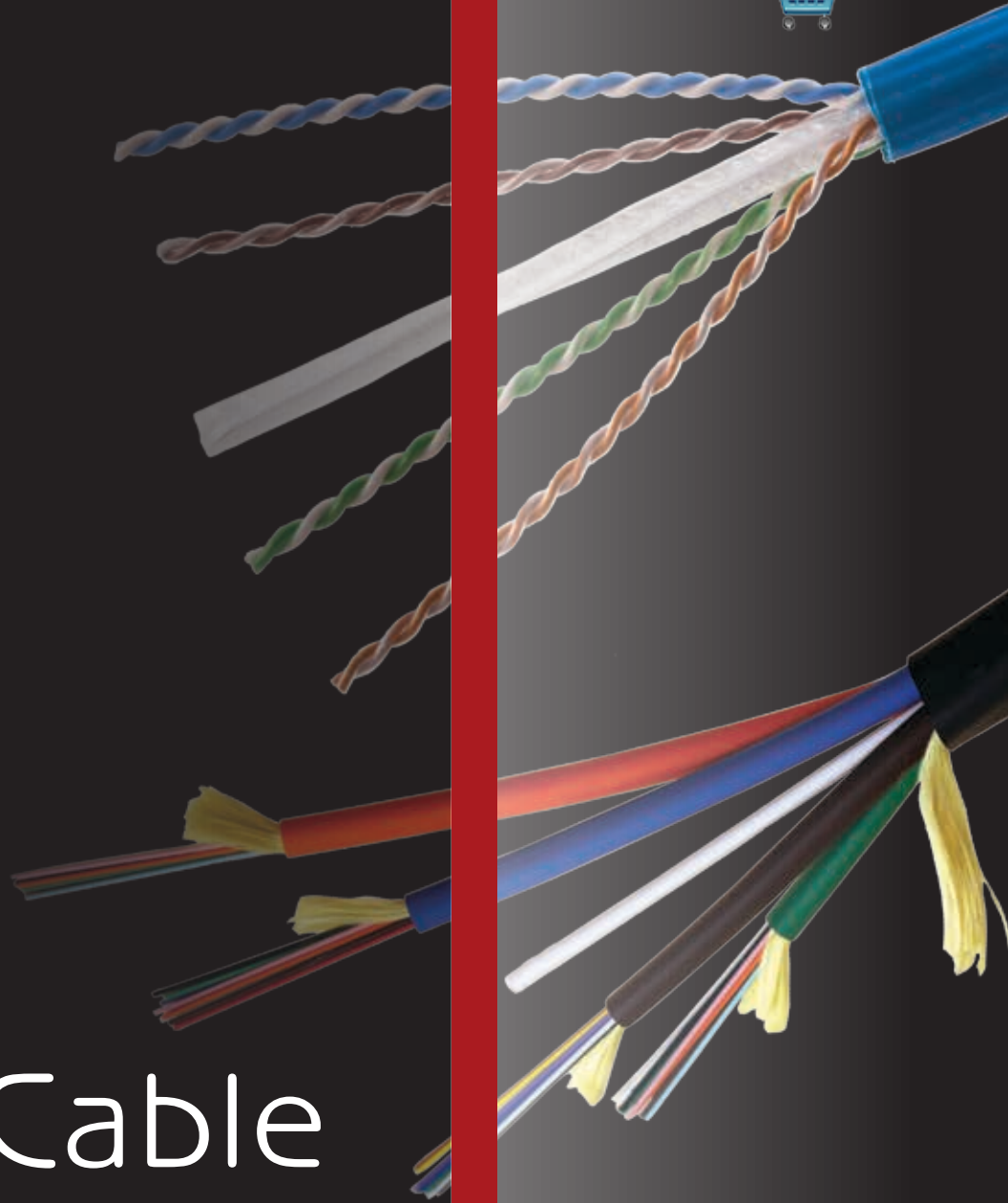


HUBBELL[®]
Premise Wiring



Cable

Product Guide



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OPTICHANNEL Fiber Cable

Indoor Distribution

Multi-Unit Distribution

Indoor/Outdoor Tight Buffer

Indoor Armored Distribution

Indoor/Outdoor Armored
Tight Buffer

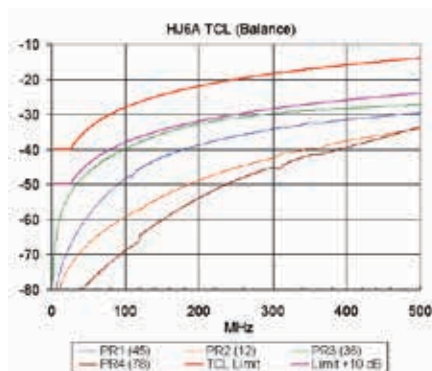
COPPER

FIBER

NEXTSPEED Cat 6A Cable

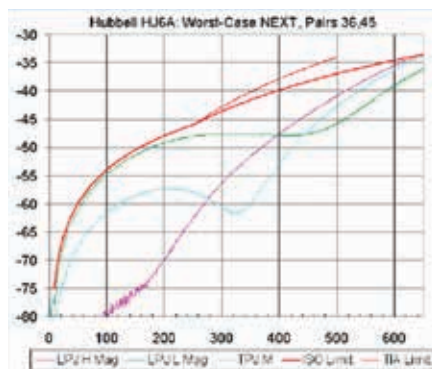
Cabling Infrastructure for 10GBASE-T and Beyond

Over the past decade, Ethernet data rates have escalated to support the transmission of increasing volumes of data associated with cloud computing, virtualization, streaming video and other digital media content. This increase in data rates impacts how networks and cabling infrastructure are designed and deployed. As a result, 10GBASE-T is expanding in the enterprise as well as data center applications. To support 10 Gigabit Ethernet (10GbE), a higher performance Category 6A copper cabling system is a necessity.



Category 6A Systems

- Component performance with 7.5dB of NEXT headroom at 500MHz allows for applications such as 10GBASE-T, a transparent path at 417MHz, eliminating bit errors and retransmissions.
- Hubbell 6A systems pass short link NEXT and RL performance configurations found in Mission Critical data centers, and support 10GBASE-T needs from 1 to 100 meters.



- Resolve design issues that limit distance and performance
- Cutting edge enhanced common mode design and AXT elimination techniques allow the Category 6A system to support connections between 2 and 100 meters apart, based on practical real work channel configurations.

Conduit Capacity Requirements at 40% Fill Ratio

Cable O.D.	Conduit Size				
	¾"	1"	1¼"	1½"	2"
.21" (C5e)	5	9	14	20	36
.25" (C6 UTP)	4	6	10	14	26
.29" (C6 FTP)	3	5	7	11	19
.35" (C6A)	2	3	5	7	13

Applications

- **Data Centers 10GbE between devices**
 - Server to server
 - Server to storage
 - Server to switch
- **PoE applications**
 - Wireless access points (IEEE 802.11ac)
 - Voice over Internet Protocol (VoIP)
 - Security applications
- **High-performance cable applications**
 - Distributed backbone
 - Floor to floor backbone
 - 10GbE cabling to desktop
 - Active zone cabling
- **Bandwidth intense processing**
 - Video on Demand (VoD)
 - Real-time security surveillance
 - Online document publishing
 - Broadband video

Cat 6 UTP



.235 O.D.

Cat 6A FTP



.290 O.D.

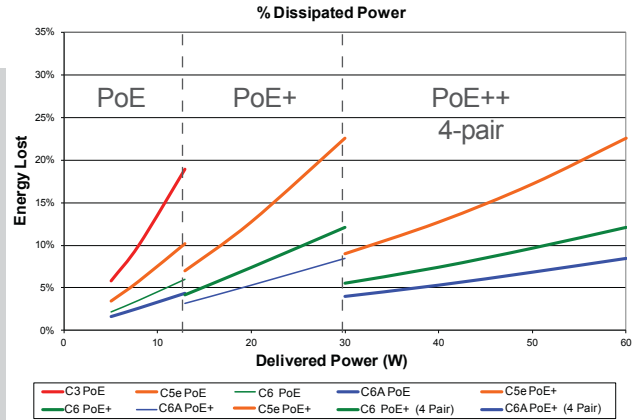
Cat 6A UTP



.300 O.D.

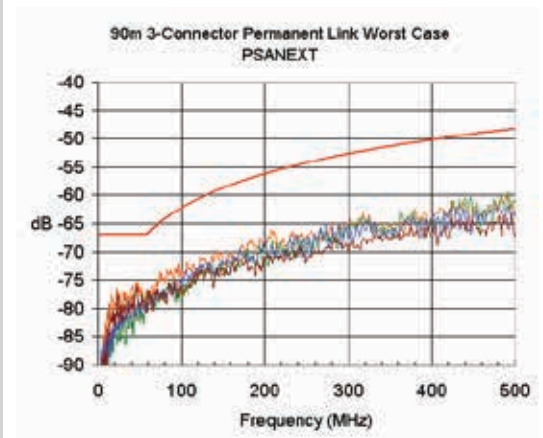
PoE

- Connecting hardware and cable designed and qualified to support IEEE 4PPoE levels on all four pairs
- Connectivity printed circuit boards feature traces capable of handling 550mA of current with less than 10 degrees of temperature rise
- Complies with IEC 60512-99-001 requirements ensuring contact seating surfaces are not damaged during plug/jack mating and disconnecting under remote powering loads
- 23AWG copper reduces heat rise, and pair separation design improves heat dissipation
- Category 6A cables support PoE guidelines TIA TSB-184-A



Alien Crosstalk (AXT)

- Superior noise suppression
- Unique inner jacket to suppress AXT, ensuring maximum transmission quality and minimum bit error rate (BER)
- Standard 110 terminations with no specialized equipment
- Traditional cable installation in runs of 2 to 100 meters
- Qualified active transmission under adverse EMI conditions



Key Industry Challenges

PoE

Powering IP devices through PoE protocols designed to handle continuous power over time

AXT

Eliminating Alien Cross Talk (AXT), EMI and security issues

Short Link

Supporting short length channels and links in data centers

Interoperability

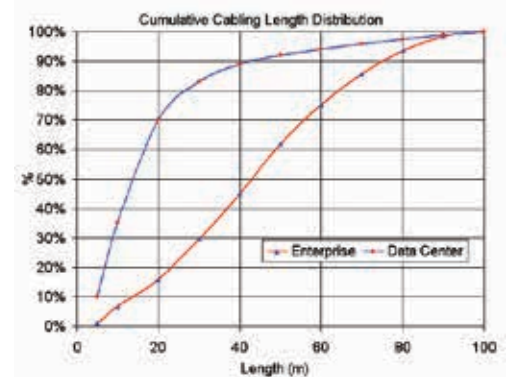
No space constraints, backward compatible, component compliant

Short Link

- Superior component NEXT performance yields channels and links with significant headroom throughout the frequency range
- Shorter links and channels require component compliant connections with margin beyond the standard
- Channel and link Return Loss are also significantly better than the standard requirements
- Improved Return Loss minimizes reflected power into the transmitter and reduces the power usage in the electronics

Interoperability

- Standards component based performance provides seamless open architecture
- Developed to maximize cabling system performance without sacrificing reliability
- Third-party verified components
- Backward compatibility
- Components designed to work together in form, fit, function and performance



(HPW Lab)



Cat 6A FTP

Specifications

- Conductor: 23AWG solid bare copper
- Insulation:
 - CMP: FEP
 - CMR: Polyolefin
- Cabling: Four unshielded twisted pairs cables around a star filler member wrapped in a polyester foil tape
- Jacket
 - CMP: Low Smoke PVC
 - CMR: PVC

Standards/Verifications

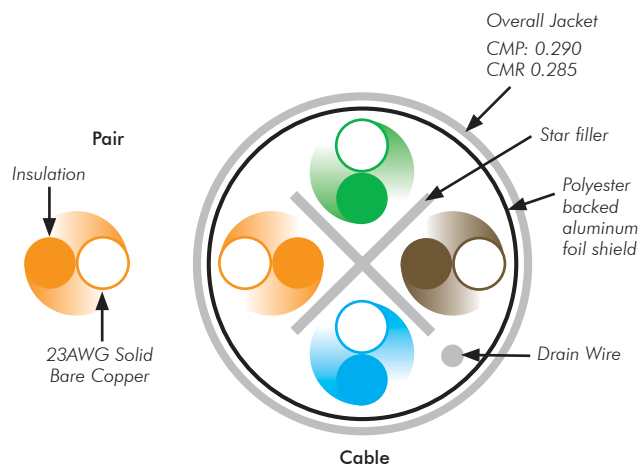
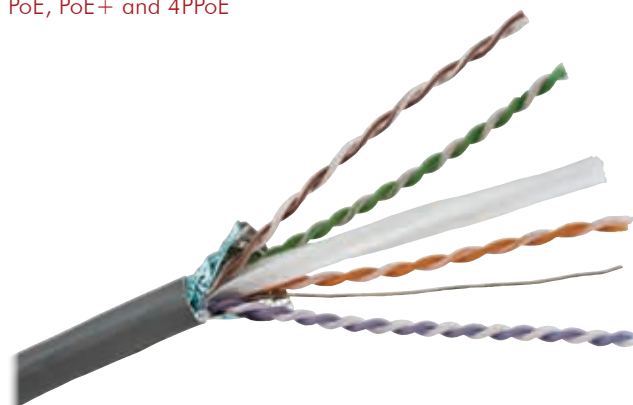
- ANSI/TIA-568.2-D (Category 6A Component)
- IEEE 802.3bt (4PPoE)
- Exceeds IEEE 802.3an 10GBASE-T link segment requirements
- NEC Article 800 Compliant

Ordering Information

Color	Riser Catalog No.	Plenum Catalog No.
Blue	C6AFTPSRB	C6AFTSPB
White	C6AFTPSRW	C6AFTSPW
Gray	C6AFTPSRGY	C6AFTSPGY
Yellow	–	C6AFTSPY

Note: 1000' of cable per spool box

10GbE Application Assurance
 Maximum Bandwidth Beyond 750MHz
 Component Compliant ANEXT Performance
 PoE, PoE+ and 4PPoE



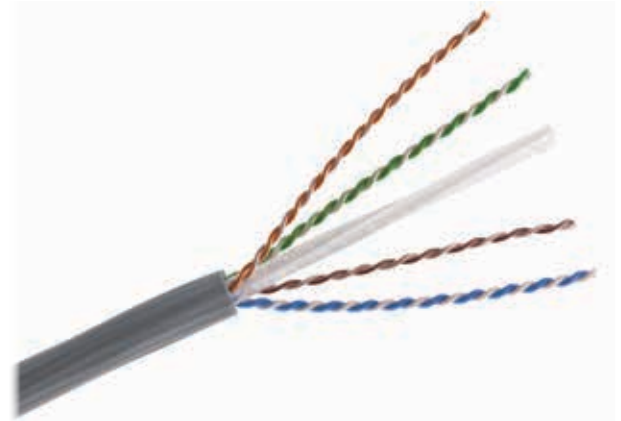
TRANSMISSION SPECIFICATIONS, Worst Case 100 meter Channel Configuration TIA-568-B.2 Category 6A Compliant, ISO/IEC 11801, 2nd Ed. Category 6A Compliant

Freq. (MHz)	Ins. Loss (dB/100m)	NEXT (dB/100m)	PSNEXT (dB/100m)	ELFNEXT (dB/100m)	PSELFEXT (dB/100m)	Return Loss (dB/100m)	Delay Max. (ns/100m)
0.772	–	84	82	78	75	–	–
1	2	82.3	80.3	75.8	72.8	20	570
4	3.7	73.3	71.3	63.8	60.8	23	552
8	5.2	68.8	66.8	57.7	54.7	24.5	547
10	5.8	67.3	65.3	55.8	52.8	25	545
16	7.3	64.2	62.2	51.7	48.7	25	543
20	8.2	62.8	60.8	49.8	46.8	25	542
25	9.2	61.3	59.3	47.8	44.8	24.3	541
31.25	10.4	59.9	57.9	45.9	42.9	23.6	540
62.5	14.9	55.4	53.4	39.9	36.9	21.5	539
100	19.2	52.3	50.3	35.8	32.8	20.1	538
200	28.1	47.8	45.8	29.8	26.8	18	537
300	35.3	45.1	43.1	26.3	23.3	16.8	536
400	41.7	43.3	41.3	23.8	20.8	15.9	536
500	47.5	41.8	39.8	21.8	18.8	15.2	536

Specifications

- Conductor: 23AWG solid bare copper
- Insulation:
 - CMP: FEP
 - CMR: Polyolefin
- Cabling: Four unshielded twisted pairs cables around a star filler member
- Jacket
 - CMP: Low Smoke PVC
 - CMR: PVC

10GbE Application Assurance
Maximum Bandwidth Beyond 750MHz
Component Compliant ANEXT Performance
PoE, PoE+ and 4PPoE



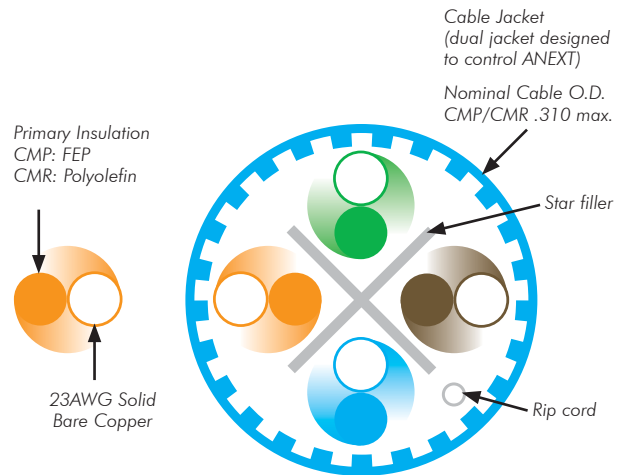
Standards/Verifications

- ANSI/TIA-568.2-D (Category 6A Component)
- IEEE 802.3bt (4PPoE)
- Exceeds IEEE 802.3an 10GBASE-T link segment requirements
- NEC Article 800 Compliant

Ordering Information

Color	Riser Catalog No.	Plenum Catalog No.
Black	C6ASRBK	C6ASPBK
Blue	C6ASRB	C6ASPB
Gray	C6ASRGY	C6ASPGY
Green	C6ASRGN	C6ASPGN
Orange	C6ASROR	C6ASPOR
Purple	–	C6ASPP
White	C6ASRW	C6ASPW
Yellow	C6ASRY	C6ASPY

Note: 1000' of cable per spool box



TRANSMISSION SPECIFICATIONS, Worst Case 100 meter Channel Configuration TIA-568-B.2 Category 6A Compliant, ISO/IEC 11801, 2nd Ed. Category 6A Compliant

Freq. (MHz)	Ins. Loss (dB/100m)	NEXT (dB/100m)	PSNEXT (dB/100m)	ELFNEXT (dB/100m)	PSELFEXT (dB/100m)	Return Loss (dB/100m)	Delay Max. (ns/100m)
0.772	–	84	82	78	75	–	–
1	2	82.3	80.3	75.8	72.8	20	570
4	3.7	73.3	71.3	63.8	60.8	23	552
8	5.2	68.8	66.8	57.7	54.7	24.5	547
10	5.8	67.3	65.3	55.8	52.8	25	545
16	7.3	64.2	62.2	51.7	48.7	25	543
20	8.2	62.8	60.8	49.8	46.8	25	542
25	9.2	61.3	59.3	47.8	44.8	24.3	541
31.25	10.4	59.9	57.9	45.9	42.9	23.6	540
62.5	14.9	55.4	53.4	39.9	36.9	21.5	539
100	19.2	52.3	50.3	35.8	32.8	20.1	538
200	28.1	47.8	45.8	29.8	26.8	18	537
300	35.3	45.1	43.1	26.3	23.3	16.8	536
400	41.7	43.3	41.3	23.8	20.8	15.9	536
500	47.5	41.8	39.8	21.8	18.8	15.2	536



Cat 6 Enhanced

Specifications

- Conductor: 23AWG solid bare copper
- Insulation:
 - CMP: FEP
 - CMR: Polyolefin
- Cabling: Four unshielded twisted pairs cables around a star filler member
- Jacket
 - CMP: Low Smoke PVC
 - CMR: PVC

Standards/Verifications

- ANSI/TIA-568-C.2 (Category 6 Component)
- IEEE 802.3bt 4PPoE
- UL Listed
- NEC Article 800 Compliant

Ordering Information

Color	Riser Catalog No.	Plenum Catalog No.
Black	–	C6ESPBK
Blue	C6ESRB	C6ESPB
Gray	C6ESRGY	C6ESPGY
Green	C6ESRGN	C6ESPGN
Orange	C6ESROR	C6ESPOR
Purple	C6ESRP	C6ESPP
Red	C6ESRRD	C6ESPRD
White	C6ESRW	C6ESPW
Yellow	C6ESRY	C6ESPY

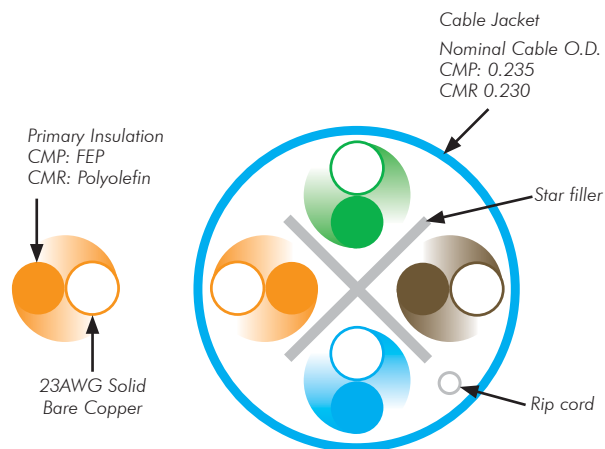
Note: 1000' of cable per spool box

Sweep Tested from 1-750MHz

Guaranteed Headroom over TIA and ISO Cat 6 Requirements

Reverse Sequential Numbering

Backward Compatible to Cat 6, 5e, 5 and 3



TRANSMISSION SPECIFICATIONS, Worst Case TIA-568-C.2 Category 6 Compliant, ISO/IEC 11801, 2nd Ed. Category 6 Compliant

Freq. (MHz)	Ins. Loss (dB/100m)	NEXT (dB/100m)	PSNEXT (dB/100m)	ACR (dB)	PSACR (dB)	ELFEXT (dB)	PSELFEXT (dB)	Return Loss (dB)
1	2.2	74.4	72.5	72.2	70.4	67.9	64.9	20.2
4	3.9	65.5	63.4	61.7	59.7	52.7	52.9	23.2
8	5.4	60.8	58.7	55.4	53.2	46.8	46.8	24.6
10	6.2	59.5	57.5	53.4	51.5	44.9	44.9	25.2
16	7.7	56.3	54.4	48.7	46.7	40.5	40.6	25.1
31.25	10.8	51.7	50	41.3	39.3	34.8	34.8	23.7
62.5	15.6	47.5	45.5	32.2	30.2	28.9	28.8	21.6
100	19.7	44.5	42.4	24.4	22.6	24.9	24.9	20.2
200	29.2	39.9	37.8	10.7	8.9	18.9	18.8	18.1
250	32.7	38.5	36.4	5.7	3.6	16.9	16.9	17.4
300*	36.5	37	35.3	-	-	15.2	15.4	16.9
350*	39.6	36.2	34.2	-	-	13.8	13.8	16.4
400*	43.1	36.5	33.5	-	-	12.9	12.9	15.8
500*	48.8	33.9	31.7	-	-	10.9	10.9	15.1
555*	52.2	33.2	31.2	-	-	9.8	10	14.8

Note: Provided for information only.

Category 6 Channel Compliant 10GbE Application Assurance
Maximum Bandwidth Beyond 500MHz
ANEXT Component Compliant
PoE and PoE+ Ready

COPPER

Specifications

- Conductor: 24AWG solid bare copper
- Insulation:
 - CMP: FEP
 - CMR: Polyolefin
- Cabling: Four unshielded twisted pairs cables around a star filler member wrapped in a polyester foil tape
- Jacket
 - CMP: Low Smoke PVC
 - CMR: PVC

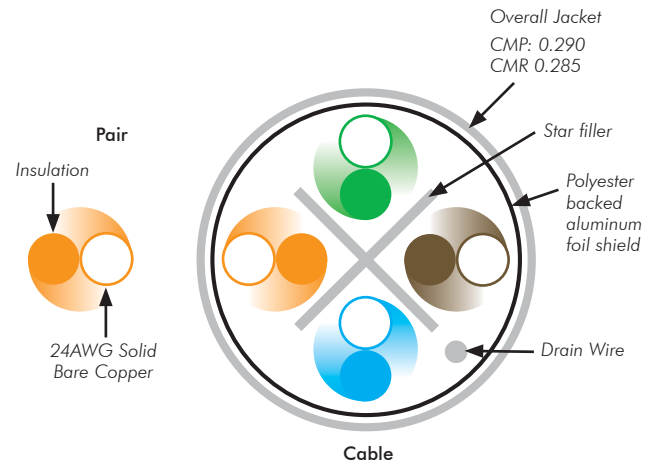
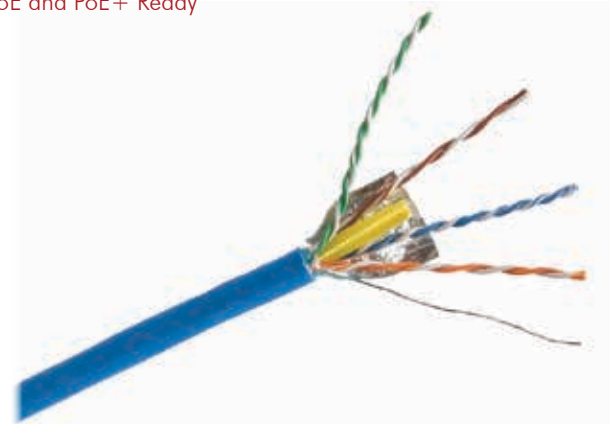
Standards/Verifications

- ANSI/TIA-568.2-D (Category 6A Component)
- IEEE 802.3bt 4PPoE
- UL Listed
- NEC Article 800 Compliant

Ordering Information

Color	Riser Catalog No.	Plenum Catalog No.
Black	C6FTPSRBK	C6FTPSPBK
Blue	C6FTPSRB	C6FTPSPB
Gray	C6FTPSRGY	C6FTPSPGY
Pink	C6FTPSRPK	C6FTPSPPK
White	C6FTPSRW	C6FTPSPW

Note: 1000' of cable per spool box



TRANSMISSION SPECIFICATIONS, Worst Case TIA-568-C.2 Category 6 Compliant, ISO/IEC 11801, 2nd Ed. Category 6 Compliant

Freq. (MHz)	Ins. Loss (dB/100m)	NEXT (dB/100m)	PSNEXT (dB/100m)	ACR (dB)	PSACR (dB)	ELFEXT (dB)	PSELFEXT (dB)	Return Loss (dB)
1	2.2	74.4	72.5	72.2	70.4	67.9	64.9	20.2
4	3.9	65.5	63.4	61.7	59.7	52.7	52.9	23.2
8	5.4	60.8	58.7	55.4	53.2	46.8	46.8	24.6
10	6.2	59.5	57.5	53.4	51.5	44.9	44.9	25.2
16	7.7	56.3	54.4	48.7	46.7	40.5	40.6	25.1
31.25	10.8	51.7	50	41.3	39.3	34.8	34.8	23.7
62.5	15.6	47.5	45.5	32.2	30.2	28.9	28.8	21.6
100	19.7	44.5	42.4	24.4	22.6	24.9	24.9	20.2
200	29.2	39.9	37.8	10.7	8.9	18.9	18.8	18.1
250	32.7	38.5	36.4	5.7	3.6	16.9	16.9	17.4
300*	36.5	37	35.3	-	-	15.2	15.4	16.9
350*	39.6	36.2	34.2	-	-	13.8	13.8	16.4
400*	43.1	36.5	33.5	-	-	12.9	12.9	15.8
500*	48.8	33.9	31.7	-	-	10.9	10.9	15.1
555*	52.2	33.2	31.2	-	-	9.8	10	14.8

Note: Provided for information only.



Cat 6 UTP

Category 6 Channel Compliant 10GbE Application Assurance
 Maximum Bandwidth Beyond 500MHz
 PoE and PoE+ Ready

Specifications

- Conductor: 24AWG solid bare copper
- Insulation:
 - CMP: FEP
 - CMR: Polyolefin
- Cabling: Four unshielded twisted pairs cables around a square filler member
- Jacket
 - CMP: Low Smoke PVC
 - CMR: PVC

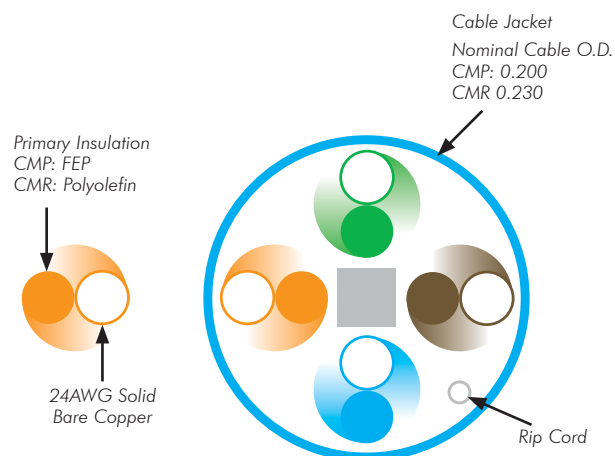
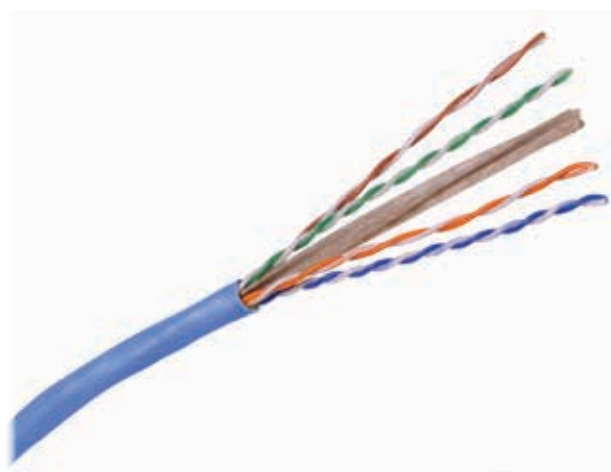
Standards/Verifications

- ANSI/TIA-568.2-D (Category 6A Component)
- IEEE 802.3bt 4PPoE
- UL Listed
- NEC Article 800 Compliant

Ordering Information

Color	Riser Catalog No.	Plenum Catalog No.
Blue	C6RRB	C6RPB
Gray	C6RRGY	C6RPGY
Green	C6RRGN	C6RPGN
Orange	C6RROR	C6RPOR
Purple	C6RRP	C6RPP
White	C6RRW	C6RPW
Yellow	C6RRY	C6RPY

Note: 1000' of cable per box



TRANSMISSION SPECIFICATIONS, Worst Case TIA-568-C.2 Category 6 Compliant, ISO/IEC 11801, 2nd Ed. Category 6 Compliant

Freq. (MHz)	Ins. Loss (dB/100m)	NEXT (dB/100m)	PSNEXT (dB/100m)	ACR (dB)	PSACR (dB)	ELFEXT (dB)	PSELFEXT (dB)	Return Loss (dB)
1	2.2	74.4	72.5	72.2	70.4	67.9	64.9	20.2
4	3.9	65.5	63.4	61.7	59.7	52.7	52.9	23.2
8	5.4	60.8	58.7	55.4	53.2	46.8	46.8	24.6
10	6.2	59.5	57.5	53.4	51.5	44.9	44.9	25.2
16	7.7	56.3	54.4	48.7	46.7	40.5	40.6	25.1
31.25	10.8	51.7	50	41.3	39.3	34.8	34.8	23.7
62.5	15.6	47.5	45.5	32.2	30.2	28.9	28.8	21.6
100	19.7	44.5	42.4	24.4	22.6	24.9	24.9	20.2
200	29.2	39.9	37.8	10.7	8.9	18.9	18.8	18.1
250	32.7	38.5	36.4	5.7	3.6	16.9	16.9	17.4
300*	36.5	37	35.3	-	-	15.2	15.4	16.9
350*	39.6	36.2	34.2	-	-	13.8	13.8	16.4
400*	43.1	36.5	33.5	-	-	12.9	12.9	15.8
500*	48.8	33.9	31.7	-	-	10.9	10.9	15.1
555*	52.2	33.2	31.2	-	-	9.8	10	14.8

Note: Provided for information only.

Category 6 Channel Compliant 10GbE Application Assurance
Maximum Bandwidth Beyond 500MHz
PoE and PoE+ Ready

COPPER

Specifications

- Conductor: 24AWG solid bare copper
- Insulation:
 - CMP: FEP
 - CMR: Polyolefin
- Cabling: Four twisted pairs
- Jacket
 - CMP: Low Smoke PVC
 - CMR: PVC

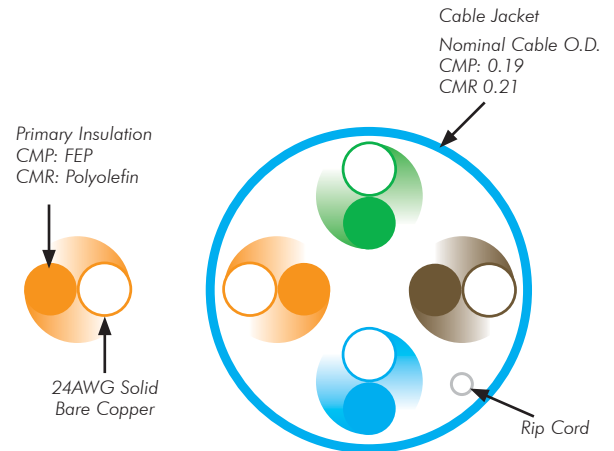
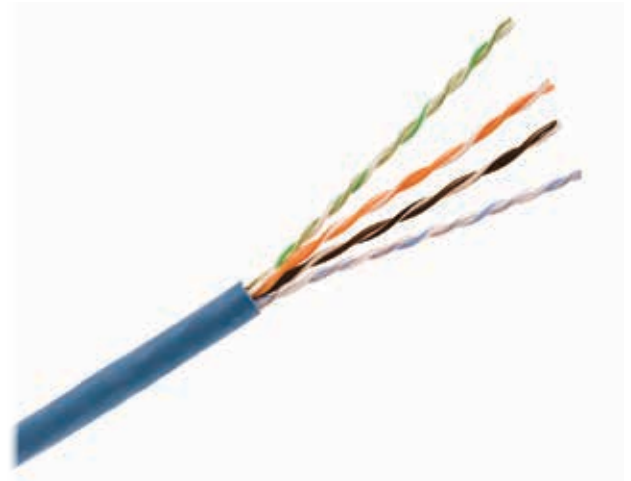
Standards/Verifications

- ANSI/TIA-568.2-D (Category 6A Component)
- IEEE 802.3bt 4PPoE
- UL Listed
- NEC Article 800 Compliant

Ordering Information

Color	Riser Catalog No.	Plenum Catalog No.
Black	C6RREBK	C6RPEBK
Blue	C6RREB	C6RPEB
Gray	C6RREGY	C6RPEGY
Green	C6RREGN	C6RPEGN
Orange	C6RREOR	C6RPEOR
Pink	C6RREPK	C6RPEPK
Purple	C6RREP	C6RPEP
Red	C6RRERD	C6RPERD
White	C6RREW	C6RPEW
Yellow	C6RREY	C6RPEY

Note: 1000' of cable per spool box



TRANSMISSION SPECIFICATIONS, Worst Case TIA-568-C.2 Category 6 Compliant, ISO/IEC 11801, 2nd Ed. Category 6 Compliant

Freq. (MHz)	Ins. Loss (dB/100m)	NEXT (dB/100m)	PSNEXT (dB/100m)	ACR (dB)	PSACR (dB)	ELFEXT (dB)	PSELFEXT (dB)	Return Loss (dB)
1	2.2	74.4	72.5	72.2	70.4	67.9	64.9	20.2
4	3.9	65.5	63.4	61.7	59.7	52.7	52.9	23.2
8	5.4	60.8	58.7	55.4	53.2	46.8	46.8	24.6
10	6.2	59.5	57.5	53.4	51.5	44.9	44.9	25.2
16	7.7	56.3	54.4	48.7	46.7	40.5	40.6	25.1
31.25	10.8	51.7	50	41.3	39.3	34.8	34.8	23.7
62.5	15.6	47.5	45.5	32.2	30.2	28.9	28.8	21.6
100	19.7	44.5	42.4	24.4	22.6	24.9	24.9	20.2
200	29.2	39.9	37.8	10.7	8.9	18.9	18.8	18.1
250	32.7	38.5	36.4	5.7	3.6	16.9	16.9	17.4
300*	36.5	37	35.3	-	-	15.2	15.4	16.9
350*	39.6	36.2	34.2	-	-	13.8	13.8	16.4
400*	43.1	36.5	33.5	-	-	12.9	12.9	15.8
500*	48.8	33.9	31.7	-	-	10.9	10.9	15.1
555*	52.2	33.2	31.2	-	-	9.8	10	14.8

Note: Provided for information only.



HFCD Series

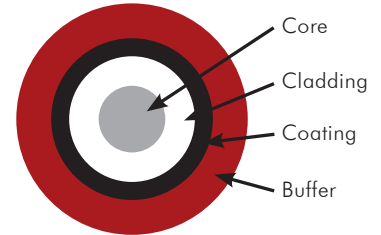
Optical fiber used in Hubbell OPTICHANNEL HFCD series cable delivers high bandwidth optical network performance and reliability. Featuring high performance laser optimized OM3 and OM4 fiber with ease of termination, all HFCD series fiber cables are supported by the Hubbell Mission Critical® 25-year warranty. Premium quality OM3, OM4 and OS2 fibers provide maximum durability and tight bend transmission performance. Tight bend rated fibers enhance cable performance, adding headroom to certification test results.

OPTICHANNEL Fiber Optic Cable

Features

- High purity glass fiber, made with advanced vapor deposition and precision draw process
- Enhanced bandwidth and distance performance
- Low bend-induced attenuation for enhanced cable operating performance
- Low dispersion, laser optimized OM3 and OM4
- Low water peak singlemode, enhanced for 1310 to 1550nm operating wavelength range

Buffered Fiber Cross Section



Specifications

- OM1: graded index core
- OM3 and OM4: graded index core; laser optimized
- OS2: step index core
- Tensile proof stress: ≥ 100 kpsi, tested in-process
- Fiber coating: clear acrylate
- Buffer layer: flame retardant color coded PVC
- Temperature test range: -60° C to $+85^{\circ}$ C

Installation Requirements

- Verify the IEEE 802.3 application is supported for channel distance and attenuation limits (see chart below).
- During installation or operation, comply with maximum loading, minimum bend radius, and temperature limits.
- Always pull cables by the internal strength member, or fiber damage may result.
- Use proper tools for stripping and dressing out cable to avoid fiber damage.
- Adhere to best installation practices, avoiding kinks, crushing and abrasion. Always use proper cable supports.
- Use recognized field termination methods. Fiber terminations shall be strain relieved from any cable weight.

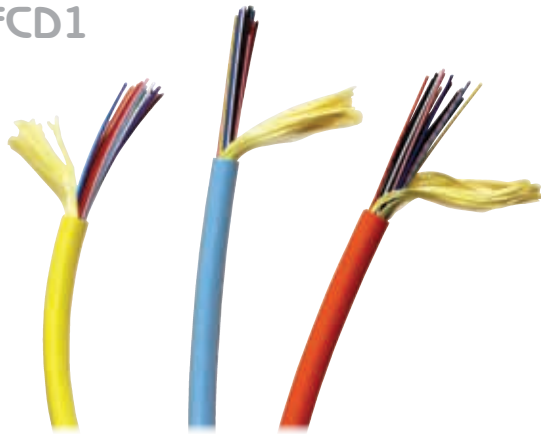
CABLE APPLICATION GUIDELINES: Distance and Channel Attenuation Limits

IEEE 802.3 Fiber Ethernet Application	Transmitter Wavelength nm	Maximum Supportable Distance (m)					Maximum Channel Attenuation (dB)				
		Multimode				Single- mode OS2	Multimode				Single- mode OS2
		62.5/125 OM1	50/125 OM2	50/125 OM3	50/125 OM4		62.5/125 OM1	50/125 OM2	50/125 OM3	50/125 OM4	
10/100BASE-SX	850	300	300	300	300	NST	4.0	4.0	4.0	4.0	NST
1000BASE-SX	850	220	550	1000	1100	NST	2.6	3.6	4.5	4.8	N/A
1000BASE-LX	1300	550	550	550	550	NST	2.3	2.3	2.3	2.3	4.7
10GBASE-S	850	26	82	300	550	NST	2.6	2.3	2.6	3.1	NST
10GBASE-L	1310	NST	NST	NST	NST	10,000	NST	NST	NST	NST	6.0
10GBASE-E	1550	NST	NST	NST	NST	40,000	NST	NST	NST	NST	11.0
10GBASE-LX4	1300	300	300	300	550	NST	2.5	2.0	2.0	2.0	NST
10GBASE-LR4	1310	N/A	N/A	N/A	N/A	10,000	N/A	N/A	N/A	N/A	6.6
40GBASE-SR4	850	N/A	N/A	100	150	NST	N/A	N/A	1.9	1.5	NST
100GBASE-SR10	850	N/A	N/A	100	150	NST	N/A	N/A	1.9	1.5	NST
40GBASE-LR4	1310	NST	NST	NST	NST	10,000	N/A	N/A	N/A	N/A	6.7
100GBASE-LR4	1310	NST	NST	NST	NST	10,000	N/A	N/A	N/A	N/A	6.3

Note: S = Short wavelength, L = Long wavelength, E = Extended wavelength
 SR4 = Short Range, 4-Channels (4 x 10G pairs), SR10 = Short Range, 10-Channels (10 x 10G pairs)
 LX4 = Multiplex (4) Multimode Wavelengths, LR4 = Multiplex (4) Singlemode Wavelengths
 NST = Non-standard, N/A = Not applicable

Indoor Distribution

HFCD1



Hubbell OPTICHANNEL HFCD1 Series Indoor Tight Buffer Distribution Cables are a cost effective backbone and horizontal infrastructure solution, featuring a compact flexible construction for ease of deployment and termination.

Features

- E-Z strip buffer with new dash style color stripes for contractor-friendly termination
- Compact cable diameter reduces congestion in shared or restricted pathways
- Premium bend-insensitive fiber for enhanced durability and maximum testing headroom
- Fiber supported: OM1, OM3, OM4 and OS2
- Sold in feet, available in Riser (OFNR) and Plenum (OFNP) for all supported fibers

Specifications

- Fiber count: 6, 12 and 24 strand
- Fiber coating: 900 micron PVC tight buffer
- Temperature range:
 - Storage: -40° F to +176° F (-40° C to +80° C)
 - Installation: 32° F to +132° F (0° C to +56° C)
 - Operation: -4° F to +158° F (-20° C to +70° C)
- Multimode attenuation: 3.5/1.5dB/km at 850/1300nm
- Singlemode attenuation: 0.5/0.4dB/km at 1310/1550nm
- Optical: see fiber data sheet

Standards

- Telcordia GR-409 and GR-20
- ANSI/ICEA S-83-596
- TIA-492 Series optical fiber specifications
- TIA-568.3 optical fiber cabling standards
- Riser cables: UL 1666/CSA FT-4
- Plenum cables: NFPA-262/UL910/CSA FT-6

Ordering Information

Strand	Micron	Riser Catalog No.	Plenum Catalog No.
2	62.5 OM1	HFCD1002R6	HFCD1002P6
	50 OM3	HFCD1002R3	HFCD1002P3
	50 OM4	HFCD1002R4	HFCD1002P4
	OS2	HFCD1002RS	HFCD1002PS
6	62.5 OM1	HFCD1006R6	HFCD1006P6
	50 OM3	HFCD1006R3	HFCD1006P3
	50 OM4	HFCD1006R4	HFCD1006P4
	OS2	HFCD1006RS	HFCD1006PS
12	62.5 OM1	HFCD1012R6	HFCD1012P6
	50 OM3	HFCD1012R3	HFCD1012P3
	50 OM4	HFCD1012R4	HFCD1012P4
	OS2	HFCD1012RS	HFCD1012PS
24	62.5 OM1	HFCD1024R6	HFCD1024P6
	50 OM3	HFCD1024R3	HFCD1024P3
	50 OM4	HFCD1024R4	HFCD1024P4
	OS2	HFCD1024RS	HFCD1024PS

FIBER

Reel Capacity Chart, Plenum or Riser

HFCD1 Series: Indoor Distribution

Fiber Count	Diameter in (mm)	24" Flange ft	30" Flange ft	Weight lb/ft
2 strand	0.174 (4.4)	5400	17,500	0.012
6 strand	0.210 (5.3)	4100	14,000	0.020
12 strand	0.250 (6.3)	2900	10,000	0.035
24 strand	0.320 (8.1)	1700	5900	0.043

Cable Jacket and Buffer Color Codes

- OM1 Multimode: Orange jacket
- OM3 and OM4 Multimode: Aqua jacket
- OS2 Singlemode: Yellow jacket
- Buffer color codes and pairing sequence:
 - 1-Blue, 2-Orange, 3-Green, 4-Brown, 5-Slate, 6-White
 - 7-Red, 8-Black, 9-Yellow, 10-Violet, 11-Rose, 12-Aqua
 - 13-Blue/Black, 14-Orange/Black, 15-Green/Black, 16-Brown/Black
 - 17-Slate/Black, 18-White/Black, 19-Red/Black, 20-Black/White
 - 21-Yellow/Black, 22-Violet/Black, 23-Rose/Black, 24-Aqua/Black



Multi-Unit Distribution

HFCD1M



Hubbell OPTICHANNEL HFCD1M Series Indoor Multi-Unit Tight Buffer Cables are a high fiber count solution in a single cable construction, featuring 12-strand color-coded sub units and central strength member for enhanced pull strength and durability.

Features

- E-Z strip buffer with new dash style color stripes for contractor-friendly termination
- Compact cable diameter reduces congestion in shared or restricted pathways
- Premium bend-insensitive fiber for enhanced durability and maximum testing headroom
- Fiber supported: OM1, OM3, OM4 and OS2
- Sold in feet, available in Riser (OFNR) and Plenum (OFNP) for all supported fibers

Specifications

- Fiber count: 48 and 72 strand
- Fiber coating: 900 micron PVC tight buffer
- Temperature range:
 - Storage: -40° F to +176° F (-40° C to +80° C)
 - Installation: 32° F to +132° F (0° C to +56° C)
 - Operation: -4° F to +158° F (-20° C to +70° C)
- Multimode attenuation: 3.5/1.5dB/km at 850/1300nm
- Singlemode attenuation: 0.5/0.4dB/km at 1310/1550nm
- Optical: see fiber data sheet

Standards

- Telcordia GR-409 and GR-20
- ANSI/ICEA S-83-596
- TIA-492 Series optical fiber specifications
- TIA-568.3 optical fiber cabling standards
- Riser cables: UL 1666/CSA FT-4
- Plenum cables: NFPA-262/UL910/CSA FT-6

Ordering Information

Strand	Micron	Riser Catalog No.	Plenum Catalog No.
48	62.5 OM1	HFCD1M12048R6	HFCD1M12048P6
	50 OM3	HFCD1M12048R3	HFCD1M12048P3
	50 OM4	HFCD1M12048R4	HFCD1M12048P4
	OS2	HFCD1M12048RS	HFCD1M12048PS
72	62.5 OM1	HFCD1M12072R6	HFCD1M12072P6
	50 OM3	HFCD1M12072R3	HFCD1M12072P3
	50 OM4	HFCD1M12072R4	HFCD1M12072P4
	OS2	HFCD1M12072RS	HFCD1M12072PS

Reel Capacity Chart, Plenum or Riser

HFCD1M Series: Indoor Multi-Unit				
Fiber Count	Diameter in (mm)	30" Flange ft	45" Flange ft	Weight lb/ft
48 strand	0.610 (15.4)	1400	2100	0.146
72 strand	0.790 (20)	1050	1700	0.233

Cable Jacket and Buffer Color Codes

- OM1 Multimode: Orange jacket
- OM3 and OM4 Multimode: Aqua jacket
- OS2 Singlemode: Yellow jacket
- 48 strand subunit colors: Blue, Orange, Green, Brown
- 72 strand subunit colors: Blue, Orange, Green, Brown, Slate, White
- Buffer color codes and pairing sequence:
 - 1-Blue, 2-Orange, 3-Green, 4-Brown, 5-Slate, 6-White
 - 7-Red, 8-Black, 9-Yellow, 10-Violet, 11-Rose, 12-Aqua
- Repeat buffer colors 1 through 12 for each cable subunit

Indoor/Outdoor Tight Buffer

HFCD14



Hubbell OPTICHANNEL HFCD14 Series Indoor/Outdoor Tight Buffer Cables are a versatile solution for inter-building duct applications, featuring plenum and riser ratings for continuous indoor deployment.

FIBER

Features

- E-Z strip buffer with new dash style color stripes for contractor-friendly termination
- Multi-purpose outdoor duct to building riser and horizontal infrastructure, all with a single cable
- Premium bend-insensitive fiber for enhanced durability and maximum testing headroom
- Fiber supported: OM1, OM3, OM4 and OS2
- Sold in feet, available in Riser (OFNR) and Plenum (OFNP) for all supported fibers

Specifications

- Fiber count: 2, 6, 12, 24, 48 and 72 strand
- Subunits: 12 fibers/unit (48–72 strand only)
- Fiber coating: 900 micron PVC tight buffer
- Temperature range:
 - Storage: -40° F to +185° F (-40° C to +85° C)
 - Installation: 32° F to +132° F (0° C to +56° C)
 - Operation: -4° F to +185° F (-20° C to +85° C)
- Multimode attenuation: 3.5/1.5dB/km at 850/1300nm
- Singlemode attenuation: 0.5/0.4dB/km at 1310/1550nm
- Optical: see fiber data sheet

Standards

- Telcordia GR-409 and GR-20
- ANSI/ICEA S-87-640
- TIA-492 Series optical fiber specifications
- TIA-568.3 optical fiber cabling standards
- Riser cables: UL 1666/CSA FT-4
- Plenum cables: NFPA-262/UL910/CSA FT-6

Ordering Information

Strand	Micron	Riser Catalog No.	Plenum Catalog No.
6	62.5 OM1	HFCD14006R6BK	HFCD14006P6BK
	50 OM3	HFCD14006R3BK	HFCD14006P3BK
	50 OM4	HFCD14006R4BK	HFCD14006P4BK
	OS2	HFCD14006RSBK	HFCD14006PSBK
12	62.5 OM1	HFCD14012R6BK	HFCD14012P6BK
	50 OM3	HFCD14012R3BK	HFCD14012P3BK
	50 OM4	HFCD14012R4BK	HFCD14012P4BK
	OS2	HFCD14012RSBK	HFCD14012PSBK
24	62.5 OM1	HFCD14024R6BK	HFCD14024P6BK
	50 OM3	HFCD14024R3BK	HFCD14024P3BK
	50 OM4	HFCD14024R4BK	HFCD14024P4BK
	OS2	HFCD14024RSBK	HFCD14024PSBK
48	62.5 OM1	HFCD14048R6BK	HFCD14048P6BK
	50 OM3	HFCD14048R3BK	HFCD14048P3BK
	50 OM4	HFCD14048P4BK	HFCD14048P4BK
	OS2	HFCD14048RSBK	HFCD14048PSBK
72	62.5 OM1	HFCD14072R6BK	HFCD14072P6BK
	50 OM3	HFCD14072R3BK	HFCD14072P3BK
	50 OM4	HFCD14072P4BK	HFCD14072P4BK
	OS2	HFCD14072RSBK	HFCD14072PSBK

Reel Capacity Chart, Plenum or Riser

HFCD14 Series: Indoor/Outdoor Multi-Unit

Fiber Count	Diameter in (mm)	30" Flange ft	45" Flange ft	Weight lb/ft
48 strand	0.610 (15.4)	1400	2100	0.146
72 strand	0.790 (20)	1050	1700	0.233

Cable Jacket and Buffer Color Codes

- Black outer jacket: all fiber types (OM1, OM3, OM4, and OS2)
- Buffer color codes and pairing sequence:
 - 1-Blue, 2-Orange, 3-Green, 4-Brown, 5-Slate, 6-White
 - 7-Red, 8-Black, 9-Yellow, 10-Violet, 11-Rose, 12-Aqua
 - 13-Blue/Black, 14-Orange/Black, 15-Green/Black, 16-Brown/Black
 - 17-Slate/Black, 18-White/Black, 19-Red/Black, 20-Black/White
 - 21-Yellow/Black, 22-Violet/Black, 23-Rose/Black, 24-Aqua/Black
- 48 strand subunit colors: Blue, Orange, Green, Brown
- 72 strand subunit colors: Blue, Orange, Green, Brown, Slate, White
- Repeat buffer colors 1 through 12 for 48 and 72 strand cable subunits



Indoor Armored Distribution

HFCD15



Hubbell OPTICHANNEL HFCD15 Series Armored Indoor Tight Buffer Cables are a cost effective solution that eliminates protected pathways and inner duct, featuring aluminum interlock armor for resistance to crushing, abrasion and rodents.

Features

- E-Z strip buffer with new dash style color stripes for contractor-friendly termination
- Compact cable diameter reduces congestion in shared or restricted pathways
- Premium bend-insensitive fiber for enhanced durability and maximum testing headroom
- Fiber supported: OM1, OM3, OM4 and OS2
- Sold in feet, available in Riser (OFNR) and Plenum (OFNP) for all supported fibers

Specifications

- Fiber count: 6, 12, 24 and 48 strand
- 48-strand cable subunits: 12 fibers per unit
- Fiber coating: 900 micron PVC tight buffer
- Armor: aluminum interlocking spiral wrap
- Temperature range:
 - Storage: -40° F to +176° F (-40° C to +80° C)
 - Installation: 32° F to +132° F (0° C to +56° C)
 - Operation: -4° F to +158° F (-20° C to +70° C)
- Multimode attenuation: 3.5/1.5dB/km at 850/1300nm
- Singlemode attenuation: 0.5/0.4dB/km at 1310/1550nm
- Optical: see fiber data sheet

Standards

- Telcordia GR-409 and GR-20
- ANSI/ICEA S-83-596
- TIA-492 Series optical fiber specifications
- TIA-568.3 optical fiber cabling standards
- Riser cables: UL 1666/CSA FT-4
- Plenum cables: NFPA-262/UL910/CSA FT-6

Ordering Information

Strand	Micron	Riser Catalog No.	Plenum Catalog No.
6	62.5 OM1	HFCD15006R6	HFCD15006P6
	50 OM3	HFCD15006R3	HFCD15006P3
	50 OM4	HFCD15006R4	HFCD15006P4
	OS2	HFCD15006RS	HFCD15006PS
12	62.5 OM1	HFCD15012R6	HFCD15012P6
	50 OM3	HFCD15012R3	HFCD15012P3
	50 OM4	HFCD15012R4	HFCD15012P4
	OS2	HFCD15012RS	HFCD15012PS
24	62.5 OM1	HFCD15024R6	HFCD15024P6
	50 OM3	HFCD15024R3	HFCD15024P3
	50 OM4	HFCD15024R4	HFCD15024P4
	OS2	HFCD15024RS	HFCD15024PS
48	62.5 OM1	HFCD15048R6	HFCD15048P6
	50 OM3	HFCD15048R3	HFCD15048P3
	50 OM4	HFCD15048P4	HFCD15048P4
	OS2	HFCD15048RS	HFCD15048PS

Reel Capacity Chart, Plenum or Riser

HFCD15 Series: Armored Indoor

Fiber Count	Diameter in (mm)	48" Flange ft	Weight lb/ft
6 strand	0.625 (15.9)	5400	0.165
12 strand	0.625 (15.9)	5400	0.170
24 strand	0.684 (17.4)	4500	0.188
48 strand	0.930 (23.5)	2200	0.365

Cable Jacket and Buffer Color Codes

- OM1 Multimode: Orange jacket
- OM3 and OM4 Multimode: Aqua jacket
- OS2 Singlemode: Yellow jacket
- Buffer color codes and pairing sequence:
 - 1-Blue, 2-Orange, 3-Green, 4-Brown, 5-Slate, 6-White
 - 7-Red, 8-Black, 9-Yellow, 10-Violet, 11-Rose, 12-Aqua
 - 13-Blue/Black, 14-Orange/Black, 15-Green/Black, 16-Brown/Black
 - 17-Slate/Black, 18-White/Black, 19-Red/Black, 20-Black/White
 - 21-Yellow/Black, 22-Violet/Black, 23-Rose/Black, 24-Aqua/Black
- 48-strand subunit colors: Blue, Orange, Green, Brown
- Repeat buffer colors 1 through 12 for subunits in 48-strand cable

Indoor/Outdoor Armored Tight Buffer

HFCD19



Hubbell OPTICHANNEL HFCD19 Series Armored Indoor/Outdoor Tight Buffer Cables are a cost effective and versatile solution for inter-building duct and backbone applications, featuring aluminum interlock armor for protection against crushing, abrasion and rodents.

FIBER

Features

- E-Z strip buffer with new dash style color stripes for contractor-friendly termination
- Multi-purpose outdoor duct to building riser and horizontal infrastructure, all with a single cable
- Premium bend-insensitive fiber for enhanced durability and maximum testing headroom
- Fiber supported: OM1, OM3, OM4 and OS2
- Sold in feet, available in Riser (OFNR) and Plenum (OFNP) for all supported fibers

Specifications

- Fiber count: 6, 12, 24 and 48 strand
- 48-strand cable subunits: 12 fibers per unit
- Fiber coating: 900 micron PVC tight buffer
- Armor: aluminum interlocking spiral wrap
- Temperature range:
 - Storage: -40° F to +185° F (-40° C to +85° C)
 - Installation: 32° F to +132° F (0° C to +56° C)
 - Operation: -4° F to +185° F (-20° C to +85° C)
- Multimode attenuation: 3.5/1.5dB/km at 850/1300nm
- Singlemode attenuation: 0.5/0.4dB/km at 1310/1550nm
- Optical: see fiber data sheet

Standards

- Telcordia GR-409 and GR-20
- ANSI/ICEA S-83-596
- TIA-492 Series optical fiber specifications
- TIA-568.3 optical fiber cabling standards
- Riser cables: UL 1666/CSA FT-4
- Plenum cables: NFPA-262/UL910/CSA FT-6

Ordering Information

Strand	Micron	Riser Catalog No.	Plenum Catalog No.
6	62.5 OM1	HFCD19006R6BK	HFCD19006P6BK
	50 OM3	HFCD19006R3BK	HFCD19006P3BK
	50 OM4	HFCD19006R4BK	HFCD19006P4BK
	OS2	HFCD19006RSBK	HFCD19006PSBK
12	62.5 OM1	HFCD19012R6BK	HFCD19012P6BK
	50 OM3	HFCD19012R3BK	HFCD19012P3BK
	50 OM4	HFCD19012R4BK	HFCD19012P4BK
	OS2	HFCD19012RSBK	HFCD19012PSBK
24	62.5 OM1	HFCD19024R6BK	HFCD19024P6BK
	50 OM3	HFCD19024R3BK	HFCD19024P3BK
	50 OM4	HFCD19024R4BK	HFCD19024P4BK
	OS2	HFCD19024RSBK	HFCD19024PSBK
48	62.5 OM1	HFCD19048R6BK	HFCD19048P6BK
	50 OM3	HFCD19048R3BK	HFCD19048P3BK
	50 OM4	HFCD19048P4BK	HFCD19048P4BK
	OS2	HFCD19048RSBK	HFCD19048PSBK

Reel Capacity Chart, Plenum or Riser

HFCD19 Series: Armored Indoor

Fiber Count	Diameter in (mm)	48" Flange ft	Weight lb/ft
6 strand	0.625 (15.9)	5400	0.165
12 strand	0.625 (15.9)	5400	0.170
24 strand	0.684 (17.4)	4500	0.188
48 strand	0.930 (23.5)	2200	0.365

Cable Jacket and Buffer Color Codes

- OM1 Multimode: Orange jacket
- OM3 and OM4 Multimode: Aqua jacket
- OS2 Singlemode: Yellow jacket
- Buffer color codes and pairing sequence:
 - 1-Blue, 2-Orange, 3-Green, 4-Brown, 5-Slate, 6-White
 - 7-Red, 8-Black, 9-Yellow, 10-Violet, 11-Rose, 12-Aqua
 - 13-Blue/Black, 14-Orange/Black, 15-Green/Black, 16-Brown/Black
 - 17-Slate/Black, 18-White/Black, 19-Red/Black, 20-Black/White
 - 21-Yellow/Black, 22-Violet/Black, 23-Rose/Black, 24-Aqua/Black
- 48-strand subunit colors: Blue, Orange, Green, Brown
- Repeat buffer colors 1 through 12 for subunits in 48-strand cable



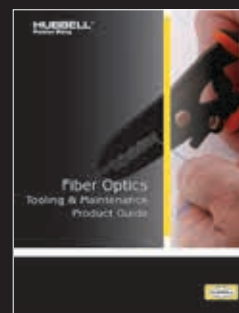
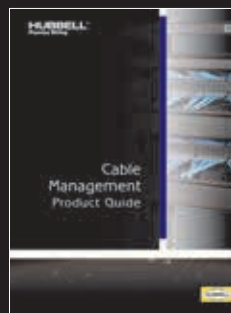
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