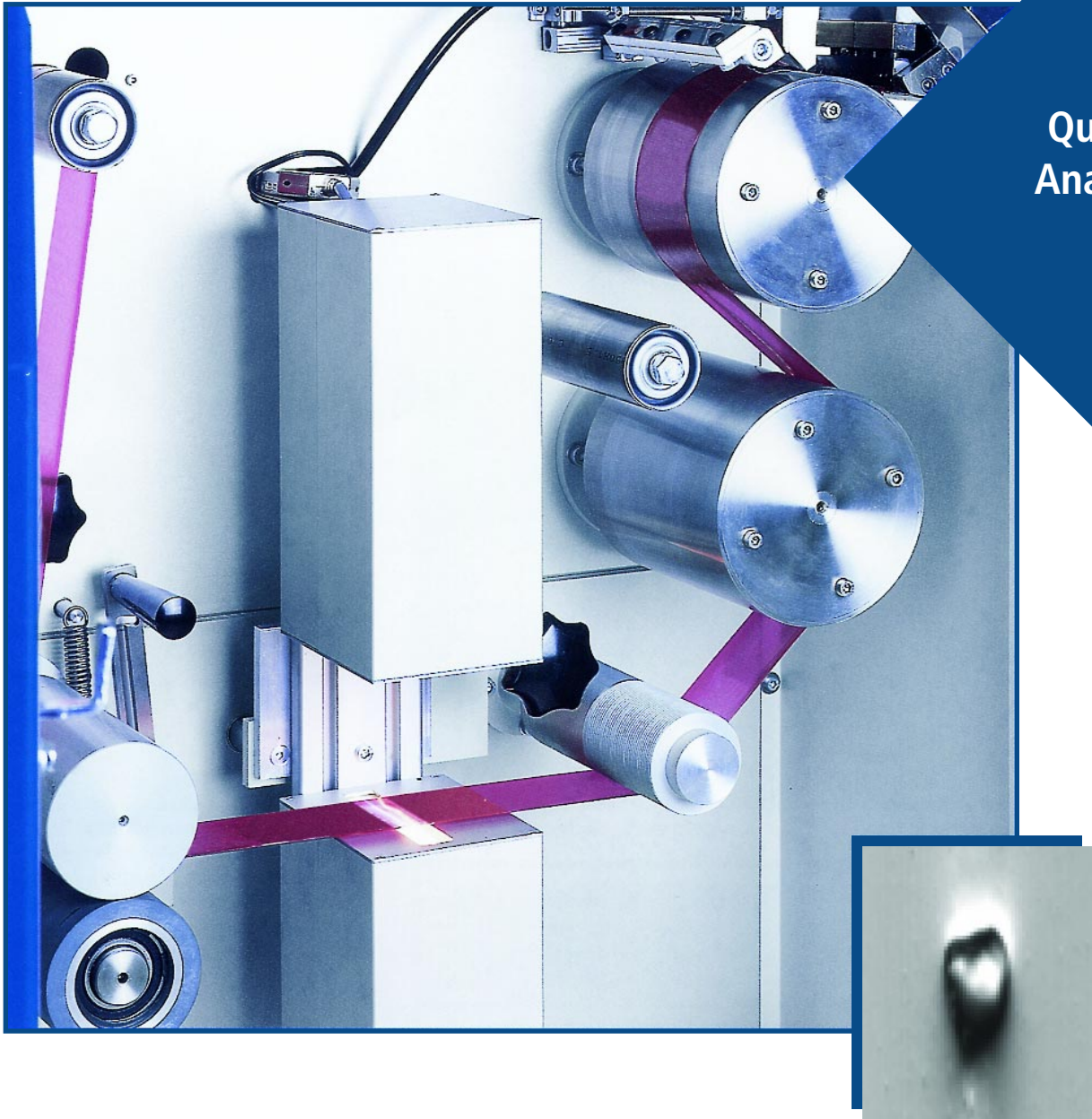


# FQA-PCI

Film  
Quality-  
Analyzer



# Optical In-Line Analysis in Laboratory and Production

## Features



*Film Quality Analyzer built into an extrusion line*

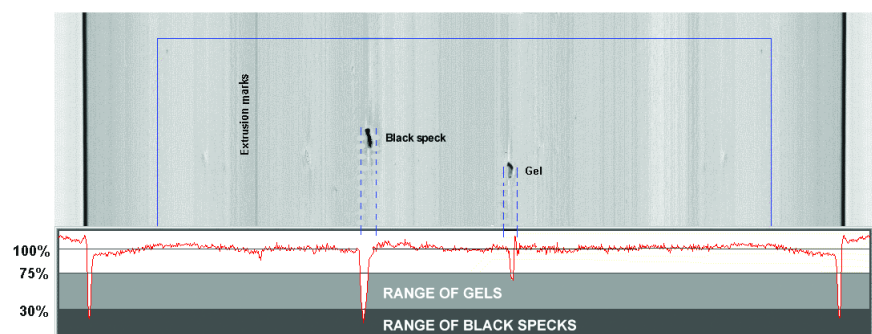
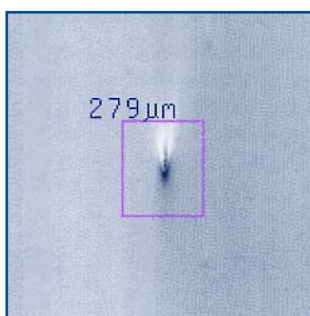
The Brabender® Film Quality Analyzer FQA-PCI optically checks the quality of blown or flat films on a laboratory or production scale. The instrument detects in-line, without blanks, inhomogeneities like gels, fisheyes, black specks, agglomerates, etc. in transparent and pigmented films. These inhomogeneities are classified according to their type and sized into up to 9 size classes for each type.

The resolution depends on the ratio of the number of camera pixels to the film-width as well as on the camera system configuration, the line scan frequency of the camera, and the take-off speed. The standard FQA-PCI system allows for a resolution of 20 µm with a film width of 80 mm and a take-off speed of 30 m/min.

The image data are continuously sent to the PC, evaluated, and saved in a database. A comfortable software

package running under Windows® offers manifold features like definition of size classes, definition of film notes, statistical evaluations, and many more.

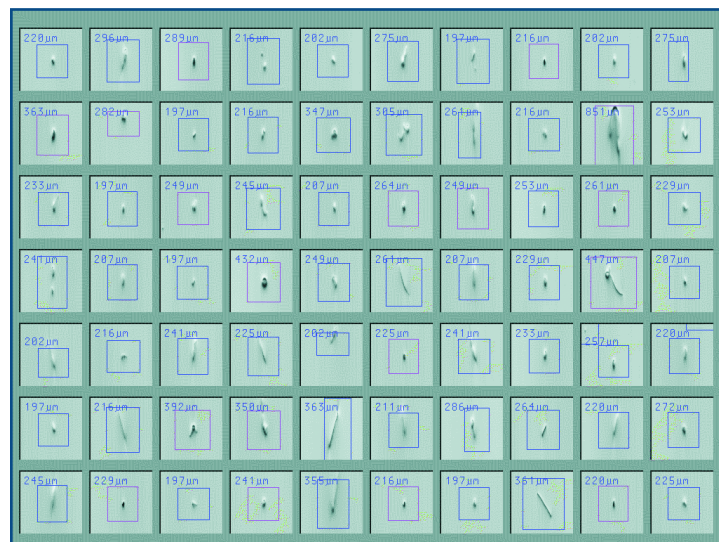
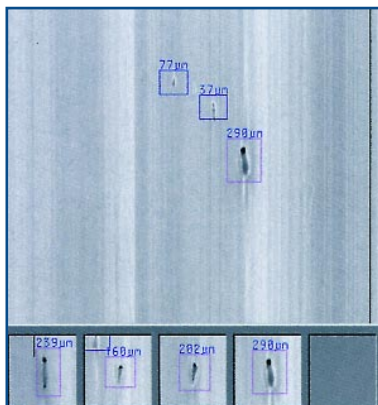
Even strongly pigmented films with transparencies going down to 2 % can be checked by means of adaptive transparency and grey level evaluation. This enables quantitative in-line quality assessment on masterbatches by sizing and classification of agglomerates and pigment particles.



## Evaluation

Each type of inhomogeneity has its own transparency characteristics. Obviously, a black speck shows another transparency value than a gel or fisheye. These differences in transparency are captured by the camera and define the basis picture of each inhomogeneity. In a further processing step the software evaluates different characteristics of each fault and classifies its type. It measures the height and width of each fault, calculates the area and a circle diameter corresponding to this area, and allocates it to the corresponding size class. The pictures are marked automatically with colored rectangles corresponding to the different types of faults.

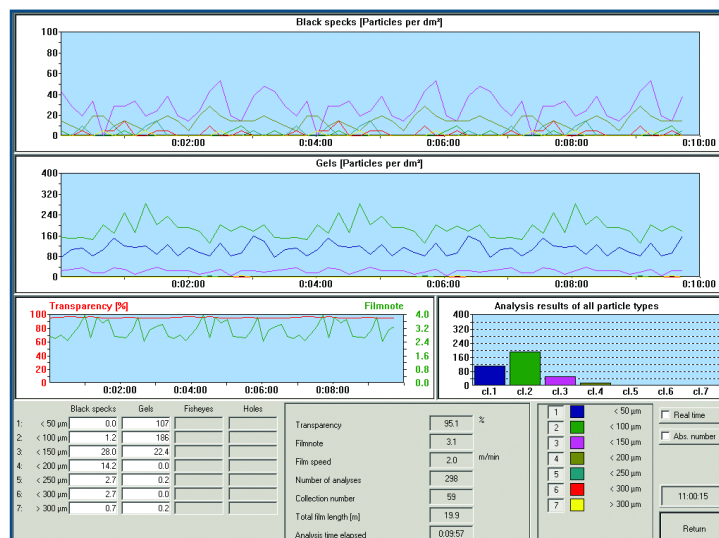
All these data as well as the time when the inhomogeneity occurred are saved in a database for further evaluation or transfer to Windows® Office applications.



## Visualization

During online evaluation the system can show

- A quality map of the extruded film
- Original pictures of passing inhomogeneities
- Online statistical evaluation of fault classes
- Trend curves of the different inhomogeneities and transparency



## Application



Auto-Grader®

## FQA-PCI Specification

### Hardware

The Brabender® FQA-PCI system consists of a high-speed CCD line scan camera, a high intensity LED line-light source, and an industrial PC with integrated framegrabber. Camera and lighting device are encapsulated in protective housings. The industrial PC is integrated in a special cabinet, with an attached touchscreen monitor for easy operation. The camera system can easily be integrated in existing extrusion lines. Additionally, Brabender® offers complete in-line film inspection systems for blown and flat films.

<b>CCD Line Scan Camera</b>	Scan Width: 80 mm Scan frequency: 30 kHz
<b>Light Source</b>	High intensity LED-line light
<b>Resolution</b> (dep. on film width and take-off speed)	Resolution 20 µm Film width 80 mm Take-off speed 30 m/min
<b>Industrial PC</b>	High Performance Configuration, Integrated framegrabber card, 15" Touchscreen Monitor

Subject to change of design and technical modification without notice.

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ISO certified to DIN EN 9001:2000 ✓

