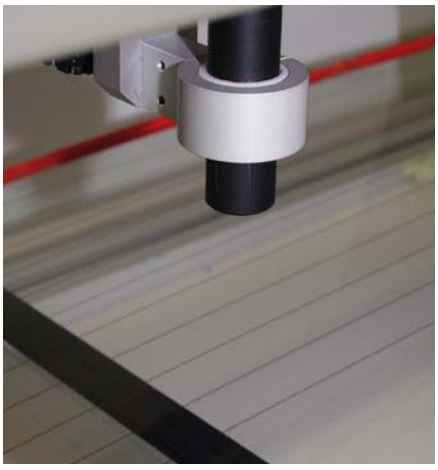
confocalDT IFS 2405
Confocal chromatic displacement sensor

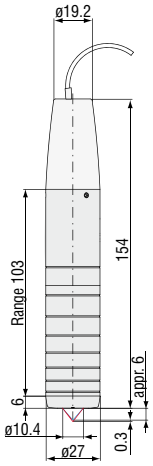
- Robust sensors for various applications
- One-sided thickness measurement of transparent material
- Displacement and position measurement
- Tiny spot size
- Submicrometer resolution
- ATEX / EX approved for hazardous areas

The confocal sensors in the IFS 2405 series are designed for measurement tasks that require maximum precision. These new sensors excel through their high sensitivity. The high tilt angle and the relatively large base distance enable a great variety of potential applications. As well as distance measurements for reflective and transparent surfaces, the sensor can also be used for one-sided thickness measurement of clear film, boards or layers.

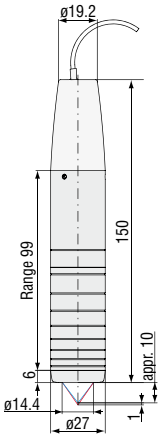


Thickness measurement of rear windows

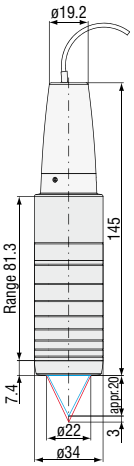
IFS2405-0.3



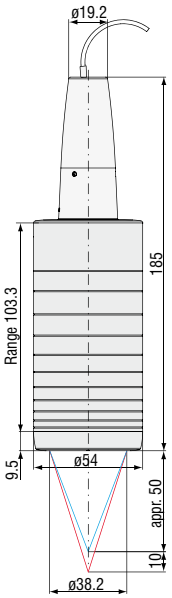
IFS2405-1



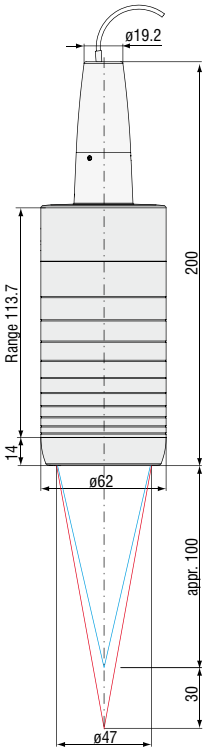
IFS2405-3



IFS2405-10



IFS2405-30

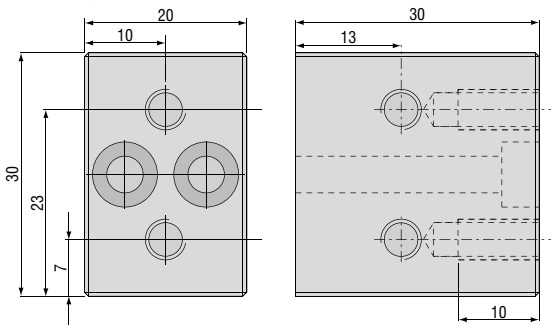


Sensor model	IFS 2405-0.3	IFS 2405-1	IFS 2405-3	IFS 2405-10	IFS 2405-30
Measuring range	0.3mm	1mm	3mm	10mm	30mm
Start of measuring range	6mm	10mm	20mm	50mm	100mm
Spot diameter	6µm	8µm	9µm	16µm	50µm
Linearity (displacement measurement)	0.3µm	0.25µm	0.75µm	2.5µm	7.5µm
	± 0.1% FSO	± 0.025% FSO			
Linearity (thickness measurement)	0.6µm	0.5µm	1.5µm	5µm	15µm
	± 0.2% FSO	± 0.05% FSO			
Resolution [1]	10nm	28nm	36nm	60nm	180nm
Weight	140g	125g	225g	500g	730g
Max. tilt [2]	± 34°	± 30°	± 24°	±17°	± 9°
Protection class	IP 65, front				
Operation temperature	+10°C … +50°C				
Storage temperature	-20°C … +70°C				
Sensor cable (fiber optic cable)	length: standard 3m; option up to 50m bending radius: static 30mm; dynamic 40mm				
Shock	15g, 6ms				
Vibration	2g / 10Hz ... 500Hz				

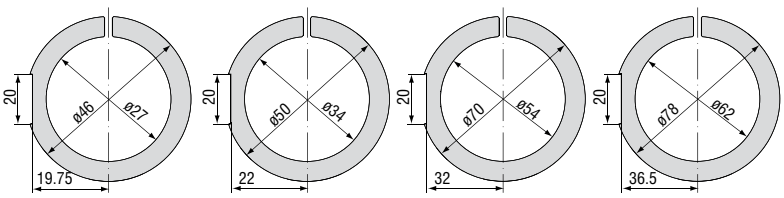
FSO = Full Scale Output
All data at constant ambient temperature (25±5°C) against optical flat; specifications can change when measuring different materials.
[1] Average from 512 values at 1kHz, near to the centre of the measuring range
[2] Maximum sensor tilt angle that produces a usable signal, near to the centre of the measuring range

Accessories: mounting adapter
MA2400 for sensors 2405 (consisting of a mounting block and a mounting ring)

mounting block



mounting ring



MA 2400-27 for sensors IFS2405-0.3 / -1

MA 2405-34 for sensor IFS2405-3

MA 2405-54 for sensors IFS2405-10

MA 2405-62 for sensors IFS2405-30