MICRO-EPSILON

More Precision.

Sensor systems for testing LEDs and self-luminous objects

Color | Intensity | Function | Light spectrum

LEDs and Illumination

MFA

Receiver sensors for testing self-luminous objects
colorCONTROL MFS

- For LEDs, lamps, bulbs, headlights, backlights, displays
- For restricted installation space
- Accurate point-by-point testing at various points for individually arranged test items
- Detection of smallest objects from 3 mm
- Working distance > 3 mm

The light emitted by the luminaire under test is received by the MFS receiver sensor at 0° (parallel) to the direction of emission. The received light beams are transmitted to the controller via an optical fiber. The range of sensors offered covers a wide variety of working distances and spot sizes. Other versions in different lengths and temperature ranges are available as options.

The MFS sensor (receiver sensor) in combination with the powerful MFA controllers offers extremely precise testing of light color, intensity, color temperature (CCT) and dominant wavelength (λ_{dom}). This is required, for example, when dividing LEDs into binnings, or for testing homogeneity within a light source with several individual LEDs.

In addition to their outstanding performance, the receiver sensors also impress with extremely advantageous installation options. Due to the external controller, less installation space is required at the measuring point. In addition, measuring points that are far apart can be tested together with a controller.

MFS-I01: Due to its extremely thin diameter of just 1.3 mm, the MFS-I01 is ideal for use in very confined installation spaces. It is perfectly suitable for SMD-LED tests. The metal sleeve on the sensor head ensures straight guidance and exact positioning above the LED.

MFS-22: The MFS-22 consists of a POF (polymer optical fiber) and a PVC sheath with a cut end.

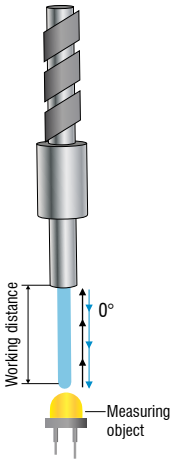
MFS-K04: The M4 thread guidance enables easy installation, allowing more precise positioning of the sensor.

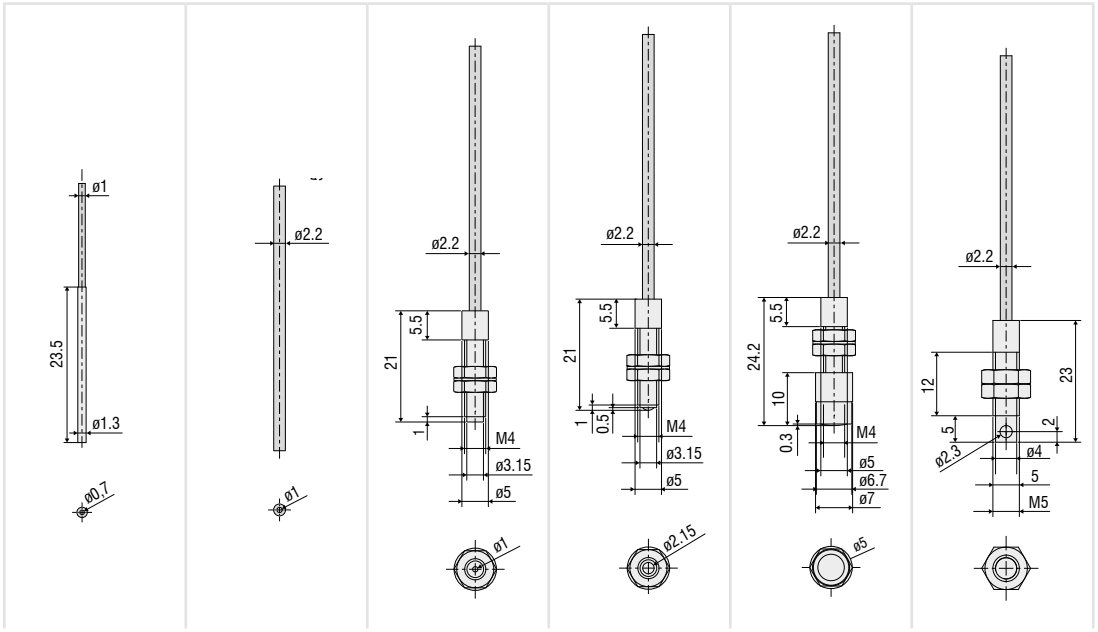
MFS-K04-3: Smallest measuring spot and best light collection thanks to improved coupling into the fiber.

MFS-K04-6: This sensor has the largest measurement spot, allowing more variable positioning of the test specimens under the sensor. In addition, measurements can be made on a larger illuminated area.

MFS-K05/90: The 90° outlet makes the sensor ideal for installation in restricted spaces where axial mounting is not possible.

Measurement geometry





Model		MFS-I01	MFS-22	MFS-K04	MFS-K04-3	MFS-K04-6	MFS-K05/90
Article number		10825516	10825504	10825506	10825508	10825510	10825512
Sensor type		Receiver sensor					
Working distance [1]	Start	3 mm	3 mm	3 mm	3 mm	3 mm	3 mm
	Optimal	5 mm	5 mm	5 mm	5 mm	5 mm	5 mm
	End	11 mm	11 mm	11 mm	15 mm	15 mm	15 mm
Measurement spot diameter [1]	Start	4 mm	4 mm	6 mm	2.5 mm	4.5 mm	2x5 mm
	Optimal	6 mm	8 mm	8 mm	3 mm	5 mm	2.5x6 mm
	End	13 mm	16 mm	16 mm	6 mm	7 mm	4x14 mm
Measurement geometry		0°					90°
Min. target size		Ø 4 mm	Ø 6 mm	Ø 4 mm	Ø 2.5 mm	Ø 4.5 mm	Ø 5 mm
Sensitivity	Distance [2]	xy < 0.003 /mm	xy < 0.003 /mm	xy < 0.003 /mm	xy < 0.002 /mm	xy < 0.003 /mm	xy < 0.004 /mm
	Tilt angle [2]	xy < 0.01 / °				xy < 0.02 / °	
Connector		integrated plastic fiber cable (axial) with PVC (P) sheath, standard length 0.5 m; other lengths 0.3 m ... 2.0 m optionally available, min. bending radius 50 mm					
Mounting		MFS plug					
Temperature range	Sensor head	-10 … +80 °C					
	Cables	-20 … +80 °C					
Air humidity		20 … 80 % r.H. (non-condensing)					
Protection class (DIN EN 60529)		IP44	IP64	IP44			
Material		Brass, plastic fiber POF-1.0 with PVC sheath (P)	PVC, plastic fiber POF-2.2 with PVC sheath (P)	Aluminum, plastic fiber POF-2.2 with PVC sheath (P)			
Weight		1.3 g	3.4 g	5.4 g	5.6 g	7.2 g	6.7 g
Compatibility		MFA controller (7, 14, 21, 28)					
Special features		All variants are available in other lengths > 300 mm as well. Lengths of up to 5 m are possible with glass optical fibers. These can also be manufactured for vacuum or high-temperature conditions.					
No. of measurement channels		1					

Details apply in conjunction with a colorCONTROL MFA-7 series controller

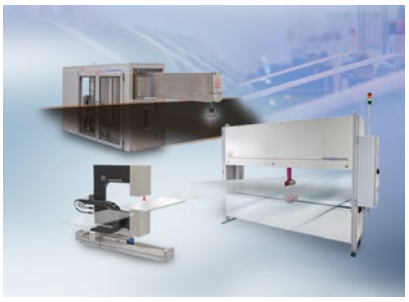
[1] Measured with a white reference light source 6500 K, 32 lm, 95 Ra

[2] Measured with red 637 nm 5 mm LED (1 mA, 11 V DC)

Sensors and Systems from Micro-Epsilon

Sensors and systems for displacement, distance and position

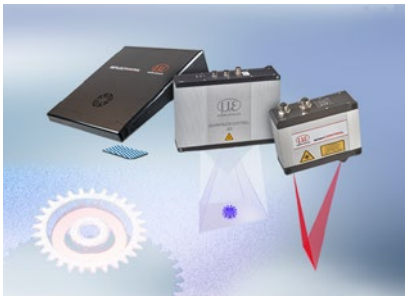
Sensors and measurement devices for non-contact temperature measurement



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



3D measurement technology for dimensional testing and surface inspection

Modifications reserved / Y9761436-D062016GKE

MICRO-EPSILON

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