

Sales Catalog of HNK Telecommunication Products

Fiber Optic Cable

Optical Characteristics

The difference between single mode and multimode fiber mainly lies in fiber core diameter, wavelength, light source and bandwidth. Single mode fiber typical core diameter is 9 μ m. And multimode fiber core diameter is 50 μ m and 62.5 μ m typically. Due to the large core size if multimode fiber, some low-cost light sources like LEDs and VCSELs that works at the 850nm and 1310nm wavelength are used in multimode fiber cables. While the single mode often uses a laser or laser diodes to produce light injected into the cable. And the commonly used single mode fiber wavelength is 1310nm and 1550nm.

Single mode was for high-speed long-distance transmission and multimode was used for lower speed short-distance applications. The smaller the core diameter, the higher the fiber's bandwidth and the lower the attenuation (loss in dB per kilometer). The fiber's attenuation and bandwidth are also dependent on wavelength. Multimode 50 μ m fiber had a lower cost and higher modal bandwidth than multimode 62.5 μ m core fiber. A higher bandwidth fiber carries more data. Multimode fiber bandwidth is limited by its light mode and the maximum bandwidth at present is 28000MHz*km of OM5 fiber. OM5 optical fiber can transmit multiple wavelengths using Short Wavelength Division Multiplexing (SWDM) technology, while maintaining OM4 backward compatibility. If the network's transmission distances dictate the use of single-mode optical fiber, consider specifying bend-insensitive, zero water peak (ZWP), full spectrum fibers. See table below.

Fiber Type	Max. Attenuation (dB/km)				Min. Overfill Launch Bandwidth (Mhz.km)		Min. Link Distance (m)		
							1000 BASE-SX	10G BASE-SR	40&100Gigabit Ethernet
	850nm	1300nm	1310nm	1550nm	850nm	1300nm	850nm	850nm	850nm
OM1 62.5/125 μ m	≤2.7	≤0.6	-	-	≥200	≥600	500	-	-
OM2 50/125 μ m	≤2.4	≤0.6	-	-	≥700	≥500	750	150	-
OM3 50/125 μ m	≤2.4	≤0.6	-	-	≥1500	≥500	1000	300	100
OM4 50/125 μ m	≤2.4	≤0.6	-	-	≥3500	≥500	1100	550	150
OM5 50/125 μ m	≤2.4	≤0.6	-	-	≥3500	≥500	1100	600	200
G652D 9/125 μ m	-	-	≤0.34	≤0.20	-	-	-	-	-
G655 9/125 μ m	-	-	-	≤0.22	-	-	-	-	-
G657A1 9/125 μ m	-	-	≤0.35	≤0.21	-	-	-	-	-
G657A2 9/125 μ m	-	-	≤0.35	≤0.21	-	-	-	-	-
G657B3 9/125 μ m	-	-	≤0.35	≤0.21	-	-	-	-	-

ANSI/TIA/EIA-598-B Standard Fiber Color Code

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

Fiber 13 and higher the color code is repeated with added black stripe or dash

Note: Fiber Tube color will be followed with same order.

Ordering Information

Part Number: OC-XX-A(B)CDCL

Ordering Guide

XX	A	B	C	D	CL
Cable Type Code	Jacket	Fiber/Per Loose Tube or Fiber/Per Sub Unit	Fiber Count	Fiber Type	Jacket Color(CL)
please see the reference below	1=PVC 2=LSZH 3=PE	2=2 Fibers/Loose Tube 12=12 Fibers/Loose Tube 2=2 Fibers/Sub Unit 12=12 Fibers/Sub Unit	No. Of Fiber 004F, 048F	OM1=62.5/125 OM1, OM2=50/125 OM2 OM3=50/125 OM3, OM4=50/125 OM4 OM5=50/125 OM5, G652D=9/125 G652D G655=9/125 G655, G657A1=9/125 G657A1 G657A2=9/125 G657A2, G657B3=9/125 G657B3	As noted in Color code chart

Color Code

BL-Blue	OR-Orange	GR-Green	BR-Brown
GY-Grey	WH-White	RE-Red	BK-Black
YE-Yellow	PU-Purple	PI-Pink	AQ-Aqua

Sales Catalog of HNK Telecommunication Products

Fiber Optic Cable

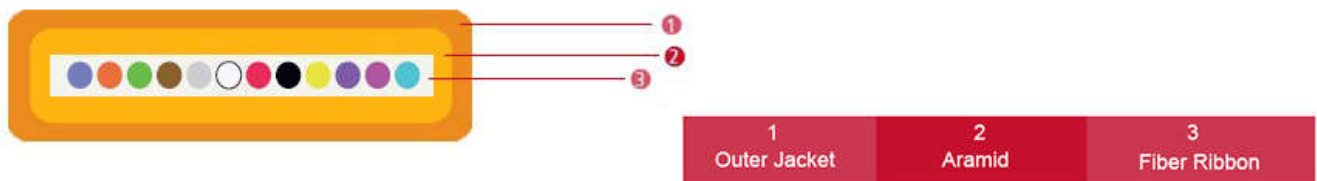
Flat Ribbon Fiber Optic Cable (GJFDBV)

Optical fiber ribbon cable is a plenum rated, single-mode or multimode 2-12 fiber ribbon, with a protective soft aramid strength member layer and outer jacket. Ideal for use in office LAN connections, patchcords and internal point-to-point links where frequent handling is likely (e.g. data cabinets, equipment rooms, user outlets).



A ribbon is comprised of 2-12 optical fibers coated with a dual acrylate coating system. The fibers are contained in a peel able UV curable matrix material, and the ribbon structure is designed to allow easy separation of the fibers from the matrix in preparation for splicing, or termination to an MTP connector. Aramid strength members are applied between the ribbon and the extruded cable jacket to provide tensile strength to crush resistance. The specification meets UL (OFNR and OFNP) flame retardant rating. Available in PVC, LSZH, Plenum outer sheath and optical testing follows ITU, IEC and TIA/EIA-FOTP.

Cable Cross Section



Complied with or Exceeds Standard

- IEC 60793-2-10 type A1b, TIA/EIA-492AAAA-A.
- IEC 60793-2-10 type A1a.2, ISO/IEC 11801 OM-3, TIA/EIA-492AAAC.
- IEC 60793-2-10 type A1a.3, ISO/IEC 11801 OM-4, TIA/EIA-492AAAD.
- IEC 60793-2-10 type A1a.4, ISO/IEC 11801 OM5, TIA/EIA-492AAAE.
- ITU-T Recommendation G.652.D/G.655/G.657.A1/G.657.A2/G.657.B2/G.657.B3
- IEC 60793-2-50 type B1.3/B6.a1/B6.a2/B6.b2/ B6.b3 Optical Fiber Specification.
- ANSI/TIA/EIA 568C.3
- IEC 60793-2-10 type A1a.1, TIA/EIA-492AAAB-A.
- IEEE 802.3z Gigabit Ethernet
- IEEE 802.3ae 10 Gigabit Ethernet
- IEEE 802.3ba 40&100 Gigabit Ethernet
- ROHS Compliant Directive 2011/65/EU(ROHS2.0)

Mechanical & Environmental Characteristics

Min. Tensile Load (Short Term)	200N	Min. Tensile Load (Long Term)	80N
Min. Crush Load (Short Term)	500N/100mm	Min. Crush Load (Long Term)	200N/100mm
Bend Radius-Dynamic (mm)	50	Bend Radius-Static (mm)	25
UL Fire Rated	OFNR		
Outer Diameter (mm)	3.5*2.5mm (2~4 F), 4.0*2.5mm (6 F), 4.5*2.5mm (8 F), 5.0*2.5mm (12 F)		
Outer Jacket Material	Standard: PVC Optional: LSZH, or other		
Operating Temperature	-20°C to +60°C	Storage Temperature	-20°C to +60°C

Ordering Sample

Part Number	Description
OC-GJFDBV-112OM3AQ	12 Cores Multimode OM3 GJFDBV Fiber Optic Cable, PVC Jacket, Aqua Color.