










More Precision

confocalDT // Confocal chromatic measurement system



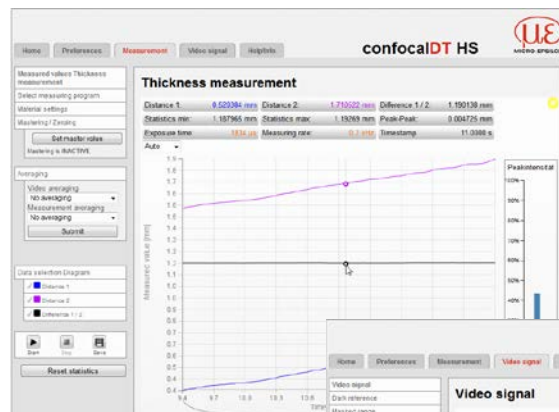


-  **Fastest controller worldwide:**
Measuring rate up to 70kHz
-  **Interfaces: Ethernet / EtherCAT / RS422 / Analog**
-  **Fast surface compensation**
-  **Configuration via web interface**
-  **Submicrometer resolution**
-  **Multi-layer thickness measurement**
-  **Robust design with passive cooling**

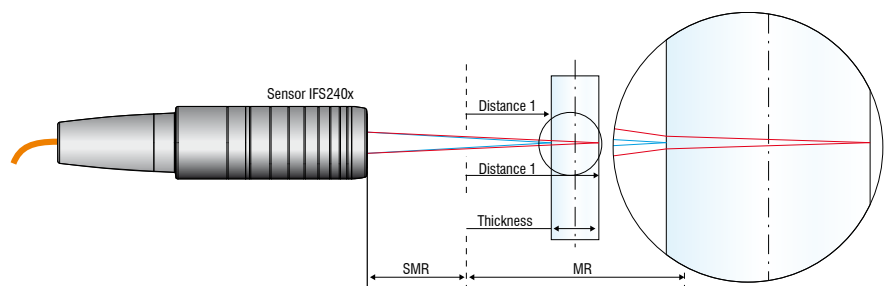
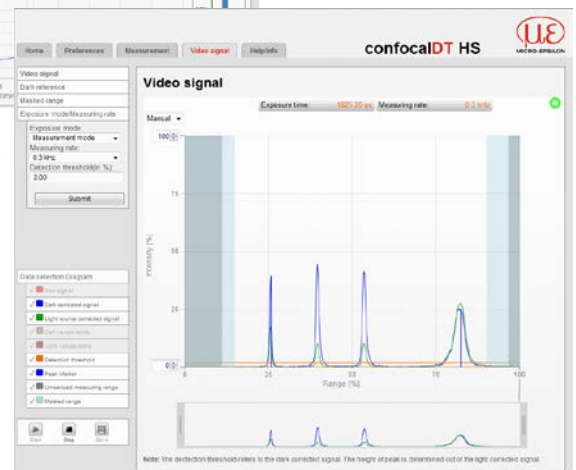
The confocalDT 2471 HS controllers are used for fast distance and thickness measurements of highly reflecting and specular surfaces. The controllers are equipped with enhanced optical components enabling measuring rates up to 70kHz without having to use an external light source. The confocalDT HS controllers are considered one of the fastest confocal measurement systems in the world. The active exposure regulation feature in the CCD array enables accurate, fast surface compensation on difficult changing surfaces during dynamic measurement processes.

The controller can be operated with any IFS sensor and is available as a standard version for distance measurements or as a multi-peak version for thickness measurements.

Due to a user-friendly web interface, the entire configuration process of controller and sensors is carried out without using any additional software. Data output is via Ethernet, EtherCAT, RS422 or analog output.

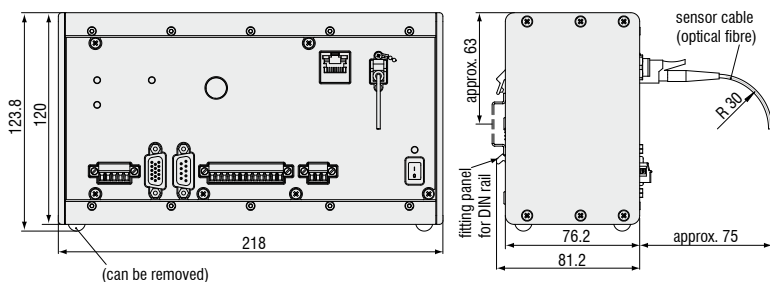


All settings are performed in the web interface. Materials are stored in an expandable materials database.



Controller		IFC2471LED	IFC2471MP LED
Multi peak measurement		2 peaks	up to 6 peaks
Light source		internal white LED	
Measuring rate		continuously adjustable from 100Hz to 70kHz	
Resolution	Ethernet / EtherCAT	1nm	
	RS422	18bit	
	analog	16bit	
Storage		up to 20 calibration tables for different sensors, menu selection	
Controller inputs / outputs		sync-in / trigger-in, sync-out error1-out, error2-out encoder (3x A, B, Index) EtherCAT/Ethernet RS422 analog: current, voltage (16bit D/A converter)	
EtherCAT			
Operating elements, controller display		On/Off switch; button for dark alignment (as well as for reset to factory setting after 10 sec) 4x LED for intensity, range, status, supply voltage	
Supply voltage, power consumption		24VDC ± 15%, ~10W	
Housing		Aluminum case for DIN rail mounting	
Protection class		IP40	
Operating temperature		5 °C ... 50 °C	
Storage temperature		-20 °C ... 70 °C	
Permissible ambient light		30,000lx	
Safety; EMC interference emission Interference resistance		CE EN 61 000-6-3 / DIN EN 61326-1 (class B) EN 61 000-6-2 / DIN EN 61326-1	
Shock		15g, 6ms	
Vibration		2g / 10Hz ... 500Hz	
Optical fiber cable length	Sensor	2 ... 50m	
	Connector	E2000	
Cable length (all cables are shielded)	EtherCAT, Ethernet	CAT5E; length <100m	
	Supply, RS422, sync./error	<30m	
	analog	<30m	
	Encoder	<3m	

Controller IFC2471 LED



System design

The confocalDT 247x system consists of:

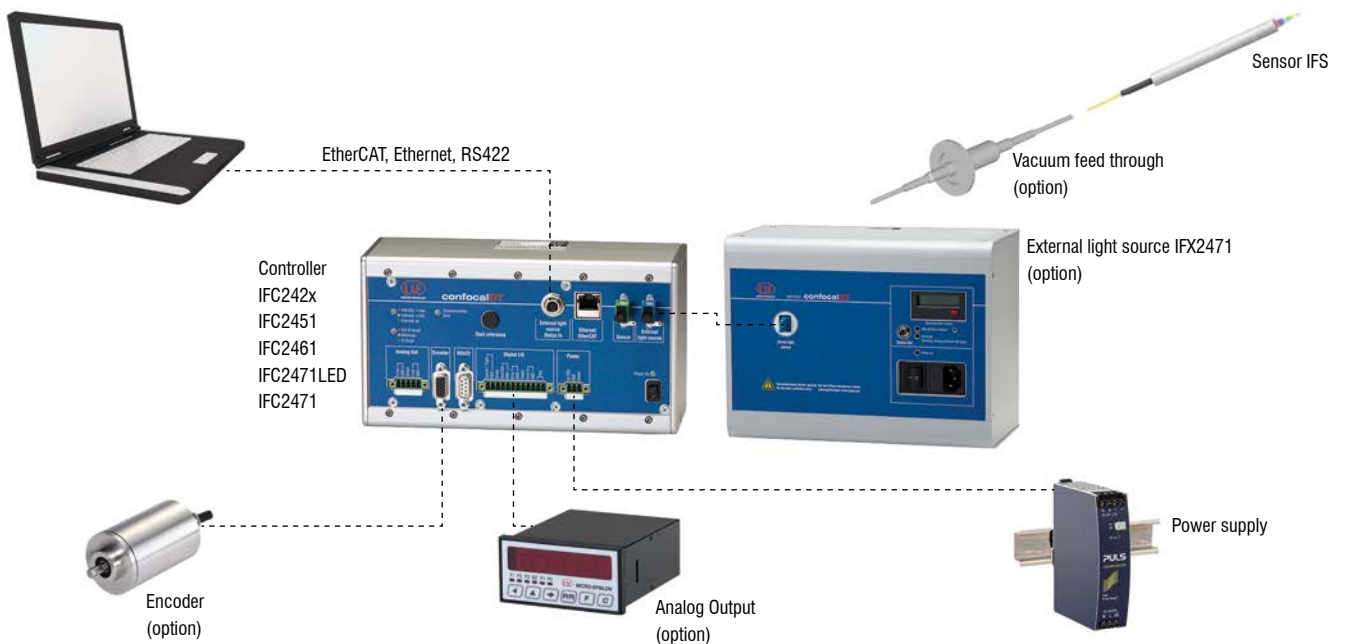
- Sensor IFS240x
- Controller IFC242x

The confocalDT 2451 / 2461 / 2471 HS system consists of:

- Sensor IFS240x
- Controller IFC2451 / IFC2461 / IFC2471LED

The confocalDT 2471 system consists of:

- Sensor IFS240x
- Controller IFC2471 (for external light source)
- Xenon light source IFX2471



Customer-specific modifications

On occasions, application requirements exceed the performance limits of standard sensors and controllers. To facilitate such special tasks it is possible to customize the sensor design and to adjust the controller accordingly. Common requests for modifications include changes in design, mounting options, customized cable lengths and modified measuring ranges.

Possible modifications

- Sensors with connector
- 90° cable outlet
- Vacuum suitability, no outgassing, also UHV
- Reduced sensor length
- Customer-specific mounting options
- Extended sensor lance
- Optical filter for ambient light compensation
- Housing material



Accessories

Software

IFD24n1-Tool Free demo software tool included

Light source accessories

IFX2471/Xe/75 External Xenon light source for IFC2471 controller (70 kHz)
 IFX2471/Xe/75 Lamp module for IFX2471
 IFL2451/LE Lamp module for IFC2451
 IFL2451/LED(003) Lamp module for IFC2451(003) with cooling element
 CL2471-1/Xe Light source cable, 1m

Accessories IFS2406

C2401-X (01) Optical fiber $\varnothing 26\mu\text{m}$ (3m, 10m)

Accessories IFS2405

C2401-X Optical fiber (3m, 10m, customer-specific length up to 50m)
 C2401/PT-X Protection tube for mechanical stress
 (3m, 10m, customer-specific length up to 50m)
 C2401-3(10) Sensor cable for drag chain use, 3m
 C2401-5(10) Sensor cable for drag chain use, 5m

Accessories IFS2402/2403

CE2402-X Sensor cable extension (3/10/13/30/50m)
 CE2402-X/PT Sensor with protection tube (for mechanical stress)
 (3m/10m, customer-specific length up to 50m)
 C2402/Vac/KF16 Vacuum feed through for optical fiber, 1 channel
 C2405/Vac/6/CF63 Vacuum feed through for optical fiber, 6 channels
 C2405/Vac/9/CF63 Vacuum feed through for optical fiber, 9 channels

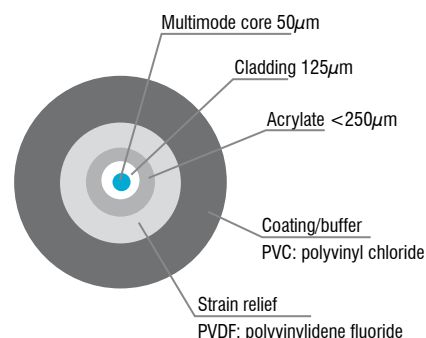
Other accessories

SC2471-3/USB/IND Connector cable IFC2451/61/71, 3m
 SC2471-3/IF2008 Connector cable IFC2451/61/71-IF2008, 3m
 SC2471-3/CSP Connector cable IFC2451/61/71-CSP2008, 3m
 SC2471-10/IF2008 Connector cable IFC2451/61/71-IF2008, 10m
 SC2471-10/CSP Connector cable IFC2451/61/71-CSP2008, 10m
 SC2471-10/USB/IND Connector cable IFC2451/61/71, 10m
 SC2471-20/USB/IND Connector cable IFC2451/61/71, 20m
 PS2020 Power supply 24V / 2.5A
 EC2471-3/OE Encoder cable, 3m

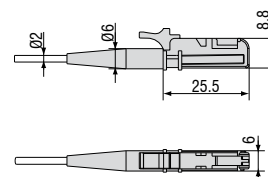
Optical fiber

Temperature range : -50°C to 90°C

Bending radius: 30/40mm



E2000/APC standard connector



High performance sensors made by Micro-Epsilon



Sensors and systems for displacement and position



Sensors and measurement devices for non-contact temperature measurement



2D/3D profile sensors (laser scanner)



Optical micrometers, fiber optic sensors and fiber optics



Color recognition sensors, LED analyzers and color inline spectrometer



Measurement and inspection systems