

INSPECTION TECHNOLOGY | FPI^{FLOAT VISION}



FPI float vision

Inline Defect Detection for Float Glass

dr. schwab gmbh
inspection technology
A Member of



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..... for float glass from 0.3 to 25 mm thickness

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..... for patterned and wired glass

Inline analysis for float glass

Float glass producers are facing permanently increasing demands, requiring an absolutely stable production process. This is only possible, using advanced quality and process control methods.

Proceeding

dr. schwab applies a specific multi-channel line-scan camera solution, based on wave length multiplexing: the signal from several colours is inspected simultaneously, which allows higher local resolution compared to other systems available. Prerequisite is a special, efficient long-life LED-Illumination.

Glass defect detection

The FPI^{float vision} is able to detect all typical glass defects. Especially the critical ones like inclusions and optical distortions classified by locating their position inside the glass via evaluation of the echo signal in the reflected light.

Hardware

Multi processor system: FPI's advanced computer architecture combines several processors working in parallel, enabling high-speed measurement as well as complex calculations and evaluations. The results are transmitted to a downstream host system.

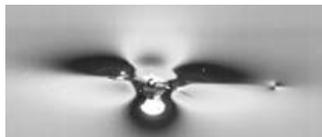
Software

Advanced evaluation algorithms are a core element for reliable defect classification. Multiple modes are available to display the results.

Typical defects



Bubble



Knot



Key features

- ▶ Reliable inspection even at fast glass production speed (typical up to 25 m/min)
- ▶ Compensates glass ribbon wander
- ▶ High resolution optics for optimised signal contrast. Inspection in transmission and reflection
- ▶ Modular, liquid cooled LED illumination, lateral retractable for cleaning and maintenance
- ▶ All typical glass defects can be detected and classified: bubbles, inclusions, optical distortions, particles, drips
- ▶ Distortion channel
- ▶ Sophisticated defect discrimination and classification, combines the pictures of all channels
- ▶ Special evaluation algorithm to detect bottom and top tins
- ▶ Smart teach for easy definition of a new defect type
- ▶ Trend analysis combines data from the production line for successive samples to a trend graph. The function also may alert the operator when production is running towards the limit of the process window, enabling corrective action to be taken long before substandard samples are produced.
- ▶ Database solution for easy correlation of measurements with line parameters and feedback to production. The correlation of trend diagrams of various process parameters even allows determination of process deviation origins.
- ▶ Remote diagnosis and maintenance via internet

