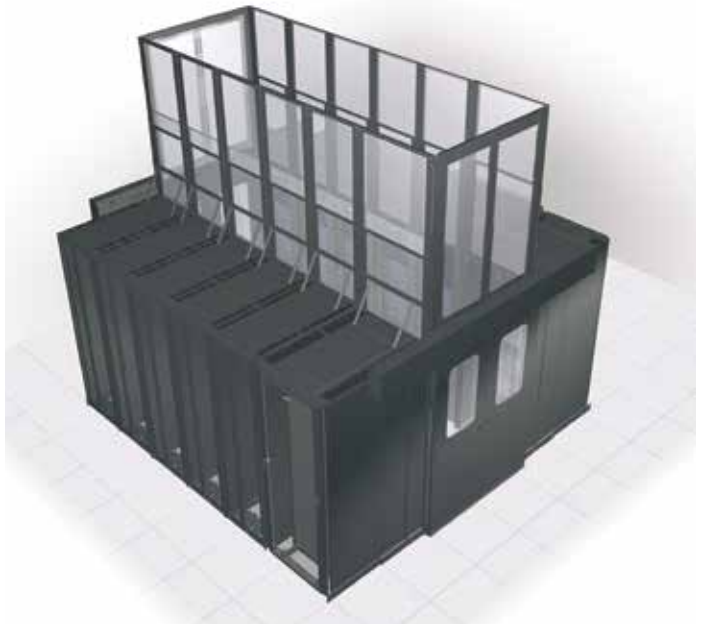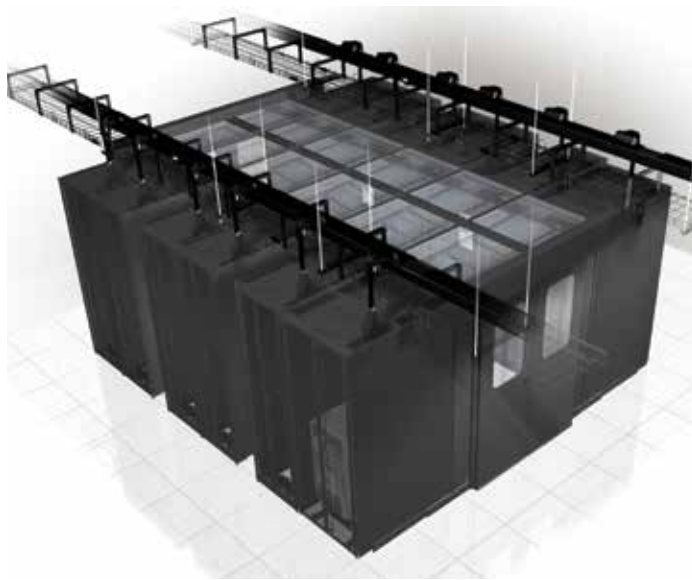


**Scan to view the Panduit® Net-Contain™ Cold Aisle Containment Application at EMC's Durham North Carolina Data Center.**

## Net-Contain™ Aisle Containment System Benefits

- **Data Center Design Versatility –** Translucent panels provide built-in provisions for fire suppression, environmental monitoring, security devices and other utilities to accommodate all application requirements

- **Complete Application Flexibility –** System can be used for slab floor or raised floor applications. Modular design enables varying aisle widths and accommodates intermixed Net-Access™ Cabinet widths and in-row coolers to support various network architectures and heat densities

- **Reduced Operational Costs –** Sliding doors allow easy accessibility for efficient moves, adds and changes and automatically return to closed position optimizing air containment. Net-Contain™ Components are engineered to seal, minimizing leakage to less than 3%
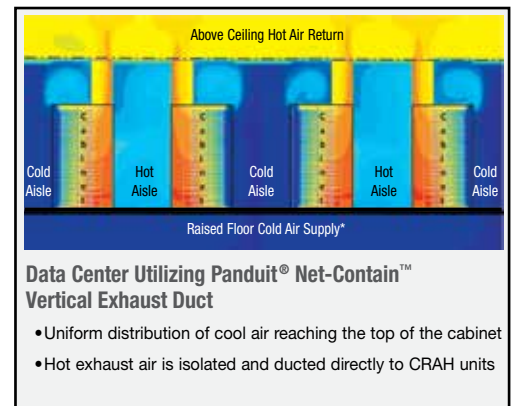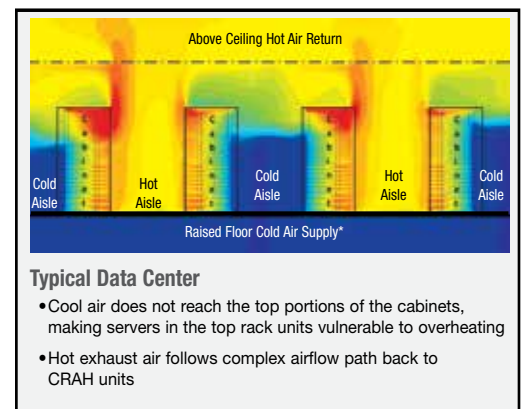
# Net-Contain™ Vertical Exhaust Duct

## Passive Cooling for High Density Applications

Net-Contain™ Vertical Exhaust Duct (VED) Systems optimize cooling energy utilization to support high density heat loads to enable 30kw or greater per cabinet. VEDs passively separate hot exhaust air from cooling air and direct hot exhaust air from active equipment into the Computer Room Air Handler (CRAH) air return system, allowing higher return air temperature improving CRAH and heat exchanger system efficiency up to 40% or more.



**Typical Data Center**
- Cool air does not reach the top portions of the cabinets, making servers in the top rack units vulnerable to overheating
- Hot exhaust air follows complex airflow path back to CRAH units



**Data Center Utilizing Panduit® Net-Contain™ Vertical Exhaust Duct**
- Uniform distribution of cool air reaching the top of the cabinet
- Hot exhaust air is isolated and ducted directly to CRAH units

**Scan to view the Panduit® Net-Contain™ Vertical Exhaust Duct Application at Cisco Allen Data Center.**

# Net-Contain™ Vertical Exhaust Duct System Benefits

- **Flexibility and Versatility –** Multiple sizes, heights and adjustable height features allow system to adapt to virtually any data center structure including slab floors or raised floors and facilities with or without drop ceilings

- **Speed Deployment and Reduce Installation Cost –** Fast, simple assembly and integral ceiling seal reduce installation time by 30% compared to competitive offerings

- **Enhance Your Data Center Environment –** Vertical Exhaust Duct and Net-Access™ Cabinets with sealed, solid rear doors dampen equipment noise

- **Bond Vertical Exhaust Duct with single connection improves system reliability and protection to personnel –** Entire VED is fully electrically bonded to the cabinet requiring no grounding whips for protection of equipment and personnel

# Monitor to Maintain Operational and Energy Efficiency

Data center managers are challenged to maintain and manage energy efficiency gains in a highly dynamic, virtualized environment in which power consumption, environmental and capacity utilization variables are constantly changing. Without the ability to monitor these variables in the data center, efficiency gains, PUE reductions and the ability to maximize capacity utilization while maintaining SLA's will erode over time leading to a higher total cost of ownership.
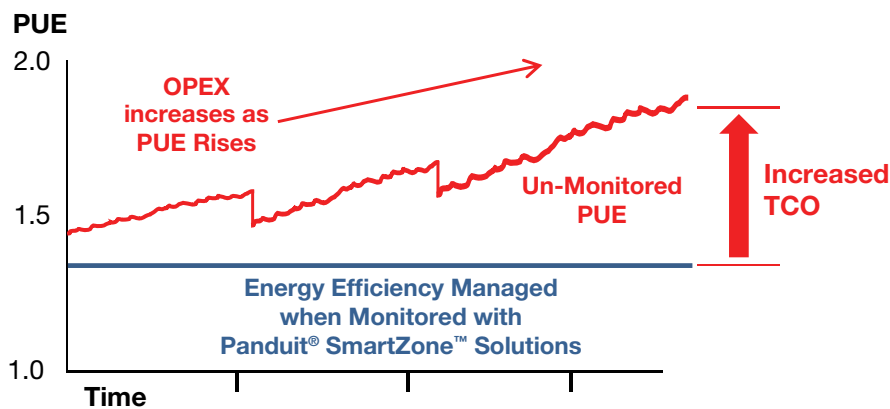


## Panduit® SmartZone™ Solutions
## Enable Real-Time Monitoring, Visualization, and Reporting

Panduit® SmartZone™ Solutions offer software, hardware and services that provide management information by monitoring power and environmental conditions in real time from the entire facility, down into individual cabinets. This capability enables the data center manager to optimize capacity and reduce CapEx and OpEx costs.

Power and environmental monitoring is only one component of Panduit's DCIM offering. SmartZone™ Software also enables the tracking, allocation, and utilization of critical IT assets within your data center.
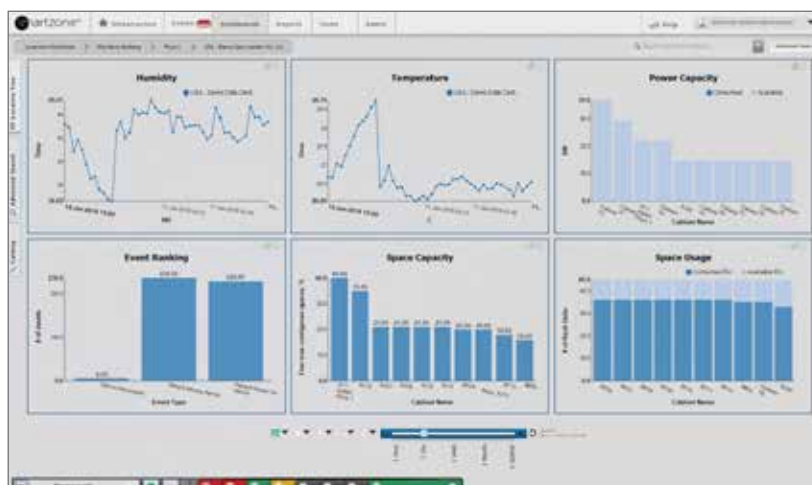
# Rack Power Distribution Units (PDUs)

## Power and Environmental Hardware

As power densities increase, monitoring of power and environmental information using an intelligent rack power distribution unit (PDU) is critical to preventing power overload and downtime. Panduit supports power and environmental management through two distinct intelligent PDU families: SmartZone™ Network-Enabled Rack PDUs that connect directly to the network and SmartZone™ Gateway-Enabled Rack PDUs which connect via a gateway. SmartZone™ Rack PDUs integrate seamlessly into Panduit® SmartZone™ Software, enabling real-time monitoring of physical infrastructure power consumption, temperature, and humidity levels for enhanced system reliability and operational efficiencies. (See pages 34 and 37 for a list of PDU and sensor part numbers).

Panduit's comprehensive rack PDU offering is available globally in a variety of power configurations to match typical applications, and can be configured to meet customer specific needs.

## Rack Power Distribution Units (PDUs) – Safely and efficiently manage and distribute power to multiple devices through a single
power connector to enhance scalability of network build outs.
Through integration with the SmartZone™ Software Suite, rack PDUs send power and temperature readings to allow:
• Automated documentation and visualization of power utilization and environmental conditions
• Recognition and notification of faults or power disruptions
• Identification of available related capacity

## Environmental Sensors – Environmental Sensors are available in wired or wireless options, to measure and trend environmental
conditions such as temperature and humidity levels, at the cabinet level. These intelligent sensors transmit real-time environmental information, providing notification of exceeded thresholds to quickly identify and resolve issues, identify hot and cold spots in the data center and automate collection of real-time and accurate environmental information.

These sensors send cabinet-level information to the SmartZone™ Software to allow:
• Automated documentation and visualization of temperature and humidity levels
• Recognition and notification of exceeded temperature thresholds and/or other environmental-specific concerns
• Trending analysis to uncover developing thermal issues that may impact optimal performance and efficiency

# Net-Access™ N-Type Cabinets

## Optimum Accessibility and Cable Management for High Density Applications

Net-Access™ N-Type Cabinets are the first choice for data center managers and systems integrators specifying high density network, storage and compute applications that require optimal thermal management and the capacity to manage high cable densities.

Integral cabinet air seal features and integration with passive hot and cold air containment components drive efficient utilization of cooling capacity and reduce cooling energy consumption. The Net-Access™ inset frame design efficiently manages large quantities of cables and provides space for unmatched access reducing operational costs. This industry leading design also maximizes airflow and provides easy access to equipment for ongoing operational efficiencies, providing exceptional value in a 800mm (31.5") wide enclosure.

### Inset frame provides up to 10% more space for cable management and cooling airflow

Industry leading inset cabinet frame posts create a large area for airflow to provide proper heat dissipation and enable easy access to equipment, in-cabinet ducting and cabling, speeding deployments and reducing operational costs.

### Dual hinged doors speed deployments and moves, adds, and changes up to 30%

IT staff is scarce, downtime is expensive. For a 120 rack dynamic data center, our cabinets save you up to an hour a day, adding up to $18,250 per year savings for your staff.

### Efficiently manage high cable densities

Modular snap in fingers align with rack spaces to simplify cable management, providing proper bend radius control and organizing cables for faster moves, adds and changes and installations.

**Open rail mounting creates more cable management space and equipment positioning flexibility**

High strength frame eliminates need for support members between rails, providing unobstructed space between the frame and the side panels.
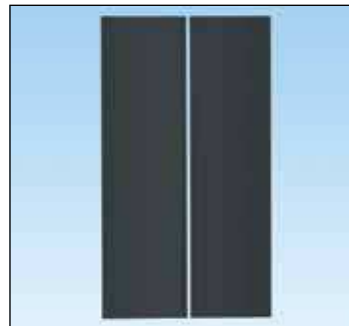
**Vertical split side panels enable fast access to equipment**

Innovative vertical split side panels and optional vertical split hinged side panels allow fast easy access to end of row network equipment and cabling, eliminating time consuming handling.

**Innovative Leveling Feet Design Reduces Cabinet Installation Time up to 80%**

Heavy duty, M14 thread top drive leveling feet are easily accessed and allow cabinets to be leveled in less time than typical leveling feet.

**Bond cabinets to the telecommunications grounding infrastructure with single connection, reducing installation time**

Entire cabinet is fully electrically bonded, requiring no grounding whips to doors or side panels for protection of equipment and personnel.

# Net-Access™ S-Type Cabinets

Cost Effective and Versatile Cabinets for all Data Center
Applications and Facilities Designs

Net-Access™ S-Type Cabinets provide data center managers and systems integrators an
unprecedented range of features in a cost effective cabinet platform for server, network,
and pre-configured cabinet applications.

Integral cabinet air seal features and seamless integration with passive hot and cold air containment
components provide efficient utilization of cooling capacity, and contribute to reduced cooling energy
consumption. An innovative frame design maximizes RU utilization saving as much as 15% of the floor
space while safely accommodating equipment loads. Offered in a variety of widths, heights,
and depths, they can be specified for a variety of applications in any facility to meet the diverse
application needs of today's data centers.

800mm (31.5") W

700mm (28") W

600mm (24") W

Large selection of standard cabinet widths, heights, and depths offered in:

- 600mm (24"), 700mm (28"), and 800mm (31.5") Widths
- 1070mm (42") and 1200mm (48") Depths
- 42 RU, 45 RU, and 48 RU Heights
- Black and White Color Option
- Static Load Rating 1,364kg (3,000 lb.)
- Rolling Load Rating 1,136kg (2,500 lb.)

**Out-Set Cable Entry Improves Floor Space Utilization up to 5%**
Network cable entry locations are outside of equipment area, allowing top 2 RUs to be used, optimizing cabinet utilization and saving floor space.



**Zero RU E-Rail Vertical Patching Adds Capacity and Improves Floor Space Utilization by 10%**
Unique Zero RU E-Rail is the industy's only vertical patching system for 600mm (24") wide cabinets integrating with Quick-Net™ Copper and Fiber Cabling Systems, optimizing cabinet utilization and saving floor space.



**Innovative Leveling Feet Design Reduces Cabinet Installation Time by 80%**
Heavy duty, M14 thread top drive leveling feet are easily accessed and allow cabinets to be leveled in less time than typical leveling feet.

**A 15% savings in floor space means you can build a 420 server POD with 10 server cabs versus a competitors' cabinet that would require 12 server cabinets to hold equivalent amount of servers. CapEx savings[10] $900/ft$^2$ x 16ft$^2$ = $14,400 capital savings per POD.**

10) Cost Model: Dollars per kW plus Dollars per Square Foot of Computer Floor, Uptime  2008

# Simplify and Accelerate Data Center Deployments

Net-Access™ Cabinets Enable Convergence of Network Equipment

## Converged Infrastructure Solutions Add Value and Reduce Installation Time and Cost

Dynamic rated Net-Access™ N-Type and S-Type Cabinets allow pre-installation of IT equipment for faster deployments and time to production. Panduit Converged Infrastructure Solutions are fully tested and validated physical infrastructures that ensure best practice installations and optimal system performance. Each configuration accelerates deployment and promotes rapid upgrades requiring zero reconfigurations and downtime.

## Fast, Single Part Number Quoting and Procurement

Simply attach pre-priced, robust Converged Infrastructure Solutions to active gear quotes:
- Reduce quote time
- Procure complete infrastructures with a single part number
- Ensure accurate delivery of all parts to the job site

## Maximize the Speed of Deployment and Overall Execution

Converged Infrastructure  Solutions can save up to 80% in deployment time.
- Solutions arrive pre-assembled, kitted, and ready to rack and roll
- Factory installed cable managers, patch cable kits, and cabling instructions ensure a precise deployment and professional appearance



**Converged Infrastructure for Nexus 7009 "Heavy Copper"**
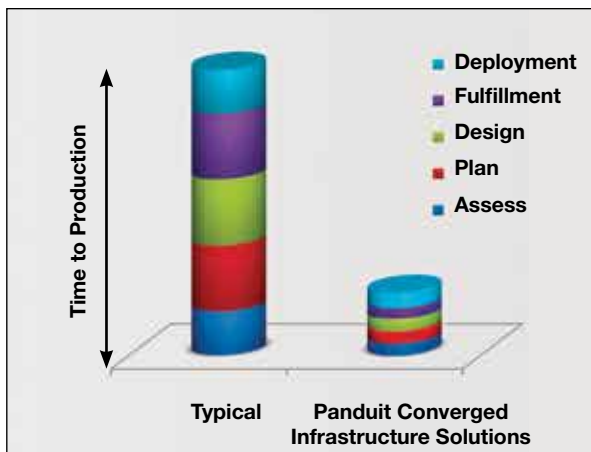


**Reduced Time to Production up to 80%**
Arrive factory designed, tested, and validated to improve:
- Assessment time up to 80%
- Planning time up to 80%
- Design time up to 80%
- Fulfillment time up to 90%
- Deployment time up to 65%

Refer to Panduit Converged Infrastructure Solutions For Cisco^ Nexus, UCS, and Catalyst Platforms, RKCB34--SA-ENG

**Major Private Cloud Provider reduced system assembly time by up to 7 hours per cabinet, improving cost and speeding delivery.**

^Cisco is a registered trademark of Cisco Technology, Inc.

# Net-Access™ Cabinet and Thermal Management Solution for Cisco^ Nexus 7018 Switch

Panduit offers a Net-Access™ Cabinet solution designed to meet the thermal and operating requirements of the modular, high density Cisco^ Nexus 7018 Switch. Based on a standard 800mm (31.5") wide Net-Access™ N-Type Cabinet, an easy to use expansion module provides space to route and manage high densities of cables. Internal ducting enables front to back cooling air flow and improved reliability.
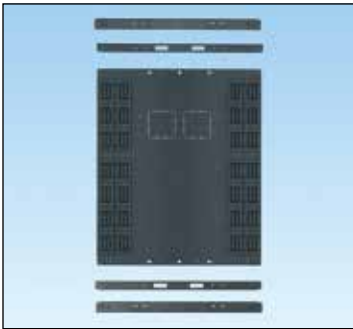


### Simple conversion for Standard 800mm N-Type Cabinet
Extension kit enables 800mm Net-Access™ N-Type Cabinet to be extended to 1,000mm (40") wide, reducing shipping costs and simplifying handling.



### Passive inlet and exhaust duct ensures cooling airflow
Prevents recirculation of exhaust air into the switch, ensuring lower inlet temperature and reduced fan energy consumption.



### Cable management fingers route, manage and protect high cable densities
Fingers align with rack spaces to ensure proper bend radius and superior management of high densities of I/O cables, keeping them clear of cold air flow while maintaining access to power supplies and fan modules, reducing operational costs.

**Net-Access™ N-Type Cabinet with Cisco^ Nexus 7018 Extension Kit Installed**

# Net-Access™ Integral Cabinet Top Cable Routing System

## Speed deployments and optimize overhead space utilization

Net-Access™ Cabinets are available with an Integral Cabinet Top Cable Routing System that protects, routes, and manages large quantities of twisted pair data cables into and out of any Net-Access™ Cabinet. This versatile system is integral to the top of the cabinet and easily integrates with other cable pathways used throughout the data center, providing up to a 30% reduction in installation costs.



Net-Access™ Integral Cabinet Top Cable Routing System deployed on Net-Access™ Cabinets.

# Net-Access™ N-Type Cabinet Specifications

- Welded and assembled steel frame construction
- Easy maintenance powder coat finish
- Adjustable rear equipment rails with continuous positioning, fixed front rails
- Large cable entry/cable access
- Doors include keyed swing handles
- Side panels
- Dual hinge door for maximum accessibility between adjacent cabinets
- Cabinet supplied with 2 sets of high density cable management fingers (SN25F)

- Cable entry holes are equipped with plastic sealing plugs
- UL 2416 standard compliant and have been static load tested to 1,360kg (3,000 lb.)
- EIA-310-E compliant
- Rolling Load of 1,136kg (2,500 lb.)
- Cabinet ships assembled, one per pallet
- N-Type Cabinets include hardware kit: #12-24 screws, or M6 screws and cage nuts
- Casters are supplied separately

# Net-Access™ S-Type Cabinet Specifications

- Welded and assembled steel frame construction
- Easy maintenance powder coat finish
- Adjustable rear equipment rails with continuous positioning, fixed front rails
- Doors include keyed swing handles
- Side panels include keyed quarter-turn latches
- Large cable entry/cable access
- PDU brackets (SPDUBRK) included

- Cable entry holes are equipped with plastic sealing plugs
- UL 2416 standard compliant and have been static load tested to 1,360kg (3,000 lb.)
- EIA-310-E compliant
- Rolling Load of 1,136kg (2,500 lb.)
- Cabinet ships assembled, one per pallet
- S-Type Cabinets include hardware kit: M6 screws, and cage nuts
- Vertical airdams included
- Casters are pre-installed

# Net-Access™ Cable Capacity Charts

| Opening Size | Top Cap Opening Cable Capacity | | | | | | | | |
| | Area | | Cable Capacities | | | | | | |
| | In.² | Cm.² | Cat. 6A 0.354" (8.99mm) | Cat. 6A 0.310" (7.87mm) | Cat. 6A 0.297" (7.54mm) | Cat. 6 0.250" (6.35mm) | Cat. 5e 0.187" (4.75mm) | Fiber (3mm) | QuickNet™ Cassettes |
|---|---|---|---|---|---|---|---|---|---|
| 5" x 3.5" | 15.6 | 100.7 | 63 | 82 | 90 | 127 | 227 | 569 | 8 |
| 5" x 1.5" | 6.5 | 42.2 | 26 | 34 | 37 | 53 | 95 | 239 | 8 |

| Cabinet Size (mm) | Cable Pathways (Per Side) | | | | | | | |
| | Area | | Cable Capacities | | | | | |
| | In.² | Cm.² | Cat. 6A 0.354" (8.99mm) | Cat. 6A 0.310" (7.87mm) | Cat. 6A 0.297" (7.54mm) | Cat. 6 0.250" (6.35mm) | Cat. 5e 0.187" (4.75mm) | Fiber (3mm) |
|---|---|---|---|---|---|---|---|---|
| **N-Type (Front Side)** | | | | | | | | |
| 800x1070 | 43.8 | 282.7 | 178 | 232 | 252 | 357 | 638 | 1599 |
| 800x1200 | 43.8 | 282.7 | 178 | 232 | 252 | 357 | 638 | 1599 |
| **S-Type (Rear Side)** | | | | | | | | |
| 600x1070 | 18.5 | 119.4 | 75 | 98 | 106 | 150 | 269 | 675 |
| 600x1200 | 30.5 | 196.8 | 123 | 161 | 176 | 248 | 444 | 1113 |
| 700x1070 | 32.4 | 208.9 | 131 | 171 | 186 | 263 | 471 | 1181 |
| 700x1200 | 53.4 | 344.4 | 216 | 282 | 308 | 434 | 777 | 1948 |
| 800x1070 | 46.3 | 298.4 | 187 | 245 | 267 | 376 | 673 | 1688 |
| 800x1200 | 76.3 | 491.9 | 309 | 404 | 440 | 621 | 1110 | 2783 |

# Net-Access™ N-Type and S-Type Cabinet Offering and Availability Overview

Multiple cabinet solutions to meet your project goals – from standard cabinets for quick turnaround to customer configured cabinet for specific deployments, Net-Access™ N-Type and S-Type Cabinets provide a complete solution to meet customer requirements.
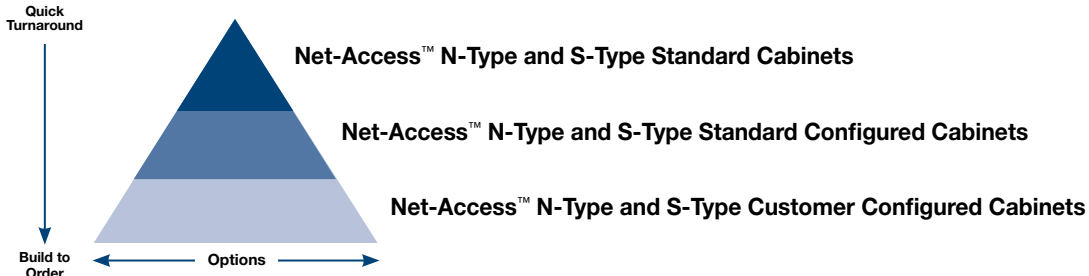


**N-Type and S-Type Standard Cabinets**

- Quick turnaround
- 3 widths – 600mm, 700mm, 800mm
- 2 heights – 42 RU, 45 RU
- 2 depths – 1070mm, 1200mm
- With or without side panels
- Black finish
- Standard doors

**N-Type and S-Type Standard Configured Cabinets**

- 3 widths – 600mm, 700mm, 800mm
- 3 heights – 42 RU, 45 RU, 48 RU
- 2 depths – 1070mm, 1200mm
- With or without side panels
- Black or white finish
- Door options
- Thermal options
- Equipment rail options
- Top cap options
- Caster options

**N-Type and S-Type Customer Configured Cabinets**

- Configured to customer specifications
- Multiple widths
- Multiple heights
- Multiple depths
- With or without side panels
- Black, white or gray finish
- Door options
- Thermal options
- Equipment rail options
- Top cap options
- Caster options
- Standard accessories pre-installed to customer specifications

# Net-Access™ N-Type and S-Type Standard Cabinets

| | | N-Type Width | S-Type Width | | | |
|---|---|---|---|---|---|---|
| | | 800mm | 800mm | 700mm | 600mm | |
| **With Side Panels** | 42 RU | N8212B | S8212B | S7212B | S6212B | 1070mm depth |
| | 45 RU | N8512B | S8512B | S7512B | S6512B | |
| | 42 RU | N8222B | S8222B | S7222B | S6222B | 1200mm depth |
| | 45 RU | N8522B | S8522B | S7522B | S6522B | |
| **Without Side Panels** | 42 RU | N8219B | S8219B | S7219B | S6219B | 1070mm depth |
| | 45 RU | N8519B | S8519B | S7519B | S6519B | |
| | 42 RU | N8229B | S8229B | S7229B | S6229B | 1200mm depth |
| | 45 RU | N8529B | S8529B | S7529B | S6529B | |

**N-Type Standard Components:**
- #12-24 tapped rails
- Dual hinge front door/split rear door
- No PDU brackets
- Two sets of fingers
- Solid side panels
- No casters

**S-Type Standard Components:**
- Cage nut rails
- Single hinge front door/split rear door
- Caster and PDU brackets included
- Cable management optional

# Net-Access™ N-Type Standard Configured Cabinets

| Series | Width | Height | Depth | Side Panels | Color | Standard Options (Select Only One) |
|--------|-------|--------|-------|-------------|-------|-------------------------------------|
| N | 8 = 800mm | 2 = 42 RU<br>5 = 45 RU<br>8 = 48 RU | 1 = 1070mm<br>2 = 1200mm | 2 = 2 Side Panels*<br>9 = No Side Panel | B = Black<br>W = White | C = Cage Nut Rails<br>E = Single Hinge Front Door and Cage Nut Rails<br>S = No Doors**<br>T = Integral Cabinet Top Cable Routing System**<br>TC = Integral Cabinet Top Cable Routing System and Cage Nut Rails<br>U = Vertical Blanking and Cage Nut Rails<br>V = VED Ready**<br>Y = VED Ready and Cage Nut Rails<br>YT = VED Ready, Cage Nut Rails, and Integral Cabinet Top Cable Routing System |

*Standard side panel. **Includes #12-24 tapped equipment rails. V, Y and YT - Only available for 1200mm deep cabinets. See page 25.

**Standard Configurations have 6 characters with only one standard option suffix.**

| N | 8 | 2 | 1 | 2 | B | | |
|---|---|---|---|---|---|---|---|

# Net-Access™ S-Type Standard Configured Cabinets

| Series | Width | Height | Depth | Side Panels | Color | Standard Options (Select Only One) |
|--------|-------|--------|-------|-------------|-------|-------------------------------------|
| S | 6 = 600mm<br>7 = 700mm<br>8 = 800mm | 2 = 42 RU<br>5 = 45 RU<br>8 = 48 RU | 1 = 1070mm<br>2 = 1200mm | 2 = 2 Side Panels*<br>9 = No Side Panel | B = Black<br>W = White | A = Switch Configured with Front Cable Management (PDU bracket not included)<br>A9 = Switch Configured with Front Cable Management and No Casters<br>F = Vertical Cable Management Fingers<br>P = Vertical Patching Equipment Rails<br>S = No Doors<br>T = Integral Cabinet Top Cable Routing System<br>T9 = Integral Cabinet Top Cable Routing System and No Casters<br>V = VED Ready<br>V9 = VED Ready and No Casters<br>9 = No Casters |

*Standard side panel. P - Only available for 600mm wide S-Type Cabinets. V and V9 - Only available for 1200mm deep cabinets. See page 25.

**Standard Configurations have 6 characters with only one standard option suffix.**

| S | 6 | 2 | 1 | 2 | B | | |
|---|---|---|---|---|---|---|---|

# Net-Access™ N-Type and S-Type Customer Configured Cabinets

Cabinets can be configured to customers' specifications. Multiple options are listed below, below, but may not be available for all configurations. For other possible options please contact your sales person or Customer Service.

- Multiple Widths
- Multiple Heights
- Multiple Depths
- Doors – Single Hinge, Dual Hinge, Split Doors, or None
- Side Panels – 0, 1, or 2

- Black, White or Gray Finish
- #12-24 Tapped or Cage Nut Rails
- Standard, VED, Integral Cabinet Top Cable Routing System, or VED and Integral Cabinet Top Cable Routing System
- Vertical Patching

- Vertical Air Dams
- Cable Management
- Casters
- PDU Brackets
- Combination Locks

# Net-Access™ N-Type and S-Type Cabinets with Integral Cabinet Top Cable Routing System

| | | N-Type Width | S-Type Width | | | |
|---|---|---|---|---|---|---|
| | | 800mm | 800mm | 700mm | 600mm | |
| **With Side Panels** | 42 RU | N8212BT | S8212BT | S7212BT | S6212BT | **1070mm depth** |
| | 45 RU | N8512BT | S8512BT | S7512BT | S6512BT | |
| | 48 RU | N8812BT | S8812BT | S7812BT | S6812BT | |
| | 42 RU | N8222BT | S8222BT | S7222BT | S6222BT | **1200mm depth** |
| | 45 RU | N8522BT | S8522BT | S7522BT | S6522BT | |
| | 48 RU | N8822BT | S8822BT | S7822BT | S6822BT | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Without Side Panels** | 42 RU | N8219BT | S8219BT | S7219BT | S6219BT | **1070mm depth** |
| | 45 RU | N8519BT | S8519BT | S7519BT | S6519BT | |
| | 48 RU | N8819BT | S8819BT | S7819BT | S6819BT | |
| | 42 RU | N8229BT | S8229BT | S7229BT | S6229BT | **1200mm depth** |
| | 45 RU | N8529BT | S8529BT | S7529BT | S6529BT | |
| | 48 RU | N8829BT | S8829BT | S7829BT | S6829BT | |

For other colors replace suffix B (Black) with W (White).

N-Type Integral Top Cabinet Components:
- 12-24 tapped rails
- Dual hinge front door/split rear door
- No PDU brackets
- Two sets of fingers
- No casters

S-Type Integral Top Cabinet Components:
- Cage nut rails
- Single hinge front door/split rear door
- No cable management
- Caster and PDU brackets included

# Net-Access™ N-Type and S-Type Vertical Exhaust Duct (VED) Cabinets (VED Sold Separately)

| | | N-Type Width | S-Type Width | | | |
|---|---|---|---|---|---|---|
| | | 800mm | 800mm | 700mm | 600mm | |
| **With Side Panels** | 42 RU | N8222BV | S8222BV | S7222BV | S6222BV | **1200mm depth** |
| | 45 RU | N8522BV | S8522BV | S7522BV | S6522BV | |
| | 48 RU | N8822BV | S8822BV | S7822BV | S6822BV | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Without Side Panels** | 42 RU | N8229BV | S8229BV | S7229BV | S6229BV | **1200mm depth** |
| | 45 RU | N8529BV | S8529BV | S7529BV | S6529BV | |
| | 48 RU | N8829BV | S8829BV | S7829BV | S6829BV | |

\* VED cabinets only available in 1200mm depths.
For other colors replace suffix B (Black) with W (White).

## N-Type VED Cabinet Components:
- #12-24 tapped rails
- Dual hinge front door/solid rear door
- No PDU brackets
- 2 sets of fingers
- VED top cap ready
- Vertical blanking panels with pass-throughs
- Rear floor seals
- No casters

## S-Type VED Cabinet Components:
- Cage nut rails
- Single hinge front door/solid single hinge rear door
- No cable management
- VED top cap ready
- Vertical blanking panels
- Front and rear floor seals
- Caster and PDU brackets included

# Net-Contain™ Vertical Exhaust Ducts (VEDs)



| Part Number | Description |
|---|---|
| **Net-Contain™ Vertical Exhaust Duct for Net-Access™ N-Type and S-Type Cabinets** | |
| **C2VED**I1626^^** | Net-Contain™ VED **mm width cabinet –  406mm (16") up to 660mm (26") height  – ^^ colored. |
| **C2VED**I2638^^** | Net-Contain™ VED **mm width cabinet –  660mm (26") up to 965mm (38") height  – ^^ colored. |
| **C2VED**I3866^^** | Net-Contain™ VED **mm width cabinet – 965mm (38") up to 1,676mm (66") height  – ^^ colored. |

** = 08 = 800mm, 07 = 700mm, 06 = 600mm ^^ = B1 = Black, W1 = White.