

Caliber ZetaPi by TECNOSENS elevates glass measurement precision

QUALITY MEASURED IN THE DETAILS

In the glass industry, precision is no longer an option: it is an essential requirement to ensure efficiency, quality, and reliability. With Caliber ZetaPi, Tecnosens elevates glass container measurement to a new level of accuracy and control, meeting the demands of a market increasingly focused on traceability, repeatability, and automation.

QUALITY CONTROL IN THE AGE OF PRECISION

Today, the production of glass containers, such as bottles, vials and jars, requires a quality standard that only the most advanced technologies can guarantee. Inspections once

depended on operator experience, but the paradigm has shifted: measurement today is automated, highly precise, and, above all, repeatable. Caliber ZetaPi meets this challenge headon: it is a fully customizable, non-contact measurement system designed to perform both in-line

CALIBER ZetaPi



Redefining precision in glass container production, TECNOSSENS' Caliber ZetaPi delivers non-contact, customizable measurements with accuracy under 20 μm . From label area control to full container analysis, ZetaPi enhances efficiency, traceability and repeatability - enabling manufacturers worldwide to achieve higher quality, reliability and competitiveness through advanced automation.

and off-line inspections on glass containers at speeds of up to 180 bottles per minute. With a measurement accuracy better than 20 μm , ZetaPi enables exceptionally detailed metrological control of the label area.

LABELABILITY UNDER CONTROL

One of the most critical aspects of bottle production is the flatness of the label area. Even a slightly uneven surface can compromise correct label placement, leading to rejects or rework. Tecnosens' ZetaPi addresses this challenge directly: featuring 16 simultaneous measurements and 10,000 acquisitions per second, it monitors container flatness in real time. Vertical and horizontal bends, as well as bulges and sinks in the labelable area, are immediately detected and flagged, allowing corrective action before they translate into production costs.

ONE SYSTEM, MULTIPLE MEASUREMENTS

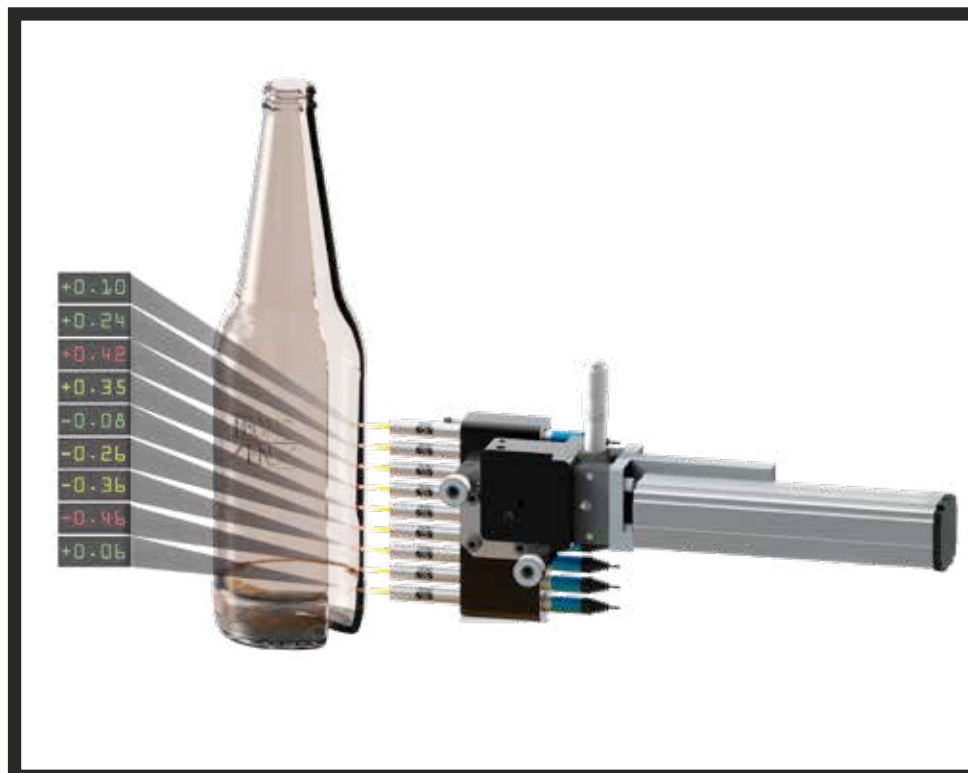
ZetaPi goes beyond flatness. Its modular architecture and flexible software allow the system to be configured for a wide range of inspections:

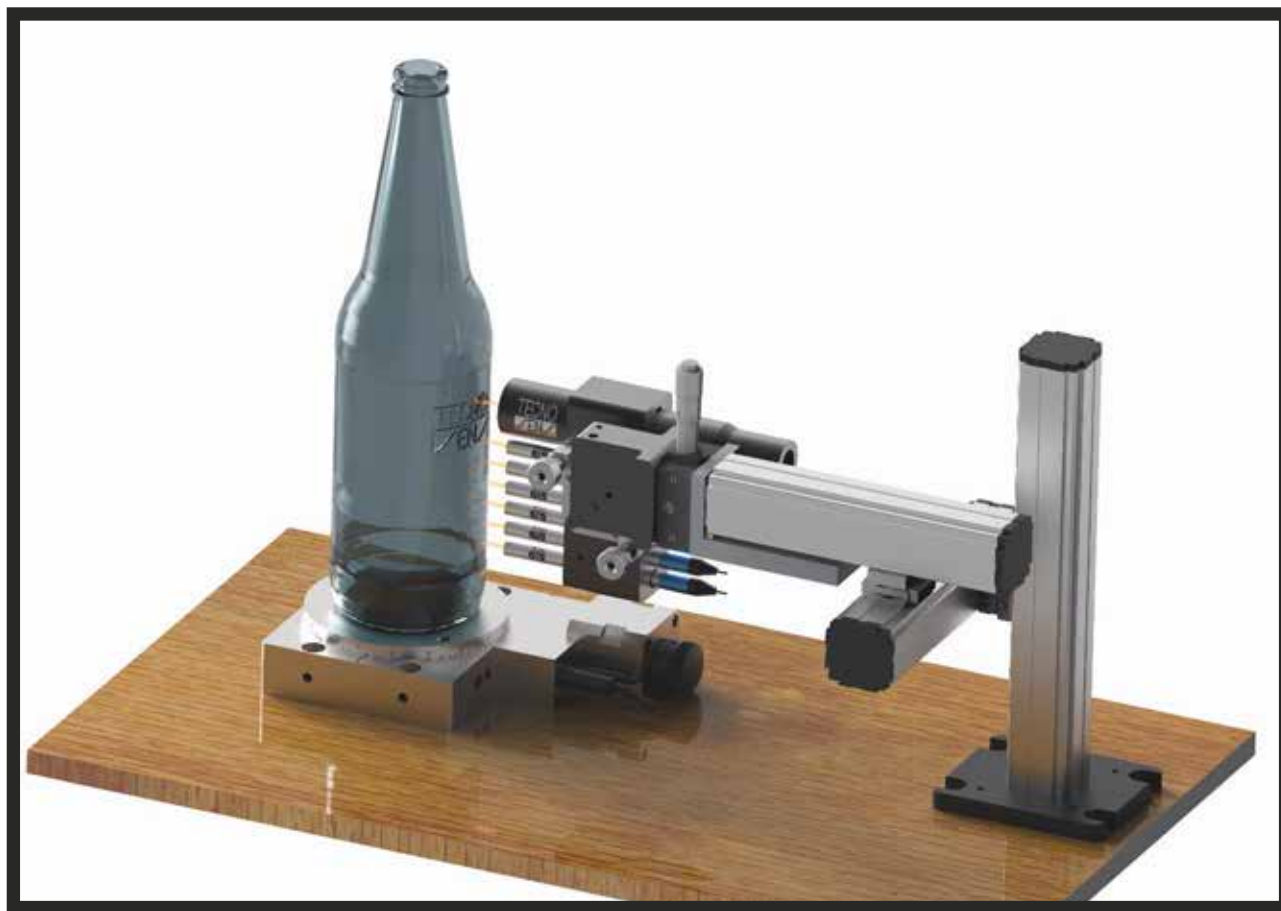
- Container shape control, including profile analysis, inter-

- nal diameter, and symmetry
 - Thickness verification, even at multiple points simultaneously
 - Quality control of printed or engraved logos and text, ensuring readability and visual brand integrity.
- These features make ZetaPi a versatile tool capable of adapting to the specifics of any production line without compromising speed or operational continuity.

COMPACTNESS AND INTEGRATION

A distinctive feature of the system is the compact size of its sensors, down to a minimum diameter of just 6 mm. This enables installation even in tight spaces and on existing machines without major structural modifications. Compact design does not compromise performance: the optical sensors integrated into ZetaPi pro-





vide the same reliability and robustness as the most advanced industrial solutions, with proven longevity from numerous installations worldwide.

CUSTOMIZATION: ADDED VALUE

Like all Tecnosens solutions, ZetaPi is engineered for full customization to meet customer specific requirements. From hardware to software, every component can be adapted to meet specific needs in terms of dimensions, measurement parameters, data management and integration with existing management systems. The internally developed control software features an intuitive and flexible interface, allowing custom recipes for each type of container. This reduces setup time and ensures consistent measurements over time, while incorporating statistical analysis and data archiving functions.

EFFICIENCY AND COMPETITIVENESS

In a market where every second counts, competitive advantage is defined by the details. ZetaPi is not only a measuring instrument, but also a strategic partner for the continuous improvement of production processes. By integrating intelligent algorithms and advanced traceability systems, ZetaPi drives the digitalization of quality: every measurement is recorded, archived, and made available for monitoring trends, analyzing statistics, and preventing defects. With over 100 installations worldwide, Tecnosens has built a reputation for combining advanced engineering with a strong focus on customization. This approach allows the company to deliver solutions that adapt to the specific challenges of each production line, rather than forcing production to adapt

to the technology. ZetaPi is the clearest expression of this philosophy. It shows that measurement is no longer a simple matter of control, but a way to optimize processes, prevent defects before they occur, and support better, data driven decisions every day. ■



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