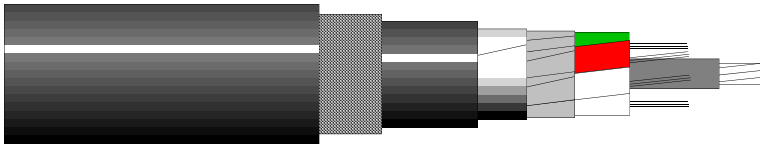
Fire resistant QFCI-I/O/RM-JM/- F1

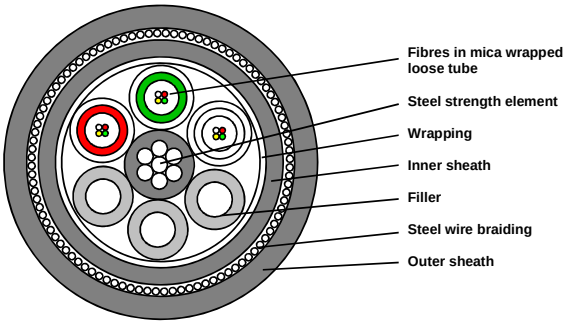


Indoor and outdoor.
Fire resistant
Flame retardant halogen-free
Loose tube

QFCI-I/O/RM-JM/-

NEK 606 Code F1

Optical cable for indoor and outdoor use in vital communication and emergency systems that need to be operational during fire. The cable has a patented design that ensures operation for more than 3 hours in fires up to 1000ºC. The cable is halogen free and flame retardant to protect against secondary damage to electronic equipment during and after fire. Outer sheath is made from black UV-stabilized and weather resistant material and may be exposed for shorter periods to fluids such as diesel and mineral oils. The resistance to these fluids is according to IEC60811-2-1. The cable is reinforced with a steel wire braiding. The fibres are protected in jelly filled loose tubes stranded around a central strength member to ensure optimum performance and long life. Each fibre and loose tube is colour coded for easy identification during splicing and termination. The outer sheath is marked to show fibre type and cable type.



Weight and dimensions

Number of fibres	Number of fibres in each tube	Number of tubes + fillers	Loose tube diameter (mm)	Outer diameter (mm)	Weight (kg/km)	Heat release (MJ/km)
4	2	2+4	2.2	13.5	260	1390
8	4	2+4	2.2	13.5	260	1381
12	4	3+3	2.2	13.5	260	1324
24	4	6+0	2.2	13.5	260	1138
48	8	6+0	2.2	13.5	260	1138

Other fibre counts are available on request.

Cable properties

Tensile strength (IEC 60794-1-2E1)		**Chemical reistance**	
Max tensile load during installation	1500 N	Mineral oils IRM 902 (IEC60811-2-1)	- 7 days/23°C - 4 hours/70°C
Max tensile load during operation	500 N	Diesel - IRM 903 (IEC60811-2-1)	- 7 days/23°C - 4 hours/70°C
Crush (IEC 60794-1-2E3)	3000 N/10cm	**Fire and smoke classifications**	
Impact (IEC 60794-1-2E4)	30J	IEC 60331-25 (750°C, 90 minutes)	<1.0 dB excess loss
Torsion (IEC 60794-1-2E7)	±1 turn/1m	Upgraded IEC 60331-25 (1000°C, 3 hours)	<1.5 dB excess loss
Cable bending		BP GS 112-2 Clause7.1	
Minimum bending diameter	250 mm	IEC 61034	
Cable bend (IEC 60794-1-2E11)	<0.1dB/ ±5 turn	IEC 60332-3-22 (Cat. A)	
		IEC 60332-3-24 (Cat. C)	
Temperature window		IEC 60754-1	
Operation	-40°C to +70°C	IEC 60754-2	
Installation	-10°C to +70°C		
Storage	-40°C to +70°C		

Fire resistant QFCI-I/O/RM-JM/- F1

Ordering information

9/125 fibre(SMF652D), Black*		50/125 fibre(MMF50HiCap), Black*		62.5/125 fibre(MMF62HiCap), Black*	
Part no.	Cable code	Part no.	Cable code	Part no.	Cable code
				694124	G4-62.5/125 QFCI-I/O/RM-JM/-
				694144	G8-62.5/125 QFCI-I/O/RM-JM/-
694150	G12-9/125 QFCI-I/O/RM-JM/-	694152	G12-50/125 QFCI-I/O/RM-JM/-	694154	G12-62.5/125 QFCI-I/O/RM-JM/-
694180	G24-9/125 QFCI-I/O/RM-JM/-	694182	G24-50/125 QFCI-I/O/RM-JM/-	694184	G24-62.5/125 QFCI-I/O/RM-JM/-
694139	G48-9/125 QFCI-I/O/RM-JM/-	694169	G48-50/125 QFCI-I/O/RM-JM/-	694189	G48-62.5/125 QFCI-I/O/RM-JM/-

*)-Standard colour of outer sheath

We reserve the right to alter this specification without notice.

Optical fibres

Fibre type	**9/125**	**HiCap 50/125**	**MaxCap 50/125**	**HiCap 62.5/125**
Reference(DNK)	**SMF652D**	**MMF50HiCap**	**MMF50MaxCap**	**MMF62HiCap**
IEC60793-2-50 category	B.1.3	A1a	A1a.2	A1b
IEC11801 classification	OS1 and OS2	OM2	OM3	OM1
ITU-T type	G652.D	G651	G651	-
Gigabit Ethernet maximum distances				
SX-serial(850 nm)		750 m	900 m	500 m
LX-serial(1310 nm)	5000m	2000 m	550 m	1000 m
10Gigabit Ethernet maximum distances				
SX-serial(850 nm)		110 m	300 m	65 m
LX-serial(1310 nm)	10000 m			
Core diameter	See mode field diameter	50 ± 2.5 µm	50 ± 2.5 µm	62.5 ± 2.5 µm
Mode field diameter	1310 nm 9.2 ± 0.4 µm 1550 nm 10.3 ± 0.5 µm			
Cladding diam. loose tube	125 ± 0.7 µm	125 ± 2.0 µm	125 ± 2.0 µm	125 ± 2.0 µm
Cladding diam. tight buffer	125 ± 0.7 µm	125 ± 2.0 µm	125 ± 2.0 µm	125 ± 2.0 µm
Primary coating diameter (nominal)	242 ± 7 µm	250 µm	250 µm	250 µm
Attenuation (Typical values)				
850 nm		≤ 2.5 dB/km	≤ 2.5 dB/km	≤ 3.0 dB/km
1300 nm		≤ 0.7 dB/km	≤ 0.7 dB/km	≤ 0.7 dB/km
1310 nm	0.33 – 0.37 dB/km			
1550 nm	0.19 – 0.23dB/km			
Attenuation (Maximum values)				
850 nm		≤ 2.7 dB/km	≤ 2.7 dB/km	≤ 3.2 dB/km
1300 nm		≤ 0.8 dB/km	≤ 0.9 dB/km	≤ 1.0 dB/km
1310 nm	≤ 0.40 dB/km			
1550 nm	≤ 0.25 dB/km			
Bandwidth(OFL*)				
850 nm		>600 MHz·km	>1500 MHz·km	>200 MHz·km
1300 nm		>1200 MHz·km	>500 MHz·km	>600 MHz·km
Chromatic Dispersion				
1285-1330 nm	≤ 3 ps/nm·km			
1550 nm	≤ 18 ps/nm·km			
Polarization Mode Disp.				
PMD Link Design Value **	≤ 0.06 √km			
Max. Individual Fibre	≤ 0.1 √km			
Numerical aperture	0.13 (nominal)	0.200 ± 0.015	0.200 ± 0.015	0.275 ± 0.015
Minimum permanent bending diameter	50 mm	50 mm	50 mm	50 mm

* Over Filled Launch methode(OFL). Modal Bandwidth in accordance with IEC60793-1-41. Rev: 09/07

** According to IEC 60794-3, Ed.3 (Q=0.01%)

Other fibre types and qualities are available on request.