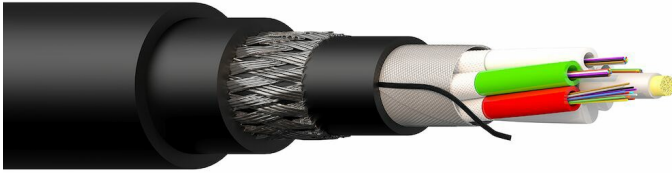


FIRE RESISTANT QFCI MUD

Fire resistant QFCI F103



GENERAL INFO

Optical cable for indoor and outdoor use in vital communication and emergency systems that need to be operational during fire. The cable has a design that ensures operation for more than 3 hours in fires up to 1000°C. The unique design features eXtended Fire Resistant properties (XFR) which secure operation during fire test with bending and impact from hammer shock. In addition also with water spray and water jet (BS 8491) during and directly after the fire. 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 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 IEC60811-404. 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. An additional outer sheath is added for improved oil- and MUD protection. The outer sheath is marked to show such as metermarking, fibre type and cable type.

CERTIFICATIONS AND DESIGN STANDARDS

RoHS

EN 50173-1

ISO/IEC 11801

IEC 60794-1

IEC 60794-2

NEK TS 606:2016

IEC 60331-25, 750°C, 90 min.

IEC 60331-25, 1000°C, 180 min.

IEC 60331-2, 830°C, 90 min.

IEC 60331-2, 830°C, 90 min.+ water spray

IEC 60331-1, 830°C, 120 min. + water jet

Generic cabling systems

Generic cabling system

Optical fibre cables, test methods

Optical fibre cables, indoor cables specifications

Cables for offshore installations

Fire resistance (750°C / 90 minutes)

Fire resistance, upgraded IEC 60331-25 (1000°C, 180 minutes)

Fire resistance, 830°C, 90 min. incl. hammer shock

Fire resistance, 830°C, 90 min. incl. hammer shock, followed by water spray acc. to EN 50200 Annex E

Fire resistance, 830°C, 120 min. incl. hammer shock, followed by water Jet acc. to BS 8491:2008

CABLE CONSTRUCTION

| | |
|-------------------------|---------------------|
| Armouring/reinforcement | Braiding |
| Armouring material | Steel, galvanized |
| Material outer sheath | Polyurethane (PUR) |
| Type of tube | Stranded loose tube |
| Cable shape | Round |
| With rodent protection | Yes |

APPLICATION PROPERTIES

| | |
|---|--------|
| With strain relief | Yes |
| Oil resistant (acc. IEC 60811-404) | Yes |
| Mud resistant | Yes |
| Min. outer temperature, fixed installation [°C] | -40 |
| Max. outer temperature, fixed installation [°C] | 70 |
| UV resistant | Yes |
| With rodent protection | Yes |
| Outdoor installation | Yes |
| Min. outer temperature during installation [°C] | -10 |
| Max. outer temperature during installation [°C] | 70 |
| Kink, no kink at loop diameter (acc. IEC 60794-1-21 E10) [mm] | 250 |
| Duct suitable | Yes |
| Bending radius (rule) | 15 x D |

FIRE PROPERTIES

| | |
|---------------------------------------|--------------------------------------|
| Circuit integrity | E30 - E90 |
| Insulation integrity | FE 180 |
| Insulation integrity (acc. IEC 60331) | Yes |
| Flame retardant | In accordance with EN/IEC 60332-3-22 |
| Low smoke (acc. IEC 61034-2) | Yes |

PRODUCT ORDER DATA

| Product name | Colour outer sheath | SAP | EL no. | Packaging type |
|--|---------------------|----------|----------|----------------|
| G4-9/125 QFCI + MUD-RESISTANT SHEATH GY | Grey | 20193428 | 20193428 | Drum |
| G4-9/125 QFCI + MUD-RESISTANT SHEATH OG | Orange | 20194019 | 20194019 | Drum |
| G8-9/125 QFCI + MUD-RESISTANT SHEATH GY | Grey | 20193423 | 20193423 | Drum |
| G8-9/125 QFCI + MUD-RESISTANT SHEATH OG | Orange | 20301213 | 20301213 | Drum |
| G12-9/125 QFCI + MUD-RESISTANT SHEATH GY | Grey | 20193424 | 20193424 | Drum |
| G12-9/125 QFCI + MUD-RESISTANT SHEATH OG | Orange | 20194021 | 20194021 | Drum |
| G24-9/125 QFCI + MUD-RESISTANT SHEATH GY | Grey | 20193425 | 20193425 | Drum |
| G24-9/125 QFCI + MUD-RESISTANT SHEATH OG | Orange | 20194023 | 20194023 | Drum |
| G48-9/125 QFCI + MUD-RESISTANT SHEATH GY | Grey | 20193426 | 20193426 | Drum |
| G48-9/125 QFCI + MUD-RESISTANT SHEATH OG | Orange | 20203842 | 20203842 | Drum |
| G72-9/125 QFCI + MUD-RESISTANT SHEATH GY | Grey | 20193427 | 20193427 | Drum |
| G4-50/125 QFCI + MUD-RESISTANT SHEATH GY | Grey | 20193429 | 20193429 | Drum |
| G4-50/125 QFCI + MUD-RESISTANT SHEATH OG | Orange | 20194020 | 20194020 | Drum |
| G8-50/125 QFCI + MUD-RESISTANT SHEATH GY | Grey | 20193430 | 20193430 | Drum |
| G12-50/125 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20193431 | 20193431 | Drum |
| G12-50/125 QFCI+MUD-RESISTANT SHEATH OG | Orange | 20203841 | 20203841 | Drum |
| G24-50/125 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20193432 | 20193432 | Drum |
| G48-50/125 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20193433 | 20193433 | Drum |
| G72-50/125 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20193434 | 20193434 | Drum |
| G4-50/OM3 QFCI + MUD-RESISTANT SHEATH GY | Grey | 20193435 | 20193435 | Drum |
| G8-50/OM3 QFCI + MUD-RESISTANT SHEATH GY | Grey | 20193436 | 20193436 | Drum |
| G12-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20193437 | 20193437 | Drum |
| G24-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20193438 | 20193438 | Drum |
| G48-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20193439 | 20193439 | Drum |
| G72-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20193440 | 20193440 | Drum |
| G24-50/OM4 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20295186 | 20295186 | Drum |
| G48-50/OM4 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20193441 | 20193441 | Drum |
| G4-62.5/125 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20193442 | 20193442 | Drum |
| G4-62.5/125 QFCI+MUD-RESISTANT SHEATH OG | Orange | 20194024 | 20194024 | Drum |
| G8-62.5/125 QFCI+MUD-RESISTANT SHEATH GY | Grey | 20193443 | 20193443 | Drum |
| G8-62.5/125 QFCI+MUD-RESISTANT SHEATH OG | Orange | 20331322 | 20331322 | Drum |
| G12-62.5/125 QFCI+MUD-RESIST. SHEATH GY | Grey | 20193444 | 20193444 | Drum |
| G12-62.5/125 QFCI+MUD-RESIST. SHEATH OG | Orange | 20194022 | 20194022 | Drum |
| G24-62.5/125 QFCI+MUD-RESIST. SHEATH GY | Grey | 20193445 | 20193445 | Drum |
| G48-62.5/125 QFCI+MUD-RESIST. SHEATH GY | Grey | 20193446 | 20193446 | Drum |
| G72-62.5/125 QFCI+MUD-RESIST. SHEATH GY | Grey | 20193447 | 20193447 | Drum |

CABLE PROPERTIES 01(PER ITEM)

| Product name | Nominal outer diameter [mm] | Max. tensile strength during installation [kN] | Cable weight [kg/km] | SAP |
|--|-----------------------------|--|----------------------|----------|
| G4-9/125 QFCI + MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193428 |
| G4-9/125 QFCI + MUD-RESISTANT SHEATH OG | 15.5 | 1.5 | 290 | 20194019 |
| G8-9/125 QFCI + MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193423 |
| G8-9/125 QFCI + MUD-RESISTANT SHEATH OG | 15.5 | 1.5 | 290 | 20301213 |
| G12-9/125 QFCI + MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193424 |
| G12-9/125 QFCI + MUD-RESISTANT SHEATH OG | 15.5 | 1.5 | 290 | 20194021 |
| G24-9/125 QFCI + MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193425 |
| G24-9/125 QFCI + MUD-RESISTANT SHEATH OG | 15.5 | 1.5 | 290 | 20194023 |
| G48-9/125 QFCI + MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193426 |
| G48-9/125 QFCI + MUD-RESISTANT SHEATH OG | 15.5 | 1.5 | 290 | 20203842 |
| G72-9/125 QFCI + MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193427 |
| G4-50/125 QFCI + MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193429 |
| G4-50/125 QFCI + MUD-RESISTANT SHEATH OG | 15.5 | 1.5 | 290 | 20194020 |
| G8-50/125 QFCI + MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193430 |
| G12-50/125 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193431 |
| G12-50/125 QFCI+MUD-RESISTANT SHEATH OG | 15.5 | 1.5 | 290 | 20203841 |
| G24-50/125 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193432 |
| G48-50/125 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193433 |
| G72-50/125 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193434 |
| G4-50/OM3 QFCI + MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193435 |
| G8-50/OM3 QFCI + MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193436 |
| G12-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193437 |
| G24-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193438 |
| G48-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193439 |
| G72-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193440 |
| G24-50/OM4 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20295186 |
| G48-50/OM4 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193441 |
| G4-62.5/125 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193442 |
| G4-62.5/125 QFCI+MUD-RESISTANT SHEATH OG | 15.5 | 1.5 | 290 | 20194024 |
| G8-62.5/125 QFCI+MUD-RESISTANT SHEATH GY | 15.5 | 1.5 | 290 | 20193443 |
| G8-62.5/125 QFCI+MUD-RESISTANT SHEATH OG | 15.5 | 1.5 | 290 | 20331322 |
| G12-62.5/125 QFCI+MUD-RESIST. SHEATH GY | 15.5 | 1.5 | 290 | 20193444 |
| G12-62.5/125 QFCI+MUD-RESIST. SHEATH OG | 15.5 | 1.5 | 290 | 20194022 |
| G24-62.5/125 QFCI+MUD-RESIST. SHEATH GY | 15.5 | 1.5 | 290 | 20193445 |
| G48-62.5/125 QFCI+MUD-RESIST. SHEATH GY | 15.5 | 1.5 | 290 | 20193446 |
| G72-62.5/125 QFCI+MUD-RESIST. SHEATH GY | 15.5 | 1.5 | 290 | 20193447 |

CABLE PROPERTIES 02(PER ITEM)

| Product name | Fibre type | Number of fibres | Number of fibres per tube | Category (fibre) | Fibre datasheet | SAP |
|--|---------------------|------------------|---------------------------|------------------|-----------------|----------|
| G4-9/125 QFCI + MUD-RESISTANT SHEATH GY | Single mode 9/125 | 4 | 4 | OS2 | C03 | 20193428 |
| G4-9/125 QFCI + MUD-RESISTANT SHEATH OG | Single mode 9/125 | 4 | 4 | OS2 | C03 | 20194019 |
| G8-9/125 QFCI + MUD-RESISTANT SHEATH GY | Single mode 9/125 | 8 | 8 | OS2 | C03 | 20193423 |
| G8-9/125 QFCI + MUD-RESISTANT SHEATH OG | Single mode 9/125 | 8 | 8 | OS2 | C03 | 20301213 |
| G12-9/125 QFCI + MUD-RESISTANT SHEATH GY | Single mode 9/125 | 12 | 12 | OS2 | C03 | 20193424 |
| G12-9/125 QFCI + MUD-RESISTANT SHEATH OG | Single mode 9/125 | 12 | 12 | OS2 | C03 | 20194021 |
| G24-9/125 QFCI + MUD-RESISTANT SHEATH GY | Single mode 9/125 | 24 | 12 | OS2 | C03 | 20193425 |
| G24-9/125 QFCI + MUD-RESISTANT SHEATH OG | Single mode 9/125 | 24 | 12 | OS2 | C03 | 20194023 |
| G48-9/125 QFCI + MUD-RESISTANT SHEATH GY | Single mode 9/125 | 48 | 12 | OS2 | C03 | 20193426 |
| G48-9/125 QFCI + MUD-RESISTANT SHEATH OG | Single mode 9/125 | 48 | 12 | OS2 | C03 | 20203842 |
| G72-9/125 QFCI + MUD-RESISTANT SHEATH GY | Single mode 9/125 | 72 | 12 | OS2 | C03 | 20193427 |
| G4-50/125 QFCI + MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 4 | 4 | OM2 | C34 | 20193429 |
| G4-50/125 QFCI + MUD-RESISTANT SHEATH OG | Multi mode 50/125 | 4 | 4 | OM2 | C34 | 20194020 |
| G8-50/125 QFCI + MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 8 | 8 | OM2 | C34 | 20193430 |
| G12-50/125 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 12 | 12 | OM2 | C34 | 20193431 |
| G12-50/125 QFCI+MUD-RESISTANT SHEATH OG | Multi mode 50/125 | 12 | 12 | OM2 | C34 | 20203841 |
| G24-50/125 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 24 | 12 | OM2 | C34 | 20193432 |
| G48-50/125 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 48 | 12 | OM2 | C34 | 20193433 |
| G72-50/125 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 72 | 12 | OM2 | C34 | 20193434 |
| G4-50/OM3 QFCI + MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 4 | 4 | OM3 | C31 | 20193435 |
| G8-50/OM3 QFCI + MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 8 | 8 | OM3 | C31 | 20193436 |
| G12-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 12 | 12 | OM3 | C31 | 20193437 |
| G24-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 24 | 12 | OM3 | C31 | 20193438 |
| G48-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 48 | 12 | OM3 | C31 | 20193439 |
| G72-50/OM3 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 72 | 12 | OM3 | C31 | 20193440 |
| G24-50/OM4 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 24 | 12 | OM4 | C32 | 20295186 |
| G48-50/OM4 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 50/125 | 48 | 12 | OM4 | C32 | 20193441 |
| G4-62.5/125 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 62.5/125 | 4 | 4 | OM1 | C02 | 20193442 |
| G4-62.5/125 QFCI+MUD-RESISTANT SHEATH OG | Multi mode 62.5/125 | 4 | 4 | OM1 | C02 | 20194024 |
| G8-62.5/125 QFCI+MUD-RESISTANT SHEATH GY | Multi mode 62.5/125 | 8 | 8 | OM1 | C02 | 20193443 |
| G8-62.5/125 QFCI+MUD-RESISTANT SHEATH OG | Multi mode 62.5/125 | 8 | 8 | OM1 | C02 | 20331322 |
| G12-62.5/125 QFCI+MUD-RESIST. SHEATH GY | Multi mode 62.5/125 | 12 | 12 | OM1 | C02 | 20193444 |
| G12-62.5/125 QFCI+MUD-RESIST. SHEATH OG | Multi mode 62.5/125 | 12 | 12 | OM1 | C02 | 20194022 |
| G24-62.5/125 QFCI+MUD-RESIST. SHEATH GY | Multi mode 62.5/125 | 24 | 12 | OM1 | C02 | 20193445 |
| G48-62.5/125 QFCI+MUD-RESIST. SHEATH GY | Multi mode 62.5/125 | 48 | 12 | OM1 | C02 | 20193446 |
| G72-62.5/125 QFCI+MUD-RESIST. SHEATH GY | Multi mode 62.5/125 | 72 | 12 | OM1 | C02 | 20193447 |