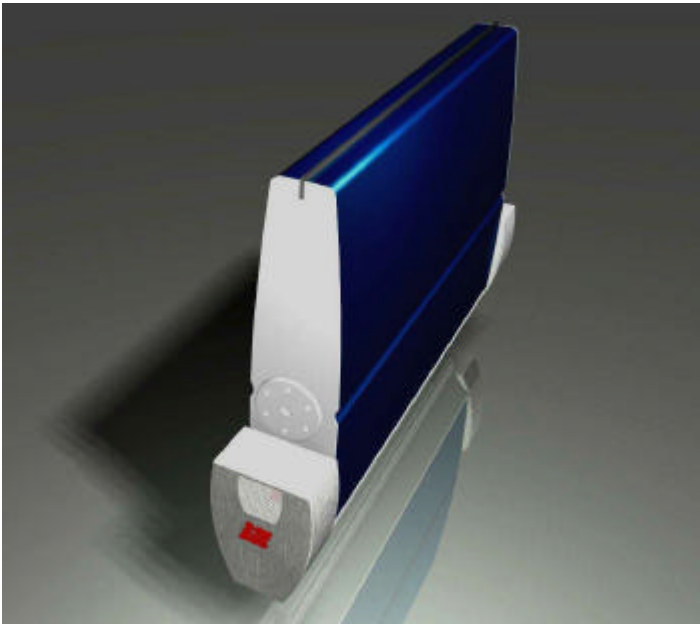


OptoScan 8000

Coil/sheet stock surface inspection



Side-view of scanner-head showing the cover of the lamp unit and one of the mounting flanges. The scanner reaches across the width of the coil or sheet feeder.

The OptoScan 8000 provides on-line 100% inspection of the surface of coil stock material.

Continuous or sheet fed material can be inspected depending on the version.

The inspection system relies on high resolution line-scan camera technology developed by InnoScan originally for pharmaceutical inspection.

The recent development of a completely sealed scanner-head for scanning linen has brought this technology into very hostile production environments.

Image-building is done by line-scanning at high resolution across the width of the coil or sheet, while synchronising to the feed speed. Interface to coil-line manufacturers or other feeder arrangements is provided so that sheets with defects are rejected.

The scanner-head for coil stock and sheets contain the line-scan camera and the advanced lighting system delivering the surface illumination. The actual

light generators are positioned outside the sealed interior on the ends, for easy lamp exchange.

Inspection is done through the tip of the scanner-head, which is closed with a specially coated window. The window is positioned 20 - 30 mm from the material surface.

By adding a supplementary through-light unit below the coil/sheet the system is also capable of detecting Fm sized pin-holes.

The special light generation method provides wavelength filtering adapting to all sorts of special coatings including the ability to work with fluorescence. The advanced optical system employed to deliver the light energy across the scan line ensures even light distribution and can provide diffuse or specular illumination according to detection and/or surface requirements.

The inspection nose at the bottom through which the light exits and the scan-line is projected. The nose is covered by a specially coated window.



Inspection for most every coil width is met with one unit covering a maximum of 1024 mm.

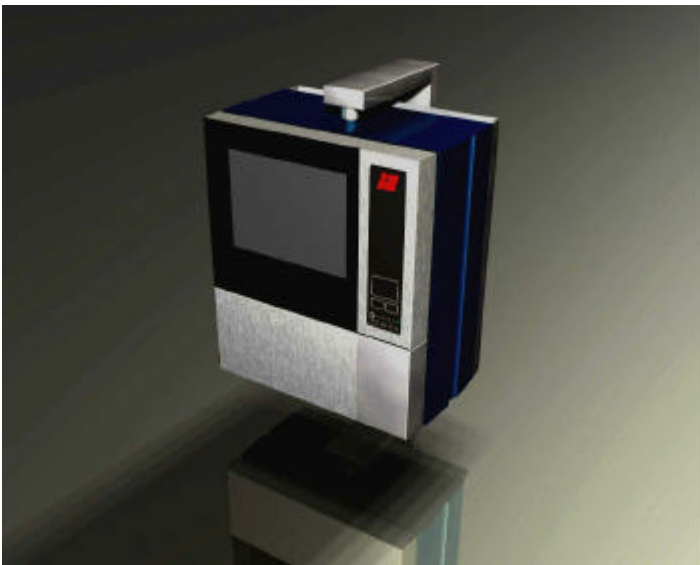
Scanner-heads with up to 4100mm (4.1m) is available for special purposes.

The OptoScan 8000 is adaptable to any type of material and surface finish such as: aluminium, raw steel, tin-plate glossy, tin-plate matt, laminated or coated material.

The control cabinet contains the image processor and ancillary electronics. It is contained in a wall hinged or floor stand mounted sealed cabinet equipped with a heat-exchanger for elevated temperature operation.

Communication with handling equipment is through opto-couplers for simple I/O signals such as reject systems.

Networking is offered for intelligent exchange of production data, and remote servicing is offered by InnoScan through modem and telephone connection to the system, should this be required.



The top hinged control cabinet has a front mounted collapsible keyboard shelf, sealed mousepad and a long life colour flat screen as operator interface. The materials are selected for durability, - stainless steel, real glass screen, anodized aluminium etc.

The types of defects that can be detected are:

- Dents
- Coating drips
- Coating drapes
- Holes in surface layer
- Rust
- Stains
- Scratches and marks
- Oil/grease
- Visible inclusions
- Foreign material
- Pinholes (option)

The system resolution allows for customer adaptations. The basic camera resolution (pixel size) range from 0,4 mm to 1mm depending on requirements.

Defect areas are generally not specified smaller than 2x2 pixels, hence the standard minimum detectable defect size is 0,8x0,8 mm to 2x2 mm, but may be smaller depending on defect type.

The operator panel provides menus to set up several quality levels and attach each quality level to a specific stock product number.

A quality level is combined from:

- Material type
- Acceptable area of single defect
- Defect contrast
- Defect position
- Clusters of small defects
- Edge defects etc.

Images of rejected sheets can be automatically displayed on screen with highlighted defects and their associated data.

Images can be automatically stored and later recalled for reference purposes.

Product number, feed speed, etc. along with production data can subsequently be communicated via network or simple I/O from the coil line or a central MES system.

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