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### FlexCore™ Installation Instructions

Installation Instruction Number	Panduit Part Number	Description
FS187	FOBKF**(Y/A)M1	Fiber Breakout Kit, Flat Ribbon Furcation Tube
FS190	FDF45**	FlexCore™ Optical Distribution Frame
FS191	FDVCM1545**	FlexCore™ 150mm Vertical Cable Manager
FS192	FDVCM3045**	FlexCore™ 300mm Vertical Cable Manager
FS193	FDUFD**45*X**	FlexCore™ Single Hinge Front Doors
FS194	DFEP45**	FlexCore™ End Panels
FS198	FDUSP	FlexCore™ Fiber Spool
FS199	FDUSP6	FlexCore™ Fiber Spool 6-pack Color Coordinated Kit
FS200	FDS**-24-***	FlexCore™ Fusion Splice Cassette - Cable to LC Adapter
FS201	FDSN-24	FlexCore™ Fusion Splice Cassette - Cable to Cable
FS203	FDFUE4**	FlexCore™ 4RU Universal Enclosure
FS204	N/A	FlexCore™ Front Access Optical Distribution Frame Patchcord Routing Guide
FS205	FDFRC45**	FlexCore™ Frame Rear Panel
FS206	N/A	FlexCore™ Front Access Ingress/Egress Cabling Guide

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**For Technical Support:** [www.panduit.com/resources/install\\_maintain.asp](http://www.panduit.com/resources/install_maintain.asp)

### **1. Correlation between Enclosure Labels and Spools**

- FlexCore™ Front Access Optical Distribution Frame offers the end user 6 Pack Spool Kits (Part Number: FDUSP6 - FS199) to guide end users on how to properly route patchcords within system
- Each FDUSP6 comes with 6 pre-labelled spools and enough labels for 11 enclosures.
- Panduit installation instruction FS199 will show where, and how to effectively adhere labels to spools and enclosures
- The matching color and number between spool and enclosure will tell end users to which spool the patchcords exiting each enclosure must be routed
- The spools and enclosures will be labelled from the top of the frame going down
- Up to 11 enclosures can be used in each frame
- Each spool can handle patchcords from (2) enclosures
- If less than 11 enclosures are used per frame, the corresponding spools can be removed from the system
- All future routing diagram show correct labelling of spools, and 11 enclosures per frame

Enclosure(s)	Enclosure Label (not to scale)	Going to Spool	Spool Label (not to scale)
1 <sup>st</sup> and 2 <sup>nd</sup> from top of frame		1	
3 <sup>rd</sup> and 4 <sup>th</sup> from top of frame		2	
5 <sup>th</sup> and 6 <sup>th</sup> from top of frame		3	
7 <sup>th</sup> and 8 <sup>th</sup> from top of frame		4	

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<p>9<sup>th</sup> and 10<sup>th</sup> from top of frame</p>		<p>5</p>	
<p>11<sup>th</sup> from top of frame</p>		<p>6</p>	

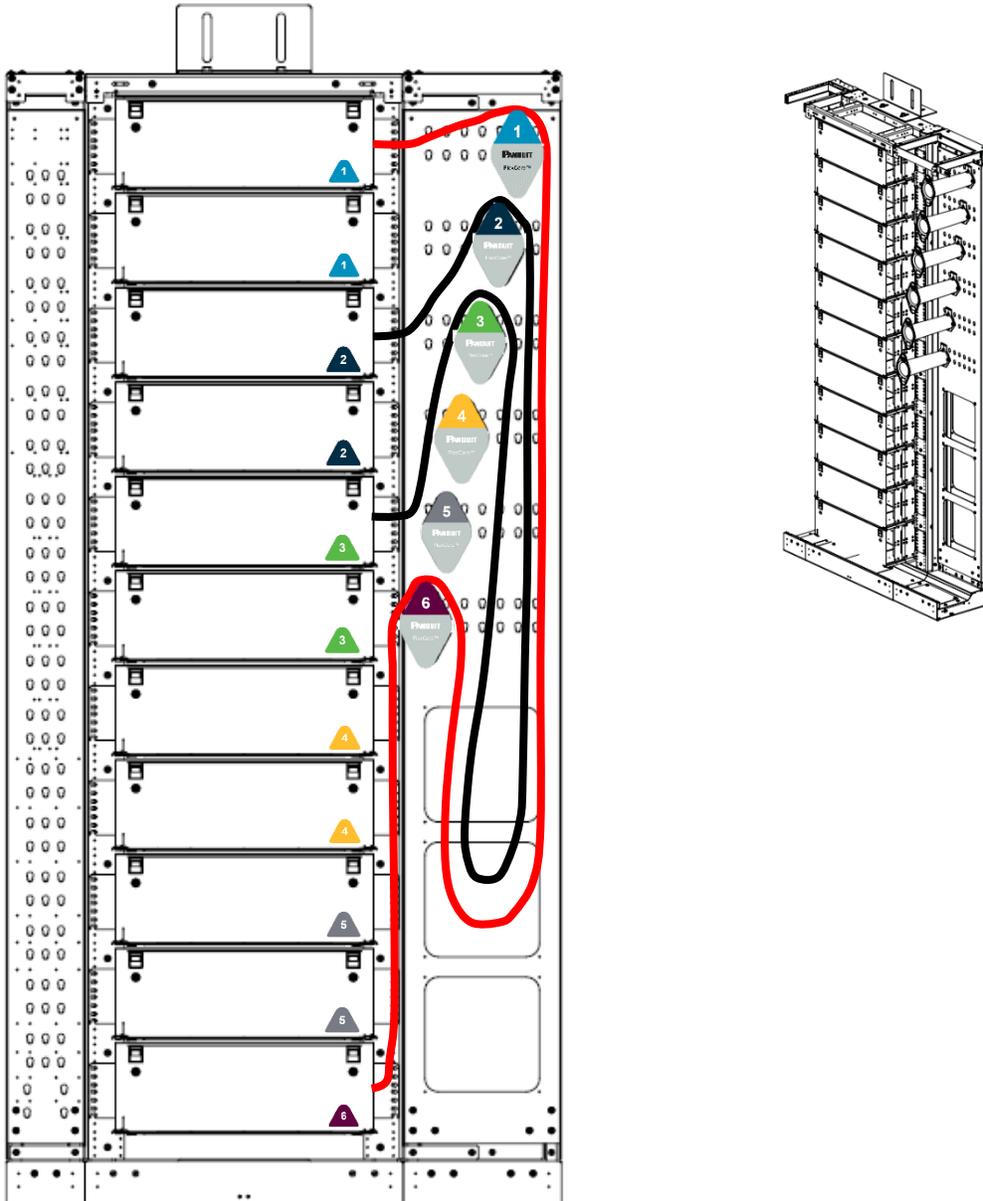
## 2. Most Common Frame Lineups With Associated Patchcord Routing Diagram

- All views shown **without** doors, end panels, and ingress/egress cabling
- Ingress/Egress Cabling will be covered in FS206
- Each view shows (2) patchcord cable paths (red and black)
- All the following lineups will use a universal **4 meter** patchcord length

### 2.1 Single Frame Cross Connect

**Solution Width:** ~1050mm (excluding end panels)/~1090mm (including end panels)

**Solution Depth:** ~300mm (excluding doors)/~340mm (including doors)



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### 2.2. Back to Back Single Frame Cross Connect

Solution Width: ~1050mm (excluding end panels)/~1090mm (including end panels)

Solution Depth: ~600mm (excluding doors)/~680mm (including doors)

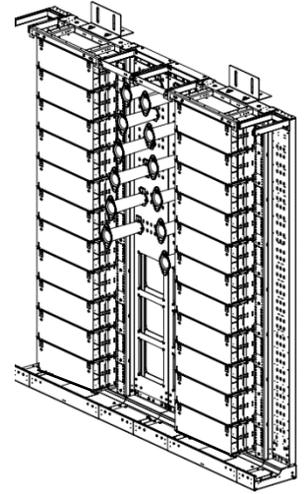
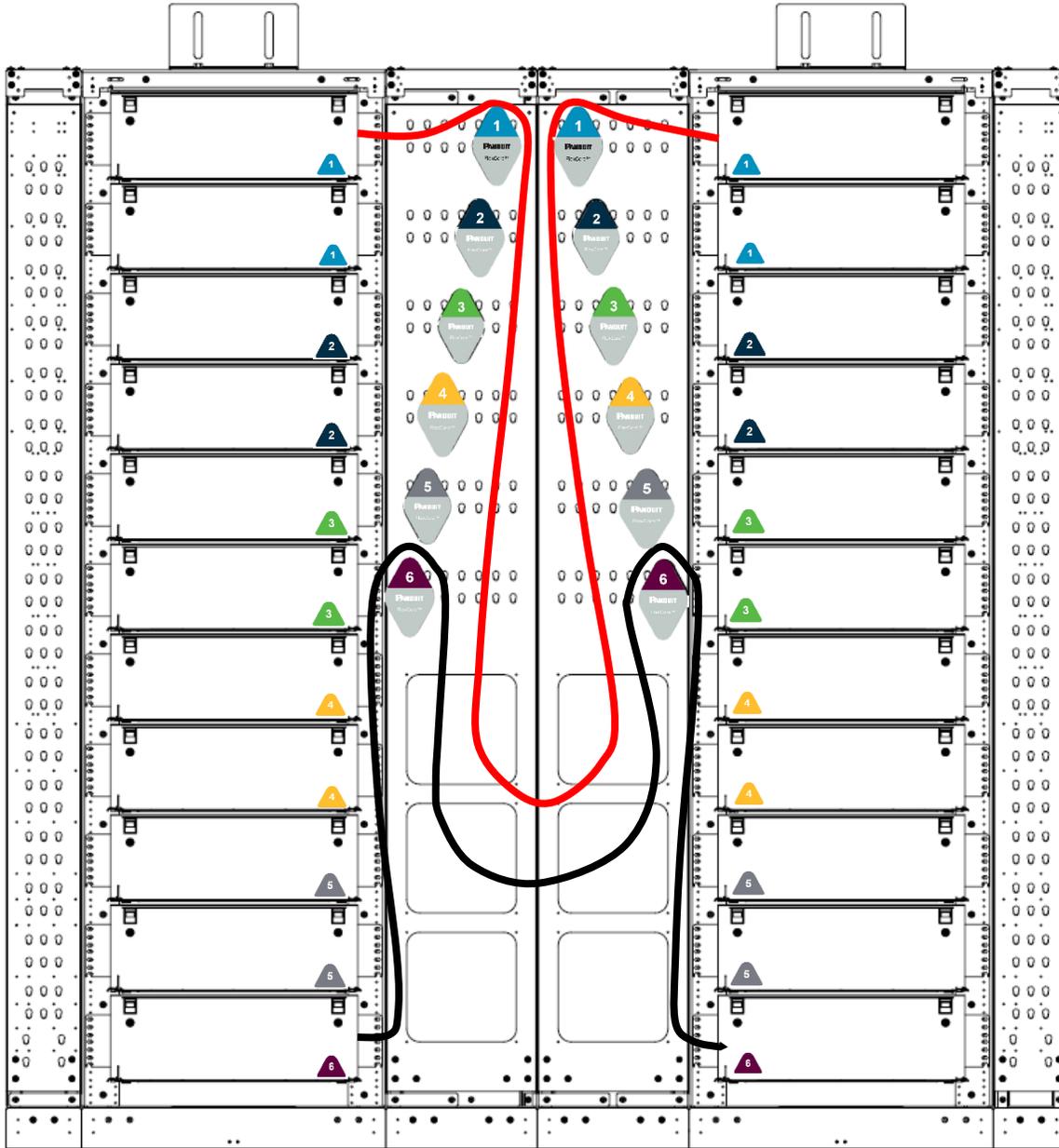


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### 2.3. Side to Side Double Frame Cross Connect

**Solution Width:** ~2100mm (excluding end panels)/~2140mm (including end panels)

**Solution Depth:** ~300mm (excluding doors)/~340mm (including doors)



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### 2.4. Back to Back Double Frame Cross Connect (Quad)

Solution Width: ~2100mm (excluding end panels)/~2140mm (including end panels)

Solution Depth: ~600mm (excluding doors)/~680mm (including doors)

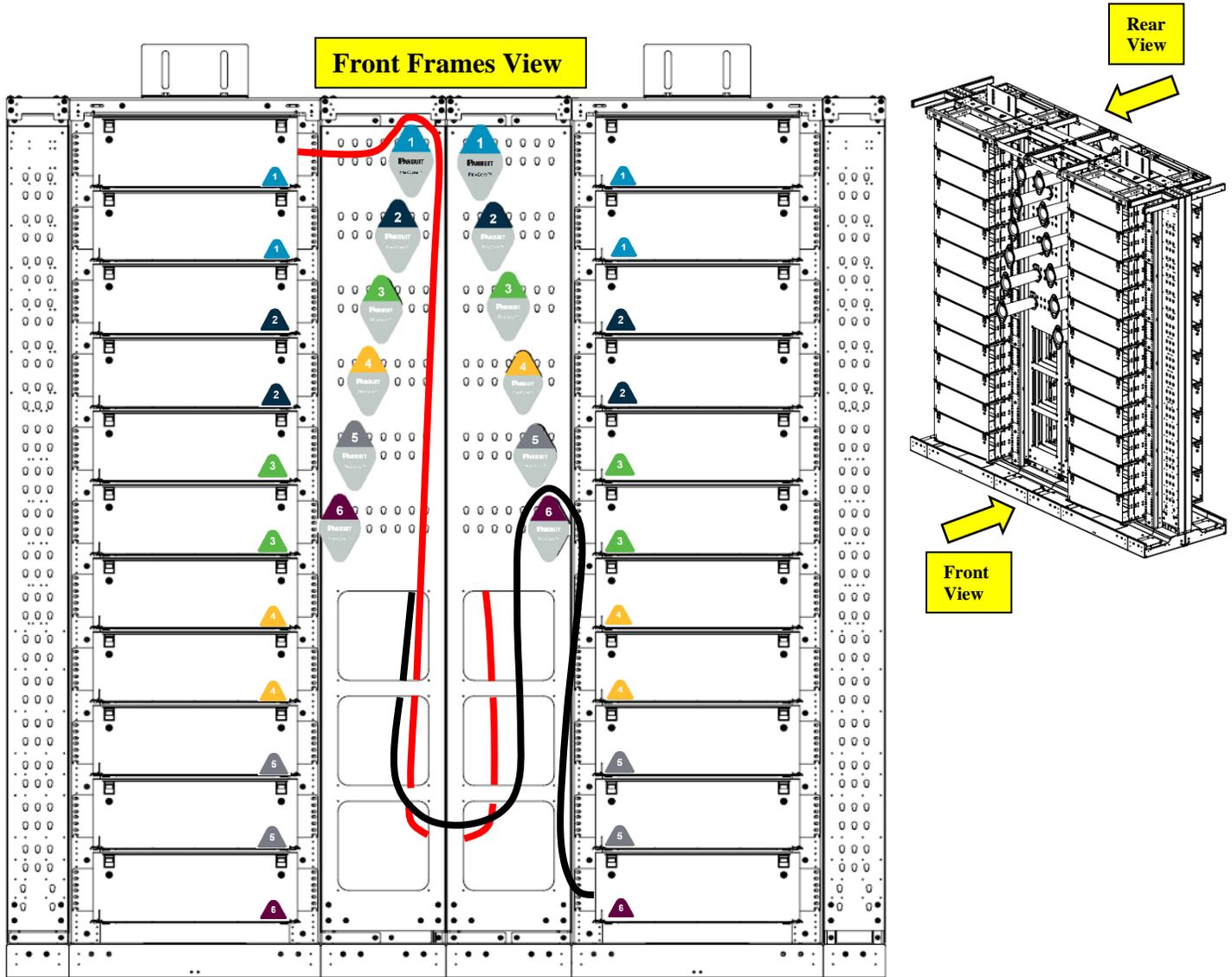
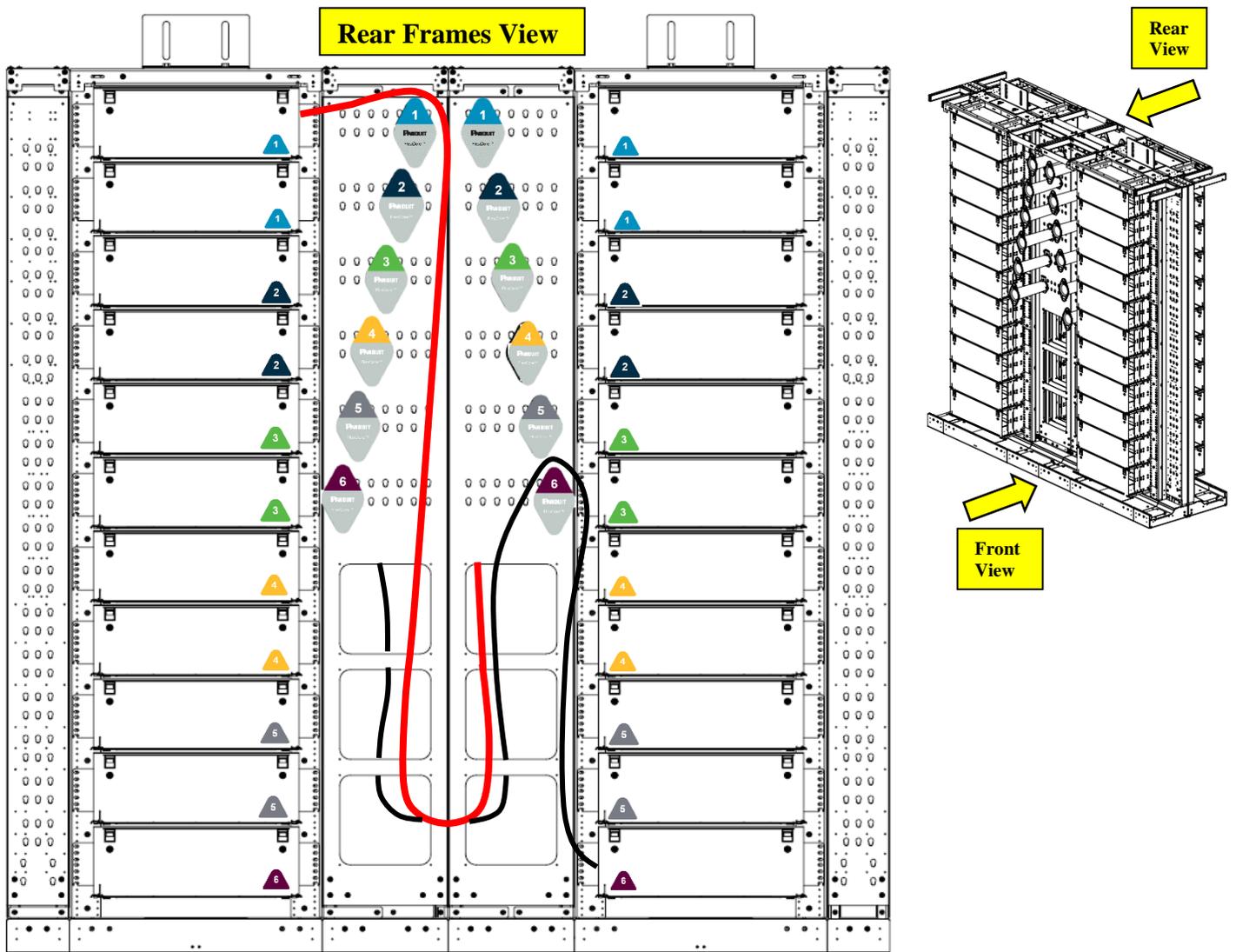


Diagram Continued on Next Page



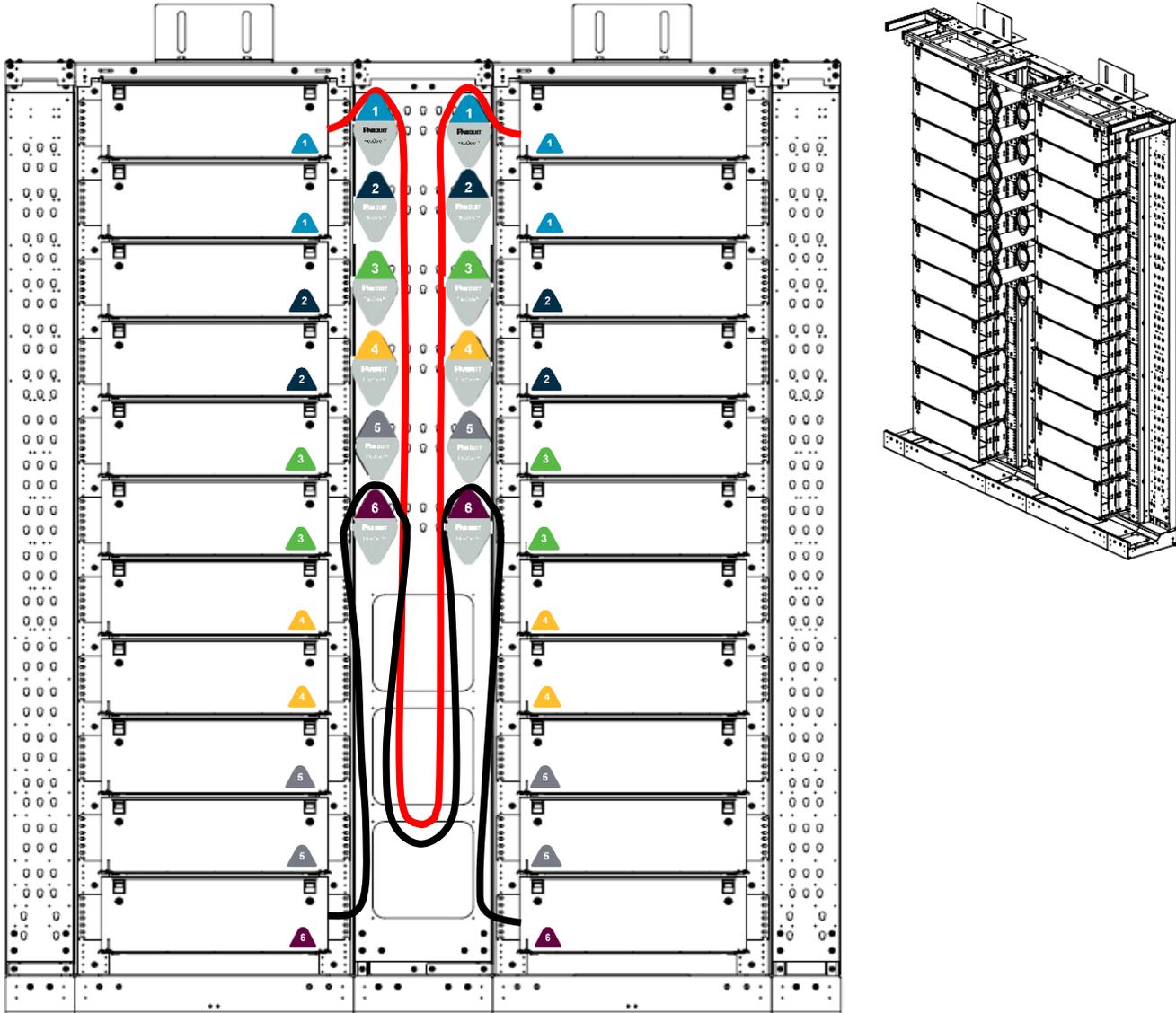
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## 2.5. High Density Side to Side Double Frame Cross Connect (Double Frame - Compact)

**Solution Width:** ~1800mm (excluding end panels)/~1840mm (including end panels)

**Solution Depth:** ~300mm (excluding doors)/~340mm (including doors)

- Solution can **only** be used to full capacity with unitary cable for patchcord routing. 2 fiber cable, terminated directly to LC Uniboot connector. Duplex zip cable, 1 fiber per jacket, **cannot** be used with this solution. Preferred patchcord would use the Panduit Opti-Core LC Uniboot Pull-Boot Connector (<https://www.panduit.com/content/dam/panduit/en/products/media/1/51/651/9651/110189651.pdf>).



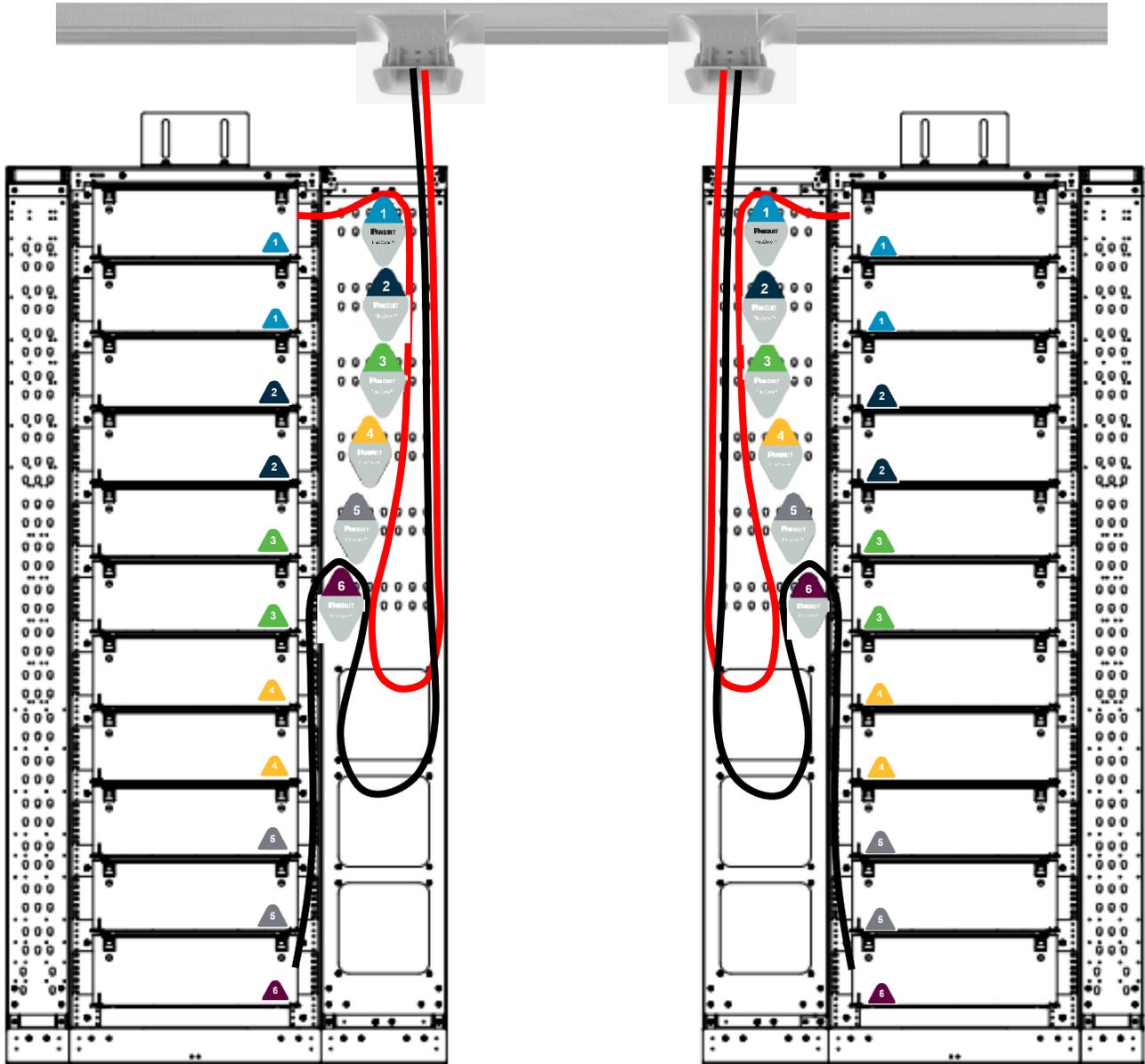
For Technical Support: [www.panduit.com/resources/install\\_maintain.asp](http://www.panduit.com/resources/install_maintain.asp)

### 3. Overhead Pathway going from Frame to Frame

**Solution Width per frame:**~1050mm (excluding end panels)/~1090mm (including end panels)

**Solution Depth per frame:**~300mm (excluding doors)/~340mm (including doors)

- Used in a situation where frames are not directly next to each other
- 4m universal patchcord lengths **cannot** be used for this situation. Patchcord lengths must be determined in planning stage of design based on where frames are located in relation to one another.



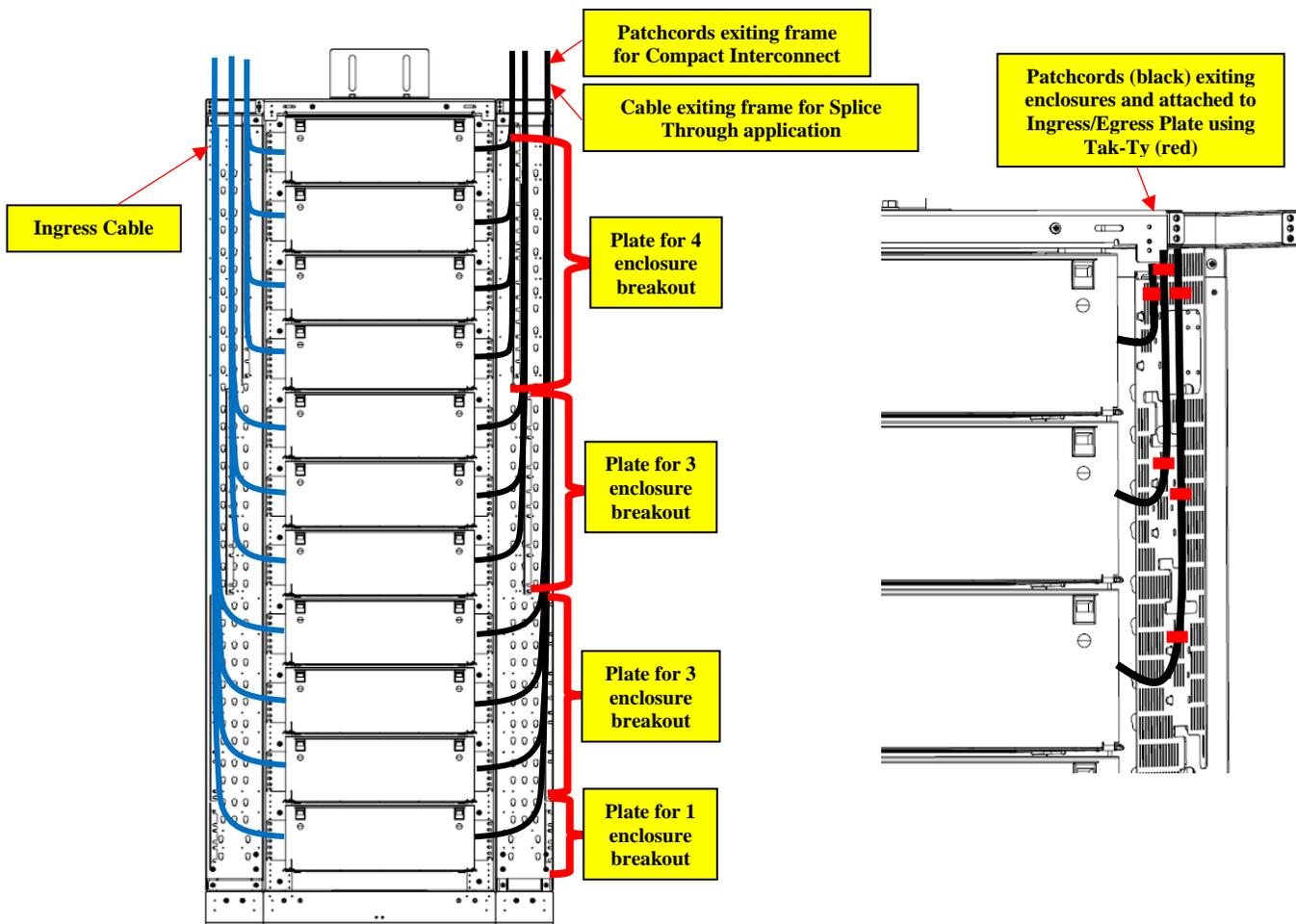
For Technical Support: [www.panduit.com/resources/install\\_maintain.asp](http://www.panduit.com/resources/install_maintain.asp)

#### 4. High Density Splice Through or Interconnect

**Solution Width per frame:**~900mm (excluding end panels)/~940mm (including end panels)

**Solution Depth per frame:**~300mm (excluding doors)/~340mm (including doors)

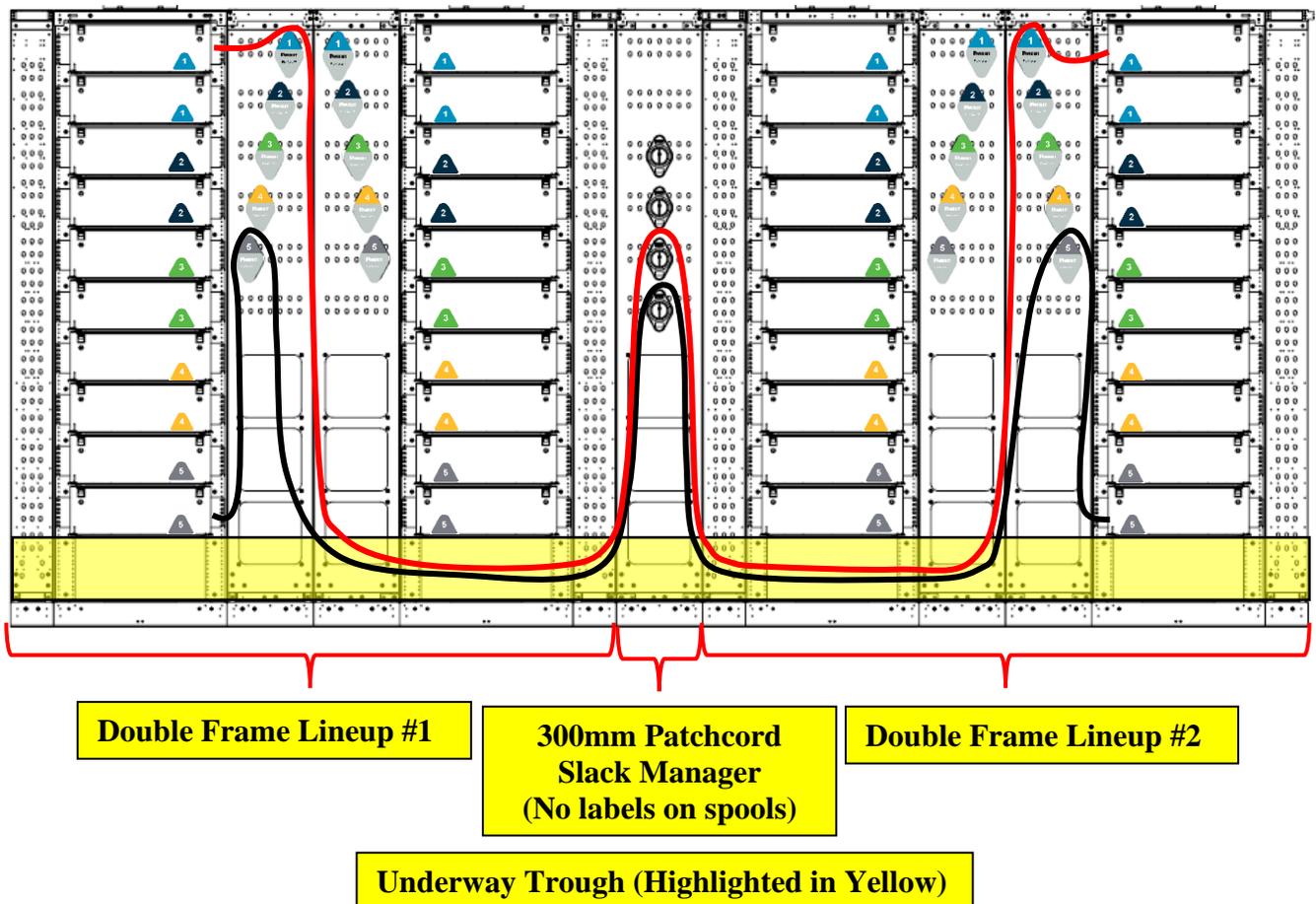
- The same setup can be used either for the Splice Through (Cable to Cable Splice) application or a compact interconnect application (Distribution Cables in and Patchcords Out)
- Used in a situation where **all** patchcords are all funnelled out the top or bottom of the frame.
- **Cannot** be used in a situation where some/all patchcord are going to/from enclosures both located in same frame. The diagram shown in Section 2 would be best suited for that situation.
- Solution can **only** be used to full capacity with unitary cable for patchcord routing. 2 fiber cable, terminated directly to LC Uniboot connector. Preferred patchcord would use the Panduit Opti-Core LC Uniboot Pull-Boot Connector (<https://www.panduit.com/content/dam/panduit/en/products/media/1/51/651/9651/110189651.pdf>).
- Instead of spools, this application will use the ingress/egress breakout plates supplied with the 150mm vertical cable manager (FDFVCM1545\*\*) to route patchcords out of the frame.
- Use Tak-ty (<https://www.panduit.com/en/products/wire-routing-management-protection/hook-and-loop-cable-ties/hook-and-loop-cable-ties.html>) to properly group patchcords and attach them to the ingress/egress plates
- FS206: FlexCore™ Front Access Ingress/Egress Cabling Guide will review in greater detail the ingress cabling shown below.
- Ingress Cable (Trunk or Bulk Cable) will be shown in **Blue**, and cable that can be patchcords/trunks/bulk fiber cable will be shown in **Black**



For Technical Support: [www.panduit.com/resources/install\\_maintain.asp](http://www.panduit.com/resources/install_maintain.asp)

## 5. Underway Trough in Multi-Frame Lineup

- FlexCore™ Front Access Optical Distribution Frame can be combined for a multi-frame lineup
- For a multi-frame lineup, 10 enclosures are seen as the maximum number of enclosures that can be used on a frame
- The 4RU at the bottom of the frame which is sometimes used for the 11<sup>th</sup> enclosure **should be left open** to provide space for routing patchcords down the row of frames using the underway trough system.
- The frame installation instruction (FS190) shows how to install the underway trough system which is provided with the frame.
- **10m** universal patchcords can be used with the 300mm patchcord slack manager to go from (1) double frame to another down the line
- Longer patchcord lengths will be needed if travelling further down the lineup past the 2<sup>nd</sup> double frame. The length of patchcord will need to be determined in planning stage.
- Below is a diagram showing the routing scheme for **10m** patchcords to frames further down the lineup using the underway trough and patchcord slack manager.
- Installers will determine which spool to use on the 300mm patchcord slack manager based on their application and where the patchcord length falls on the tolerance range. All (4) spools shown in the below figure can be used.



For Technical Support: [www.panduit.com/resources/install\\_maintain.asp](http://www.panduit.com/resources/install_maintain.asp)

## 6. Spool Positioning on 300mm Vertical Cable Manager

- FlexCore™ Front Access Optical Distribution Frame offers flexibility for where to install the ODF Fiber Spool (Panduit Part #: FDUSP) using a repeated pattern of keyholes located on the 300mm vertical cable manager
- Installation Instruction(s) FS198 and FS199 describe how to properly install the spool into the provided keyholes
- If less than 11 enclosures are used, Panduit suggests installation should start from the top enclosure and work down, without skipping any spools or RU space on the frame to plan properly for moves, adds, and changes
- Below are optimal spools locations for all applications discussed previously

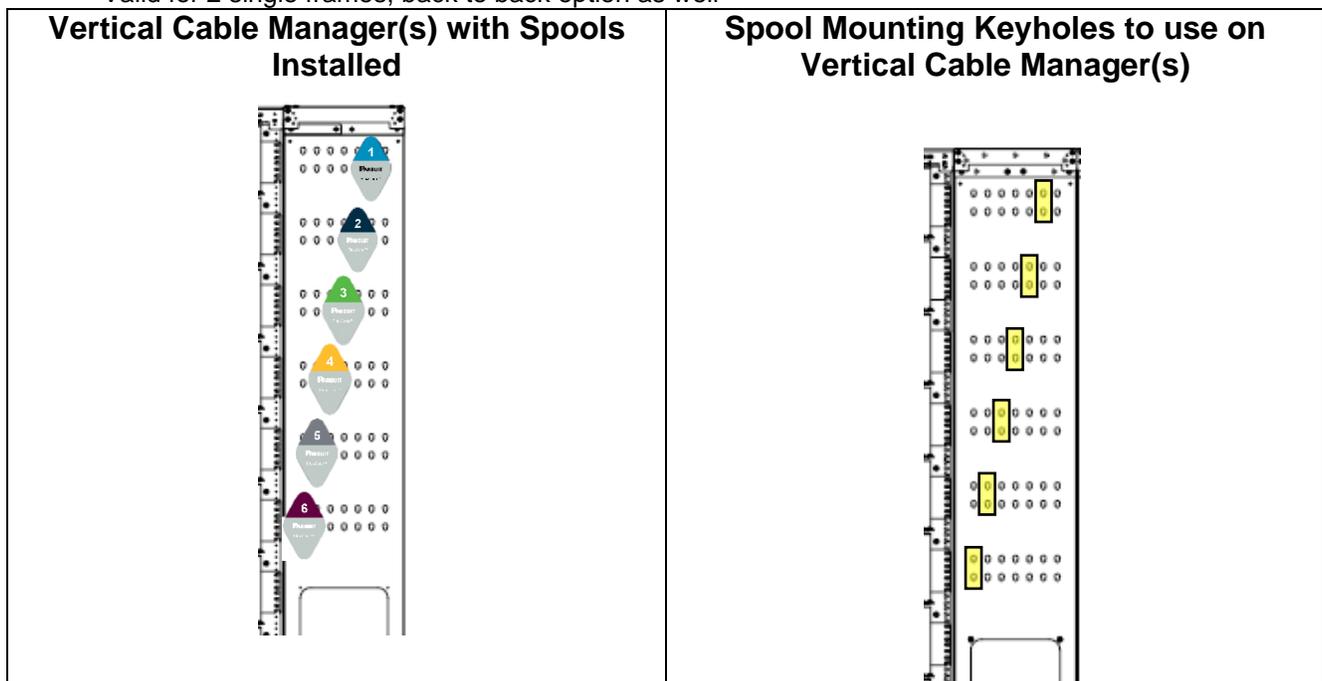
### 6.1. Single Frame Cross Connect – Right Side

Amount of enclosures on frame: 11

Location of 300mm vertical cable manager(s): Right Side of Frame

Patchcords being routed out of system (ex. Overhead): No

- Valid for 2 single frames, back to back option as well



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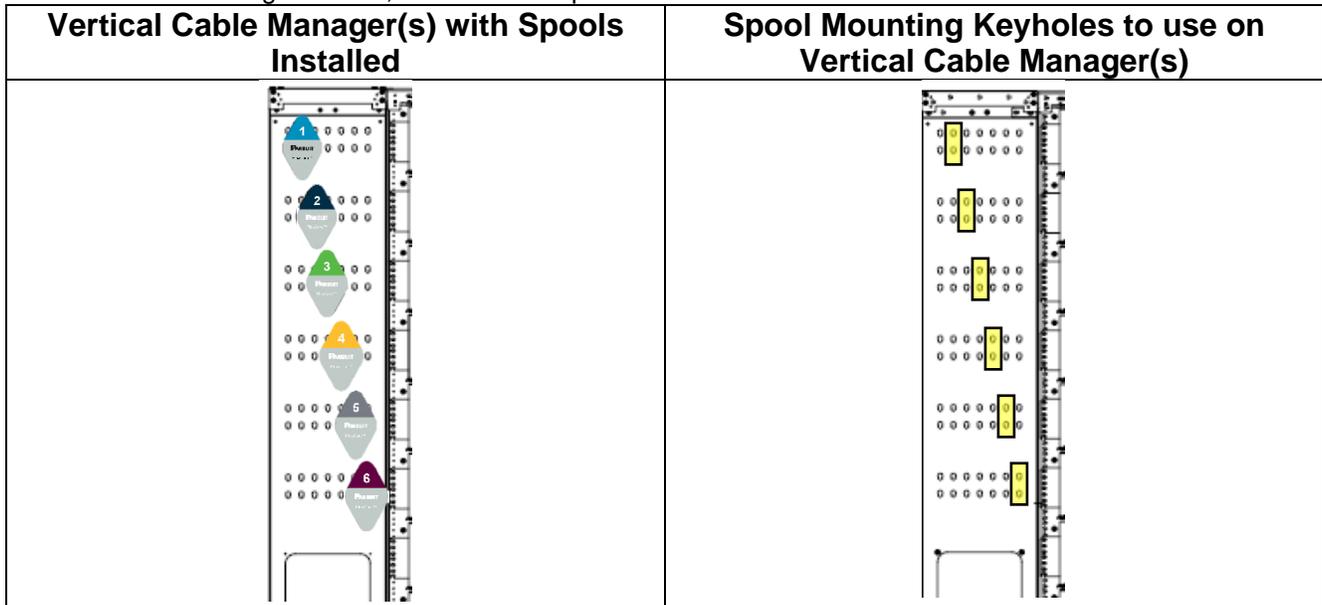
### 6.2. Single Frame Cross Connect – Left Side

Amount of enclosures on frame: 11

Location of 300mm vertical cable manager(s): Left Side of Frame

Patchcords being routed out of system (ex. Overhead): No

- Valid for 2 single frames, back to back option as well



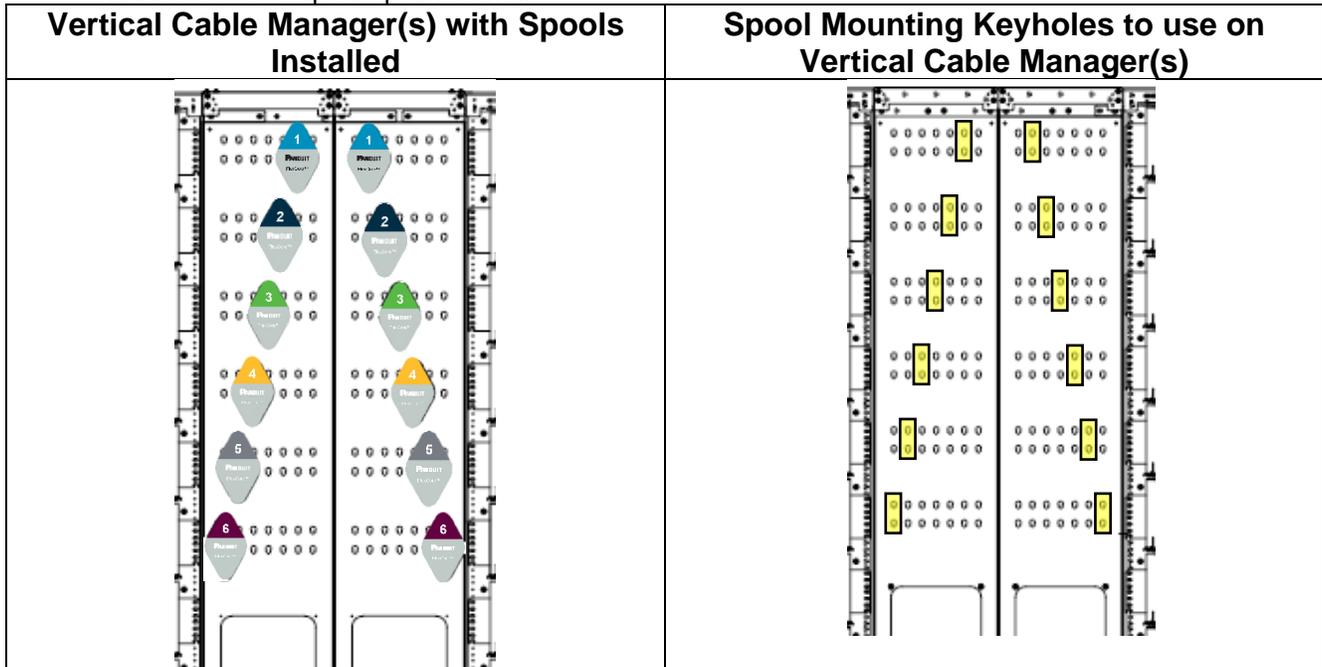
### 6.3. Double Frame Side to Side Cross Connect – 2100mm

Amount of enclosures on frame: 11

Location of 300mm vertical cable manager(s): (2) located in between frames

Patchcords being routed out of system (ex. Overhead): No

- Valid for 4 frame quad option as well



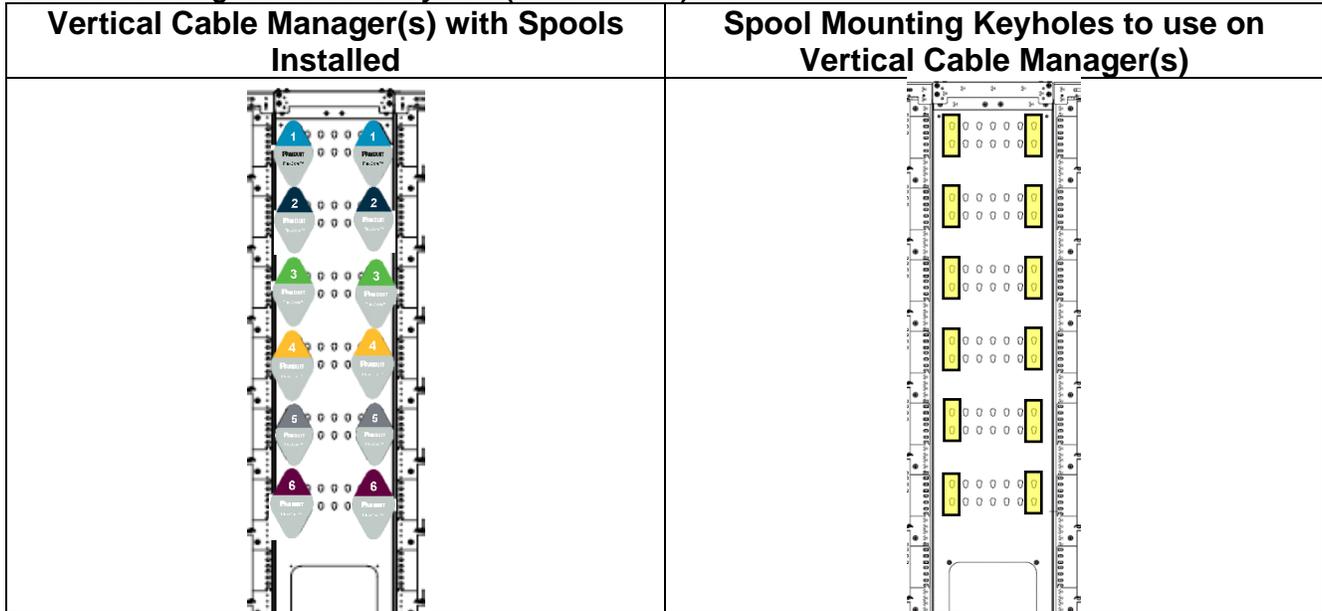
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### 6.4. High Density Double Frame Side to Side Cross Connect – 1800mm

Amount of enclosures on frame: 11

Location of 300mm vertical cable manager(s): (1) located in between frames

Patchcords being routed out of system (ex. Overhead): No

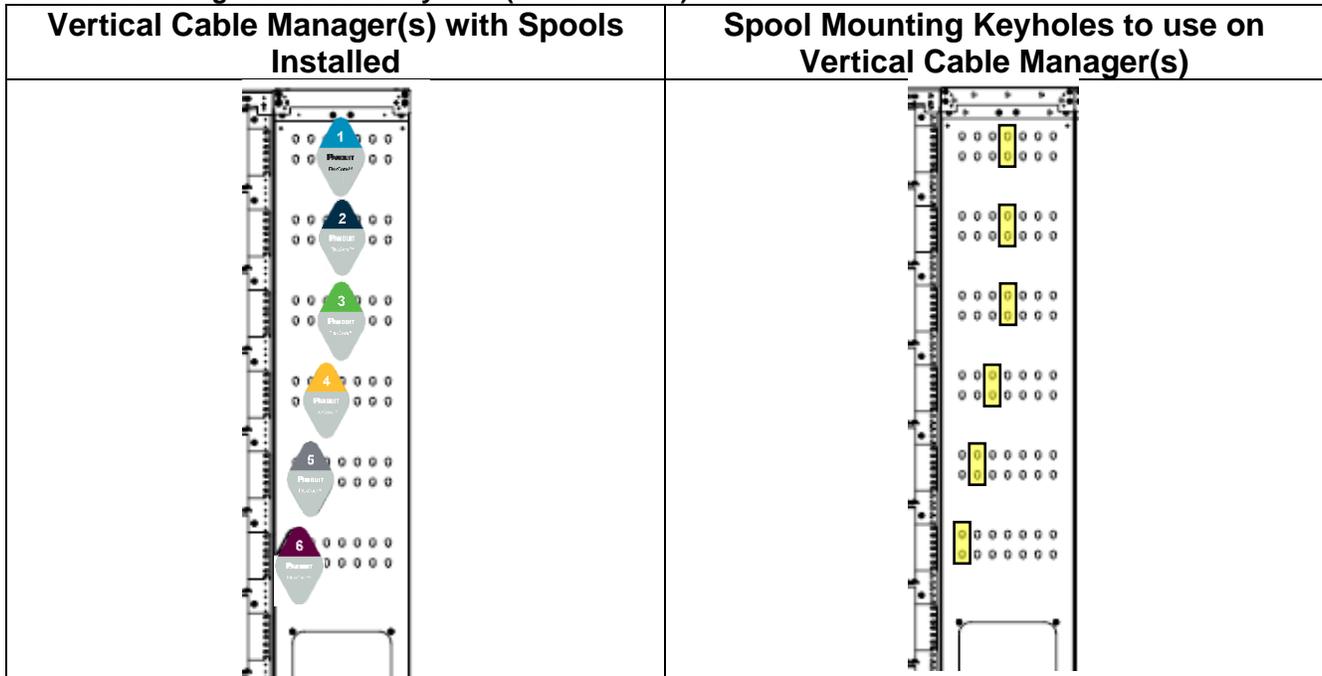


### 6.5. Single Frame With Patchcord Routing Out of System – Right Side

Amount of enclosures on frame: 11

Location of 300mm vertical cable manager(s): Right Side of Frame

Patchcords being routed out of system (ex. Overhead): Yes



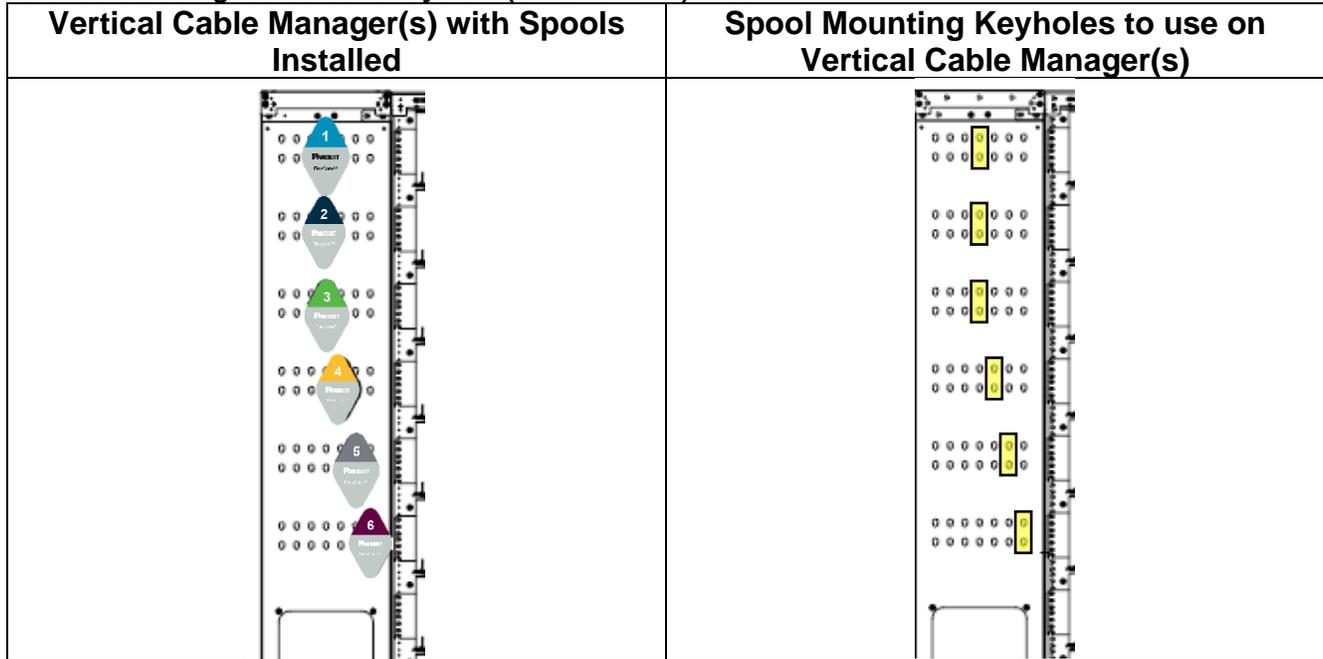
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### 6.6. Single Frame With Patchcord Routing Out of System – Left Side

Amount of enclosures on frame: 11

Location of 300mm vertical cable manager(s): Left Side of Frame

Patchcords being routed out of system (ex. Overhead): Yes

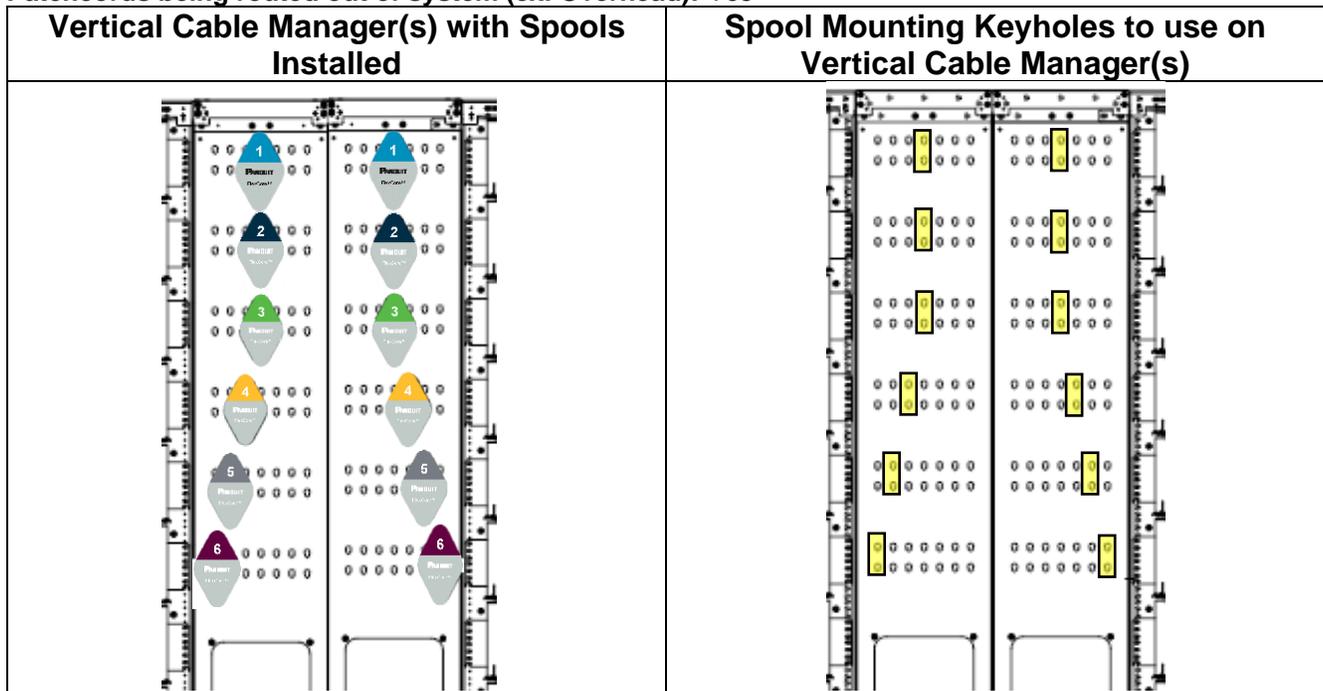


### 6.7. Double Frame Side to Side with Patchcord Routing Out of System – 2100mm

Amount of enclosures on frame: 11

Location of 300mm vertical cable manager(s): (2) located in between frames

Patchcords being routed out of system (ex. Overhead): Yes



For Technical Support: [www.panduit.com/resources/install\\_maintain.asp](http://www.panduit.com/resources/install_maintain.asp)

**6.8. Intermediate VCM recommend for application requiring multiple double frame arrangements (see section 5)**

**Amount of enclosures on frame: N/A**

**Location of 300mm vertical cable manager(s):** (1) located in between 150mm VCMs

**Patchcords being routed out of system (ex. Overhead):** No, patchcords are routed using bottom pathway (trough) in this arrangement example

