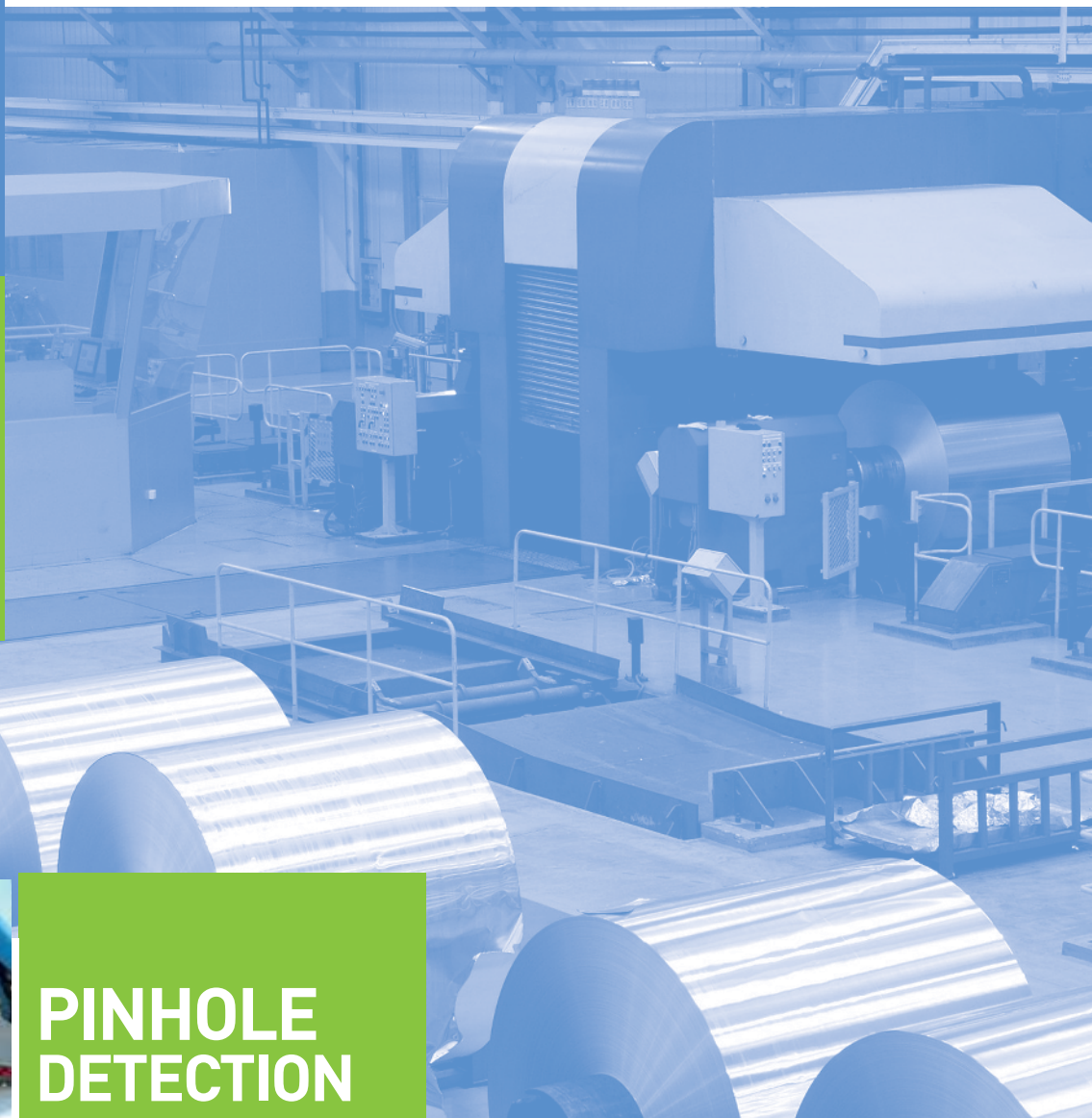




ACCURATE
ROBUST

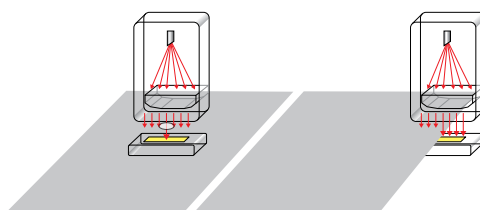
QUALITY CONTROL FOR FLAT METALLIC PRODUCTS



PINHOLE DETECTION

Sheet metals used for the food packaging are produced by companies from the steel and aluminium industry. Sheet metals are manufactured using rolling mills to stretch the raw material and form a steel or aluminium sheet of some tenth millimetres of thickness. The stretching process of sheet can induce a lack of homogeneity of the metal structure and form holes.

The most critical defects are very small holes called "pin hole" existing on strip dedicated to food and liquid packaging. These holes can not be detected visually. In order to detect those defects, Arck Sensor offers an automatic detector named CEPHEE® using the "dark room" principle.



Under the strip of metal to be controlled is placed a specific laser light going through the holes in the metal in order to activate ultra sensitive photoelectrical sensors.

The hole is detected and calibrated (classified by size) and positioned in X, Y along the strip. This alarm is delivered to line process system and allows to detect which part of the metal sheet is defective. CEPHEE® detectors detect, at a run speed of 1200 m/min, holes of diameter 10 μm ; or a lower value following requirements.

Customer benefits:

- Certify your quality:
 - maximum size pinhole
 - pinhole density per m^2
 - line pinhole
- Optimize your process & maintenance cost-cutting thanks to the result analysis
- Increase your productivity by reducing the defects

Accurate and Robust:

The patented sensor technology, its specific design and ruggedness are approved for severe environments; ambient light immunity.

Arck Sensor is a French company specialized in optical measurement in harsh industrial environments. Our mission is to provide the most robust and accurate sensors for container ports and heavy industries in the frame of automation and safety concerns.

Since 1998, Arck Sensor has been constantly improving its technology to deliver long term solutions for major container terminals and metal industry companies, world-wide.

OUR EXPERTISE IN QUALITY CONTROL FOR FLAT METALLIC PRODUCTS

Pinhole detection

■ Width measurement

■ Welding detection

■ Edge pinhole detection

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PINHOLE DETECTION

Laser technology

The principle is based on the use of a laser beam as a light source and of high sensitivity photo sensors suited for the reception of the light through possible holes in the metal sheet.

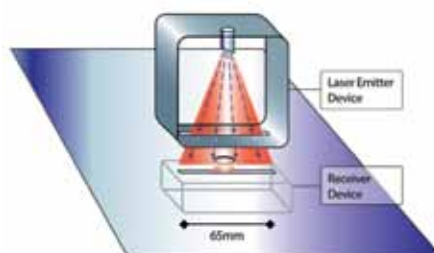
Considering the size of holes and to avoid the use of hypersensitive sensors, the emitted light energy must be high.

The use of a laser source meets this requirement.

A laser diode of some mW produces a high energy source because the power is condensed into a very thin light spot. The original beam is made divergent to sweep the detection zone using a line generation lens.

For technical reasons, an optical module does not cover more than 73 cm.

This implies the use of several optics with an overlap of 1 mm on each side between one module and the following one.



CEPHEE® V :

CEPHEE® V is a cutting-edge detector able to **analyse 100% of the foil for highest quality assurance**. The sheet is inspected in its totality **thanks to the no-edge-mask improvement**.

Such sensor associated to the processing electronics can therefore:

- Detect holes larger than 10µm at 10 m/sec,
- Detect cracks on the edge of the strip,
- Provide their positions inside the module.



CEPHEE®-AS :

CEPHEE®-AS is an automatic detector especially designed for foil separator, **testing 100% of the two foils** at the exit of the separator.

CEPHEE®-AS:

- Detects pinholes on the whole strip,
- Detects holes larger than 10µm at 20 m/sec,
- Gives the exact position of each pin-hole,
- Evaluates the width of strip.

