

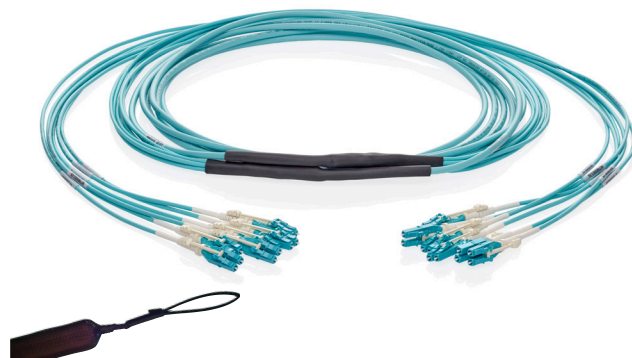
## PRODUCT SPECIFICATIONS

### OPT-X Engage Low Loss Fiber Trunk Cables

## OPT-X™ Engage Low Loss Fiber Trunk Cables

### APPLICATION

Factory-terminated and tested fiber trunk cables connect central patching locations to zones or pods. Available terminated with both modular MTP® and discrete connectors, these trunks are custom built in any length to meet specific applications. An optional pulling eye, installed on the first end, protects fiber connectors on 12- through 288-fiber trunk cables. The pulling eye completely covers the breakout length, transferring any pulling force from the assembly to the pulling-eye sleeve. A high-tensile load option that attaches to Kevlar® is also available for applications of greater than 125 feet.



Pulling Eye

### SPECIFICATION

All pre-terminated components — including trunks, cassettes, harnesses, brackets, patch panels, and enclosures — shall be provided and warranted by a single manufacturer. Components with a modular connection shall utilize MTP connectors. All discrete connectors (LC, SC) shall use ceramic ferrules and sleeves. Multimode MTP-to-MTP trunks shall meet an optical connector insertion loss not to exceed 0.35 dB per mated pair. Trunks shall be available in plenum, and interlock armor versions. Each will be available in custom lengths of one-foot increments. Total trunk length shall be specified from connector to connector. A pulling eye is optional on the pulling end of all trunks to safeguard fibers during installation. Trunks shall be pre-terminated and pretested with test documentation available upon request. Trunks with LC unibody connectors shall use SPECTRO-LINK™ Technology to support field polarity reversal without twisting or moving fibers. Unibody LC connectors shall have a push/pull grip that, coupled with a one-piece unitized duplex housing, shall assure exact centerline spacing for fast mating in congested patching fields.

### COUNTRY OF ORIGIN

USA

### WARRANTY INFORMATION

For Leviton product warranties, go to [Leviton.com/ns/warranty](https://leviton.com/ns/warranty)

### FEATURES

- LC Unibody connector with SPECTRO-LINK™ Technology includes reversible polarity feature, allowing polarity changes in the field without tools
- Pre-terminated fiber eliminates the need for complicated and craft-sensitive field terminations and splices
- Every fiber component is factory terminated and pre-tested using automated procedures to ensure product quality
- All discrete connectors (LC, SC) are heat cured and use ceramic ferrules and sleeves for consistent performance
- 12, 24, 48, 72, 96, 144, 288, or custom fiber counts
- OS2, OM3, OM4, and OM5 fiber
- Standard breakout lengths can be staggered
- Pulling eyes are provided as an option along with robust connector protection on both ends to safeguard fiber connectors during installation
- Trunk cables have a sturdy breakout point, yet are flexible enough to allow for smooth curving of breakout cordage without kinking or creating sharp bends
- Armored option uses flexible jacketed ARMOR-TEK™ spiral aluminum armor, replacing the need for innerduct
- SJP and SJP ARMOR-TEK are plenum rated
- Field terminable grounding strap for armor trunks—when local electrical code requires grounding

### DESIGN CONSIDERATIONS

- For use with Leviton MTP cassettes, adapter plates, and panels
- Standard breakout length is 36 inches; other lengths available upon request
- Total trunk length is from connector to connector
- Trunks longer than 125 feet are shipped on plastic spools, shorter than 125 feet are coiled and shipped in poly bags
- Standard polarity is A to B for LC and SC connector types; for MTP, standard polarity is Method B
- All Singlemode MTP connectors are angle polished (APC)
- Breakout must be staggered for applications requiring small diameter through conduit
- Method B trunk required for Universal Polarity Cassettes
- 400G and 800G switch ports using multimode fiber - MTP terminations to be APC per QSFP-DD MSA

### STANDARDS & REGULATIONS

- ANSI/TIA-568.3-E
- Supports data rates identified in multiple IEEE 802.3xx standards as applicable by connector type and cable grade
- ANSI/TIA-942 data center design guidelines
- OM3, OM4, OM5 meet ITU-T G651.1
- OM5 meets TIA 492-AAAE for SWDM
- OS2 meets ITU-T 652.D and ITU-T 657.A1
- Detailed Fiber Specifications in PS 0309 data sheet

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**OPT-X SJP PLENUM NON-ARMORED TRUNK CABLE PHYSICAL SPECIFICATIONS**

Fiber Count	Nominal Outside Diameter	Weight lbs/1000 ft (kg/km)	Max Installation Tension lbs (N)	Minimum Bend Radius in (cm)		Temperature Range	
	In (mm)			Installation	Long Term	Operating	Storage
12	0.189 (4.8)	17 (26)	150 (667)	2.8 (7.2)	1.9 (4.8)	-0 °C to +75 °C	-40 °C to +75 °C
24	0.295 (7.5)	35 (52)	150 (667)	4.4 (11.3)	3.0 (7.5)		
48	0.295 (7.5)	35 (52)	150 (667)	4.4 (11.3)	3.0 (7.5)		
72	0.319 (8.1)	43 (64)	150 (667)	4.8 (12.1)	3.2 (8.1)		
96	0.421 (10.7)	68 (101)	300 (1335)	6.3 (16.0)	4.2 (10.7)		
144	0.421 (10.7)	69 (102)	300 (1335)	6.3 (16.0)	4.2 (10.7)		

**OPT-X SJP PLENUM ARMORED TRUNK CABLE PHYSICAL SPECIFICATIONS\***

Fiber Count	Nominal Outside Diameter	Weight lbs/1000 ft (kg/km)	Max Installation Tension lbs (N)	Minimum Bend Radius in (cm)		Temperature Range	
	In (mm)			Installation	Long Term	Operating	Storage
12	0.563 (14.3)	112 (167)	150 (667)	8.4 (21.3)	5.6 (14.2)	0 °C to +75 °C	-40 °C to +75 °C
24	0.614 (15.6)	137 (203)	300 (1335)	9.21 (23.3)	6.1 (15.5)		
48	0.614 (15.6)	137 (203)	300 (1335)	9.21 (23.3)	6.1 (15.5)		
72	0.68 (17.3)	157 (233)	300 (1335)	10.2 (25.9)	6.8 (17.3)		
96	0.774 (19.7)	202 (301)	600 (2670)	11.6 (29.5)	7.7 (19.5)		
144	0.774 (19.7)	203 (303)	600 (2670)	11.6 (29.5)	7.7 (19.5)		

\* Check local IEC requirements for grounding armored cables.

**I/O PLENUM ARMORED FIBER TRUNK CABLE PHYSICAL SPECIFICATIONS**

Fiber Count	Nominal Outside Diameter	Weight lbs/1000 ft (kg/km)	Max Installation Tension lbs (N)	Minimum Bend Radius in (cm)		Temperature Range	
	In (mm)			Installation	Long Term	Operating	Storage
12	0.620 (15.7)	33	300	3.9	2.6	-20 °C to +70 °C	-40 °C to +75 °C
24	0.730 (18.5)	55	300	5.6	3.7		
48	0.730 (18.5)	56	300	5.6	3.7		
72	0.774 (19.7)	80	600	6.9	4.6		
96	0.851 (21.6)	126	600	8	5.3		
144	1.004 (25.5)	209	1000	10.1	6.7		

**GROUNDING STRAP KIT**

- Kit allows for field installation on preterminated armor trunk when local electrical codes require grounding
- Grounding strap is 5 ft in length, 6 AWG wire with ring terminals already installed
- For grounding strap assembly instructions, visit [Leviton.com/fibertrunks](http://Leviton.com/fibertrunks)



**GROUNDING STRAP KIT**

Description	Part No.
Grounding Strap Kit	11140671

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I/O PLENUM FIBER TRUNK CABLE PHYSICAL SPECIFICATIONS							
Fiber Count	Nominal Outside Diameter	Weight	Max Installation Tension	Minimum Bend Radius in (cm)		Temperature Range	
	In (mm)	lbs/1000 ft (kg/km)	lbs (N)	Installation	Long Term	Operating	Storage
12	0.260 (6.6)	136	300	9.3	6.2	-20 °C to +70 °C	-40 °C to +75 °C
24	0.370 (9.4)	184	300	11	7.3		
48	0.370 (9.4)	185	300	11	7.3		
72	0.460 (11.7)	220	600	11.6	7.7		
96	0.532 (13.5)	247	600	12.8	8.5		
144	0.670 (17.0)	359	1000	15.1	10		

PULLING EYE OUTSIDE DIMENSIONS (OD)				
Fiber Count	MTP®	LC	LC Unibody	SC
6	1.0"	1.0"	1.5"	1.5"
12	1.0"	1.0"	1.5"	1.5"
24	1.0"	1.5"	1.5"	1.5"
48	1.5"	1.5"	2.0"	2.0"
72	1.5"	2.0"	2.0"	2.0"
96	1.5"	2.0"	2.0"	2.0"
144	2.0"	2.0"	2.0"	2.0"

FIBER INSERTION LOSS PERFORMANCE (DB)				
Connector Mated Pairs	Multimode		Single-mode	
	MAX IL	MIN RL	MAX IL	MIN RL
LC Unibody	0.25	-35	0.25	-55
LC	0.25	-25	0.25	-45 (-60 for APC)
SC	0.25	-25	0.25	
MTP	0.35	-25 (-40 for APC)	0.35	

For premium MTP® (low loss) see OPT-X Unity Trunks.

**NOTE:**

High fiber count cables with LC / SC connectors need to be staggered to maintain these O.D. dimensions if they must fit through a conduit

COLOR CODES	
<b>Cable Jackets</b>	
OS2 Single-mode	Yellow
OM3/OM4 Multi-mode (50/125 µm)	Aqua
OM5	Lime Green
<b>LC/SC Connectors</b>	
<b>Connector</b>	
OS2 Single-mode	Blue
OS2 Single-mode, APC (angle polishing)	Green
OM3 Multi-mode (50/125 µm), OM4 Multi-mode (50/125 µm), Unibody	Aqua
OM5 Multi-mode (50/125 µm)	LC - Beige (Lime Green/White boots)
OM3/OM4 MTP APC Multimode	Green
<b>MTP Connectors (8,12 fiber)</b>	
<b>Connector</b>	
OS2 Single-mode, APC (angle polishing)	Yellow
OM3 Multi-mode (50/125 µm), OM4 Multi-mode (50/125 µm), Unibody	Aqua
OM4 MTP APC Multimode	Green
OM5 Multi-mode (50/125 µm)	Lime Green
<b>MTP Connectors (16 fiber)</b>	
<b>Connector</b>	
OS2 Single-mode, APC (angle polishing)	Green
OM4 MTP APC Multimode	Green

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**LC-TO-LC TRUNKS**

Description	Part Number
12-Fiber, OM4, Unibody LC-to-LC, Plenum, 50 Feet Long	FT-FW2012VV05036B36BN-NNBS
24-Fiber, OM4, Unibody LC-to-LC, Plenum, 50 Feet Long	FT-FW2024VV05036B36BN-NNBS
12-Fiber, OS2, Unibody LC-to-LC, Plenum, 50 Feet Long	FT-AW2012VV05036B36BN-NNBS
24-Fiber, OS2, Unibody LC-to-LC, Plenum, 50 Feet Long	FT-AW2024VV05036B36BN-NNBS

\*Part numbers reflect SJP cabling configuration. See MTO "PRE-TERMINATED TRUNK CABLE OPTIONS" for more configurations

**MTP®-TO-MTP TRUNKS (12-FIBER MTP)**

Description	Part Number
12-Fiber, OM4, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-FW2012LL050F36C36CN-NNBS
24-Fiber, OM4, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-FW2024LL05036B36BN-NNBS
48-Fiber, OM4, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-FW2048LL050F36B36BN-NNBS
96-Fiber, OM4, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-FW2096LL050F36B36BN-NNBS
144-Fiber, OM4, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-FW2144LL050F36B36BN-NNBS
12-Fiber, OS2, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-AW2012LL050F36C36CN-NNBS
24-Fiber, OS2, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-AW2024LL05036B36BN-NNBS
48-Fiber, OS2, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-AW2048LL050F36B36BN-NNBS
96-Fiber, OS2, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-AW2096LL050F36B36BN-NNBS
144-Fiber, OS2, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-AW2144LL050F36B36BN-NNBS

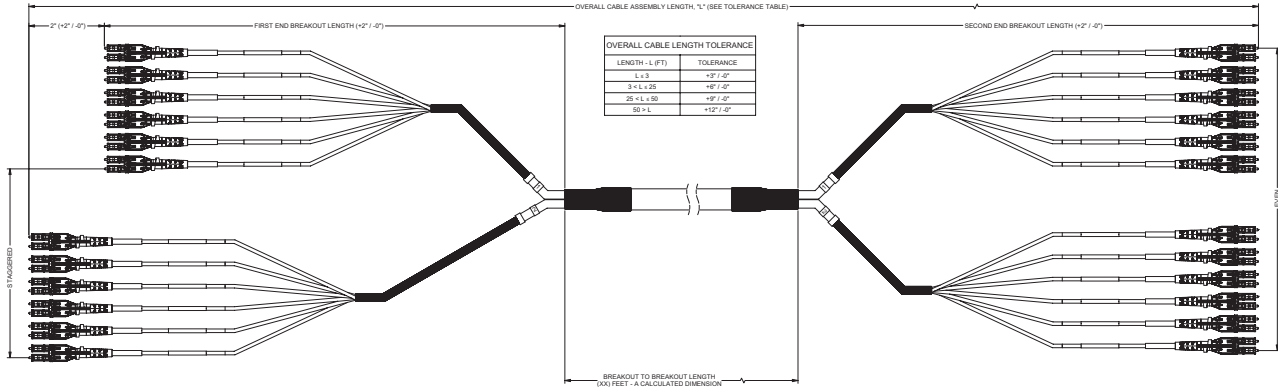
**MTP-TO-MTP TRUNKS (8-FIBER MTP)**

Description	Part Number
24-Fiber, OM4, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-FW8024NN05036B36BN-NNBS
48-Fiber, OM4, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-FW8048NN050F36B36BN-NNBS
96-Fiber, OM4, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-FW8096NN050F36B36BN-NNBS
144-Fiber, OM4, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-FW8144NN050F36B36BN-NNBS
24-Fiber, OS2, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-AW8024NN05036B36BN-NNBS
48-Fiber, OS2, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-AW8048NN050F36B36BN-NNBS
96-Fiber, OS2, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-AW8096NN050F36B36BN-NNBS
144-Fiber, OS2, Unpinned MTP-to-MTP, Plenum, 50 Feet Long	FT-AW8144NN050F36B36BN-NNBS

# PRODUCT SPECIFICATIONS

## OPT-X™ Engage Low Loss Fiber Trunk Cables

Make-to-Order  
Pre-Terminated  
Trunk Cable Options:



OPT-X Engage Low Loss Fiber Trunk Cables

Make-to-order!		OPT-X ENGAGE LOW LOSS TRUNK CABLE OPTIONS								
Fiber Type	Cable Type	Fiber Count	Termination	Cable Length	Breakout Length (in)	Breakout-Leg Type First- & Second-End Termination	Pulling Eye	Polarity	Labeling	
<ul style="list-style-type: none"> <li>OM3 (E)</li> <li>OM4 (Aqua) (F)</li> <li>OS2 (A)</li> <li>OM5 (5)</li> </ul>	<ul style="list-style-type: none"> <li>OPT-X SJP Sub-Jacketed Plenum (W)</li> <li>OPT-X SJP Indoor Armor (K)</li> </ul>	<ul style="list-style-type: none"> <li>12</li> <li>24</li> <li>48</li> <li>72*</li> <li>96</li> <li>144</li> <li>288</li> </ul>	<p><b>FIRST END</b></p> <ul style="list-style-type: none"> <li>LC (duplex clips) (R)</li> <li>LC/APC (F)</li> <li>LC Unibody (V)</li> <li>SC (Q)</li> <li>SC/APC (E)</li> <li>Low Loss MTP (female) (L)</li> <li>Low Loss MTP (male) (K)</li> <li>8F MTP (female) (M)</li> <li>8F MTP (male) (N)</li> <li>16F MTP (male) (T)</li> <li>16F MTP (female) (S)</li> <li>8F MTP/APC OM4 (male) (P)</li> <li>8F MTP/APC OM4 (female) (G)</li> </ul>	<p><b>SECOND END</b></p> <ul style="list-style-type: none"> <li>LC (R)</li> <li>LC/APC (F)</li> <li>LC Unibody (V)</li> <li>SC (W)</li> <li>SC/APC (E)</li> <li>Blunt end (Z)</li> <li>Low Loss MTP (female) (L)</li> <li>Low Loss MTP (male) (K)</li> <li>8F MTP (female) (M)</li> <li>8F MTP (male) (N)</li> <li>16F MTP (male) (T)</li> <li>16F MTP (female) (S)</li> <li>8F MTP/APC OM4 (male) (P)</li> <li>8F MTP/APC OM4 (female) (G)</li> </ul>	<ul style="list-style-type: none"> <li>10-1500 (ft)</li> <li>3-450 (mtr)</li> </ul>	<ul style="list-style-type: none"> <li>12</li> <li>18</li> <li>24</li> <li>36</li> <li>38</li> <li>48</li> <li>72</li> </ul>	<p><b>FIRST END</b></p> <ul style="list-style-type: none"> <li>2 mm jacketed fiber (for LC, SC) (B)</li> <li>3 mm jacketed fiber (for MTP) (C)</li> </ul> <p><b>SECOND END</b></p> <ul style="list-style-type: none"> <li>2 mm jacketed fiber (for LC, SC) (B)</li> <li>3 mm jacketed fiber (for MTP) (C)</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> <li>No</li> </ul>	<ul style="list-style-type: none"> <li>MTP Method A (A)</li> <li>MTP Method B (Standard) (B)</li> <li>MTP Method C (C)</li> <li>A-A (A)</li> <li>A-B (Standard) (B)</li> <li>LC/SC A-A (A)</li> <li>LC/SC A-B (B) (Standard)</li> </ul>	<ul style="list-style-type: none"> <li>Standard (S)</li> <li>Custom (C)</li> </ul>



For assistance customizing your trunk cables, please visit [Leviton.com/mto](http://Leviton.com/mto) or call Tech Support at 800-824-3005.  
\*Minimum order quantities and lead times may apply

For further support information, visit [Leviton.com/ns/support](http://Leviton.com/ns/support)

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