

INSPECTION TECHNOLOGY | FPI<sup>COAT IN-SITU</sup>



**FPI** coat in-situ

# Inline Analysis for Coated Glass

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inspection technology  
A Member of



## INSPECTION TECHNOLOGY | FPI COAT IN-SITU

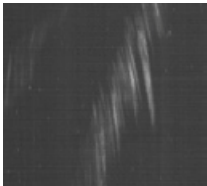
### Full surface layer characterisation (thickness, colour, haze) by successive (in-situ) measurement

A central challenge for the production of coated glass is creating maximum uniformity of the coating layer. dr. schwab offers a special solution, if multiple layers are coated at successive coating stations. Measurement heads are located after each coating station, inside the vacuum chambers. For calculation at the appropriate station, the results of all preceding measurement stations are included.

### Camera inspection

dr. schwab applies a specific multi-channel line-scan camera solution, based on wavelength multiplexing: the signal from several colours is inspected simultaneously, which allows higher local resolution than supplied by other systems available. Prerequisite is a special, efficient long-life LED-illumination.

### Typical defects



Scratches



Pinholes



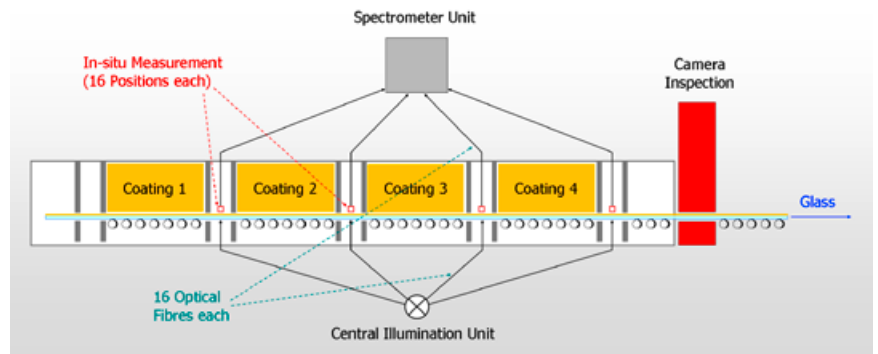
Coating defects

### Hardware

Multi processor system: FPI's advanced computer architecture combines several processors working in parallel, enabling high-speed measurement as well as complex calculations and evaluations. The results are transmitted to a downstream host system.

### Software

Advanced evaluation algorithms are a core element for reliable defect classification. Multiple modes are available to display the results.



### Trend analysis

Trend analysis combines measurement data and data from the production line to a trend graph. The function also may alert the operator when production is running towards the limit of the process window, enabling corrective action to be taken long before substandard samples are produced. The correlation of trend diagrams of various process parameters even allows determination of process deviation origins.

### Key features

- Coating thickness by spectrometer
  - Thickness at nanometer scale, full surface measurement by multiplexing technology enables coating layer uniformity
  - Evaluation of colour, gloss and haze
  - Process analysis minimizes downtime by improving target life cycle management
- Camera inspection
  - Inspection in transmission and reflection
  - Sophisticated LED illumination
  - All typical coating defects are detected and classified
  - Substrate size measurement
  - Simultaneous spectrometer measurement and camera inspection at production speed
- Evaluation and electronics
  - Database solution for easy correlation of measurements with line parameters and feedback to production
  - Remote diagnosis and maintenance via Internet