

TECHNICAL SPECIFICATIONS

multi-Thick

OPTICAL SENSOR FOR MULTI-LAYER THICKNESS MEASUREMENTS

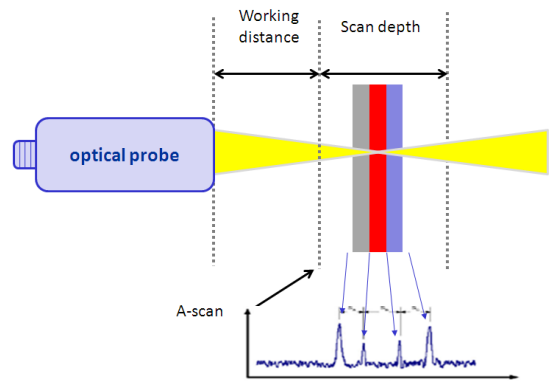
HOW IT WORKS

The measuring system is based on low coherence interferometry. It represents the latest measuring solution available on the market to optically measure thickness of sample with complex structure.

Layers of different materials generate an optical reflection due to the difference of the refractive index. Optical head collects all the reflections that are mixed together with embedded optics: the resulting signal will contain information about position of each reflection. The processing allows the reconstruction of the A-scan profile (intensity of reflection vs. position).

it provides full information of the structure of the measuring object in just one point.

The processing of the A-scan with embedded algorithms allows the detection of the material's interface and measurements of thickness of each layer.



APPLICATIONS

The sensor measures any transparent or semi-transparent material; coating on substrates can also be measured.

Target markets are:

- multi-layered plastic film (barrier and/or functional)
- coating/lamination
- multi-layer, multi-lumen medical tube
- coating on glass, metal or optical device

ADVANTAGES

- complete depth information of the sample
- one-sided measure (reflection mode)
- high accuracy
- non-contact
- quick integration in production lines or QA/QC laboratory

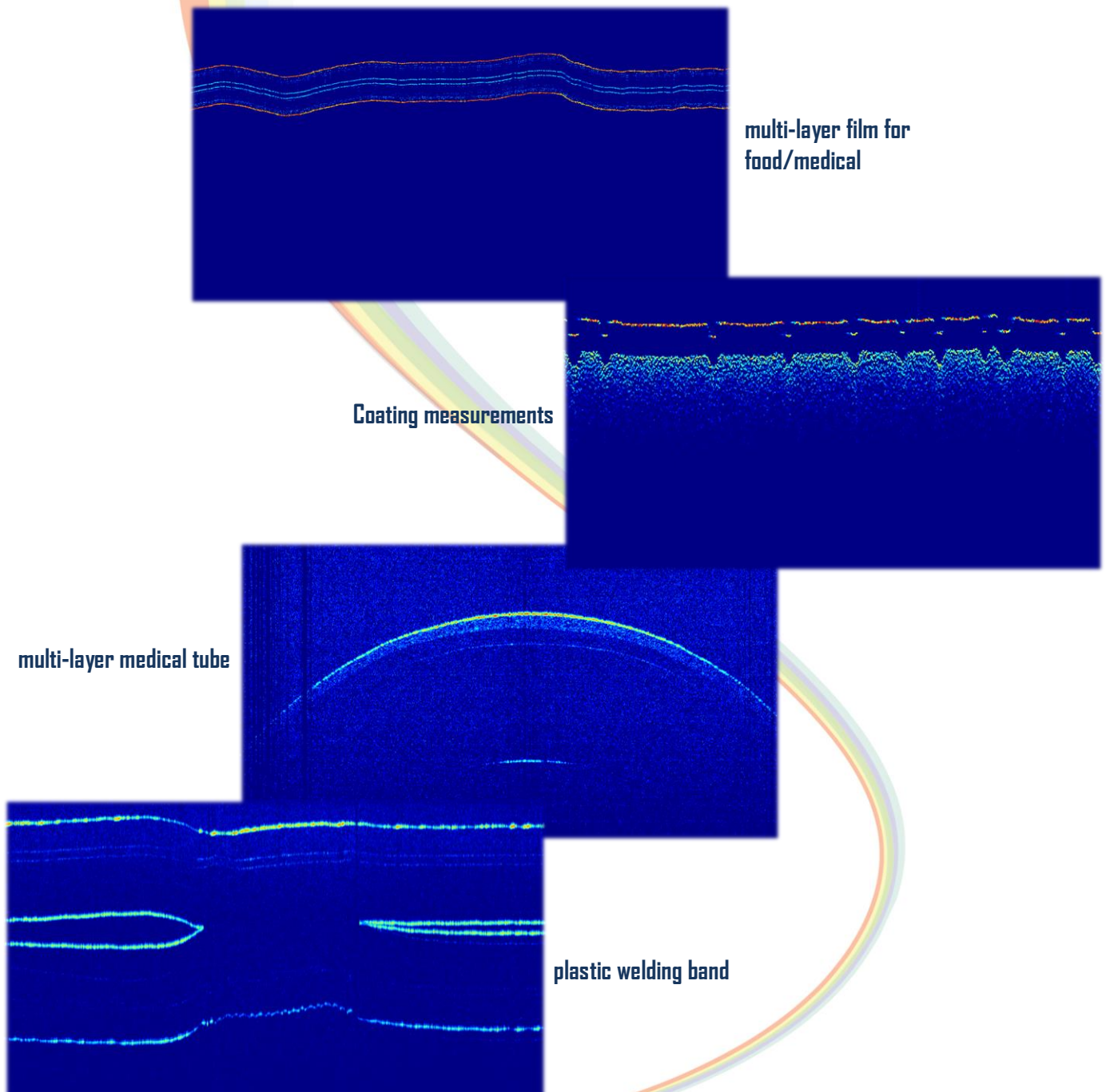
TECHNICAL SPECIFICATIONS

	ML1	ML2	ML3
A-scan measuring rate	250 Hz		
light source	superluminescent diode		
scan depth	4 mm	4 mm	1.8 mm
position accuracy	< 1 micron		
axial resolution (n=1.5)	7.3 micron	4.4 micron	2.1 micron

DEPTH IMAGE RECONSTRUCTION: B-SCAN

The inner structure of a sample can be represented as an image if the sensor is used in combination with a scanning system or if the object is moving under the optical head. In such a situation multiple A-scan deriving for diverse positions of the sample are combined providing color image with depth information: this is the B-scan.

Each A-scan is color coded so that pixel color is related to the intensity of the reflection (the position is maintained in the pixel index) and raise a single column of the image. In the B-scan the depth information is displayed from top to bottom, while the scanning axis is from left to right.

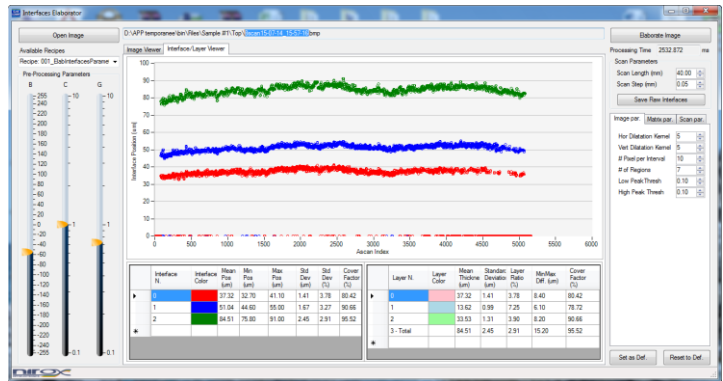


EMBEDDED PROCESSING

A-scan or B-scan are post-processed by sensor embedded software according to the type of the structure.

Available solutions for multi-layer film, coating over diffusing/metal substrates and profilometry.

Custom algorithms are also developed for challenging probes.



MANUFACTURER

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