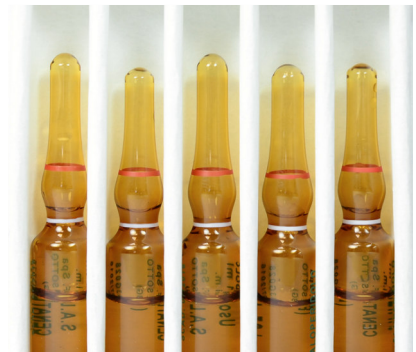# CODES, TEXT & GRAPHICS INSPECTION

SIGNUM Ring Codes (CL)

■ Description

SIGNUM Ring Codes is a high-resolution colour vision system for inspection of colour codes on ampoules, vials and syringes. Installed on packaging lines, the system detects deficient products and prevents cross-contamination.

The system can be used for both single ampoule inspection and inspection of multiple and different products in blisters or trays.

■ Area of Application

Applicable Objects:

- Inspection of ampoules and vials
- Inspection of multiple items in blister or tray
- Single product inspection on labelling machines

Inspection Criteria:

- Ampoules: Number of colour rings, ring colours, ring sequence, width, distance between rings, gaps and overall length of all rings
- Vials: Presence and colour of cap
- At the same time, the presence and colour of the label is inspected


■ Highlights

- Real colour recognition for optimum results
- Inspection of ringcode and label in one single step
- Electronically controllable scanware SMD-W-LED illumination for reproducible light conditions
- Two illumination levels can be evaluated in immediate succession

■ System

SIGNUM Ring Codes offers real colour evaluation for the inspection of up to 9,600 products per minute. Up to 80 units per package with up to four different product types can be inspected. Up to seven parameters, each taught specifically and individually, can be used in one inspection step. Per ampoule, up to six rings can be verified.

The combination of illumination, usability and high quality hardware establish a powerful inspection system. The use of white LED offers long-life, wear-free, homogenous illumination. The guided menu structure is easy-to-follow and user-friendly. Evaluation unit, camera and operating system facilitate high-speed evaluation.
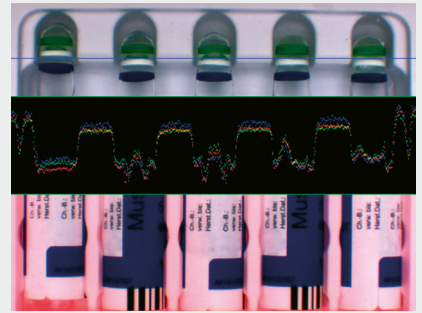
■ Hardware

Using real colour recognition, the number of distinct colours is unlimited.

Due to the high recognition power of the scanware evaluation unit in combination with the real-time operating system QNX®, the evaluation at two different illumination levels in close succession is possible. Thus, illumination can be optimised for ring code and label separately. The illumination with white LED is controlled electronically, thus enabling constant, reproducible, homogenous optical surroundings.

Evaluation unit

Housing	42 HP, 3.5 RU
Power supply	24 V DC PELV/SELC (safety extra low voltage) 18 - 30 V max. allowed voltage range
Standard I/O System	D-I/O 24
Expanded I/O System	TCP/IP, Integrated PLC
Frame grabber	scanware frame grabber for up to two Camera Link cameras, compactPCI serial

Illumination

|	
Illumination unit	scanware, with up to 3,000 LEDs per unit
Illumination adjustment	scanware, 2 x 16 levels
Illuminant	SMD-W-LED
Illumination types	Top light, back light, side light, diffuse light

■ Software

The **SIGNUM Ring Codes** software has the same ove-rall structure all scanware systems share. This reduces training times for users. Discover real colour recognition instead of smart camera for perfect ring code inspection.

Some of our extraordinary software features:

▪ Specialised algorithms for ring code recognition
▪ Re-teaching of ring colours and sizes possible
▪ Comprehensive Audit Trail
▪ Easy-to-follow, guided user menu
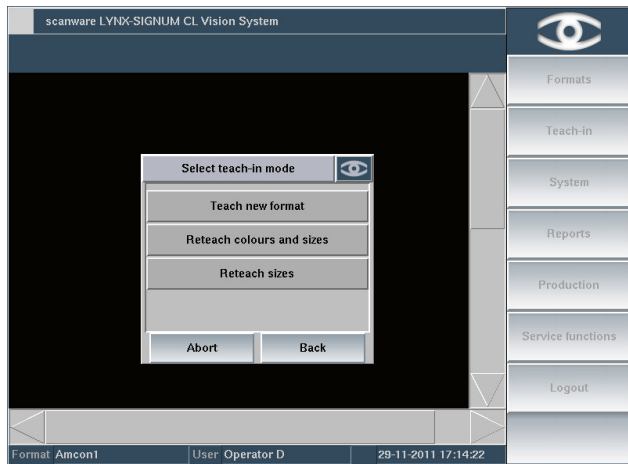
The guided teach-in is particularly easy to follow. The inspection areas for individual criterions can be defined individually. Using test runs and format testing, the evaluation can be checked.
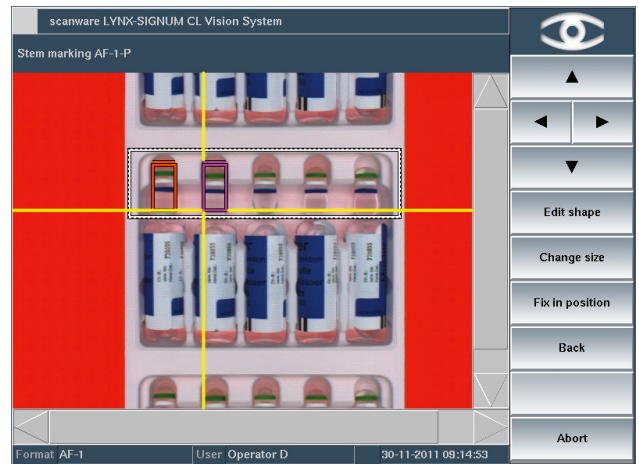
The necks of ampoules are taught. The contrast can be optimised by using colour filters.
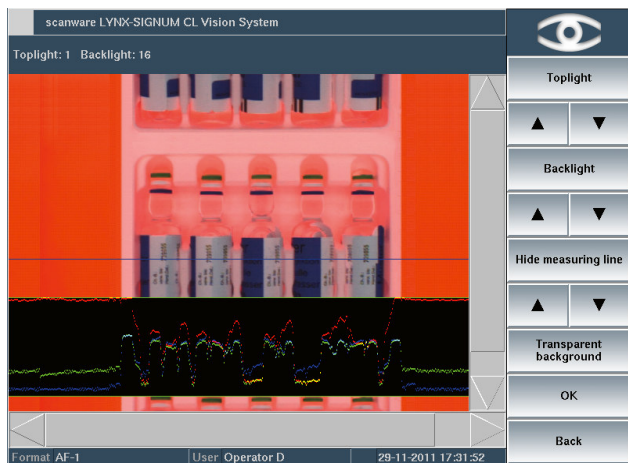
For the inspection of labels, a designated illumination setting can be chosen independent of the ring code inspection.
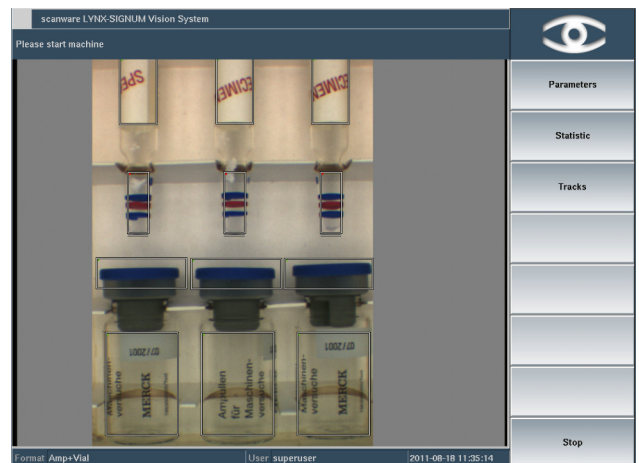

The evaluation of vials and ampoules within the same tray is possible.

■ Re-Teaching

The partial teach-in enables the user to change ring colours at a later stage.

Particularly with ampoules, varieties in colour due to production environments occur frequently. In this case, it is not necessary to undertake a full format teach-in. Instead, error images of ampoules of a new batch can be used to add the colours to the product colour definition. Afterwards, the ring codes on these products are recognized as correct.
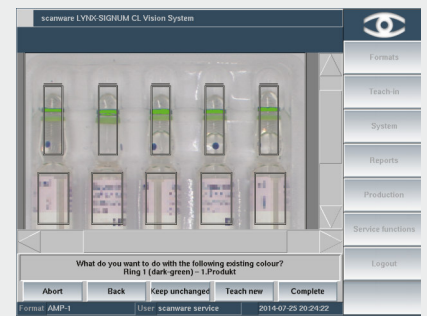
■ Technical Data

Camera technology	1CMOS or 3CMOS
Camera resolution	1,024 × 768 to 4,096 × 768 pixels
Colour resolution	16 million colours
Max. products per package	80
Number of different products per package	4
Inspection criteria per product	up to 6 + label
Format storage	>1,000
Number of cameras	1-3
Evaluation speed	up to 9,600 units / minute

■ 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
- Hard- and software are expandable and upgradable

- Fully 21 CFR Part 11 compliant
- Wear-free, electronically controllable scanware W-LED illumination
- Easy to install on all common packaging machinery
- Communication with machine via a VDMAXML_P or OPC UA 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** scanware