

CL3R-OF Composite Fiber Cable

Composite 2 Fiber OS2 with Two 12 AWG Stranded Conductors, Tight Buffer

Part Number: HDRC002AB0707-002X12AWG

Berk-Tek's Composite Copper/Fiber cables incorporate high bandwidth optical fibers with insulated stranded copper TFFN or THWN conductors. 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, and interlock armoring. 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):

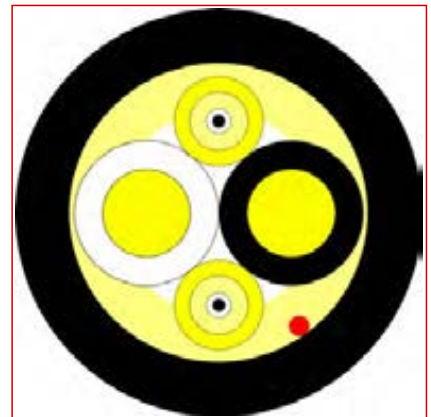
- Power over Ethernet (PoE+) length extension
- Combining control and communication in industrial pathways
- Common pathway for fiber backbone and Class 3 power supply
- 10BASE-FL
- 100BASE-SX/100BASE-FX

Features

- Multimode, Single-mode, and GIGAlite™ fibers
- CL3R-OF, wet and dry rated
- Aluminum or 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
- CL3R-OF/PLTC-OF allows cable to be installed in communication pathways
- Ease of installation
- Broad design selection allows for mix and match of copper and fiber components to specific networking applications
- Armor option adds crush resistance and protection from rodent attacks



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

Composite 2 Fiber OS2 with Two 12 AWG Stranded Conductors, Tight Buffer

Part Number: HDRC002AB0707-002X12AWG

Characteristics

Construction characteristics	
Fiber optic type	SM (G.652D)
Type of cable	Tight buffer
Outer sheath	Fire-retardant PVC
Sheath colour	Black
Conductor material	Bare copper
Dimensional characteristics	
Tube diameter	2 mm
Number of optical fibres	2
Nominal outer diameter	0.37 in
Nominal outer diameter	9.4 mm
Approximate weight	93 lb/kft
Approximate weight	138 kg/km
Conductor cross-section (AWG)	12
Electrical characteristics	
Max. DC resistance of the conductor at 20°C	1.65 Ohm/kft
Max. DC resistance of the conductor at 20°C	5.41 Ohm/km
Transmission characteristics	
Optical performance	AB (Single-mode, OS2)
Attenuation, max. 1310 nm (cabled)	0.7 dB/km
Attenuation, max. 1550 nm (cabled)	0.7 dB/km
Mechanical characteristics	
Maximum installation tension	300 lb
Maximum installation tension	1335 N
Max. Load. Long Term (lbs)	90.0 lb
Max. Load. Long Term	400.0 N
Impacts per TIA/EIA FOTP-25	2 at 5.88 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	5.6 in
Minimum Bend Radius - Install	14.1 cm
Minimum Bending Radius - LongTerm	3.7 in
Minimum Bending Radius - LongTerm	9.4 cm
Operating temperature, range	-40 .. 85 °C
Ambient installation temperature, range	-10 .. 70 °C
Storage temperature, range	-40 .. 85 °C
Field of application	Indoor, Outdoor

CL3R-OF Composite Fiber Cable

Composite 2 Fiber OS2 with Two 12 AWG Stranded Conductors, Tight Buffer

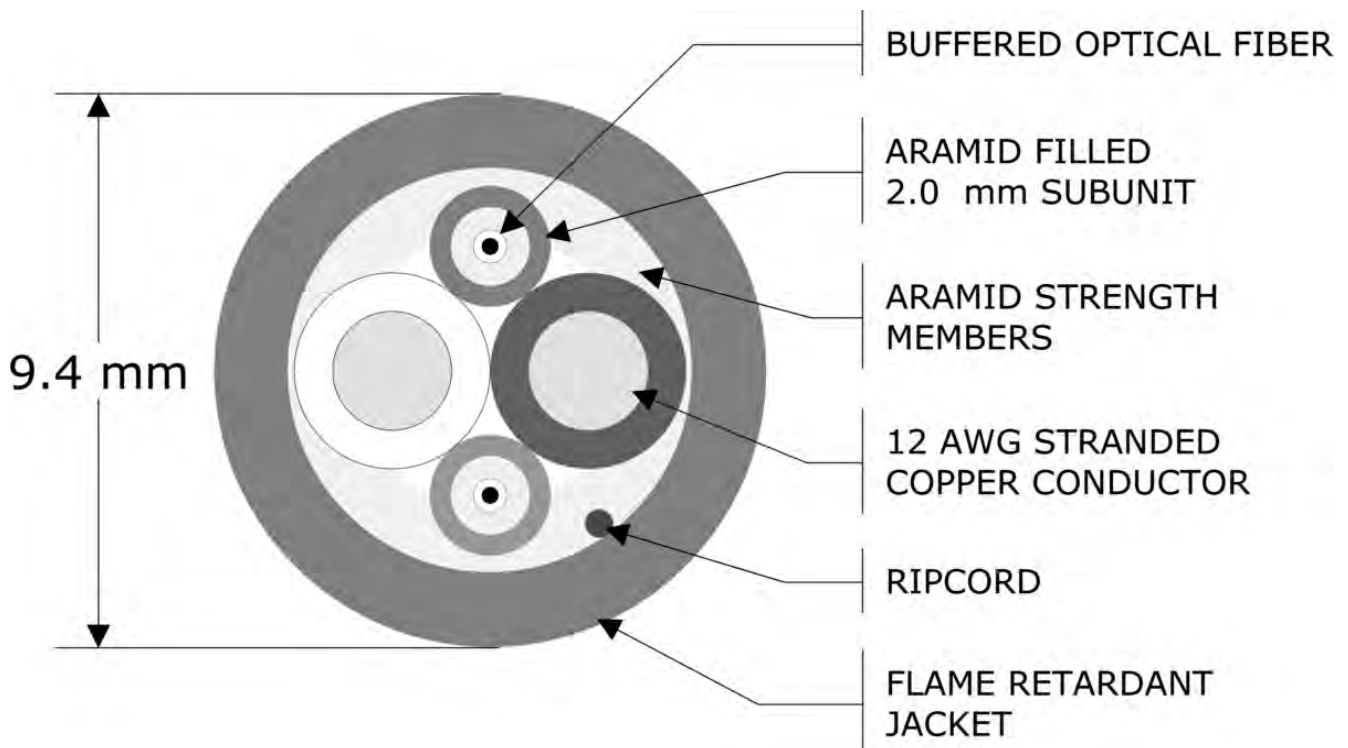
Sheath Colors

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

Cross-section Diagram - HDRC002-002x12AWG



Manufacturing Release

IMPORTANT NOTICE: This product specification is provided for informational purposes only in order to illustrate typical product constructions, applications and/or methods of installation. Because conditions of actual installation and use are unique and will vary, Berk-Tek makes no representation or warranty

CL3R-OF Composite Fiber Cable

Composite 2 Fiber OS2 with Two 12 AWG Stranded Conductors, Tight Buffer

as to the reliability, accuracy or completeness of this data, even if Berk-Tek is aware of the product's intended use or purpose. Furthermore, this data does not constitute, nor should it be regarded or relied upon, as professional engineering advice. Installation of cable should only be done by qualified personnel and in conformance with all safety, electrical and other applicable codes, standards, rules or regulations. Appropriate and correct product selection, installation and use, and compliance with all such codes, standards, rules and regulations, is a customer/end-user responsibility. Product specifications, standards, programs or services are subject to improvement or changes without notice. Berk-Tek accepts no liability for typographical errors, technical inaccuracies, omissions or misuse of the information contained herein. Changes will be periodically made to address any such issues.