

More Precision

confocalDT IFS2404-1 / -3 / -6

Confocal chromatic sensors

- Precise distance measurement
- Compact sensor design
- Excellent price-performance ratio



Model	IFS2404-1	IFS2404-3	IFS2404-6		
Measuring range	1 mm	3 mm	6 mm		
Start of measuring range	approx.	15 mm	25 mm		
Resolution	static ^[1]	< 12 nm	< 40 nm		
	dynamic ^[2]	< 50 nm	< 250 nm		
Linearity ^[3]	Displacement and distance	< $\pm 0.3 \mu\text{m}$	< $\pm 0.9 \mu\text{m}$		
	Thickness	< $\pm 0.6 \mu\text{m}$	< $\pm 1.8 \mu\text{m}$		
Light spot diameter	12 μm	18 μm	24 μm		
Maximum measuring angle ^[4]	$\pm 25^\circ$	$\pm 19^\circ$	$\pm 10^\circ$		
Numerical aperture (NA)	0.45	0.35	0.18		
Min. target thickness ^[5]	0.05 mm	0.15 mm	0.3 mm		
Target material	reflective, diffuse as well as transparent surfaces (e.g. glass)				
Connection	Pluggable optical fiber via FC socket; for cable type see accessories; standard length 2 m; extension up to 50 m; bending radius: static 30 mm, dynamic 40 mm				
Mounting	Radial clamping (mounting adapter see accessories)				
Temperature range	Storage	-20 ... +70 °C			
	Operation	+5 ... 70 °C			
Shock (DIN EN 60068-2-27)	15 g / 6 ms in XY axis, 1000 shocks each				
Vibration (DIN EN 60068-2-6)	2 g / 20 ... 500 Hz in XY axis, 10 cycles each				
Protection class (DIN EN 60529)	IP64				
Material	Aluminum housing, glass lenses				
Weight ^[6]	approx. 100 g	approx. 100 g	approx. 100 g		

[1] Average from 512 values at 1 kHz, in the mid of the measuring range onto optical flat

[2] RMS noise related to the mid of the measuring range (1 kHz)

[3] All data at constant ambient temperature (25 $\pm 1^\circ\text{C}$). Measured on plane-parallel test glass. Acceptance report is enclosed with delivery

[4] Maximum sensor measuring angle up to which a usable signal can be achieved on reflective surfaces, with accuracy decreasing toward the limit values

[5] Glass sheet with refractive index $n = 1.5$ throughout the entire measuring range. In the mid of the measuring range, also thinner layers can be measured.

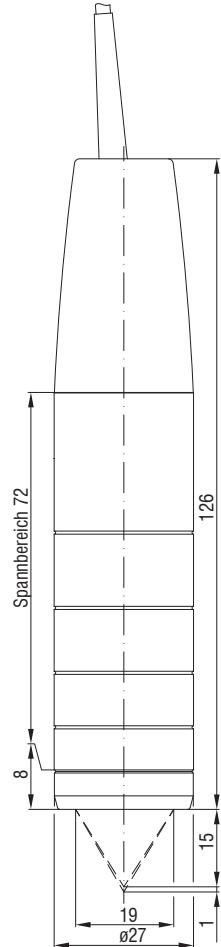
[6] Sensor weight without optical fiber

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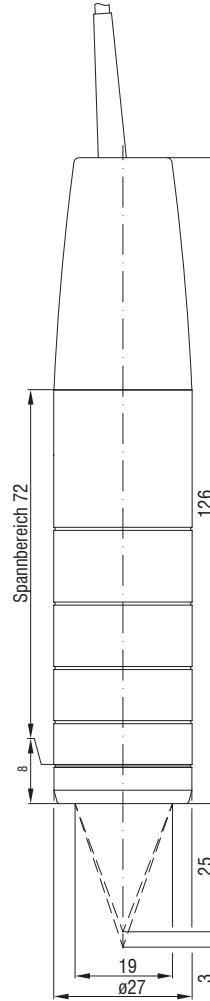
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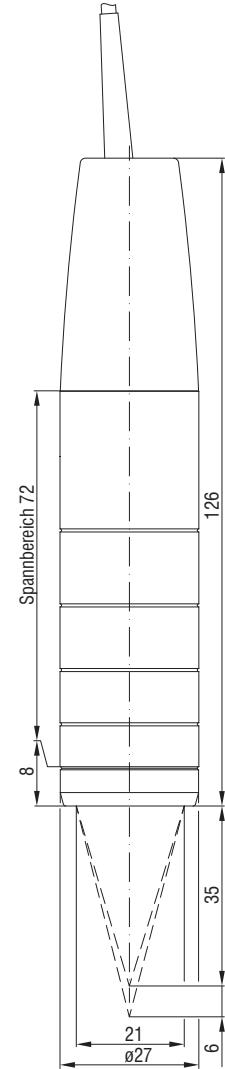
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confocalDT IFS2404-3



confocalDT IFS2404-6



(dimensions in mm, not to scale)