

# The Swiss Army knife for blowmoulders

For almost two decades, the Swiss vision inspection specialist IMD has been supplying bottle inspection systems to well-known pharmaceutical brands for HDPE bottles. The Swiss have since developed advanced technology expertise in the field of line scan cameras. The combination of established and innovative technology has resulted in the IMDvista BOCO SCAN - a modular and versatile bottle inspection system, also suitable for PET containers. IMD will showcase the system at its booth at drinktec.

## Compact origins in HDPE pill bottle inspection

It all began with the idea of packaging all vision inspection equipment for white HDPE pill bottles into one compact system. Many companies in the blow moulding industry face even tighter space restrictions than the closures and preforms manufacturers that IMD initially served. As a result, a minimal footprint was central to the design of the IMDvista BOCO. It can be fitted to an existing line simply by lifting it onto the customer's existing conveyor.

## New versatile inspection system

When IMD presented the BOCO SCAN concept demonstrator at the K show in 2019, a line scan camera was integrated for the first time. Line scan cameras generate images from thousands of columns of pixels, captured from the same angle. When combined with line illumination at an optimised angle, reflections on glossy PET and other materials are minimised. The result is a CAD-model-like image allowing the detection of defects which would otherwise be hidden.



The scan image (left) has no reflections, revealing the upper defect invisible to regular cameras (right)

In the following years, IMD ran a pilot installation with a pharmaceutical customer producing a wide variety of bottle designs. These bottles had varying surface finishes and material colours. The customer benefited from having a single bottle inspection system capable of detecting defects on both opaque and translucent or transparent materials. This includes PET, which had previously been highly challenging to inspect for defects due to its glossy surface. The pilot was a success, resulting in a production line that received zero end-customer complaints.

## Modularity to match the inspection that blowmoulders need

The technological advances have been combined with the years of experience gained from the pharmaceutical pilot project to develop a modular version of the BOCO SCAN. The main module houses the core line scan technology for the flexible side inspection. Along with all electronics and the HMI, it takes up less than 1 m<sup>2</sup> (10 square feet) of floor space. As IMD explains, additional neck inspections are available. These feature tightly integrated



IMD will present the BOCO SCAN with a base inspection add-on module at drinktec 2025.

overhead cameras that check sealing surface quality and inspect the interior for choked necks or material blocking the bottle opening.

Several development iterations followed after the pilot. IMD responded to customer feedback about the size of the original technology demonstrator. They introduced add-on modules which provide additional inspection perspectives, only taking up floor space where needed – staying true to the compact BOCO design philosophy.

At drinktec, IMD will exhibit a BOCO SCAN featuring a bottle base inspection add-on with a side-grip conveyor. Other add-ons include a thin wall inspection and precise thread measurement. More specialised functions can be engineered on a project basis and integrated into add-on housings.

[www.imdvista.ch](http://www.imdvista.ch)



Scan technology allows inspecting transparent and opaque bottles on the same system.