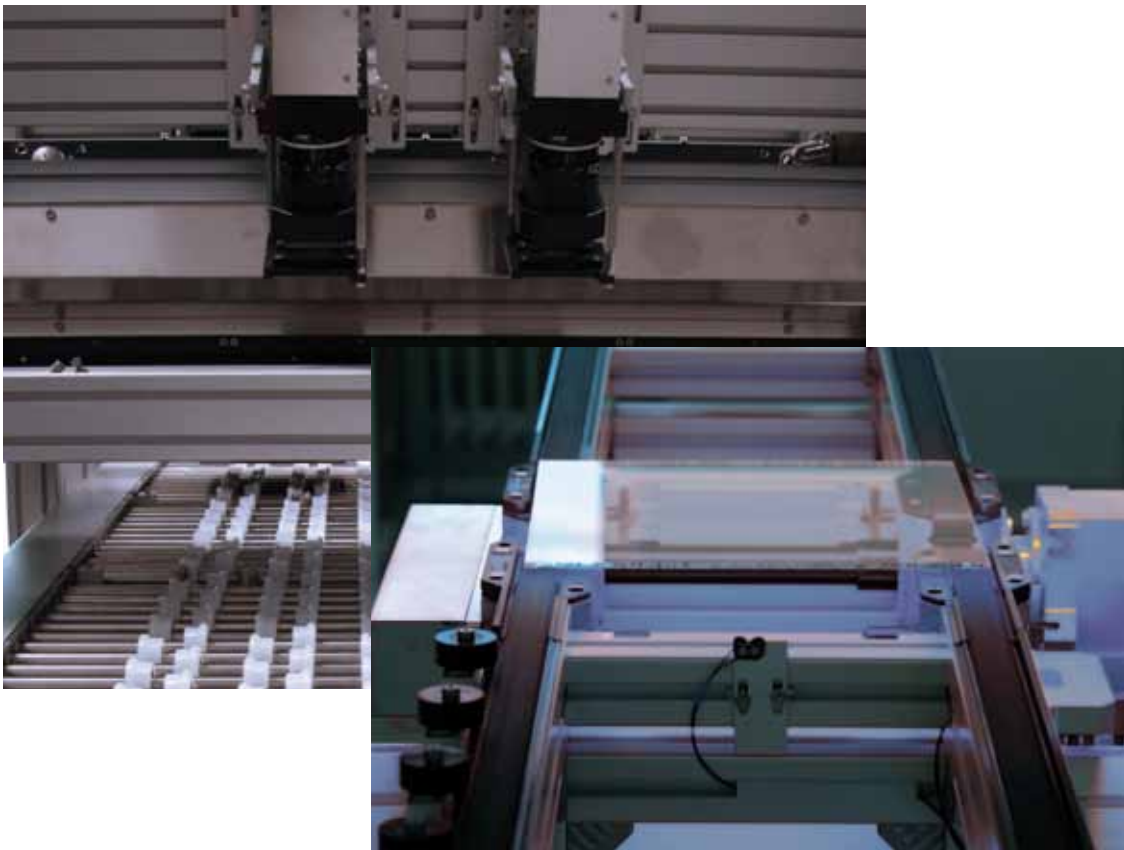


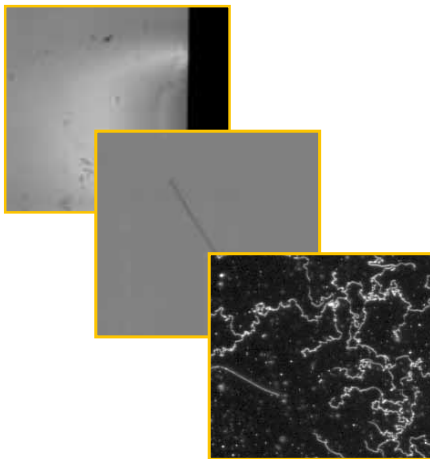
Glass Inspect



In-Line Quality & Process Control for Coated Flat Glass



Coated Glass



The Number 1 in
Glass Inspection

Glass Inspect & Glass Measure



KEY BENEFITS

- Improved defect detection and classification through Multiple Image Defect Analysis (MIDA)
- Super-fast cameras allow multiple optical channels in one camera line, saving money and installation space
- 100% monitoring of glass and coating layers
- The optimal solution for all types of coated glass:
 - Architectural glass including fire protection, low-E, sunstop, security or mirror glass
 - Display glass up to GEN 10 including TFT, PDP, ITO, OLED
 - Coatings on specialty glass such as display cover glass, microscope slides, thin glass, touch-sensitive glass
 - Coated automotive glass
 - TCO or MO coated solar glass for thin film solar modules

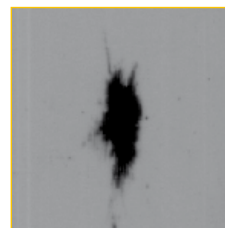
ITO / TCO & AR Coatings on glass substrates, displays and thin film solar modules

Zinc-Oxide (ZnO), Indium-Tin-Oxide (ITO) and transparent conductive oxides (TCO) are used as coating in the display industry and for thin film solar modules. Local discontinuities and thickness variations of the coating will reduce the flow of the electricity and lead to bad quality. Missing or defective antireflective coatings (AR) on solar glass substrates result in reduced cell efficiency.

Dr. Schenk's GlassInspect and GlassMeasure detect all types of local and larger-scale irregularities fast, efficient, reliably and early in the production. This prevents costs for waste and customer returns, and increases productivity.

Glass Inspect

TYPICAL DEFECTS ON COATED GLASS



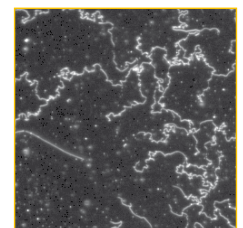
Inclusion



Coating burn



Pinhole



Arcing



The No. 1 in Glass Inspection



Low-E & sunstop coating for architectural and automotive glass

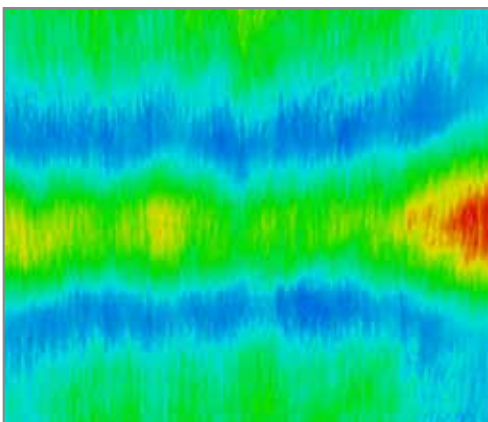
Low emissivity (Low-E) coatings are used e.g. in thermal / insulation windows to stop radiant heat and light rays of certain wavelengths to penetrate the glass. Defects in the coating layer like stains, voids or scratches can result in glass discolorations which distract the view. In the case of coatings for automotive glass, such defects can even put the traffic safety at risk as they cause dangerous stray light.

With Dr. Schenk's MIDA (Multiple Image Defect Analysis), both cosmetic and functional defects in low-E and sunstop glass can be detected with different optical channels and different illuminations in one single camera line, ensuring the timely and cost-efficient production of glass that meets all safety and display standards of the industry.



Glass Measure

COATING HOMOGENEITY MONITORING



Electrochromic glass panes

Electrochromic coatings allow to change the light and heat transmission of a glass pane in buildings and automotive applications. They allow the adaptation of glazing characteristics in terms of energy saving and user comfort.

Even small defects in the various coating layers may cause large cosmetic and also functional problems of the glass. The GlassInspect and Glass-Measure optical inspection allows to sort out defective glass panes throughout the individual production steps, and so helps to stabilize the production flow and to optimize the process parameters.

Inspection and Handling Systems



Dr. Schenk's production site

Dr. Schenk GmbH, established in 1985, is an innovative high-tech company based near Munich, Germany. Dr. Schenk develops, produces and markets optical surface inspection and measurement solutions for automated quality assurance and production process monitoring. This includes high-quality, customizable handling solutions. Our products are a key success factor in the making and converting of many materials, e.g. plastics, textile materials, nonwovens, paper, metal, or glass, for a multitude of markets like display glass, automotive, packaging, medical, renewable energy, and many more.

Throughout the world more than 300 Dr. Schenk employees continue to set new standards for the inspection of surfaces. Over 12,000 m² of modern, cleanroom-capable production and testing facilities are available to research, development and production to apply cutting-edge optics and electronics to customer applications.

Dr. Schenk offers extensive from-lab-to-fab knowledge. Customers benefit from our expertise in the translation of lab applications to large scale productions. Our sophisticated handling solutions complete the one-stop-shopping experience.

The company's objective is complete customer satisfaction. This is achieved through innovative and practical solutions that can be implemented into new and existing production lines. Local sales and service facilities around the world ensure fast support, technical service, training and consulting at any phase of a project.

From modular standard units to highly customized systems – Dr. Schenk's solutions have precision in focus!

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