









More Precision

interferoMETER IMS5200-TH

White light interferometer for precise and high speed thickness measurements



White light interferometer for precise & high speed thickness measurement of thin layers interferoMETER IMS5200-TH

-  Layer thickness measurement of transparent materials with nanometer precision
-  Detection of fine layers as thin as 1 µm
-  Suitable for use in vacuums
-  Multi-peak: up to 5 layers in one measurement
-  Measuring rate up to 24 kHz for high speed measurements
-  Interface: Ethernet / EtherCAT / RS422



The innovative IMS5200-TH white light interferometer from Micro-Epsilon opens up new perspectives for fast and reliable thickness measurements of thin layers from 1 µm to 100 µm.

The interferometers are used for high-precision thickness measurement of transparent single layers and multilayer coatings. With a measuring rate up to 24 kHz, the IMS5200-TH models are ideally suited for industrial use.

The sensor and controller are matched and calibrated at the factory. This makes it possible to measure air gaps and layer thicknesses with nanometer precision. The white light interferometers are used in industrial applications, but also in clean room environments and vacuums.

Integrated interfaces such as Ethernet, EtherCAT and RS422 as well as encoder connections, analog outputs, synchronization inputs and digital I/Os support the connection to modern control systems and production programs.

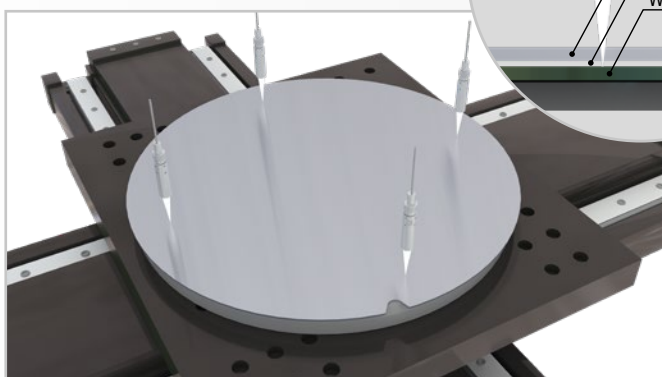
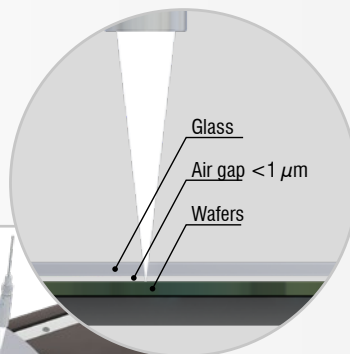
A robust sensor and a controller in a metal housing make the system ideally suitable for integration into production lines. With its compact design and large operating range, the sensor is easy to integrate. It provides stable measurement results even in vibrating environments. The controller is installed in the control cabinet via DIN rail mounting.

Unlike conventional interferometers, initial operation and parameter set up are conveniently performed via web interface and do not require any software installation.

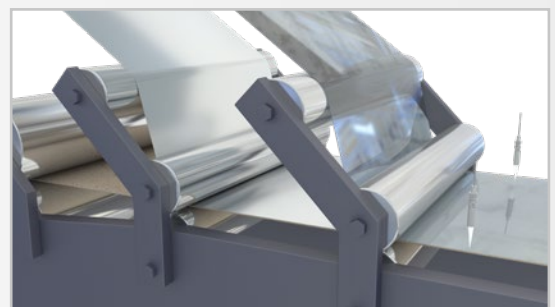
NEW

IMS5200MP-TH26

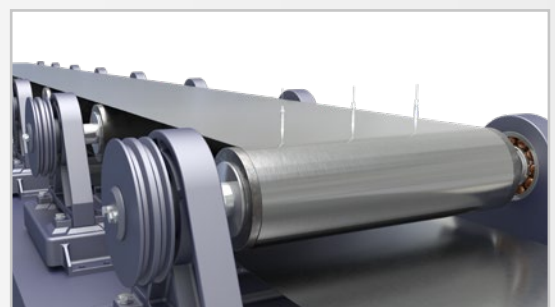
The IMS5200MP-TH26 model features multi-peak measurement. Therefore, up to 5 thin layers can be detected



Air gap measurement for glass wafers and masks



Inspection of the coating processes for beverage cartons



Paint thickness inspection in the metal industry

Model		IMS5200-TH26	IMS5200MP-TH26
Working distance		26 mm ±2 mm	
Measuring range	Thickness	1 µm ... 100 µm ^[1]	
Resolution ^[2]		< 1 nm	
Measuring rate		continuously adjustable from 100 Hz to 24 kHz	
Linearity ^[3]		< ±100 nm	
Temperature stability	Sensor	Linearity valid for the entire temperature range	
Multi-peak measurement		1 layer	5 layers
Light source		Internal white LED ^[4]	
Light spot diameter ^[5]		55 µm	
Measuring angle ^[6]		±4°	
Supply voltage		24 VDC ±15 %	
Power consumption		approx. 10 W (24 V)	
Signal input		Sync in, trigger in, 2 x encoders (A+, A-, B+, B-, index), 3 x encoders (A+, A-, B+, B-)	
Digital interface		Ethernet / EtherCAT / RS422 / PROFINET ^[7] / EtherNet/IP ^[7]	
Analog output		4 ... 20 mA / 0 ... 10 V (16 bit D/A converter)	
Switching output		Error1-Out, Error2-Out	
Digital output		sync out	
Connection	Optical	Pluggable optical fiber via E2000 socket (controller); cable lengths see accessories; bending radius: static 30 mm, dynamic 40 mm	
	Electrical	3-pin supply terminal strip; encoder connection (15-pin, HD-sub socket, max. cable length 3 m, 30 m with external encoder supply); RS422 connection socket (9-pin, Sub-D, max. cable length 30 m); 3-pin output terminal strip (max. cable length 30 m); 11-pin I/O terminal strip (max. cable length 30 m); RJ45 socket for Ethernet (out) / EtherCAT (in/out) (max. cable length 100 m)	
Mounting	Sensor	Radial clamping, mounting adapter (see accessories)	
	Controller	Free-standing, DIN rail mounting	
Temperature range	Storage	-20 ... +70 °C	
	Operation	+10 ... +50 °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)	Sensor	IP65 (front; option /VAC IP40)	
	Controller	IP40	
Vacuum		UHV (cable and sensor)	
Material	Sensor	Stainless steel	
	Controller	Aluminum housing, passive cooling	
Control and indicator elements		Multifunction button: two adjustable functions and reset to factory settings after 10 s; web interface for setup: selectable presets, freely selectable averaging, data reduction, setup management; 5 x color LEDs for intensity, range, status and power	

^[1] All data at constant ambient temperature (24 ±2 °C). Measuring range with n=1.5; for air gap measurement between two glass plates (n~1), the measuring range is 1.5 µm ... 150 µm. The measuring object must be within the working distance.

^[2] Sampling rate 0.5 kHz, moving average over 64 values, measured on an approx. 30 µm thick SCHOTT glass D263

^[3] Maximum thickness deviation when passing through the measuring range during measurement of an approx. 30 µm thick SCHOTT glass D263 (n=1.5).

^[4] Wavelength band between 480 and 760 nm

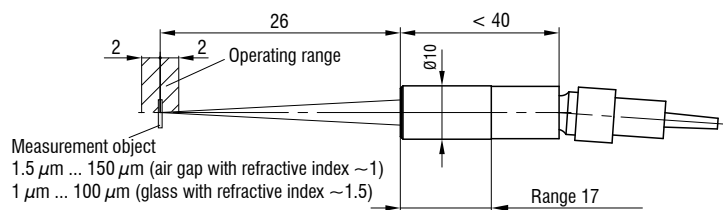
^[5] In the mid of the measuring range

^[6] Maximum sensor tilt angle that produces a usable signal on an approx. 0.6 mm thick BK7 optical flat in the mid of the measuring range. The accuracy decreases when approaching the limit values.

^[7] Optional connection via interface module (see accessories)

Dimensions

Sensor



Controller

