General Datasheet

Fiber in Metal Tubes for Ropes and Ropeways

Single and double layer tubing
with or without sheathing

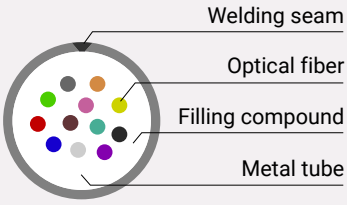
DTS
Distributed Temperature Sensing

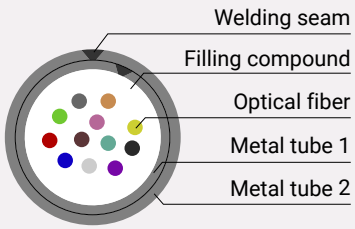
DAS
Distributed Acoustic Sensing

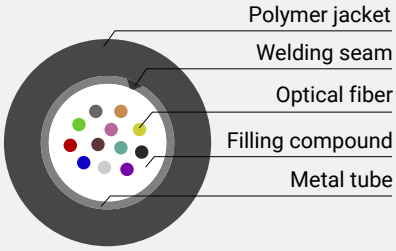
FBG
Based Point Sensing

Technical Information

Fiber in Metal Tubes (FIMT) are designed as a loose tube construction to protect the integrated optical fibers against mechanical stress, hydrogen exposure and other environmental factors, ensuring maximum optical lifetime for their intended applications. The high-density tubular design provides excellent crush resistance while allowing for small bending radii. The FIMT is filled with a thixotropic gel, which may or may not include hydrogen-absorbing additives, and it fully complies with EN60794-2-22 method F5. Single and multi-mode fibers can be combined to enable simultaneous data transmission and sensing. Common fiber types used for this construction include ITU-T G.652.D, ITU-T G.654.C, ITU-T G.657.A1 / A2 / B3, ITU-T G651.1 (OM1-OM5), or those based on customer requirements.







ROPES

Available Steel Grades for FIMT

- EN 1.4301 (304)
- EN 1.4306 (304L)
- EN 1.4303 (305)
- EN 1.4404 (316L)

Common Polymer Materials

- PA
- LDPE, HDPE
- TPE
- PVC
- FRNC

Typical Cable Types

Suitable for OPGW / OPPC cables in

- Aerial Tramways / Gondola Systems
- Ski Lifts
- Material Ropeways
- Ropes for Cranes & Industrial
- Mining Wire Ropes
- Heavy Lifting Ropes
- Ropes for Structures

Stainless Steel Tube Dimensions and Fiber Count

Table shows the minimum diameter for the stated number of fibers. Outer diameter is available in steps of 0.05/0.10mm (.0020/.0039”). Other dimensions available on request!

OD in steps of 0.05 / 0.10mm available (.0020" / .0039")

OD FIMT mm (inch)	max. amount of fibers 250µm (200µm)	Single Tube Wall Thickness in mm (inch)				
		0.125 *(.0049)*	0.15 *(0.0059)*	0.20 *(.0079)*	0.25 *(.0098)*	0.30 *(.0118)*
1.10 (0.043)	2 (2)	●	●			
1.25 (0.049)	4 (4)	●	●	○		
1.70 (0.067)	6 (8)	○	●	●		
1.80 (0.071)	8 (12)		●	●		
2.20 (0.087)	16 (24)		●	●	○	
2.40 (0.094)	24 (36)		●	●	●	
2.90 (0.114)	36 (48)		●	●	●	○
3.30 (0.130)	48 (64)		●	●	●	●
3.60 (0.142)	56 (72)		●	●	●	●
4.00 (0.157)	64 (80)		○	●	●	●
4.50 (0.177)	80 (96)					●
5.30 (0.209)	144 (192)					●
7.00 (0.276)	144 (192)					●

● available in this dimension

○ starting or ending with this specific wall thickness; some outer diameters between this and the next/previous row are possible as not all variations of outer diameters are stated in the table

Packaging and single Length

Standard packaging consists of wooden reels in a standing position fixed on pallets. The outer layer is protected with bubble foil and flexible cardboard. Optionally, machine spools provided by customer can be used. Produced single lengths are tailored to meet customer requests.

Coloring, Bundling and Marking Options

Fiber coloring is performed in accordance with EIA/TIA-598-C, DIN VDE V 0888, DIN IEC 60304, or based on customer requirements. Identification options include bundling with colored yarns, ring marking on fibers, and outer tube marking (meter marking, ring code). Various jacket colors can be selected for the outer sheath, optionally with custom cable markings.

Certificate of Conformity

Test report according to EN 10204 / 2.2 is physically attached on every spool and digital available including following information:

- Order Number
- Product Length
- Product Dimensions
- Welding Depth
- Excess Fiber Length
- Optical Attenuation
- Water Penetration Test

Visit our website for more details

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