

INNOVATION

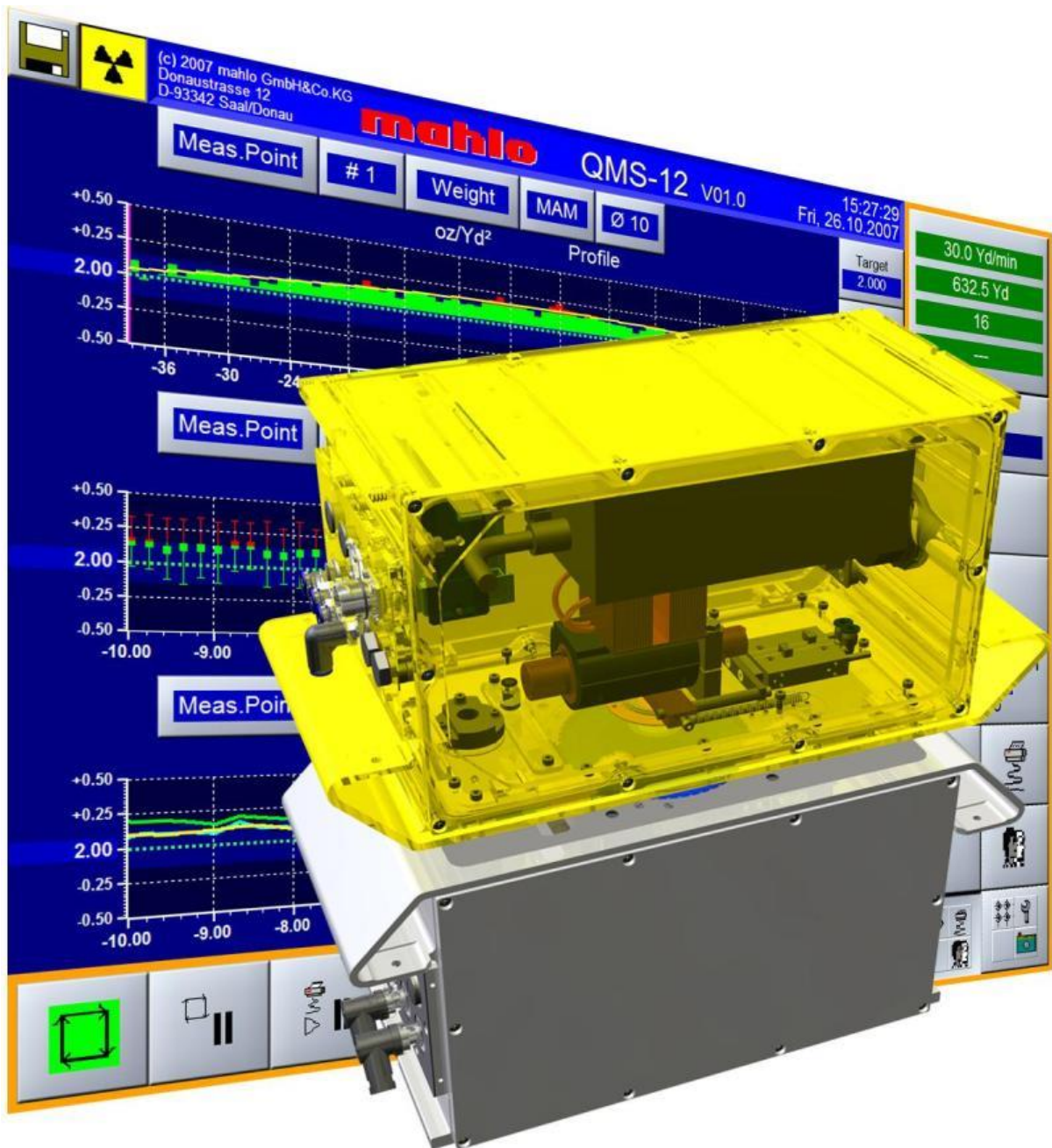
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trendsetting technology. worldwide

**NEW!**

# IMF-15 Near Infrared Sensor

Solid-State Transmission and Reflection Infrared  
Measurement of Basis Weight / Thickness



TEXTILE NONWOVENS PAPER PLASTIC



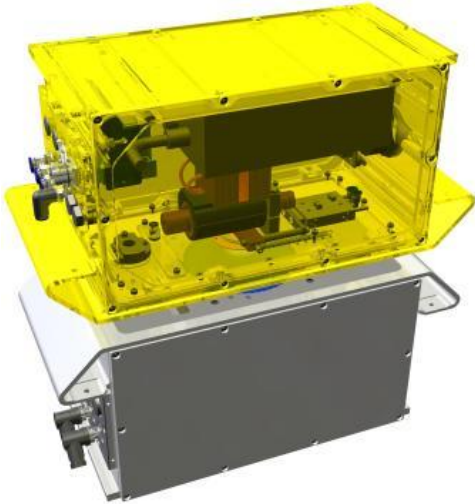
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INFRALOT IMF-15 en  
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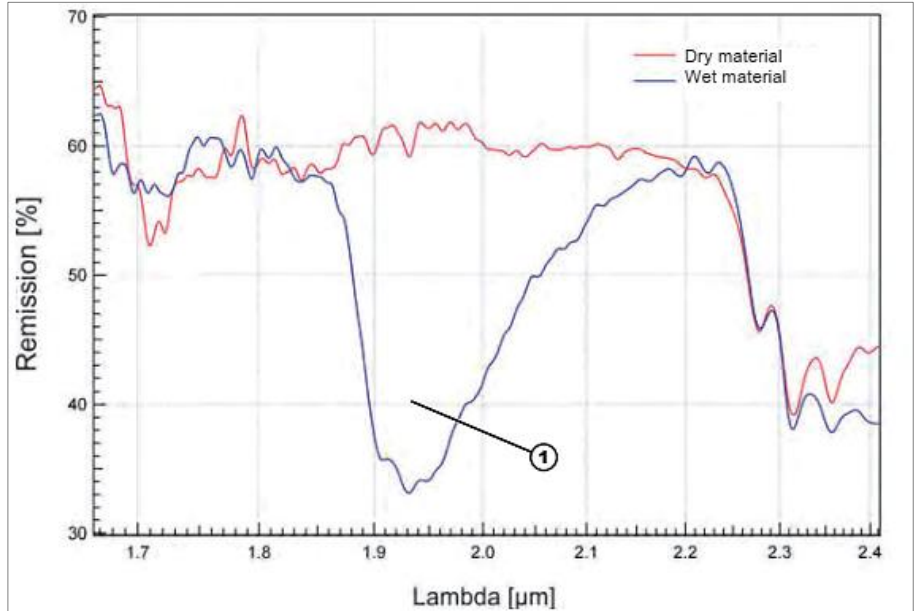
# IMF-15 NIR Sensor

## Principle of Operation



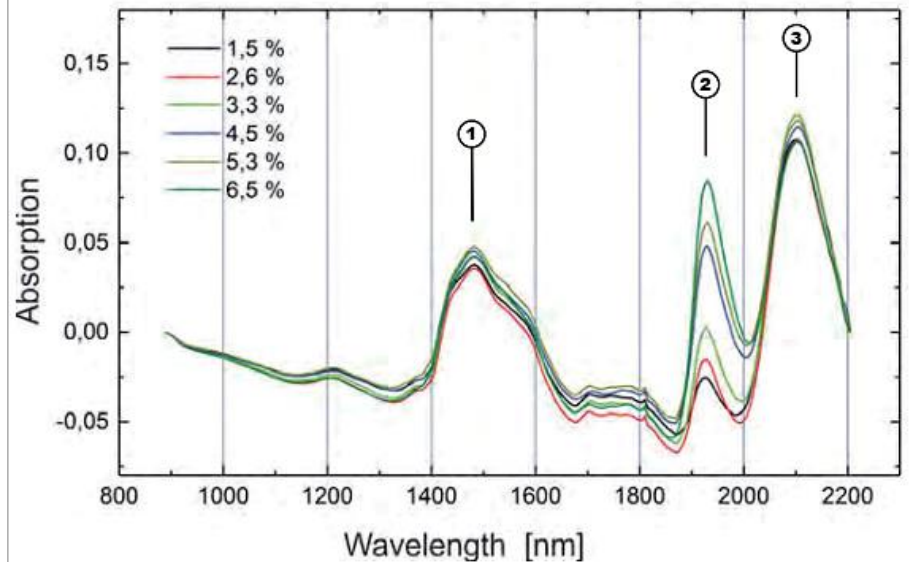
Light-specific wavelengths can excite the molecular bonds of certain organic compounds to oscillate. The greater the number of these molecules present, the more of the incident light is absorbed at the wavelength specific to that compound (water, polymer, etc.).

In practice, in order to ensure measurement stability, the measured light energy at the resonance wavelength is compared with other reference wavelengths at which no absorption occurs.



Absorption of IR energy through water

### 1 Representative absorption



Determination of paper moisture by absorption of IR energy (here the absorption spectra of paper at different moisture levels can be seen)

- 1 Water + cellulose
- 2 Water
- 3 Cellulose

# IMF-15 NIR Sensor

## Solid State Infrared Absorption Measurement



*Nonwoven Manufacturer controls Basis Weight and Moisture on Spunlace Lines with Qualiscan QMS from Mahlo*

### Precise Measurement

The NEW Mahlo Solid-State IMF-15 measures moisture and the basis weight and thickness of films, plastic sheet, aqueous and other organic coatings, nonwovens, and many other webs with high resolution, accuracy and excellent defect detection. Its non-nuclear measurement technique is very selective and cost-effective as it can be configured in either single-sided reflection, or dual-sided transmission modes.

### Applications

- Moisture
- Aqueous coatings on paper and polymer
- Dry coatings
- Single- and multi-layer films
- Nonwovens
- Tissue
- Multiple measurements simultaneously

### Benefits

- True Solid State! No moving parts to fail or cause heat and vibration
- Non-Nuclear
- Excellent CD resolution for accurate profile control
- Finely focused measurement spot for narrow Defect Detection
- Operates at high temperatures without cooling

Specification		Value		Unit
Parameter		Basis Weight & Moisture		
Type		IMF-R	IMF-T	
Measuring principle		Reflection of infrared light	Transmission of infrared light	
Measuring range Basis weight <sup>1</sup>	Paper	~ 10 - 30	~ 10 - 200	g/m <sup>2</sup>
	Polymer	~ 10 - 60	~ 10 - 500	
Measuring range Moisture <sup>1</sup>		~ 0.2 - 15	~ 0.2 - 15	% H <sub>2</sub> O
		~ 0.2 - 10	~ 0.2 - 30	g/m <sup>2</sup>
Measuring range Coating <sup>1</sup>		0.2 - 200	-	g/m <sup>2</sup>
Repeatability <sup>1</sup>		Better than 1%		
Measuring gap		10 / 15 / 30	10 / 15 / 30 / 60	mm
Temperature range without cooling		10 - 50		°C

1) Measuring range and measuring accuracy depending on the material (analysis of material samples necessary)



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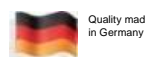
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