

Dimensional Testing of Cans for the Food Industry

Accurate dimensions and shape of the prefabricated cans and can-lids is of prime importance, in order to ensure that the lids and the cans match properly and form a permanent airtight seal after the filling and sterilization process. This in order to avoid costly batch sealing failures in the canning industry. A special non-contact automated measurement testing machine was developed to control the dimensional integrity of the cans and the matching lids. The machine determines with the aid of a laser-optical sensor. The exact location and dimensions of the corrugations, the unfolded seam stitching height and the nominal core-height of the lid. The MICRO-EPSILON optoNCDT used in this machine is not influenced by variations in basic container material colour, or by preprinted advertising illustrations and text in a wide variety of colours on the cans or the can-lids. Accurate measurement test results are therefore guaranteed.

Technical details

- Measuring range: 20 mm
- Accuracy: $10\ \mu\text{m}$
- Resolution: $10\ \mu\text{m}$
- Band width: 500 Hz

Ambient conditions

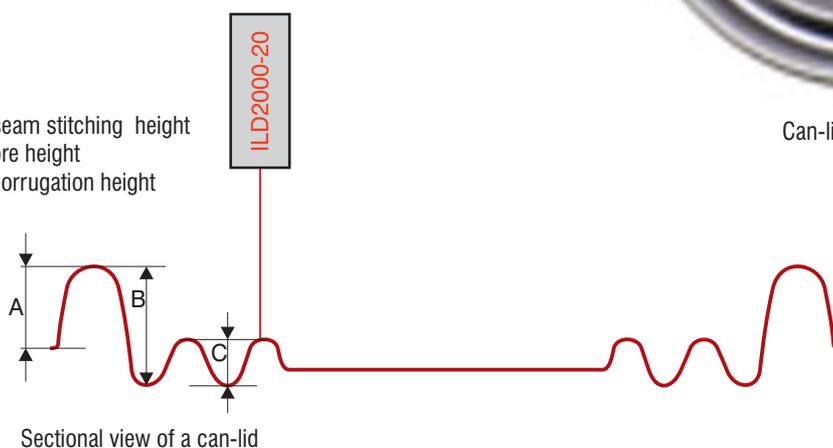
- Temperature: ambient room temperature
- Medium: air
- Band width: none



Can-lid, top view

Principle

- A = Unfolding seam stitching height
- B = Nominal core height
- C = Stiffening corrugation height



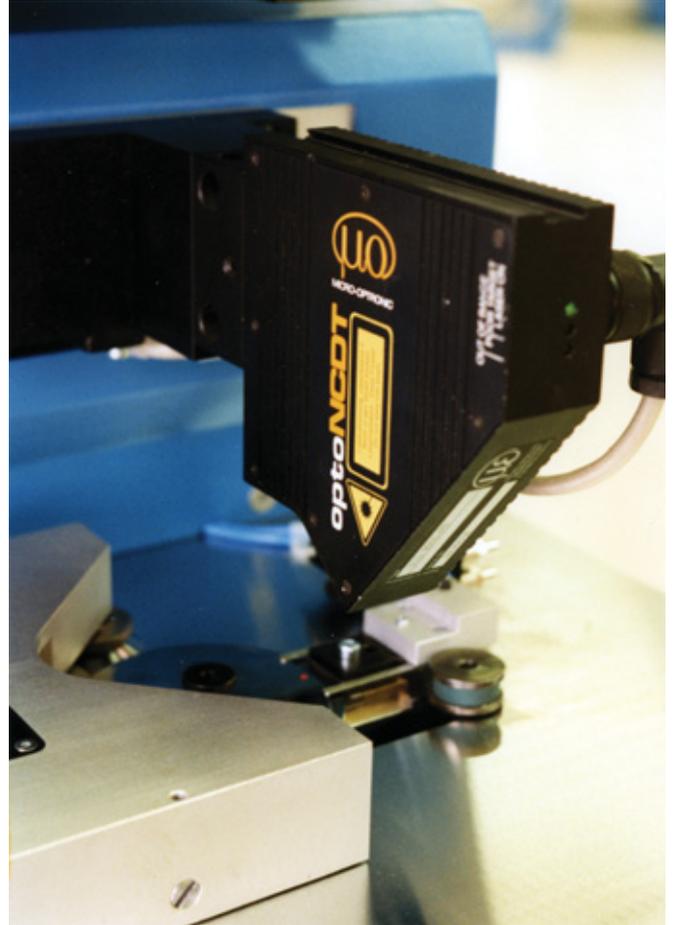
Application

System configuration optoNCDT Series 2000 - --

- ILD2000-20 - Laseroptical sensor C2001-8
- Sensor connecting cable
- IFPS2001 - Interface board
- KH2000 - Clamping holder

Reasons for choosing the system

- High repeatability of and consistency of measurement values especially by various reflecting materials, aluminium, surface treated sheet-metal etc., as well as insensitive to rapid colour variations of preprinted advertising illustrations and texts.
- Extreme small laser-beam measuring point especially well suited for measuring exact dimensions of small corrugations.
- Possibility to transfer data directly into a computer for visualization and statistical data storage



Pic: Weil Engineering, Müllheim