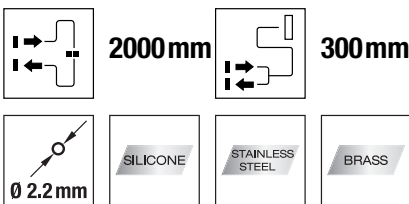


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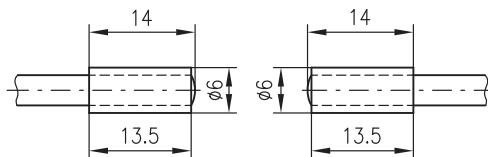


- Glass fiber optics in throughbeam or scanner operation
- Connection suitable for amplifiers LV463 and LV463B
- For fiber optic amplifier with 2.2mm connection
- Different sheath materials

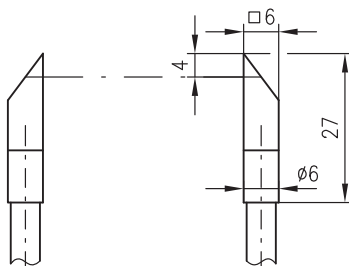
**Accessories:**

(available separately)

- Lens attachment **GF-L1** (part no. 50014649), only for throughbeam operation with GF-LB-...-IQ



- Angular attachment **GF-U1** (part no. 50009382), only for throughbeam operation with GF-LB-...-IQ



**Specifications**

**Optical data**

Typ. operating range limit 1)	<b>With LV463</b>	<b>With LV463B</b>
GF-LB-...	0 ... 400mm	0 ... 680mm
GF-ETG-...	2 ... 180mm	2 ... 300mm
GF-ETM-...	2 ... 180mm	2 ... 300mm
GF-LB-...-IQ + GF-L1	0 ... 1200mm	0 ... 2000mm
GF-LB-...-IQ + GF-U1	0 ... 800mm	0 ... 1360mm
Fiber material	glass	
Core diameter	50µm	
Opening angle	65°	
Number of fibers (transmitter/receiver)	approx. 990 units with D = 1.5mm	
Fiber configuration, sensor side	multiple fiber core (see list of types): F1 mixed fiber configuration F2 50%/50% fiber configuration F3 coaxial fiber configuration	

**Mechanical data**

Length of fiber optics	see list of types	
Optical outlet	glass	
Material	<b>Sheathing</b>	<b>End piece</b>
	...-SI-... silicone	stainless steel V2A
	...-SS-... stainless steel V2A	stainless steel V2A
	...-BR-... brass	aluminum
Fiber optics cross section D3	see list of types	
Fiber diameter D7	see list of types	
Bending radius	...-SI-... > 40mm	
	...-SS-... > 40mm	
	...-BR-... > 40mm	
Connection	Ø 2.2mm amplifier side	

**Environmental data**

Operating temperature	<b>Rigid laying</b>	<b>Flexible laying</b>
	...-SI-... -30°C ... +180°C	-30°C ... +160°C
	...-SS-... -30°C ... +300°C	-30°C ... +200°C
	...-BR-... -30°C ... +160°C	-30°C ... +140°C

1) Typ. operating range limit: max. attainable range without performance reserve

**Part number code**

G F - L B - S I - 4 0 5 - I Q

<b>Fiber material</b>	GF glass fiber
<b>Optical operating principle</b>	L throughbeam photoelectric sensor ET energetic scanner
<b>Fiber diameter (D6, D7 see tables)</b>	B D6 = 1.0mm or 1.5mm G D7 = 1.0mm or 2.5mm M D7 = 0.5mm
<b>Sheathing material</b>	SI silicone SS stainless steel V2A BN brass
<b>Head diameter at optical inlet/outlet (D1 see tables)</b>	3 D1 = 3.0mm 4 D1 = 4.0mm or M4 6 D1 = 1.5mm or 5.5mm 7 D1 = 1.5mm 8 D1 = 10mm or M8
<b>Length of the optical fiber</b>	02 L <sub>total</sub> = 200mm 05 L <sub>total</sub> = 500mm 10 L <sub>total</sub> = 1000mm 20 L <sub>total</sub> = 2000mm 30 L <sub>total</sub> = 3000mm 50 L <sub>total</sub> = 5000mm
<b>Sleeve length at optical inlet/outlet (L1 see tables)</b>	I L1 = 10mm S L1 = 5 / 10 / 16 / 20mm
<b>Design at optical inlet/outlet</b>	Q without thread U bent 90° D lateral optical outlet without lens F lateral optical outlet with lens M metric thread

We reserve the right to make changes • DS\_GF\_en\_50126563.fm

**Remarks**

**Observe intended use!**

- ☞ This product is not a safety sensor and is not intended as personnel protection.
- ☞ The product may only be put into operation by competent persons.
- ☞ Only use the product in accordance with the intended use.

**Delivery contents**

With the GF-LB..., delivery is in pairs.

**Mounting**

When mounting the fiber optics, a minimum bending radius of 40mm must be maintained for reliable function.

**Connecting to the fiber optic amplifier**

The fiber optics are plugged into the intended openings on the fiber optic amplifier. The fiber optics must be secure. The fiber optics are fastened via the clamping lever.

**Optic attachments**

For larger operating ranges or to deflect the light channel in throughbeam operation, optic attachments are available (see "Accessories").



**CAUTION**

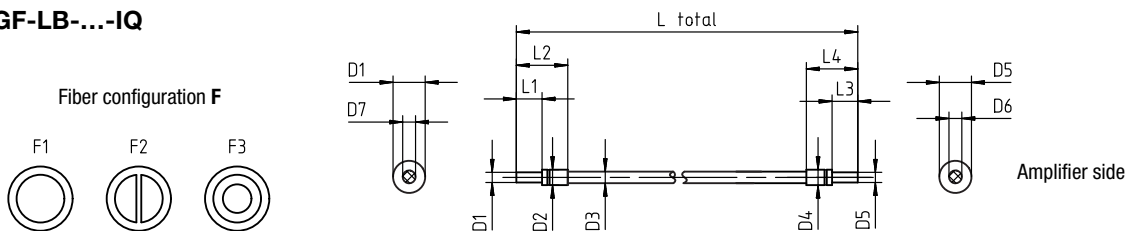
☞ When mounting the attachments, make certain that no adhesive enters the area of the optics. The adhesive must have the required temperature resistance and is not included in the delivery contents.

**Other designs**

Fiber optics with other lengths, head pieces and cross sections on request.

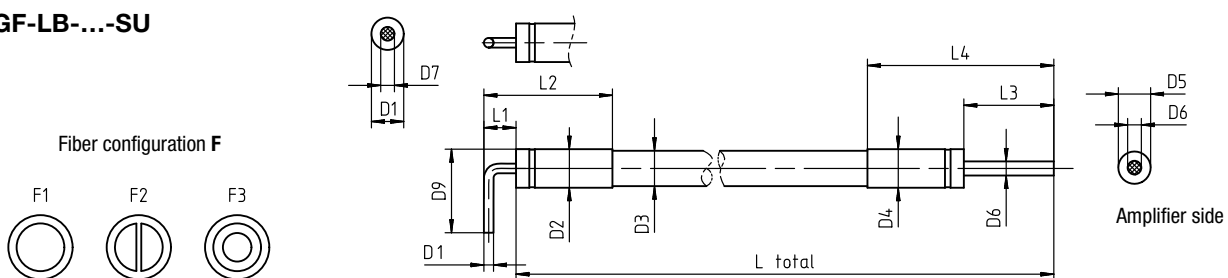
**Dimensioned drawing / List of types - Throughbeam operation**

**GF-LB-...-IQ**



Part no.	Product name	Sheathing	L <sub>total</sub>	Dimensions [mm]															
				L1	L2	L3	L4	L5	D1	D2	D3	D4	D5	D6	D7	D8	D9	F	
50126459	GF-LB-SI-405-IQ	silicone	500	10	25	14	24	-	4.0	6.0	4.5	6.0	2.2	1.5	1.5	-	-	F1	
50126460	GF-LB-SI-410-IQ	silicone	1000	10	25	14	24	-	4.0	6.0	4.5	6.0	2.2	1.5	1.5	-	-	F1	
50126461	GF-LB-SI-430-IQ	silicone	3000	10	25	14	24	-	4.0	6.0	4.5	6.0	2.2	1.5	1.5	-	-	F1	
50126462	GF-LB-SI-450-IQ	silicone	5000	10	25	14	24	-	4.0	6.0	4.5	6.0	2.2	1.5	1.5	-	-	F1	
50126463	GF-LB-SS-405-IQ	stainless steel	500	10	25	14	24	-	4.0	6.0	5.5	6.0	2.2	1.5	1.5	-	-	F1	
50126464	GF-LB-SS-410-IQ	stainless steel	1000	10	25	14	24	-	4.0	6.0	5.5	6.0	2.2	1.5	1.5	-	-	F1	
50126465	GF-LB-SS-430-IQ	stainless steel	3000	10	25	14	24	-	4.0	6.0	5.5	6.0	2.2	1.5	1.5	-	-	F1	
50126466	GF-LB-SS-450-IQ	stainless steel	5000	10	25	14	24	-	4.0	6.0	5.5	6.0	2.2	1.5	1.5	-	-	F1	
50126467	GF-LB-BR-405-IQ	brass	500	10	25	14	24	-	4.0	6.0	5.5	6.0	2.2	1.5	1.5	-	-	F1	
50126468	GF-LB-BR-410-IQ	brass	1000	10	25	14	24	-	4.0	6.0	5.5	6.0	2.2	1.5	1.5	-	-	F1	
50126469	GF-LB-BR-430-IQ	brass	3000	10	25	14	24	-	4.0	6.0	5.5	6.0	2.2	1.5	1.5	-	-	F1	
50126470	GF-LB-BR-450-IQ	brass	5000	10	25	14	24	-	4.0	6.0	5.5	6.0	2.2	1.5	1.5	-	-	F1	

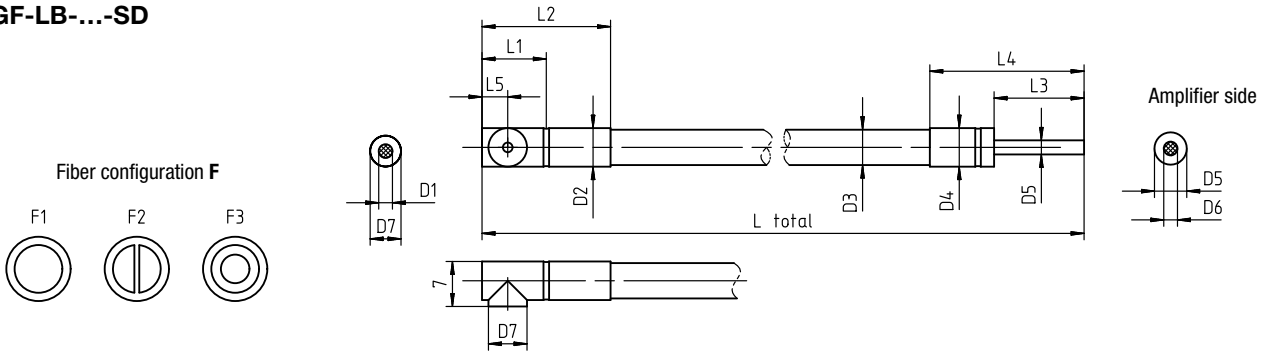
**GF-LB-...-SU**



Part no.	Product name	Sheathing	L <sub>total</sub>	Dimensions [mm]															
				L1	L2	L3	L4	L5	D1	D2	D3	D4	D5	D6	D7	D8	D9	F	
50126489	GF-LB-SI-610-SU	silicone	1000	5	20	14	24	-	1.5	6.0	4.5	6.0	2.2	1.0	1.0	-	13	F1	
50126490	GF-LB-SS-610-SU	stainless steel	1000	5	20	14	24	-	1.5	6.0	4.5	6.0	2.2	1.0	1.0	-	13	F1	
50126491	GF-LB-BR-610-SU	brass	1000	5	20	14	24	-	1.5	6.0	4.5	6.0	2.2	1.0	1.0	-	13	F1	

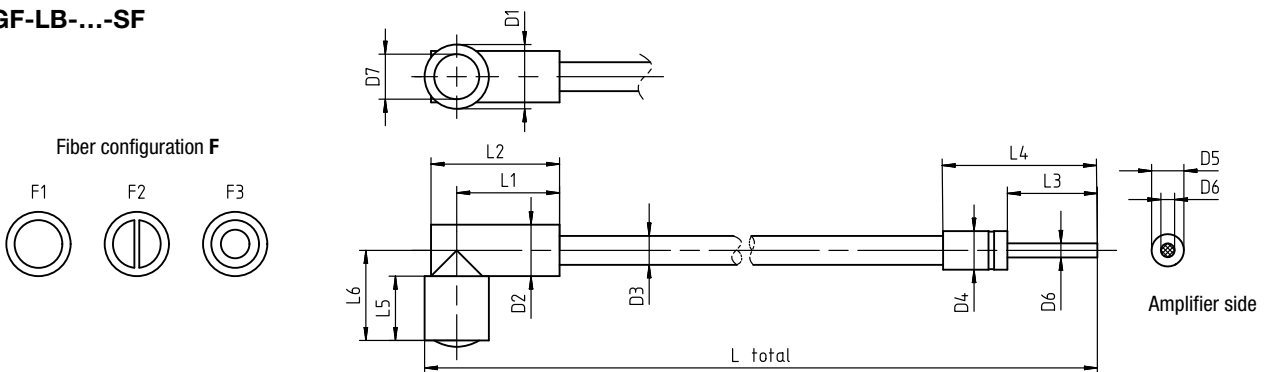
**Dimensioned drawing / List of types - Throughbeam operation (cont.)**

**GF-LB-...-SD**



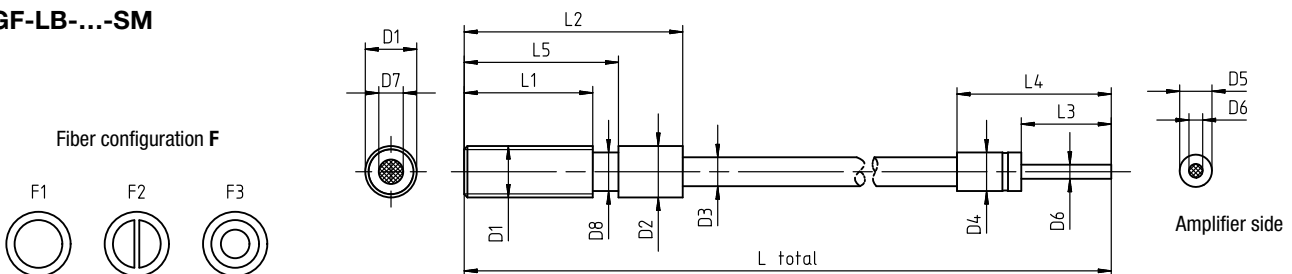
Part no.	Product name	Sheathing	Dimensions [mm]																
			L <sub>total</sub>	L1	L2	L3	L4	L5	D1	D2	D3	D4	D5	D6	D7	D8	D9	F	
50126495	GF-LB-SI-610-SD	silicone	1000	10	20	14	24	4.0	1.5	6.0	4.5	6.0	2.2	1.5	4.0	-	6.0	F1	
50126496	GF-LB-SS-610-SD	stainless steel	1000	10	20	14	24	4.0	1.5	6.0	4.5	6.0	2.2	1.5	4.0	-	6.0	F1	
50126497	GF-LB-BR-610-SD	brass	1000	10	20	14	24	4.0	1.5	6.0	4.5	6.0	2.2	1.5	4.0	-	6.0	F1	
50126498	GF-LB-SI-630-SD	silicone	3000	10	20	14	24	4.0	1.5	6.0	4.5	6.0	2.2	1.5	4.0	-	6.0	F1	
50126499	GF-LB-SS-630-SD	stainless steel	3000	10	20	14	24	4.0	1.5	6.0	4.5	6.0	2.2	1.5	4.0	-	6.0	F1	
50126500	GF-LB-BR-630-SD	brass	3000	10	20	14	24	4.0	1.5	6.0	4.5	6.0	2.2	1.5	4.0	-	6.0	F1	

**GF-LB-...-SF**



Part no.	Product name	Sheathing	Dimensions [mm]																
			L <sub>total</sub>	L1	L2	L3	L4	L5	L6	D1	D2	D3	D4	D5	D6	D7	D8	F	
50127338	GF-LB-SI-810-SF	silicone	1000	16	20	14	24	10.0	14.0	10.0	8.0	4.5	6.0	2.2	1.5	7.0	-	F1	
50127339	GF-LB-SS-810-SF	stainless steel	1000	16	20	14	24	10.0	14.0	10.0	8.0	4.5	6.0	2.2	1.5	7.0	-	F1	
50127340	GF-LB-BR-810-SF	brass	1000	16	20	14	24	10.0	14.0	10.0	8.0	4.5	6.0	2.2	1.5	7.0	-	F1	

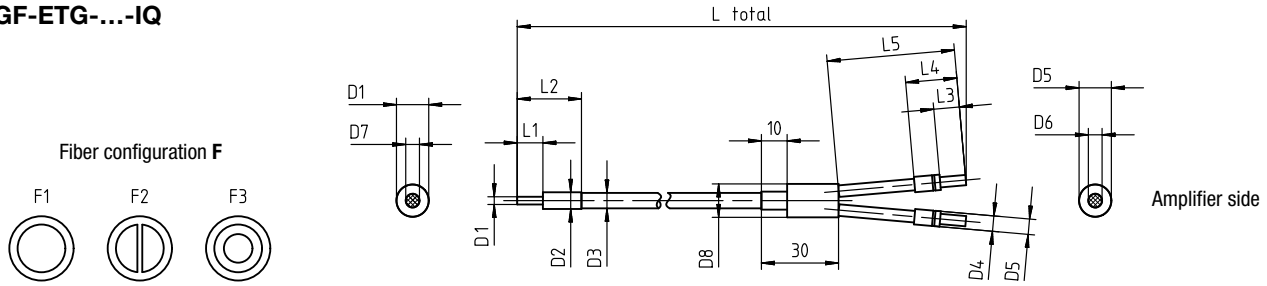
**GF-LB-...-SM**



Part no.	Product name	Sheathing	Dimensions [mm]																
			L <sub>total</sub>	L1	L2	L3	L4	L5	D1	D2	D3	D4	D5	D6	D7	D8	D9	F	
50127341	GF-LB-SS-830-SM	stainless steel	3000	20	34	14	24	24	M8	8.0	4.5	6.0	2.2	1.5	3.8	6.0	-	F1	

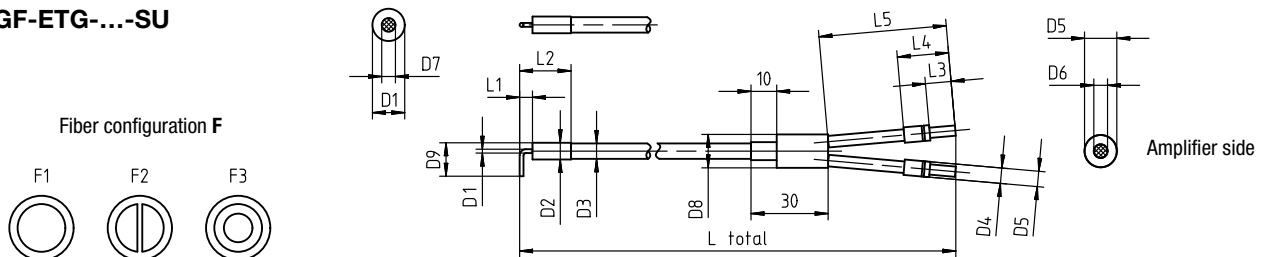
Dimensioned drawing / List of types - Scanner operation

GF-ETG-...-IQ



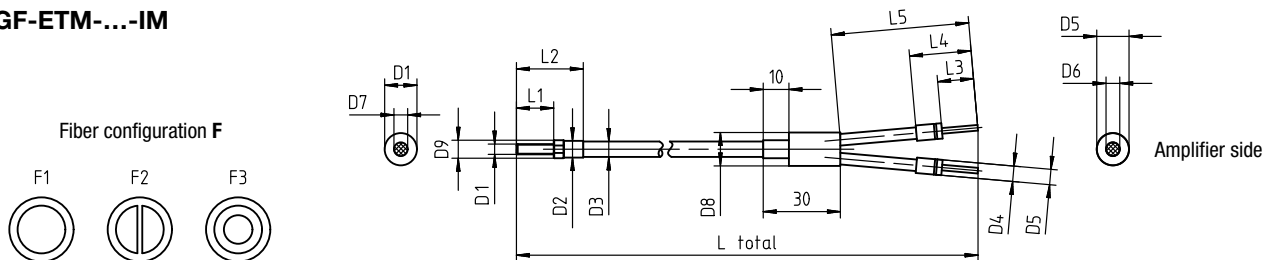
Part no.	Product name	Sheathing	Dimensions [mm]															
			L <sub>total</sub>	L1	L2	L3	L4	L5	D1	D2	D3	D4	D5	D6	D7	D8	D9	F
50126471	GF-ETG-SI-305-IQ	silicone	500	10	25	14	24	65	3.0	6.5	5.5	6.0	2.2	1.5	2.5	13	-	F2
50126472	GF-ETG-SI-605-IQ	silicone	500	10	25	14	24	65	5.5	8.0	5.5	6.0	2.2	1.5	2.5	13	-	F2
50126473	GF-ETG-SI-310-IQ	silicone	1000	10	25	14	24	65	3.0	6.5	5.5	6.0	2.2	1.5	2.5	13	-	F2
50126474	GF-ETG-SI-610-IQ	silicone	1000	10	25	14	24	65	5.5	8.0	5.5	6.0	2.2	1.5	2.5	13	-	F2
50126475	GF-ETG-SI-630-IQ	silicone	3000	10	25	14	24	65	5.5	8.0	5.5	6.0	2.2	1.5	2.5	13	-	F2
50126476	GF-ETG-SI-650-IQ	silicone	5000	10	25	14	24	65	5.5	8.0	5.5	6.0	2.2	1.5	2.5	13	-	F2
50126477	GF-ETG-SS-305-IQ	stainless steel	500	10	25	14	24	65	3.0	6.5	6.0	6.0	2.2	1.5	2.5	13	-	F2
50126478	GF-ETG-SS-605-IQ	stainless steel	500	10	25	14	24	65	5.5	8.0	7.0	6.0	2.2	1.5	2.5	13	-	F2
50126479	GF-ETG-SS-310-IQ	stainless steel	1000	10	25	14	24	65	3.0	6.5	6.0	6.0	2.2	1.5	2.5	13	-	F2
50126480	GF-ETG-SS-610-IQ	stainless steel	1000	10	25	14	24	65	5.5	8.0	7.0	6.0	2.2	1.5	2.5	13	-	F2
50126481	GF-ETG-SS-630-IQ	stainless steel	3000	10	25	14	24	65	5.5	8.0	7.0	6.0	2.2	1.5	2.5	13	-	F2
50126482	GF-ETG-SS-650-IQ	stainless steel	5000	10	25	14	24	65	5.5	8.0	7.0	6.0	2.2	1.5	2.5	13	-	F2
50126483	GF-ETG-BR-305-IQ	brass	500	10	25	14	24	65	3.0	6.5	6.0	6.0	2.2	1.5	2.5	13	-	F2
50126484	GF-ETG-BR-605-IQ	brass	500	10	25	14	24	65	5.5	8.0	6.0	6.0	2.2	1.5	2.5	13	-	F2
50126485	GF-ETG-BR-310-IQ	brass	1000	10	25	14	24	65	3.0	6.5	6.0	6.0	2.2	1.5	2.5	13	-	F2
50126486	GF-ETG-BR-610-IQ	brass	1000	10	25	14	24	65	5.5	8.0	6.0	6.0	2.2	1.5	2.5	13	-	F2
50126487	GF-ETG-BR-630-IQ	brass	3000	10	25	14	24	65	5.5	8.0	6.0	6.0	2.2	1.5	2.5	13	-	F2
50126488	GF-ETG-BR-650-IQ	brass	5000	10	25	14	24	65	5.5	8.0	6.0	6.0	2.2	1.5	2.5	13	-	F2

GF-ETG-...-SU



Part no.	Product name	Sheathing	Dimensions [mm]															
			L <sub>total</sub>	L1	L2	L3	L4	L5	D1	D2	D3	D4	D5	D6	D7	D8	D9	F
50126492	GF-ETG-SI-710-SU	silicone	1000	5	17	14	24	60	1.5	4.5	6.0	6.0	2.2	1.0	1.0	13.0	13.0	F2
50126493	GF-ETG-SS-710-SU	stainless steel	1000	5	17	14	24	60	1.5	4.5	6.0	6.0	2.2	1.0	1.0	13.0	13.0	F2
50126494	GF-ETG-BR-710-SU	brass	1000	5	17	14	24	60	1.5	4.5	6.0	6.0	2.2	1.0	1.0	13.0	13.0	F2

GF-ETM-...-IM



Part no.	Product name	Sheathing	Dimensions [mm]															
			L <sub>total</sub>	L1	L2	L3	L4	L5	D1	D2	D3	D4	D5	D6	D7	D8	D9	F
50127342	GF-ETM-BR-402-IM	brass	250	15	24	14	24	66	M4	6.0	4.5	4.0	2.2	0.5	0.5	13.0	SW7	F1