Energy Efficient Data Center Cabinet Systems

Compatible

Net-Access™ Cabinet has tested compatible with Cisco Nexus 7018, MDS 9513, and Catalyst 6509. Go to www.panduit.com/cisco1 for disclaimer

PANDUIT®

building a smarter, unified business foundation

Connect. Manage. Automate.

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

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

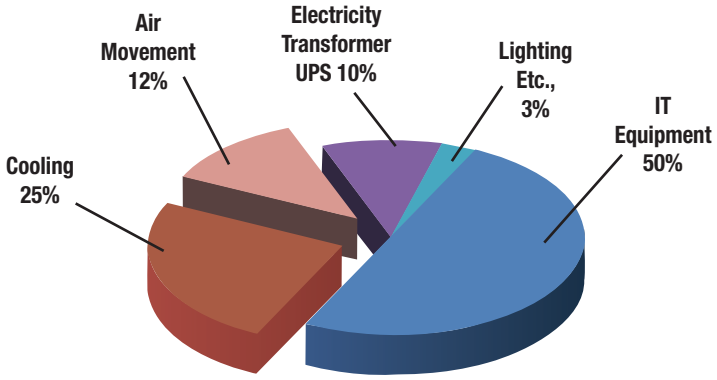
Enabling Improved Efficiency

- 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

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].



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.

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

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.

*Power Usage Effectiveness – a metric used to measure how effectively input power is used. It is expressed as a ratio of power available to power used.

1 Average Data Center Energy Usage Allocation , Lawrence Berkeley National Laboratory 2007

2 451 Research has published 'Highly Energy-Efficient Datacenters in Practice,' October 2012

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

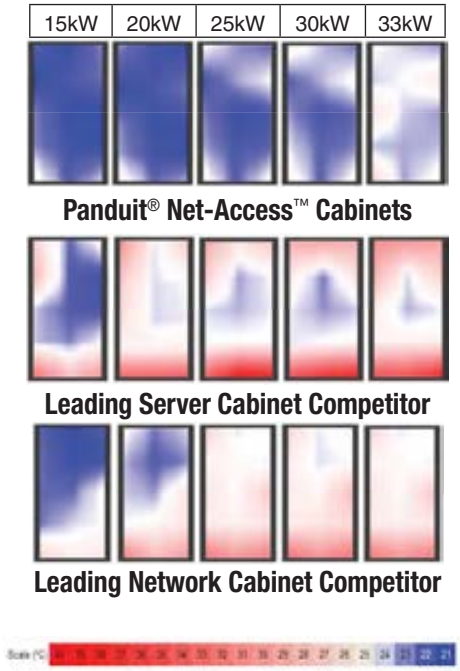
Panduit's Energy Efficient Data Center Cabinet System offers containment, in-cabinet ducting, and improved sealing that optimizes air separation and provide superior energy savings compared to competitive offerings.

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%.

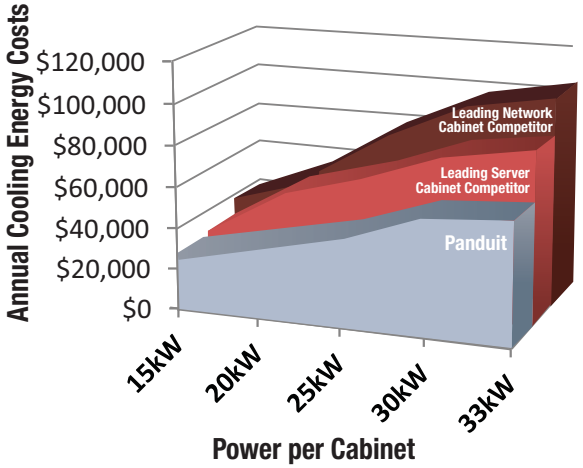
The graphics below illustrate the impact these leaks have on inlet temperatures. By preventing hot air recirculation, a more consistent inlet temperature gradient can be realized across the entire front of the cabinet allowing the data center set point to be raised. This results in reduced cooling expense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



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.

7 Maximizing Cooling Energy Efficiency with Effective Cabinet Sealing, Panduit White Paper RKAT01-WW-ENG, March 2013

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

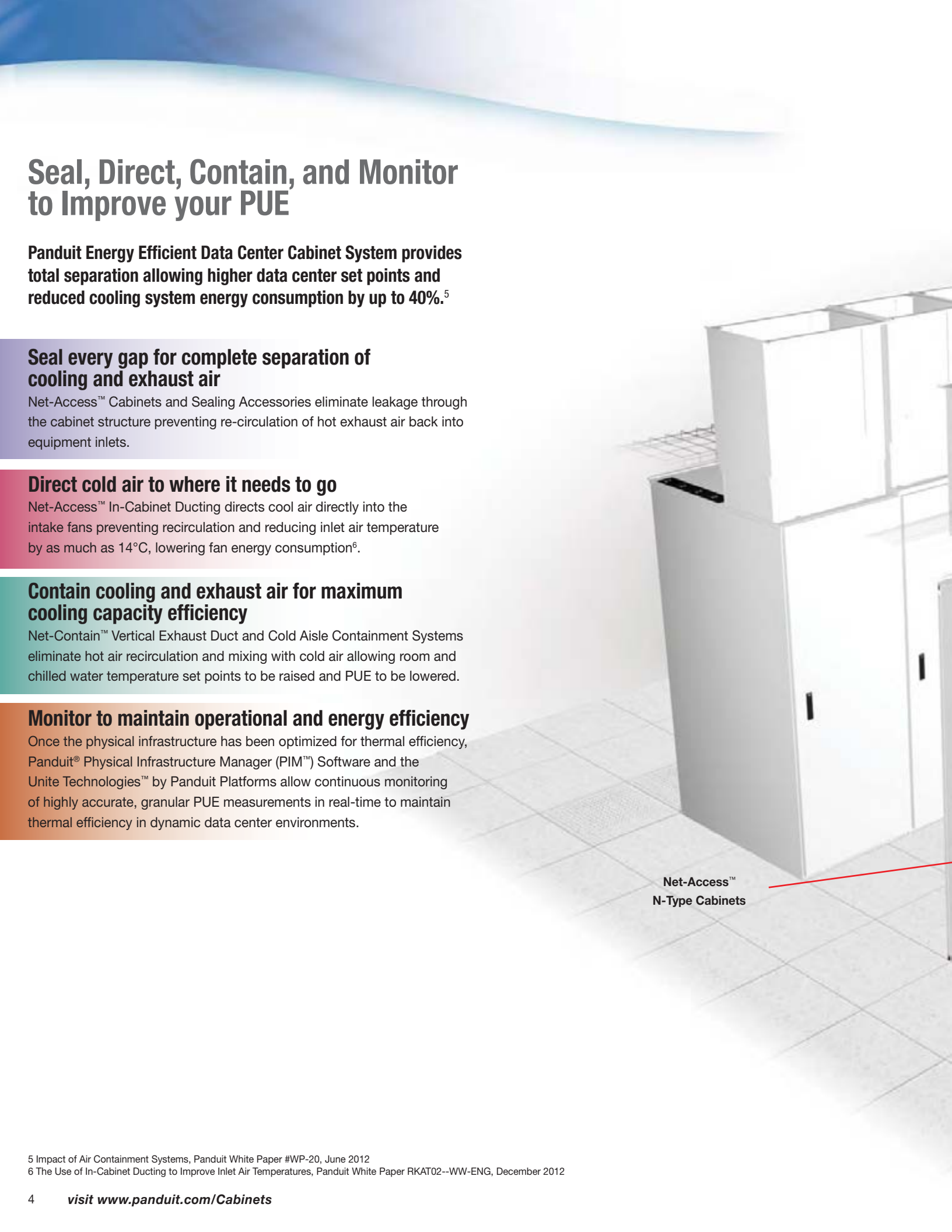
Net-Access™ In-Cabinet Ducting directs cool air directly into the intake fans preventing recirculation and reducing inlet air temperature by as much as 14°C, lowering fan energy consumption[6].

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® Physical Infrastructure Manager (PIM™) Software and the Unite Technologies™ by Panduit Platforms 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

Net-Access™ Inlet and Exhaust Duct

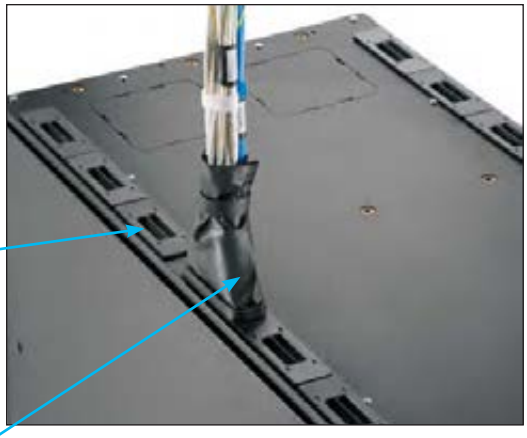
Panduit® Physical Infrastructure Manager™ (PIM™) and Unite Software Platforms, combined with PViQ™ System and Unite Technologies™ Hardware

The Energy Efficient Data Center Cabinet System can be seamlessly integrated with all elements of the Panduit Intelligent Data Center Solution, 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 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 Needs To Go

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

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

Available for: Cisco^ Nexus and Catalyst Switches

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

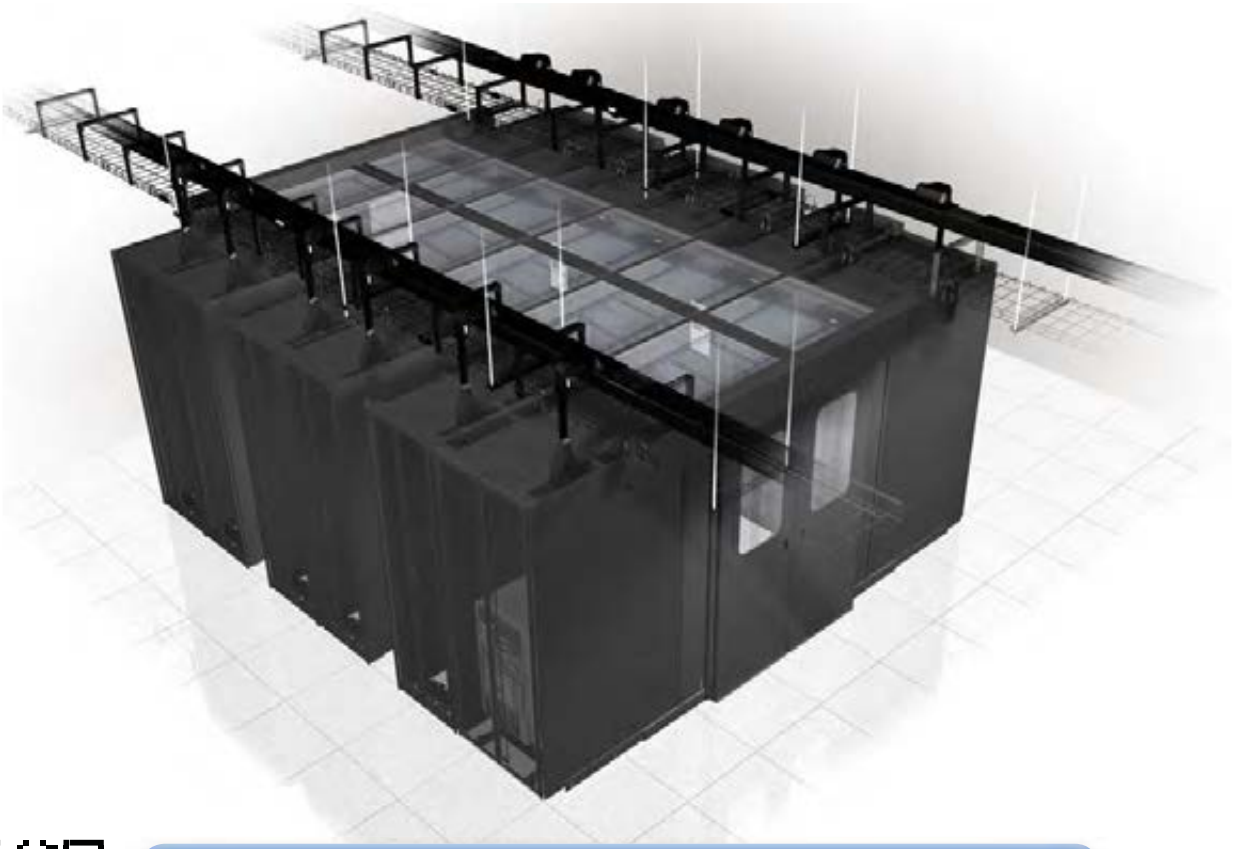
Patented[9] In-Cabinet Ducting optimizes cooling system efficiency by establishing front-to-back airflow patterns through the cabinet.

9 Patents #8,035,965, #7,855,885 and #7,595,985 - Network Cabinet with Thermal Air Flow Management System

Contain Cold Intake and Hot Exhaust Air to Maximize Cooling and Space Capacity Utilization

Net-Contain™ Cold Aisle Containment System Delivers 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.

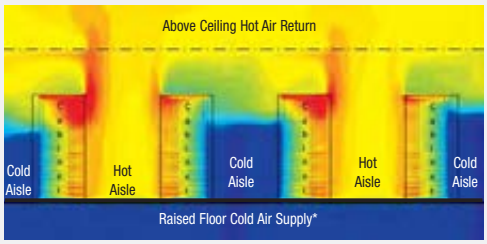
Net-Contain™ Cold Aisle Containment System Benefits

- **Data Center Design Versatility –** Translucent top 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 both 1200mm (48") and 1800mm (60") 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 cold air containment. Net-Contain™ Components are engineered to seal, minimizing leakage to less than 3%

Net-Contain™ Vertical Exhaust Duct

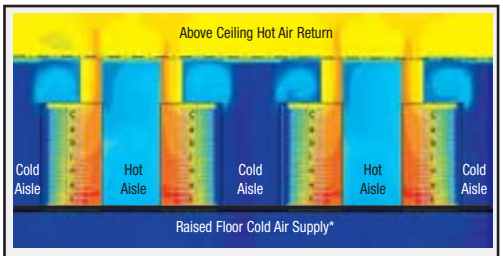
Passive Cooling for High Density Applications

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

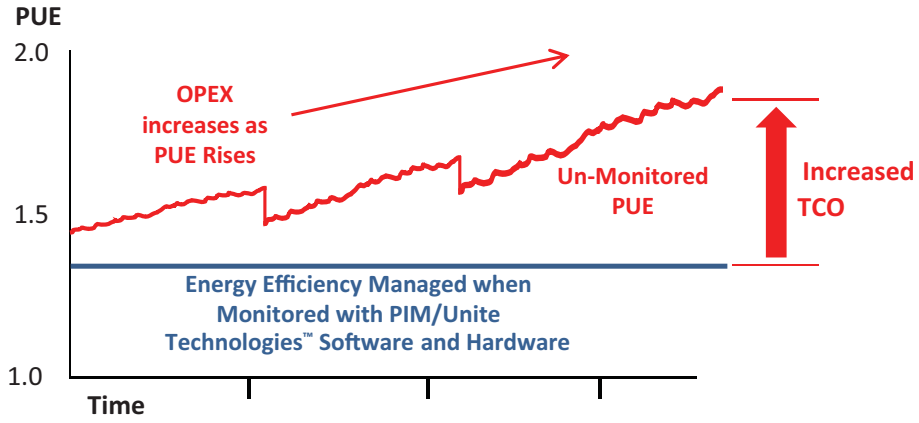
Scan to view the Panduit® Net-Contain™ Vertical Exhaust Duct Application at Cisco Allen Data Center.

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

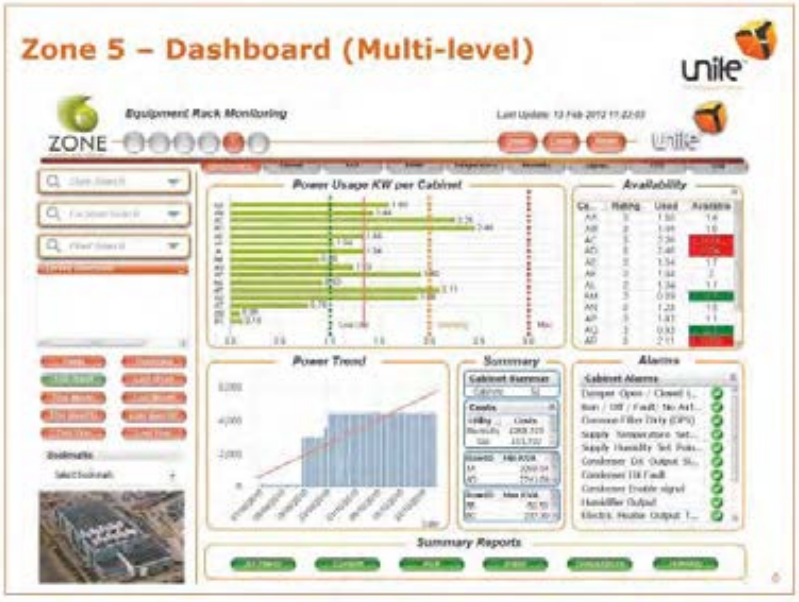
Monitor to Maintain Operational and Energy Efficiency

Data Center Managers are challenged to maintain and manage energy efficiency gains in a highly dynamic environment in which power consumption and environmental variables are constantly changing. Without the ability to monitor these variables in the data center, efficiency gains, PUE reductions and capacity utilization can erode over time leading to a higher total cost of ownership.



Panduit® PIM™ and Unite Technologies™ by Panduit Platforms Enable Real-Time Monitoring, Visualization, and Reporting

Panduit® PIM™ and Unite Technologies™ by Panduit Software and Hardware Platforms produce management information by monitoring power and environmental conditions in real-time. This enables data center managers to manage power consumption and PUE as the data center evolves and prevents increased operational costs as energy efficiency declines.



Unite Technologies™ by Panduit Dashboard Example

PViQ™ and Unite Technologies™ POUs and Hardware

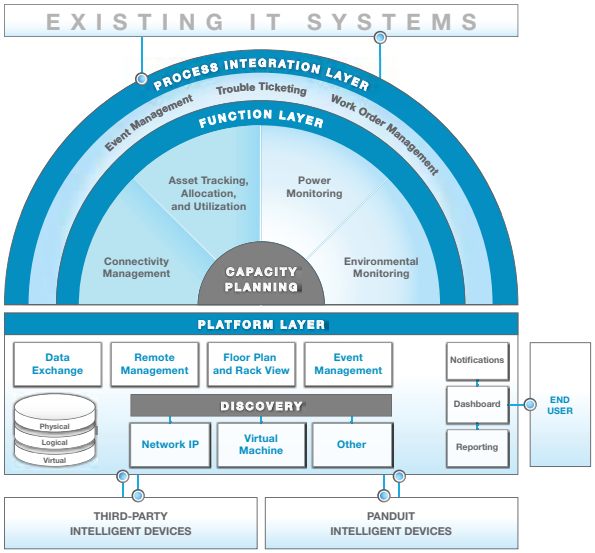
Panduit offers a wide range of Power Outlet Units (POUs), gateways, and environmental sensors that integrate seamlessly into Panduit cabinets and DCIM Software Platforms to enable real-time monitoring. Intelligent POUs have network capabilities with optional environmental and switching capabilities that enable real-time monitoring down to the individual device level.

These options allow you to manage power, cooling and space at the cabinet level for reduced operational costs, increased capacity utilization and improved network reliability. (See page 28 and 29 for examples of POUs and Sensors)

Please refer to Panduit® Physical Infrastructure Manager Software for Data Centers and Beyond Brochure PVCB26--SA-ENG.

Leverage Real-Time Information to Optimize Data Center Operations

Power and environmental monitoring is only one component of Panduit's DCIM offering. The Panduit® Physical Infrastructure Manager™ (PIM™) Software Platform is a physical infrastructure management system for tracking the allocation and utilization of critical IT assets within your data center and throughout today's fast-paced enterprise. The Panduit platform lays the foundation for effective Data Center Infrastructure Management (DCIM) through accurate and timely dashboards and documentation of these physical assets, improved visibility into asset moves, adds, and changes (MACs), and process-driven integration with applicable management systems.



PIM™ Software Function and Architecture
Visit www/panduit.com/Software/PIMSolutions for more information.

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 by 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 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. For example, to install 100 cabinets, the competition requires 1-1/2 days compared to less than 2 hours with Panduit.

Bond cabinets to the MCBN 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 dynamic 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.

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 Colors
- Static Load Rating 1,364kg (3,000 lb.)
- Rolling Load Rating 1,136kg (2,500 lb.)
- Dynamic Shock Pallet Rating of 1,250 lb. and 2,000 lb.

Out-Set Cable Entry Improves Floor Space Utilization by 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 industries 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. For example, to install 100 cabinets, the competition requires 1-1/2 days compared to less than 2 hours with Panduit.

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 Pre-Configuration of Network Equipment

Pre-Configured 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 Pre-Configured 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 Pre-Configured Solutions to active gear quotes:

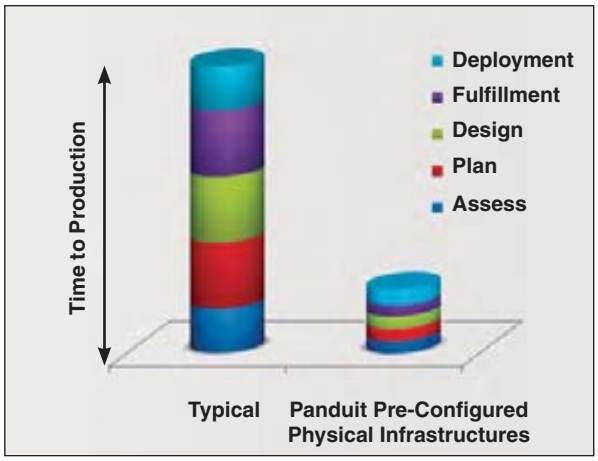
- Reduce quote time
- Procure complete infrastructures with a single part number
- Ensure accurate delivery of all parts to the job site

Maximize the Speed of Deployment and Overall Execution

Pre-Configured 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

Nexus 7009 "Heavy Copper" Pre-Configured Physical Infrastructure



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 Pre-Configured Physical Infrastructures for Cisco^ Nexus, UCS, and Catalyst Platforms, SA-RKCB28.

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 Expansion Module Installed

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

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 mounts to the top of the cabinets 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 infinite positioning
- Internal equipment space (max.) 1070mm Cabinet – 995mm (39.1")
- Internal equipment space (max.) 1200mm Cabinet – 1147mm (45.1")
- Doors include keyed swing handles
- Side panels
- Dual hinge door for maximum accessibility between adjacent cabinets
- Cabinet supplied with high density cable management fingers on front and rear posts
- Cable entry holes are equipped with plastic sealing plugs
- Static Load of 1,364kg (3,000 lb.)
- Rolling Load of 1,136kg (2,500 lb.)
- Cabinet ships assembled, one per pallet
- Dynamic/Shock Pallet (1,250 and 2,000 lb.) ratings
- 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 infinite positioning
- Doors include keyed swing handles
- Side panels include keyed quarter-turn latches
- Large cable entry/cable access
- Internal equipment space (max) 1070mm Cabinet – 962mm (37.8")
- Internal equipment space (max) 1200mm Cabinet – 1114mm (43.8")
- Cable entry holes are equipped with plastic sealing plugs
- Static Load of 1,364kg (3,000 lb.)
- Rolling Load of 1,136kg (2,500 lb.)
- Cabinet ships assembled, one per pallet
- Dynamic/Shock Pallet (1,250 and 2,000 lb.) ratings
- S-Type Cabinets include hardware kit: M6 screws, and cage nuts
- Vertical airdams included
- Casters are pre-installed

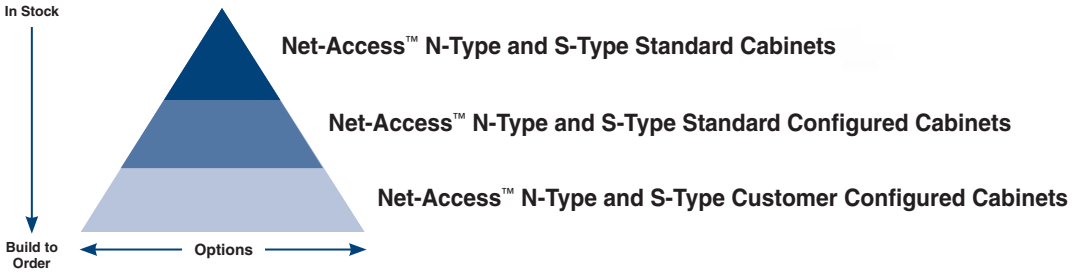
Net-Access™ Cable Capacity Charts

	Top Cap Opening Cable Capacity								
	Area		Cable Capacities						
Opening Size	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

	Cable Pathways (Per Side)							
	Area		Cable Capacities					
Cabinet Size (mm)	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)
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
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

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

Multiple cabinet solutions to meet your project goals – from in-stock standard cabinets for quick turnaround to customer configurations 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

- 32 cabinets
- Stocked cabinets
- 3 widths – 600mm, 700mm, 800mm
- 2 heights – 42 RU, 45 RU
- 2 depths – 1070mm, 1200mm
- With or without side panels
- Black paint
- Standard doors

N-Type and S-Type Standard Configured Cabinets

- 624 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 paint
- 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 paint
- 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 POU 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 POU brackets included
- No cable management

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

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

*Standard side panel. ** Includes cage nut equipment rails. ***Includes #12-24 tapped equipment rails. V - Only available for 1200mm deep cabinets. See page 23.

Standard Configurations have a maximum of 7 characters. Choose only one standard option.

N	8	2	1	2	B	

Series	Width	Height	Depth	Side Panels	Color	Standard Options
S	6 = 600mm	2 = 42 RU	1 = 1070mm	2 = 2 Side Panels*	B = Black	A = Switch Configured with Front Cable Management**
	7 = 700mm	5 = 45 RU	2 = 1200mm	9 = No Side Panel	W = White	F = Vertical Cable Management Fingers**
	8 = 800mm	8 = 48 RU				P = Vertical Patching Equipment Rails**
						S = No Doors**
						T = Integral Cabinet Top Cable Routing System**
						V = VED Ready**
						9 = No Casters**

*Standard side panel. ** Includes cage nut equipment rails. P - Only available for 600mm wide S-Type Cabinets. V - Only available for 1200mm deep cabinets. See page 23.

Standard Configurations have a maximum of 7 characters. Choose only one standard option.

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, 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 Paint
- #12-24 Tapped or Cage Nut Rails
- Standard, VED, Integrated Cable Routing Top, or VED and Integrated Cable Routing Top Cap
- Vertical Patching
- Vertical Blanking Panels
- Cable Management (multiple)
- Casters
- PDU Brackets
- Cool Boots
- Dynamic Shipping
- Combination Locks
- Electronic Locks
- PDUs
- Door Sensor Quick Disconnect Module

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 POU brackets
- Two sets of fingers
- Integral cabinet top cable routing
- No casters

S-Type Integral Top Cabinet Components:

- Cage nut rails
- Single hinge front door/split rear door
- No cable management
- Integral cabinet top cable routing
- Caster and POU brackets included

Net-Access™ N-Type and S-Type Vertical Exhaust Duct (VED) Ready Cabinets

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

N-Type VED Ready Cabinet Components:

- #12-24 tapped rails
- Dual hinge front door/solid single hinge rear door
- No POU brackets
- 2 sets of fingers
- VED top cap ready
- Vertical blanking panels with pass-throughs
- Front and rear floor seals
- No casters

S-Type VED Ready Cabinet Components:

- Cage nut rails
- Single hinge front door/solid single hinge rear door
- No cable management
- VED top cap ready
- Front and rear floor seals

VED sold separately.
See page 24.

Net-Contain™ Vertical Exhaust Ducts (VEDs) and Cold Aisle Containment System

Part Number	Description
Net-Contain™ Vertical Exhaust Duct for 1200mmD Net-Access™ N-Type and S-Type Cabinets	
C2VEDI1626^^**	Net-Contain™ VED **mm width cabinet – 406mm (16") up to 660mm (26") height – ^^ colored.
C2VEDI2638^^**	Net-Contain™ VED **mm width cabinet – 660mm (26") up to 965mm (38") height – ^^ colored.
C2VEDI3866^^**	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.

Net-Contain™ Cold Aisle Containment Sliding Doors for 1200mmD Net-Access™ N-Type and S-Type Cabinets	
C2CACT5FSD^^**	Net-Contain™ Sliding Door CAC for **ft (**mm) aisle- capable of 42 up to 45 RU – ^^ colored.

** = 04 = 4ft (1200mm), 06 = 6ft (1800mm) ^^ = B1 = Black, W1 = White.

Net-Contain™ Integral Low Profile Ceiling Structure for 1200mmD Net-Access™ N-Type and S-Type Cabinets	
C2CAC08FIR^^**	Net-Contain™ (CAC) Integral Roof for 800mm width cabinet with **ft (**mm) aisle width – ^^ colored.
C2CAC07FIR^^**	Net-Contain™ (CAC) Integral Roof for 700mm width cabinet with **ft (**mm) aisle width – ^^ colored.
C2CAC06FIR^^**	Net-Contain™ (CAC) Integral Roof for 600mm width cabinet with **ft (**mm) aisle width – ^^ colored.

** = 04 = 4ft (1200mm), 06 = 6ft (1800mm) ^^ = B1 = Black, W1 = White.

Net-Contain™ Integral Roof Wall Panels	
C2CACF08WP^^**	Net-Contain™ Integral Roof Wall Panel for **mm width cabinet – ^^ colored.

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

Net-Contain™ Row Base Cooling Blanking Panels	
C2CACABWPA^^**	For cold aisle containment systems using row base cooling equipment.

** = 06 = 600mm, 04 = 400mm, 03 = 300mm ^^ = B1 = Black, W1 = White.

End of Row Floor Seals	
N2EOR1BA1070B1	Net-Access™ N-Type End of Row Seal 1070mm for switch cabinets.
N2EOR1CA1200B1	Net-Access™ N-Type End of Row Seal 1200mm for switch cabinets.
S2EOR1BA1070B1	Net-Access™ S-Type End of Row Seal 1070mm for server cabinets.
S2EOR1CA1200B1	Net-Access™ S-Type End of Row Seal 1200mm for server cabinets.

Net-Access™ N-Type and S-Type Accessories

SN15F SN25F

NCSTR4

NVPDUB

Part Number	Description
N and S-Type Cabinet Accessories	
SN15F	Net-Access™ S and N-Type Cabinet 100mm Depth Finger Kit for 42 RU and 45 RU cabinets.
SN25F	Net-Access™ S and N-Type Cabinet 150mm Depth Finger Kit for 42 RU and 45 RU cabinets.
SN8VPPB	Vertical patching bracket for N-Type and S-Type 800mm wide cabinets.
N-Type Cabinet Accessories	
NCSTR4	Net-Access™ N-Type Casters for switch cabinets (package of 4 pcs.).
NVPDUB	Net-Access™ N-Type POU Brackets for switch cabinets.
NVBP	Net-Access™ N-Type Vertical Blanking Panels with pass-through holes for cabinets 42 RU through 48 RU.
NERSS	Net-Access™ N-Type end of row slack spool.
NACSS	Net-Access™ N-Type adjustable center slack spool for between cabinets.
N-Type Cabinet Standard Side Panels	
N21SPS	42 RU 1070mm Depth Net-Access™ N-Type Cabinet Side Panel.
N51SPS	45 RU 1070mm Depth Net-Access™ N-Type Cabinet Side Panel.
N81SPS	48 RU 1070mm Depth Net-Access™ N-Type Cabinet Side Panel.
N22SPS	42 RU 1200mm Depth Net-Access™ N-Type Cabinet Side Panel.
N52SPS	45 RU 1200mm Depth Net-Access™ N-Type Cabinet Side Panel.
N82SPS	48 RU 1200mm Depth Net-Access™ N-Type Cabinet Side Panel.
N-Type Cabinet Split Hinged Side Panels	
N21SPH	42 RU 1070mm Depth Net-Access™ N-Type Cabinet Split Hinged Side Panel for end of row.
N51SPH	45 RU 1070mm Depth Net-Access™ N-Type Cabinet Split Hinged Side Panel for end of row.
N81SPH	48 RU 1070mm Depth Net-Access™ N-Type Cabinet Split Hinged Side Panel for end of row.
N22SPH	42 RU 1200mm Depth Net-Access™ N-Type Cabinet Split Hinged Side Panel for end of row.
N52SPH	45 RU 1200mm Depth Net-Access™ N-Type Cabinet Split Hinged Side Panel for end of row.
N82SPH	48 RU 1200mm Depth Net-Access™ N-Type Cabinet Split Hinged Side Panel for end of row.
7018 Cabinet Kits	
N1000EXT	Extension kit to expand 800mm wide x 1200mm deep Net-Access™ N-Type Cabinet to 1000mm. For use with cabinets N8229BS, N8529BS, and N8829BS.
N2SD1000	One set of split doors (used front or back) for 1000mm wide Net-Access™ N-Type Cabinet 42 RU.
N5SD1000	One set of split doors (used front or back) for 1000mm wide Net-Access™ N-Type Cabinet 45 RU.
N8SD1000	One set of split doors (used front or back) for 1000mm wide Net-Access™ N-Type Cabinet 48 RU.

Net-Access™ N-Type and S-Type Accessories (continued)

S2BRK6

S2BRK12

SPDUBRK

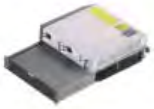
SCSTR4

Part Number	Description
S-Type Cabinet Accessories	
S2BRK6	Net-Access™ S-Type Cable Management/POU Bracket 6" full length for server cabinets.
S2BRK12	Net-Access™ S-Type Cable Management/POU Bracket 12" full length for server cabinets.
S2DR	Net-Access™ S-Type D-Ring Kit for full length cable management bracket (bag of 8 pcs.).
S2LR	Net-Access™ S-Type L-Ring Kit for full length cable management bracket (bag of 8 pcs.).
S7VPPB	Vertical patching bracket for S-Type 700mm wide cabinets.
SPDUBRK	Net-Access™ S-Type POU Brackets for server cabinets.
SCSTR4	Net-Access™ S-Type Casters for server cabinets (package of 4 pcs.).
S-Type Cabinet Side Panels	
S21SPS	42 RU 1070mm Depth Net-Access™ S-Type Cabinet Standard Side Panel.
S51SPS	45 RU 1070mm Depth Net-Access™ S-Type Cabinet Standard Side Panel.
S81SPS	48 RU 1070mm Depth Net-Access™ S-Type Cabinet Standard Side Panel.
S22SPS	42 RU 1200mm Depth Net-Access™ S-Type Cabinet Standard Side Panel.
S52SPS	45 RU 1200mm Depth Net-Access™ S-Type Cabinet Standard Side Panel.
S82SPS	48 RU 1200mm Depth Net-Access™ S-Type Cabinet Standard Side Panel.

Net-Direct™ In-Cabinet Ducting

CDE1

CDE2



CNLTD21B2

CNLTD52A2

CNLTD142A3

CNLTD72A3

DIBBC2314S21W

DIRLC2214M21W

DIRBB2007S21W

Exhaust Ducts

Part Number	Description
Inlet Ducts	
CDE1	Net-Direct™ Air Inlet Duct, 1 RU that resides below the switch provides cold aisle airflow to Cisco^ 4948, 4928, and 4924. Optimized for use in server cabinet applications.
CDE2	Net-Direct™ Air Inlet Duct, 1 RU that resides in-line and below switch provides cold aisle airflow to Cisco^ Nexus N2K-C2148T-1GE, N2K-C2248TP-1GE, and N2K-C2232PP-10GE fabric extenders and Cisco^ WS-C4948E-F, WS-C4948E-F-S, and WS-C4948E-F-E. Optimized for use in server cabinet applications.
CNLTD21B2	Net-Direct™ Air Inlet Duct designed for Cisco^ Catalyst 4900M switch. Consists of one 2 RU inlet duct and a side duct.
CNLTD52A2	Net-Direct™ Air Inlet Duct designed for Cisco^ Catalyst 6504-E switch. Consists of 2 RU top and 2 RU bottom inlet ducts and a side duct.
CNLTD142A3	Net-Direct™ Air Inlet Duct designed for Cisco^ Nexus 7009 switch. Consists of 3 RU top and 3 RU bottom inlet ducts and a side duct.
CNLTD72A3	Net-Direct™ Air Inlet Duct designed for Cisco^ MDS 9506 switch. Consists of 3 RU top and 3 RU bottom inlet ducts and a side duct.
DIBBC2314S21W	Net-Direct™ Air Inlet Duct designed for Cisco^ MDS 9513 switch. Consists of 2 RU top and 3 RU bottom inlet ducts and a side duct.
DIRLC2214M21W	Net-Direct™ Air Inlet Duct designed for Cisco^ Catalyst 6509-E switch. Consists of 2 RU top and 2 RU bottom inlet ducts and a side duct.
DIRBB2007S21W	Net-Direct™ Air Inlet Duct designed for Cisco^ Nexus 7004 switch. Consists of one 2 RU inlet duct and a side duct.
Exhaust Ducts	
DERLCC6509A	Net-Direct™ Air Exhaust Duct for Net-Access™ N-Type 1070mm Depth Cabinets. Designed for Cisco^ 6509 switch.
DERLCC9513A	Net-Direct™ Air Exhaust Duct for Net-Access™ N-Type 1070mm Depth Cabinets. Designed for Cisco^ 9513 switch.
DERLCC7009A	Net-Direct™ Air Exhaust Duct for Net-Access™ N-Type 1070mm Depth Cabinets. Designed for Cisco^ 7009 switch.
DERLCC6513A	Net-Direct™ Air Exhaust Duct for Net-Access™ N-Type 1070mm Depth Cabinets. Designed for Cisco^ 6513 switch.
7018 Ducting Solution	
DIEBCC7018B	Net-Direct™ Air Inlet/Exhaust Duct designed for Cisco^ Nexus 7018 switch.
DIRLD0425S27W	Net-Direct™ Air Inlet Duct designed for Cisco^ Nexus 7018 switch.

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

Power Outlet Units (POUs) North America

VB1A1M2BM30P1

QN1A1D0BA24E1

QL1B1F0BA2401

Part Number	Description
Vertical Metered POUs	
VB1A1M2BM30P1*	30A, Single Phase, L5-30P Plug, 120V, (24) C-13/(6) C-19 Receptacles.
VB1B1L2BN30P1*	30A, Single Phase, L6-30P Plug, 208V, (24) C-13/(6) C-19 Receptacles.
VB1B1J0BA30P1*	20A, 3 Phase WYE, L21-20P Plug, 208V, (24) C-13/(6) C-19 Receptacles.
VB1B1P3BN30P1*	30A, 3 Phase WYE, L21-30P Plug, 208V, (24) C-13/(6) C-19 Receptacles.
VB1B1N3BN30P1*	30A, 3 Phase Delta, L15-30P Plug, 208V, (24) C-13/(6) C-19 Receptacles.
VB1D1Q3BN30P1*	30A, 3 Phase WYE, L22-30P Plug, 230/400V, (24) C-13/(6) C-19 Receptacles.
VB1B2C3BN30P1*	60A, Single Phase, IEC 60309 - 6H 2P+E Blue Watertight Plug, 208V, (24) C-13/(6) C-19 Receptacles.
Vertical Networked with Environmental POUs	
QN1A1D0BA24E1**	20A, Single Phase, L5-20P Plug, 120V, (24) C-13/(6) C-19 Receptacles.
QN1A1M2BM24E1**	30A, Single Phase, L5-30P Plug, 120V, (24) C-13/(6) C-19 Receptacles.
QN1B1F0BA30P1**	20A, Single Phase, L6-20P Plug, 208V, (24) C-13/(6) C-19 Receptacles.
QN1B1L2BN30P1**	30A, Single Phase, L6-30P Plug, 208V, (24) C-13/(6) C-19 Receptacles.
QN1B1J0BA30P1**	20A, 3 Phase WYE, L21-20P Plug, 208V, (24) C-13/(6) C-19 Receptacles.
QN1B1P3BN30P1**	30A, 3 Phase WYE, L21-30P Plug, 208V, (24) C-13/(6) C-19 Receptacles.
QN1B1N3BN30P1**	30A, 3 Phase Delta, L15-30P Plug, 208V, (24) C-13/(6) C-19 Receptacles.
QN1B2G6BN24R1**	60A, Single Phase, IEC 60309 - 6H 2P+E Blue Splashproof Plug, 208V, (18) C-13/(6) C-19 Receptacles.
Vertical Switched with Per Outlet Monitoring POUs	
QL1B1F0BA2401***	20A, Single Phase, L6-20P Plug, 208V, (21) C-13/(3) C19 Locking Receptacles.
QL1B1L2BN24AA1***	30A, Single Phase, L6-30P Plug, 208V, (20) C-13/(4) C19 Locking Receptacles.
QL1B1J0BA2401***	20A, 3 Phase WYE, L21-20P Plug, 208V, (21) C-13/(3) C19 Locking Receptacles.
QL1B1P3BN2401***	30A, 3 Phase WYE, L21-30P Plug, 208V, (21) C-13/(3) C19 Locking Receptacles.
QL1B2G6BN2491***	60A, 3 Phase Delta, IEC 60309 - 9H 3P+E Blue Splashproof Plug, 208V, (18) C-13/(6) C-19 Locking Receptacles.

*For no local monitor, replace “1” with “0”, e.g. VB0A1M2BM30P1
** For Networked current monitoring, replace “QN” with “QZ”, e.g. QZ1A1D0BA30P1
*** For Switched without per outlet monitoring, replace “QL1” with “QS1”, e.g. QS1B1F0BA2401

Power Outlet Units (POUs) Global

VB1D2B2BM30P1

QZ1D2A0BA30P1

QL1D2A0BA2401

Part Number	Description
Vertical Metered POUs	
VB1D2A0BA30P1*	16A, Single Phase, IEC 60309 - 6H 2P+E Blue Splashproof Plug, 230V, (24) C-13/(6) C-19 Receptacles.
VB1D2B2BM30P1*	32A, Single Phase, IEC 60309 - 6H 2P+E Blue Splashproof Plug, 230V, (24) C-13/(6) C-19 Receptacles.
VB1D2P3BN30P1*	32A, 3 Phase WYE, IEC 60309 - 6H 3P+N+E Red Splashproof Plug, 230/400V, (24) C-13/(6) C-19 Receptacles.
VB1D2Q0BA30P1*	16A, 3 Phase WYE, IEC 60309 - 6H 3P+N+E Red Splashproof Plug, 230/400V, (24) C-13/(6) C-19 Receptacles.
Vertical Networked with Environmental POUs	
QN1D2A0BA30P1**	16A, Single Phase, IEC 60309 - 6H 2P+E Blue Splashproof Plug, 230V, (24) C-13/(6) C-19 Receptacles.
QN1D2B2BN30P1**	32A, Single Phase, IEC 60309 - 6H 2P+E Blue Splashproof Plug, 230V, (24) C-13/(6) C-19 Receptacles.
QN1D2Q0BA30P1**	16A, 3 Phase WYE, IEC 60309 - 6H 3P+N+E Red Splashproof Plug, 230/400V, (24) C-13/(6) C-19 Receptacles.
QN1D2P3BN30P1**	32A, 3 Phase WYE, IEC 60309 - 6H 3P+N+E Red Splashproof Plug, 230/400V, (24) C-13/(6) C-19 Receptacles.
Vertical Switched with Per Outlet Monitoring POUs	
QL1D2A0BA2401***	16A, Single Phase, IEC 60309 - 6H 2P+E Blue Splashproof Plug, 230V, (21) C-13/(3) C-19 Receptacles.
QL1D2B2BN24AA1***	32A, Single Phase, IEC 60309 - 6H 2P+E Blue Splashproof Plug, 230V, (20) C-13/(4) C-19 Receptacles.
QL1D2Q0BA2401***	16A, 3 Phase WYE, IEC 60309 - 6H 3P+N+E Red Splashproof Plug, 230/400V, (21) C-13/(3) C-19 Receptacles.
QL1D2P3BN2401***	32A, 3 Phase WYE, IEC 60309 - 6H 3P+N+E Red Splashproof Plug, 230/400V, (21) C-13/(3) C-19 Receptacles.

*For no local monitor, replace “1” with “0”, e.g. VB0A1M2BM30P1
** For Networked current monitoring, replace “QN” with “QZ”, e.g. QZ1A1D0BA30P1
*** For Switched without per outlet monitoring, replace “QL1” with “QS1”, e.g. QS1B1F0BA2401

PViQ™ Sensors Global

PVQ-EST-18

PVQ-ESTAFHD-18

PVQ-ESDPK

PVQ-ESWK

Part Number	Description
PVQ-EST-18	Environmental temperature sensor with 18' cord.
PVQ-ESTAFHD-18	Temperature, humidity, airflow, and dew point sensor with 18' cord.
PVQ-ESDPK	Door position sensor kit.
PVQ-ESWK	Water sensor kit.

Blanking Panels

TLBP1

TLBP2

Part Number	Description
Tool-Less Blanking Panels	
TLBP1S-V	19" (483mm) width for 3/8" cage nut holes (may be used with or without cage nuts installed). 1 RU.
TLBP2S-V	19" (483mm) width for 3/8" cage nut holes (may be used with or without cage nuts installed). 2 RU.
TLBP1R-V	19" (483mm) width for tapped rails. 1 RU.
TLBP2R-V	19" (483mm) width for tapped rails. 2 RU.

Sealing Accessories

CTGN1X5

CTGN3X5

CTCN1X5

CTCN3X5

BFS100X2000

Part Number	Description
Cool Boot ® Cabinet Top Air Sealing Fitting	
CTGN1X5	Used to seal off 1" x 5" cabinet top openings when cables are routed through the top of a cabinet. Airtight fabric and Ultra-Cinch™ Tie close top of fabric, minimizing hot air bypass around cables to improve cooling of network equipment and reduce energy costs. For use with 600mm wide Net-Access™ Cabinets.
CTGN3X5	Used to seal off 3" x 5" cabinet top openings when cables are routed through the top of a cabinet. Airtight fabric and Ultra-Cinch™ Tie close top of fabric, minimizing hot air bypass around cables to improve cooling of network equipment and reduce energy costs. For use with 700mm, 800mm, and 1000mm wide Net-Access™ Cabinets.
CTGN6X6	Used to seal off 6.5" x 6.5" cabinet top openings when cables are routed through the top of a cabinet. Airtight fabric and Ultra-Cinch™ Tie close top of fabric, minimizing hot air bypass around cables to improve cooling of network equipment and reduce energy costs. For use with 600mm, 700mm, 800mm, and 1000mm wide Net-Access™ Cabinets.
Cabinet Top Cover and Cable Protection Bezel	
CTCN1X5	Used to seal off 1.5" x 5" cabinet top openings. Can also be used to add the CTGN1X5 to openings where the snap-on cover has been removed. For use with Net-Access™ Cabinets.
CTCN3X5	Used to seal off 3.5" x 5" cabinet top openings. Can also be used to add the CTGN3X5 to openings where the snap-on cover has been removed. For use with Net-Access™ Cabinets.
CTNBZL6X6	Used to provide a protective edge for cables routed through the 6.5" x 6.5" cabinet top openings after knock-outs are removed. Can also be used to add the CTGN6X6 to openings where knock-out has been removed. For use with Net-Access™ Cabinets.
Blanking Foam Strips	
BFS100X2000	Adhesive-backed blanking foam strips conform to minimize gaps and prevent bypass air within network cabinets. Removable and repositionable acrylic-based adhesive is aggressive to provide suitable strength, however, will not leave residue on equipment 4.0" x 100" roll perforated 1.0" in width and 20.0" in length.

Energy Efficient Data Center Cabinet System

A Part of Panduit's Intelligent Data Center Solution

Panduit's Unified Physical Infrastructure℠ (UPI)-based Intelligent Data Center Solutions embody the next wave of systems integration and risk management by aligning and harmonizing critical systems to support the delivery of secure, energy-efficient, always-on, real-time data and services. Energy Efficient Cabinet Systems are one of the key pillars of the Panduit Intelligent Data Center Solution that include:

Intelligent Software and Hardware — Panduit Physical Infrastructure Manager™ (PIM™) Software Platform works seamlessly with PanView iQ™ (PViQ™) System Hardware and select third-party devices providing an end-to-end physical to logical view of your data center and extended enterprise. Panduit's Intelligent Software and Hardware enable effective optimization of your data center's space, power, and capacity planning through 10% OpEx savings in energy costs, 75% faster moves, adds, and changes (MACs), and 80% faster mean time to repair (MTTR).

Data Center Advisory Services — Panduit Data Center Advisory Services provide a full range of physical infrastructure layer services to help you assess, design, and maintain resilient, sustainable solutions that deliver operational flexibility to reduce costs by up to 20%, and meet future requirements.

High Speed Data Transport (HSDT) Copper and Fiber Cabling Systems — Panduit HSDT Solutions are both protocol and media agnostic, delivering maximum flexibility during planning, designing, commissioning, and operation of the data center. Our HSDT Solutions enable advanced network architectures such as 10/40/100 Gig Ethernet LANs and 8/16/32 Gig Fibre Channel SANs and can provide a 10% improvement in network throughput.

Pre-Configured Physical Infrastructures — Panduit helps reduce deployment times up to 65% and mitigates the risk of adopting new technologies with reliable and robust Pre-Configured Infrastructures. Panduit utilizes optimized reference designs collaboratively engineered with our partners, to enhance the physical infrastructure of their technology platforms and seamlessly integrate physical and logical systems.

Physical Infrastructure Foundation — Critical to the deployment of our Intelligent Data Center solution is the physical infrastructure foundation in the data center, which includes such items as:

Pathways: Provide the best method to route and manage the growing amount of data and power cabling while ensuring high levels of network performance

Zone Cabling: Serves as a main distribution point for a particular zone, increasing network flexibility, manageability, accessibility, and efficiency

Bonding and Grounding: Provides a high quality, visually verifiable and dedicated grounding path to maintain system performance, improve network reliability, and protect network equipment and personnel

Identification and Labeling: Enhance the appearance of installations by presenting a clear and efficient way to label according to TIA/EIA-606-A standards

Real-World Solutions

With a proven reputation for excellence and innovation, Panduit and our partners work with you to overcome challenges and implement real-world solutions that create a competitive business advantage. Panduit offers the broadest range of solutions, from data centers and intelligent buildings to manufacturing operations, to help you build a ***smarter, unified business foundation.***

Technology Leadership

Panduit develops innovative physical infrastructure solutions that meet the rapidly changing needs of our clients, from hardware and software to advisory services. This commitment is supported by investment in advanced research, solutions-focused product development, world-class manufacturing, and collaboration with customers at the forefront of technology.

Partner Ecosystem

Our best-in-class partner ecosystem offers a comprehensive portfolio of services that span the project lifecycle, from planning and design to delivery, deployment, maintenance, and operation. Panduit business partners – distributors, and certified architects, consultants, engineers, designers, system integrators, and contractors – are qualified to help you achieve your objectives and realize predictable and measurable results.

Strategic Alliances

Panduit cultivates long-term strategic alliances with industry leaders, including Cisco Systems, EMC, IBM, and Rockwell Automation, to develop, optimize, and validate solutions for our customers. This investment in people and resources helps solve our customers' greatest business challenges.

Global Business Commitment

Panduit is committed to delivering a consistently high level of quality and service the world over. With a presence in more than 100 countries, local Panduit sales representatives and technical specialists offer guidance and support that bring value to your business. Our global supply chain, which includes manufacturing, customer service, logistics, and distribution partners, provides prompt response to your inquiries and streamlines delivery to any worldwide destination.

Sustainability

With a commitment to environmental sustainability, Panduit develops and implements solutions that protect, replenish, and restore the world in which we live. This commitment is demonstrated by Panduit's LEED Gold certified World Headquarters, leveraging the Unified Physical Infrastructure℠ approach to enable convergence of critical building systems to drive energy efficiency and ongoing operational improvement.

Transform Your Physical Infrastructure

Call or visit us online, we can show you how.

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