

Fibre Optical Patch Leads

KEY FEATURES

- The style is diverse, the interface is complete
- Low insertion loss and added loss
- Height of attenuation
- High back loss, small volume, light weight
- End-face geometry and quality superior than IEC and Telcordia standards.
- LSZH, OFNP, OFNR cable jacket.
- RoHS and REACH material



APPLICATIONS

- Optical fibre communication systems engineering
- Fibre optic data communication network
- Fibre CATV engineering
- Other optical technology tests

Connector Types

TYPE	REFERENCE	NOTE		
LC	IEC 61754-20	Single mode simplex	APC: Green connectors, Green boots UPC: Green connectors, White boots	
		Single mode duplex	APC: Green connectors, Green boots UPC: Blue connectors, White boots	
		Multimode simplex	UPC: Beige connectors, White boots	
		Multimode duplex	UPC: Beige connectors, White boots	
SC	IEC 61754-4	Single mode simplex	APC: Green connectors, Green boots UPC: Blue connectors, Blue boots	
		Single mode duplex	APC: Green connectors, Green boots UPC: Blue connectors, Blue boots	
		Multimode simplex	UPC: Beige connectors, Beige boots	
		Multimode duplex	UPC: Beige connectors, Beige boots	
FC	IEC 61754-13	Single mode simplex	APC: Green boots UPC: Black boots	
		Multimode simplex	UPC: Black boots	
ST	IEC 61754-2	Single mode simplex	APC: Black boots UPC: Black boots	
		Multimode simplex	UPC: Black boots	
MU	IEC 61754-6	Single mode simplex	APC: brown connectors, Green boots UPC: brown connectors, Blue boots	
		Multimode simplex	UPC: Beige connectors, Beige boots	

Patch Cord Versions

JUMPER TOLERANCE REQUIREMENT	
OVERALL LENGTH (L) (M)	LENGTH OF TOLERANCE (CM)
$0 < L \leq 20$	+10/-0
$20 < L \leq 40$	+15/-0
$L > 40$	+0.5%*L/-0

Optical Characteristics

ITEM	PARAMETER				REFERENCE
	Single mode		Multimode		
INSERTION LOSS	L≤30M	Typical value≤0.15dB; Maximum≤0.25	L≤30M	Typical value≤0.15dB; Maximum≤0.25	IEC 61300-3-34
	L>30M	<0.35dB/KMxL+0.25dB	L>30M	<0.35dB/KMxL+0.25dB	
RETURN LOSS	≥60dB (APC); ≥ 50dB (UPC)		≥30dB (UPC)		IEC 61300-3-6

End-Face Geometry

ITEM	UPC (Ref: IEC 61755-3-1)	APC (Ref: IEC 61755-3-2)
RADIUS OF CURVATURE (MM)	10 to 25	5 to 12
FIBRE HEIGHT (NM)	-100 to 100	-100 to 100
APEX OFFSET (UM)	0 to 50	0 to 50
APC ANGLE (°)	–	$8^\circ \pm 0.2^\circ$
KEY ERROR (°)	–	0.2° max

End-Face Quality (SM)

ZONE	RANGE (UM)	SCRATCHES	PITS	REFERENCE
A: Core	0 to 25	Not accepted	Not accepted	IEC 61300-3-35:2015
B: Cladding	25 to 115	2PCS, $\leq 1\mu m$ accepted	2PCS, $\leq 1\mu m$ accepted	
C: Adhesive	115 to 135	3PCS, $\leq 1\mu m$ accepted	3PCS, $\leq 1\mu m$ accepted	
D: Contact	135 to 250	3PCS, $\leq 1\mu m$ accepted	3PCS, $\leq 1\mu m$ accepted	

End-Face Quality (MM)

ZONE	RANGE (MM)	SCRATCHES	PITS	REFERENCE
A: Core	0 to 65	Not accepted	Not accepted	IEC 61300-3-35:2015
B: Cladding	65 to 115	2PCS,≤1um accepted	2PCS,≤1um accepted	
C: Adhesive	115 to 135	3PCS,≤1um accepted	3PCS,≤1um accepted	
D: Contact	135 to 250	3PCS,≤1um accepted	3PCS,≤1um accepted	

Mechanical Characteristics

TEST	CONDITIONS	REFERENCE
ENDURANCE	500 matings	IEC 61300-2-2
VIBRATION	Frequency: 10 to 55Hz, Amplitude: 0.75mm	IEC 61300-2-1
CABLE RETENTION	50N (patch cable); 5N (pigtail)	IEC 61300-2-4
STRENGTH OF COUPLING MECHANISM	40N for 2 to 3mm cable	IEC 61300-2-6
CABLE TORSION	15N for 2 to 3mm cable	IEC 61300-2-5
FALL	10 drops, 1m drop height	IEC 61300-2-12
STATIC LATERAL LOAD	1N for 1h (patch cable); 0.2N for 5min (pigtail)	IEC 61300-2-42
COLD	-25°C, 96h duration	IEC 61300-2-17
DRY HEAT	+70°C, 96h duration	IEC 61300-2-18
CHANGE OF TEMPERATURE	-25°C to +70°C, 12 cycles	IEC 61300-2-22
HUMIDITY	+40°C at 93%, 96h duration	IEC 61300-2-19

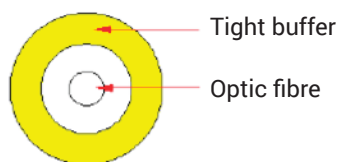
Cable Specification

Fibre characteristic

FIBRE TYPE	ATTENUATION				OFL BANDWIDTH	EFFECTIVE MODEL BANDWIDTH	10G ETHERNET SX	MIN BEND RADIUS
CONDITIONS	1310/1550NM		850/1300NM		850/1300NM	850NM	850NM	–
	Typical	Maximum	Typical	Maximum				
Unit	dB/km	dB/km	dB/km	dB/km	MHZ.km	MHZ.km	m	mm
G652D	0.36/0.22	0.4/0.3	–	–	–	–	–	16
G657A1	0.36/0.22	0.4/0.3	–	–	–	–	–	10
G657A2	0.36/0.22	0.4/0.3	–	–	–	–	–	7.5
62.5/125	–	–	3.0/1.0	3.5/1.5	≥600/200	–	–	30

FIBRE TYPE	ATTENUATION				OFL BANDWIDTH	EFFECTIVE MODEL BANDWIDTH	10G ETHERNET SX	MIN BEND RADIUS
CONDITIONS	1310/1550NM		850/1300NM		850/1300NM	850NM	850NM	-
	Typical	Maximum	Typical	Maximum				
Unit	dB/km	dB/km	dB/km	dB/km	MHZ.km	MHZ.km	m	mm
50/125	-	-	3.0/1.0	3.5/1.5	≥1000/500	-	-	30
OM3	-	-	3.0/1.0	3.5/1.5	≥1500/500	≥2000	≤300	30
OM4	-	-	3.0/1.0	3.5/1.5	≥3500/500	≥4700	≤550	30
BI-OM3	-	-	3.0/1.0	3.5/1.5	≥1500/500	≥2000	≤300	7.5
BI-OM4	-	-	3.0/1.0	3.5/1.5	≥3500/500	≥4700	≤550	7.5

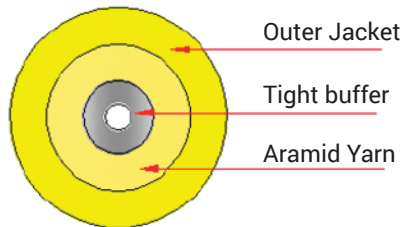
Cable structure (0.9)



Cable Characteristics

FIBRE TYPE	9/125, 50/125, 62.5/125, OM3, OM4, OM5	
CABLE TYPE	Φ0.9	
TIGHT BUFFER DIAMETER (MM)	0.85±0.05	
CABLE WEIGHT (KG/KM)	0.9	
OUTER JACKET MATERIAL	LSZH, PVC or customers requirement	
TENSILE STRENGTH (N)	Long Term	5
	Short Term	10
BENDING RADIUS (CM)	Dynamic	20×D (D: Cable Diameter)
	Static	10×D (D: Cable Diameter)
COLOUR	Customers requirement	
TEMPERATURE (°C)	Storage	-20 to +70
	Transporation	-20 to +70
	Operation	-20 to +70

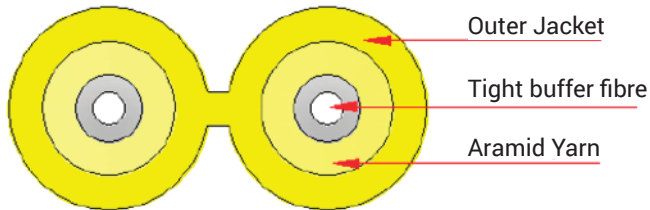
Cable Structure (Simplex)



Cable Characteristics

FIBRE TYPE		9/125, 50/125, 62.5/125, OM3, OM4, OM5			
CABLE TYPE		Φ3.0	Φ2.0	Φ1.8	Φ1.6
CABLE DIMENSION (MM)		2.9±0.1	1.9±0.1	1.75±0.1	1.6±0.1
CABLE WEIGHT (KG/KM)		6.5	3.2	3.1	3.0
TIGHT BUFFER DIAMETER (MM)		900±50			600±50
OUTER JACKET MATERIAL		LSZH, PVC or customers requirement			
TENSILE STRENGTH (N)	Long Term	18060	60	40	40
	Short Term	150	100	80	80
CRUSH RESISTANCE (N/100MM)	Long Term	100	100	100	100
	Short Term	500	500	500	500
BENDING RADIUS (CM)	Dynamic	20×D (D: Cable Diameter)			
	Static	10×D (D: Cable Diameter)			
COLOUR		Customers requirement			
STRENGTH MEMBERS		Aramid yarn			
TEMPERATURE (°C)	Storage	-20 to +70			
	Transportation	-20 to +70			
	Operation	-20 to +70			

Cable Structure (Duplex)



Cable Characteristics

FIBRE TYPE		9/125, 50/125, 62.5/125, OM3, OM4, OM5			
CABLE TYPE		Φ3.0	Φ2.0	Φ1.8	Φ1.6
CABLE DIMENSION (MM)		2.9±0.1/5.9±0.3	1.9±0.1/3.9±0.2	1.75±0.1/3.6±0.2	1.6±0.1/3.3±0.2
CABLE WEIGHT (KG/KM)		13.2	8.2	6.8	5.7
TIGHT BUFFER DIAMETER (MM)		900±50			600±50
OUTER JACKET MATERIAL		LSZH, PVC or customers requirement			
TENSILE STRENGTH (N)	Long Term	160	100	80	80
	Short Term	300	200	160	160
CRUSH RESISTANCE (N/100MM)	Long Term	100	100	100	100
	Short Term	500	500	500	500
BENDING RADIUS (CM)	Dynamic	20×D (D: Cable Diameter)			
	Static	10×D (D: Cable Diameter)			
COLOUR		Customers requirement			
STRENGTH MEMBERS		Aramid yarn			
TEMPERATURE (°C)	Storage	-20 to +70			
	Transportation	-20 to +70			
	Operation	-20 to +70			