

OPTOFLEX (M) Rubber-Sheathed Flexible Fibre-Optic Cables



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Selection and dimensioning criteria

Refer to Section 4 for further details



	Type	OPTOFLEX (M)			Page	4/2
	Type designation	6 x ... x ... /125 Micron			Page	4/3
	Approvals/standards	Based on DIN VDE 0888, MSHA-SC 189-1			Page	4/4
	Application (refer also to DIN VDE 0298, Part 3)	For optical signal and data transmission in open-cast mining applications, for use on material handling equipment and for laying alongside conveyor belts (including shiftable conveyor belts)			Page	4/6
Optical parameters	Transmission data of the	Graded-index fibre	Graded-index fibre	Monomode fibre		
	• Fibre-optics	62.5/125	50/125	9/125		
	• Attenuation at wavelength 850 nm	≤ 3.3 dB/km	≤ 2.8 dB/km	–		
	• Attenuation at wavelength 1300 nm	≤ 0.9 dB/km	≤ 0.8 dB/km	≤ 0.4 dB/km		
	• Attenuation at wavelength 1550 nm	–	–	≤ 0.3 dB/km		
	Bandwidth at 850 nm and 1300 nm	≥ 400 MHz	≥ 400 MHz			
	Numerical aperture	0.275 ± 0.02	0.200 ± 0.02			
Thermal parameters	Ambient temperature				Page	4/18
	• Fully flexible operation	-30 °C to + 60 °C				
	• Fixed installation	-40 °C to + 80 °C				
Mechanical parameters	Tensile load	Max. 2000 N at max. 0.1 dB attenuation change			Page	4/20
	Torsional stresses	Max. 100 °/m			Page	4/21
	Min. bending radius (fixed installation)	50 mm			Page	4/22
	Additional tests	Tensile load test, transverse pressure test, reversed bending test, roller bending test, torsional stress test, water compatibility according to HD 22.16			Pages to	4/24 4/25
Chemical parameters	Resistance to oil	Given to DIN VDE 0473, Part 811-2-1, Para. 10			Page	4/28
	Weather resistance	Unrestricted use outdoors and indoors, resistant to ozone and moisture				

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- 1 GFK supporting element
- 2 Fibre-optics
- 3 Buffering tube envelope
- 4 Kevlar braiding
- 5 Outer sheath



Design features

Refer to Section 4 for further details →

Type	OPTOFLEX (M)	Page	4/2
Fibre-optics	Inner core diameter of the fibres: 50 µm, 62.5 µm or 9 µm, diameter over cladding: 125 µm, diameter over coating: 250 µm	Page	4/5
Fibre covering	Buffering tube with filling compound, basic material ETFE, compound type: 7Y11, natural colouring	Page	4/32
Identification of the fibres	Colour coding of the fibres and buffering tube for identification of the fibre type	Page	4/5
Core arrangement	Six buffering tubes, one layer, especially laid-up around a GFK supporting element (GFK = Glass-fibre reinforced plastic)		
Braid	Special braid of Kevlar threads, tensile-strength reinforcement by means of longitudinal Kevlar threads. Surface covered: approx. 80%	Page	4/39
Outer sheath	Basic material PCP, compound type: 5GM5, colour orange	Page	4/32
Marking	OPTOFLEX (M) 6 x ... x ... /125 Micron	Page	4/40

Selection and ordering data

Number of fibres and fibre type	Order No.	Max. overall diameter	Bending radius for fixed installation	Fibre attenuation at 850 nm	Fibre attenuation at 1300 nm	Numerical aperature	Bandwidth at 1300 nm	Approx. net weight for 1000 m	Maximum permissible tensile force
µm		mm	mm	dB/km	dB/km		MHz	kg	N

OPTOFLEX (M)

6 x 1 G50/125	5DG8 028	10	50	2.8	0.8	0.2 ± 0.02	> 400	100	2000
6 x 2 G50/125	5DG8 030	10	50	2.8	0.8	0.2 ± 0.02	> 400	100	2000
6 x 3 G50/125	5DG8 027	10	50	2.8	0.8	0.2 ± 0.02	> 400	100	2000
6 x 1 G62.5/125	5DG8 021	10	50	3.3	0.9	0.275 ± 0.02	> 400	100	2000
6 x 2 G62.5/125	5DG8 022	10	50	3.3	0.9	0.275 ± 0.02	> 400	100	2000
6 x 3 G62.5/125	5DG8 024	10	50	3.3	0.9	0.275 ± 0.02	> 400	100	2000
6 x 1 E9/125	5DG8 031	10	50	0.4	0.3			100	2000
6 x 2 E9/125	5DG8 032	10	50	0.4	0.3			100	2000
6 x 3 E9/125	5DG8 033	10	50	0.4	0.3			100	2000