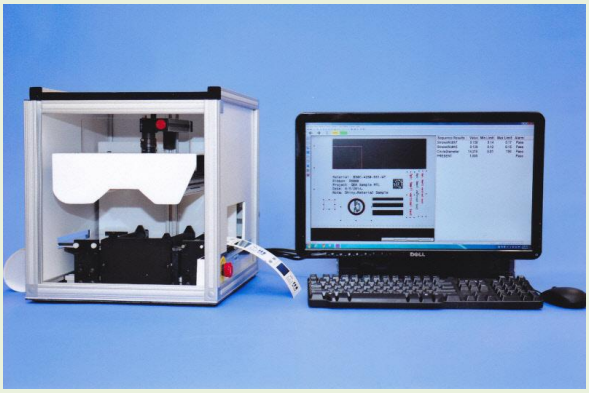
Automated Label Inspection System

IAS®-1000L



The IAS-1000L is an automated label print quality analysis system ideally equipped to analyze strips or continuous rolls of labels in a broad range of sizes. Performing objective measurements automatically, efficiently and consistently, it eliminates the need for subjective visual inspection and tedious manual measurements.

Labels are inspected and analyzed sequentially to quantify print quality, identify defects and report quality statistics for design verification, process control, and quality management purposes. The IAS-1000L is an ideal tool both for research and development and for production environments.

The compact desktop design comprises a transport system, light source, and camera for label image capture. The system uses QEA's advanced IASLab® image analysis software for motion control, analysis of critical image features, real time pass/fail decisions, archiving of measurement results and statistics, and generation of quality management reports.

The IAS-1000L is a powerful, flexible system that is easy to use not only by experts but by less-experienced operators responsible for routine testing.

The IAS-1000 toolkit An array of basic and advanced tools perform:

- dot (blob), line, and area analyses, fundamental to nearly every print analysis application
- tone reproduction (tone reproduction curve, optical density and Dmax measurements, density consistency and stability)
- color analysis (color accuracy, consistency and stability, gray balance, color gamut)
- sharpness and detail (line and dot quality, dot gain, text and barcode quality, resolution, modulation transfer, spatial frequency response)
- image noise and print defects (color registration, print uniformity including banding, streaking, graininess mottle, wrinkle, missing prints, voids, background, and more)

Interactive or Automated operation Two modes of operation—Interactive ("expert") and Automated ("operator")—make this flexible system ideal for both R&D applications and for optimal efficiency and productivity in production environments. Expert users working in Interactive mode create automated test sequences that specify the test parameters: regions of interest, analysis settings, results to display on the monitor, and data to report to a database or text file. The test sequences can be as long or short, as simple or complex as needed. They can to be run on any number of samples.

The sequences are typically run in Automated mode by operators doing routine testing on batches of samples: Press the MEASURE button in the user interface, enter information identifying the job, and the system runs the test and delivers a pass/fail determination.

Flexible design

- Can be configured for high-speed production QC or high-res R&D.
- Measures labels ranging from $^{3}/_{8}$" to 4 ½" wide.
- Accommodates new software tools.
- SDK (optional) is available for advanced users .

No more guesswork The IAS-1000L delivers consistent, quantitative, operator-independent measurements—quickly, reliably and repeatably.

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IAS®-1000L

*System Specifications***

Functions and Features

- Automated or interactive analyses with IASLab®, the IAS-1000L's advanced image quality analysis software platform
- Analysis of real-time or saved images in a wide range of image file formats
- Test sequence programming with a graphical user interface
- All measurements in calibrated, physical units including spatial dimensions, reflectance, optical density and color
- Numerical results saved to a CSV text file and images to bitmaps
- User-selectable results formats; zoom and color channel display

Analysis Tools and Attributes

- Dot (blob) quality analysis (size, shape, x-y locations, dot%, and screen angle)
- Line, edge and text quality analysis (line width, blurriness, raggedness, density, contrast, fill, location, and orientation; line attributes analyzed per ISO-13660 where applicable)
- Solid area attribute measurements (density, reflectance, L*a*b*, tone reproduction, gradient, graininess, mottle and background; area attributes analyzed per ISO-13660 where applicable)
- Graphics quality (size, density, color, uniformity)
- Defect detection (void analysis)
- Barcode reading tool (available as option)
- Barcode verification (Code 128 and 39; available as option)
- OCR tool available as option
- Real-time pass/fail reporting (determination based on user-specified limits)

Typical Applications

For prints produced by digital or other printing technologies:

- Research and development
- Incoming inspection
- Process monitoring and development
- Quality control
- Diagnostics and problem-solving
- Quality management

Label Dimensions and Processing Time

- Optimized for continuous strips or rolls of labels ranging from $^{3}/_{8}$ " to 4 ½ " in width; length unlimited; thickness up to 2mm
- Typical throughput is on the order of 20 to 30 labels per minute. However, processing time varies significantly depending on factors such as the size of the label, the spacing of the labels on the strip, the number of measurements on each label, and the complexity of the analyses performed.

System Components (QEA-Supplied)

- IASLab control software
- Enclosure with label transport mechanism, transport guides, camera, light source
- Transport mechanism including motorized drive rollers and positioning guides
- Calibration targets
- All necessary cables and connectors

Minimum PC Requirements (Customer-Supplied)

- PC running Windows® 7 to 10, 64-bit (with Microsoft Office Professional® including Excel 2007 or later, recommended)
- RAM: 8GB or more
- CD-ROM drive
- Two USB 2.0 ports

Electrical Requirements

- 110 Vac±10% @ 50/60 Hz or 230 Vac±10% @ 50/60 Hz

Operating Environment

- Temperature: 10 to 32 C (50 to 90 F)
- Relative humidity: 20% to 80% (non-condensing)

Documentation

- Quick Start Guide
- User's Guide

*** Specifications subject to change without notice. Rev. 160309*

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