

Glass Inspect



In-line Inspection of Continuous Glass for Highest Quality Standards and Optimized Yields



INTRODUCTION

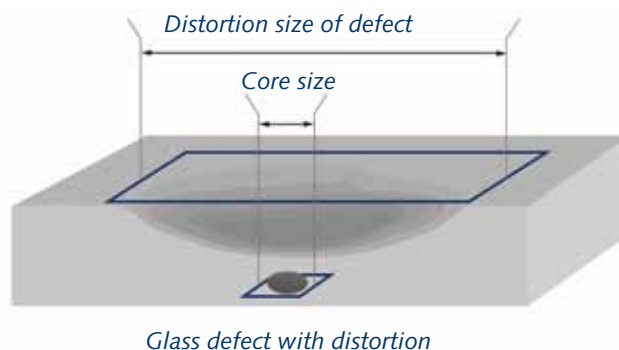
Dr. Schenk's GlassInspect for continuous flat glass is an inspection solution focusing on the quality assurance and process control for the production of float, down draw or rolled glass.

Used as raw material for a wide range of applications e.g. in the architectural, automotive or display industries, continuous glass has to meet highest quality standards. In order to guarantee these, the material is inspected for glass defects that could cause a reduced quality or glass breakage during further glass processing steps.

HIGHEST ACCURACY OF DEFECT SIZE AND TYPE WITH THE UNIQUE DUAL-CHANNEL TECHNOLOGY

Dr. Schenk's GlassInspect convinces by its absolute reliable analysis of type, size and location of relevant glass defects. Considered unmatched in the industry, this performance advantage grounds on two innovations:

- A unique dual-channel technology combines two illumination concepts and enables the exact distinction between the defect's core size and its distortion size.
- The system's defect classification and image processing software has been consequently adapted to the needs of float glass.

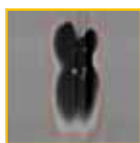
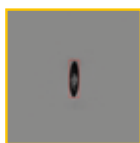


These advantages enable GlassInspect to ...

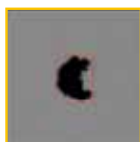
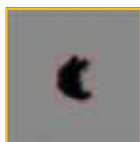
- ... deliver realistic, microscope like images as reliable decision basis for declaring material as "acceptable" or "no-go"
- ... determine the exact size of defects and clearly identify a defect's core size and its distortion size
- ... differentiate between relevant glass defects as e.g. bubbles or stones and non-critical contaminations like dust or other "pseudo-defects".

Defect core size with channel 1 Distortion size with channel 2

Critical glass defect (bubble)



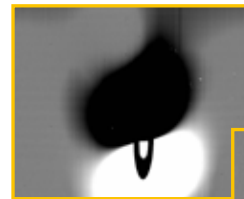
Non-critical contamination



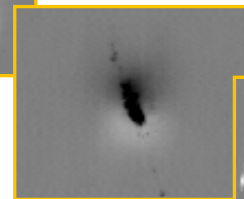
BENEFITS AT A GLANCE

- Dual-channel technology for reliable and accurate size determination of glass defects including the identification of core and distortion size
- Realistic, high resolution 2D and 3D images of defects via the intuitive visualization software
- Defect classification optimized for float glass application
- Easy integration into production lines with direct interface to cutting optimization systems and marker units
- High resolution CCD Line Scan cameras and high performance LED illumination units
- Innovative modular design to allow adjustment of hardware/software configuration and resolutions to individual environments at an optimized price / performance ratio
- Advanced analyzing and processing software according to SEMI standards for fast reaction on process deviations

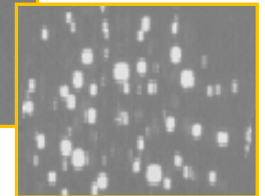
Representative defects of continuous glass analyzed by GlassInspect



Bubble



Inclusion



Tin Defects



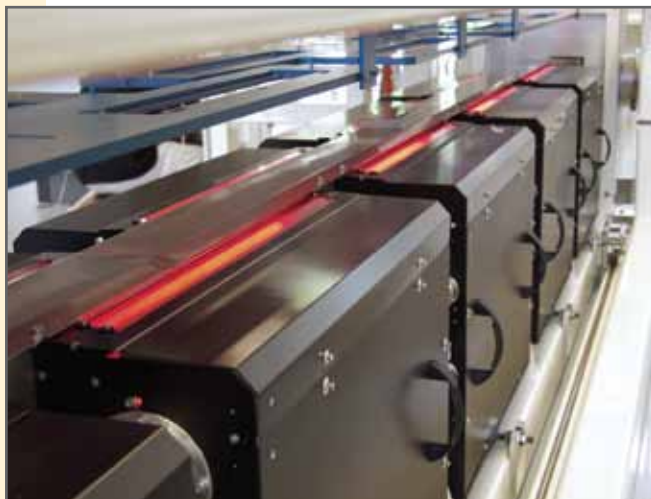
Stone



Knot Line



Bubble



OPTIONAL MEASUREMENT CHANNELS

- Defect Depth Location Measurement: precise localisation of defects on the bottom, top side or inside the glass
- Ream Channel: detection of variations of the glass refraction index as they are typical for reams
- Tin Channel for advanced inspection of tin defects at both material sides

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