

## Erhardt+Leimer Corrugated

Erhardt+Leimer Corrugated is an experienced specialist in system solutions and automation control technology for corrugators since 25 years now.

To improve the quality and increase the productivity of corrugated board production, E+L offers state-of-the-art products for the automatic web guiding, via control systems for the optimization of the web tension up to the automatic parameter setting of all important production parameters.

The extensive production range includes:

- + Process automation
- + Bridge quantity control and splice synchronization
- + Replacement of obsolete PLC control systems
- + PLC controlled hydraulic loading systems for single facers
- + Stand-alone temperature control systems for pre-heaters and pre-conditioners

Today, the Bielefeld Company concentrates their efforts intensively to the area of inspection technology. With these developments, E+L Corrugated has already successfully entered the converting sector.

In future the intention is to continuing emphasis on increasing board quality and quantity. Using the automation network ELCorruMatic it is possible, for example, to automate the corrugated production process step-by-step. This approach ensures consistent high board quality and high productivity such that systems can be operated optimally.

## E+L Contact:

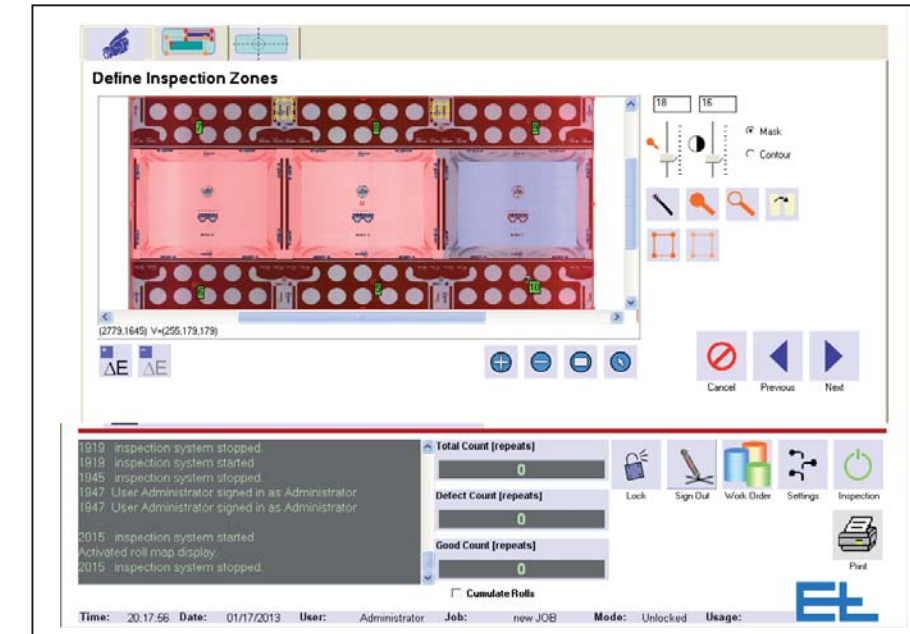


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## ELCorrVision® Inspection Technology for Corrugating Converting



The Erhardt+Leimer Group has been using inspection cameras for guiding, web viewing and inspection technologies for over 30 years. The companies' expertise ranges from hardware development of cameras controllers, trigger boards and lighting technologies, software development for detection algorithms, defect classifications and HMI interfaces, to application implementation and machine integration into various processes of web and sheet fed industries.

This expertise has now been integrated into the world of Corrugating by utilizing proven hardware and software packages and applying them to Corrugating Converting and machinery, such as Printing Machines, Die Cutters, Gluers and Folders as well as Inline Boxmaker machines.

The applications range from Print Inspection of print quality, color drift, defects, hickies, scratches etc. "Print to Die Cut Accuracy", Glue Application Inspection and Manufacturers Gap Inspection of the folded box.







## System Function

The E+L Pattern Control Inspection System is designed to automatically inspect complex shapes, print patterns, glue lines and die cut shapes to ensure repeatable quality of web or sheet processes.

The inspection can be fixed mounted or cross directional traversable in order to accommodate any field of view in machine and cross machine direction.

A control algorithm compares the live scan with a master image (golden template) and logs inaccuracies in reference to tolerances and thresholds that can be freely defined.

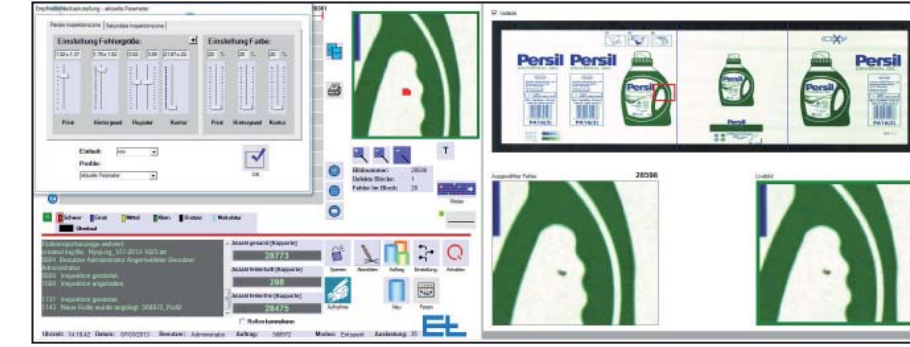
Outputs for automatic rejection devices, alarm horns or alarms lights or even machine control signals can be defined as needed.

## Highlights

- + The „super-sensor“ when standard edge and line sensors reach their limits
- + Designed for monitoring, logging and controlling running webs or sheet processes
- + Designed with state of the art camera technology and image processing algorithms
- + Inspection of
  - geometrical shapes and distance of patterns in reference to each other
  - any number of events
- + Inspection with industry typical reflective light application or newly patent pending backlight application
- + Register Control
  - Print to print
  - Print to die cut
  - Print to slot

## Typical applications

- + Print Pattern Guiding  
print marks, water marks, tamper tapes
- + Sheet Guiding  
Corrugated sheet processes (die cutter, FFG's, Laminators etc)
- + Die Cut / Register Control  
Corrugated sheet processes (die cutter, FFG's, Laminators etc)
- + Glue Line Detection  
Absence/Presence of glue line, shapes and count of glue lines
- + Print Skew Detection
- + Manufacturers Gap Inspection
- + Slot Depth Inspection



## System Function

NyscanCorr, 100 % Print Inspection system is designed to inspect the entire sheet in machine and cross machine direction and every sheet of the production run.

Our CCD Line scan camera technology and our patented lighting system combine a safe inspection algorithm in order to overcome the challenges of Corrugated Sheet inspection.

E.g. Sheet skew and washboarding are internally compensated and masked in order to guarantee a valid inspection accuracy.

Automatic interfaces to feeder/prefeeder, to sheet ejectors, warning light/horns as well as data history logging is realized.

## Highlights

- + Defects in Print
  - Detection of Hickies
  - Disappearance of colors/symbols
  - Multiple sensitivity areas
  - Color drift
- + Measurement Capability
  - Point to Point
  - Point to Edge
  - Edge to Edge
- + Detection of Defect Re-Occurrence (repeat defect)
- + Detection of Defect Clustering
- + Delta E Drift Detection

## Typical applications

- + Sheet Printing Presses
- + High Board Line Printing Presses
- + Inliner
- + Boxmaker
- + Pre Print Web- Printing Machines



Folder



Gluer



Die Cutter



Printer



Folder



Gluer



Die Cutter



Printer