# ELSCAN product family

Sophisticated image processing, combined with two high-resolution cameras – this is what the ELSCAN web monitoring systems offer. They allow the display of printed images on moving webs with the greatest detail and color fidelity. The cameras can be moved manually or by a motor to adopt positions with the highest precision and display the corresponding images on the monitor.

All ELSCAN variants feature the patented "dualView" technology with its two cameras. The telephoto lens or wide-angle lens is activated depending on the zoom level. During zooming, the system switches imperceptibly between the cameras. It is thus possible to display the printed images at several times their resolution. This unique, patented "dualView" concept allows nearly lag-free zooming up to the highest resolution.

Patented "dualView" technology

Telephoto lens

Wide-angle lens
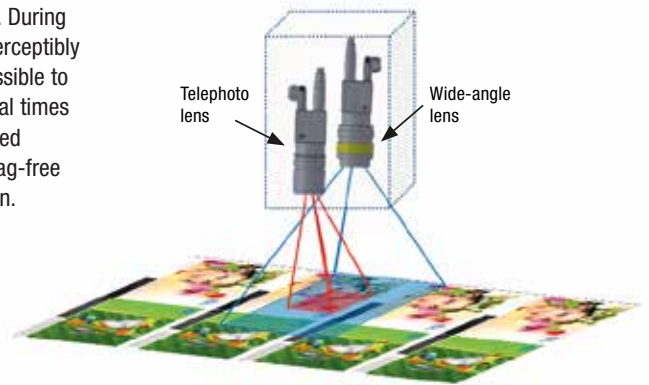
OMS3 - Basic
+ Field of view of 100 x 75 mm
+ Patented "dualView" technology with 2 x 5-megapixel cameras
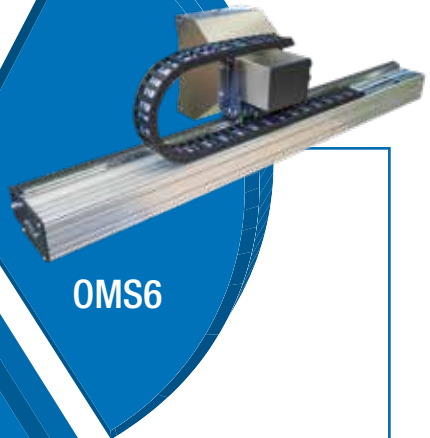+ For narrow web applications up to 580 mm operating width

OMS3

OMS6
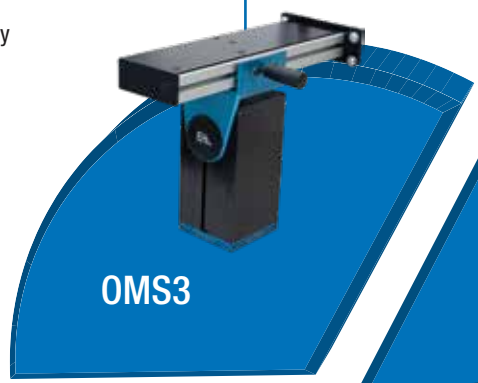
OMS4.6

OMS4.6 - Premium
+ Field of view of 120 x 90 mm (other versions available)
+ Patented "dualView" technology with 2 x 5-megapixel cameras
+ For operating widths up to 2,370 mm
+ Additional functions, e.g.
  • Color comparison (deltaE)
  • 100% repeat overview
  • Position gallery
  • Double-camera system

OMS6 - High End
+ Large field of view of 234 x 124 mm
+ Patented "dualView" technology with 2 x 12-megapixel cameras
+ Uncompromising image quality in 4k quality and brilliant color rendering
+ Highly precise camera positioning via motorized crossbeam guide
+ For operating widths up to 3,250 mm

Higher quality and productivity with web monitoring

Production processes in printing houses are becoming ever faster and more precise. The quality of the results of the printing is continuously increasing and paper waste must be reduced to a minimum.

For many years, web monitoring systems from Erhardt+Leimer have made an essential contribution to fulfilling these demands. More than 5000 ELSCAN systems have been delivered to the market worldwide.

ELSCAN dualView supports the printing process from the setup phase to completion of the job with the continuous display of the printed web in the highest resolution and prime image quality. The points in the print that are decisive for quality, such as register and color marks or distinctive colored areas, are made available to the printer in highest resolution, and thereby guarantee high quality production.

Advantages
+ Higher production speed
+ Constant quality printing and color
+ Less waste
+ Faster system setup
+ Operator assistance during production

Application areas / examples of errors in the graphics industry

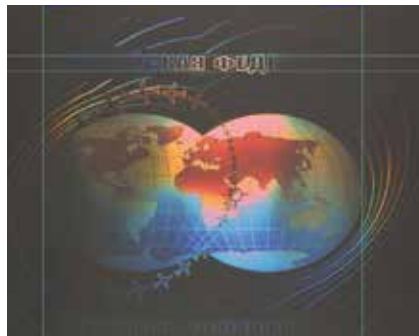+ Register inspection

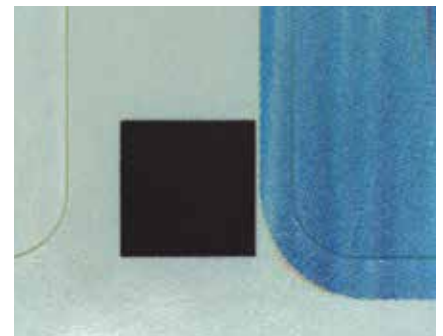+ Print quality inspection

+ Color accuracy monitoring

Examples from the graphics industry
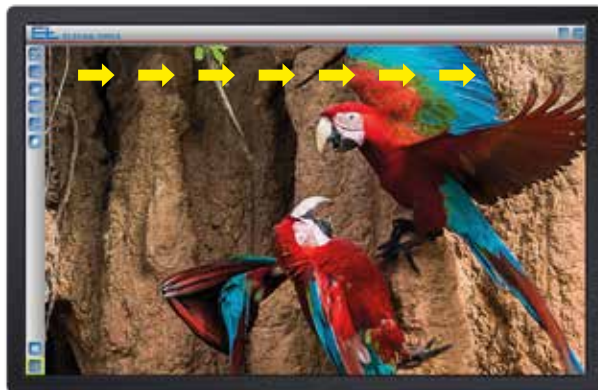

+ Hot foil / cold foil

+ Hologram depiction

+ Die cutting position monitoring

Function modules

Autoscan X *

+ In the Autoscan X mode the entire width of the repeat is scanned at any position along the length of the repeat

x (across web direction)

Autoscan Y

+ In the Autoscan Y mode, the repeat is scanned in the direction of web travel, at any position transverse to the web

y (in direction of web travel)

Autoscan 100% *

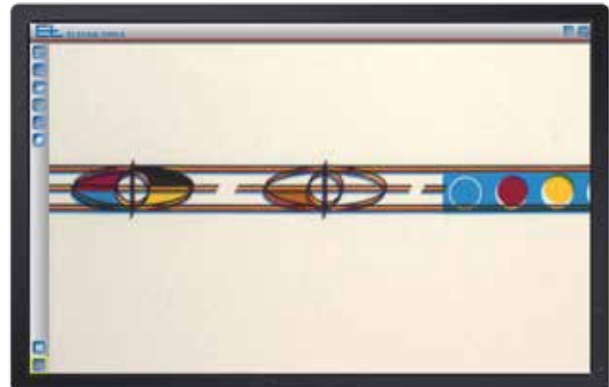+ Scanning the repeat in X and Y direction

Meander-scan *

+ The camera scans the entire repeat by meandering over the print image


* Only with motorized crossbeam

100% repeat overview

+ Display of the entire repeat overview
+ The repeat is built up one image after the other
+ Each position in the repeat overview can be selected directly and quickly by clicking with the mouse

Master image comparison

+ Define and save a reference area on the repeat in the print image
+ The smallest changes in color or position can be detected optimally using picture-in-picture
+ Master image and associated position are saved and can be retrieved at any time
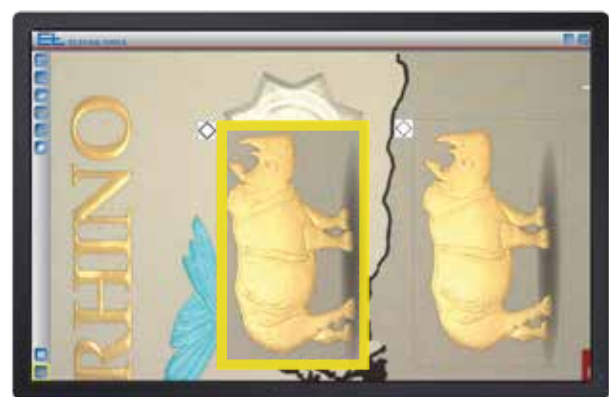
Measuring lines

+ 2 vertical measuring lines and 2 horizontal measuring lines can be positioned as required using the mouse
+ Measuring accuracy down to 1/10 mm
+ For inspecting die cutting positions in the print
+ Measurement of panels
+ Inspection of the web tension on flexible materials

Image stabilization

+ Jitter, for instance caused by web elongation during printing, can be compensated in the direction of web travel
+ The details of register marks can be monitored precisely on screen without "skipping"

Position gallery

+ Up to 5/21/30 positions can be saved in the position gallery with zoom and brightness levels
+ The saved positions are shown in a continuous loop and can be selected specifically
+ Additional functions such as master image or color comparison are taken into account
+ Double camera systems can switch freely from position to position between the cameras
+ In each position it is also possible to vary individually between lead/follow and single camera mode
+ A rear flash is also possible instead of the second camera for inspecting the front and rear registers
+ A program library provides quick access
+ Saved programs can be edited

Color comparison

+ The high image quality allows precise color inspection over the entire job
+ Minimal color deviations are detected
+ The inspection window allows simultaneous monitoring of up to 8 colors
+ The color comparison is therefore excellently suited to color bars
+ In combination with the position gallery, each position can have a color measurement zone
+ Image stabilization guarantees that the correct color area is analyzed if slip or web elongation occurs
+ The last 50 measured values of each monitored color are saved and can be displayed graphically
+ Signal output for alarms (24 V signal)

General evaluation of ∆E

∆E	Evaluation
0.0 … 0.5	No difference to almost no difference
0.5 … 1.0	Difference can be distinguished by trained eyes
1.0 … 2.0	Imperceptible color difference (2.0 = typical limit)
2.0 … 4.0	Perceptible color difference
4.0 … 5.0	Significant color difference that is rarely tolerated
Above 5.0	The difference is evaluated as a different color

Register Pre-Adjustment (RPA)

Ideal printing, more quickly

ELSCAN RPA (Register Pre-Adjustment) was specially developed for the flexo printing area. Due to the easy operation, the register can be set much more quickly on flexo printing machines while setting up a new print job or while a process is running, in this way waste can be avoided and costs reduced.

ELSCAN RPA combines register pre-adjustment with web monitoring – everything in one system. After setting up, the camera system is ready for web monitoring and can be moved to any position on the repeat to display the related images in high resolution on the monitor.
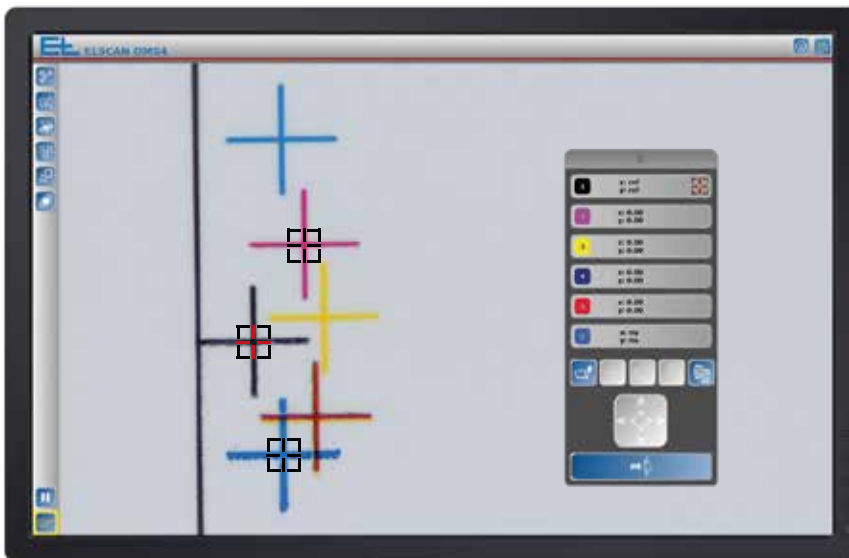
RPA in detail

+ For quickly matching the color register on, for instance, CI flexo printing machines
+ Measuring accuracy higher than 50 µm due to high screen resolution and lenses with fixed focal length
+ The individual register marks are selected with the mouse and the distances between them measured traverse and longitudinally to the web
+ The established deviations are transferred to the printing press
+ Up to 12 printing units are supported
+ Printing unit configurations created are stored in the archive
+ The interface to the printing press is implemented via Ethernet

Register adjustment for all printing units

Fine register adjustment on a selected printing unit

You will find more detailed information in the separate brochure "ELSCAN RPA" (PRO--251203).