QV
QualiVision

A Baumer Company

AI Platform on Smart-Camera
combined with versatile image processing software

All-in-One and Ready-to-Use
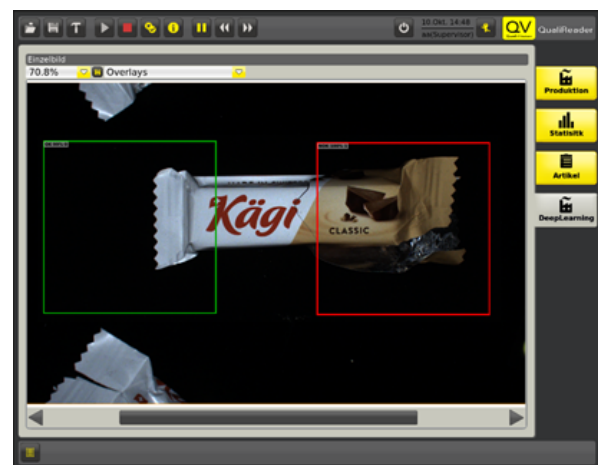
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Classic image processing

- Presence checks
- Color detection and verification
- Contour checks
- Location/position controls
- Dimensional accuracy tests
- Surface checks
- Detection of product type
- Completeness checks

Image processing with Deep Learning (AI)

- Detect defects of many different types
- Detection even with undefined object positions
- Deformations
- Contamination
- Detecting new types of defects through learning
- Execution of pre-trained neural networks

QualiReader: The multifunctional platform for your quality control and machine controlling

Advantages of the smart camera with pre-installed QualiReader

- Savings of additional PC systems and their cabling
- Simple integration through standardized interfaces via input/output signals and digital bus systems (B&R, Beckhoff, OPC UA ...)
- Extremely flexible and modular test and filter sequences for the best test result
- Fully configurable through your PC or directly via the optional touch monitor
- Easy configuration via GUI, no programming knowledge required.
- C-mount lens connection for many possible use cases
- The software QualiReader has been a proven and validated product for optical quality control for many years
- Linux
- NVIDIA Jetson – embedded system in ARM architecture
- Sony CMOS sensors
- Efficient execution of pre-trained neural networks

Quick implementation of an effective and reliable inspection

From the image template to the finished system in just three steps with the VAX smart camera and the QualiReader image processing software
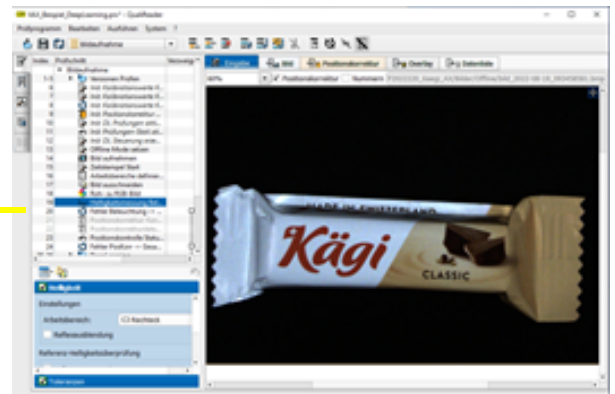

Step 1
Classification of good and bad parts

Image capture and assignment to the respective folder in the category

Step 2
Transfer data to QualiReader

Use of the filter criteria of the AI system and detection of irregularities
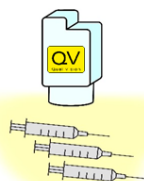

Step 3
Select and start the job

Iteration of classification using false assessments to improve quality

The QualiReader - a proven software, Linux and Windows compatible for test and migration applications.

Because of its universal applicability, existing, validated test routines can be copied and used sustainably regardless of the platform.
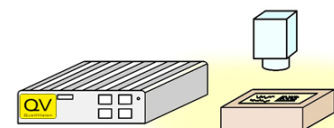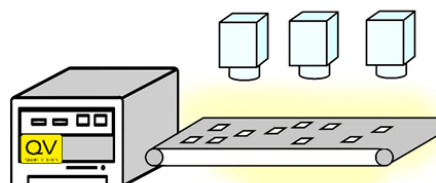
Small size

Ideal for embedded smart camera

Mid size

Ideal for fanless industrial PCs in various industries and applications

Big size

Ideal for powerful computers to control multi-camera systems with computationally intensive tasks

Technical Data

Camera	Baumer 5 megapixel camera, monochrome or color
Processor equipment	NVIDIA Jetson Xavier NX
Sensor data	Sony IMX250 Gen2
Sensor type	2/3″ CMOS
Resolution	2448 × 2048 px
Pixel size	3,45 × 3,45 μm
Lens mount adapter	C-Mount
Mechanical data	B 70mm, H 70mm, T 120mm
Operating system	L4T Ubuntu® Linux® 18.04
Power assumption	approc. 17,9 W @ 73 fps
Protection class	IP 67 (with mounted tube and cable)

Interfaces

Digital inputs	1 input
Digital Outputs	4 power-outputs with pulse width modulation (PWM) (max. 48 V / max. 2,5 A)
Data interfaces	GigE, USB 3.0, RS232
Monitor connection	HDMI

Software

Image analysis system	QualiReader®
Type of analysis	Traditional image analysis and deep learning (AI) supported evaluation
Bedienung	Optionally via touch monitor or via virtual remote control software
Signaling	via digital I/O, TCP socket, generic communication devices, OPC-UA

Advantages of the Baumer VAX Smart Camera solution with pre-installed QualiReader

- Easy system integration into new machines and retrofits
- Multifunctional system through parallel evaluation methodology
- Complete image analysis system with standardized input/output interfaces
- AI and classic image processing
- Robust and space-saving

Subject to technical changes and errors 04/2024