

# Interconnect

## Product Highlights

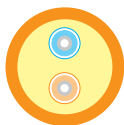
- RoHS compliant
- 900 μm buffered design recommended for easy termination
- OM2, OM3 & OM4 cables utilize Corning ClearCurve glass
- Ideal for patch cords, interconnections, and short runs
- Easy to strip and terminate
- Lightweight, flexible aramid yarns enhance strength
- Extremely flexible for easy handling

## Options

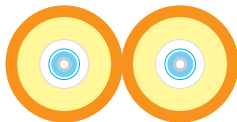
- Cables with 600 micron buffer available
- Low smoke zero halogen available
- Standard colors are yellow for singlemode, orange for multimode and aqua for 10 Gigabit - other colors are available
- OM4 cables with extended 10 gigabit distances are available



1-fiber Interconnect



2-fiber Interconnect



2-fiber Zip Cord

Diagram scale approx. 5:1

## Interconnect (Riser)

(UL) OFNR c(UL) FT4

Fiber Count	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2	8.3 UM OS2BI
1	60001-1	60004-1	60464-1	61790-1	60040-1	61653-1
1	60037-1	60003-1	60465-1	61791-1	60039-1	61655-1
1	60038-1	60002-1	60466-1	61792-1	60010-1	61657-1
1	60425-1	60462-1	60467-1	61793-1	60489-1	61659-1
2	60514-2	60063-2	60463-2	61838-2	60012-2	61653-2
2	60001-2	60004-2	60464-2	61842-2	60040-2	61661-2
2	61512-2	61510-2	61511-2	61843-2	61515-2	61663-2
zip	60005-2	60007-2	60501-2	61844-2	60011-2	61665-2

## Optical Specifications

TIA/EIA-568-C.3 | ISO/IEC 11801, 2nd edition | Telcordia GR-409-CORE

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

	1310 nm	1550 nm
OS2	0.50	0.50
OS2 BI**	0.50	0.50

\*\*OS2 BI utilizes bend-insensitive optical glass

# Multimode and Singlemode Interconnect

Indoor

## Interconnect (Riser)

(UL) OFNR us FT4

FIBER COUNT	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
	in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
1	0.114	2.9	96	427	48	213	4.9	7.2
1	0.094	2.4	96	427	48	213	1.2	4.2
1	0.083	2.1	48	213	24	106	3.2	4.7
1	0.063	1.6	48	213	24	106	1.8	1.8
2	0.190	4.8	128	569	64	284	11.5	17.1
2	0.114	2.9	96	427	48	213	4.9	7.2
2	0.098	2.5	96	427	48	213	4.0	5.9
zip	.113 x .140	2.9 x 6.1	128	569	64	284	11.5	17.1

## Mechanical Specifications

- Bend radius, no load = 10x cable overall diameter
- Bend radius, load = 15x cable overall diameter

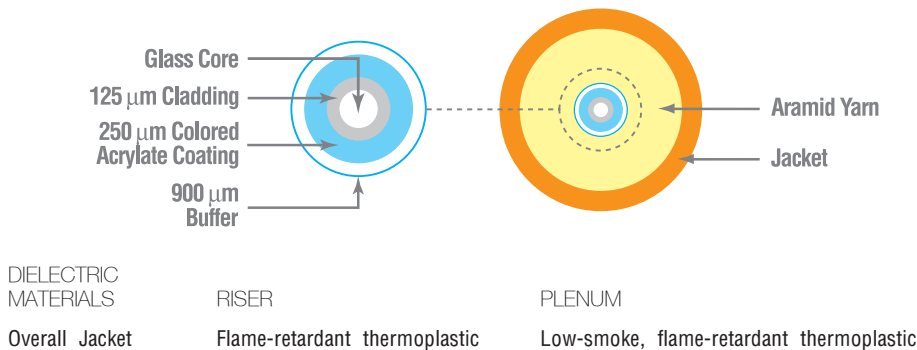


## 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

## Features



# Interconnect

## Product Highlights

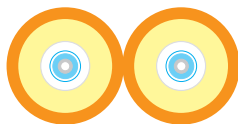
- RoHS compliant
- 900 μm buffered design recommended for easy termination
- OM2, OM3 & OM4 cables utilize Corning ClearCurve glass
- Ideal for patch cords, interconnections, and short runs
- Easy to strip and terminate
- Lightweight, flexible aramid yarns enhance strength
- Extremely flexible for easy handling

## Options

- Cables with 600 micron buffer available
- Standard colors are yellow for singlemode, orange for multimode and aqua for 10 Gigabit - other colors are available
- OM4 cables with extended 10 gigabit distances are available



1-fiber Interconnect 2-fiber Interconnect



2-fiber Zip Cord

Diagram scale approx. 5:1

## Interconnect (Plenum)

(UL) OFNP c(UL) FT6

Fiber Count	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2	8.3 UM OS2BI
1	60042-1	60022-1	60472-1	61851-1	60044-1	61679-1
1	60430-1	60468-1	60473-1	61852-1	60490-1	61681-1
1	60431-1	60469-1	60474-1	61853-1	60491-1	61683-1
1	60432-1	60470-1	60475-1	61854-1	60492-1	61685-1
2	60024-2	60026-1	60471-2	61851-2	60031-2	61679-2
2	60042-2	60022-2	60472-2	61855-2	60044-2	61687-2
2	61461-2	61492-2	61488-2	61856-2	61493-2	61689-2
zip	60023-2	60008-2	60502-2	61857-2	60030-2	61691-2

## Optical Specifications

TIA/EIA-568-C.3 | ISO/IEC 11801, 2nd edition | Telcordia GR-409-CORE

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

	1310 nm	1550 nm
OS2	0.50	0.50
OS2 BI**	0.50	0.50

\*\*OS2 BI utilizes bend-insensitive optical glass

# Multimode and Singlemode Interconnect

Indoor

## Interconnect (Plenum)

(UL) OFNP c(UL) FT6

FIBER COUNT	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
	in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
1	0.114	2.9	96	427	48	213	5.6	8.3
1	0.094	2.4	96	427	48	213	4.7	6.9
1	0.083	2.1	48	213	24	106	3.6	5.3
1	0.063	1.6	48	213	24	106	2.0	2.9
2	0.190	4.8	128	569	64	284	13.1	19.4
2	0.114	2.9	96	427	48	213	6.4	9.5
2	0.098	2.5	96	427	48	213	4.3	6.3
zip	.113 x .235	2.9 x 6.0	128	569	64	284	13.2	19.6

## Mechanical Specifications

- Bend radius, no load = 10x cable overall diameter
- Bend radius, load = 15x cable overall diameter

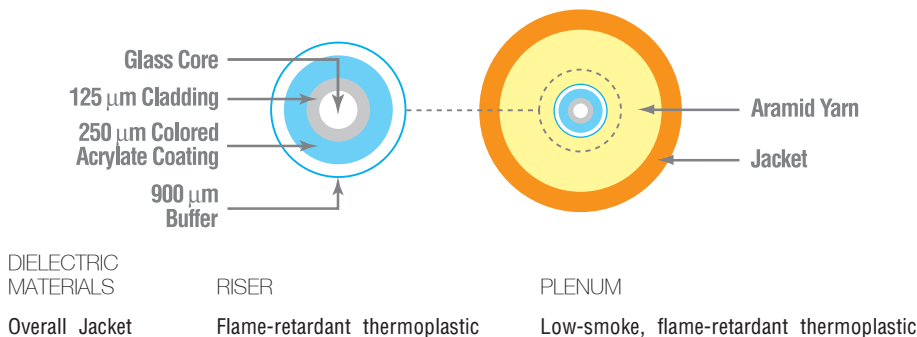


## 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

## Features



# SingleUnit

2 through 24 fibers

## Product Highlights

- RoHS compliant
- 900µm buffered design recommended for easy termination.
- OM2, OM3 & OM4 cables utilize Corning ClearCurve glass
- Each fiber is color coded for easy identification
- Ideal intra-building cable solution
- Flexible and easy to handle
- Lightweight, flexible aramid yarns enhance strength

## Options

- Cables with 600 micron buffer available.
- Low smoke zero halogen available
- Standard colors are yellow for singlemode, orange for multimode and aqua for 10 Gigabit - other colors are available
- OM4 cables with extended 10 gigabit distances are available



2-fiber



4-fiber



6-fiber



8-fiber



10-fiber



12-fiber

Diagram scale approx. 2:1

## SingleUnit (Riser)

(UL) OFNR c(UL) FT4

Fiber Count	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2	8.3 UM OS2BI
2	60514-2	60063-2	60463-2	61864-2	60012-2	61661-2
4	60515-4	60516-4	60520-4	61865-4	60014-4	61705-4
6	60515-6	60516-6	60520-6	61865-6	60014-6	61705-6
8	60515-8	60516-8	60520-8	61865-8	60014-8	61705-8
10	60515-10	60516-10	60520-10	61865-10	60014-10	61705-10
12	60515-12	60516-12	60520-12	61865-12	60014-12	61705-12
24	60515-24	60516-24	60520-24	61865-24	60014-24	61705-24

## Optical Specifications

TIA/EIA-568-C.3 | ISO/IEC 11801, 2nd edition | Telcordia GR-409-CORE

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

1310 nm 1550 nm

OS2 0.50 0.50

OS2 BI\*\* 0.50 0.50

\*\*OS2 BI utilizes bend-insensitive optical glass

HCM reserves the right to revise any specifications.

## SingleUnit (Riser)

(UL) OFNR c(UL) FT4

FIBER COUNT	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
	in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
2	.190	4.8	128	569	64	284	11.5	17.1
4	.190	4.8	128	569	64	284	13.0	19.4
6	.190	4.8	128	569	64	284	14.5	21.6
8	.230	5.8	160	712	80	356	18.5	27.6
10	.230	5.8	160	712	80	356	20.0	29.8
12	.230	5.8	160	712	80	356	21.5	32.0
24	.350	8.8	288	1282	144	641	52.4	78.1

## Mechanical Specifications

- Bend radius, no load = 10x cable overall diameter
- Bend radius, load = 15x cable overall diameter

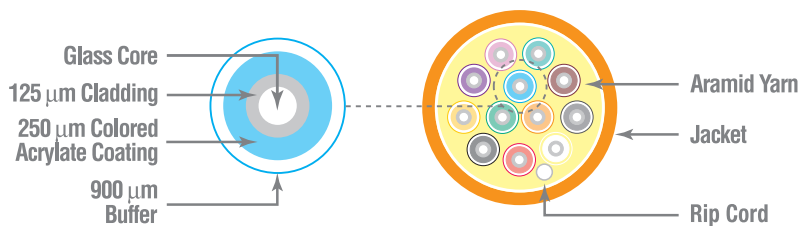


## 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

## Features



DIELECTRIC MATERIALS	RISER	PLENUM
Overall Jacket	Flame-retardant thermoplastic	Low-smoke, flame-retardant thermoplastic



# SingleUnit

2 through 24 fibers

## Product Highlights

- RoHS compliant
- 900µm buffered design recommended for easy termination.
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- Each fiber is color coded for easy identification
- Ideal intra-building cable solution
- Flexible and easy to handle
- Lightweight, flexible aramid yarns enhance strength

## Options

- Cables with 600 micron buffer available.
- Standard colors are yellow for singlemode, orange for multimode and aqua for 10 Gigabit - other colors are available
- OM4 cables with extended 10 gigabit distances are available



2-fiber



4-fiber



6-fiber



8-fiber



10-fiber



12-fiber

Diagram scale approx. 2:1

## SingleUnit (Plenum)

(UL) OFNP c(UL) FT6

Fiber Count	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2	8.3 UM OS2BI
2	60024-2	60026-2	60471-2	61867-2	60031-2	61687-2
4	60517-4	60518-4	60522-4	61868-4	60029-4	61707-4
6	60517-6	60518-6	60522-6	61868-6	60029-6	61707-6
8	60517-8	60518-8	60522-8	61868-8	60029-8	61707-8
10	60517-10	60518-10	60522-10	61868-10	60029-10	61707-10
12	60517-12	60518-12	60522-12	61868-12	60029-12	61707-12
24	60517-24	60518-24	60522-24	61868-24	60029-24	61707-24

## Optical Specifications

TIA/EIA-568-C.3 | ISO/IEC 11801, 2nd edition | Telcordia GR-409-CORE

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

	1310 nm	1550 nm
OS2	0.50	0.50
OS2 BI**	0.50	0.50

\*\*OS2 BI utilizes bend-insensitive optical glass

HCM reserves the right to revise any specifications.

## SingleUnit (Plenum)

(UL) OFNP c(UL) FT6

FIBER COUNT	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
	in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
2	.190	4.8	128	569	64	284	13.3	19.8
4	.190	4.8	128	569	64	284	14.5	21.6
6	.190	4.8	128	569	64	284	15.7	23.4
8	.230	5.8	160	712	80	356	20.9	31.1
10	.230	5.8	160	712	80	356	21.7	32.3
12	.230	5.8	160	712	80	356	23.0	34.3
24	.350	8.8	288	1282	144	641	52.4	78.1

## Mechanical Specifications

- Bend radius, no load = 10x cable overall diameter
- Bend radius, load = 15x cable overall diameter

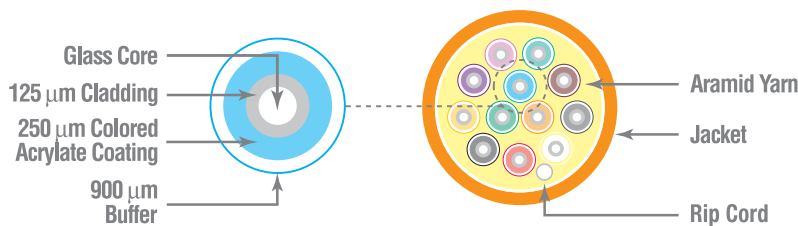


## 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

## Features



DIELECTRIC MATERIALS	RISER	PLENUM
Overall Jacket	Flame-retardant thermoplastic	Low-smoke, flame-retardant thermoplastic





# MultiUnit

12 through 144 fibers

## Product Highlights

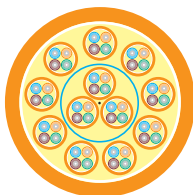
- RoHS compliant
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- Each fiber is color coded for easy identification
- Compact distribution design
- Ideal intra-building, multi-floor cable solution
- Lightweight, flexible aramid yarns enhance strength

## Options

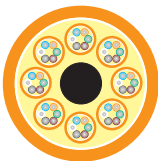
- Cables with a 600 micron buffer available
- Low smoke zero halogen available
- Standard colors are yellow for singlemode, orange for multimode and aqua for 10 Gigabit - other colors are available
- OM4 cables with extended 10 gigabit distances are available
- OS2 Bend insensitive optical glass available

## Applications

- See Page 91



48-fibers (12 tubes of 4-fibers)



48-fibers (8 tubes of 6-fibers)



48-fibers (4 tubes of 12-fibers)

Diagram scale approx. 1:1

## MultiUnit (Riser)

(UL) OFNR c(UL) FT4

Fiber Count	# Fibers per Tube	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2
12	2	60369-12	60594-12	60585-12	61870-12	60621-12
24	2	60369-24	60594-24	60585-24	61870-24	60621-24
24	4	60564-24	60588-24	60591-24	61871-24	60627-24
48	4	60564-48	60588-48	60591-48	61871-48	60627-48
18	6	60567-18	60595-18	60581-18	61872-18	60633-18
24	6	60567-24	60595-24	60581-24	61872-24	60633-4
36	6	60567-36	60595-36	60581-36	61872-36	60633-36
48	6	60567-48	60595-48	60581-48	61872-48	60633-48
72	6	60567-72	60595-72	60581-72	61872-72	60633-72
24	8	60569-24	60600-24	60603-24	61873-24	60638-24
32	8	60569-32	60600-32	60603-32	61873-32	60638-32
48	8	60569-48	60600-48	60603-48	61873-48	60638-48
72	8	60569-72	60600-72	60603-72	61873-72	60638-72
36	12	60006-36	60009-36	60613-36	61874-36	60015-36
48	12	60006-48	60009-48	60613-48	61874-48	60015-48
60	12	60006-60	60009-60	60613-60	61874-60	60015-60
72	12	60006-72	60009-72	60613-72	61874-72	60015-72
96	12	60006-96	60009-96	60613-96	61874-96	60015-96
144	12	60006-144	60009-144	60613-144	61874-144	60015-144

## Optical Specifications

TIA/EIA-568-C.3 | ISO/IEC 11801, 2nd edition | Telcordia GR-409-CORE

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

	1310 nm	1550 nm
OS2	0.50	0.50

HCM reserves the right to revise any specifications.

# Multimode and Singlemode MultiUnit

Indoor

## MultiUnit (Riser)

(UL) OFNR c(UL) FT4

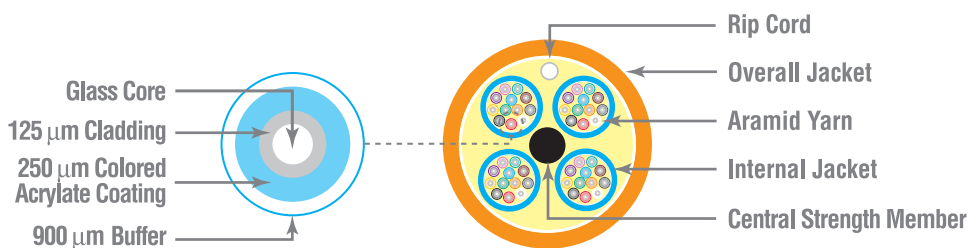
FIBER COUNT	#Fibers per Tube	Tube Layout	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
			in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
12	2	6xCSM	.630	16.0	768	3418	384	1709	131.0	195.2
24	2	9x3xCSM	.903	22.9	1536	6837	768	3418	249.0	371.0
24	4	6xCSM	.630	16.0	768	3418	384	1709	140.0	2086
48	4	9x3xCSM	.903	22.9	1536	6837	768	3418	263.0	391.9
18	6	3xCSM	.479	12.1	384	1709	192	854	77.0	114.7
24	6	4xCSM	.518	13.1	512	2279	256	1139	97.0	144.5
36	6	6xCSM	.630	16.0	768	3418	384	1709	148.0	220.5
48	6	8xCSM	.792	20.1	1024	4557	512	2279	253.0	377.0
72	6	9x3xCSM	.903	22.9	1536	6837	768	3418	280.0	417.2
24	8	3xCSM	.559	14.1	480	2136	240	1068	100.0	149.0
32	8	4xCSM	.614	15.5	640	3848	320	1424	127.0	189.2
48	8	6xCSM	.750	19.0	960	4273	480	2136	199.0	296.5
72	8	9xCSM	1.00	25.4	1440	6409	720	3204	393.0	585.6
36	12	3xCSM	.559	14.1	480	2136	240	1068	109.0	162.4
48	12	4xCSM	.614	15.5	640	2848	320	1424	139.0	207.1
60	12	5xCSM	.681	17.2	800	3561	400	1780	175.0	260.8
72	12	6xCSM	.750	19.0	960	4272	480	2136	216.0	321.8
96	12	8xCSM	.937	23.7	1280	5697	640	2848	360.0	536.4
144	12	9x3xCSM	1.06	26.9	1920	8545	960	4272	404.0	602.0

## Mechanical Specifications

- Bend radius, no load = 10x cable overall diameter
- Bend radius, load = 15x cable overall diameter



## Features



DIELECTRIC MATERIALS

Overall Jacket

RISER

Flame-retardant thermoplastic

PLENUM

Low-smoke, flame-retardant thermoplastic

# MultiUnit

12 through 144 fibers

## Product Highlights

- RoHS compliant
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- Each fiber is color coded for easy identification
- Compact distribution design
- Ideal intra-building, multi-floor cable solution
- Lightweight, flexible aramid yarns enhance strength

## Options

- Cables with a 600 micron buffer available
- Standard colors are yellow for singlemode, orange for multimode and aqua for 10 Gigabit - other colors are available
- OM4 cables with extended 10 gigabit distances are available

## Applications

- See Page 91



48-fibers (12 tubes of 4-fibers)



48-fibers (8 tubes of 6-fibers)



48-fibers (4 tubes of 12-fibers)

Diagram scale approx. 1:1

## MultiUnit (Plenum)

(UL) OFNP c(UL) FT6

Fiber Count	# Fibers per Tube	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2
12	2	60559-12	60582-12	60586-12	61875-12	60622-12
24	2	60559-24	60582-24	60586-24	61875-24	60622-24
24	4	60565-24	60589-24	60592-24	61876-24	60628-24
48	4	60565-48	60589-48	60592-48	61876-48	60628-48
18	6	60258-18	60596-18	60598-18	61877-18	60634-18
24	6	60258-24	60596-24	60598-24	61877-24	60634-24
36	6	60258-36	60596-36	60598-36	61877-36	60634-36
48	6	60258-48	60596-48	60598-48	61877-48	60634-48
72	6	60258-72	60596-72	60598-72	61877-72	60634-72
24	8	60570-24	60601-24	60604-24	61878-24	60639-24
32	8	60570-32	60601-32	60604-32	61878-32	60639-32
48	8	60570-48	60601-48	60604-48	61878-48	60639-48
72	8	60570-72	60601-72	60604-72	61878-72	60639-72
36	12	60027-36	60028-36	60614-36	61879-36	60033-36
48	12	60027-48	60028-48	60614-48	61879-48	60033-48
60	12	60027-60	60028-60	60614-60	61879-60	60033-60
72	12	60027-72	60028-72	60614-72	61879-72	60033-72
96	12	60027-96	60028-96	60614-96	61879-96	60033-96
144	12	60027-144	60028-144	60614-144	61879-144	60033-144

## Optical Specifications

TIA/EIA-568-C.3 | ISO/IEC 11801, 2nd edition | Telcordia GR-409-CORE

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

	1310 nm	1550 nm
OS2	0.50	0.50

HCM reserves the right to revise any specifications.

## MultiUnit (Plenum)

(UL) OFNP c(UL) FT6

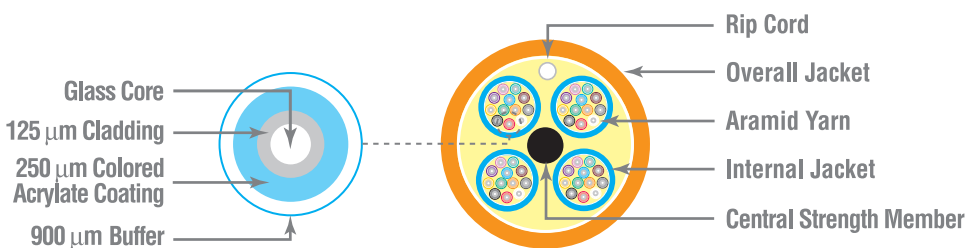
FIBER COUNT	#Fibers per Tube	Tube Layout	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
			in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
12	2	6xC5M	.630	16.0	768	3418	384	1709	131.0	195.2
24	2	9x3xC5M	.903	22.9	1536	6837	768	3418	249.0	371.0
24	4	6xC5M	.630	16.0	768	3418	384	1709	140.0	208.6
48	4	9x3xC5M	.903	22.9	1536	6837	768	3418	263.0	391.9
18	6	3xC5M	.479	12.1	384	1709	192	854	77.0	114.7
24	6	4xC5M	.518	13.1	512	2279	256	1139	97.0	144.5
36	6	6xC5M	.630	16.0	768	3418	384	1709	148.0	220.5
48	6	8xC5M	.792	20.1	1024	4557	512	2279	253.0	377.0
72	6	9x3xC5M	.903	22.9	1536	6837	768	3418	280.0	417.2
24	8	3xC5M	.559	14.1	480	2136	240	1068	100.0	149.0
32	8	4xC5M	.614	15.5	640	3848	320	1424	127.0	189.2
48	8	6xC5M	.750	19.0	960	4273	480	2136	199.0	296.5
72	8	9xC5M	1.00	25.4	1440	6409	720	3204	393.0	585.6
36	12	3xC5M	.559	14.1	480	2136	240	1068	109.0	162.4
48	12	4xC5M	.614	15.5	640	2848	320	1424	139.0	207.1
60	12	5xC5M	.681	17.2	800	3561	400	1780	175.0	260.8
72	12	6xC5M	.750	19.0	960	4272	480	2136	216.0	321.8
96	12	8xC5M	.937	23.7	1280	5697	640	2848	360.0	536.4
144	12	9x3xC5M	1.06	26.9	1920	8545	960	4272	404.0	602.0

## Mechanical Specifications

- Bend radius, no load = 10x cable overall diameter
- Bend radius, load = 15x cable overall diameter



## Features



DIELECTRIC MATERIALS

Overall Jacket

RISER

Flame-retardant thermoplastic

PLENUM

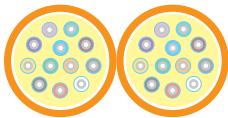
Low-smoke, flame-retardant thermoplastic

## Product Highlights

- RoHS compliant
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- 250 micron loose tube design allows for higher fiber strand counts in a smaller overall diameter cable
- Ideal for MT and MTP/MPO style connectors
- No gel design makes installation quick, easy and clean
- Each fiber is color coded for easy identification
- Flexible and easy to handle
- Lightweight, flexible Aramid yarns enhance strength

## Options

- Standard colors are yellow for singlemode, orange for multimode and aqua for 10 Gigabit -other colors are available
- OM4 cables with extended 10 gigabit distances are available



Zip Cord

Diagram scale approx. 5:1

## NanoCore™ Loose Tube No Gel Distribution Zip Cord (Plenum)

(UL) OFNP c(UL) FT6

Fiber Count	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2	8.3 UM OS2BI
12	61546-12	61539-12	61882-12	61547-12	61713-12
24	61546-24	61539-24	61882-24	61547-24	61713-24

## Optical Specifications

TIA/EIA-568-C.3 | ISO/IEC 11801, 2nd edition | Telcordia GR-409-CORE

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.25	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

	1310 nm	1550 nm
OS2	0.50	0.5
OS2 BI**	0.50	0.5

\*\*OS2 BI utilizes bend-insensitive optical glass

HCM reserves the right to revise any specifications.

# Loose Tube

## NanoCore™ Loose Tube No Gel Distribution Zip Cord (Plenum)

(UL) OFNP c(UL) FT6

FIBER COUNT	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
	in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
12	.118 x .255	3.0 x 6.47	128	569	64	284	11.3	16.8
24	.118 x .255	3.0 x 6.47	128	569	64	284	11.4	17.0

### Mechanical Specifications

- Bend radius, no load = 10x cable overall diameter
- Bend radius, load = 15x cable overall diameter

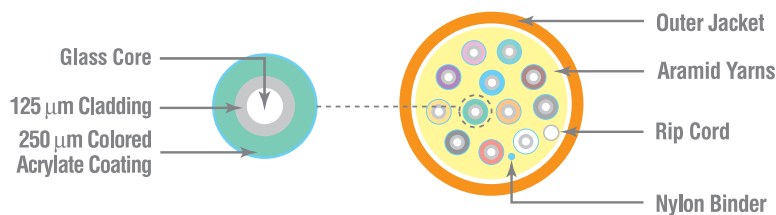


### 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

### Features



<b>DIELECTRIC MATERIALS</b>	<b>PLENUM</b>
Overall Jacket	Low-smoke, flame-retardant thermoplastic



Indoor

## Product Highlights

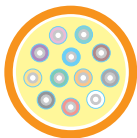
- RoHS Compliant
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- 250 micron loose tube design allows for higher fiber strand counts in a smaller overall diameter cable
- Ideal for MT and MTP/MPO style connectors
- No gel design makes installation quick, easy and clean
- Each fiber is color coded for easy identification
- Flexible and easy to handle
- Lightweight, flexible Aramid yarns enhance strength

## Options

- Riser rated cables available
- OM1 cables available
- Standard colors are yellow for singlemode, orange for multimode and aqua for 10 Gigabit -other colors are available
- OM4 cables with extended 10 gigabit distances are available

## Applications

- See Page 91



12 fibers

Diagram scale approx. 3:1

## NanoCore™ Loose Tube No Gel Distribution Single-Jacket (Plenum)

(UL) OFNP c(UL) FT6

Fiber Count	# Fibers per Tube	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2	8.3 UM OS2BI
2	2	61506-2	61507-2	61883-2	61538-2	61715-2
6	6	61506-6	61507-6	61883-6	61538-6	61715-6
8	8	61506-8	61507-8	61883-8	61538-8	61715-8
12	12	61506-12	61507-12	61883-12	61538-12	61715-12
24	24	61506-24	61507-24	61883-24	61538-24	61715-24
6	2	61732-6	61736-6	61889-6	61724-6	61778-6
18	6	61733-18	61737-18	61890-18	61725-18	61779-18
36	12	61734-35	61738-36	61890-36	61726-36	61780-36
72	24	61735-72	61739-72	61890-72	61727-72	61781-72
8	2	61732-8	61736-8	61889-8	61724-8	61778-8
24	6	61733-24	61737-24	61890-24	61725-24	61779-24
48	12	61734-48	61738-48	61890-48	61726-48	61780-48
96	24	61735-96	61739-96	61890-96	61727-96	61781-96
12	2	61732-12	61736-12	61889-12	61724-12	61778-12
36	6	61733-36	61737-36	61890-36	61725-36	61779-36
72	12	61734-72	61738-72	61890-72	61726-72	61780-72
144	24	61735-144	61739-144	61890-144	61727-144	61781-144

## Optical Specifications

TIA/EIA-568-C.3 | ISO/IEC 11801, 2nd edition | Telcordia GR-409-CORE

HCM FIBER	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.25**	1.0	200	500	220	na	300	550	33	na
OM2	3.25**	1.0	700	500	850	na	750	550	150	na
OM3	3.0**	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

	1310 nm	1550 nm
OS1	0.50	0.50
OS2	0.35	0.25
OS2 BI***	0.35	0.25

\*\*OM1 & OM2 cables w/24 fibers/tube have max attenuation of 3.5dB/Km at 850 nm.

\*\*OM3 cables w/24 fibers/tube have max attenuation of 3.25dB/Km at 850 nm.

\*\*\*OS2 BI utilizes bend-insensitive optical glass

HCM reserves the right to revise any specifications.

# Loose Tube

## NanoCore™ Loose Tube No Gel Distribution Single-Jacket (Plenum)

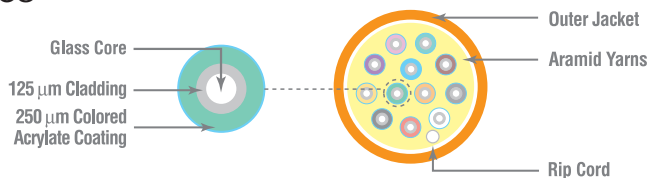
(UL) OFNP c(UL) FT6

FIBER COUNT	# Fibers per Tube	Tube Layout	Tube O.D.		CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
			in.	mm	in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
2	2	-	0.118	3.0	0.118	3.0	64	284	32	142	5.5	8.2
6	6	-	0.118	3.0	0.118	3.0	64	284	32	142	5.6	8.3
8	8	-	0.118	3.0	0.118	3.0	64	284	32	142	5.7	8.5
12	12	-	0.118	3.0	0.118	3.0	64	284	32	142	5.9	8.8
24	24	-	0.177	4.5	0.177	4.5	100	445	50	223	13.1	19.5
6	2	3xCSM	0.144	3.66	0.372	9.45	192	855	96	427	53.1	79
18	6	3xCSM	0.144	3.66	0.372	9.45	192	855	96	427	53.7	79.9
36	12	3xCSM	0.144	3.66	0.372	9.45	192	855	96	427	54.5	81.1
72	24	3xCSM	0.177	4.5	0.443	11.25	300	1335	150	668	69.6	103.6
8	2	4xCSM	0.144	3.66	0.428	10.87	256	1140	128	570	81.2	120.8
24	6	4xCSM	0.144	3.66	0.428	10.87	256	1140	128	570	81.9	121.8
48	12	4xCSM	0.144	3.66	0.428	10.87	256	1140	128	570	82.9	123.4
96	24	4xCSM	0.177	4.5	0.507	12.88	400	1780	200	890	105.4	156.9
12	2	6xCSM	0.144	3.66	0.512	13.00	384	1709	192	855	120.4	179.2
36	6	6xCSM	0.144	3.66	0.512	13.00	384	1709	192	855	121.5	180.8
72	12	6xCSM	0.144	3.66	0.512	13.00	384	1709	192	855	123.0	183
144	24	6xCSM	0.177	4.5	0.612	15.54	600	2670	300	1335	161.7	240.6

### 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

### Features



**DIELECTRIC MATERIALS**

**PLENUM**

Overall Jacket

Low-smoke, flame-retardant thermoplastic

### Mechanical Specifications

- Bend radius, no load = 10x cable overall diameter
- Bend radius, load = 15x cable overall diameter



Indoor



## Product Highlights

- RoHS Compliant
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- 250 micron loose tube design allows for higher fiber strand counts in a smaller overall diameter cable
- Ideal for MT and MTP/MPO style connectors
- No gel design makes installation quick, easy and clean
- Each fiber is color coded for easy identification
- Color-coded binders separate fiber strands into bundles of 12
- Rugged dual-jacket design
- Flexible and easy to handle
- Lightweight, flexible Aramid yarns enhance strength

## Options

- Cables with improved attenuation available
- Standard colors are yellow for singlemode, orange for multimode and aqua for 10 Gigabit -other colors are available
- OM4 cables with extended 10 gigabit distances are available



12-fibers

Diagram scale approx. 3:1

## NanoCore™ Loose Tube No Gel Distribution Dual-Jacket (Plenum)

(UL) OFNP c(UL) FT6

Fiber Count	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2	8.3 UM OS2BI
12	61549-12	61509-12	61884-12	61550-12	61717-12
24	61549-24	61509-24	61884-24	61550-24	61717-24
36	61549-36	61509-36	61884-36	61550-36	61717-36
48	61549-48	61509-48	61884-48	61550-48	61717-48
72	61549-72	61509-72	61884-72	61550-72	61717-72
96	61549-96	61509-96	61884-96	61550-96	61717-96

## Optical Specifications

TIA/EIA-568-C.3 | ISO/IEC 11801, 2nd edition | Telcordia GR-409-CORE

HCM FIBER	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

	1310 nm	1550 nm
OS2	0.5	0.5
OS2 BI**	0.5	0.5

\*\*OS2 BI utilizes bend-insensitive optical glass

HCM reserves the right to revise any specifications.

# Loose Tube

Indoor

## NanoCore™ Loose Tube No Gel Distribution Dual-Jacket (Plenum)

(UL) OFNP c(UL) FT6

FIBER COUNT	12-Fiber Bundles	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
		in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
12	1	.335	8.5	384	1709	195	855	47.0	70.0
24	2	.335	8.5	384	1709	195	855	47.2	70.3
36	3	.335	8.5	384	1709	195	855	47.4	70.6
48	4	.335	8.5	384	1709	195	855	47.6	70.9
72	6	.335	8.5	384	1709	195	855	47.8	71.2
96	8	.335	8.5	384	1709	195	855	60.3	79.7

## Mechanical Specifications

- Bend radius, no load = 10x cable overall diameter
- Bend radius, load = 15x cable overall diameter

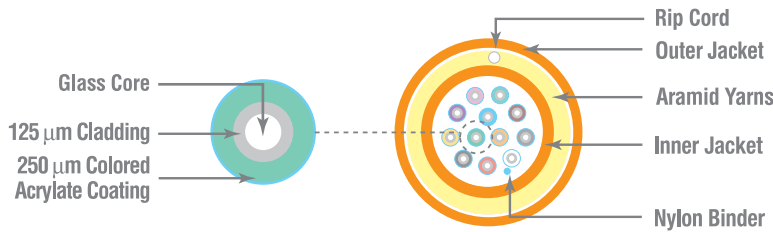


## 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

## Features



**DIELECTRIC MATERIALS**

**PLENUM**

Overall Jacket

Low-smoke, flame-retardant thermoplastic



# Armored

2 through 24 fibers

## Product Highlights

- RoHS compliant
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- 900 um buffered design recommended for easy termination.
- Eliminates need for inner duct or conduit
- Aluminum interlock armor
- Each fiber is color coded for easy identification
- Ideal intra-building cable solution
- Flexible and easy to handle
- Lightweight, flexible aramid yarns enhance strength

## Options

- Cables with up to 144 fibers available
- Steel interlock available
- Low smoke zero halogen available
- Standard colors are yellow for singlemode, orange for multimode and aqua for 10 Gigabit -other colors are available
- OM4 cables with extended 10 gigabit distances are available



2-fiber



4-fiber



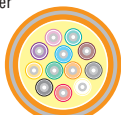
6-fiber



8-fiber



10-fiber



12-fiber

Diagram scale approx. 2:1

## Armored Tight Buffered (Riser)

(UL) OFCR c(UL) FT4

Fiber Count	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2
2	60524-2	61542-2	61421-2	61896-2	61540-2
4	60524-4	61542-4	61421-4	61896-4	61540-4
6	60524-6	61542-6	61421-6	61896-6	61540-6
8	60524-8	61542-8	61421-8	61896-8	61540-8
10	60524-10	61542-10	61421-10	61896-10	61540-10
12	60524-12	61542-12	61421-12	61896-12	61540-12
24	60524-24	61542-24	61421-24	61896-24	61540-24

## Optical Specifications

TIA/EIA-568-C.3 | ISO/IEC 11801, 2nd edition | Telcordia GR-409-CORE

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na
OS2			1310 nm	1550 nm					0.50	0.50

\*EMBC for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

HCM reserves the right to revise any specifications.

## Armored Tight Buffered (Riser)

(UL) OFCR c(UL) FT4

FIBER COUNT	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
	in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
2	.48	12.192	128	570	64	285	93.4	139.2
4	.48	12.192	128	570	64	285	94.9	141.4
6	.48	12.192	128	570	64	285	96.4	143.6
8	.52	13.208	160	712	80	356	109.9	163.8
10	.52	13.208	160	712	80	356	111.4	166.0
12	.52	13.208	160	712	80	356	112.9	168.2
24	.64	16.256	288	1282	144	641	164.1	244.5

## Mechanical Specifications

- Bend radius, no load = 15x cable overall diameter
- Bend radius, load = 20x cable overall diameter

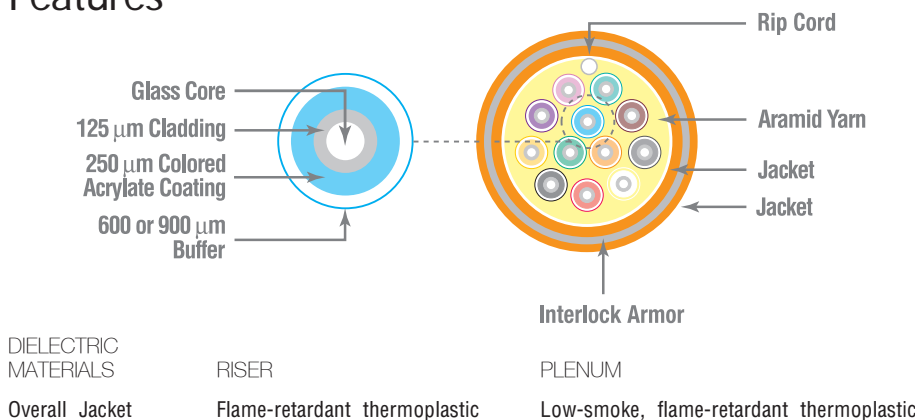


## 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

## Features



Indoor Armored

# Armored

2 through 24 fibers

## Product Highlights

- RoHS compliant
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- 900um buffered design recommended for easy termination.
- Eliminates need for inner duct or conduit
- Aluminum interlock armor
- Each fiber is color coded for easy identification
- Ideal intra-building cable solution
- Flexible and easy to handle
- Lightweight, flexible aramid yarns enhance strength

## Options

- Standard colors are yellow for singlemode, orange for multimode and aqua for 10 Gigabit -other colors are available
- OM4 cables with extended 10 gigabit distances are available

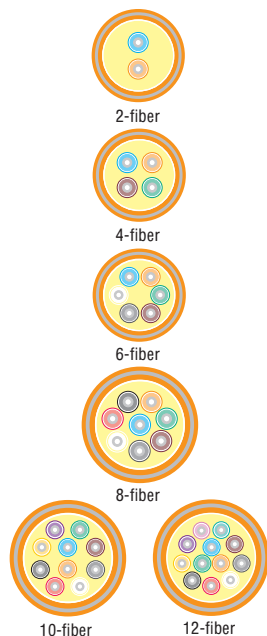


Diagram scale approx. 2:1

## Armored Tight Buffered (Plenum)

(UL) OFCP c(UL) FT6

Fiber Count	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2
2	60405-2	61319-2	61337-2	61897-2	61433-2
4	60405-4	61319-4	61337-4	61897-4	61433-4
6	60405-6	61319-6	61337-6	61897-6	61433-6
8	60405-8	61319-8	61337-8	61897-8	61433-8
10	60405-10	61319-10	61337-10	61897-10	61433-10
12	60405-12	61319-12	61337-12	61897-12	61433-12
24	60405-24	61319-24	61337-24	61897-24	61433-24

## Optical Specifications

TIA/EIA-568-C.3 | ISO/IEC 11801, 2nd edition | Telcordia GR-409-CORE

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na
OS2	1310 nm 1550 nm		0.50	0.50						

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

HCM reserves the right to revise any specifications.

## Armored Tight Buffered (Plenum)

(UL) OFCP c(UL) FT6

FIBER COUNT	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
	in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
2	.48	12.192	128	570	64	285	99.2	147.8
4	.48	12.192	128	570	64	285	100.4	149.6
6	.48	12.192	128	570	64	285	101.6	151.4
8	.52	13.208	160	712	80	356	116.7	173.9
10	.52	13.208	160	712	80	356	117.5	175.1
12	.52	13.208	160	712	80	356	118.8	177.0
24	.64	16.256	288	1282	144	641	164.1	244.5

## Mechanical Specifications

- Bend radius, no load = 15x cable overall diameter
- Bend radius, load = 20x cable overall diameter

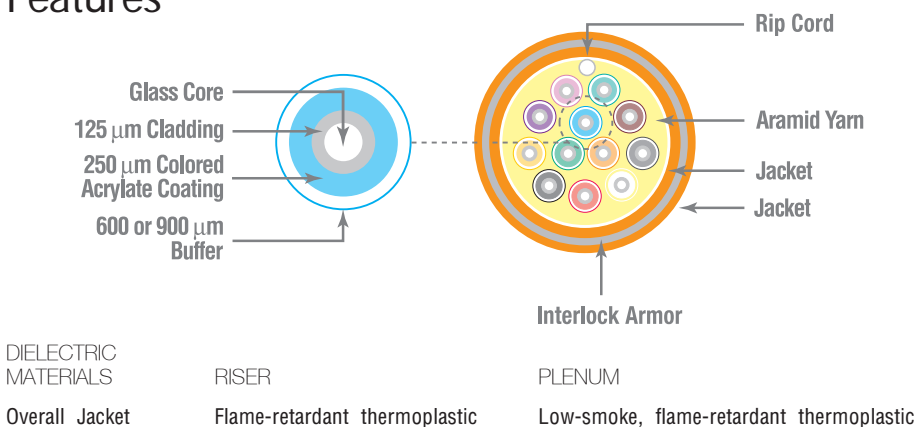


## 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

## Features



# Tight Buffered

## Product Highlights

- RoHS compliant
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- UV resistant jacket
- Tight buffered construction
- Each fiber is color coded for easy identification
- Dry, super absorbent polymers (SAPs) eliminate water migration in cable interstices
- Suitable for lashed aerial, duct, underground conduit and indoor riser applications
- 900um buffered design recommended for easy termination

## Options

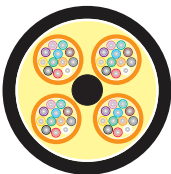
- Low smoke zero halogen available
- OM4 cables with extended 10 gigabit distances are available



6-fiber



12-fiber



48-fibers (4 tubes of 12-fibers)

Diagram scale approx. 2:1

## I/O Tight Buffered (Riser)

(UL) OFNR c(UL) FT4

Fiber Count	#Fibers per Tube	62.5 UM		50 UM		50 UM		8.3 UM	
		OM1	OM2	OM3	OM4	OS2	OS2BI		
2	2	61345-2	61347-2	61348-2	61893-2	61349-2	61719-2		
4	4	61345-4	61347-4	61348-4	61893-4	61349-4	61719-4		
6	6	61345-6	61347-6	61348-6	61893-6	61349-6	61719-6		
8	8	61345-8	61347-8	61348-8	61893-8	61349-8	61719-8		
10	10	61345-10	61347-10	61348-10	61893-10	61349-10	61719-10		
12	12	61345-12	61347-12	61348-12	61893-12	61349-12	61719-12		
24	24	61345-24	61347-24	61348-24	61893-24	61349-24	61719-24		
36	6	61380-36	61376-36	61523-36	61898-36	61415-36	na		
48	12	61495-48	61522-48	61524-48	61899-48	61363-48	na		
72	12	61495-72	61522-72	61524-72	61899-72	61363-72	na		

## Optical Specifications

TIA/EIA-568-C.3

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

1310 nm 1550 nm

OS2 0.50 0.50

OS2 BI\*\* 0.50 0.50

\*\*OS2 BI utilizes bend-insensitive optical glass

HCM reserves the right to revise any specifications.

# Tight Buffered Multimode and Singlemode

## I/O Tight Buffered (Riser)

(UL) OFNR c(UL) FT4

FIBER COUNT	#Fibers per Tube	Tube Layout	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
			in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
2	2	x	.190	4.8	128	570	64	285	12.6	18.8
4	4	x	.190	4.8	128	570	64	285	13.9	20.7
6	6	x	.190	4.8	128	570	64	285	15.1	22.5
8	8	x	.230	5.8	160	712	80	356	20.0	29.8
10	10	x	.230	5.8	160	712	80	356	21.3	31.7
12	12	x	.230	5.8	160	712	80	356	22.5	33.5
24	24	x	.350	8.8	288	1282	144	641	52.4	78.1
36	6	6xC5M	.657	16.7	600	2671	200	890	135.0	201.2
48	12	4xC5M	.64	16.4	600	2671	200	890	145.0	216.1
72	12	6xC5M	.816	20.7	600	2671	200	890	156.7	233.5

## Mechanical Specifications

- Bend radius, no load = 10x cable overall diameter
- Bend radius, load = 20x cable overall diameter

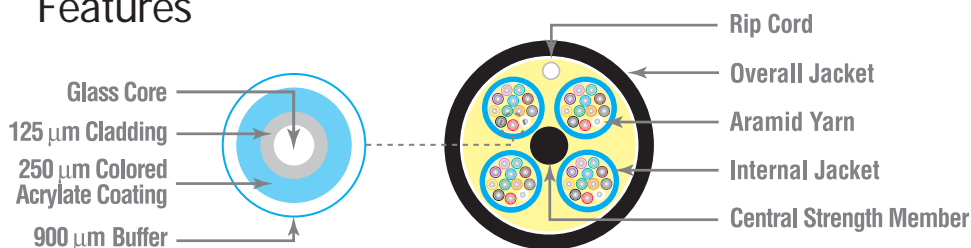


## 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

## Features



DIELECTRIC MATERIALS

RISER

PLENUM

Overall Jacket

Flame-retardant thermoplastic

Low-smoke, flame-retardant thermoplastic



Indoor/Outdoor  
Tight Buffered



# Tight Buffered

## Product Highlights

- RoHS compliant
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- UV resistant jacket
- Tight buffered construction
- Easy to strip and terminate
- Each fiber is color coded for easy identification
- Dry, super absorbent polymers (SAPs) eliminate water migration in cable interstices
- Suitable for lashed aerial, duct, underground conduit and indoor plenum applications
- 900um buffered design recommended for easy termination

## Options

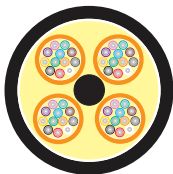
- OM4 cables with extended 10 gigabit distances are available



6-fiber



12-fiber



48-fibers (4 tubes of 12-fibers)

Diagram scale approx. 3:1

## I/O Tight Buffered (Plenum)

(UL) OFNP c(UL) FT6

Fiber Count	Fibers per tube	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2	8.3 UM OS2BI
2	2	61460-2	61464-2	61468-2	61894-2	61459-2	61721-2
4	4	61460-4	61464-4	61468-4	61894-4	61459-4	61721-4
6	6	61460-6	61464-6	61468-6	61894-6	61459-6	61721-6
8	8	61460-8	61464-8	61468-8	61894-8	61459-8	61721-8
10	10	61460-10	61464-10	61468-10	61894-10	61459-10	61721-10
12	12	61460-12	61464-12	61468-12	61894-12	61459-12	61721-12
24	24	61460-24	61464-24	61468-24	61894-24	61459-24	61721-24
48	12	61979-48	61956-48	61959-48	61980-48	61480-48	61981-48
72	12	61979-72	61956-72	61959-72	61980-72	61480-72	61981-72
144	12	61979-144	61956-144	61959-144	61980-144	61480-144	61981-144

## Optical Specifications

TIA/EIA-568-C.3

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.5	1.0	200	500	220	na	300	550	33	na
OM2	3.5	1.0	700	500	850	na	750	550	150	na
OM3	3.25	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

1310 nm 1550 nm

OS2 0.50 0.50

OS2 BI\*\* 0.50 0.50

\*\*OS2 BI utilizes bend-insensitive optical glass

HCM reserves the right to revise any specifications.

# Tight Buffered Multimode and Singlemode

## I/O Tight Buffered (Plenum)

(UL) OFNP c(UL) FT6

FIBER COUNT	# Fibers per Tube	Tube Layout	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
			in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
2	2	x	.190	4.8	128	570	64	285	12.6	18.8
4	4	x	.190	4.8	128	570	64	285	13.9	20.7
6	6	x	.190	4.8	128	570	64	285	15.1	22.5
8	8	x	.230	5.8	160	712	80	356	20.0	29.8
10	10	x	.230	5.8	160	712	80	356	21.3	31.7
12	12	x	.230	5.8	160	712	80	356	22.5	33.5
24	24	x	.350	8.8	288	1282	144	641	52.4	78.1
48	12	4xCSM	0.627	15.9	640	2849	320	1424	135.1	201.1
72	12	6xCSM	0.756	19.2	960	4273	480	2136	226.6	337.2
144	12	9x3xCSM	1.072	27.2	1920	8546	960	4273	396.8	590.5

## Mechanical Specifications

- Bend radius, no load = 10x cable overall diameter
- Bend radius, load = 20x cable overall diameter

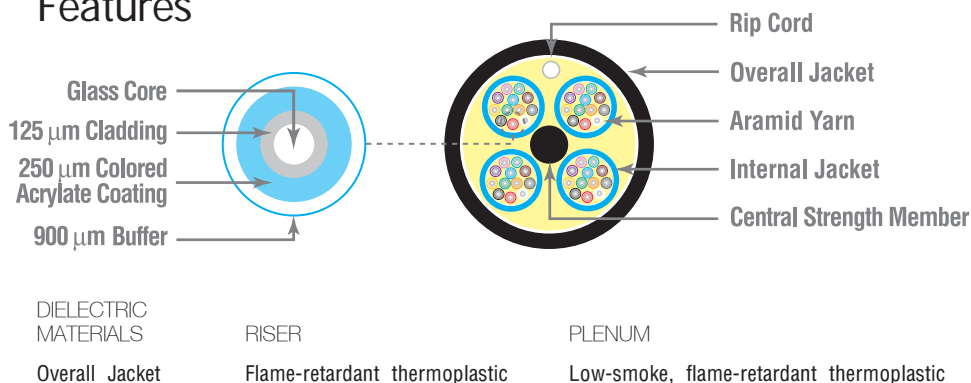


## 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

## Features



Indoor/Outdoor  
Tight Buffered

# Central Tube

2 through 12 fibers

## Product Highlights

- RoHS compliant
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- UV resistant jacket
- Gel filled central tube provides protection against water penetration
- Dry, super absorbent polymers (SAPs) eliminate water migration in cable interstices
- Suitable for lashed aerial, duct, underground conduit and indoor riser applications

## Options

- Low smoke zero halogen available
- OM4 cables with extended 10 gigabit distances are available



2-fibers



4-fibers



6-fibers



8-fibers



10-fibers



12-fibers

Diagram scale approx. 3:1

## Indoor/Outdoor Central Tube (Riser)

(UL) OFNR c(UL) FT4

Fiber Count	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2	8.3 UM OS2BI
2	60103-2	60104-2	60337-2	61837-2	60105-2	61723-2
4	60103-4	60104-4	60337-4	61837-4	60105-4	61723-4
6	60103-6	60104-6	60337-6	61837-6	60105-6	61723-6
8	60103-8	60104-8	60337-8	61837-8	60105-8	61723-8
10	60103-10	60104-10	60337-10	61837-10	60105-10	61723-10
12	60103-12	60104-12	60337-12	61837-12	60105-12	61723-12

## Optical Specifications

TIA/EIA-568-C.3-1

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)		
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	
OM1	3.25	1.0	200	500	220	na	300	550	33	na	
OM2	3.25	1.0	700	500	850	na	750	550	150	na	
OM3	3.0	1.0	1500	500	2000	na	1000	550	300	na	
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na	
OS2	1310 nm 1550 nm										
OS2	0.35	0.25									
OS2 BI**	0.35	0.25									

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

\*\*OS2 BI utilizes bend-insensitive optical glass

HCM reserves the right to revise any specifications.

# Central Tube

## Indoor/Outdoor Central Tube (Riser)

(UL) OFNR c(UL) FT4

FIBER COUNT	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
	in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
2	.287	7.2	300	1335	150	667	39.4	58.7
4	.287	7.2	300	1335	150	667	39.4	58.7
6	.287	7.2	300	1335	150	667	39.4	58.7
8	.287	7.2	300	1335	150	667	39.5	58.8
10	.287	7.2	300	1335	150	667	39.5	58.8
12	.287	7.2	300	1335	150	667	39.6	58.8

## Mechanical Specifications

Bend radius

- No load = 10x cable overall diameter
- Load = 20x cable overall diameter

Central Tube Diameter

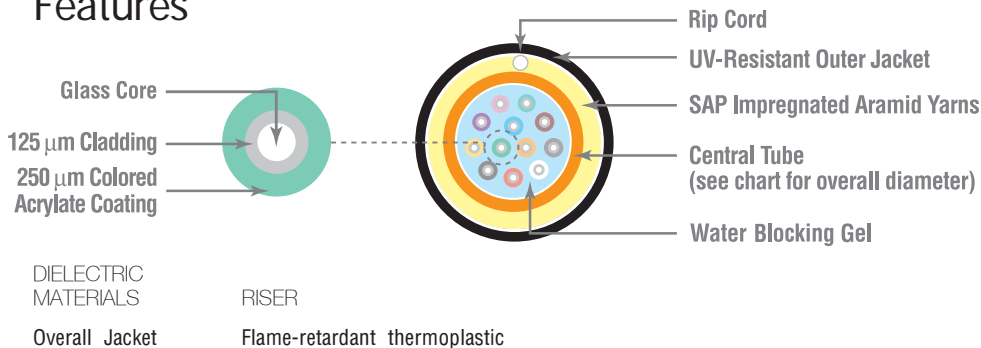
	in.	mm
2-12 fibers per tube	.160	4.1

## 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

## Features



Indoor/Outdoor

# Loose Tube

12 through 144 fibers

## Product Highlights

- RoHS compliant
- OM2, OM3, & OM4 cables utilize Corning ClearCurve glass.
- UV resistant jacket
- Gel filled loose tubes provide protection against water penetration
- Dry, super absorbent polymers (SAPs) eliminate water migration in cable interstices
- Suitable for lashed aerial, duct, underground conduit and indoor riser applications

## Options

- Other configurations and fiber counts available
- Low smoke zero halogen available
- OM4 cables with extended 10 gigabit distances are available

## Applications

- See Page 91



48-fibers (12 tubes of 4-fibers)



48-fibers (8 tubes of 6-fibers)



48-fibers (6 tubes of 8-fibers)



48-fibers (4 tubes of 12-fibers)

Diagram scale approx. 1:1

## Indoor/Outdoor Loose Tube (Riser)

(UL) OFNR c(UL) FT4

Fiber Count	# Fibers per Tube	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2
12	2	60701-12	60710-12	60714-12	61900-12	60720-12
24	2	60701-24	60710-24	60714-24	61900-24	60720-24
24	4	60344-24	60711-24	60715-24	61901-24	60721-24
48	4	60344-48	60711-48	60715-48	61901-48	60721-48
18	6	60106-18	60108-18	60716-18	61902-18	60110-18
24	6	60106-24	60108-24	60716-24	61902-24	60110-24
36	6	60106-36	60108-36	60716-36	61902-36	60110-36
48	6	60106-48	60108-48	60716-48	61902-48	60110-48
72	6	60106-72	60108-72	60716-72	61902-72	60110-72
24	8	60702-24	60712-24	60717-24	61903-24	60722-24
32	8	60702-32	60712-32	60717-32	61903-32	60722-32
48	8	60702-48	60712-48	60717-48	61903-48	60722-48
72	8	60702-72	60712-72	60717-72	61903-72	60722-72
36	12	60107-36	60109-36	60719-36	61904-36	60111-36
48	12	60107-48	60109-48	60719-48	61904-48	60111-48
60	12	60107-60	60109-60	60719-60	61904-60	60111-60
72	12	60107-72	60109-72	60719-72	61904-72	60111-72

## Optical Specifications

TIA/EIA-568-C.3

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)		
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	
OM1	3.25	1.0	200	500	220	na	300	550	33	na	
OM2	3.25	1.0	700	500	850	na	750	550	150	na	
OM3	3.0	1.0	1500	500	2000	na	1000	550	300	na	
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na	
	1310 nm 1550 nm										
OS2	0.35	0.25									

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

HCM reserves the right to revise any specifications.

# Loose Tube

## Indoor/Outdoor Loose Tube (Riser)

(UL) OFNR c(UL) FT4

FIBER COUNT	#Fibers per Tube	Tube Layout	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
			in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
12	2	6xC5M	.422	10.7	600	2670	200	890	77.0	114.7
24	2	12xC5M	.595	15.1	600	2670	200	890	155	231.0
24	4	6xC5M	.422	10.7	600	2670	200	890	78.0	116.2
48	4	12xC5M	.595	15.1	600	2670	200	890	155	231.0
18	6	6xC5M	.422	10.7	600	2670	200	890	64	95.4
24	6	6xC5M	.422	10.7	600	2670	200	890	69.0	102.8
36	6	6xC5M	.422	10.7	600	2670	200	890	78.0	116.2
48	6	8XC5M	.482	12.2	600	2670	200	890	100	149.0
72	6	12XC5M	.595	15.1	600	2670	200	890	156	232.4
24	8	6xC5M	.422	10.7	600	2670	200	890	64	95.4
32	8	6xC5M	.422	10.7	600	2670	200	890	69.0	102.8
48	8	6xC5M	.422	10.7	600	2670	200	890	78.0	117.7
72	8	9XC5M	.509	12.9	600	2670	200	890	113	168.4
36	12	6xC5M	.466	11.8	600	2670	200	890	73.0	108.8
48	12	6xC5M	.422	11.8	600	2670	200	890	79.0	117.7
60	12	6xC5M	.466	11.8	600	2670	200	890	85.0	126.7
72	12	6xC5M	.466	11.8	600	2670	200	890	91.0	135.6

## Mechanical Specifications

Bend radius

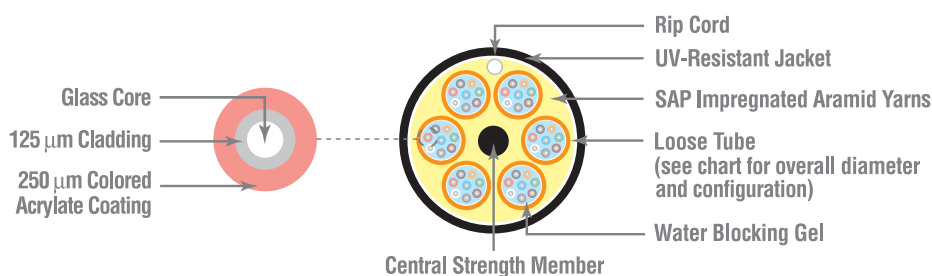
- No load = 10x cable overall diameter
- Load = 20x cable overall diameter

Loose Tube Diameter

	in.	mm
2-8 fibers per tube	.095	2.4
12-fibers per tube	.110	2.8



## Features



DIELECTRIC MATERIALS  
Overall Jacket

RISER  
Flame-retardant thermoplastic



Indoor/Outdoor

## Product Highlights

- RoHS compliant
- UV resistant jacket
- Dry, super absorbent polymers (SAPs) eliminate water migration in cable interstices and loose tubes
- Suitable for lashed aerial, duct, and underground conduit applications
- Dual jacket constructions available

## Options

- Other configurations and fiber counts available
- Corrugated steel armor available
- Dual jacket constructions available
- Low smoke zero halogen available
- Up to 432 fibers available
- OM4 cables with extended 10 gigabit distances are available

## Applications

- See Page 91



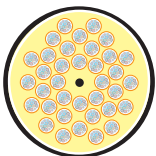
48-fibers (12 tubes of 4-fibers)



48-fibers (8 tubes of 6-fibers)



48-fibers (4 tubes of 12-fibers)



432-fibers (36 tubes of 12-fibers)

Diagram scale approx. 1:1

## Mojave™ Dry-Block Outdoor (Outside Plant) Loose Tube

Fiber Count	# Fibers per Tube	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2
12	2	61963-12	61967-12	61971-12	61975-12	61952-12
24	2	61963-24	61967-24	61971-24	61975-24	61952-24
24	4	61964-24	61968-24	61972-24	61976-24	61953-24
48	4	61964-48	61968-48	61972-48	61976-48	61953-48
18	6	61965-18	61969-18	61973-18	61977-18	61954-18
24	6	61965-24	61969-24	61973-24	61977-24	61954-24
36	6	61965-36	61969-36	61973-36	61977-36	61954-36
48	6	61965-48	61969-48	61973-48	61977-48	61954-48
12	12	61966-12	61970-12	61974-12	61978-12	61955-12
24	12	61966-24	61970-24	61974-24	61978-24	61955-24
36	12	61966-36	61970-36	61974-36	61978-36	61955-36
48	12	61966-48	61970-48	61974-48	61978-48	61955-48
60	12	61966-60	61970-60	61974-60	61978-60	61955-60
72	12	61966-72	61970-72	61974-72	61978-72	61955-72
84	12	61966-84	61970-84	61974-84	61978-84	61955-84
96	12	61966-96	61970-96	61974-96	61978-96	61955-96
108	12	61966-108	61970-108	61974-108	61978-108	61955-108
120	12	61966-120	61970-120	61974-120	61978-120	61955-120
132	12	61966-132	61970-132	61974-132	61978-132	61955-132
144	12	61966-144	61970-144	61974-144	61978-144	61955-144
168	12	61966-168	61970-168	61974-168	61978-168	61955-168
192	12	61966-192	61970-192	61974-192	61978-192	61955-192
216	12	61966-216	61970-216	61974-216	61978-216	61955-216
240	12	61966-240	61970-240	61974-240	61978-240	61955-240
264	12	61966-264	61970-264	61974-264	61978-264	61955-264

## Optical Specifications

### TIA/EIA-568-C.3

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.25	1.0	200	500	220	na	300	550	33	na
OM2	3.25	1.0	700	500	850	na	750	550	150	na
OM3	3.0	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

	1310 nm	1550 nm
OS2	0.35	0.25

HCM reserves the right to revise any specifications.

# Loose Tube

## Mojave™ Dry-Block Outdoor (Outside Plant) Loose Tube

FIBER COUNT	# Fibers per Tube	Tube Layout	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT lbs/1000 ft
			in.	mm	lbs-f	N	lbs-f	N	
12	2	6xCSM	.493	12.5	600	2670	200	890	63.8
24	2	12XCSM	.695	17.7	600	2670	200	890	139.6
24	4	6xCSM	.493	12.5	600	2670	200	890	64.8
48	4	12XCSM	.695	17.7	600	2670	200	890	139.6
18	6	5XCSM	.463	11.7	600	2670	200	890	50.9
24	6	5XCSM	.463	11.7	600	2670	200	890	53.2
36	6	6xCSM	.493	12.5	600	2670	200	890	64.8
48	6	8XCSM	.561	14.2	600	2670	200	890	83.4
12	12	5XCSM	.463	11.7	600	2670	200	890	46.3
24	12	5XCSM	.463	11.7	600	2670	200	890	48.6
36	12	5XCSM	.463	11.7	600	2670	200	890	50.9
48	12	5XCSM	.463	11.7	600	2670	200	890	53.2
60	12	5XCSM	.463	11.7	600	2670	200	890	55.5
72	12	6xCSM	.493	12.5	600	2670	200	890	65.8
84	12	7XCSM	.552	14.0	600	2670	200	890	81.1
96	12	8XCSM	.581	14.8	600	2670	200	890	92.4
108	12	9XCSM	.611	15.5	600	2670	200	890	104.7
120	12	10XCSM	.649	16.5	600	2670	200	890	120
132	12	11XCSM	.683	17.3	600	2670	200	890	134.3
144	12	12XCSM	.715	18.2	600	2670	200	890	150.6
168	12	12X6XCSM	.737	18.7	600	2670	200	890	1406.2
192	12	12X6XCSM	.737	18.7	600	2670	200	890	123.8
216	12	12X6XCSM	.737	18.7	600	2670	200	890	128.4
240	12	13X7XCSM	.770	19.6	600	2670	200	890	141
264	12	14X8XCSM	.805	20.4	600	2670	200	890	158.6

## Mechanical Specifications

Bend radius

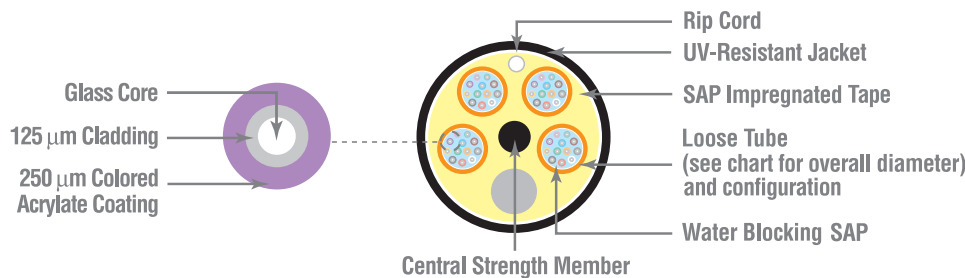
- No load = 10x cable overall diameter
- Load = 20x cable overall diameter

Loose Tube Diameter

	in.	mm
2-12 fibers per tube	.110	2.8



## Features



DIELECTRIC MATERIALS

Overall Jacket

Medium density polyolefin



Outdoor



# Loose Tube

12 through 432 fibers

## Product Highlights

- RoHS compliant
- UV resistant jacket
- Gel filled loose tubes provide protection against water penetration
- Dry, super absorbent polymers (SAPs) eliminate water migration in cable interstices
- Suitable for lashed aerial, duct, and underground conduit applications
- SM Fiber is RDUP approved

## Options

- Other configurations and fiber counts available
- Dual jacket constructions available
- Low smoke zero halogen available
- Up to 432 fibers available
- OM4 cables with extended 10 gigabit distances are available

## Applications

- See Page 91



48-fibers (12 tubes of 4-fibers)



48-fibers (8 tubes of 6-fibers)



48-fibers (4 tubes of 12-fibers)



432-fibers (36 tubes of 12-fibers)

Diagram scale approx. 1:1

## Outdoor (Outside Plant) Loose Tube

Fiber Count	# Fibers per Tube	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2
12	2	60351-12	60282-12	60938-12	61905-12	60950-12
24	2	60351-24	60282-24	60938-24	61905-24	60950-24
24	4	60235-24	60408-24	60939-24	61906-24	60951-24
48	4	60235-48	60408-48	60939-48	61906-48	60951-48
18	6	60085-18	60087-18	60940-18	61907-18	60089-18
24	6	60085-24	60087-24	60940-24	61907-24	60089-24
36	6	60085-36	60087-36	60940-36	61907-36	60089-36
48	6	60085-48	60087-48	60940-48	61907-48	60089-48
12	12	60086-12	60088-12	60943-12	61908-12	60090-12
24	12	60086-24	60088-24	60943-24	61908-24	60090-24
36	12	60086-36	60088-36	60943-36	61908-36	60090-36
48	12	60086-48	60088-48	60943-48	61908-48	60090-48
60	12	60086-60	60088-60	60943-60	61908-60	60090-60
72	12	60086-72	60088-72	60943-72	61908-72	60090-72
84	12	60086-84	60088-84	60943-84	61908-84	60090-84
96	12	60086-96	60088-96	60943-96	61908-96	60090-96
108	12	60086-108	60088-108	60943-108	61908-108	60090-108
120	12	60086-120	60088-120	60943-120	61908-120	60090-120
132	12	60086-132	60088-132	60943-132	61908-132	60090-132
144	12	60086-144	60088-144	60943-144	61908-144	60090-144
168	12	60086-168	60088-168	60943-168	61908-168	60090-168
192	12	60086-192	60088-192	60943-192	61908-192	60090-192
216	12	60086-216	60088-216	60943-216	61908-216	60090-216
240	12	60086-240	60088-240	60943-240	61908-240	60090-240
264	12	60086-264	60088-264	60943-264	61908-264	60090-264

## Optical Specifications

TIA/EIA-568-C.3 | RDUP 7CFR.1755

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.25	1.0	200	500	220	na	300	550	33	na
OM2	3.25	1.0	700	500	850	na	750	550	150	na
OM3	3.0	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

	1310 nm	1550 nm
OS2	0.35	0.25

HCM reserves the right to revise any specifications.

# Loose Tube

## Outdoor (Outside Plant) Loose Tube

FIBER COUNT	# Fibers per Tube	Tube Layout	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
			in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
12	2	6xC5M	.493	12.5	600	2670	200	890	74.0	110.3
24	2	12XC5M	.700	17.8	600	2670	200	890	160.0	238.4
24	4	6xC5M	.493	12.5	600	2670	200	890	75.0	111.8
48	4	12XC5M	.700	17.8	600	2670	200	890	160.0	238.4
18	6	5XC5M	.463	11.7	600	2670	200	890	56.0	83.4
24	6	5XC5M	.463	11.7	600	2670	200	890	60.0	89.4
36	6	6xC5M	.493	12.5	600	2670	200	890	75.0	111.8
48	6	8XC5M	.561	14.2	600	2670	200	890	97.0	144.5
12	12	5XC5M	.463	11.7	600	2670	200	890	48.0	71.5
24	12	5XC5M	.463	11.7	600	2670	200	890	52.0	77.5
36	12	5XC5M	.463	11.7	600	2670	200	890	56.0	83.4
48	12	5XC5M	.463	11.7	600	2670	200	890	60.0	89.4
60	12	5XC5M	.463	11.7	600	2670	200	890	64.0	95.4
72	12	6xC5M	.493	12.5	600	2670	200	890	76.0	113.2
84	12	7XC5M	.552	14.0	600	2670	200	890	93.0	138.6
96	12	8XC5M	.581	14.8	600	2670	200	890	106.0	157.9
108	12	9XC5M	.620	15.7	600	2670	200	890	120.0	178.8
120	12	10XC5M	.649	16.5	600	2670	200	890	137.0	204.1
132	12	11XC5M	.683	17.3	600	2670	200	890	153.0	228.0
144	12	12XC5M	.720	18.3	600	2670	200	890	171.0	255.0
168	12	12X6XC5M	.737	18.7	600	2670	200	890	1430	213.1
192	12	12X6XC5M	.737	18.7	600	2670	200	890	151.0	225.0
216	12	12X6XC5M	.737	18.7	600	2670	200	890	159.0	236.9
240	12	13X7XC5M	.770	19.6	600	2670	200	890	175.0	260.8
264	12	14X8XC5M	.805	20.4	600	2670	200	890	196.0	292.0

## Mechanical Specifications

Bend radius

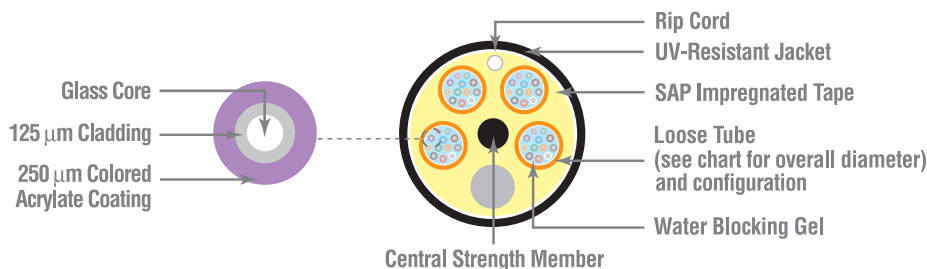
- No load = 10x cable overall diameter
- Load = 20x cable overall diameter

Loose Tube Diameter

	in.	mm
2-12 fibers per tube	.110	2.8



## Features



DIELECTRIC MATERIALS

Overall Jacket Medium density polyolefin



Outdoor

# Loose Tube

12 through 144 fibers

## Product Highlights

- RoHS compliant
- Rugged corrugated steel armor provides extra crush-resistance and rodent protection
- UV resistant jacket
- Gel filled loose tube provides protection against water penetration
- Dry, super absorbent polymers (SAPs) eliminate water migration in cable interstices
- Suitable for lashed aerial, duct, and underground conduit applications

## Options

- Other configurations and fiber counts available
- Dual jacket constructions available
- Low smoke zero halogen available
- OM4 cables with extended 10 gigabit distances are available



48-fibers (12 tubes of 4-fibers)



48-fibers (8 tubes of 6-fibers)



48-fibers (4 tubes of 12-fibers)

Diagram scale approx. 1:1

## Outdoor (Outside Plant) Armored

Fiber Count	# Fibers per Tube	62.5 UM OM1	50 UM OM2	50 UM OM3	50 UM OM4	8.3 UM OS2
24	2	60346-24	60932-24	60944-24	61909-24	60954-24
48	4	60345-48	60933-48	60945-48	61910-48	60356-48
48	6	60097-48	60934-48	60946-48	61911-48	60101-48
12	12	60098-12	60937-12	60949-12	61912-12	60102-12
24	12	60098-24	60937-24	60949-24	61912-24	60102-24
48	12	60098-48	60937-48	60949-48	61912-48	60102-48
144	12	60098-144	60937-144	60949-144	61912-144	60102-144

## Optical Specifications

### TIA/EIA-568-C.3

HCM Fiber Performance Parameters	Max Attenuation (dB/Km)		Min Bandwidth OFL MHz-Km		Min Bandwidth* MHz-Km		Gigabit Ethernet Support Distance (meters)		10 Gigabit Ethernet Support Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	3.25	1.0	200	500	220	na	300	550	33	na
OM2	3.25	1.0	700	500	850	na	750	550	150	na
OM3	3.0	1.0	1500	500	2000	na	1000	550	300	na
OM4	3.0	1.0	3500	500	4700	na	1100	550	550	na
OS2			1310 nm	1550 nm						
	0.35	0.25								

\*EMBc for OM2, OM3 & OM4 fibers. RML for OM1 fibers.

HCM reserves the right to revise any specifications.

# Armored Loose Tube

## Outdoor (Outside Plant) Armored

FIBER COUNT	#Fibers per Tube	Tube Layout	CABLE O.D.		MAXIMUM LOAD INSTALL		OPERATION		CABLE WEIGHT	
			in.	mm	lbs-f	N	lbs-f	N	lbs/1000 ft	kg/1000m
24	2	12xC5M	0.748	19.0	600	2700	200	890	228.0	339.7
48	4	12xC5M	0.748	19.0	600	2700	200	890	229.0	341.2
48	6	8XC5M	0.613	15.6	600	2700	200	890	147.0	219.0
12	12	5XC5M	0.508	13.1	600	2700	200	890	97.0	144.5
24	12	5XC5M	0.508	13.1	600	2700	200	890	101.0	150.0
48	12	5XC5M	0.508	13.1	600	2700	200	890	110.0	163.9
144	12	12xC5M	0.768	19.5	600	2700	200	890	241.0	359.1

## Mechanical Specifications

Bend radius

- No load = 10x cable overall diameter
- Load = 20x cable overall diameter

Loose Tube Diameter

in. mm  
2-12 fibers per tube .110 2.8

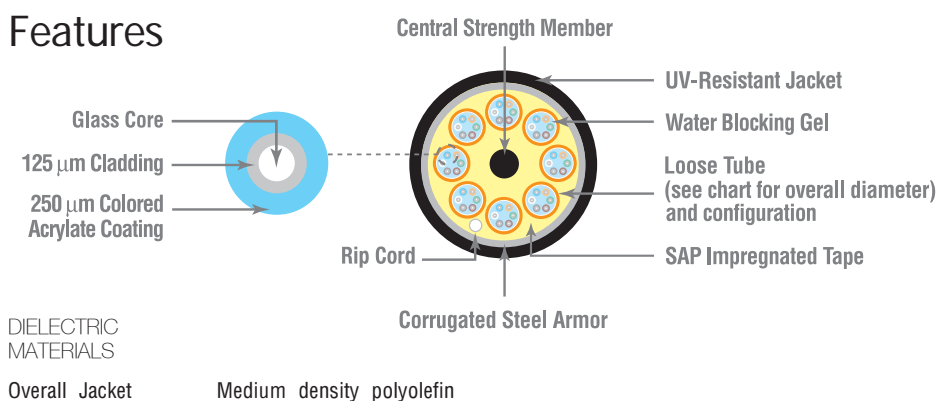


## 10 Gigabit Applications

IEEE standard	Wavelength	Transmission	Fiber type	Length (m)
10GBASE-SR	850nm	Serialized	OM1	33
			OM2	82
			OM3	300
			OM4	550
10GBASE-LR	1310nm	Serialized	SM	10,000 - 25,000
10GBASE-LRM	1310nm	Serialized	OM1	220
			OM3	260
10GBASE-ER	1550nm	Serialized	SM	40,000
10GBASE-LX4	1300nm	WDM	MM	240-300
			SM	10,000

For complete application list, refer to page 91.

## Features



Outdoor Armored

# Color Code

Chart

## High Pair Count Cables

When cables contain more than one pair group, different color binder tapes are used to differentiate the 25 pair groups.

## Primary Insulation (FEP) Color Coding

HCM uses a co-extruded FEP color stripe to mark FEP insulated conductors. This process provides several benefits:

- Marking durability is insured for the life of the cable
- Electrical characteristics of the marking stripe match the FEP insulation
- Avoids highly toxic ink systems that are required to bond to FEP

Pair #	Copper Conductor Color Combinations
1	White/Blue - Blue/White
2	White/Orange - Orange/White
3	White/Green - Green/White
4	White/Brown - Brown/White
5	White/Gray - Gray/White
6	Red/Blue - Blue/Red
7	Red/Orange - Orange/Red
8	Red/Green - Green/Red
9	Red/Brown - Brown/Red
10	Red/Gray - Gray/Red
11	Black/Blue - Blue/Black
12	Black/Orange - Orange/Black
13	Black/Green - Green/Black
14	Black/Brown - Brown/Black
15	Black/Gray - Gray/Black
16	Yellow/Blue - Blue/Yellow
17	Yellow/Orange - Orange/Yellow
18	Yellow/Green - Green/Yellow
19	Yellow/Brown - Brown/Yellow
20	Yellow/Gray - Gray/Yellow
21	Violet/Blue - Blue/Violet
22	Violet/Orange - Orange/Violet
23	Violet/Green - Green/Violet
24	Violet/Brown - Brown/Violet
25	Violet/Gray - Gray/Violet

Fiber #	Fiber Buffer Color
1	Blue
2	Orange
3	Green
4	Brown
5	Gray
6	White
7	Red
8	Black
9	Yellow
10	Violet
11	Pink
12	Aqua

### Note:

To differentiate bundles in cables with greater than 12 strands, polyester binders or buffer tubes (depending on the construction) are used. Those binders or buffer tubes will incorporate the same color code found in the chart above. The color code is part of the TIA-598 standard. For indoor, multiunit fiber optic cables, subunits will be numbered for identification.