Key Features

Camera Inspection
- Full surface inspection by one or multiple CCD line-scan cameras - unlimited number enables every material width and resolution
- Inspection in transmission and reflection, bright field and dark field
- High resolution optics for optimised signal contrast
- Sophisticated LED illumination
- Advanced defect discrimination and classification, e.g. fisheye, particles, inclusions, bubbles, coating defects like pinholes and scratches
- Smart Teach for easy definition of a new defect type
- Automatic edge tracking

Coating thickness by spectrometer
- Full surface coating analysis including layer uniformity, based on multiplexing technology
- Thickness at nano meter scale
- Evaluation of colour, gloss and haze

General
- Simultaneous camera inspection and spectrometer measurement at production speed
- Robust systems with high mechanical stability and long-term reliability
- Self-calibrating, minimal maintenance requirements
- Intuitive Windows® based software, network compatible via standard Ethernet, all common interfaces

The Company

dr. schwab Inspection Technology is a leading supplier of systems and solutions for quality control and process optimization. We are active in many fields like flat glass, display, microfluidics or roll-to-roll processes. Our original area of operation are quality control systems for optical discs for data storage.

Multiple optical technologies like line-scan and matrix cameras or lasers are applied. Our proprietary spectrometer multiplexing technology enables layer thickness measurement at nano scale plus spectral evaluation over the full surface of the sample.

Software solutions like our especially adapted database module allow the immediate recognition of process deviations.

Since mid-2013, dr. schwab is member of Grenzebach Group.

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Benefits
- Supplies insight in process details
- Especially the database solution supplies a substantial contribution to optimize process uniformity and stability
- Reduces your costs by improving quality and increasing yield
Many large-area materials today are produced cost-effectively and fast, using a roll-to-roll process. To equip the product with the desired properties, multiple refinement steps may be applied, which increases quality demands.

For quality and process control at roll-to-roll production, dr. schwab offers systems, based on optical technologies like cameras or spectrometers. Hardware components and software solutions are proprietary to a big extent.

**Camera inspection**

One or multiple cameras are arranged in a row to cover any material width and resolution.

**Software**

Multiple modes are available to display the results.

**Classification**

Beside sensitive defect detection, advanced evaluation algorithms are a core element for reliable defect classification.

**Foil Defects**

- Fisheye
- Particle
- Scratch

**Coating Defects**

- Residue
- Stripes
- Splash

**Spectrometer with multiplexing**

dr. schwab’s proprietary series of spectrometers allows full surface high-speed and high-resolution multi layer thickness measurement over a wide thickness range.

Multiplexing: one of the outstanding features is the ability to analyze a big number of measurement points within short time, using optical fibre technology.

This allows to also recognize local deviations. A mechanically moving measurement head is not necessary.

Spectral reflectivity and transmittance plus colour including colour homogeneity may be evaluated additionally.

**Database improves process uniformity and stability**

dr. schwab offers a database solution with special visualisation software for long-term result tracking and easy correlation of measurement graphs. By also including parameters of the production process, the software even allows to find out the origin of process deviations, as shown at below example:

Unstable temperature leads to varying layer thickness, cutting the yield of the production line.

A trend analysis function may automatically alert the operator, when production is running towards the limit of the process window, enabling corrective action to be taken long before substandard material is produced.