// iPQ-Check

100% print inspection for your quality assurance.

Be inspired. Move forward.

BST
an ELEXIS company

PRECISE PRINT MONITORING. PERFECT QUALITY.

Competition in the printing industry is hard, and the requirements are rising constantly. Exact control is the prerequisite both for quality printing products and satisfied customers.

Precision based on experience

Being a leading manufacturer of quality assurance systems for the web-processing industries, BST eltromat International has provided more than 100,000 installations in more than 100 countries all over the world.

The powerful all-rounder

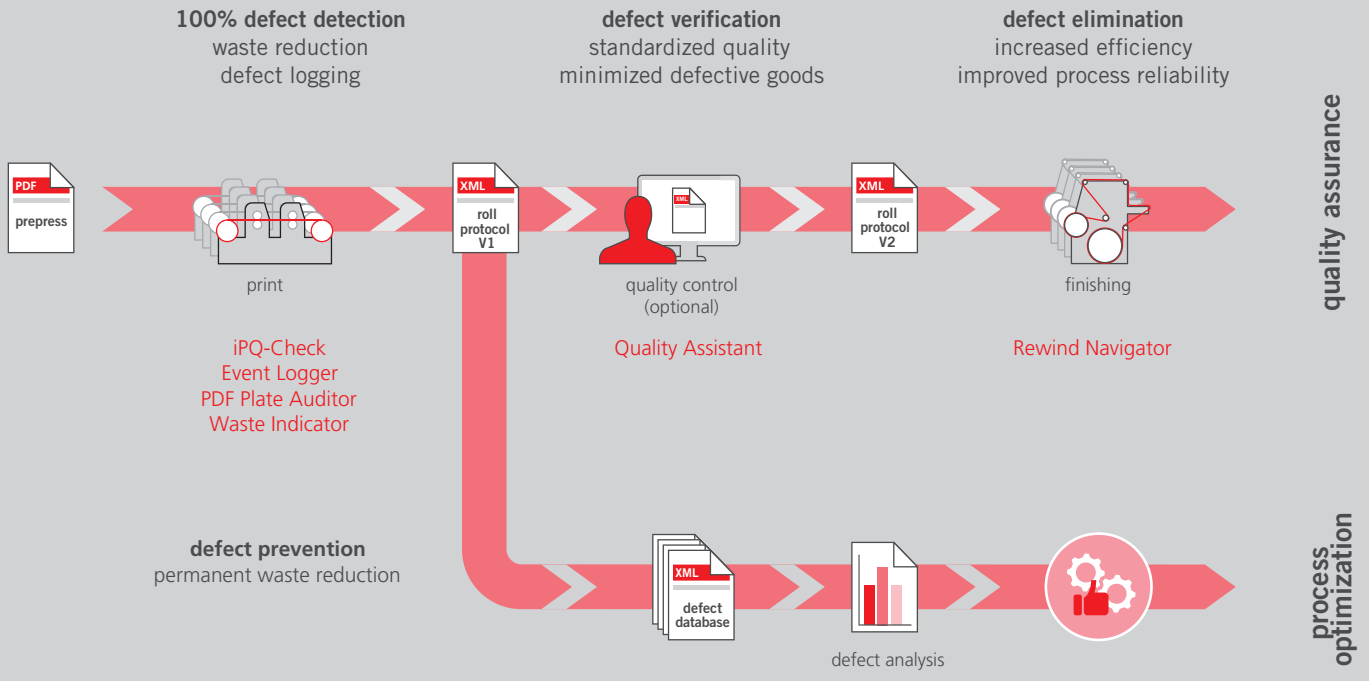
The increasing Productivity & Quality-Center – abbreviated as iPQ-Center – by BST eltromat offers a modular product line for centralized control of various quality assurance functions. BST eltromat integrates web viewing, 100% inspection and spectral color measurement as well as comprehensive WorkFlow into one complete system. Choose your level of quality assurance with our modular platform.

100 % print inspection

The iPQ Check module by BST eltromat is an intelligent tool for uncompromised print quality inspection for the complete print format.

iPQ-Check is especially suitable for many applications in the web printing industry. The high performance line scan cameras deliver detailed color image data for an immediate image reproduction from the first print cylinder revolution onwards. Sophisticated technologies and algorithms ensure the complete and reliable monitoring as well as the immediate correction of error sources.

The result: defect free print quality, lower production cost and higher press productivity.



Quality management - from prepress to postpress:
With iPQ-Check you monitor your print and use the information throughout the entire process chain.

CONVINCING FEATURES.
FIRST-CLASS RESULTS.

The system features of iPQ-Check are specifically designed to meet and exceed the needs of web converters.

High-speed image capture

- 4K RGB color line cameras
- high-detail image data for web widths up to 2,800 mm (110 inches) and machine speeds up to 1,000 m/min (3,280 ft/min)

Intuitive operator interface

- 16:9 multi-touch monitor
- simple and fast handling thanks to intuitive gesture control
- modern design
- preparation for print job in <30 sec

Fast remote maintenance

- for easy and immediate diagnostics

Live view of the whole print repeat format

- visualisation immediately after machine starts
- live view also with activated inspection
- high resolution images
- zoom via gestures
- increased decision certainty during set-up

1. *Camera and image menu – fast access to main operating controls, cameras and settings*
2. *Live image of the entire repeat*
3. *Overview of the repeat*
4. *Last defect image*

At a glance:

iPQ-Check – your benefits:

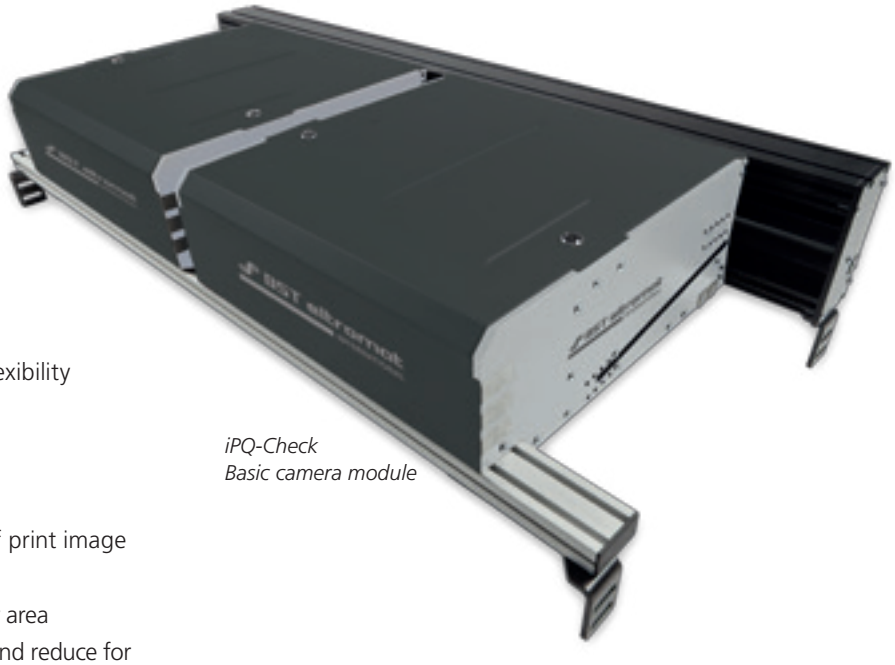
- uninterrupted quality control
- reliable error detection
- fast correction of errors
- increased productivity thanks to automated print inspection
- targeted error prevention by analysis of production logs
- reduced waste and complaints
- increased customer satisfaction
- production of a higher quality product at a lower cost

IMPRESSIVELY VERSATILE: STANDARD FUNCTIONS OF IPQ-CHECK.

The basic version of the iPQ-Check systems already offers an impressive variety of functions that proves its value in practice every day:

Inspection on all materials

- reliable inspection and brilliant images on all materials
- complete illumination by power LEDs
- also for highly reflective materials and holograms
- further illumination options for transparent materials
- special algorithms for materials with high flexibility such as PE, BOPP, OPP and LDPE



iPQ-Check
Basic camera module

Flexible setting options for sensitivities

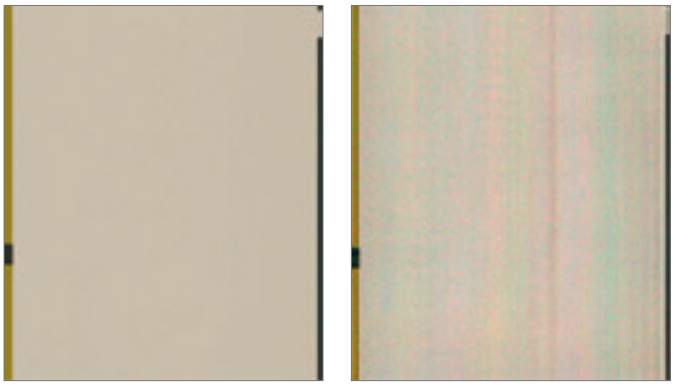
- intuitive masking functions for inspection of print image areas with different sensitivities
- adjustable degree of inspection as required by area relevance: increase sensitivity in critical areas and reduce for unimportant areas
- no error alarms

Comfortable video web inspection functions

- efficient reduction of waste
- increase the reliability of the printing process
- e.g. by comparison of live image and reference images using the split screen function

Split screen allows e.g. for comparison of live image and reference images.

TAILORED SOFTWARE OPTIONS.
INTELLIGENT DESIGN.



Hazing-streak on transparent material

Normal view *Image with activated Haze Guard*

1 *Defect history*

Display of low contrasts (Haze Guard)

- making the "invisible" visible
- visualization of missing lacquer and any kind of low contrast defects like hazing or scumming
- one touch standard contrast enhancement

Clearly structured error displays

- defect review allows toggle between reference and defect images
- saving of defect area in the print format preview
- quality assurance view: documentation of every defect with the first defect image, the last defect image and the image with the largest defect
- fast and informed decisions means avoidance of waste

Intelligent defect classification

- differentiation between process-related and sporadic defects
- support or operator with defect analysis
- option for suppression of sporadic defects

The production quality always at glance: The platform-independent user interface enables access to the quality statistics on the move.

FLEXIBLE UPGRADING:
IPQ-CHECK WITH TAILOR-MADE OPTIONS.

In addition to standard functions, iPQ-Check also offers a multitude of useful optional features. These options allow for improved capabilities of your system.

Additional monitor options

- 23“ TFT monitor (as second monitor)
- 23“ TFT monitor (color-calibrated)
- 40“ TFT monitor

Illumination options

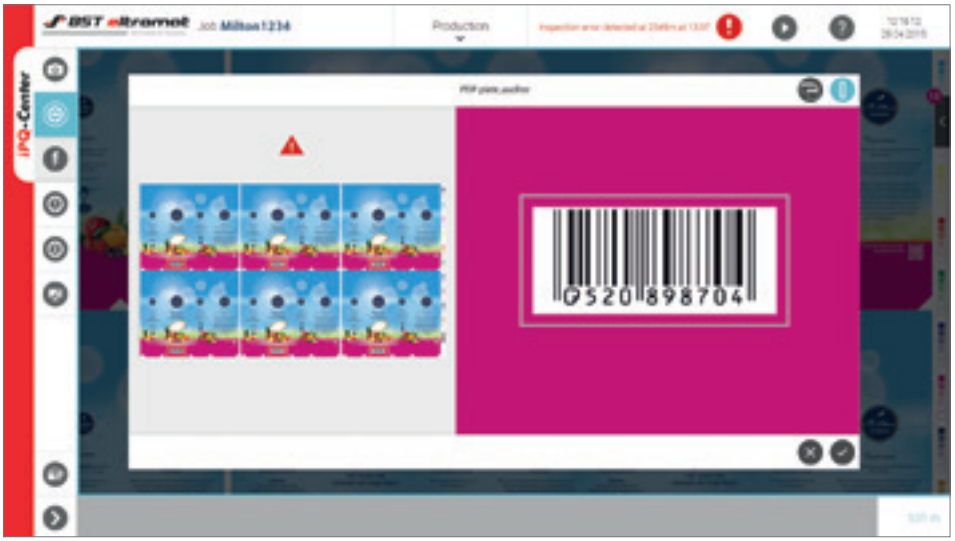
- back-side illumination for transparent materials
- shadowless backing plate

Workflow solutions

- comparison of pre-press PDF with print plate in register (PDF plate auditor)
- detailed output of 24 V defect signals – for the whole web or for individual lanes (waste indicator)
- assessment of defects and production quality based on standardized criteria, alternatively at central workplace or at rewinder
- time-saving rewinder control by defect protocol, placing defects to be eliminated precisely at the splice table

Relative color measurement (Color Monitoring)

- detects color deviations compared to previously defined color values
- freely selectable measuring points



The PDF Plate Auditor identifies and shows large deviations between the actual print and the pre-press PDF file.

Housing and remote options

- ergonomic operator console for integration of the processing unit and all further electric components
- joystick as operating alternative (also for remote controlling of camera)
- monitor cable extensions >5 m

Screenshot gallery (Snapshot Gallery)

- remote monitoring of production
- up to 50 live images per job can be saved

Defect data logging (Event Logger)

- lane-related logging of all relevant defects, including defect classes, running meter or feet positions and defect images as well as the corresponding reference images
- presentation of defects of both sides in case of inspections of front and back side
- uninterrupted documentation as proof of quality and for process optimisation
- XML format allows for exchange with other applications

... and also:

- separate print format preview
- alarm status

IPQ-CHECK:
TECHNICAL DATA.

Area of application

Print methods	Gravure, flexo printing, reel fed offset printing, digital printing, screen printing, converting
Material	Paper, plastic sheet (PE, BOPP, OPP, LDPE and more; transparent, translucent, opaque, reflective), aluminium

System performance

Max. web speed	1,000 m/min (3,920 ft/min)
Max. web width	2,850 mm (112 inches)
Ambient temperature	0-42 °C (32-108 °F)
Min. defect size	0,01 mm² (0.00039 inch²) at 3% grey scale value tolerance

Camera

Type	RGB-color line scan camera
Quantity	1-2
Camera resolution	3 x 4096 pixels
Max. image resolution	0.1 mm/pixel
Interface	Camera link with 85 MHz

Illumination unit

Type	LED
Form	Main illumination for all opaque materials, including reflective materials, back-side illumination for transparent materials*

User interface

Type	23“ TFT multi-touch screen
Resolution	1920 x 1080 pixels
Signal input	DVI

Supply voltage

Power supply	115 / 230 V AC / 50-60 Hz
Rated current	Depends on application

Inputs / Outputs

Input / Output	Alarm signal (error, warning, good)
Power supply	24 V DC
Max. output current	100 mA per output, short-circuit proof

*optional

MODULAR QUALITY ASSURANCE: THE IPQ-CENTER.

Integrated functions. Intuitive operation.
The features of the iPQ-Center are always based on your needs. Cameras, image analysis functions, error detection, additional illumination, spectral measurement and other components can be integrated when they are needed.

Thanks to the iPQ-Center it is not necessary to switch between different operating elements: all modules and functions are integrated into a uniform, intuitive multi-touch operator interface.

At a glance:

iPQ-Center – your benefits:

- **numerous quality assurance functions** on a single software platform
- hardware and software modules efficiently integrated into a **single system**
- intuitive and **uniform operation**
- **central access** to various quality management functions
- **freely configurable** as wanted or needed
- functions and modules can also be integrated at a **later point in time**

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Your local contact

BST eltromat India Pvt. Ltd.

Head Office : 801, Sri Krishna, New Link Road, Andheri West,
Mumbai – 400053. Maharashtra, INDIA.
Email : kpatel@bsteltromat-india.com | **Website:** www.bsteltromat-india.com
Mobile : +91 98215 54475

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an ELEXIS company