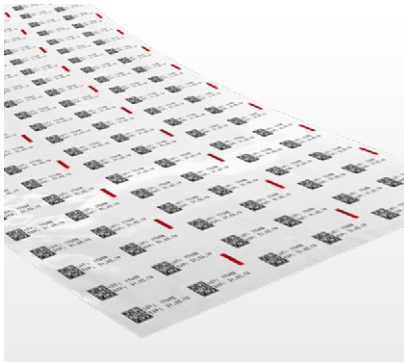# CODES, TEXT & GRAPHICS

SIGNUM Print (HR)

■ Description

SIGNUM Print is a highly efficient greyscale vision system and the complete solution for 100% optical inspection of print including characters (OCR/OCV) on packaging materials during the packaging process. It offers recognition capacity, operating features and operator comfort that so far have been known only from most up-to-date vision systems. The high reading speed, integrated illumination and outstanding software make the system the best of its kind.


■ Area of Application

Inspection of presence, completeness, readability and quality of prints such as:

Product markers consisting of letters, numbers and graphics such as:
- Company information
- Product data
- Logos, pictograms or symbols
- Barcodes and 2D-Codes, i. e. DataMatrix

Use for:
- Small area recognition e.g. blister identification
- In-line single blister printing e.g. Late Stage Customisation
- Large area foil inspection
- Sachet and stick-pack machinery
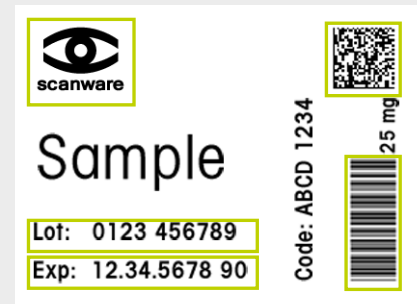
■ Highlights

- Fast evaluation of data due to smart unicode library
- Automatic recognition of character orientation
- Copy of Evaluation Type feature for fast teach-in if object is to be inspected at different locations
- Multiple camera systems for inspection of large area prints available
- Automatic teach-in

■ System

The OCV/OCR camera system is fully format-independent. scanware has chosen a feature-based recognition process. The object to be inspected is analysed based on features such as size and centre of gravity.

However, not each individual previous reading is taken as a reference value since this is an approach that is either time-consuming or lacks precision. Rather, **SIGNUM Print** creates a virtual character from all readings that were marked correct. Thus, the virtual character depicts the average value of all previous readings. Ultimately, for each sign, only a single evaluation occurs to establish correctness and readability.

This library of virtual signs is taught at installation by scanware. Subsequent changes can be made by the user. During the self-teaching mode, the characters to be inspected are detected automatically. In production, an automated tracking feature ensures that the format mask is in the correct reading position at all times. Up to three cameras ensure 100 % inspection of the relevant area. That capacity can be further increased in the future.

The vision system's high computing power allows the verification of up to 5,000 characters. The individual areas may have different orientations.
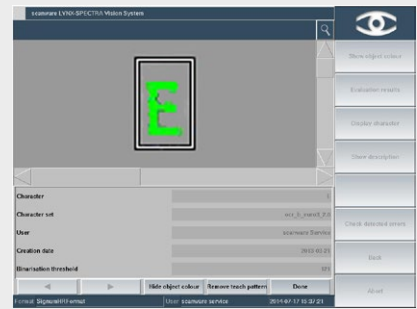
■ Hardware

The matrix cameras are equipped with integrated W-LED illumination. This is electronically adjustable in 16 illumination levels, settings of which can be saved for each format. This guarantees reproducible and homogenous lighting for the inspection at hand.

■ Software

The extensive software features include the following: Consecutive error recognition, memory for error images, trial runs for formats, diagnosis and optimisation of features in trial run, production statistics as well as a batch-based order documentation.
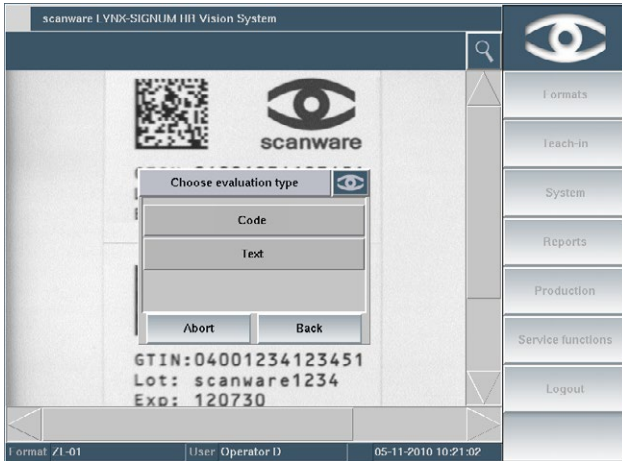
The teach-in can be configured and consequently is very fast. Firstly, the print type to be inspected is chosen. Thereafter, only the parameters relevant to the type of print need to be taught.
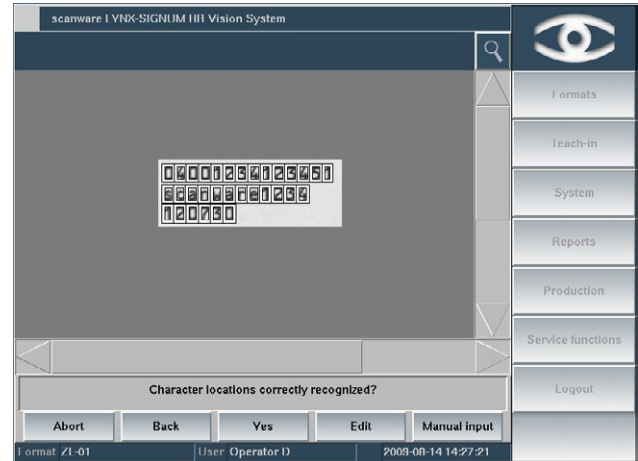
In OCV mode, the system automatically recognises the position of the text.
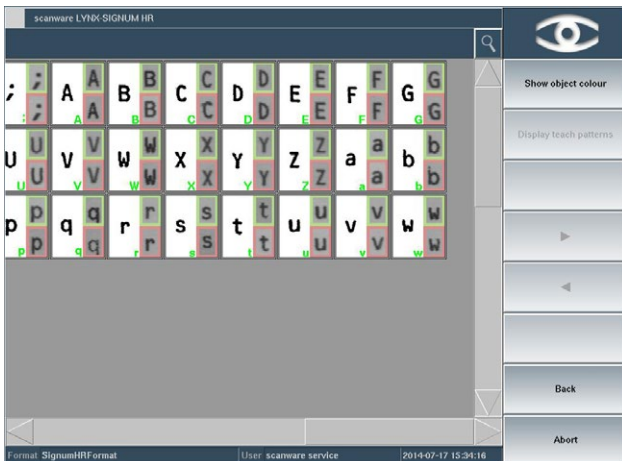
The unicode library does not grow continuously which would slow down evaluation. Instead, evaluation is based on an intersection of parameters of the previously read variants. Thus, the evaluation speed is uniformly fast.

When an evaluation type, for example a DataMatrix, is inspected at different locations within an image, it is copied during teach-in rather than each item taught individually. The user enters the number of copies expected within the image and **SIGNUM Print** locates the copies.

■ Further Application Options

Tablet Print
The print inspection **SIGNUM Print** can also be used on prints on products such as tablets and capsules. The automatic detection of orientation is of particular importance in this field of application. The print inspection can occur simultaneously with product inspection of criteria like colour and size.

Large Area Foil Inspection
Combining multiple cameras results in a very high image resolution which enables the inspection of complete foils such as on sachet and stick pack machines.

■ Technical Data

Camera resolution	1,296 × 966 to 4,872 × 3,248 pixels		
Numbers of cameras	1-6, depending on application		
Reading speed	600 readings/minute for 224 characters		

Inspection areas for	
Codes	max. 10
Text lines	max. 10
Logos and graphics	max. 100
Characters	up to 5,000

■ Quality is visible.

- Modular build for a multitude of installation options
- Real-time operating system QNX® for security and speed
- Uniform graphical interface and easy-to-follow menu structure
- Fully 21 CFR Part 11 compliant
- Hard- and software are expandable and upgradable

- Wear-free, electronically controllable scanware W-LED illumination
- Easy to install on all common packaging machinery
- Communication with machine via a VDMA-XML protocol
- Simultaneous use of numerous inspection parameters
- Variety of statistical tools

- Development of special tasks and requirements on your request
- Availability of all parts guaranteed for 10 years
- Service offering solutions and support within 24 hours

Management   **Packaging**   **Blister & Products**   **Codes, Text & Graphics**   **Track & Trace**   **Support**

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