

# Opti-Core® Indoor-Outdoor Riser Hybrid Powered Fiber Cable

## specifications

The cable shall contain singlemode optical fibers and 12 AWG copper conductors for use in delivering data signals and power to remote devices such as wireless access points and surveillance cameras in a campus environment. The cable shall be rugged and suitable for indoor-outdoor use, including wet and dry locations. The cable shall also be CMR and CL3R-OF/PLTC-OF rated for use in indoor riser communication pathways.



## technical information

<b>Sheath:</b>	Black fire retardant PVC with ripcord
<b>Fiber Component:</b>	250µm coated in 3mm dry water-blocked loose tube or 900µm tight buffered in 2mm simplex jacket (yellow)
<b>Electrical Component:</b>	THHN / THWN-2 solid copper 12 AWG
<b>Water Blocking:</b>	Water-blocking yarns (gel-free)
<b>Strength Members:</b>	Aramid strength yarns

## standards

<b>ISO/IEC 11801</b>
<b>EN 50173</b>
<b>ANSI/CEA S-104-696</b>
<b>ANSI/TIA-568.3-D</b>
<b>Telcordia GR-409</b>
<b>ITU G.657.A2/B2</b>
<b>UL 13 and UL 444</b>
<b>RoHS Compliant</b>

## key features and benefits

<b>Fiber and power in the same cable</b>	Simplifies the delivery of data and power to remote devices in locations where a power outlet is not available
<b>G.657.A2/B2 singlemode fiber</b>	Fiber is bend insensitive and allows high bit rate data transmission to support 10 GbE, 25 GbE, 40 GbE, 100 GbE, 400 GbE and PON
<b>12 AWG conductors</b>	Delivers power for PoE+ devices at distances well beyond the standard 328 ft. (100m)
<b>Rugged, water-blocked construction with CMR and CL3ROF/PLTC-OF rating</b>	Flexible for use in wet or dry outdoor environments as well as indoor riser and power limited tray cable applications
<b>Loose tube option</b>	Accommodates 12 fibers in small diameter with low insertion loss
<b>Tight-buffered simplex option</b>	Provides easy breakout and termination at single devices requiring two fibers

## applications

- When used with a PoE+ media converter, Opti-Core® Hybrid Fiber Cable extends the distance that powered devices can be installed from the power source. 12 AWG conductors can increase this distance from 328 feet to several thousand feet, depending on the application.
- Ideal for indoor-outdoor campus network installations such as IP camera or WAP on a pole
- 2-fiber tight-buffered simplex design with 2 conductors is recommended for connecting single devices
- 12-fiber loose tube design with 4 or 6 conductors is recommended for connecting multiple devices
- Also suitable for applications where power and data are combined in indoor communication or industrial pathways

# Opti-Core® Indoor-Outdoor Riser Hybrid Powered Fiber Cable

<b>FSHRB12-04S12C</b> 12 fiber Loose Tube with 4x12 AWG 	<b>FSHRB12-06S12C</b> 12 fiber Loose Tube with 6x12 AWG 	<b>FSHRB02-02S12A</b> 2 Fiber Simplex with 2x12 AWG 
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## PHYSICAL AND MECHANICAL PROPERTIES

Cable Diameter	0.48 in. (12.2mm)	0.53 in. (13.5mm)	0.34 in. (8.6mm)
Cable Weight	159 lb./k ft. (237 kg/km)	206 lb./k ft. (307 kg/km)	93 lb./k ft. (138 kg/km)
Bend Radius (installation)	7.2 in. (18.3cm)	8.0 in. (20.2cm)	5.1 in. (13cm)
Bend Radius (long term)	4.8 in. (12.2cm)	5.3 in. (13.5cm)	3.4 in. (8.6cm)
Compressive Strength (crush)	100 N/cm	100 N/cm	100 N/cm
Tensile Strength (installation)	300 lbf (1335 N)	300 lbf (1335 N)	150 lbf (668 N)
Tensile Strength (long term)	90 lbf (400 N)	90 lbf (400 N)	45 lbf (200 N)
Impacts (per TIA/EIA FOTP-25)	2 at 4.41 N-m	2 at 4.41 N-m	2 at 4.41 N-m
Cable Flexibility (per TIA/EIA FOTP-104)	100 cycles	100 cycles	100 cycles
Temperature Range			
Shipping and storage	-76 to 185°F (-60 to 85°C)		-40 to 185°F (-40 to 85°C)
Installation	-4F to 140°F (-20 to 60°C)		
Operating	-40 to 167°F (-40 to 75°C)		




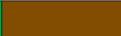
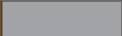


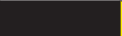

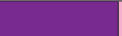


## OPTICAL PROPERTIES (SINGLEMODE ITU G.657.A2/B2)

Attenuation, max. 1310 nm (cabled)	0.4 dB/km	0.4 dB/km	0.5 dB/km
Attenuation, max. 1550 nm (cabled)	0.3 dB/km	0.3 dB/km	0.5 dB/km







## ELECTRICAL PROPERTIES

Max. DC resistance of conductor at 20°C	1.62 Ohm/kft
Max. DC resistance of conductor at 20°C	5.31 Ohm/km

## FIBER COLOR SEQUENCE (FOR LOOSE TUBE)

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Pink	Aqua
											

## CONDUCTOR COLOR SEQUENCE

1	2	3	4	5	6
Black	White	Blue	Yellow	Brown	Orange
					

## ORDERING INFORMATION

PART NUMBER	DESCRIPTION
<b>FSHRB12-04S12C</b>	G.657.A2/B2 Indoor-Outdoor Hybrid Fiber Cable, Riser, 12 250µm Fibers, 4x12 AWG solid conductors
<b>FSHRB12-06S12C</b>	G.657.A2/B2 Indoor-Outdoor Hybrid Fiber Cable, Riser, 12 250µm Fibers, 6x12 AWG solid conductors
<b>FSHRB02-02S12A</b>	G.657.A2/B2 Indoor-Outdoor Hybrid Fiber Cable, Riser, 2 900µm Buffered Simplex Fibers, 2x12 AWG solid conductors

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