

BREAKOUT SERIES FIBER OPTIC CABLE TYPE OFNR RISER PRODUCT SPECIFICATIONS

Available from:
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U * S * A
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INDOOR/OUTDOOR CABLES | I/O 13

B-Series Riser

Applications

- Ideal for installations requiring an extremely rugged and reliable cable design where maximum mechanical and environmental protection are necessary
- Easiest cable to install where direct termination of connectors to sub-units and direct run to panels and equipment is desired

Features

- High performance components and construction
- UL Listed in accordance with NEC sections 770.179(b) for use in vertical runs in building riser shafts or from floor to floor
- Most rugged and easy to install cable design for enterprise cabling applications
- Core-Locked™ outer jacket design for installation survivability, long-term, trouble free service
- Ideal for use in long, vertical installations
- 2.5mm subcables can be direct-terminated with standard connectors (2.0mm and 2.9mm subcables also available)
- Subcabled fiber is environmentally and mechanically protected
- Ideal for use in point-to-point runs in adverse environments
- Direct termination to subcable provides additional strain relief for better connector retention during moves, adds, and changes
- Design is ideal for direct pulling with mesh grips
- Cable materials are indoor/outdoor – UV, water and fungus resistant
- Wide operating temperature range of -40°C to +85°C
- High performance 900 µm tight-buffered coating on each optical fiber for environmental and mechanical protection
- Interlocking armor can be applied to cables as an alternative to conduit installation
- 2 to 72 fibers

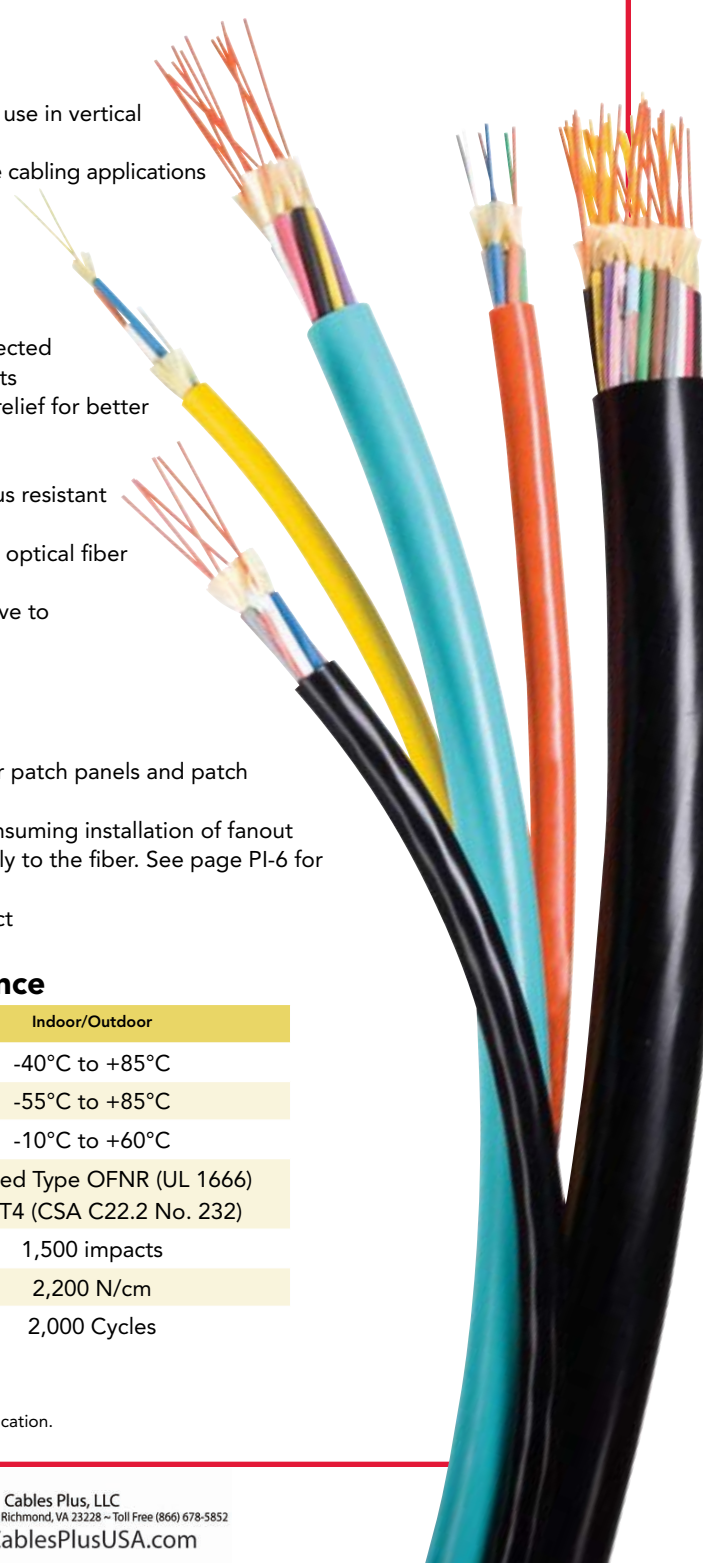
Cost Savings

- Direct termination to subcable may eliminate the need for patch panels and patch cords and reduce connector loss
- 900 µm buffer eliminates the need for costly and time-consuming installation of fanout kits or pigtail splices because connectors terminate directly to the fiber. See page PI-6 for typical termination approach.
- High crush resistance may eliminate the need for innerduct

Mechanical and Environmental Performance

	Indoor/Outdoor
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +85°C
Installation Temperature (cable temp.)	-10°C to +60°C
Flame Retardancy	UL Listed Type OFNR (UL 1666) and FT4 (CSA C22.2 No. 232)
Impact Resistance:	1,500 impacts
Crush Resistance:	2,200 N/cm
Flex Resistance:	2,000 Cycles

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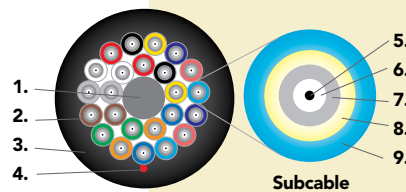
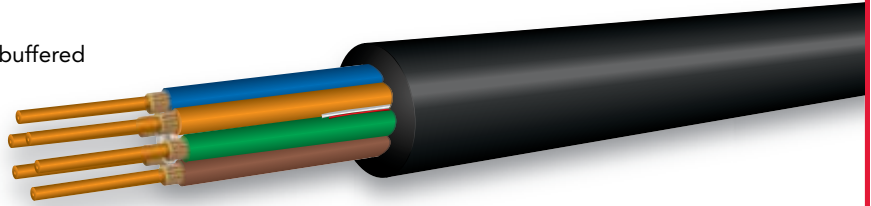
**BREAKOUT SERIES FIBER OPTIC CABLE
TYPE OFNR RISER PRODUCT SPECIFICATIONS**

I/O 14 | INDOOR/OUTDOOR CABLES

Applicable Standards

Optical Cable Corporation indoor/outdoor tight-buffered fiber optic cables meet the functional requirements of the following standards

- ICEA –S-83-596
- ICEA-S-104-696
- GR-409-CORE
- TIA-568
- TIA-598



1. Central Filler
 2. Subcable
 3. Core-Locked™ Outer Jacket
 4. Ripcord
- Subcable**
5. Optical Fiber
 6. Acrylate Fiber Coating
 7. 900 µm Diameter Tight-Buffer
 8. Aramid Strength Member
 9. Color-Coded Subcable Jacket

Cable Characteristics: B-Series Breakout Riser Cables (with 2.5mm subcables)

Fiber Count	Diameter mm (in)	Weight kg/km (lbs/1,000')	Installation Tensile Load N (lbs)	Operational Tensile Load N (lbs)	Minimum Bend Radius Installation cm (in)	Minimum Bend Radius Long-Term cm (in)
2	7.0 (0.28)	41 (28)	1,200 (270)	500 (110)	10.5 (4.1)	7.0 (2.8)
4	8.1 (0.32)	65 (44)	2,000 (450)	800 (180)	12.2 (4.8)	8.1 (3.2)
6	9.6 (0.38)	84 (56)	3,000 (670)	1,200 (270)	14.4 (5.7)	9.6 (3.8)
8	11.6 (0.46)	126 (85)	4,000 (900)	1,700 (380)	17.5 (6.9)	11.6 (4.6)
12*	13.0 (0.51)	142 (95)	6,000 (1,350)	2,500 (560)	19.5 (7.7)	13.0 (5.1)
18	15.3 (0.60)	216 (145)	8,000 (1,800)	3,500 (790)	23.1 (9.1)	15.3 (6.0)
24	17.6 (0.69)	279 (188)	10,000 (2,250)	3,800 (850)	26.5 (10.4)	17.6 (6.9)
36	20.3 (0.80)	360 (242)	14,000 (3,150)	6,000 (1,350)	30.6 (12.0)	20.3 (8.0)
48	23.6 (0.93)	483 (325)	18,000 (4,050)	7,500 (1,690)	35.5 (13.9)	23.6 (9.3)
60	28.5 (1.12)	744 (500)	22,000 (4,950)	8,800 (1,980)	42.7 (16.8)	28.5 (11.2)
72	28.9 (1.14)	738 (496)	26,000 (5,845)	11,000 (2,470)	43.4 (17.1)	28.9 (11.4)

*62.5 µm multimode fiber. Specifications vary by fiber type. Installation loads in excess of 2,700 N (600 lbs.) are not recommended. Other fiber counts available upon request.

Note: 2.5mm subcables standard. 2.0 and 2.9mm subcable diameters available upon request.

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Laser Ultra-Fox™ Fiber Performance

Fiber Code	Core/Cladding Diameter (µm)	Wavelength (nm)	Industry Standard Designation	Gigabit Ethernet Distance (m)	10-Gigabit Ethernet Distance (m)	Maximum Cabled Attenuation (dB/km)	Minimum Laser Bandwidth (MHz-km)	Minimum LED Bandwidth* (MHz-km)
WLS	62.5/125 Standard	(850/1310)	OM1 ISO/IEC 11801	300/600	33/300 ¹	3.5/1.5	220/500	200/500
WLX	62.5/125 XL	(850/1310)	OM1 ISO/IEC 11801	500/1000	33/300 ¹	3.0/1.0	385/500	200/500
ALS	50/125 Standard	(850/1310)	OM2 ISO/IEC 11801	600/600	82/300 ¹	3.5/1.5	510/500	500/500
ALX	50/125 XL	(850/1310)	OM2 ISO/IEC 11801	750/600	150/300 ^{1,2}	3.0/1.0 ³	950/500	700/500
ALT	50/125 (300 meter 10-GbE)	(850/1310)	OM3 ISO/IEC 11801	1000/600	300/300 ^{1,2}	3.0/1.0 ³	2000/500	1500/500
ALE	50/125 (550 meter 10-GbE)	(850/1310)	OM3 ISO/IEC 11801	1040/600	550 ¹ /300 ^{1,2}	3.0/1.0 ³	4700/500	3500/500
SLX	9µ/125 Low Water Peak Single-mode	(1310/1550)	ITU-T G.652.D	5 km ⁴	10 km ⁵	0.5/0.5	—	—
SLA	9µ/125 Bend-Insensitive Single-mode	(1310/1550)	ITU-T G.657.A ITU-T G.652.D	5 km ⁴	10 km ⁵	0.5/0.5	—	—
SLB	9µ/125 Bend-Insensitive Single-mode	(1310/1550)	ITU-T G.657.A & B ITU-T G.652.D	5 km ⁴	10 km ⁵	0.5/0.5	—	—

Ordering Information

	B	X				D				9	K	R
Digit No:	1	2	3	4	5	6	7	8	9	10	11	12

- 1 – 2 Breakout Series Ultra-Fox™ = **BX**
- 3 – 5 Fiber count: (See Cable Characteristics Chart) = **002 – 072**
- 6 Jacket type: PVC = **D**
- 7 – 9 Fiber type: (See Laser Ultra-Fox™ Fiber Performance Table)
- 10 250 µm fiber with 900 µm tight buffer = **9**
- 11 Standard Jacket Colors: Black = **K**
Optional colors available:
62.5 µm multimode (WLS, WLX): Orange = **O**
50 µm multimode (ALS, ALX): Orange = **O**
50 µm Ten-Gigabit multimode (ALT, ALE): Aqua = **Q**
Single mode: Yellow = **Y**
- 12 Rating: Riser = **R**

Example: 12 fiber cable using 62.5 µm standard laser optimized fiber, black jacket –

B	X	0	1	2	D	W	L	S	9	K	R
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* For backward compatibility to LED based systems, overfilled launch (OFL)

¹ 1310 nm CWDM lasers (10GBASE-LX4)

² Reach assuming 3.0 dB maximum cabled attenuation at 850 nm and 1.3 dB total connection and splice loss

³ Supports 220 meter 10GBASE-LRM distance, or 300 meter 10GBASE-LRM distance with 300 meter capable equipment

⁴ 3.5/1.5 dB/km maximum attenuation applies for DX-Series cables greater than 36 fibers, and for all DX-Series cables with armor (corrugated steel tape or interlocked armor) or any other secondary outer jacketing

⁵ 10 km for 1310 nm 1000BASE-LH, and 5 km for 1310 nm 1000BASE-LX

⁶ 10 km for 1310 nm 10GBASE-LR, and 40 km for 1550 nm 10GBASE-ER

⁷ Nominal Mode Field Diameter at 1310 nm

Note: many other fiber types, fiber bandwidth, and attenuation performances are available.

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