PANDUIT®

Solutions to
Manage,
Protect,
and
Showcase

Your Network Investment

WORLD LEADER IN CABLE MANAGEMENT RACK SYSTEMS

The World Leader in Rack and Cable Management Solutions

Designed to support copper and fiber cabling, PANDUIT Cable Management Rack Systems provide a complete system solution to manage, protect, and showcase equipment and structured cabling investments.

PANDUIT Rack Systems Provide:

Management of Network Cabling

Industry experience and quality engineering of *PANDUIT* solutions result in superior products designed for optimum cable management. *PANDUIT* products help effortlessly route and organize cable for ease of installation and future maintenance.

Protection for Reliable System Performance

As new technologies emerge, network cabling performance is pushed to the limit. Today's complex systems depend on robust cable management for increased reliability. *PANDUIT* racks and cable management systems are designed for maximum performance and protection of network cabling, resulting in ultimate system reliability.

A Showcase for Network Technology

PANDUIT rack systems control and conceal cable pathways to enhance system appearance. Well-organized cable management makes any telecom room or data center a showplace and demonstrates your commitment to technology.
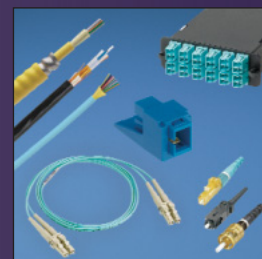
Why settle for anything less?

Copper Cabling Systems

Fiber Cabling Systems

Racks

PANDUIT rack systems allow complete flexibility for a wide range of cable and equipment combinations and are designed to maximize cable access.

Vertical Cable Managers

Vertical cable managers allow increased cable density for maximum space utilization and organization. This provides a cost-effective solution with easy cable access and ultimate cable protection.

Horizontal Cable Managers

PANDUIT offers a variety of horizontal cable managers to provide additional pathways for increased management and control of copper and fiber patch cords.

Patch Panels

PANDUIT offers a complete selection of standard, angled, high density and powered patch panels to fit each unique application. Modular designs accommodate a full range of media types and performance levels to provide flexibility and scalability for changing network requirements.

Fiber Enclosures

OPTICOM® Rack Mount Fiber Enclosures provide a high-capacity, high-density connection point with optimum management and protection of fiber cable.

Network Grounding Systems

PANDUIT® *STRUCTUREDGROUND*™ System for Data Center Grounding provides a high quality, visually verifiable, and dedicated grounding path to ensure highest network system performance and protect network equipment and personnel.

Raised Floor Grommet

PANDUIT raised floor grommet reduces bypass airflow around cables that penetrate the raised floor, thereby reducing energy costs and improving network reliability.

Fiber Routing Systems

Zone Cabling

Cable Ties and Accessories

Network Identification Systems

3

PATCHRUNNER™
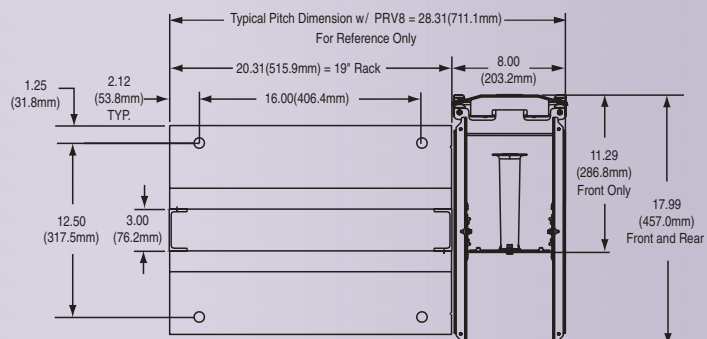## Vertical Cable Management Rack System

PATCHRUNNER™ _Vertical Cable Management Rack System manages high density network equipment and patch panels in up to half the number of racks required by traditional cable management systems._

- Curved cable management fingers support cables as they transition to the vertical pathway eliminating the need for horizontal managers
- Fingers align with rack spaces simplifying cable routing
- Large finger openings accommodate up to 48 Category 6 cables
- Individual fingers can be removed without the use of a tool for routing of large cable bundles
- Slack management spools organize and manage patch cord slack allowing standardization of patch cords
- Angled patch panels promote proper bend radius control
- Rugged full-length dual hinged doors open 180° for complete access to pathway

See pages 5 and 6 for more on
The Maximum Density Solution

Floor Footprint for CMR19X84 and PRV8

Typical Pitch Dimension w/ PRV8 = 28.31(711.1mm)
For Reference Only

20.31(515.9mm) = 19" Rack

8.00 (203.2mm)

1.25 (31.8mm)

2.12 (53.8mm) TYP.

16.00(406.4mm)

11.29 (286.8mm) Front Only

12.50 (317.5mm)

3.00 (76.2mm)

17.99 (457.0mm) Front and Rear

The Ultimate Cable Management Solution for Data Centers and Telecommunications Rooms

PATCHRUNNER™ Solution Benefits

Reduce real estate costs with innovative patented angled modular patch panels and space saving vertical cable managers. These products work together to provide up to quadruple the density, reducing costs in data centers and telecommunications rooms.

- Angled high density modular patch panels provide 48 ports in one rack space
- Bend radius fingers on vertical cable managers eliminate the need for horizontal cable managers

Ensure network reliability with a complete solution that protects cables from strain, maintains data integrity, and delivers reliable network performance.

- Angled modular patch panel design promotes proper bend radius of patch cords as they are routed into the vertical pathway
- Bend radius fingers on vertical cable managers support the cables as they transition to the vertical pathway to ensure data integrity

Achieve flexible system design with angled modular patch panels and adaptable vertical cable managers.

- Modular patch panels accept MINI-COM® Copper, Fiber, and Coax Modules providing complete modularity for mixed media applications and future upgrades
- Slack management spools on vertical cable managers can be repositioned to organize and manage cables providing maximum design flexibility
- Inter-rack pathways can be positioned at the top and/or bottom of the rack minimizing the need to route cables under the floor or overhead
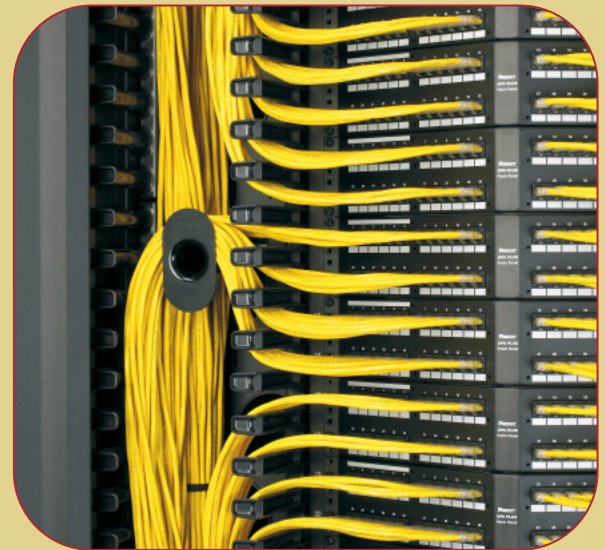
Designed to reduce real estate costs, maximize reliability, and provide flexible system design, MINI-COM® Angled Modular Patch Panels and PATCHRUNNER™ Vertical Cable Managers deliver a complete solution for data centers and telecommunications rooms
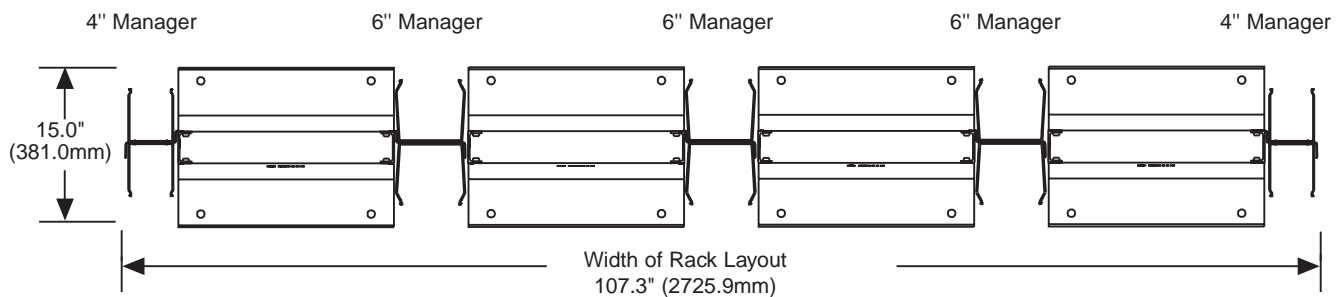
PANDUIT Cable Management Solutions
Traditional vs. High-Density

To illustrate the type of savings that can be achieved in a 960-port application, a comparison of a traditional vs. high-density cable management solution demonstrates a more efficient use of space and the cost savings realized.
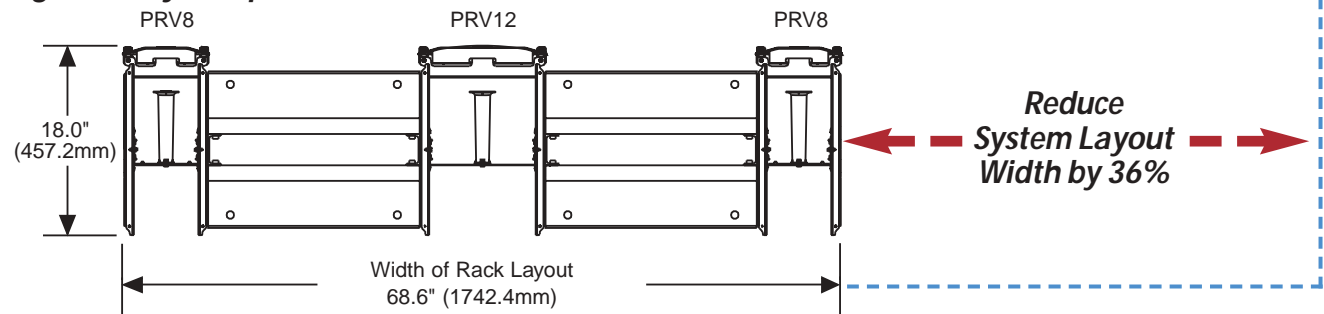
Reduce System Layout Width by 36%

Traditional Layout	Qty.	Width In.	Width mm	High-Density Layout	Qty.	Width In.	Width mm
Standard EIA channel racks	4	20.31	515.8	Standard EIA channel racks	2		515.8
4" vertical managers	2	4.24	107.7	PRV12 vertical managers	1	12	304.8
6" vertical managers	3	5.87	149.1	PRV8 vertical managers	2	8	203.2
2 RU horizontal managers	20	N/A		PRD12 hinged doors	1	N/A	
CPP48WBL 48-port modular patch panels	20	N/A		PRD8 hinged doors	2	N/A	
				CPPLA48WBL 48-port angled modular patch panels	20	N/A	
Total (not including jack modules)	**49**	**107.3**	**2725.9**	**Total (not including jack modules)**	**28**	**68.6**	**1742.4**

Traditional Footprint*

4" Manager   6" Manager   6" Manager   6" Manager   4" Manager

15.0" (381.0mm)

Width of Rack Layout
107.3" (2725.9mm)

High Density Footprint*

PRV8   PRV12   PRV8

18.0" (457.2mm)

Width of Rack Layout
68.6" (1742.4mm)

Reduce System Layout Width by 36%

Reduce Square Footage and Real Estate Costs Up to 23%

|	Traditional	High-Density	Benefits
Number of parts	49	28	Reduce installation time with 43% fewer system components to manage
Layout width	107.3" (2725.9mm)	68.6" (1742.4mm)	36% narrower profile is ideal for space constrained applications
Square footage	11.2 ft.^{2} (1.04m^2)	8.6 ft.^{2} (0.80m^2)	Smaller footprint saves 23% floor space
Real estate cost**	$4,480	$3,440	Resulting space savings reduces real estate costs 23%

*Representative application, actual configurations may vary.
**Based on $400/ft.^{2} annually.

PATCHRUNNER™
Rack System Roadmap
Maximum Density, Minimum Floor Space

1 Standard EIA Rack
(Features listed on page 8)
19" x 7', 45 Rack Units (RU)
CMR19X84
NEW! 19" x 8', 52 Rack Units (RU)
CMR19X96

2 PATCHRUNNER™ Vertical Managers
Available in 6", 8", 10", 12" and 15"
widths for both *7' and 8' racks*.
See below for part numbers

3 PATCHRUNNER™ Dual Hinged Doors.
Available for both *7' and 8' racks*
PRD6 – 6" wide
PRD8 – 8" wide (shown)
PRD10 – 10" wide
PRD12 – 12" wide
PRD15 – 15" wide

4 PATCHRUNNER™ Single Hinged Doors
Available for 7' racks
PRSHD6 – 6" wide (shown)
PRSHD8 – 8" wide
PRSHD12 – 12" wide

5 Angled Modular Patch Panels
CPPLA48WBLY – 2 RU, 48 Port
CPPA48HDWBLY – 1 RU, 48 Port

6 High Capacity Cable Manager
NCMHAEF4 – 4 RU (shown)
NCMHAEF2 – 2 RU

7 Cable Routing Trough
CMT4 – 4 RU

8 PATCHRUNNER™ End Panel
PREP – 7' Version
PREP96 – 8' Version

9 PATCHRUNNER™ Rack Top Trough
CRTW
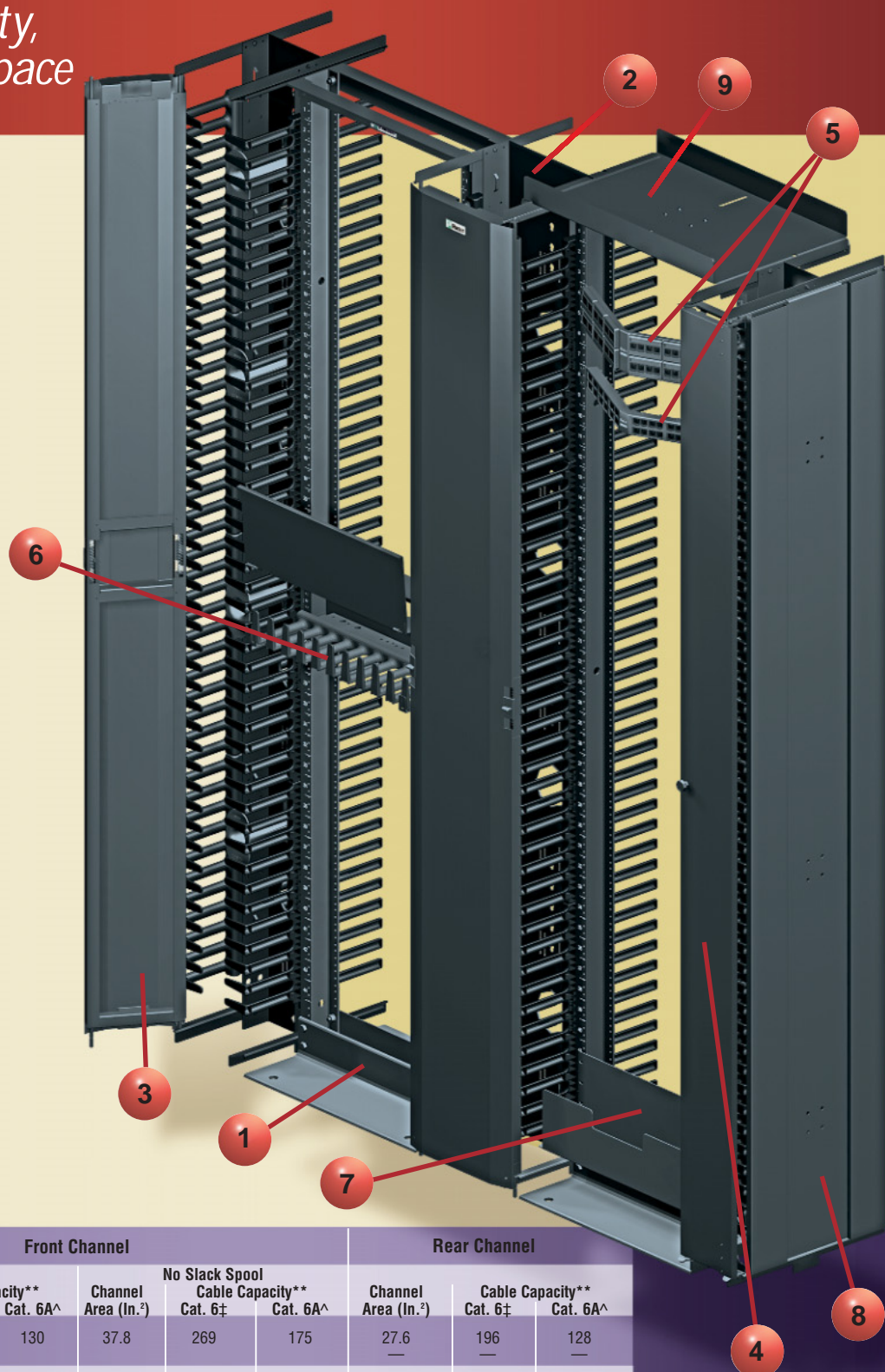
Capacity Chart	Front Channel						Rear Channel		
		w/ Slack Spool Cable Capacity**			No Slack Spool Cable Capacity**			Cable Capacity**	
Part Number*	Channel Area (In.²)	Cat. 6‡	Cat. 6A^	Channel Area (In.²)	Cat. 6‡	Cat. 6A^	Channel Area (In.²)	Cat. 6‡	Cat. 6A^
PRV6 (front/rear) PRVF6 (front only)	28.2	201	130	37.8	269	175	27.6	196	128
PRV8 (front/rear) PRVF8 (front only)	44.7	318	207	54.3	387	251	39.0 —	277 —	180 —
PRV10 (front/rear) PRVF10 (front only)	61.1	435	283	70.7	504	328	50.3 —	358 —	233 —
PRV12 (front/rear) PRVF12 (front only)	77.6	553	359	87.2	621	404	61.7 —	439 —	289 —
PRV15 (front/rear) PRVF15 (front only)	102.3	729	474	111.9	797	518	78.7 —	561 —	365 —

*For part numbers that fit in 8' rack, add "96" to end of part number.
‡ = .25" diameter; ^ = .31" diameter

**Capacities are based upon a fill rate of 35% to accommodate proper cable routing techniques.

NETRUNNER™ Vertical Cable Management Rack System

NETRUNNER™ Vertical Cable Management Rack System provides a medium density solution that manages, protects, and showcases network cabling in telecommunication rooms and data centers.
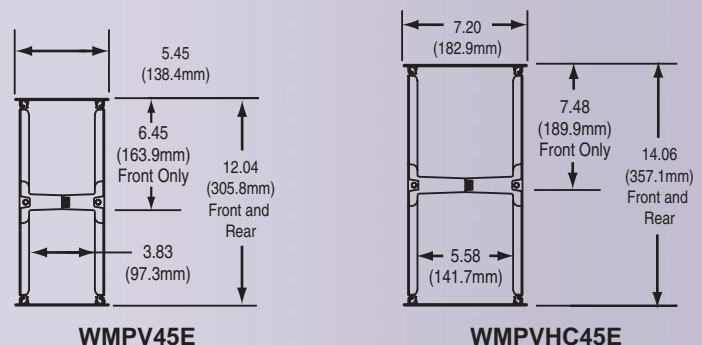
NETRUNNER™ Vertical Cable Management Rack System

- Bend radius fingers align with rack spaces to support cables as they transition to the vertical pathway

- Large finger openings accommodate up to 24 Category 6 cables

- Dual hinged covers open 110° to the left or right to provide complete access to the cables inside the vertical pathway

- Integral cable retainers on the end of each finger help contain cables within each rack unit

- Snap-on cable retainers can be placed on fingers to help retain cables in channel during installation and maintenance

Standard EIA Rack System

- Grounding washers provide a fully bonded structure to simplify the grounding process

- Printed rack space identification allows quick and easy location of printed rack mounted equipment

- UL listed for 1000 lbs. load rating to accommodate large networking equipment

Floor Footprint for WMPV45E and WMPVHC45E

WMPV45E

5.45 (138.4mm)

6.45 (163.9mm) Front Only

12.04 (305.8mm) Front and Rear

3.83 (97.3mm)

WMPVHC45E

7.20 (182.9mm)

7.48 (189.9mm) Front Only

14.06 (357.1mm) Front and Rear

5.58 (141.7mm)

NETRUNNER™
Rack System Roadmap

The New Standard in Cable Management

1 Standard EIA Rack
19" x 7', 45 Rack Units (RU)
CMR19X84

2 NETRUNNER™ Vertical Managers
WMPVHC45E – 6" wide (shown)
WMPV45E – 4" wide
WMPVCBE – Center Mount
Bracket Kit

3 NETRUNNER™ Rack Top Trough
WMPV45ERTW

4 NETRUNNER™ End Panel
WMPVHC45EP – use with
WMPVHC45E (shown)
WMPV45EP – use
with WMPV45E

5 PATCHLINK™ Horizontal
Cable Manager
WMPH2E – 2 RU

6 OPEN-ACCESS™ Horizontal
Cable Manager
CMPH2 – 2 RU

NEW! NETMANAGER™ High Capacity
Horizontal Cable Manager
NM2 – Front and Rear 2 RU
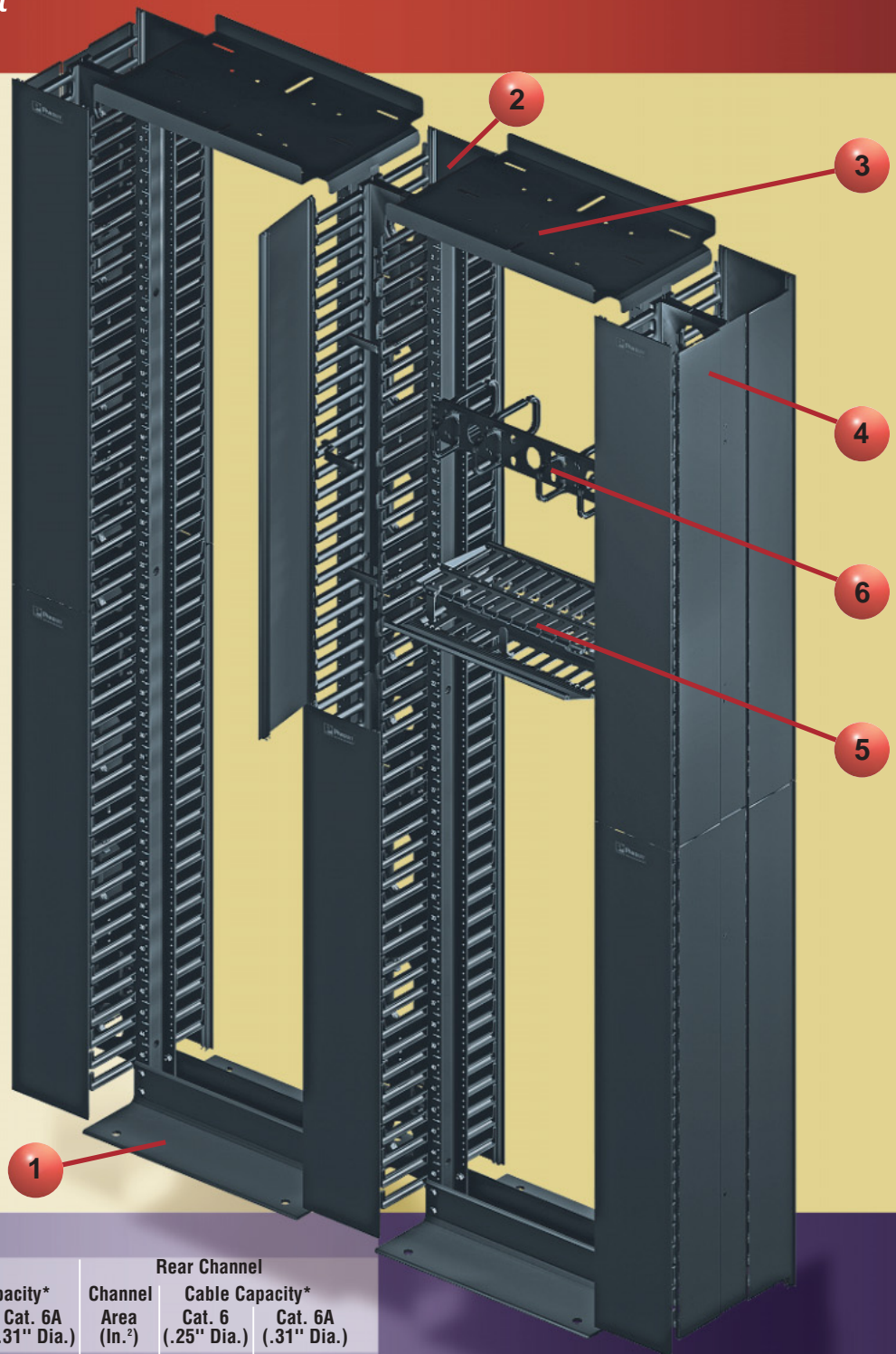
Capacity Chart

Part Number	Front Channel			Rear Channel		
	Channel Area (In.²)	Cable Capacity* Cat. 6 (.25" Dia.)	Cat. 6A (.31" Dia.)	Channel Area (In.²)	Cable Capacity* Cat. 6 (.25" Dia.)	Cat. 6A (.31" Dia.)
WMPV45E (front/rear)	18.5	131	83	18.5	131	83
WMPVF45E (front only)				—	—	—
WMPVHC45E (front/rear)	34.5	245	154	34.5	245	154
WMPVHCF45E (front only)				—	—	—

*Note: Capacities are based upon a fill rate of 35% to accommodate proper cable routing techniques.
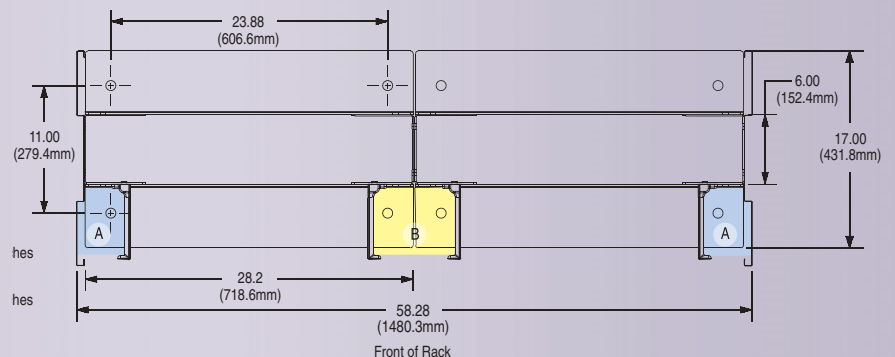
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NETFRAME®
Cable Management Rack System

NETFRAME® Cable Management Rack System supports heavy-duty applications utilizing an extra wide channel design to provide vertical pathways for convenient routing of cables within the frame footprint.

■ Patented cable management rack is UL listed for 1500 lbs. load rating to accommodate large networking equipment

■ Vertical cable management options for mid-to-high-density cabling applications are simple to install and can be configured to meet individual needs

■ Fully bonded structure with a single point ground contact simplifies the grounding process

■ Rack features 19" or 23" EIA mounting

■ Pass through holes on front and side of channels provide convenient patching from front to back or between racks

■ Full length dual and single hinged doors provide an aesthetic finish and easy access to the vertical pathway

■ 6" deep vertical channel with unequal flange design provides access to cable pathway

■ Top channel provides pathway for cable or ladder rack up to 18" wide

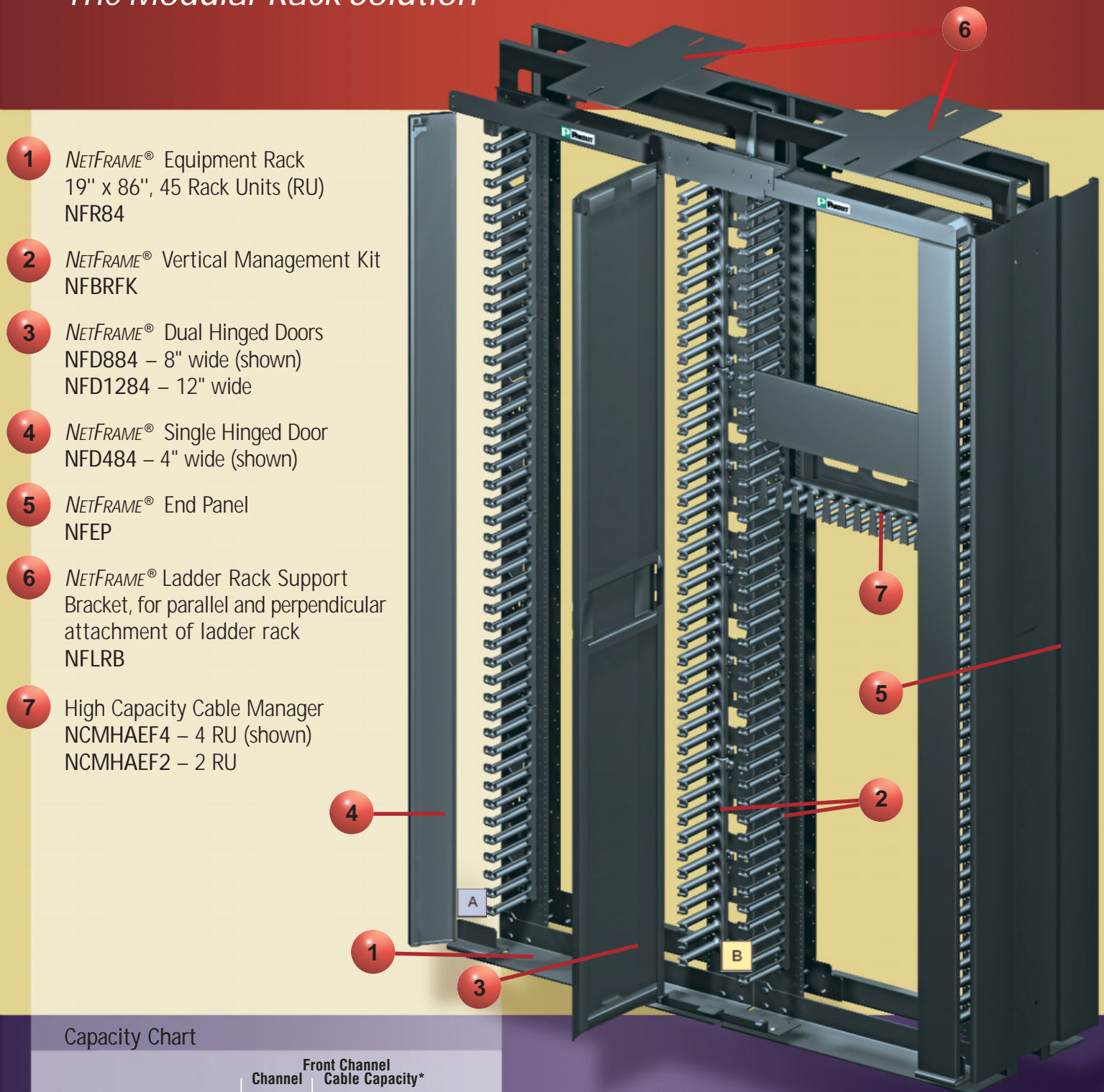## Floor Footprint for two NFR84, NFEP, and NFBRFK

| A | End Cable Pathway Area = 23.7 square inches |
| B | Center Cable Pathway Area = 41.6 square inches |

23.88 (606.6mm)

6.00 (152.4mm)

11.00 (279.4mm)

17.00 (431.8mm)

A   B   A

hes

hes

28.2 (718.6mm)

58.28 (1480.3mm)

Front of Rack

NETFRAME®
Rack System Roadmap
The Modular Rack Solution

1 *NETFRAME®* Equipment Rack
19" x 86", 45 Rack Units (RU)
NFR84

2 *NETFRAME®* Vertical Management Kit
NFBRFK

3 *NETFRAME®* Dual Hinged Doors
NFD884 – 8" wide (shown)
NFD1284 – 12" wide

4 *NETFRAME®* Single Hinged Door
NFD484 – 4" wide (shown)

5 *NETFRAME®* End Panel
NFEP

6 *NETFRAME®* Ladder Rack Support
Bracket, for parallel and perpendicular
attachment of ladder rack
NFLRB

7 High Capacity Cable Manager
NCMHAEF4 – 4 RU (shown)
NCMHAEF2 – 2 RU

Capacity Chart

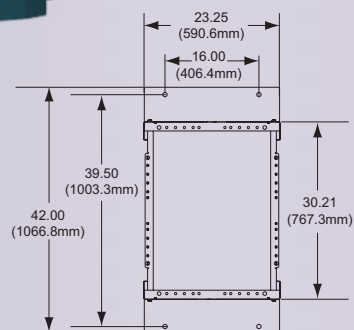| Pathway	Part Number	Channel Area (In.²)	Front Channel Cable Capacity*	
			Cat. 6 (.25" Dia.)	Cat. 6A (.31" Dia.)
A (End)	NFR84, NFEP, NFBRFK	23.7	168	106
B (Center)	(2) NFR84, NFBRFK	41.6	296	186

*Note: Capacities are based upon a fill rate of 35% to accommodate proper cable routing techniques.
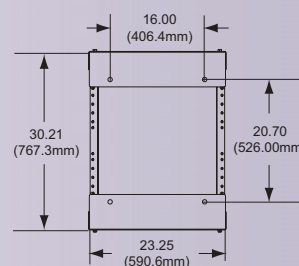
4 Post
Rack System

4 Post Rack System supports deep networking equipment. The rack combines the stability of a cabinet with the accessibility of an open rack to provide maximum flexibility.

- Front and rear equipment mounting rails can be adjusted after the rack is secured to the floor

- UL listed for 2000 lbs. load rating to accommodate large networking equipment

- Open frame provides easy access and improved heat dissipation

- Rear rail design provides clear ventilation path for side ventilated switches

- Printed rack space identification on equipment mounting rails

- Fully bonded structure with a single point ground contact simplifies the grounding process

- *PATCHRUNNER™* and *NETRUNNER™* Vertical Cable Managers mount directly to any of the corner posts

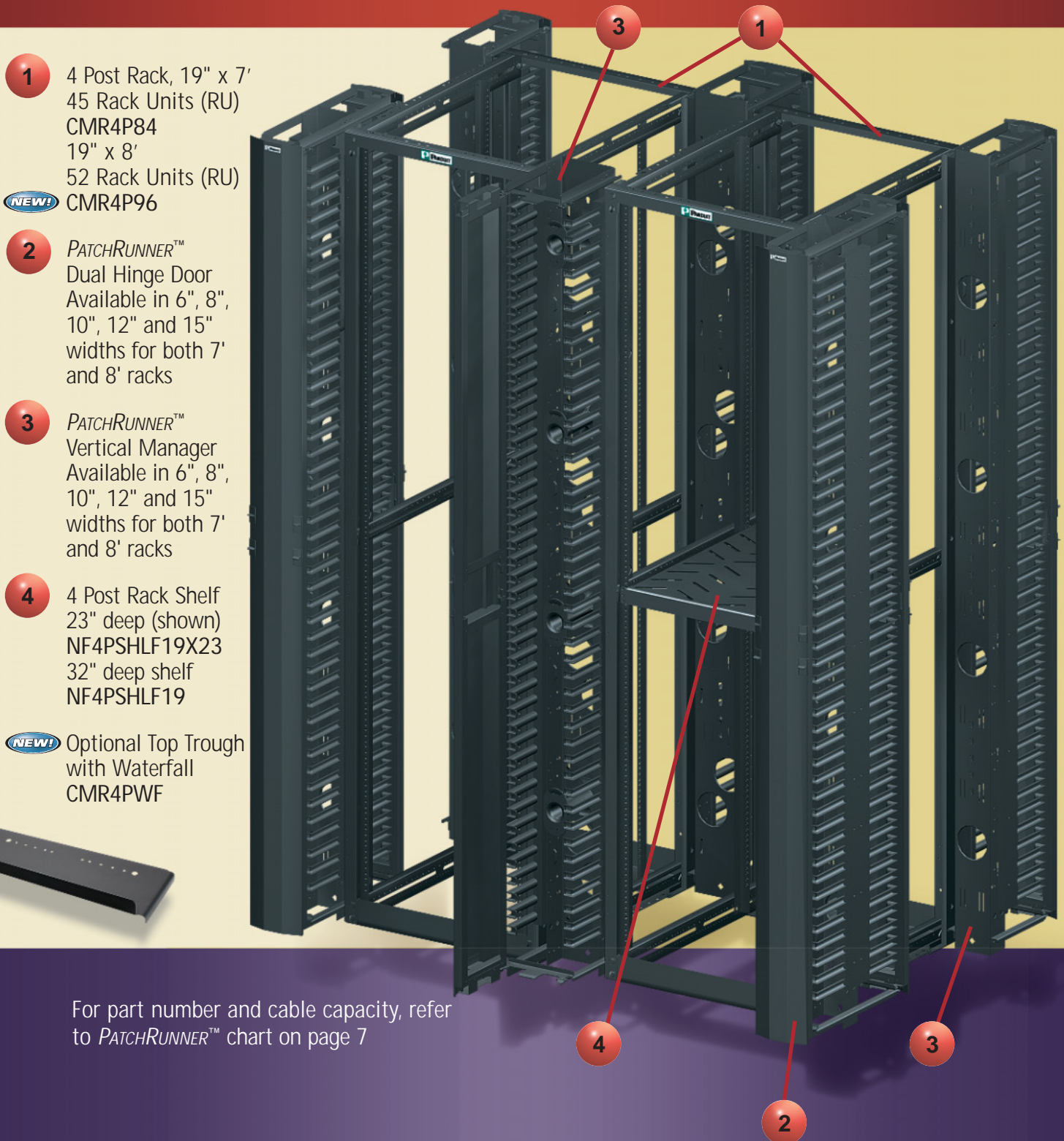- Optional top trough with waterfall creates pathway above rack

Floor Footprint for CMR4P84

23.25 (590.6mm)
16.00 (406.4mm)
39.50 (1003.3mm)
42.00 (1066.8mm)
30.21 (767.3mm)

Base angle outside mounting

16.00 (406.4mm)
30.21 (767.3mm)
20.70 (526.00mm)
23.25 (590.6mm)

Base angle inside mounting

4 Post
Rack System Roadmap

*Maximum Stability for
Servers and Equipment*

1 4 Post Rack, 19" x 7′
45 Rack Units (RU)
CMR4P84
19" x 8′
52 Rack Units (RU)
NEW! **CMR4P96**

2 *PATCHRUNNER™*
Dual Hinge Door
Available in 6", 8",
10", 12" and 15"
widths for both 7'
and 8' racks

3 *PATCHRUNNER™*
Vertical Manager
Available in 6", 8",
10", 12" and 15"
widths for both 7'
and 8' racks

4 4 Post Rack Shelf
23" deep (shown)
NF4PSHLF19X23
32" deep shelf
NF4PSHLF19

NEW! Optional Top Trough
with Waterfall
CMR4PWF

For part number and cable capacity, refer
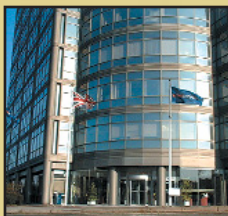to *PATCHRUNNER™* chart on page 7
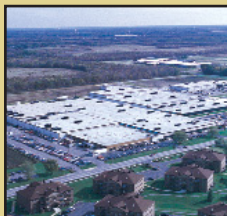
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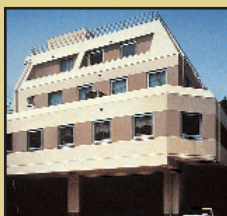or by phone: 800-777-3300

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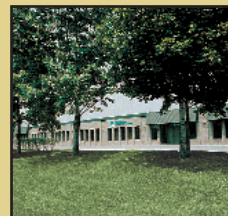cs-la@panduit.com
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WORLDWIDE HEADQUARTERS

For a copy of *PANDUIT* product warranties, log on to www.panduit.com/warranty