

CL3R-OF Composite Fiber Cable with Armor-Tek

Berk-Tek's Composite Copper/Fiber cables incorporate high bandwidth optical fibers with insulated stranded copper TFFN or THWN conductors. Armor-Tek Interlocking Armor is wrapped around the CL3R-OF cable core. A wide variety of design options are available including; up to 7 conductors ranging from #12 AWG to #18 AWG, up to 12 tight buffered fibers or 24 loose tube fibers. These cables are listed as CL3R-OF/PLTC-OF. A key application of these cables is to extend the distance that powered devices can be installed from the power source in Power over Ethernet (PoE+) installations. Proper conductor size selection can increase this distance from 328 feet to several thousand feet. The powered device could be an IP camera, a wireless access point, or other building automation device located in an area where an electrical outlet is not readily available.

Description

Construction

Each cable consists of multiple TFFN or THWN copper conductors and multiple fibers cabled together within an outer jacket. Cable design accommodates from 2 to 7 conductors and 2 to 24 fibers.

- Fibers can be tight buffered or in a loose tube
- Cable is dry-waterblocked for outdoor installations
- Aluminum (standard) or steel interlock armored cables available

Applications

Berk-Tek's Composite cables are suitable for all power limited applications where optical fibers are needed. Specific applications include (but not limited to):

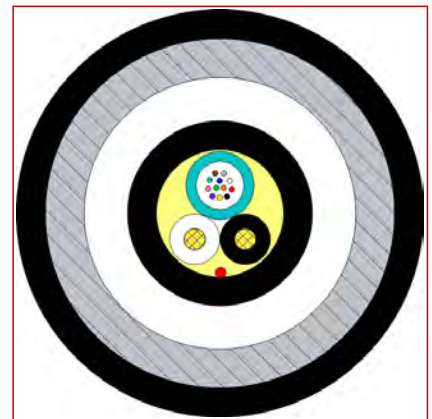
- Power over Ethernet (PoE+) length extension
- Combining control and communication in industrial pathways
- Common pathway for fiber backbone and Class 3 power supply
- 10BASE-FL
- 100BASE-SX/100BASE-FX

Features

- Multimode, Single-mode, and GIGAlite™ fibers
- CL3R-OF, wet and dry rated
- Aluminum interlock armored, steel interlock armored designs available
- Indoor/Outdoor dry water-blocked designs available

Benefits

- Enables PoE+ equipment to be located more than 100 meters from the switch
- Cost savings versus installation of a new electrical outlet
- Broad design selection allows for mix and match of copper and fiber components to specific networking applications
- CL3R-OF/PLTC-OF allows cable to be installed in communication pathways
- Eliminates the need for conduit or riser innerduct
- Ease of installation, accommodating last minute relocations or pathway changes
- Armor adds crush resistance and protection from rodent attacks
- Significant cost savings in both materials and labor - up to 25%



Standards

International EN 50173; ISO/IEC 11801

National ANSI/ICEA S-104-696;
ANSI/TIA-568-C.3;
Telcordia GR-409; UL 13

CL3R-OF Composite Fiber Cable with Armor-Tek

Product List

Part Number	Description
☎ OPRCK012EB3010/25-002X18AWG	Composite 12 Fiber OM3 with Two 18 AWG Stranded Conductors, Filled Loose Tube, Interlock Armored
☎ OPRCK012AB0403-002X18AWG	Composite 12 Fiber OS2 with Two 18 AWG Stranded Conductors, Filled Loose Tube, Interlock Armored
☎ = Make to order, 📦 = In stock	

CL3R-OF Composite Fiber Cable with Armor-Tek

Sheath Colors

CL3R fiber types and sheath colors (black)

Fiber Type	Core Size (um)	ISO-TIA Standard	Effective Modal BW @ 850 nm	Overfilled Launch BW @ 850 nm	Attenuation @ 850 nm	Attenuation @ 1300 nm	Attenuation @ 1550 nm	Sheath Color
Loose Tube								
AB	8.3	OS2	NS	NS	NS	0.4 dB/km	0.3 dB/km	Black
Tight Buffer								
AB	8.3	OS2	NS	NS	NS	0.7 dB/km	0.7 dB/km	Black
CB	62.5	OM1	200 MHz-km	200 MHz-km	3.5 dB/km	1.0 dB/km	NS	Black
GB	62.5	OM1+	500 MHz-km	350 MHz-km	3.5 dB/km	1.0 dB/km	NS	Black
ZB	50	OM2	500 MHz-km	500 MHz-km	3.5 dB/km	1.5 dB/km	NS	Black
LB	50	OM2+	950 MHz-km	700 MHz-km	3.0 dB/km	1.0 dB/km	NS	Black
EB	50	OM3	2000 MHz-km	1500 MHz-km	3.0 dB/km	1.0 dB/km	NS	Black
FB	50	OM4	4700 MHz-km	3500 MHz-km	3.0 dB/km	1.0 dB/km	NS	Black
XB	50	OM4+	4900 MHz-km	3675 MHz-km	3.0 dB/km	1.0 dB/km	NS	Black

NS = Not Specified

Manufacturing Release

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CL3R-OF Composite Fiber Cable with Armor-Tek

Composite 12 Fiber OM3 with Two 18 AWG Stranded Conductors, Filled Loose Tube, Interlock Armored

Part Number: OPRCK012EB3010/25-002X18AWG

Berk-Tek's Composite Copper/Fiber cables incorporate high bandwidth optical fibers with insulated stranded copper TFFN or THWN conductors. Armor-Tek Interlocking Armor is wrapped around the CL3R-OF cable core. A wide variety of design options are available including; up to 7 conductors ranging from #12 AWG to #18 AWG, up to 12 tight buffered fibers or 24 loose tube fibers. These cables are listed as CL3R-OF/PLTC-OF. A key application of these cables is to extend the distance that powered devices can be installed from the power source in Power over Ethernet (PoE+) installations. Proper conductor size selection can increase this distance from 328 feet to several thousand feet. The powered device could be an IP camera, a wireless access point, or other building automation device located in an area where an electrical outlet is not readily available.

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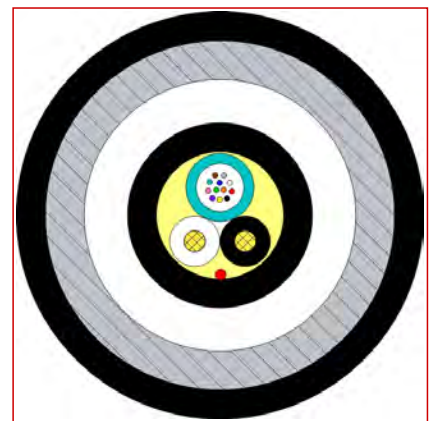
- Power over Ethernet (PoE+) length extension
- Combining control and communication in industrial pathways
- Common pathway for fiber backbone and Class 3 power supply
- 10BASE-FL
- 100BASE-SX/100BASE-FX

Features

- Multimode, Single-mode, and GIGAlite™ fibers
- CL3R-OF, wet and dry rated
- Aluminum interlock armored, steel interlock armored designs available
- Indoor/Outdoor dry water-blocked designs available

Benefits

- Enables PoE+ equipment to be located more than 100 meters from the switch
- Cost savings versus installation of a new electrical outlet
- Broad design selection allows for mix and match of copper and fiber components to specific networking applications
- CL3R-OF/PLTC-OF allows cable to be installed in communication pathways
- Eliminates the need for conduit or riser innerduct
- Ease of installation, accommodating last minute relocations or pathway changes
- Armor adds crush resistance and protection from rodent attacks
- Significant cost savings in both materials and labor - up to 25%



Standards

International EN 50173; ISO/IEC 11801

National ANSI/ICEA S-104-696;
ANSI/TIA-568-C.3;
Telcordia GR-409; UL 13

CL3R-OF Composite Fiber Cable with Armor-Tek

Composite 12 Fiber OM3 with Two 18 AWG Stranded Conductors, Filled Loose Tube, Interlock Armored

Characteristics

Construction characteristics	
Fiber optic type	OM3 50/125
Type of cable	Loose tube
Outer sheath	Fire-retardant PVC
Sheath colour	Black
Armour type	Aluminum Interlock
Conductor material	Bare copper
Dimensional characteristics	
Tube diameter	3 mm
Number of optical fibres	12
Nominal outer diameter	0.71 in
Nominal outer diameter	18.0 mm
Approximate weight	260 lb/kft
Approximate weight	174 kg/km
Conductor cross-section (AWG)	18
Electrical characteristics	
Max. DC resistance of the conductor at 20°C	6.66 Ohm/kft
Max. DC resistance of the conductor at 20°C	21.90 Ohm/km
Transmission characteristics	
Optical performance	EB (50/125 GIGAlite-10, OM3)
Attenuation, max. 850 nm (cabled)	3.0 dB/km
Attenuation, max. 1300 nm (cabled)	1.0 dB/km
Mechanical characteristics	
Maximum installation tension	150 lb
Maximum installation tension	668 N
Max. Load. Long Term (lbs)	45.0 lb
Max. Load. Long Term	200.0 N
Impacts per TIA/EIA FOTP-25	2 at 8.83 N-m
Crush resistance per TIA/EIA FOTP-41	220 N/cm
Cable flexibility per TIA/EIA FOTP-104	100 cycles
Usage characteristics	
Minimum Bending Radius - Install	10.7 in
Minimum Bend Radius - Install	27.1 cm
Minimum Bending Radius - LongTerm	7.1 in
Minimum Bending Radius - LongTerm	18 cm
Operating temperature, range	-40 .. 75 °C
Ambient installation temperature, range	-20 .. 60 °C
Storage temperature, range	-60 .. 85 °C
Field of application	Indoor, Outdoor

CL3R-OF Composite Fiber Cable with Armor-Tek

Composite 12 Fiber OM3 with Two 18 AWG Stranded Conductors, Filled Loose Tube, Interlock Armored

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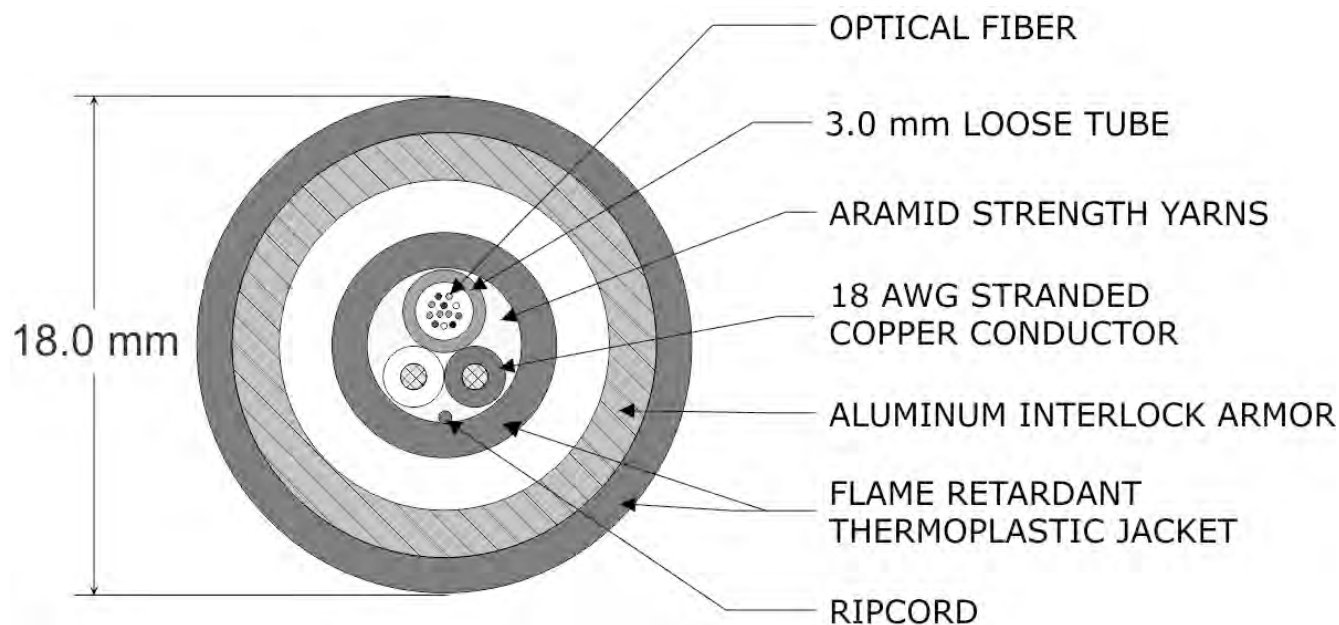
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CL3R fiber types and sheath colors (black)

Fiber Type	Core Size (um)	ISO-TIA Standard	Effective Modal BW @ 850 nm	Overfilled Launch BW @ 850 nm	Attenuation @ 850 nm	Attenuation @ 1300 nm	Attenuation @ 1550 nm	Sheath Color
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XB	50	OM4+	4900 MHz-km	3675 MHz-km	3.0 dB/km	1.0 dB/km	NS	Black

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Cross-section Diagram - OPRCK012-002x18AWG



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Composite 12 Fiber OM3 with Two 18 AWG Stranded Conductors, Filled Loose Tube, Interlock Armored

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CL3R-OF Composite Fiber Cable with Armor-Tek

Composite 12 Fiber OS2 with Two 18 AWG Stranded Conductors, Filled Loose Tube, Interlock Armored

Part Number: OPRCK012AB0403-002X18AWG

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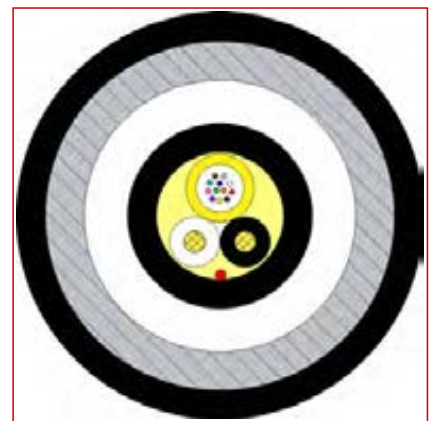
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- Combining control and communication in industrial pathways
- Common pathway for fiber backbone and Class 3 power supply
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- 100BASE-SX/100BASE-FX

Features

- Multimode, Single-mode, and GIGAlite™ fibers
- CL3R-OF, wet and dry rated
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Benefits

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Characteristics

Construction characteristics	
Fiber optic type	SM (G657.A1)
Type of cable	Loose tube
Outer sheath	Fire-retardant PVC
Sheath colour	Black
Armour type	Aluminum Interlock
Conductor material	Bare copper
Dimensional characteristics	
Tube diameter	3 mm
Number of optical fibres	12
Nominal outer diameter	0.71 in
Nominal outer diameter	18.0 mm
Approximate weight	260 lb/kft
Approximate weight	174 kg/km
Conductor cross-section (AWG)	18
Electrical characteristics	
Max. DC resistance of the conductor at 20°C	6.66 Ohm/kft
Max. DC resistance of the conductor at 20°C	21.90 Ohm/km
Transmission characteristics	
Optical performance	AB (Single-mode, OS2)
Attenuation, max. 1310 nm (cabled)	0.4 dB/km
Attenuation, max. 1550 nm (cabled)	0.3 dB/km
Mechanical characteristics	
Maximum installation tension	150 lb
Maximum installation tension	668 N
Max. Load. Long Term (lbs)	45.0 lb
Max. Load. Long Term	200.0 N
Impacts per TIA/EIA FOTP-25	2 at 8.83 N-m
Crush resistance per TIA/EIA FOTP-41	220 N/cm
Cable flexibility per TIA/EIA FOTP-104	100 cycles
Usage characteristics	
Minimum Bending Radius - Install	10.7 in
Minimum Bend Radius - Install	27.1 cm
Minimum Bending Radius - LongTerm	7.1 in
Minimum Bending Radius - LongTerm	18 cm
Operating temperature, range	-40 .. 75 °C
Ambient installation temperature, range	-20 .. 60 °C
Storage temperature, range	-60 .. 85 °C
Field of application	Indoor, Outdoor

CL3R-OF Composite Fiber Cable with Armor-Tek

Composite 12 Fiber OS2 with Two 18 AWG Stranded Conductors, Filled Loose Tube, Interlock Armored

Part Number: OPRCK012AB0403-002X18AWG

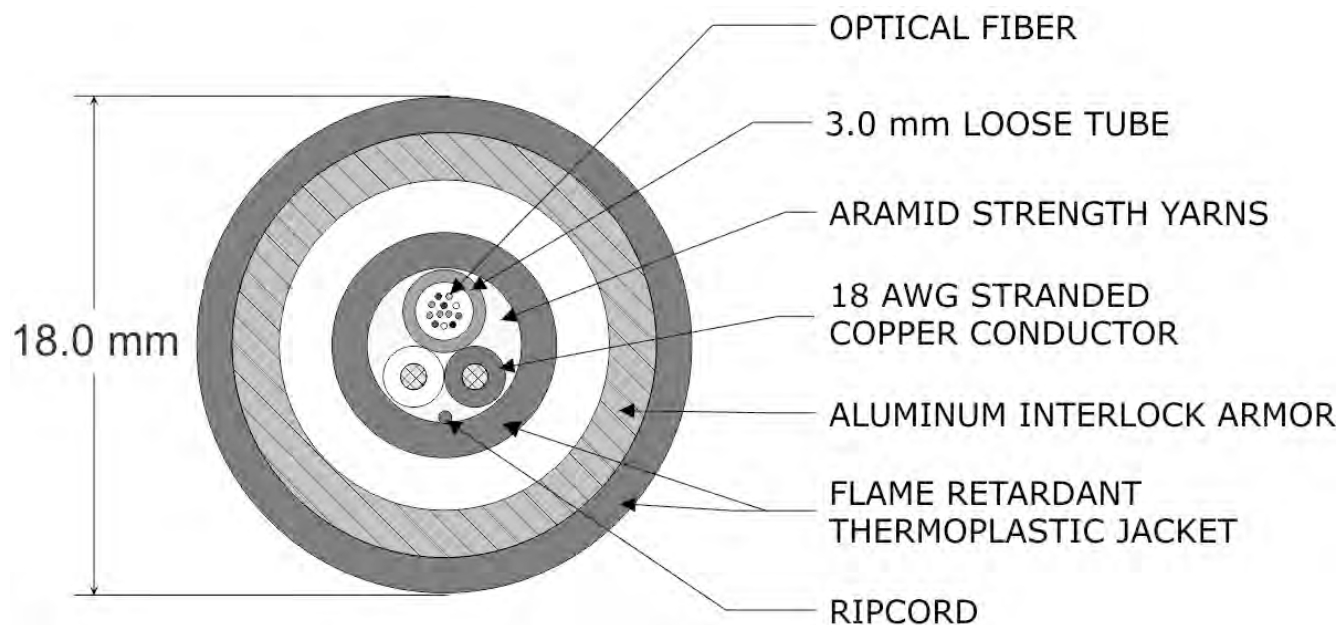
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ZB	50	OM2	500 MHz-km	500 MHz-km	3.5 dB/km	1.5 dB/km	NS	Black
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