System Specifications**

Description
- Advanced software product for objective, automated evaluation of image quality

Image Sources
- TWAIN compliant scanner (for scanner-based option)
- DirectX compliant camera (for camera-based option)
- Stored files (BMP, JPEG, PDF, etc.)
- QEA IAS®-1000, automated PQ measurement system
- QEA PIAS® II, portable PQ measurement system

Analysis Tools
- Dot and halftone
- Line and edge quality analysis
- Area attribute measurement
- Noise Power Spectrum (NPS)
- Banding analysis
- Spatial Frequency Response (SFR)
- Color registration
- Colorant coverage (option)
- OCR, Optical Character Recognition (option)
- Plug-in SDK for new tools and functions (option)

Operating Modes
- Interactive mode: interactively analyzes a single ROI (region of interest).
- Batch (automated) mode: automatically analyzes multiple ROIs using a predefined sequence. The software's Design Mode allows easy creation of sequences for any test target.

Productivity Tools
- Automated document feeder (ADF) support
- Double-sided print support (contact QEA for models)
- Automatic adjustment for sample misposition
- OCR for automatic reading of sample labels (option)

Other Tools
- Image and data copying
- Saving and printing images, summary data, or detailed data
- Image manipulation: zoom in and out, flip and rotate
- Color channel selection for display
- Results selection
- Font size selection

Documentation
- User’s Guide supplied on CD
- Tutorial supplied on CD
- Sample test target supplied on CD

Computer Configuration
- High-performance PC
- Minimum 1GB RAM
- Available USB port
- Microsoft Windows® XP
- Microsoft Excel® and Access™
- Scanner-based option: TWAIN compliant high-quality scanner (ADF optional)
- Camera-based option: DirectX compliant digital camera or similar output device

Applicable Standards
- ISO 13400 PQ standard for line and area results
- ISO 12233 for SFR analysis
- AATCC Method 135-200 for color registration
- Colorant coverage (option)
- Color registration
- Plug-in SDK for new tools and functions (option)

Output Data
- Graphical overlays are generated for contour boundaries
- Graphs are generated for many analyses - banding, SFR, NPS, etc.
- Images can be saved, with or without graphical overlays

Results Selection
- Results selection
- Saving and printing images, summary data, or detailed data
- Image and data copying

Reporting
- Comprehensive results appear instantaneously
- Summary results are user-customizable
- Automated mode sends data to an Access database or text file; output data is user-selectable
- Data tables can be copied from IASLab or Access to Excel or other applications

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Access, Excel, Windows are registered trademarks of Microsoft Corporation.

**Specifications subject to change without notice.
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IASLab™

Image Analysis System Laboratory
IASLab is an advanced software product for objective, automated evaluation of image quality. Bundled with the PIAS® II, Scanner IAS® and other QEA image quality analysis tools, IASlab is also available as a standalone software package. IASLab offers a comprehensive toolkit for measuring dots, lines, large areas, NPS, and many other salient image quality features. The software can be used in interactive mode to analyze a particular image element or in automated mode for sequential or repetitive analyses. Automated scan results are stored in an Access database for convenient analysis and reporting.

Easy PQ measurements from 1 to 1,000,000

1) Have a few quick measurements to make? Use Interactive Mode

2) Click on the desired analysis tool button

3) View instantaneous results on screen

>1,000,000

1) Drag an ROI (region of interest)
2) Run an automated sequence that measures as many ROIs as you want
3) Report results from Access or export to Excel or other software

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Quality Engineering Associates, Inc.
755 Middlesex Turnpike, Unit 3, Billerica, MA 01821 USA
**Basic**

- **Dot Tool**
  - Diameter, position, shape...
- **Line Tool**
  - Width, ruggedness, spacing...
  - ISO 13460
- **Area Tool**
  - Density, moiré, graininess...
  - ISO 13460
- **Color Registration**
  - Alignment of colors...

**Advanced**

- **OCR Tool**
  - Can be used for sample ID...
- **NPS Tool**
  - Noise power spectrum...
- **Banding Tool**
  - Including VTF analysis...
- **SFR Tool**
  - Spatial frequency response...

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**WHY DO PQ MEASUREMENTS?!**

PQ measurements are essential during development, manufacturing, and marketing of printing systems.

These measurements determine whether the printer and components are working as expected.

**Examples**

1) An inkjet head manufacturer measures a pattern of dots and lines to see if the print head is working properly.
2) An inkjet ink or media manufacturer measures blocks of colors and colored lines to check for mottle and bleed.
3) A laser printer manufacturer measures patterns of lines to check laser scanner and paper feeder performance.

We invite you to contact QEA’s application engineers to discuss your PQ measurement needs.
Basic

Dot Tool
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Line Tool
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  ISO13460

Area Tool
- Density, moiré, graininess...
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Color Registration
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We invite you to contact QEA’s application engineers to discuss your PQ measurement needs.

THE TOOLS

THE PROCESS

1) Select an appropriate test target for the problem of interest

2) Print the target using the printer, cartridge, ink, and / or media to be analyzed

3) Digitize the printed sample using a scanner or digital microscope

4) Analyze automatically in IASLab

5) Review results on screen and...

6) In Access for further data analysis and report generation

QEA IAS Products for Print Quality Evaluation

- PIAS-II portable image analysis system
- Scanner IAS™ scanner-based image analysis system
- IAS®-1000 automated camera-based image analysis
System Specifications**

**Description**
- Advanced software product for objective, automated evaluation of image quality

**Image Sources**
- TWAIN compliant scanner (for scanner-based option)
- DirectX compliant camera (for camera-based option)
- Stored file (BMP, JPEG, PDF, option), and many more
- QEA’s IAS®-1000 automated PQ measurement system
- QEA’s PIAS®II portable PQ measurement system

**Analysis Tools**
- Dot and half tone
- Line and edge quality analysis
- Area attribute measurement
- Noise Power Spectrum (NPS)
- Banding analysis
- Spatial Frequency Response (SFR)
- Color registration
- Colorant coverage (option)
- OCR, Optical Character Recognition (option)
- Plugins SDK for new tools and functions (option)

**Operating Modes**
- Interactive mode: interactively analyzes a single ROI (region of interest)
- Sequence (automated) mode: automatically analyzes multiple ROIs using a pre-defined sequence. The software’s Design Mode allows easy creation of sequences for any test target.
- Batch (automated) mode: analyzes a batch of images in automated mode. Analyses can be performed on saved image files or on images captured by an input device (such as a scanner or camera) under software control. Analysis results are displayed instantly. Data is entered in an Access database and can be exported to Excel or other applications.

**Reporting**
- Comprehensive results appear instantaneously
- Summary results are user customizable
- Automated mode sends data to an Access database or text file; output data is user selectable
- Data tables can be copied from IASLab or Access to Excel or other applications

**Applicable Standards**
- ISO-15660 PQ standard for line and area results
- ISO-12233 for SFR analysis

**Productivity Tools**
- Automated document feeder (ADF) support
- Doublesided print support (contact QEA for models)
- Automatic adjustment for sample misposition
- OCR for automatic reading of sample labels (option)

**Other Tools**
- Image and data copying
- Saving and printing images, summary data, or detailed data
- Image manipulation - zoom in and out, flip and rotate
- Color channel selection for display
- Results selection
- Font size selection

**Documentation**
- User’s Guide supplied on CD
- Tutorial supplied on CD
- Sample test target supplied on CD

**Computer Configuration**
- High performance PC
- RAM: 2 GB or more
- Available USB port
- Microsoft Windows® XP or Windows® 7
- Microsoft Excel® and Access® 2007
- Scanner-based option: TWAIN compliant high quality scanner (ADF optional)
- Camera-based option: DirectX compliant digital camera or similar output device

**QEA’s PIAS®**
- Stored file (BMP, JPEG, PDF, option), and many more
- Advanced software product for objective, automated evaluation of image quality. Bundled with the PIAS®-II, Scanner IAS® and other QEA image quality analysis tools, IASLab is also available as a standalone software package. IASLab offers a comprehensive toolkit for measuring dots, lines, large areas, NPS, and many other salient image quality features. The software can be used in interactive mode to analyze a particular image element or in automated mode for sequential or repetitive analyses. Automated scan results are stored in an Access database for convenient analysis and reporting.

Easy PQ measurements from 1 to 1,000,000

1. Have a few quick measurements to make? Use Interactive Mode

2. Click on the desired analysis tool button

3. View instantaneous results on screen

>1,000,000 Have a lot of measurements to make? Use Automated Mode

1. Load the documents into a scanner with ADF

2. Run an automated sequence that measures as many ROIs as you want

3. Report results from Access or export to Excel or other software

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