

# Vision Inspection

**PCE**

Pharma Vision Inspection



## Quality Inspection

Brand Protection

Product Safety

Solutions

## Smart Camera

Quality and Safety in Focus

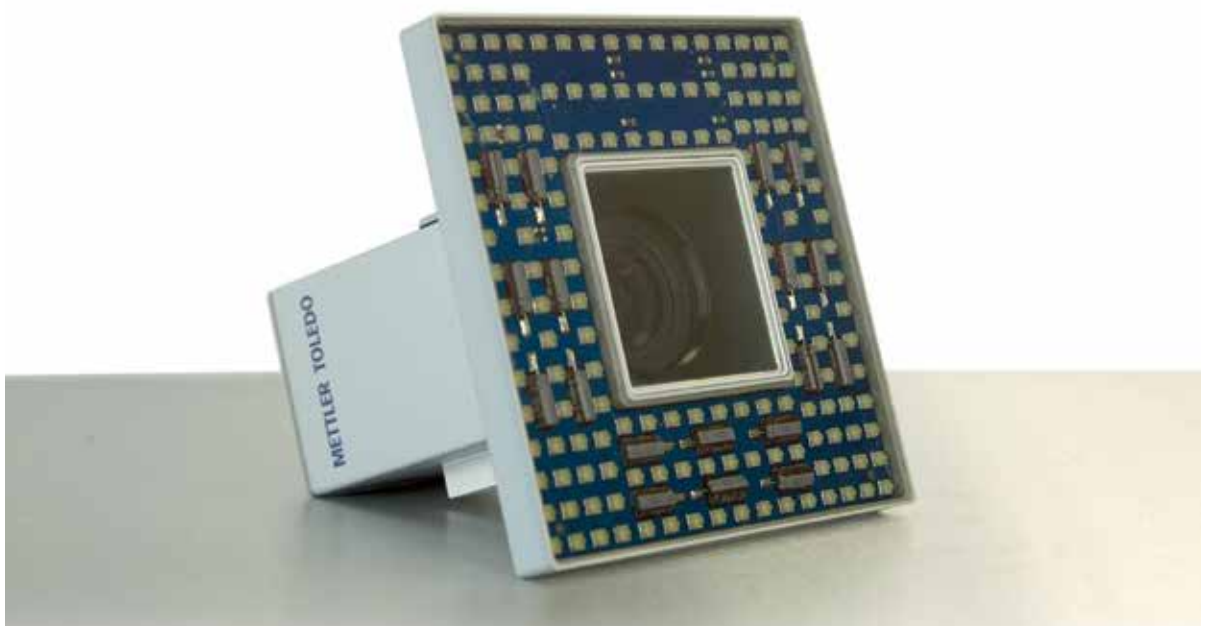
**METTLER TOLEDO**

# A Brief History

## Optical Packaging Checks

**Almost 20 years have passed since Pharmacontrol Electronic GmbH (PCE) developed the first smart camera. Ever since, we have ensured maximum process reliability in the packaging industry, even within the smallest spatial requirements, thanks to our intelligent, high-performance optical inspection systems.**

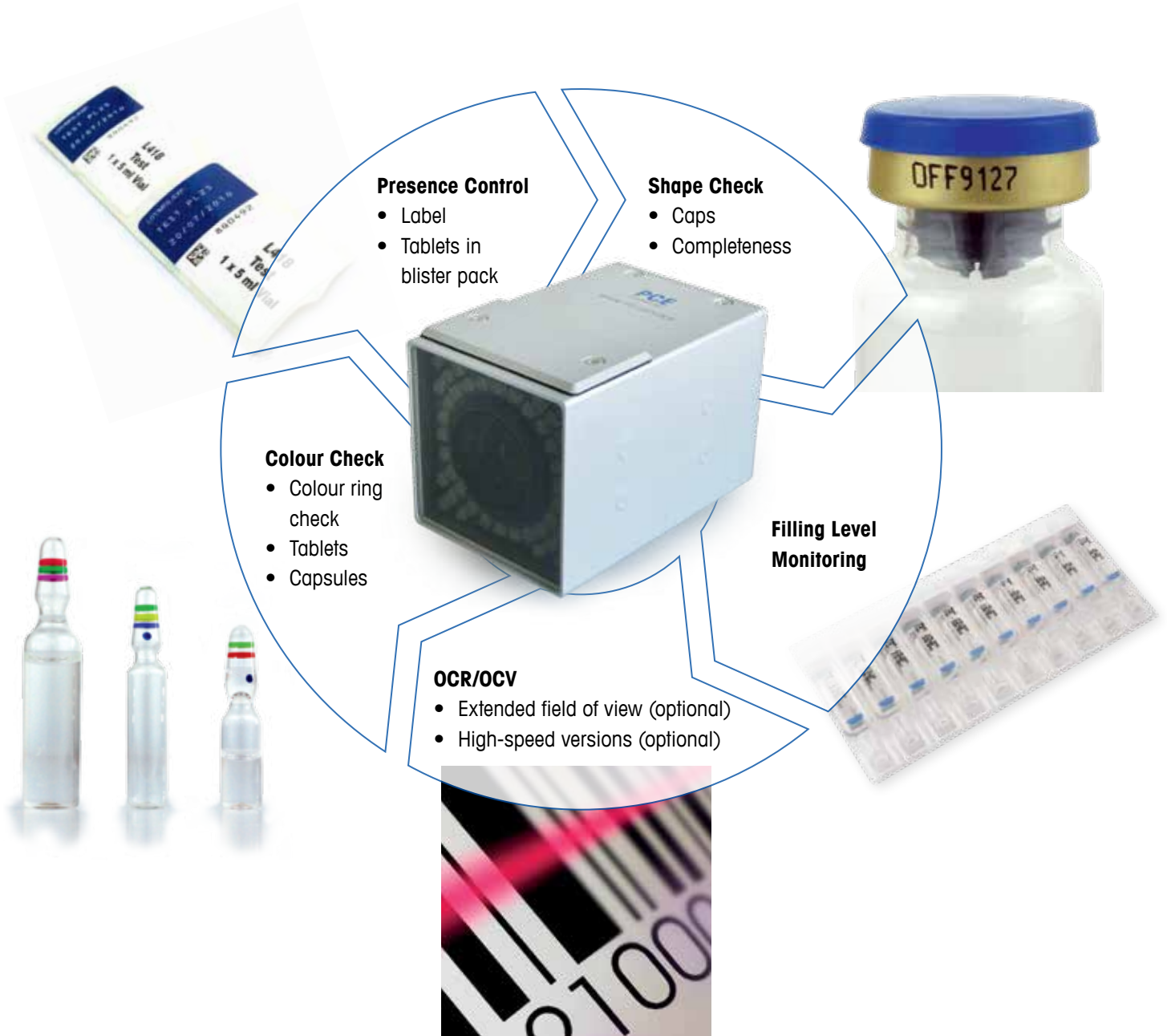
- The first PCE smart camera to feature its own dedicated processor was developed as early as 1996. This made it possible to integrate a single unit comprising image acquisition and processing software into existing systems.
- Today, our smart cameras are around 60 times faster than they were back then, with a resolution that is approximately 15 times higher.
- As a result of the speed and resolution available back then, the fields of application were limited; the initial software was used for imprint monitoring, which checked printed images for smudges and gaps.
- The system was supplemented with a plain text reading function (OCV/OCR) in 2000.
- Even the lighting technology has undergone significant development; where halogen and fluorescent lamps or flashtubes were in use 20 years ago, the cameras of today favour space-saving, high-power, white LEDs.
- Back then, the cameras were operated using a simple black and white user interface and a membrane keyboard; today on the other hand, they can be connected to a network and operated via Pilot Line Manager (PLM) or the machine control GUI.
- Even the maintenance and service provisions are designed to be user friendly, and it's now possible to access, amend settings and install software on each individual camera.



With the increasing tendency towards the use of high-end image processing systems and computerized comparison of analysis data, it is now possible to implement a range of basic functions into the production run as part of the optical

inspection process. This includes comparing packaging on the production line against compliant images and rejecting items which don't meet the standard. It also includes measuring product dimensions and determining

whether any tolerance values deviate from the norm. Other tasks, such as checking product data, print quality standards and ensuring packing units are properly filled can be performed.



# Reliable Monitoring

## Thanks to Intelligent Image Processing Systems

### Compact design for even the smallest spatial requirements.

The compact cameras already contain all necessary parts, such as lighting, optics and full video technology in a GMP-compliant housing. This compact design makes it possible to use the device even in confined installation

situations, such as in the retrofitting of existing machines. The cameras process all relevant signals so that they can also operate as a standalone monitoring station without a terminal. The cameras display their full potential

in conjunction with other printing and monitoring units on the interconnected line via the installed LAN interface and central operation via Pilot Line Manager (PLM).

#### Various Camera Types (Fig.: model 215)

- Up to 4.2 megapixels
- High-speed
- S/W, colour

#### Comprehensive Software Implementation

- OCR/OCV
- Product inspection (S/W)
- Product inspection (colour)
- Blister inspection (colour)

#### Industry Standard

- IP56 protection
- Robust aluminium housing
- 90° housing variant for use in confined spaces

#### Flexible Installation

- Various installation plates available

#### Optics

- Calibration function
- Protection against unauthorized access
- Auto-focus (optional)



Flexible solution for virtually all packing machines:

- Label machines (OCV/OCR, code reading)
- Blister machines (tablets, capsules, etc.)
- Cartoner (contents check, vial check, ampoules, etc.)

#### Wide Range of Applications

- Extended field of view
- High-speed versions

#### Embedded System

- Special high-speed processor for rapid image processing
- No PC required for image preparation
- Easy to add additional smart cameras to the system

#### Connection for External Lighting

#### Industrial Connections

- Ethernet
- I/O 24 V
- 7 outputs and 3 inputs with LED status display

#### Internal High-Performance Lighting

- White light
- UV light
- External lighting (optional)
- Dimmable lighting



# Fields of Application

## Flexibility in Monitoring Tasks

**This intelligent and small monitoring system is the ideal packaging monitoring unit because with maximum flexibility and the simplest handling, it simultaneously and economically performs a number of monitoring tasks. It can be used everywhere in the packaging industry – primarily in the pharmaceutical branch but also in all other sectors where code (data matrix barcode, pharmacode, etc.) or plain text are used.**

The smart cameras are suitable for simple mono-functional monitoring tasks (e.g. data matrix code monitoring) and multi-functional monitoring tasks, such as data matrix code and plain text reading (OCV). Reading is possible on a wide variety of packaging,

such as ampoules, blisters, steel cylinders, labels, tubes, foils, vials, cartons and leaflets. The labelling can be applied with hot embossing, inkjet, laser or thermal transfer printer. Dark marking/code on a light background or vice-versa can be read (positive/negative

reading). In addition, the presence of other print colours or marks on labels and cartons can be checked with up to 12 windows. At high speeds, low contrasts can also be processed.

Application	Labeller	Blister machine	Cartoner, toplayer
Products	Labels, ampoules, syringes, vials, bottles	Tablets, coated tablets, capsules, ampoules, vials, syringes, blister packs, foil printing	Ampoules, vials, syringes, labels, package forms, package filling, package printing, contents, brochures
Checks	Code reading, variable data, imprint monitoring, label monitoring, colour ring, colour cap, filling level, cap position check, label presence check	Shape and colour check, breakage check, completeness check, contamination check, foil defects inspection, position control, double filling inspection, absence control, colour ring, colour cap, label presence control, code reading, imprint monitoring, variable data	Colour ring, colour cap, presence check, shape check, completeness check, code reading, variable data
Software	OCV/code, colour product control, product control	Colour blister inspection, colour product control, product control, OCV/code	Colour product control, product control, OCV/code



Cartoner	Bundle machine	Bundle packer	Case packer	Tube filling system	Other filling systems
Vials, bottles, spoons, contents, package printing, package forms	Label, package printing	Foil printing	Label, package printing	Tubes	Glass bottles, plastic containers, direct application of bottles, containers, vials, tubes
Colour cap, presence check, code reading, shape check, variable data	Code reading, data matrix code	Code reading, imprint monitoring, variable data	Code reading, data matrix code	Seal check Code reading, variable data	Bottle mouth check, contamination check, code reading, variable data
Colour product control, product control, OCV/code	OCV/code	OCV/code	OCV/code	Product control, OCV/code	Product control, OCV/code

# Smart Camera Systems

## Maximum Protection for your Products



### The benefits are clear to see

By using the latest systems for checking traceability, you can be sure that:

- Quality standards are being met
- Patient protection is ensured
- All applicable guidelines in the international pharmaceutical industry are being followed
- You avoid damaging product recalls and counterfeits resulting from theft, whilst maximising the transparency of your processes and inventory
- You are increasing productivity and profitability in the long term

#### Mettler Toledo Product Inspection Germany

31180 Giesen, Germany  
Sales Tel: +49 (0) 5121 933 222  
Service Tel: +49 (0) 5121 933 160  
E-mail: [pid@mt.com](mailto:pid@mt.com)

#### Mettler-Toledo Gesellschaft m.b.H.

1230 Vienna, Austria  
Sales Tel: +43 (0) 1 604 1980  
Service Tel: +43 (0) 1 604 1990  
E-mail: [info.mtat@mt.com](mailto:info.mtat@mt.com)

#### Mettler-Toledo (Schweiz) GmbH

8606 Greifensee, Switzerland  
Sales Tel: +41 (0) 44 944 45 45  
Service Tel: +41 (0) 44 944 47 47  
E-mail: [info.ch@mt.com](mailto:info.ch@mt.com)

[www.mt.com/pce](http://www.mt.com/pce)

For more information