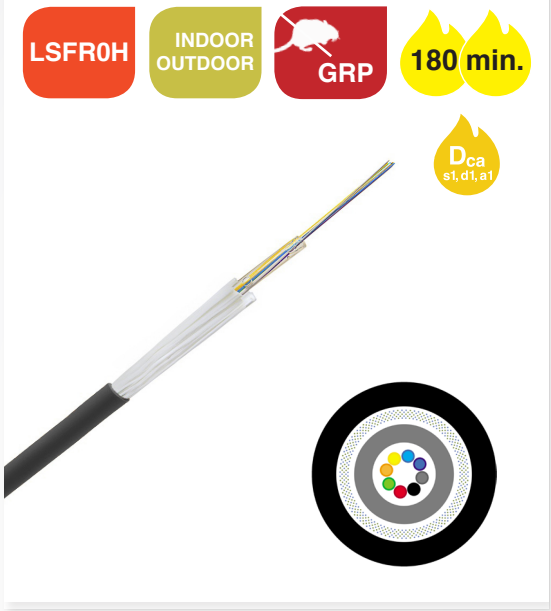
Fire resistant universal central loose tube cables, 180min. at 750°C

CLTFRxxyyy - KELINE SYSTEM - Optical Fibre Cable X x Y - Fire Resistant to IEC 60331-25 (180min./750°C) - LSFROH - Rodent Protected



features

- fire resistant accoring to IEC 60331-11:01, IEC 60331-25:01, 180min. at 750°C
- fully dielectric construction, halogen-free and fire retardant sheath
- tensile elements made of glass yarns
- primary protection of 250 µm
- central loose tube filled with water blocking gel
- suitable for outdoor as well as for indoor environment
- resistant to moisture, water and UV radiation
- partial rodent protection (glass rodent protection - GRP)
- ideal for horizontal campus duct installations using blowing and pulling technique

4 fibers

OM1 multimode · OM2 multimode · OM3 multimode · OM4 multimode · Dca s1, d1, a1 · OS2 singlemode

P/N: **CLTFR04OM1**	OM1 multimode 62,5/125 µm
P/N: **CLTFR04OM2**	OM2 multimode 50/125 µm
P/N: **CLTFR04OM3**	OM3 multimode 50/125 µm
P/N: **CLTFR04OM4**	OM4 multimode 50/125 µm
P/N: **CLTFR04OS2**	OS2 singlemode 9/125 µm (ITU-T G.652.D)

8 fibers

OM1 multimode · OM2 multimode · OM3 multimode · OM4 multimode · Dca s1, d1, a1 · OS2 singlemode

P/N: **CLTFR08OM1**	OM1 multimode 62,5/125 µm
P/N: **CLTFR08OM2**	OM2 multimode 50/125 µm
P/N: **CLTFR08OM3**	OM3 multimode 50/125 µm
P/N: **CLTFR08OM4**	OM4 multimode 50/125 µm
P/N: **CLTFR08OS2**	OS2 singlemode 9/125 µm (ITU-T G.652.D)

12 fibers

OM1 multimode · OM2 multimode · OM3 multimode · OM4 multimode · Dca s1, d1, a1 · OS2 singlemode

P/N: **CLTFR12OM1**	OM1 multimode 62,5/125 µm
P/N: **CLTFR12OM2**	OM2 multimode 50/125 µm
P/N: **CLTFR12OM3**	OM3 multimode 50/125 µm
P/N: **CLTFR12OM4**	OM4 multimode 50/125 µm
P/N: **CLTFR12OS2**	OS2 singlemode 9/125 µm (ITU-T G.652.D)

24 fibers

OM1 multimode · OM2 multimode · OM3 multimode · OM4 multimode · Dca s2, d1, a1 · OS2 singlemode

P/N: **CLTFR24OM1**	OM1 multimode 62,5/125 µm
P/N: **CLTFR24OM2**	OM2 multimode 50/125 µm
P/N: **CLTFR24OM3**	OM3 multimode 50/125 µm
P/N: **CLTFR24OM4**	OM4 multimode 50/125 µm
P/N: **CLTFR24OS2**	OS2 singlemode 9/125 µm (ITU-T G.652.D)

reaction to fire and flame resistance

Fire safety	fire resistance	IEC 60331-25 (180min. at 750°C)			
	flame retardancy	IEC 60332-3-10, IEC 60332-3-22			
	smoke performance	IEC 61034-1, IEC 61034-2			
	halogen acidity	EN 50267-1, EN 50267-2-2, EN 50267-2-3			
Reaction to fire	number of fibers	**4**	**8**	**12**	**24**
		D_{ca} - s1, d1, a1	D_{ca} - s1, d1, a1	D_{ca} - s1, d1, a1	D_{ca} - s2, d1, a1

mechanical properties

number of fibres		**4**	**8**	**12**	**24**
Nominal cable diameter		7 mm	7 mm	7 mm	7,8 mm
Sheath		1,3 mm	1,3 mm	1,3 mm	1,3 mm
Loose tube diameter		2,3 mm	2,3 mm	2,3 mm	3,0 mm
Cable weight netto		58 kg/km	58 kg/km	58 kg/km	68 kg/km
Min. bending radius	installation	140 mm	140 mm	140 mm	156 mm
	operation	70 mm	70 mm	70 mm	78 mm
Max. tensile strength	installation	2000 N	2000 N	2000 N	2000 N
Impact resistance		10 Nm			
Crush resistance		2000 N / 10 cm			
Temperature range	installation	-5°C to 50°C			
	operation	-20°C to 70°C			

fibre propertie

Cabled optical fibre (ISO/IEC 11801)	**OM1**	**OM2**	**OM3**	**OM4**	**OS2**
IEC 60793-2	10-A1b	10-A1a.1	10-A1a.2	10-A1a.3	50-B1.3
ITU-T	-	G.651.1	-	-	G.652.D
Attenuation @ 850 / 1300 nm (dB/km)	≤ 3,2 / ≤ 0,8	≤ 2,8 / ≤ 0,8	≤ 2,8 / ≤ 0,8	≤ 2,8 / ≤ 0,8	-
Bandwidth @ 850 / 1300 nm (MHz.km)	≥ 200 / ≥ 500	≥ 500 / ≥ 800	≥ 1500 / ≥ 500	≥ 3500 / ≥ 500	-
EMBc @ 850 (MHz.km)	-	-	≥ 2000	≥ 4700	-
Attenuation @ 1310 / 1550 nm (dB/km)	-	-	-	-	≤ 0,38 / ≤ 0,25
Dispersion @ 1310 / 1550 nm (ps/nm.km)	-	-	-	-	≤ 3 / ≤ 18
Numerical Aperture	0,275 ± 0,015	0,200 ± 0,015	0,200 ± 0,015	0,200 ± 0,015	-
Refractive index @ 850 / 1300 nm	1,495 / 1,490	1,482 / 1,477	1,482 / 1,477	1,482 / 1,477	-
Refractive index @ 1310 / 1550 nm	-	-	-	-	1,470
Core diameter (μm)	62,5 ± 2	50 ± 2	50 ± 2	50 ± 2	-
MFD (μm) 1310 nm	-	-	-	-	9,2 ± 0,4
Core / cladding concertricity error (μm)	≤ 1	≤ 1	≤ 1	≤ 1	≤ 0,5
Overall coating diameter (μm)	125 ± 1	125 ± 1	125 ± 1	125 ± 1	125 ± 0,7