Rapid Fiber Connect™ platform

Engineered for AI. Built for Scale.

First Edition

**COMMSCOPE®**
an **Amphenol** company

The Rapid Fiber Connect™ platform solves ultra-dense AI complexity with plug-and-play simplicity

Exploding AI demand is driving the need for more ultra-dense GPU racks, pods, and clusters — requiring tens of thousands fiber connections. The resulting time, complexity and risk associated with these deployments create major challenges for data center operators, designers and integrators.

CommScope's Rapid Fiber Connect solution is a rack-scale, plug-and-play platform, purpose-built for ultra-dense AI data centers. It simplifies cabling, testing, deployment and scaling through flexible panel designs and integrated, pre-configured, pre-labeled pigtails that allow for GPU and switch connections to be made and integrated off site. On site, Mass Insert connectors accelerate installation and system turn-up with fewer connections.

The result

- Simplified and faster cabling that helps reduce mistakes
- Easier off-site validation testing
- Reduced labor skill requirements on site
- Higher fiber density with fewer connection "clicks" required on site
- Streamlined upgrades for scaling AI environments
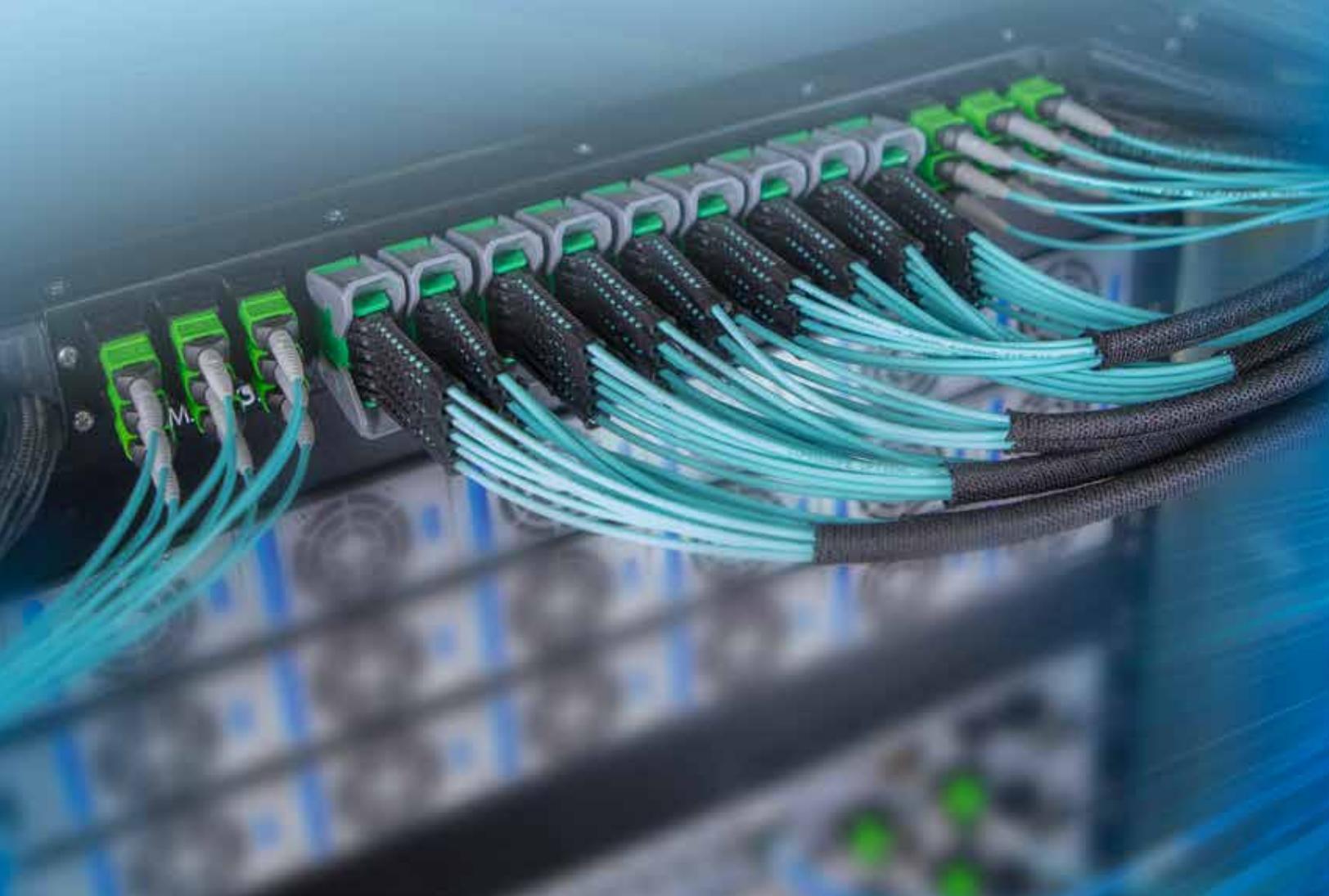
Four ways

Rapid Fiber Connect rack-scale, plug-and-play platform empowers AI data center evolution:

1

Accelerated deployment

Pre-configured, pre-labeled and factory terminated pigtail outputs reduce rack assembly time and opportunity for error. The panel accepts Mass Insert connectors, allowing rack-to-rack connectivity with 12 times fewer clicks than required by individual MPO12/8 connectors. Trunk cables can also be deployed on site prior to roll in for even faster deployments.

2

Optimized for AI architectures

The platform aligns with modern AI reference designs, offering flexible panel options, optimized connector layouts, and integrated spare capacity. Its optimized panel port counts, locations and types support various trunk and patching fiber counts. Its integrated spare panel ports enable the repair of broken links without pulling new cable. Multimode and singlemode solutions are available.

3

Ultra-high density

The Rapid Fiber Connect platform features a 1RU front access panel with a maximum density of 960 fibers to connect GPUs and CPUs in common 72-GPU rack-scale systems. Its 1RU front and rear panels support up to 1,728 fibers. Mass Insert connectors deliver 12 times density over MPO12/8, and the solution is stackable to service ultra-high density switch racks.

4

Pre-configured for risk mitigation

Off site configuration reduces on site manual labor, cost, and potential risk by leveraging pre-labeled pigtails and legs configured to align with the rack design. Its front access panel prevents potential mistakes caused by working in deep, overcrowded racks. Once configured, the rack can roll in fully assembled for simplified Mass Insert connection.

Rapid Fiber Connect platform

Uniquely designed for speed and simplicity, the Rapid Fiber Connect platform consists of GPU and switch panels with pre-installed output cabling and trunk cable terminated with Mass Insert trunk connectors.

Rapid Fiber Connect GPU panel

The front access only design supports up to 960 fibers and is ideal for high-density racks. It is also optimized for a 72-GPU rack scale system designs.

Rapid Fiber Connect switch panel

The front and/or rear access switch panel supports up to 1,728-fibers and is stackable to achieve ultra-high fiber density.
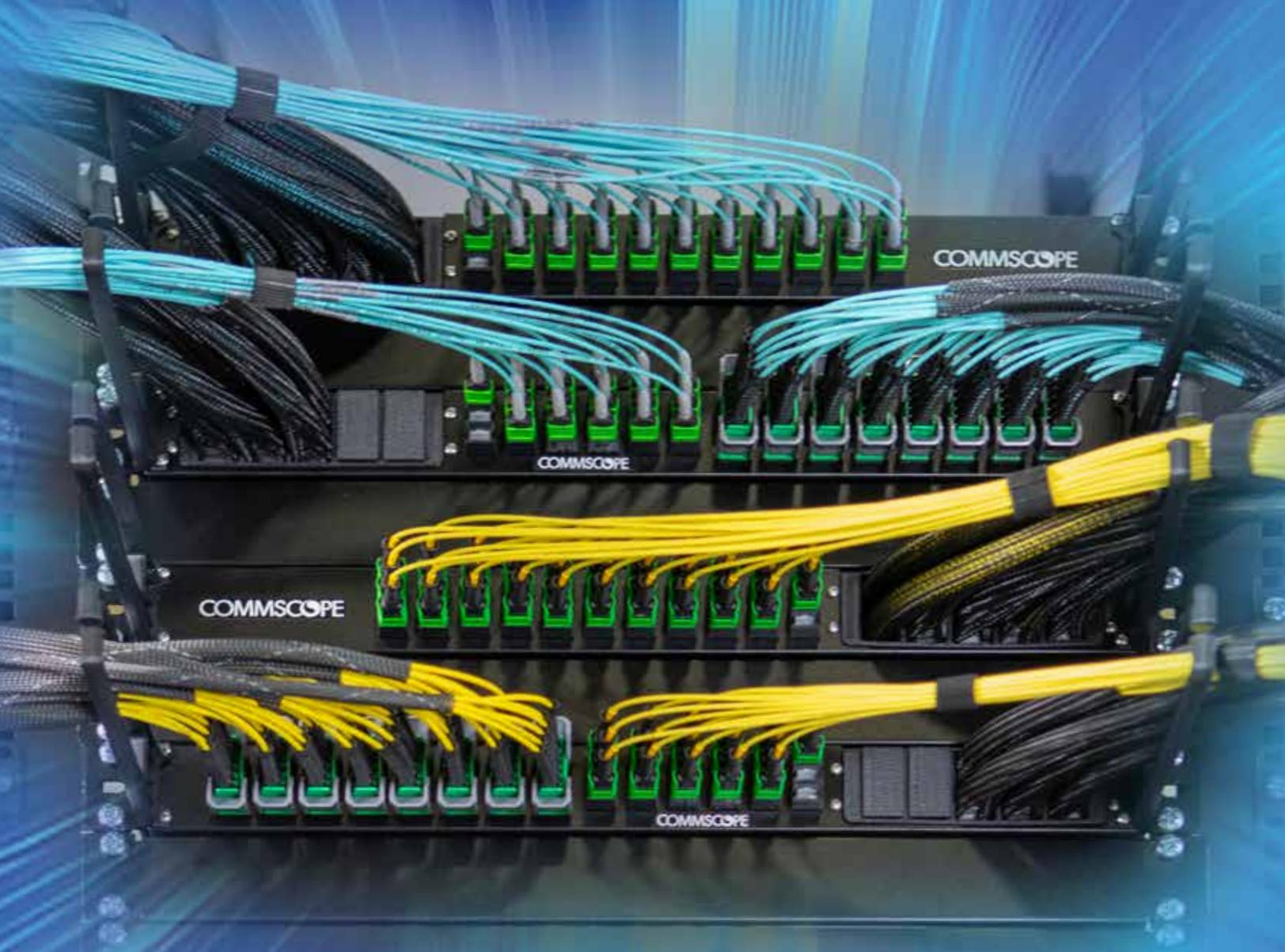

Trunk cables with Mass Insert connector

Trunks are available in singlemode and multimode to connect between racks and across pods, and in various lengths and fiber counts to match specific applications.

Rapid Fiber Connect panels key features

Feature	Rapid Fiber Connect panel for GPU cabinets	Rapid Fiber Connect panel for switch cabinets
Optimized for	72 GPU rack-scale systems, such as Nvidia NLV72 or AMD Helios racks	Switch cabinets (leaf/spine/core)
Fiber type	Multimode and Singlemode	Multimode (within pod) and Singlemode (between pods)
Rack space	1RU	1RU (can be stacked)
Maximum fiber capacity	960 fibers	1,728 fibers
Access type	Front access only	Front and rear access
Front connection	MPO pigtails for GPU, CPU, spares Mass Insert connectors for trunk cable	MPO pigtail into switches, spares
Rear connections	None	Mass Insert connectors for trunk cable

Trunk cable constructed with Mass Insert connectors to make connection in between racks: available in singlemode and multimode, in different lengths and fiber counts matching the specific application.

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Typical application examples

1. Connecting GPU cabinet to leaf switches inside a pod
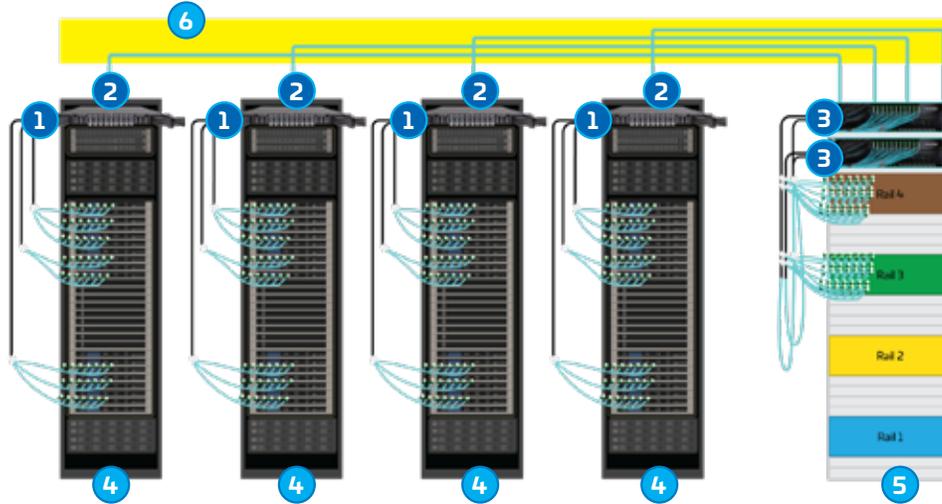
1	Rapid Fiber Connect GPU panel (all front access)
2	Rapid Fiber Connect multimode trunks with Mass Insert connectors
3	Rapid Fiber Connect switch panel (front + rear access)
4	GPU cabinets—rack-scale systems
5	Leaf switch cabinets
6	CommScope FiberGuide® fiber raceway

2. Connecting AI pods to build out a large AI cluster
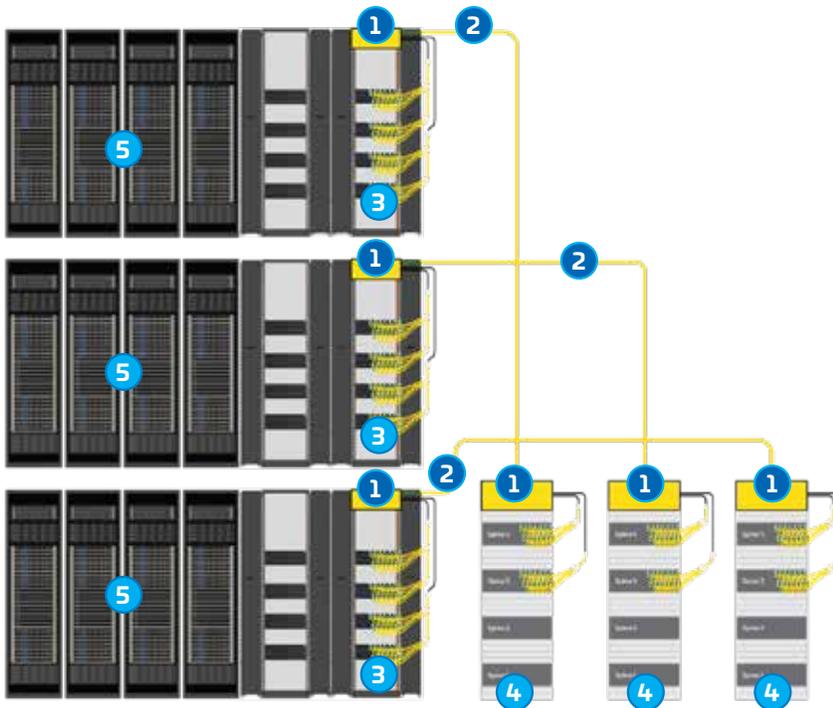
1	Rapid Fiber Connect Switch panel (front + rear access)
2	Rapid Fiber Connect singlemode trunk cables with Mass Insert connector
3	Spine switch cabinet
4	Core switch cabinets
5	AI pod composed of GPU cabinets rack-scale systems and leaf switch cabinet

Ordering Information

Rapid Fiber Connect Panels

1. Rapid Fiber Connect GPU panel

See application example 1, item 1

Note: This scheme details the options that are available to configure a GPU cabinet, front panel (optimized for 72 GPU designs).

Specific configurations required will be released as discrete 760… MIDs.

760…MID Description

RFC	1U	00864	1	X	6X	F	C	QP	F
	Panel RU Size	Panel Fiber Count	Panel Number	Fiber Type	Input Connectors	Input Side	Input Position	Output Connectors	Output Position
	1U	00432 432 Fibers	1	G Teraspeed SM, G.657.A2	6X MMC16 MI Pinned 6-port Adapter	F Front Panel	L Left Entry	QP MPO8 unpinned	F Front Panel
	2U	00864 864 Fibers	2	X LazrSPEED 550 MM, OM4		B Back Panel	R Right Entry	RP MPO16 unpinned	B Back Panel
	3U	01152 1152 Fibers	3				C Center	HP MMC8 unpinned	
	4U	01728 1728 Fibers	4				S Split Left & Right	UP MMC16 unpinned	
	6U	02304 2304 Fibers	5						
	etc	03456 3456 Fibers	6						
		06912 6912 Fibers	etc						
		etc etc							

Note: Exact pigtail lengths can be configured to the network layout need.

2. Rapid Fiber Connect switch panel

See application example 2, item 2

Note: This scheme details the options that are available to configure a leaf switch facing spine with 4x 4RU switches with spares.

Specific configurations required will be released as discrete 760… MIDs.

760…MID Description

RFC	2U	03456	2	G	6X	B	C	QP	F
	Panel RU Size	Panel Fiber Count	Panel Number	Fiber Type	Input Connectors	Input Side	Input Position	Output Connectors	Output Position
	1U	00432 432 Fibers	1	G Teraspeed SM, G.657.A2	6X MMC16 MI Pinned 6-port Adapter	F Front Panel	L Left Entry	QP MPO8 unpinned	F Front Panel
	2U	00864 864 Fibers	2	X LazrSPEED 550 MM, OM4		B Back Panel	R Right Entry	RP MPO16 unpinned	B Back Panel
	3U	01152 1152 Fibers	3				C Center	HP MPC8 unpinned	
	4U	01728 1728 Fibers	4				S Split Left & Right	UP MMC16 unpinned	
	6U	02304 2304 Fibers	5						
	etc	03456 3456 Fibers	6						
		06912 6912 Fibers	etc						
		etc etc							

Note: Exact pigtail lengths can be configured to the network layout need.

1RU panel dimensions

Height	Width	Depth
1.7" (4.3 cm)	19.3" (49.0 cm)	34.0" (86.4 cm)

Note: Dimensions will scale as Rapid Fiber Connect panels are stacked.
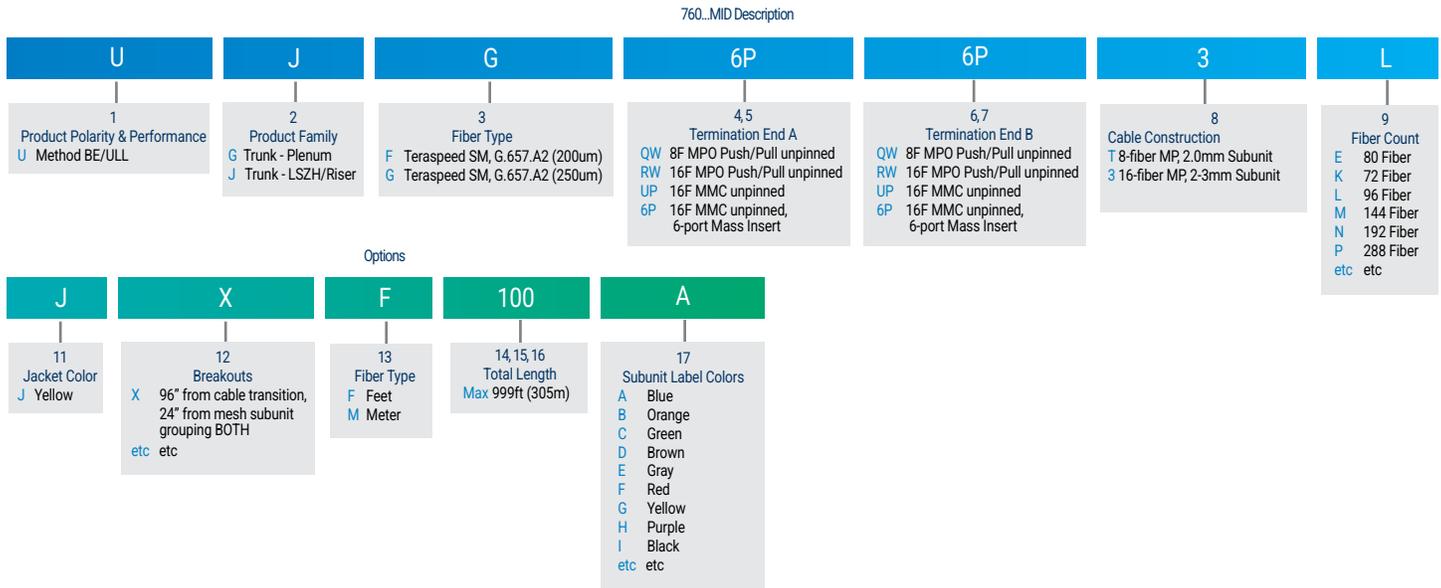
Cable assemblies

1. Singlemode Trunk connecting leaf > spine

See application example 2, item 2

Note: This scheme details the options that are available for bundled array assemblies.

Specific configurations required will be released as discrete 760... MIDs.

Design note

We recommend bundled arrays for shorter distances, max 100ft /30m; and trunks for the longer distances.
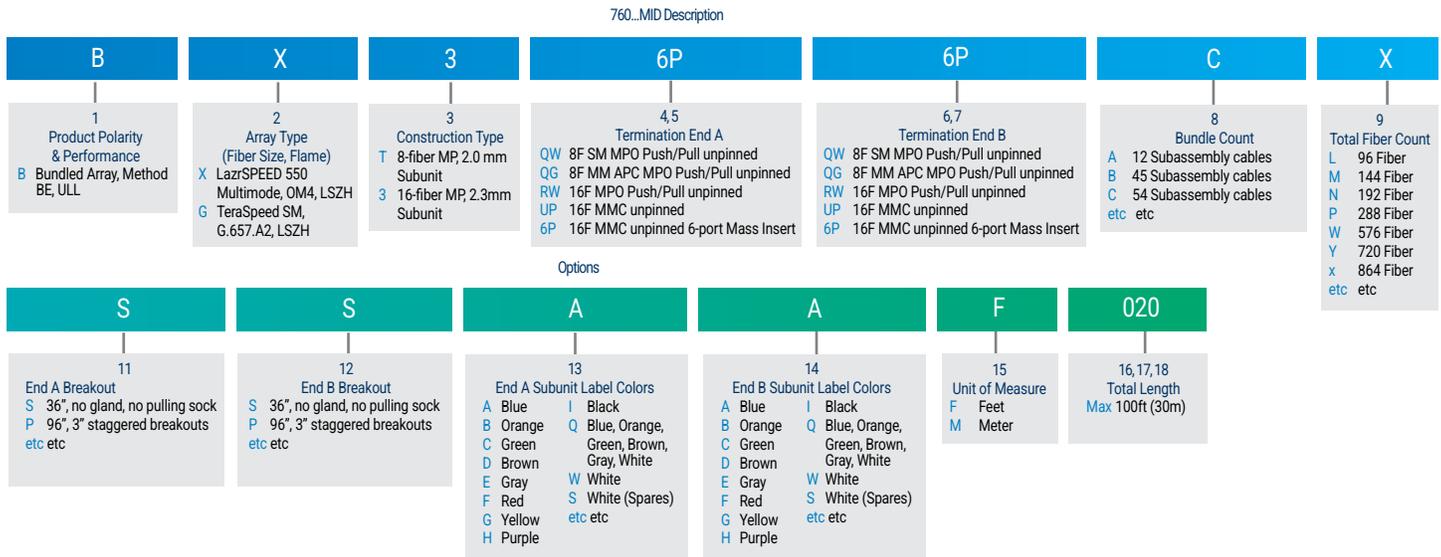
760...MID Description

U	J	G	6P	6P	3	L
1 Product Polarity & Performance	**2** Product Family	**3** Fiber Type	**4,5** Termination End A	**6,7** Termination End B	**8** Cable Construction	**9** Fiber Count
U Method BE/ULL	G Trunk - Plenum J Trunk - LSZH/Riser	F Teraspeed SM, G.657.A2 (200um) G Teraspeed SM, G.657.A2 (250um)	QW 8F MPO Push/Pull unpinned RW 16F MPO Push/Pull unpinned UP 16F MMC unpinned 6P 16F MMC unpinned, 6-port Mass Insert	QW 8F MPO Push/Pull unpinned RW 16F MPO Push/Pull unpinned UP 16F MMC unpinned 6P 16F MMC unpinned, 6-port Mass Insert	T 8-fiber MP, 2.0mm Subunit 3 16-fiber MP, 2-3mm Subunit	E 80 Fiber K 72 Fiber L 96 Fiber M 144 Fiber N 192 Fiber P 288 Fiber etc etc

Options

J	X	F	100	A
11 Jacket Color	**12** Breakouts	**13** Fiber Type	**14, 15, 16** Total Length	**17** Subunit Label Colors
J Yellow	X 96" from cable transition, 24" from mesh subunit grouping BOTH etc etc	F Feet M Meter	Max 999ft (305m)	A Blue B Orange C Green D Brown E Gray F Red G Yellow H Purple I Black etc etc

2. Bundled Array connecting GPU > leaf switch

See application example 1, item 2

Note: This scheme details the options that are available for bundled array assemblies.

Specific configurations required will be released as discrete 760... MIDs.

760...MID Description

B	X	3	6P	6P	C	X
1 Product Polarity & Performance	**2** Array Type (Fiber Size, Flame)	**3** Construction Type	**4,5** Termination End A	**6,7** Termination End B	**8** Bundle Count	**9** Total Fiber Count
B Bundled Array, Method BE, ULL	X LazrSPEED 550 Multimode, OM4, LSZH G TeraSpeed SM, G.657.A2, LSZH	T 8-fiber MP, 2.0 mm Subunit 3 16-fiber MP, 2.3mm Subunit	QW 8F SM MPO Push/Pull unpinned QG 8F MM APC MPO Push/Pull unpinned RW 16F MPO Push/Pull unpinned UP 16F MMC unpinned 6P 16F MMC unpinned 6-port Mass Insert	QW 8F SM MPO Push/Pull unpinned QG 8F MM APC MPO Push/Pull unpinned RW 16F MPO Push/Pull unpinned UP 16F MMC unpinned 6P 16F MMC unpinned 6-port Mass Insert	A 12 Subassembly cables B 45 Subassembly cables C 54 Subassembly cables etc etc	L 96 Fiber M 144 Fiber N 192 Fiber P 288 Fiber W 576 Fiber Y 720 Fiber x 864 Fiber etc etc

Options

S	S	A	A	F	020
11 End A Breakout	**12** End B Breakout	**13** End A Subunit Label Colors	**14** End B Subunit Label Colors	**15** Unit of Measure	**16,17,18** Total Length
S 36", no gland, no pulling sock P 96", 3" staggered breakouts etc etc	S 36", no gland, no pulling sock P 96", 3" staggered breakouts etc etc	A Blue I Black B Orange Q Blue, Orange, Green, Brown, Gray, White C Green D Brown W White E Gray S White (Spares) F Red etc etc G Yellow H Purple	A Blue I Black B Orange Q Blue, Orange, Green, Brown, Gray, White C Green D Brown W White E Gray S White (Spares) F Red etc etc G Yellow H Purple	F Feet M Meter	Max 100ft (30m)

Contact your CommScope representative or our Data Center - Customer Service team
to discuss the options available to you with the Rapid Fiber Connect™ platform.

CommScope pushes the boundaries of communications technology with game-changing ideas and ground-breaking discoveries that spark profound human achievement. We collaborate with our customers and partners to design, create and build the world's most advanced networks. It is our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at commscope.com

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