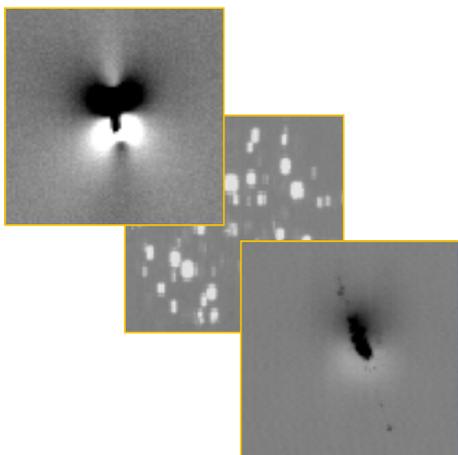
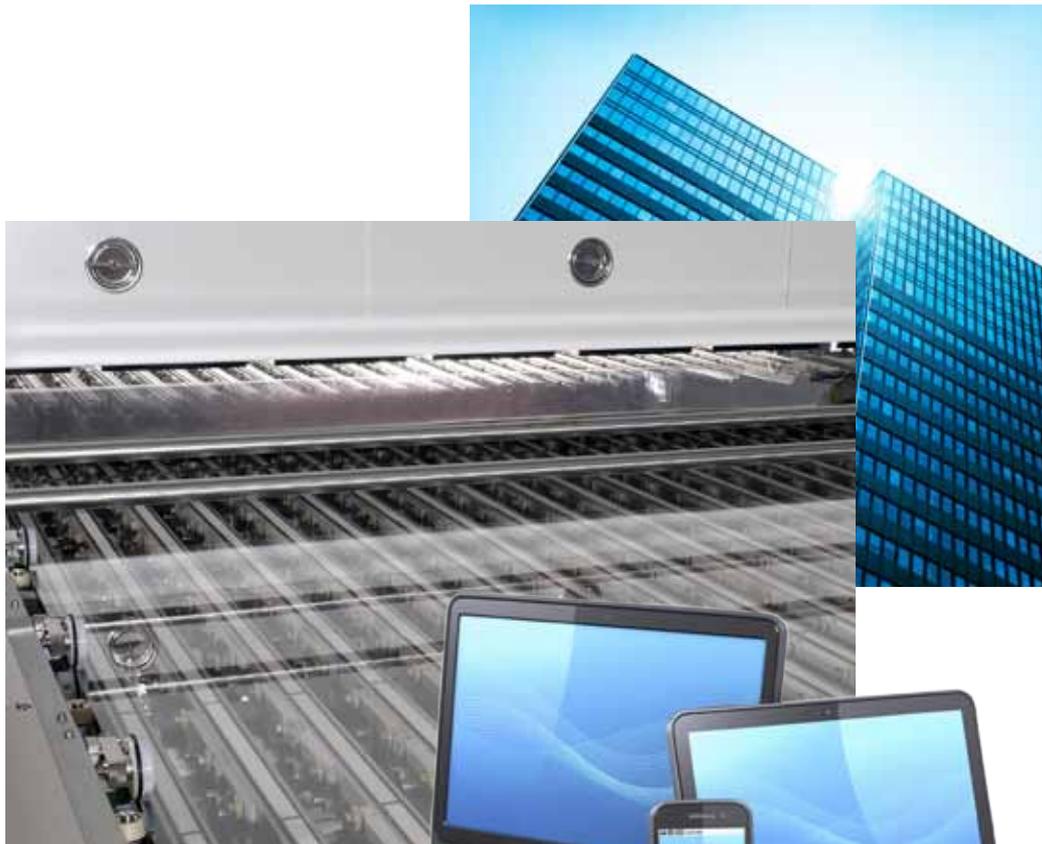


# Glass Inspect



In-Line Surface Inspection and Handling  
for Glass Manufacturing and Processing

Glass Inspection



The Number 1 in  
Glass Inspection

# GlassInspect & GlassMeasure

## The complete solution for glass inspection

Dr. Schenk's GlassInspect and GlassMeasure are the perfect automatic surface inspection solution for all types of flat glass products. As the market leader in the glass inspection industry, GlassInspect offers inspection coverage for all stages of the glass production, from raw glass to tempered, coated, and finished glass. Material properties like coating thickness are monitored for 100% of the material with GlassMeasure. The system can be completed with a handling that is integrated seamlessly into the customer's production line.

## Float glass

During the production of float glass, a number of totally different, but equally damaging defects can occur, from local glass defects, to tin drops and reams. With GlassInspect, all of these defects can be detected, so that the defect information can be used for cutting optimization. This allows to fix the production before waste is produced, and thereby saves production resources and post-processing effort.



## Low-e, sunstop, and coated glass

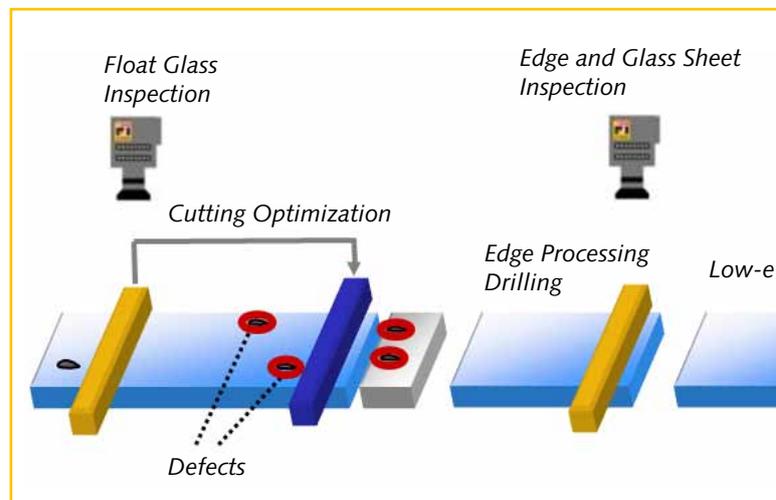
The multi-layer structure of low-e and sunstop glass includes a risk for many defects, from local glass defects, crazing, cathode defects, and homogeneity, thickness and color variations. The GlassInspect and GlassMeasure multi-channel inspection enables a simultaneous, fast and reliable detection of all these defect types.

In addition, GlassInspect has supreme inspection capabilities for clear and tinted glass of extremely low transmission grade, making it an ideal tool for inspecting automotive glass.



## Display glass

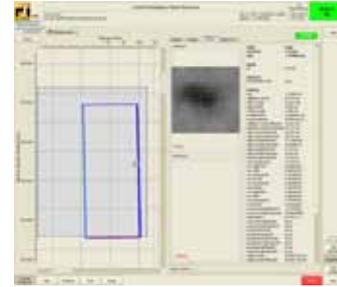
Glass used for monitors, touch panels, and all types of mobile devices has to meet exceptionally high quality standards. With the help of Dr. Schenk's GlassInspect, scratches, inclusions, particles, ITO burns, glass chips and more can be detected before the product is finished in substandard quality. Increased yield and higher quality are the result.



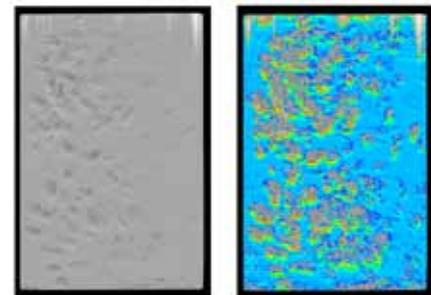
# The No. 1 in Glass Inspection

## KEY BENEFITS

- Improved defect detection and classification through Multiple Image Defect Analysis (MIDA)
- Super-fast cameras allow multiple optical channels in one camera line
- The optimal solution for all types of glass:
  - Architectural glass including fire protection, low-e, sunstop, security or mirror glass
  - Display glass up to GEN 10 including TFT, PDP, ITO, OLED
  - Specialty glass such as display cover glass, microscope slides, thin glass, touch-sensitive glass
  - Automotive glass including tinted or laminated glass
  - Solar glass including substrates and TCO or MO coated glass for thin film solar modules, and patterned glass
- Inspection and handling system from a single source



Local glass defects displayed in defect map



Homogeneity map of a glass sheet as gray image and in false color display

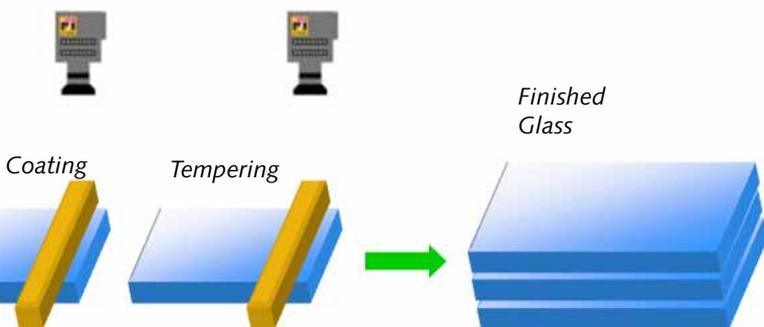


## MIDA: The perfect solution for defect detection

Dr. Schenk's Multiple Image Defect Analysis (MIDA) lets you view defects simultaneously in different channels, from different perspectives (brightfield/darkfield, reflection/transmission), with different illuminations (diffuse/focussed, multiple wavelengths), resulting in up to 8 different channels with one camera.

Coating Inspection

Final Inspection



From float glass to finished glass sheets with Dr. Schenk inspection

## Successful installations worldwide

Market-leading glass manufacturers in Europe, Japan, China and the USA are using the advanced illumination techniques and multi-channel setup of MIDA to produce pristine high-quality glass for all applications.

# 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 m<sup>2</sup> 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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