

## Inline oil sensor NGO3

### Traversing continuous oil layer thickness measurement

InfraLytic is considered to be the most innovative developer and manufacturer in oil layer thickness measurement technology.

Our more than 20 years of know-how lies in the non-contact measurement of oil film layers on steel and aluminium. The inline sensors are specially designed for automated and continuous measurement of the oil layer thickness, e.g. in conveyor systems.

Our experienced **integrators** implement your wishes and requirements for an inline oil layer thickness measurement quickly and easily.

New fast NGO3 measuring head for contact free oil layer thickness measurement. New materials and more complex components require ever greater precision for the forming process. The lubricating film on steel and aluminium sheets must be adapted to the process. Tool life is to be increased, the number of missing parts in production is reduced and efficiency is increased.

With the new and fast inline oil layer thickness sensor NGO3 you continuously determine the oil layer thickness during the process. You receive the measured values in real time. As a numerical value in  $g / m^2$ , as a graph or as a colour carpet, you can immediately see the lubricating film covering with which the material is coated.

You can react directly to under- or over-oiling, flat or partial, and avoid faulty production, process downtimes and increased tool wear.

Statistics are created on the collected data of the production, including the oil layer thickness. This allows conclusions to be drawn as to which oiling is used to ensure the highest level of process reliability, the lowest number of missing parts and the longest tool life. For some subsequent processes e.g. coating or painting measures must be ensured and verified that there is no oil.

All calibrations are interchangeable among the devices of the NG group and can easily be transferred to other measuring devices of the NG series. This applies not only to the handheld devices but also to the inline oil layer thickness sensors NGO3. Calibration transfer from the handheld device to the inline sensor and vice versa.

## FEATURES

- Calibration transfer between handheld device NG2 and the inline measuring head NGO3
- non-contact measurement in real time
- internal automatic continuous validation review
- colour, graphic display
- Independent of the line speed
- Band vibration compensation

- 200 mm safety distance between measuring head and material
- all common oil qualities pre-calibrated
- Independent of oil mixing
- IP 65

## AREAS OF APPLICATION

The standard measurable oil thickness is between 0.05 and 6  $\mu\text{m}$  (approximately  $\text{g} / \text{m}^2$ ) oil layer thickness. Calibrations are standard for:

- untreated cold sheet
- hot-dip galvanized sheet
- fire-aluminium sheet
- electrolytically galvanized sheet (automatic phosphating detection)
- galvanized
- Aluminium (Mill finish and EDT)

## MEASURING PRINCIPLE

Using the Lambert Beerschen law, the NGO3 determines the oil layer thickness.

The thickness of the oil layer is directly related to the absorption of the light. The light rays penetrate the oil layer twice. The specific wavelengths are partially absorbed by the oil and evaluated. This measuring principle works largely independent of the type of oil, so oil mixtures do not affect the measurement results accountably.

## TECHNICAL DATA

**Measurement method:** Infrared spectroscopy

**Measuring range:** 0.02 - 6  $\text{g} / \text{m}^2$

**Measurement accuracy:**

0.10 - 0.5  $\text{g} / \text{m}^2$ : +/- 0.025  $\text{g} / \text{m}^2$

0.5 - 2  $\text{g} / \text{m}^2$ : +/- 0.2  $\text{g} / \text{m}^2$

> 2  $\text{g} / \text{m}^2$ : +/- 10% of the measured value

**Repeatability:**

$\pm 5$  nm without smoothing (120 Hz)

$\pm 0,8$  nm with smoothing

**Measurement resolution:** up to 0.01  $\text{g} / \text{m}^2$

**Surfaces:** all that are not extremely shiny e.g.; Cold strip, hot-dip galvanized, electrolytically galvanized, phosphated, aluminized ZnMg surfaces, galvanized; Aluminium – uncoated, pre-treated

**Lubricants:** Mineral oil, tixotropic mineral oils, hotmelt, waxes, other organic lubricants after special calibration

**Measuring distance:** 200 mm + 20 / - 20 mm

**Measurement frequency:** up to 450 Hz (default 120 Hz)

**Speed of transversing unit:** up to 2 m / s

**Ambient temperature:** + 5 °C to 55 °C

**Cleaning interval:** up to 12 months (depending on the environment)

**Protection class:** IP 65



## Inline water measuring head NGO3-W

New NGO3-W measuring head for non-contact water film measurement in moving processes.

The demands on companies to improve their energy balances are constantly increasing. Rolling slabs requires a lot of energy. After the rolling process, the strip is wound up. Here, the emulsion required for rolling is blown off at great expense and the strip is dried using radiant heaters and fans.

Our water measuring head **NGO3-Water** measures the amount of water remaining on the strip in real time while the strip is being wound up at production speed. With a distance of 200 mm, the measuring head can be mounted between the last stand and the reel, for example.

The information about the measured amount of water and lubricant on the belt is provided in separate displays in  $\text{mg}/\text{m}^2$  and directly on your operator's monitor. This means that the drying of the belt can be adjusted according to the measured values and it does not have to be heated or blown excessively. The great risk of water being wrapped up at the end is history.

### FEATURES

- non-contact measurement in real time
- internal automatic continuous validation check
- colourful, graphic display
- belt speed independent
- belt vibration compensation
- 200 mm safety distance between measuring head and tape
- independent of residual oil
- IP 65

### AREAS OF APPLICATION

Special sensor for measuring emulsions.

The sensor is used e.g. in

- heavy plate rolling mills
- continuous casting plants
- hot rolling mills

### TECHNICAL DATA

**Measurement method:** infrared spectroscopy

**Measuring range:** 0.05 - 6 g / m<sup>2</sup>

**Measurement accuracy:**

0.10 - 0.5 g/m<sup>2</sup>: +/- 0.025g/m<sup>2</sup>

0.5 - 2g/m<sup>2</sup>: +/- 0.2g/m<sup>2</sup>

> 2 g / m<sup>2</sup>: +/- 10% of measured value

**Repeatability:**

± 5 nm without smoothing (120 Hz)

± 0.8 nm with smoothing

**measurement resolution:** up to 0.01 g / m<sup>2</sup>

**Surfaces:** all those that are not extremely shiny e.g.; Cold rolled strip, hot-dip galvanized, electrolytically galvanized, phosphated, aluminized ZnMg surfaces, galvanized Aluminium – uncoated, pretreated

**Lubricants:** Mineral oil, thixotropic mineral oils, hot melt, waxes, other organic lubricants after special calibration

**measuring distance:** 200 mm + 20 / - 20 mm

**measurement frequency:** 120 Hz

**Traversing speed:** 0 to 2 m / s

**Ambient temperature:** +0 °C to 55 °C

**cleaning interval:** up to 12 months (depending on the environment)

**Protection class:** IP 65



## Inline paint layer sensor

### Traversing continuous paint layer thickness measurement

InfraLytic is considered the most innovative developer and manufacturer in infrared measurement technology. Our more than 20 years of know-how is in the contactless measurement of lubricating and paint layers on metal surfaces.

The inline sensors are specially designed for automated and continuous measurement, e.g. in conveyor systems. Our experienced integrators implement your wishes and requirements for inline paint layer thickness measurement quickly and easily.

Current measuring methods such as beta transmission measurement are reaching the limits of what is possible. With our highly developed IR sensors, we determine the absolute paint layer thickness and its distribution inline in real time.

Transparent and very dark paint layers  $< 0.5 \mu\text{m}$  are measured absolutely by our sensors with the highest accuracy. Traversing at a speed of 4 m / s, the paint layers of your electrical sheets are measured at up to 450 Hz. The measured values are shown in a diagram, as a false colour carpet or a desired visualization.

Paint layers  $< 0.5 \mu\text{m}$  and very dark paints are measured absolutely with the highest precision by our sensors. Traversing at a speed of 2 m/s, the paint layers of your electrical sheets are measured at up to 450 Hz. The measured values are shown in a diagram, as a false colour carpet or in a desired visualization.

### FEATURES

- Calibration transfer between handheld device NG2 and inline measuring head NGO3
- non-contact measurement in real time
- internal automatic continuous validation check
- colourful, graphic display
- belt speed independent
- belt vibration compensation
- 200 mm safety distance between measuring head and tape
- all common oil qualities pre-calibrated
- independent of oil mixture
- IP 65

## AREAS OF APPLICATION

The standard measurable oil thickness is between 0.05 and 6  $\mu\text{m}$  (approximately  $\text{g} / \text{m}^2$ ) oil layer thickness. Standard calibrations are for:

- untreated cold-rolled sheet
- hot-dip galvanized sheet
- hot-dip aluminized sheet
- electrolytically galvanized sheet (automatic phosphating detection)
- galvanized
- aluminium (mill finish and EDT)

## TECHNICAL DATA

**Measurement method:** infrared spectroscopy

**Measuring range:** 0.02 - 6  $\text{g} / \text{m}^2$

**Measurement accuracy:**

0.10 - 0.5 $\text{g}/\text{m}^2$ : +/- 0.025 $\text{g}/\text{m}^2$

0.5 - 2 $\text{g}/\text{m}^2$ : +/- 0.2 $\text{g}/\text{m}^2$

**Repeatability:**

$\pm 5$  nm without smoothing (120 Hz)

$\pm 0.8$  nm with smoothing

**measurement resolution:** up to 0.01  $\text{g} / \text{m}^2$

**Surfaces:** all those that are not extremely shiny e.g.; Cold rolled strip, hot-dip galvanized, electrolytically galvanized, phosphated, aluminized ZnMg surfaces, galvanized Aluminium – uncoated, pre-treated

**Lubricants:** Mineral oil, thixotropic mineral oils, hot melt, waxes, other organic lubricants after special calibration

**measuring distance:** 200 mm + 20 / - 20 mm

**measurement frequency:** up to 450 Hz (standard 120 Hz)

**Traversing speed:** 0 to 2 m / s

**Ambient temperature:** + 5  $^{\circ}\text{C}$  to 55  $^{\circ}\text{C}$

**cleaning interval:** up to 12 months (depending on the environment)

**Protection class:** IP 65



[www.robustech.sk](http://www.robustech.sk)  
[www.gapgun.sk](http://www.gapgun.sk)  
[www.gapgun.eu](http://www.gapgun.eu)  
[robustech@robustech.sk](mailto:robustech@robustech.sk)