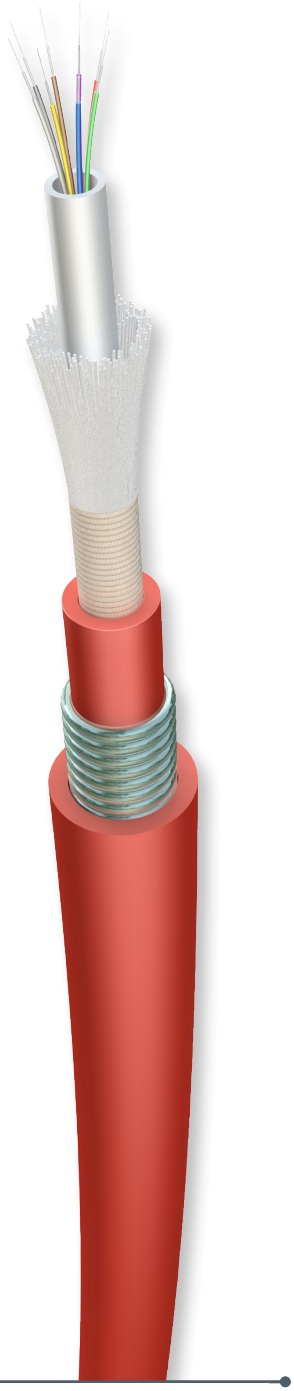
DataGuard® FRC

CST Armoured Fire Survival Fibre Optic Cable

Application

A dual Low Smoke Zero Halogen jacketed, steel armoured fibre optic cable with enhanced fire survival properties according to BS8434-2 for installation in the most extreme environments.



Cable Design

Fibre	250 µ diameter colour coded acc. to EIA-598
Loose tube	Thermoplastic material PBT, jelly filled. White
Strength elements	Glass yarns
Wrapping	Fire resistant glass tape
Inner jacket	LSZH thermoplastic compound, Red
Armour	Corrugated steel tape
Outer jacket	LSZH thermoplastic compound, Red

Characteristics

- Fire resistant
- Fire retardant
- Flame retardant
- Water blocking construction
- Rodent resistant

Physical Data

Static/working temperature		-20/+80°C
Flex/installation temperature		-5/+65°C
Min. bending radius (static)	IEC 60794-1-21-E11	10 x overall diameter
Min. bending radius (dynamic)	IEC 60794-1-21-E11	20 x overall diameter
Crush	IEC 60794-1-21-E3	2500 N/100 mm for 15 min.

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Fire Performance

Flame retardant	IEC 60332-1-2
Fire retardant	IEC 60332-3-22 Cat. A
Fire resistant	IEC 60331-25 (no fibre break)
Fire resistant	BS 8434-2 (no fibre break)
Acid gas emission	IEC 60754-2 (pH >=4.3, Conductivity ≤ 10 µS/mm)
Smoke density	IEC 61034-2 (Light transmittance ≥ 60%)

Specification

Part Number	N° of Fibres	Tube Diameter mm	Cable Diameter (±10%) mm	Net Weight (±10%) kg/km	Tension load (0,3‰) N
FRC-04*ST04	4	2,7	11,3	160	1000
FRC-08*ST04	8	2,7	11,3	160	1000
FRC-12*ST04	12	2,7	11,3	160	1000
FRC-16*ST04	16	3,5	12,3	180	1000
FRC-24*ST04	24	3,5	12,3	180	1000

* denotes fibre type required : 01=62.5/125 OM1 | 02 = 50/125 0M2 | 03 = 50/125 0M3 | 04 = 50/125 0M4 |08 = 9/125

e.g. 24 core single mode 9/125 = FRC-2408ST04

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Single Mode Fibre Characteristics *ITU-T G652D*

Nominal MFD range at 1310 nm		8,6 - 9,4	µm
Nominal MFD range at 1550 nm		9,6 - 10,6	µm
Cladding diameter		125±0,7	µm
Coating diameter		245±10	µm
Core/cladding concentricity error		≤ 0,50	µm
Cladding non-circularity		≤ 0,70	%
Attenuation	1310 nm	≤ 0,36	dB/km
Attenuation	1383 nm	≤ 0,36	dB/km
Attenuation	1550 nm	≤ 0,23	dB/km
Attenuation	1285÷1330 nm	≤ 0,40	dB/km
Attenuation	1530÷1565 nm	≤ 0,25	dB/km
Attenuation	1565÷1625 nm	≤ 0,27	dB/km
Chromatic Dispersion coefficient	1285÷1330 nm	≤ 3,0	ps/nm • km average
Chromatic Dispersion coefficient	1285÷1330 nm	≤ 3,5	ps/nm • km maximum
Chromatic Dispersion coefficient	1550 nm	≤ 18	ps/nm • km
Chromatic Dispersion coefficient	1625 nm	≤ 22	ps/nm • km
Zero chromatic dispersion wavelength		1302 ≤ ≤ 1322	nm
Cut-off wavelength		≤ 1260	nm
Individual fibre polarization mode dispersion (PMD)		≤ 0,20	

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Multi Mode Fibre Characteristics

Parameter	50/125 µm			62,5/125 µm	Units
ISO/IEC 11801 Performance Category	OM2	OM3	OM4	OM1	
Attenuation @ 850 nm	≤ 2,8			< 3,2	dB/km
Attenuation @ 1300 nm	≤ 0,9			< 1,0	dB/km
Bandwidth @ 850 nm	≥ 500	≥ 1500	≥ 3500	≥ 200	MHz • km
Bandwidth @ 1300 nm	≥ 500	≥ 500	≥ 500	≥ 500	MHz • km
Effective Model Bandwidth @ 850 nm	N/A	≥ 2000	≥ 4700	N/A	MHz • km
Supported Ethernet Link Lengths (max.)					
1 GbE @ 850 nm (1000BASE-SX)	550	970	1040	220	m
1 GbE @ 1300 nm (1000BASE-LX)	950	550	600	550	m
10 GbE @ 850 nm (10GBASE-SR)	82	300	550	33	m
10 GbE @ 1300 nm (10GBASE-LX4)	450	300	300	300	m
40/100 GbE @ 850 nm (40/100 GBASE-SR4/10)	N/A	100	150	N/A	m
Numerical Aperture	0,20 ± 0,015			0,275 ± 0,015	
Core Diameter	50 ± 2,5			62,5 ± 3	µm
Cladding Diameter	125 ± 1			125 ± 2	µm
Core Non-Circularity	≤ 4			≤ 5	%
Cladding Non-Circularity	≤ 0,7			≤ 1	%
Core/Cladding Offset	≤ 1,5			≤ 1,5	µm
Coating Diameter (Un-dyed)	245 ± 10			245 ± 10	µm
Proof-Test Level	0,7			0,7	GN/m²
Induced Macrobend Attenuation					
100 turns on 37,5 mm radius	0,5 / 0,5			0,5 / 0,5	dB (max.) 850/1300 nm
2 turns on 15 mm radius	0,1 / 0,3			0,5 / 0,5	
2 turns on 7,5 mm radius	0,2 / 0,5			0,5 / 0,5	