PRYSMIAN
CABLES & SYSTEMS

# OPTOFLEX

## Fibre Optic Reeling and Festoon Cable

**ENERGY**

## Technical Data

| | | |
|---|---|---|
| | Type | OPTOFLEX |
| | Type designation | G62.5/125 Micron<br>G50/125 Micron<br>E9/125 Micron |
| | Approvals/standards | Based on FDDI, ISO/IEC 9314 Part 3, DIN VDE 0888, MSHA-SC 189-1 |
| | Application | Flexible fibre optic cable for signal and data transmission on cranes and material handling equipment; suitable for cable handling systems, such as reels, festoon systems, cable tenders, etc. at high data rates, large bandwidth and absolute immunity to electromagnetic interference. |

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| **Optical parameters** | Transmission data of the fibre-optics | Graded-index fibre 50/125 | Graded-index fibre 62.5/125 | Monomode fibre E9/125 |
| | Max. attenuation at wavelength 850 nm | 2.8 dB/km | 3.3 dB/km | - |
| | Max. attenuation at wavelength 1300 nm | 0.8 dB/km | 0.9 dB/km | 0.4 dB/km |
| | Max. attenuation at wavelength 1550 nm | -<br>km | - | 0.3 dB/ |
| | Bandwidth at 850 nm | > 400 MHz | > 400 MHz | - |
| | Bandwidth at 1300 nm | > 1200 MHz | > 600 MHz | - |
| | Numerical aperture | 0.200 +/- 0.200 | 0.275+/-0.02 | 0.14+/-0.02 |
| | Chromatic dispersion at 1300 nm | - | - | <3.5 ps/nm km |
| | Chromatic dispersion at 1550 nm | - | - | <3.5 ps/nm km |

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| **Thermal parameters** | Ambient temperature | |
| | - Fully flexible operation | -35°C to +80°C |
| | - Fixed installation | -40°C to +80°C |

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| **Mechanical parameters** | Tensile load | Max. 500 N |
| | Torsional stresses | 50°/m |
| | Minimum bending radii<br>- Fixed installation and on festoon system | 125 mm |
| | - for reeling | 250mm |
| | Minimum distance with S-type directional changes | 20 x D<br>(D=cable diameter) |
| | Travel Speed | |
| | - Gantry (reeling operation) | Up to 120 m/min (no random wound reel, cylindrical reel) |
| | - Trolley (festoon systems) | Up to 240 m/min (festoon, cable tender) |
| | - Hoist | No application |
| | Additional tests | Bending and reversed bending test |

## Technical Data

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| **Chemical parameters** | Resistance to oil | DIN VDE 0473, Part 811-2-1 Para. 10 |
| | Weather resistance | Unrestricted use outdoors and indoors, resistant to ozone, UV and moisture |


## Design features

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|---|---|
| Type | OPTOFLEX |
| Fibre-optics | Fibre core diameter: 62.5 µm, 50 µm or 9 µm<br>Diameter across the cladding: 125 µm<br>Diameter over the coating: 250 µm |
| Fibre covering<br><br>Identification of the fibres | Hollow core with filling compound, basic material ETFE<br>Compound 7YI 1 natural colour<br>- Specially developed colour code for identification of the individual fibres |
| Core arrangement | Six cores, especially laid-up in one layer around a GFK supporting element<br>(GFK=glass-fibre reinforced plastic) |
| Inner sheath | Special compound, wall thickness 0.8 mm |
| Braid | Special braid made of polyester threads<br>Surface covered: approx. 80% |
| Outer sheath | Basic material PCP, rubber compound 5GM3<br>Colour black, wall thickness 2.6 mm |
| Marking | (Year of manufacture) OPTOFLEX<br>e.g. 6 G 62.5/125 Micron Germany P-MSHA-SC 189/1 |
| Note | The cable is also available in a special design (not suitable for reeling operation)<br>(Design OPTOFLEX(M), color of the outer sheath: orange) |

## Selection and ordering data

| Number of cores and nominal dimensions | Order No. | Overall dimensions of cable Min. value [mm] | Overall dimensions of cable Max. value [mm] | Approx. net weight for 1000 m [kg/km] | Maximum permissible tensile force [N] |
|---|---|---|---|---|---|
| OPTOFLEX | | | | | |
| 6G62,5/125 Micron | 5DG8 002 | 14,9 | 16,9 | 280 | 500 |
| 6G50/125 Micron | 5DG8 004 | 14,9 | 16,9 | 280 | 500 |
| 6E9/125 Micron | 5DG8 023 | 14,9 | 16,9 | 280 | 500 |
| 12G62,5/125 Micron | 5DG8 035 | 14,9 | 16,9 | 280 | 500 |
| 12G50/125 Micron | 5DG8 036 | 14,9 | 16,9 | 280 | 500 |
| 12E9/125 Micron | 5DG8 037 | 14,9 | 16,9 | 280 | 500 |
| 18G50/125 Micron | 5DG8 014 | 14,9 | 16,9 | 280 | 500 |
| 18G62,5/125 Micron | 5DG8 012 | 14,9 | 16,9 | 280 | 500 |
| 18E9/125 Micron | 5DG8 010 | 14,9 | 16,9 | 280 | 500 |
| Special design OPTOFLEX (M) only for fixed installation | | | | | |
| 6G62,5/125 Micron | 5DG8 021 | 8,5 | 10 | 100 | 2000 |
| 6G50/125 Micron | 5DG8 028 | 8,5 | 10 | 100 | 2000 |
| 6E9/125 Micron | 5DG8 031 | 8,5 | 10 | 100 | 2000 |
| 12G62,5/125 Micron | 5DG8 022 | 8,5 | 10 | 100 | 2000 |
| 12G50/125 Micron | 5DG8 030 | 8,5 | 10 | 100 | 2000 |
| 12E9/125 Micron | 5DG8 032 | 8,5 | 10 | 100 | 2000 |
| 18G62,5/125 Micron | 5DG8 038 | 8,5 | 10 | 100 | 2000 |
| 18G50/125 Micron | 5DG8 027 | 8,5 | 10 | 100 | 2000 |
| 18E9/125 Micron | 5DG8 033 | 8,5 | 10 | 100 | 2000 |