



We keep an eye on your quality

Light Pinhole Tester - LPT 7000

**ibea**<sup>®</sup>  
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# Ibea Vision Inspection System LPT 7000

## The Light Pinhole Tester

In-line leak detection for deep drawn cans. Very precise timing allows the inspection of pinholes down to 20  $\mu\text{m}$  at the bottom and 50  $\mu\text{m}$  at the wall of drawn cans.

The LPT 7000 Light Leak detector for cans is designed for the detection of small pinholes in drawn cans. The direct integration into the press has a small footprint and needs no special transport. The cans are accepted by clocked transportation of the press or to the inspection mask. There the cans will be arrested momentarily, inspected and accelerated to the downstream line or diverted by the rejection if a leak is detected.

Cans are fed bottom up to the module. Therefore can height change requires no adjustment for cans fed bottom-up. Interlocking with the press will stop the press and an alarm will be activated (blinking warning light, siren etc.). If a light source fails or if the LPT for some reason is not operational. The basic control design has a number of self-monitoring features that report to the operator monitor, featuring a high level of information about its internal status to an operator or service person.



Inside of a DRD  
can press

Modules are connected through a robust industrial network to the LPT. The LPT operator monitor provides a permanent operator interface for setting up the modules, monitoring the process, logging/printing/ uploading of production data and has helpful menus for service personnel.



Easy maintenance  
access through swingarm



CAT drawing  
of the high end can inspection

## Rejection Systems

The exit end of the inspection module is provided with a reject system to divert leaking cans into a funnel leading downwards for collection in a box below the module. The reject system is based on controlled timing of pneumatic blow-off nozzle. Timing and electrical control is integrated in the system and the reject has a detector to positively verify that a rejected can is actually dumped.

## Optical Inspection

The basic inspection principle is an optical transmission measurement, whereby a strobed light source delivers an intense illumination to one side of the can, while a high sensitivity light detector "looks" at the other side to detect any light transmitted through a possible hole. The occasional hole where a clear lacquer film stays intact will also be detected compared to systems based on vacuum or pressure. Light sources are based on solid state LEDs, with their long life time. Placing specially prepared cans with calibrated holes in the inspection stations enables the operator to check the system sensitivity.

## Pinhole size & location

When applying the LPT 7000 to can inspection the sensitivity is different for holes in the bottom of the can and on the sidewalls. Bottom holes will be detected down to 20  $\mu\text{m}$  sidewall holes to 50  $\mu\text{m}$ . Very large can sizes may result in reduced sensitivity. The greatest advantage of optical detection is the exact location of the hole at the product.



## Light Sources

The lamp units contain a dense matrix of hundreds of solid state light emitting diodes LEDs plus special optics to focus the light onto the entire surface to be inspected. Control electronics are integrated in the lamp housing to ensure constant light output with changing temperature. The electronics also monitor the current of each individual LED, and in the event just one single LED should fall, inspection will be halted, an alarm output set and the error cause will be displayed on the LPT. The actual layout and size of a lamp unit depends on the physical outline of the can(s) to be inspected.

# ibea - product quality systems

## Testing methods applied by ibea systems

- Standard image processing applications:  
inspection by camera of surface, texture, geometry, shape and dimensional accuracy, color, 2D and 3D measurement, holographic imaging, roughness, measurement of position and torsion, leak tightness
- Image processing, special applications:  
Heat-flow thermography by direct application of heat or ultrasonic initiation for structure checks, crack detection or the detection of other anomalies; UV light for fluxing agents or coating checks — crack detection, X-Ray
- Acoustic inspection:  
initiation by a hammer system
- Eddy current measurement:  
castings

## What ibea systems inspect

- Ceramic tubes, ceramic insulators
- NoX sensors
- Sprinkler glasses, Sprinkler bodies
- Glass ampoules, plastic ampoules
- Syringes, syringe parts
- Laparoscopes, Biopsy forceps
- Catheter, Artery tubes
- Toothpaste caps or shoulders
- Blister packaging, before sealing:
  - two-sided and for filling
- Tablets - color, cracks, size
- Silicone sealings and plastic sealings
- Metal packaging
- Plastic packaging
- Heavy ceramics and fine ceramics

## Put our know-how to the test

Feel free to send us samples of your faulty products that need inspection. Please give us a short description of your conveying system, possibly including photographs. Please also include conveyor speed and part rate. We will prepare a comprehensive offer specified to your needs, including needed accessories — all for an attractive price!

## About Ibea

ibea develops and implements inspection systems for a perfect quality check — modular, future-proof, and flexible. It is our aim to ensure a trouble-free production around the clock. Our focus is on producing systems, which are stable and maintenance-free. As a systems integrator we offer you comprehensive professional service from consulting to implementation.