MICRO-EPSILON

More Precision

Eltrotec // Industrial Endoscopes

ELTROTEC MTFS

- *Ø 0.5 mm to 2.5 mm*
- *Lengths: 500 mm to 15,000 mm*
- *Aperture angle up to 100°*
- *High quality quartz fibers*
- *Pliable - high break resistance provides robustness*
- *External focus ring for diopter adjustment*
- *Custom adaption possible*

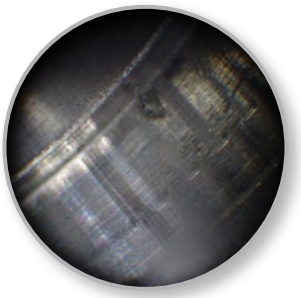
Eltrotec Flex MTFS fiber-optical endoscopes are extremely small, flexible and serve as valuable tools and inspection devices in many areas of quality assurance. Despite their extremely small outer diameter, the flexible micro endoscopes are high-quality instruments with good image sharpness, true color reproduction and a resolution of up to 30,000 pixels, suitable for the inspection of miniature components and channels in microelectronics, precision engineering and research.

Objects are illuminated by an external light source from our accessory range. The endoscopes can optionally be connected to a camera system.

Operating conditions:

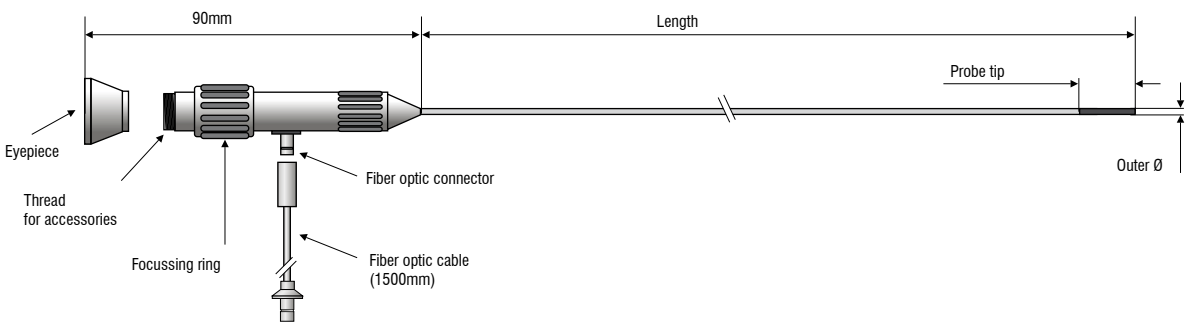
- Temperature in air:
  Endoscope probe: -20 °C to +60 °C
  Complete endoscope: -20 °C to +50 °C
- Pressure resistance in air: up to 5 bar
- Resistance to liquids:
  The endoscope probe may be immersed in the following liquids for a short time: water, saline solution (5 %), kerosene, gasoline, diesel, 70 % alcohol
- Humidity: up to 95 % at 40°
  (non-condensing)

Application examples:



Chatter marks

Inspecting soldered joints



Model MTFS	050	075	100	150	200	250
Outer-Ø	0.5 mm	0.75 mm	1.0 mm	1.5 mm	2.0 mm	2.5 mm
Length	0.5 / 1.0 / 1.5 / 2.0 m				2/3/4/5 m	2/5/10/15 m
Resolution	4000 pixels	6000 pixels	10,000 pixels	30,000 pixels		
Direction of view	direct view 0°					
Aperture angle approx.	70°			60°	70°	
Focal range	3 to 50 mm			10 mm to ∞		
Diopter compensation	adjustable					
Min. bending radius	10 mm	15 mm	30 mm	50 mm	60 mm	80 mm
Rigid part max.	5 mm	5 mm	6 mm	7 mm	10 mm	12 mm
Illumination	separate or permanently connected fiber optics with a length of 1500 mm for external light source					
Camera and TV connection	eyepiece equipped for the attachment of a corresponding adapter					
Temperature resistance	up to 60 °C					

Outer-Ø mm	Length mm	Direction of view	Article no.
0.5	500	0°	20560930
0.5	1000	0°	20561733
0.5	1500	0°	20561734
0.5	2000	0°	20561880
0.75	500	0°	20561004
0.75	1000	0°	20560321
0.75	1500	0°	20561732
0.75	2000	0°	20560939
1.0	500	0°	20560854
1.0	1000	0°	20560322
1.0	1500	0°	20561731
1.0	2000	0°	20560895
1.5	500	0°	20561000
1.5	1000	0°	20561589
1.5	1500	0°	20561584
1.5	2000	0°	20560896
2.0	500	0°	20561985
2.0	1000	0°	20561986
2.0	1500	0°	20561987
2.0	2000	0°	20561988
2.0	3000	0°	20561989
2.0	4000	0°	20561990
2.0	5000	0°	20561827
2.5	500	0°	20560336
2.5	1000	0°	20561983
2.5	1500	0°	20561984
2.5	2000	0°	20561689
2.5	5000	0°	20561826
2.5	10,000	0°	20561981
2.5	15,000	0°	20561982

Endoscopes with external ø up to 2.0 mm with permanently connected fiber optics

Accessories:	Article no.
Fiber optic cable for MTFS (1500 mm, Ø 2 mm fiber cross section)	20560670
Mirror head, d=1.4 mm, direction of view 90°	20560897
Mirror head, d=1.9 mm, direction of view 90°	20560898
Mirror head, d=2.4 mm, direction of view 90°	20561413

Sensors and Systems from Micro-Epsilon

Sensors and systems for displacement, distance and position

Sensors and measurement devices for non-contact temperature measurement

Measuring and inspection systems for metal strips, plastics and rubber

Optical micrometers and fiber optics, measuring and test amplifiers

Color recognition sensors, LED analyzers and inline color spectrometers

Industrial endoscopes, light sources

Modifications reserved / Y9761395-E052054GKE

MICRO-EPSILON

MICRO-EPSILON Eltrotec GmbH
Manfred-Wörner-Str. 101 | 73037 Göppingen | Germany
Tel. +49 (0)7161 98872-300 · Fax+49 (0)7161 98872-303
eltrotec@micro-epsilon.de · **www.micro-epsilon.de**