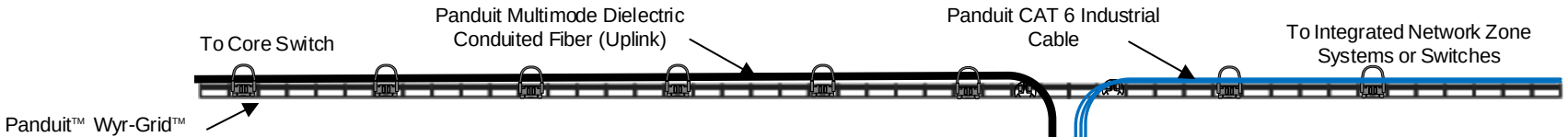
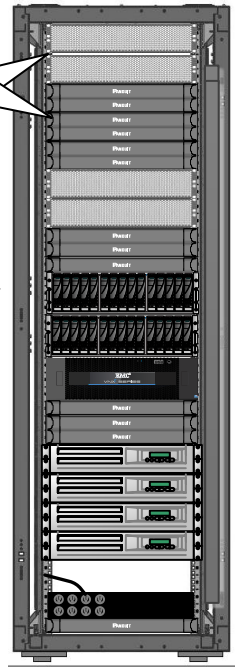
# Micro Data Center Layout, Cable Management, Grounding/Bonding, Power and ID




**Thermal**
Blanking panels optimize airflow and improve appearance. Perforated and solid blanking panels shown.

Inside Cabinet

**Strain Relief**
Strain relief bar and clip securely hold horizontal cable preventing disconnect.



Front View

Light

Heavy

**Cable Management**
1RU Fiber enclosure with termination management, bend radius control, and protection.

Panduit Small Diameter Patch Cord

Network Switch

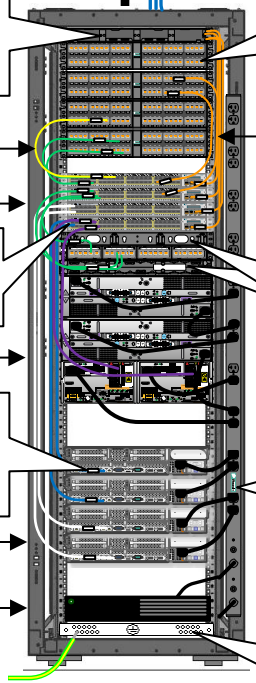
**Layout**
Switches turned around to have ports on same side.

Storage Array

**Identification**
Label cords with FROM and TO location. Panduit TurnTell labels makes it easy to view.

Servers

Uninterruptible Power Supply



Rear View

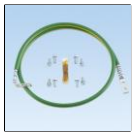
**Cable Management**
High Density patching using a 48-port angled patch panel. Horizontal managers not needed.

Panduit Multimode Fiber Patch Cord

**Cable Management**
Standard patching using a 24-port patch panel with D-ring (open) or NetManager™ (hidden) horizontal manager.

**Power**
Verticle Power Outlet Unit (POU) powers devices. Some units have power and environmental monitoring and connected to UPS. A second POU can be added for redundant power.

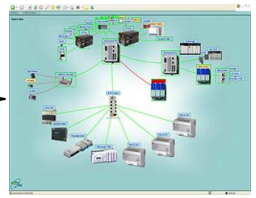
**Grounding/Bonding**
Grounding cable attaches to grounding bar. Jumpers attach to ground bar and equipment



**Use this drawing when:**

- Deploying a new compute, network, and/or storage cabinet or rack
- Upgrading or adding devices
- Expanding the network
- Addressing moves, adds, and changes maintenance issues

**Network Monitoring**
IntraVUE Network Monitoring Software



IN-ROOM
PCD007-AUG16-ENG

PANDUIT™

Micro Data Center Reference Design

# Bill of Materials

| Part Number | Description |
|---|---|
| MDC79D | 42 RU pre-configured industrial micro data center, 78.1'' (1984mm) height, network cabling, 4 casters, and shock pallet |
| S8222B | Net-access S-type cabinet frame. Single hinge perforated front door. Split perforated rear doors. 79.8" H x 31.5" W x 48.0" D |
| CPPA48FMWBLY | Angled 48-port flush mount patch panel supplied with rear-mounted faceplates |
| CPPL24M6BLY | 24-port patch panel supplied with 4 factory-installed CFPLM6BL snap-in faceplates |
| CJ688TGBL | Cat 6, 8-position, 8-wire universal module |
| CMPHF1 | D-rings installed on panel |
| PSL-DCJB | Jack module block-out device |
| TLBP1R-V | Tool-less blanking panel for 1RU |
| UTP28SP5GR | Cat 6 performance, 28 AWG UTP patch cord with TX6 modular plugs on each end, green, 5 feet length |
| FX2ERLNLNSNM002 | OM3 2-fiber patch cord, riser rated, LC duplex to LC duplex with 1.6mm jacket, 2 meter length |
| FAP6WBLDLC | LC OM2 FAP loaded with 6 LC duplex multimode fiber optic adapters (black) with phosphor bronze split sleeves |
| FCE1UA | Holds up to 5 QuickNet cassettes, FAP adapter panels, or FOSM splice modules |
| Q1L2B3J2M24AFA0 | Vertical power strip, 32A, 18 IEC C-13 and 6 IEC C-19 locking receptacles, and IEC-60309-6H 2P+E plug |
| RGRB19CN | Grounding busbar kit, 19" long, 20 holes |
| RGEJ660PF | #6 AWG jumper, 60" long, 45° bent lug |
| R100X150V1T | TurnTellThermal transfer, vinyl, 1.00" W x 1.50" H, 0.50" POA, clear/white, 3" core |
| SRBBRWC-KIT | Strain relief bar with integrated adjustable clips and pair of quick release brackets |
| IUC6C04ABL-CEG | Industrial copper cable, Cat 6, 4-pair, 24/7 AWG stranded, U/UTP, CM, black, 1000ft/305m reel |
| FSPD508-050M | 8-fiber OM2 dielectric conduited, low-smoke zero halogen (LSZH) riser (OFNR) rated, (MM) indoor distribution cable, 50 meters length |
| IABDIN4 | 4 RU din-rail conversion kit |

## For More Information

For more information, contact your local distributor, Panduit Sales Representative, or Rockwell Automation Sales Representative.
www.panduit.com/ia
iai@panduit.com

# About this Configuration

## Server, Switch, Storage, etc. Layout

For best stability, heavier equipment like server, UPS, and storage should be mounted towards the bottom of a cabinet or rack with lighter components like switch, firewall, and patch panel towards the top. Reliable and efficient cabling is best with all equipment ports facing backwards. Equipment like switches may need to be turned around with their port side facing backwards. Cabinet rails may need to be moved forward to line up devices on the front. Ensure cabinet or rack RU holes are compatible with equipment rails and brackets.

## Cable Management

Follow best practices to route and protect cabling to achieve the highest reliability and ease moves, adds, and changes. Reduce interference with ports by placing rack mounted horizontal cable managers like D-Rings and NetManagers above and below equipment or flat patch panels to route cables away from port. Use angled patch panels for high density patching. A fiber enclosure protects exposed fiber cable, termination management (e.g. fusion splice), and bend radius control. Select patch cord lengths that have minimal slack between connections. Use slack spools to take up slack. Bundle cables using Hook & Loop cable ties for easy cable additions and removal. Horizontal cable should have strain relief to prevent jack connection damage like a strain relief bar.

## Grounding & Bonding

Grounding and bonding is essential for reliable communication and equipment protection. A solid copper grounding conductor is terminated to a lug and then landed on a grounding bar. Jumper cables are attached to equipment ground terminal and then routed to the grounding bar terminated with a lug that is attached to the grounding bar with a screw.

## Power

Reliable power is achieved with redundant power sources via UPS or dual, independent power lines to a Power Outlet Unit (POU). The POU should have a current rating and outlets sized to support current and future equipment. POUs can also come with power and environmental monitoring to provide critical alerts.

## Identification

Clear and intuitive identification eases installation along with moves, adds, and changes. This includes labeling cables on both ends following TIA-606-B standards. Color coding such as cables, color bands, and labels can be used to identify VLANs, areas, and media type.

## Network Monitoring

IntraVUE™ real-time industrial network monitoring software for assessment and troubleshoot. 128 node license: SNMS-0128

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