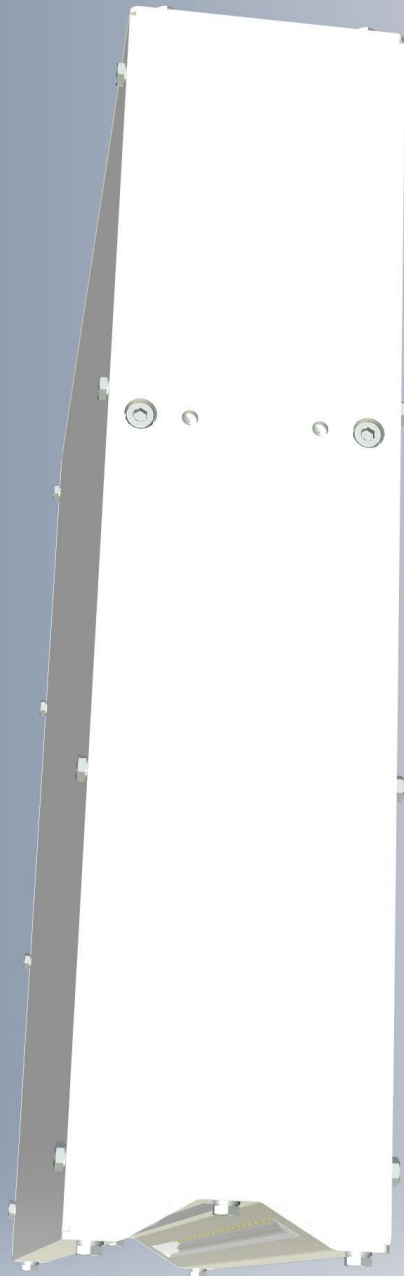# Integration-Kit for Print-Inspection
For Pharma-Blisterlines and Digital Foil Printing

Why Our Integration Kit?

Highly automated processes with flexible inline digital printing require camera inspection and flexible interfaces. The heterogeneous production conditions and installation situations call for a flexible modular solution that can grow with the requirements. With the QualiReader-PI (Print+Inspect) and QR-I (Inspect), QualiVision offers a modular system that simplifies project planning, service and operation through system integration and standardization of interfaces.
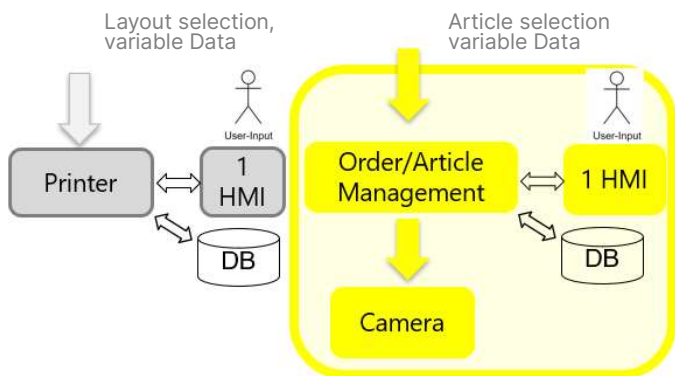
Scope of Supply

Fully automatic print and inspection system consisting of:

■ Integrated software solution for certified print
■ Camera-Module with illumination
■ Small control cabinet with controller, UPS, I/O interface
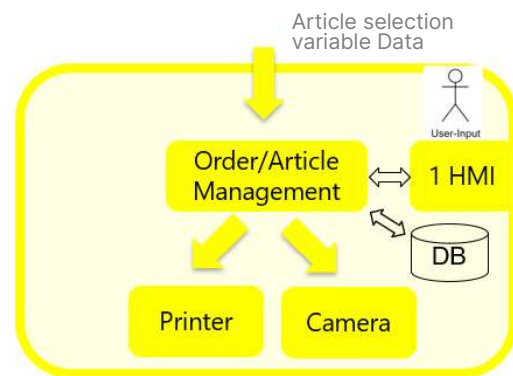■ Touch-HMI

QualiReader I (Inspect)
Printer/Camera separated

Setup inspection layout with PDF (digital reference) and check printing
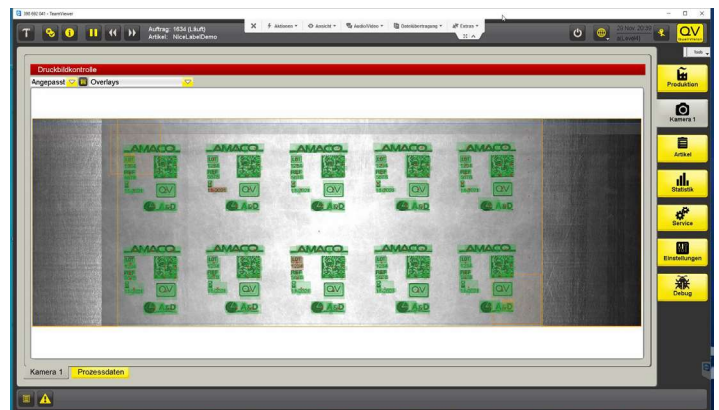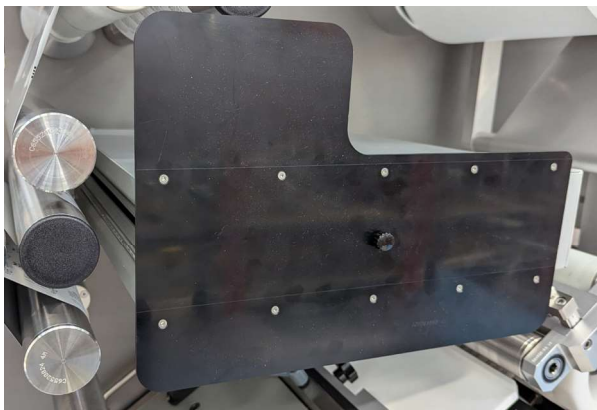
QualiReader PI (Print+Inspect)
Data integrity between printer and camera

Define ONE layout which is used for printer and for quality inspection

Application samples: Mechanical integration and HMI of print inspection

Unique one-step workflow

The unique QualiVision solution is that the print layout is also used as a digital reference for the camera inspection ('single source of truth'). Design the label in the integrated label layouter and your QualiVision inspection system is ready to go. QualiReader® PI checks each printed product and compares it with the digital artwork. This eliminates manual processes and saves time.

- **Automatic one-step teach-in directly from digital reference**
- 100% inspection of any data (fixed and variable) and **any font**
- All-in-one solution for full-area quality assurance of imprints

Setup new print layout and inspection in just two steps:
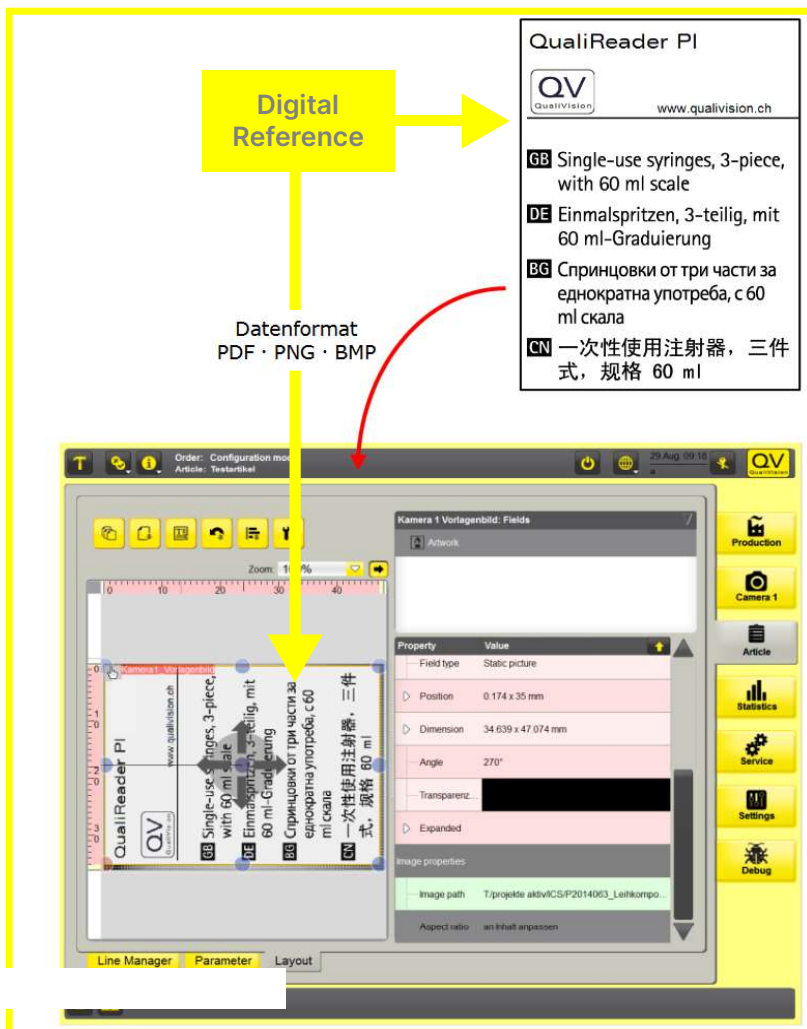
1. Setup of a new article

- Define Printing Layout
- Save Article

2. Run production

- Set order data
- GO

With the Start of production, the printer and camera will be setup automatically

Process data	QualiReader I (Inspect)	QualiReader PI (Print+Inspect)
Foil/label speed	Up to 100 m/min	
Inspection width/resolution	288 mm (other widths on request) / 720dpi	
Image capture technology	Compact and robust installation housing with line camera and lighting, which can be easily integrated into blister machines.	
Horizontal process interface	Adaptable machine/device interface for process control, triggering, result and also error output and product tracking via digital I/Os, ProfiNET, OPC-UA, TCP socket, ...	
Vertical process interface	Standard interfaces for item and order management and control for Level3 systems, MES, ERP, LMS and operational data collection. Customizations are made possible via adapter software.	
Reporting	Order data with statistics, audit trail, serial number reports as PDF, CSV, XML, ... The reports can be customized.	

Labeling

Printer control	Printing system will not be controlled by QualiReader.	Sending the print data, data flow control, depending on the printer Error handling, parameterization, audit trail.
Marking system		Inkjet (TIJ, CIJ), Thermotransfer, UV-DoD, DOD, etc. ReajetHR, Hapa, Zebra, CAB, Domino, Amaco, ALFAService, etc.

General functionality

Software	Configurable standard software QualiReader, Pharma-ready	
Networking	Several QualiReader systems in one line can be connected - line management.	
Controller, HMI operation	Controller is selected depending on the required computing power Monitor touchscreen (set up via touch): standard multi-touch or also hygienic design	
Article and Order management	Managing and testing items. Optional order management and article version management.	
Print layout system	Integrated print layout tool to create or define print layouts of test areas: Fixed, variable and serialized data: writing, codes, images Layout consisting of font, codes, images, variable links,... can be set-up with touch. GS1 digital link ready Optionally, layout can be imported as order data.	
Serialization	Accounting	GS1, China Code, IFA, UDI (depends on printer implementation)
User management	Standard 4 Level (Compliant with 21 CFR Part 11), internal or with Active Directory	

The inspection

Range of functions	Completeness, correctness and positional accuracy of fixed and variable data: writing, Codes, images
Print image control	Graph-based checking also of international character sets (Chinese, Arabic, ...), Pictograms, symbols without manual teach-in. Fixed data within order teach-in from "Digital reference". Tests of individual points (decimal point) > 0.01mm2.
Code reading	Reading, comparing, decoding 1D/2D including stack codes.
Code grading estimation	Yes (depending on the minimum line width). 1D code line width > 0.2mm, 2D codes Module size >0.35mm
Reading (OCR/OCV)	Typically used only for serialized imprint. Fonts should be optimized for reading. Font size typically >1.2mm
Mix-up control	Methods: writing/code reading or image comparison
Quality checks	Optional VisionTools: General inspection tasks such as comparing pre-print with imprint, Distance measurements,... can be seamlessly integrated.

More options

Qualification (IQ, OQ, PQ)	Software modules can be validated for applications in the pharmaceutical, medtech and cosmetics sectors
Operational data collection (PDA, BDE)	Standard OPC-UA interface for operational data acquisition and order/article management