

Intelligent supervisor
for defect detection



Detect **AXIS**

100% print defect detection system for rotogravure machines

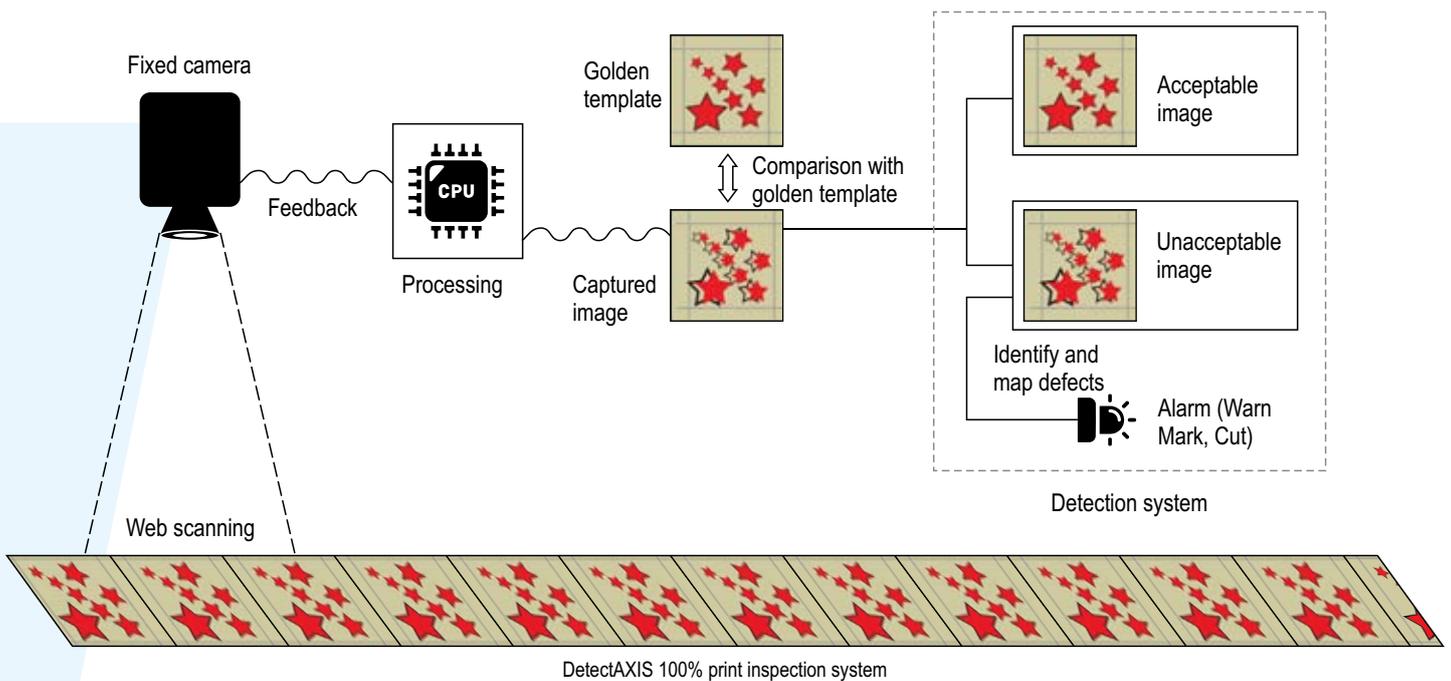
Over the past few years, the print and packaging industry has become increasingly competitive with additional demands for improved print quality and reduced wastage of expensive raw materials. To keep up with these demands, printers and converters are increasing production speeds and reducing job run times. Unfortunately, this means that defects and errors on the print web are not spotted until it's too late, and the job is rejected during QC after a large quantity of material is already printed. These rejections increase rework, thus severely affecting profitability. The only way to ensure a consistent and high quality print without extensive rework is to make use of an automated defect detection system.

Full print width defect detection systems

A.T.E.'s DetectAXIS is an intelligent supervisor that ensures 100% print defect detection. With the help of high resolution line scan cameras, it captures sharp and 'near-print quality' images at full production speeds. At these speeds (of up to 450 metres/minute), it is virtually impossible for the unassisted human eye to spot errors and defects.

The DetectAXIS, on the other hand, can spot these defects quickly – it compares the captured images with golden templates and detects defects that are practically invisible to the operator. When a defect is spotted, the DetectAXIS generates alarms and warnings, consequently bringing to the operator's attention that corrective action is needed. DetectAXIS thus ensures defect free, high quality print output.

The DetectAXIS captures sharp images of the print web with camera-based, cutting-edge smart imaging technology. Irrespective of your printing methods and format, the images taken by the DetectAXIS are consistently precise and of the highest quality. Even the smallest of errors are identified; the printed material can be examined using a resolution of up to 0.01 mm².



Functions

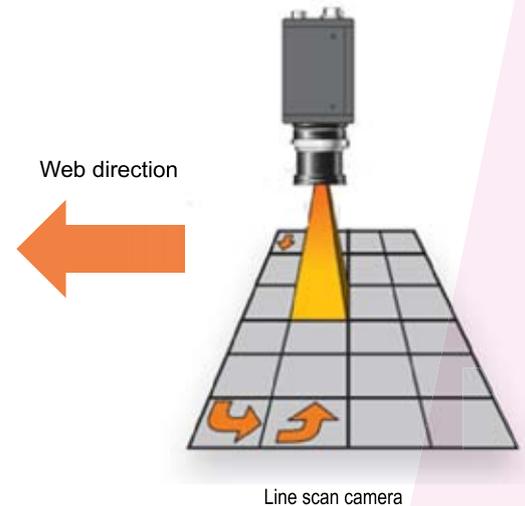
- Golden template comparison, saved image comparison
- Online image acquisition and comparison
- Roll mapping with re-winder control
- Adaptive defect detection
- Adjustable sensitivity
- Colour density monitoring
- Register defect detection
- Selected area sensitivity setting
- Filter zone – area to be marked for defect detection
- Defect snapshot – actual snapshot of defect

Continuously inspects 100% of print surface for defects such as:

- Missing print
- Smearing, toning and hazing
- Doctor blade streaks
- Bleeding
- Colour variations
- Register defects
- Drags
- Holes
- Colour fading

Line scan camera

The line scan camera has three rows of RGB pixel sensors. The camera scans horizontally, then vertically, all the while clicking images. Designed to produce high resolution images of fast-moving objects, the line scan camera has an encoder as input trigger and scans the image line by line at high print speeds. The lines are continuously fed to a frame grabber that joins them together to form a high resolution image. The images and further image processing functions are displayed on a touchscreen monitor. The icon based graphical user interface (GUI) makes it easy for the operator to use.



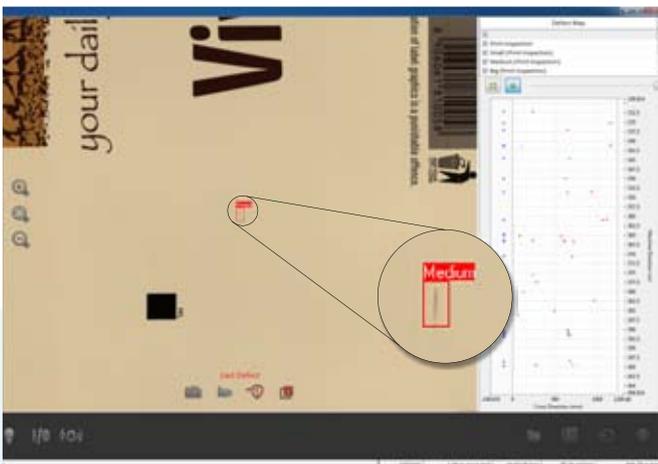
Designed for operational flexibility, to improve print quality, and high productivity

- **Precise and efficient web monitoring**
 - High resolution digital images and numerous web viewing options
 - Line scan camera with digital zoom facility
 - 22" touch screen monitor for operation and web viewing
- **Instant error identification**
 - Golden template, saved image or online image acquisition and comparison
 - Defect snapshot and location indication
- **Better image control**
 - Bright white light LED illumination with variable intensity
 - Magnification control
 - Filter zone to select areas where defect detection is not required
 - Selected area sensitivity setting for varying tolerances in defect detection
 - Full print repeat and 'fit to screen' view
 - Line scan camera of >150 DPI resolution
- **Variable intensity LED back and front lights consume less power**
- **Adapts to different materials**
 - Roll mapping with rewinder control
 - System can be used for any type of roll to roll printing applications and for any packaging substrate
 - Supports all material like polyester, BOPP, aluminium foil, LDPE
- **Easy to operate with interactive graphical user interface**
- **Online diagnostics and support**

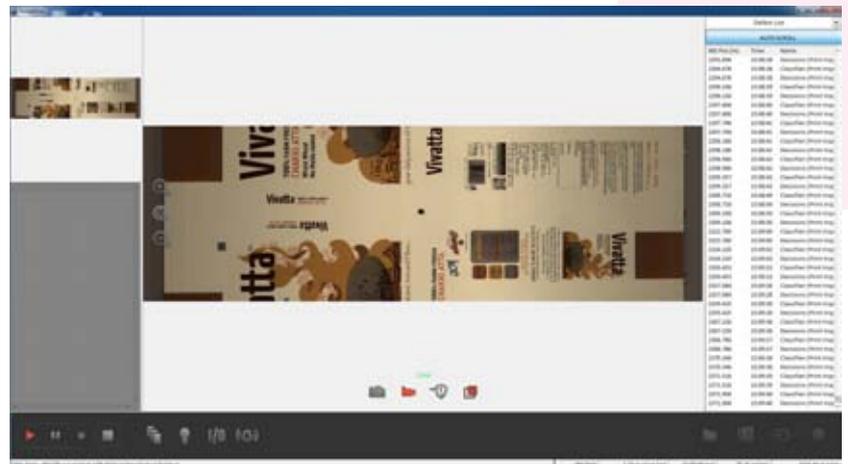


Technical specifications

Model	DetectAXIS
Camera unit	Single or multiple line scan cameras as required
Web width	As per customer requirement
Print speed	As per customer requirement
Monitor	22" touch screen monitor
Area magnification	8x digital zoom
Lights	Bright light LED
Power supply	230 V AC 50 Hz
Temperature range	0° to 50° C
Software	Under licence from OneBoxVision Ltd.



Defect identification



Full print repeat view

About A.T.E.

With deep domain knowledge built over three decades in the print and packaging field, A.T.E. is known as a reliable source of quality products.

A.T.E. has developed customised solutions for demanding and complex printing applications using measurement and control technologies. A.T.E.'s dedicated team is focused on continuously improving A.T.E.'s products and solutions with regular upgrades to algorithms and software.



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