

## PRODUCT SPECIFICATIONS

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

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### APPLICATION

Factory-terminated and tested OPT-X Engage DC Trunk Cables connect central patching locations to zones or pods. Available terminated with modular (MTP®) and discrete connectors. All trunks are custom built in any length to meet specific application needs. Optional pulling eyes protect fiber connectors on 8- through 144-fiber trunk cables. This high-tensile load solution pulling eye completely covers the breakout length, transferring any pulling force from the assembly to the pulling-eye sleeve. Trunks shall be pre-tested with test documentation provided with each assembly.



### SPECIFICATION

All pre-terminated components, including arrays, trunks, cassettes, modules, harnesses, brackets, patch panels, and enclosures, shall be provided and warranted by a single manufacturer. Trunks will be CPR rated to B2ca, s1a, d1, a1 and available in 8, 12, 24, 48, 72, 96 and 144 fiber counts. Components with a modular (8- or 12-fiber) connection shall use MTP connectors rather than MPO. All discrete connectors (LC, SC) shall use ceramic ferrules and sleeves. MTP connectors shall meet an optical connector insertion loss not to exceed 0.35 dB per mated pair. Discrete connectors shall meet an optical connector insertion loss not to exceed 0.25 db per mated pair. Trunks will be available in custom lengths of 0.3 m 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 pre-tested with test documentation provided with each trunk.

### LABELING

- Standard labeling:
  - Trunk label on each end detailing end, length, polarity, and serial number
  - Leg label on each leg detailing the leg number and end
- Custom labeling also available and can be configured

### FEATURES

- Low-loss 8- or 12-fiber MTP and discrete connectors for network design flexibility
- 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
- Connector boots are color-coded for easy identification
- Highest performing LSZH Euroclass B2ca, s1a, d1, a1 to meet the requirements of the Construction Product Regulation (CPR)
- Available in 8, 12, 24, 48, 72, 96, 144, or custom fiber counts
- Fiber types include OS2, OM3, OM4, and OM5 high performance fiber
- Standard breakout lengths can be staggered to ease installation
- 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
- Fiber-on-demand manufacturing and logistics allows Leviton to deliver plug-n-play solutions with significantly reduced lead times

### DESIGN CONSIDERATIONS

- For use with Leviton MTP cassettes, adapter plates, panels, and brackets
- Standard breakout length is 0.5 m, other lengths can also be configured
- Total trunk length is from connector to connector
- Shorter lengths are supplied in a coil and packed in an individual bag. Longer lengths are shipped on spools
- Standard polarity is A to B for LC and SC connector types; for MTP, standard polarity is Method B, others are available
- Pulling eye is typically on first-end termination, if selected
- Breakout must be staggered for applications requiring small diameter through conduit
- If staggers are configured, MTP's are staggered in 51 mm pairs, LC/SCs are staggered in 51 mm groups of 12
- Method B trunk required for Universal Polarity Cassettes

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### STANDARDS & REGULATIONS

- ANSI/TIA-568.3-D
- ANSI/TIA-942
- ISO/IEC 11801-1
- Supports data rates identified in multiple IEEE 802.3xx standards as applicable by connector type and cable grade
- 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

### WARRANTY INFORMATION

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

PERFORMANCE SPECIFICATIONS	MULTIMODE SYSTEM (OM3)		MULTIMODE SYSTEM (OM4)		MULTIMODE SYSTEM (OM5)		SINGLE-MODE SYSTEM (OS2)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	1310 nm	1550 nm
Maximum Attenuation (dB/km)	2.8	1.5	2.8	1.5	2.8	1.0	0.4	0.4

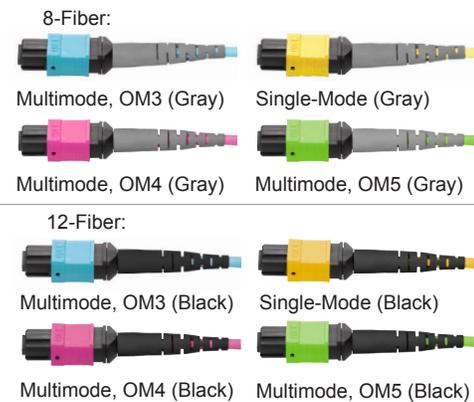
FIBER INSERTION LOSS PERFORMANCE (DB)				
Connector Mated Pairs	Multimode		Single-mode	
	MAX IL	MIN RL	MAX IL	MIN RL
LC	0.25	-25	0.25	-45 (-60 for APC)
SC	0.25		0.25	
MTP	0.35		0.35	

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

TRUNK LENGTH TOLERANCE	
Length (m)	Tolerance (m)
1.0 – 3.0	+0.1/-0
3.1 – 10.0	+0.2/-0
10.1 – 50.0	+0.3/-0
50.1 – 150.0	+0.6/-0
150.1 – 550.0	+1.0/-0

COLOR CODES				
<b>Cable Jackets</b>				
OS2	Yellow			
OM3	Aqua			
OM4	Heather Violet			
OM5	Lime Green			
<b>Connectors</b>				
OS2	Yellow			
OM3	Aqua			
OM4	Heather Violet			
OM5	Lime Green			
<b>MTP Connector Boots</b>				
8-fiber	Gray			
12-fiber	Black			
<b>Single Fiber Connector Boots</b>	<b>Multimode OM3</b>	<b>Multimode OM4</b>	<b>Multimode OM5</b>	<b>Single-mode OS2 PC Single-mode OS2 APC</b>
LC/SC Duplex	White/Aqua	White/Heather Violet	White/Lime Green	White/Blue White/Green

### Color-Coded Boots on MTP



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B2CA TRUNK CABLE PHYSICAL SPECIFICATIONS									
Fiber Count	CPR Rating	Nominal Outside Diameter mm (in)	Weight kg/km (lb./kft)	Max Installation Tention (N)	Max Crush Resistance (N/dm)	Minimum Bend Radius mm (in)		Temperature Range (°C)	
						Installation	Long Term	Operating*	Storage*
8	B2ca, s1a, d1, a1	4.8 (0.188)	24 (16)	667	1000	72 (2.8)	48 (1.9)	-20 °C to +70 °C	-40 °C to +75 °C
12	B2ca, s1a, d1, a1	4.8 (0.188)	24 (16)	667	1000	72 (2.8)	48 (1.9)		
24	B2ca, s1a, d1, a1	7.6 (0.300)	51 (35)	1335	1000	114 (4.5)	76 (3.0)		
48	B2ca, s1a, d1, a1	7.6 (0.300)	54 (36)	1335	1000	114 (4.5)	76 (3.0)		
72	B2ca, s1a, d1, a1	8.2 (0.322)	69 (46)	1335	1000	123 (4.8)	82 (3.2)		
96	B2ca, s1a, d1, a1	10.7 (0.420)	97 (65)	2670	1000	160 (6.3)	107 (4.2)		
144	B2ca, s1a, d1, a1	10.7 (0.420)	101 (68)	2670	1000	160 (6.3)	107 (4.2)		

CCA TRUNK CABLE PHYSICAL SPECIFICATIONS									
Fiber Count	CPR Rating	Nominal Outside Diameter mm (in)	Weight kg/km (lb./kft)	Max Installation Tension (N)	Max Crush Resistance (N/dm)	Minimum Bend Radius mm (in)		Temperature Range (°C)	
						Installation	Long Term	Operating	Storage
8	Cca, s1a,d1,a1	≤4.8 (0.188)	≤24 (16)	1000	300	≤72 (2.8)	≤48 (1.9)	-5 °C to +60 °C	-10 °C to +60 °C
12	Cca, s1a,d1,a1	≤4.8 (0.188)	≤24 (16)	1000	300	≤72 (2.8)	≤48 (1.9)		
24	Cca, s1a,d1,a1	≤7.6 (0.300)	≤51 (35)	1000	300	≤114 (4.5)	≤76 (3.0)		
48	Cca, s1a,d1,a1	≤7.6 (0.300)	≤54 (36)	800	600	≤114 (4.5)	≤76 (3.0)		
96	Cca, s1a,d1,a1	≤10.7 (0.420)	≤97 (65)	800	600	≤160 (6.3)	≤107 (4.2)		
144	Cca, s1a,d1,a1	≤10.7 (0.420)	≤101 (68)	800	600	≤160 (6.3)	≤107 (4.2)		

PULLING EYE OUTSIDE DIMENSIONS (OD)			
Fiber Count	MTP®	LC	SC
8	25.4 mm	25.4 mm	38.1 mm
12	25.4 mm	25.4 mm	38.1 mm
24	25.4 mm	38.1 mm	38.1 mm
48	38.1 mm	38.1 mm	50.8 mm
72	38.1 mm	50.8 mm	50.8 mm
96	38.1 mm	50.8 mm	50.8 mm
144	50.8 mm	50.8 mm	50.8 mm

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.

LC-TO-LC TRUNKS		
Description	PART NUMBERS OS2	PART NUMBERS OM4
8F OPT-X Engage SJZ Trunk, LC Duplex to LC Duplex, Euroclass B2ca, 15.0 m	FT-AZ008RR015005B05BN-NNBS	FT-FZ008RR015005B05BN-NNBS
12F OPT-X Engage SJZ Trunk, LC Duplex to LC Duplex, Euroclass B2ca, 15.0 m	FT-AZ012RR015005B05BN-NNBS	FT-FZ012RR015005B05BN-NNBS
24F OPT-X Engage SJZ Trunk, LC Duplex to LC Duplex, Euroclass B2ca, 15.0 m	FT-AZ024RR015005B05BN-NNBS	FT-FZ024RR015005B05BN-NNBS
48F OPT-X Engage SJZ Trunk, LC Duplex to LC Duplex, Euroclass B2ca, 15.0 m	FT-AZ048RR015005B05BN-NNBS	FT-FZ048RR015005B05BN-NNBS
72F OPT-X Engage SJZ Trunk, LC Duplex to LC Duplex, Euroclass B2ca, 15.0 m	FT-AZ072RR015005B05BN-NNBS	FT-FZ072RR015005B05BN-NNBS
96F OPT-X Engage SJZ Trunk, LC Duplex to LC Duplex, Euroclass B2ca, 15.0 m	FT-AZ096RR015005B05BN-NNBS	FT-FZ096RR015005B05BN-NNBS
144F OPT-X Engage SJZ Trunk, LC Duplex to LC Duplex, Euroclass B2ca, 15.0 m	FT-AZ144RR015005B05BN-NNBS	FT-FZ144RR015005B05BN-NNBS

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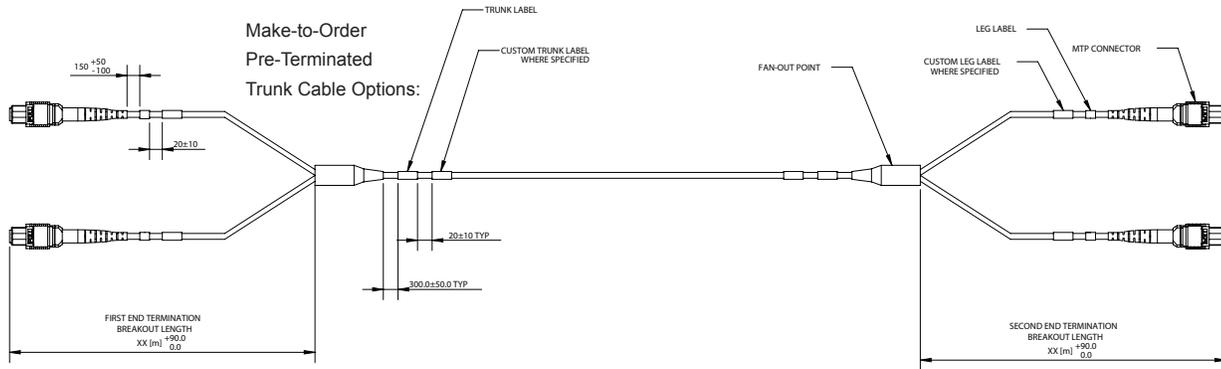
## OPT-X™ Engage Low Loss Fiber Trunk Cables

### MTP®-TO-MTP TRUNKS (12-FIBER MTP)

Description	PART NUMBERS OS2	PART NUMBERS OM4
12F OPT-X Engage SJZ Trunk, 12F Female MTP to 12F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ012LL015005B05BN-NNBS	FT-FZ012LL015005B05BN-NNBS
24F OPT-X Engage SJZ Trunk, 12F Female MTP to 12F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ024LL015005B05BN-NNBS	FT-FZ024LL015005B05BN-NNBS
48F OPT-X Engage SJZ Trunk, 12F Female MTP to 12F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ048LL015005B05BN-NNBS	FT-FZ048LL015005B05BN-NNBS
72F OPT-X Engage SJZ Trunk, 12F Female MTP to 12F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ072LL015005B05BN-NNBS	FT-FZ072LL015005B05BN-NNBS
96F OPT-X Engage SJZ Trunk, 12F Female MTP to 12F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ096LL015005B05BN-NNBS	FT-FZ096LL015005B05BN-NNBS
144F OPT-X Engage SJZ Trunk, 12F Female MTP to 12F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ144LL015005B05BN-NNBS	FT-FZ144LL015005B05BN-NNBS

### MTP®-TO-MTP TRUNKS (8-FIBER MTP)

Description	PART NUMBERS OS2	PART NUMBERS OM4
8F OPT-X Engage SJZ Trunk, 8F Female MTP to 8F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ008MM015005B05BN-NNBS	FT-FZ008MM015005B05BN-NNBS
12F OPT-X Engage SJZ Trunk, 8F Female MTP to 8F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ012MM015005B05BN-NNBS	FT-FZ012MM015005B05BN-NNBS
24F OPT-X Engage SJZ Trunk, 8F Female MTP to 8F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ024MM015005B05BN-NNBS	FT-FZ024MM015005B05BN-NNBS
48F OPT-X Engage SJZ Trunk, 8F Female MTP to 8F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ048MM015005B05BN-NNBS	FT-FZ048MM015005B05BN-NNBS
72F OPT-X Engage SJZ Trunk, 8F Female MTP to 8F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ072MM015005B05BN-NNBS	FT-FZ072MM015005B05BN-NNBS
96F OPT-X Engage SJZ Trunk, 8F Female MTP to 8F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ096MM015005B05BN-NNBS	FT-FZ096MM015005B05BN-NNBS
144F OPT-X Engage SJZ Trunk, 8F Female MTP to 8F Female MTP, Euroclass B2ca, 15.0 m	FT-AZ144MM015005B05BN-NNBS	FT-FZ144MM015005B05BN-NNBS



### Make-to-order! OPT-X ENGAGE TRUNK CABLE OPTIONS

Fiber Type	Fiber Count	CPR Rating	Termination	Cable Length (m)	Breakout Length (m)	Pulling Eye	Polarity	Labeling
• OS2 (A)	• 8	• B2ca	<b>FIRST END</b>	• 3-550	• 0.5	• Yes	• Method A (A)	• Standard (S)
• OM3 (E)	• 12	• Cca	• 8F MTP Male (N)					
• OM4 (F)	• 24		• 8F MTP Female (M)	• 8F MTP Female (M)	• 0.6	• No	• Method B (B)	• Custom (C)
• OM5 (5)	• 48		• 12F MTP Male (K)	• 12F MTP Male (K)	• 0.9		• Method C (C)	
	• 72		• 12F MTP Female (L)	• 12F MTP Female (L)	• 1.0		• 40G-10G (K)	
	• 96		• LC Duplex (R)	• LC Duplex (R)	• 1.5			
	• 144		• LC Duplex APC (F)	• LC Duplex APC (F)				
			• SC Duplex (Q)	• SC Duplex (Q)				
			• SC Duplex APC (E)	• SC Duplex APC (E)				
			• Blunt End (Z)					



For assistance customizing your trunk cables, please visit [levitonemea.com/mto](http://levitonemea.com/mto) or call Tech Support +44 (0) 1592 778494.

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

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