LAKE IMAGE

DISCOVERY SmartPQ for Pharma

Automated, Fast 100% Print Quality Inspection for Pharmaceutical Packaging and Labels

PRODUCT OVERVIEW

For most industries, packaging plays a critical role. From protecting and securing the product, increasing its appeal, to communicating important marketing and product information. However, printing errors on packaging can result in massive recalls and obsolete inventory costs for the Printer, whilst exposing them to risks due to regulatory non-compliance and lower product safety. When it comes to printing errors on pharmaceutical packaging, whether on the packaging itself, on an attached label or on an associated printed leaflet with the medication, this can have more serious, sometimes life threatening consequences.

In many countries, specific legislation govern what information needs to be printed on pharmaceutical packaging to combat the growing threat of counterfeit medicine. In Europe, for example the Falsified Medicines Directive (FMD) 2011/62/EU requires all medication to have a serialized number which enables the package to be tracked and traced throughout the supply chain. Also pharmaceutical packaging printers need to check the final print against the original approved artwork, and notify the authorities of any changes.

It is estimated that 50% of pharmaceutical recalls are due to errors in product labelling or packaging artwork. Furthermore printing errors such as missing, incorrect or unreadable medication names, strength, lot/serial numbers or expiry dates can confuse or mislead people into taking the wrong or inappropriate medicine. Error in dosage instructions where e.g. "2.5mg" appears as "25mg" or "2-3 tablets" is printed as "23 tablets", can potentially cause serious harm or even fatalities. These printing errors could easily occur due to a number of prepress, production or operational issues. Blocked or misfiring inkjet heads, toner marks, dust, equipment/software glitches or human error (e.g. keying errors) could and do happen at any time.

Manual print quality inspection or using strobed video web viewing systems (which monitor only small portions of the web), are grossly inadequate for catching small or random print defects, leading to higher reprint costs, inventory obsolescence and operational pressures – which impact profits, lower customer satisfaction and your ability to secure future business. In turn, if these errors go out undetected, the repercussions could be even worse, exposing you and your clients to negative publicity, damaging penalties, lawsuits and regulatory action.

Automated Variable Data Verification and Print Quality Inspection

DISCOVERY SmartPQ for Pharma is a comprehensive print quality inspection and data verification system for pharmaceutical applications, capable of monitoring 100% of the web using high performance line scan imaging and automated defect detection technology for web print, labels and packaging applications.

Pharmaceutical Packaging and Label Inspection

DISCOVERY SmartPQ for Pharma ensures real-time print defect detection of randomly occurring and recurring print defects on web-fed printing presses. Print defects such as mis-registration, die-cut variations, smudges, hickeys, hazing, streaks, creases, wrinkles and colour variation are automatically detected.

Furthermore, DISCOVERY SmartPQ for Pharma provides powerful but simple to use, OCR and barcode reading and verification tools to validate 1D/2D barcodes, serial/lot numbers and Expiry Dates. This ensures they are present, readable, reconciled and are correctly logged into a database.

PDF Compare for Full Leaflet Proofing[†]

PDF RIP issues, toner or inkjet problems, paper properties, equipment vibration, human error and environmental conditions such as humidity or dust, can cause the printed page to deviate slightly from the original PDF or artwork.

DISCOVERY SmartPQ for Pharma's PDF Compare[†] feature provides the ideal tool for precisely comparing every printed character against the original input PDF (post RIP'd) file or digital artwork, even for large page layouts or small font sizes.

Fast, Robust Image Capture, Processing & Reporting

DISCOVERY SmartPQ for Pharma's simultaneous capabilities and 64bit software platform, ensures the system is super-fast, responsive and able to read and process extremely large (1GB+) images., even at web speeds up to 350 m/min (1150 ft./min). It captures and processes crystal clear images from a variety of technologies including Areascan, Linescan (up to 16K) cameras and DISCOVERY Maxscan scanners, which provides uniform, undistorted images at 600 DPI - essential for high-speed, pharmaceutical leaflet inspection requirements.

DISCOVERY SmartPQ for Pharma maintains a detail audit file which can be downloaded as a CSV file or used as an error Roll Map for offline correction. Alternatively, this can be integrated with track and trace or serialisation management systems. The Operator is alerted when a critical or repeating defect is found or when the size or frequency of a defect reaches an unacceptable level.

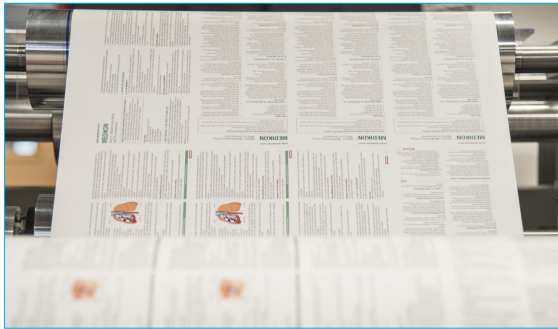### Intuitive Design – Quick Set-up & Adaptive Learning

System setup is quick and easy. An intelligent, master image training mode is used to generate the golden image (master), which is compared against the live image when the system is running.

Unique detection algorithms can be configured for range of defects type and to avoid false alarms - especially important where small web movements can result in distorted or stretched images. For repeating areas such as multi-lane labels, the setting for one label, auto replicates for all labels.

DISCOVERY SMARTPQ

FACT SHEET

FEATURES

Variable Data Verification
- Full alphanumeric text reading & verification
- Verify 1D or 2D barcodes
- Correct paper stock
- Presence / absence of text, logos & images
- X Y location, orientation & measurement
- ISO/ANSI Barcode Grading (ISO/IEC 15416:2000)

Integrity
- Batch control, file audit and file look-up
- Identify duplicate / missing items
- Correct sequencing
- Full Text (IQ) database matching and logging
- Print file reconciliation

Print Quality Defect Inspection
- Streaks, creases, hickies, smears, ink spots & voids
- Missing, filled-in or broken text & images
- Missing or blocked inkjets
- Die-cut and positional variations
- Print registration
- PDF Compare† for master image setup - Optional
- Colour variation measurement (ΔE) - Optional

Easily Set-up
- An intelligent, fast master image auto training
- Smart scan set-up for multi-lane labels

Control
- Operator light & audible alarms/warnings/device stop
- Marking & flagging device - Optional

Defect History / Reporting
- Overview report of all print defects
- Image archive - Optional
- Roll mapping - Optional

†PDF Compare requires the Post RIP'd Raster File

WEB APPLICATIONS
- Pharmaceutical packaging, labels and blister pack printing
- Pharmaceutical leaflet verification and change reporting
- Data verification and capture for track & trace

SYSTEMS
- Colour Linescan cameras: (2K for 300mm or 4K for 600mm web widths)
- DISCOVERY Maxscan scanner (12", 24" & 36" lengths)
- Resolution: up to 16K
- Triggering: High resolution encoders
- Lighting: Long life L.E.D. Optional back-light
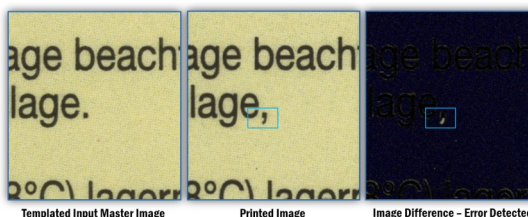
Processor / Interface
- OS: Windows™ 10 (64bit)
- Chassis: Industrial rack
- Power: 110-230VAC
- Approvals: CE Certified
- Interface: Touch screen monitor, keyboard & mouse

Performance
- Min. defect sizes: sub 1mm
- Press speeds: up to 350 meters/min (1150 ft./min)
- Web widths: up to 600mm (24")

Installation / Integration
- On Press: Standard press mounting kits
- Rewinders: Web stability frame, web guide and path rollers available if necessary
- On site installation & training. Remote technical support.

| Templated Input Master Image | Printed Image | Image Difference – Error Detected |

ADVANTAGES
- **Machine independent** - Can be retro-fitted to most existing packaging or label printing and finishing equipment
- **Reliable** - 100% web monitoring & defect reporting. Uninterrupted detection of defects
- **Flexible** - Ability to deploy broad a set of camera and scanner technologies to capture a variety of defects
- **User-Friendly** - Faster set-up & logical GUI layout
- **Upgradable -** Deploy multiple sophisticated, customisable DISCOVERY Tools for complex defect detection and variable data inspection including PDF Compare
- **Supported** - Comprehensive maintenance contracts featuring remote diagnostics.

BENEFITS
- **Lower Costs** - Automatically capture defects before reaching unacceptable levels. Prevents costly reprints
- **Improved Productivity** - Automate labour intensive print quality inspection processes
- **Meet Pharmaceutical Regulatory needs** - for Serialization, Track and Trace and change control management
- **Less Scrap / Less Waste** - Immediately prevent costly scrapping of large runs of defect print
- **Mitigate risks** - Ensure all jobs comply to industry and government regulations.

Lake Image Systems Ltd
The Forum Icknield Way Tring
Hertfordshire HP23 4JX England
T: +44 (0)1442 892700
F: +44 (0)1442 892792
E: sales@lakeimage.com

Lake Image Systems Inc
205 Summit Point Drive Suite 2
Henrietta NY 14467 USA
T: 001 585 321 3630
F: 001 585 321 3788
E: salesna@lakeimage.com

Lake Image Systems France
165 Avenue du Prado
13272 MARSEILLE
CEDEX 08 FRANCE
T: +33 (0)4 91 17 90 62
F: +33 (0)4 91 17 90 63
E: euLIS@lakeimage.com

Lake Image Systems Asia
33 Ubi Avenue 3 #03-07,
The Vertex, Tower B
SINGAPORE 408868
T: +65 6509 0192
E: LISasia@lakeimage.com