

Automatic Process & Quality Control for Window Film



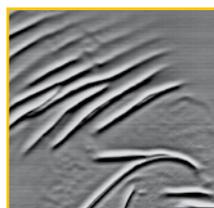
Window Film

The complete inspection solution for
window film

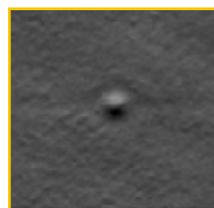
Bent



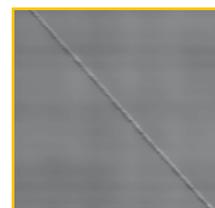
Wrinkle



Dent



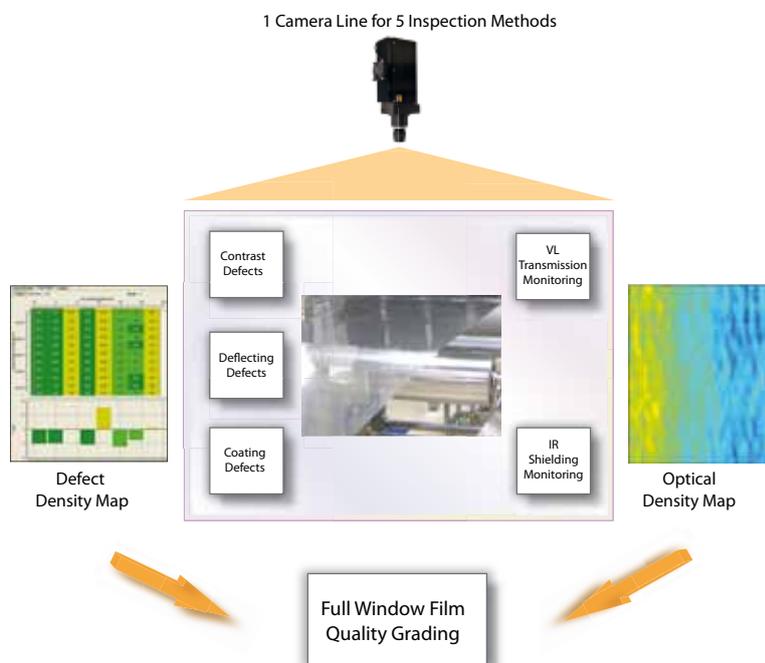
Scratch



EasyInspect & EasyMeasure

KEY BENEFITS

- Window film quality grading by simultaneous defect inspection and monitoring of Visible and Infrared Light Transmissivity (VLT/IR)
- New generation of sputter and coating process control due to full web monitoring in ultra-high resolution: 1% change in VLT or IR can be resolved to more than 300 gray values
- Cost effective multiple material characterizations: 1 camera line serves 5 channels
- Extreme small form factor for easy line integration: The multiple channel inspection with the same space consumption as a single channel system



5x Material Properties in a Single Scan

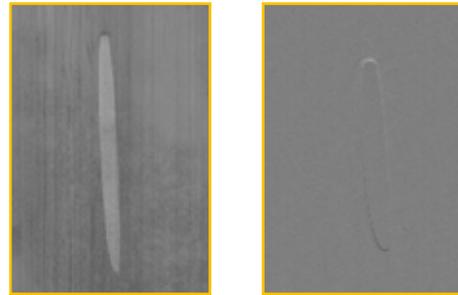
The window film industry is characterized by versatile applications, high quality requirements and a growing material demand for both quantity and quality. To provide customers reliably and timely with high-quality window films for architectural and automotive applications, an effective integrated inline inspection solution for window film production is a key competitive advantage. Quality control by Dr. Schenk's EasyInspect and EasyMeasure systems for inspecting window films provides the leading edge advantage for not missing any defect or coating issue.



Ensures Quality, Improves Your Process

Unique MIDA Inspection

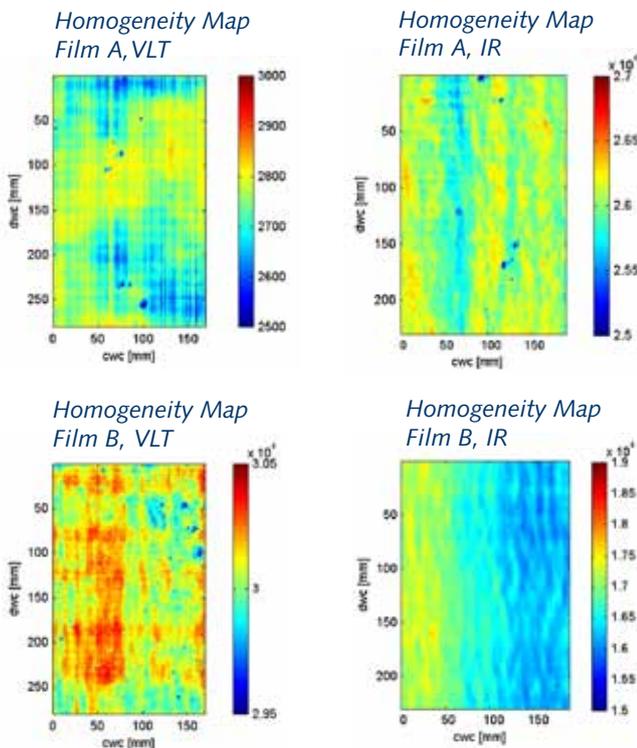
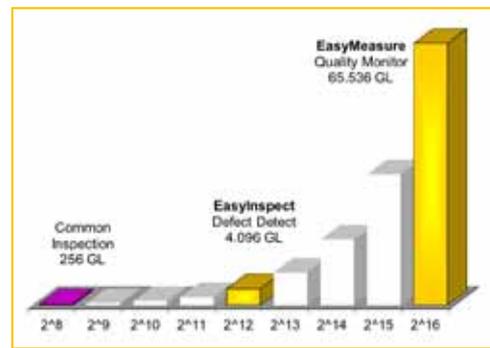
With Dr. Schenk's unique Multiple Image Defect Analysis (MIDA) all typical kinds of window film defects (e.g. color dust, scratches, wrinkles, bobbles, uncoated areas, dents or bents) can be fully analyzed in one run. Thanks to ultra-high speed illumination switching and multiple channel optics per one single camera line all of them can be detected and classified in substantially greater detail compared to any other inspection technology.



Uncoated area in Reflection channel (left) and Transmission channel (right)

Monitoring Layer Homogeneity

For a typical window film application of up to 2.000 mm width, the more than 16.000 EasyMeasure brightness gauges guarantee the consistent quality and detect the critical deviations of the coating, sputtering, and evaporation processes. They monitor the optical density changes in the IR-absorbing and VLT-controlling layers with 16bit Gray Level resolution (65.536 GL). EasyMeasure allows detecting the optical density variations revealing detailed information about the converting processes and supports the production improvement as well as the quality grading of the final product.



The figures on the left show VLT and IR homogeneity maps at window films with different light transmissivity: The false color pattern comparison of VLT and IR channels reflect on different process steps and therefore do provide independent and complementing perspectives on the material quality.

The Complete Solution

EasyInspect and EasyMeasure are the only fully production-integrated, automatic optical inspection solution for window film that combines all the five necessary channels in one camera line. It is the best investment to save time, money and resources, in order to improve the quality of the window film production.

Your Reliable Partner



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. The systems 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 Dr. Schenk's over 300 employees continue to set new standards for the inspection of surfaces. More than 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.

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!

For more information and contact details:
www.dr.schenk.com

Germany

Phone: +49-89-85695-0
Fax: +49-89-85695-200

USA

Phone: +1-651-730-4090
Fax: +1-651-730-1955

Korea

Phone: +82-2-527-1633
Fax: +82-2-527-1635

Taiwan

Phone: +886-2-2920-7899
Fax: +886-2-2920-8198

Hong Kong

Phone: +852-2425-1860
Fax: +852-2425-6775

China-Beijing

Phone: +86-10-6503-2159
Fax: +86-10-6503-2161

China-Kunshan

Phone: +86-512-8788-0069
Fax: +86-512-8788-0070

China-Shanghai

Phone: +86-21-5836-3548
Fax: +86-21-5836-3549

For further regional sales & service representatives please refer to www.dr.schenk.com

Dr. Schenk GmbH Industriemesstechnik

Einsteinstrasse 37 (Martinsried)
82152 Planegg
Germany