Powerful Print Management for Narrow Web Applications

PREMIUS
digital LEX

BST international

Productivity and ROI

In this day of global competition, faster press speeds, constant price pressure and demands for defect free products from your customers, printers and converters need to use every possible means to achieve continuous process improvement. The potential impact to your productivity and bottom line is huge. But without an effective on-press inspection and process management system, the downside potential is even greater.

PREMIUS digital LEX was engineered from the start as a tool to help narrow web printers and converters manage the printing process. The unique combination of the most advanced digital inspection technology in the world, with an easy to use graphic user interface, generates productivity improvements and bottom line impact that will allow you to compete and win in today's dynamic market place.

The system combines
- state-of-the–art digital inspection technology,
- a simple-to-operate, graphical user interface and
- innovative software for the management of print quality, color and automatic identification of print defects.

The result:
a comprehensive, powerful, and extremely reliable system, never seen before in the narrow web sector.

Comparison of resolutions
Colour line scan camera – PREMIUS digital LEX

Web width: 400 mm/15.7"
Web speed: 120 m/min / 393.7 ft/min

PREMIUS digital LEX
Zoom: 3 x
Field of view: max. 220 mm x 160 mm / 9" x 7" (without zoom)

Capabilities of *PREMIUS digital LEX*

- ***Ease of operation***
  The single-monitor solution of *PREMIUS digital LEX* combines the elements of graphic image display and simple operation on a 17" touch screen. This means that, where space is limited you can both monitor the print run and manage all functions from a centralised station.
- ***Versions for each of your requirements***
  Choose the optimum *PREMIUS digital LEX* system for your own personal demands, for web widths of up to 330 mm (13") or up to 540 mm (21.3").
- ***Automatic defect detection***
  PREMIUS digital LEX is the only system on the market with an integrated print defect detection software package. There are no additional costs for this feature.
- ***Superior image replication***
  The *PREMIUS digital LEX* camera is equipped with three matrix chips to provide the highest resolution independent from the web speed, the web width and the zoom value. By the high-tech objective which is precisely coordinated with the camera you get an image quality and precision not reached by the competition. This advantage in quality has a direct effort on your production result.
- ***Proven technology***
  PREMIUS digital LEX is based on the established *PREMIUS digital 3^{Chip}* print management system technology. This means that you can use this proven tool for your narrow web applications.
- ***Comprehensive quality management***
  With its various system functions and options such as Job Save and Job Report, the *PREMIUS digital LEX* is a high-performance quality management system which can ideally be integrated into your workflow.
- ***Reliable information transmission***
  A well-known problem in analogue defect detection systems is data loss during image capture and the processing of images. But, because *PREMIUS digital LEX* utilizes Digital Data Transfer (DDT) no information is lost nor corrupted.
- ***Advanced camera technology***
  Through its 4.2 mega-pixel resolution the digital 3-chip camera provides photographic picture quality with fine detail, sharp contrast and natural color.

Technological Highlights

Digital 3-chip camera resolution
PREMIUS digital LEX uses a digital 3-chip camera with a resolution of 4.2 megapixel, which is more than 300 % better than all other systems on the market, including the finest 3-chip analog systems.

This means image quality that is photographic, with crisp detail, sharp contrast and rich vibrant color.

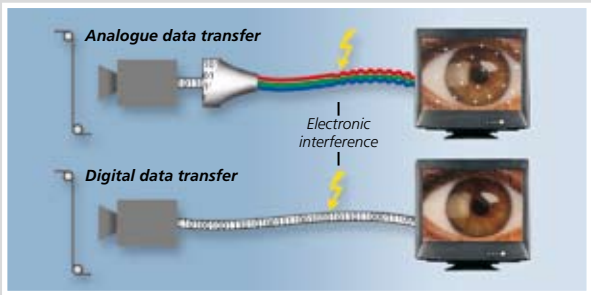
The camera technology also has a direct impact on process management functions – resulting in defect detection and color monitoring that are more powerful, capable and reliable than ever before; and finds defects other systems do not find.

100 % digital
PREMIUS digital LEX is the world's first web inspection and print process management system to integrate digital camera technology, 3 chip color reproduction and defect detection software. This unique combination of state-of-the-art technologies allows PREMIUS digital LEX to harness the full power of process management (e.g. color monitoring) as never before, while making huge strides in operator functionality and ease of use.

High Dynamic Range
The new camera technology used in the *PREMIUS digital LEX* features a Dynamic Range – the ability to show light and dark detail at the same time – that is substantially better than any other system made. This provides for sharp contrast along the entire color spectrum, and in particular at the high and low ends where it is most useful to a printer, resulting in superior, more reliable print defect detection.

Magnified image detail taken with analog 3 chip camera used in most high end video systems

Magnified image detail taken with digital 3 chip camera used in PREMIUS digital LEX



Digital Data Interface
A common and troublesome problem with analog defect detection is the loss of data that occurs during image capture and processing. But because *PREMIUS digital LEX* uses Digital Data Transfer (DDT) technology, zero information is lost during image capture and processing.
The data stream is pure, resulting in greater accuracy and reliability for all process management functions, such as print defect detection, color monitoring or bar code verification.

Unique shutter technology
Free shutter timing makes *PREMIUS digital LEX* impervious to ambient light conditions. Sunlight or fluorescent overhead lights that cause false defects on analog systems, have no impact what-so-ever.

Image stabilisation software
PREMIUS digital LEX has three levels of protection engineered into the software that work diligently in the background. These highly sophisticated algorithms automatically compensate for image drift caused by web movement, stretch and snapback caused by tension variation and other web movement anomalies.

Equipment

Space-saving single-monitor solution with an intuitive touch screen user interface

The *PREMIUS digital LEX* single-monitor solution combines display and operation on a single touch screen. Together with its intuitive "Graphical User Interface"(GUI), you have a system that will be used to save you money and improve your productivity every day, every run.

Features of the GUI:

- Easy switching between operator interface and full size view mode with just one keystroke
- Touch screen operator interface responds instantly to operator commands
- More efficent because of the single media design. Operators spend less time running the system and more time printing
- Multi-language OSD (on-screen display) menu
- Password-protected system settings
- Information window provides real time data
- Alarm status indicator on the GUI

Operator interface

Full size view mode

Intelligent functions

PREMIUS digital LEX has the most comprehensive package of "smart" visual inspection capabilities of any system on the market.

- Integrated Defect Detection
- Position memory with image gallery
- Area of interest (AOI) with Auto Image Centering
- Quick zoom function
- Split-screen reference images
- Auto-scan function for automatic monitoring of the complete pattern
- Job data storage

VIRTUAL REPEAT™

PREMIUS digital LEX uses BST International's unique Virtual Repeat™ technology pioneered by BST.

- The operator can easily navigate about the entire print repeat at the touch of a button
- Complete thumbnail overview of the entire repeat area
- Fast and natural image navigation – simply touch any thumbnail and the camera instantly moves to that area and displays the live print

Electronic Loupe

Places an electronic magnifying glass over the live image, which can be moved just as you would a loupe on the web. The new Electronic Loupe provides 2x electronic magnification on top of the 16x optical zoom lens.

Your Personal *PREMIUS digital LEX*

PREMIUS digital LEX grows with your demands. Customise the basic system to your personal production requirements with the *PREMIUS digital LEX* hardware and software options. Detailed information on the software options can be found in the separate catalog sheets.

Defect Detection

An effective tool to manage print quality and reduce waste

PREMIUS digital LEX utilizes powerful already integrated algorithms which allow it to automatically detect a variety of common print defects such as streaks, hickeys, splash, voids, mis-register, missing type and fill-in. Print quality can be effectively managed throughout the run, resulting in reduced waste and happier customers. The overall impact can often generate ROI.

Colour Monitoring*

Consistant color roll-to-roll and job-to-job

The color monitoring option performs automatic inline comparison of the live color with previously stored standard values at user-defined positions on the web. When actual print color approaches the preset out of tolerance range, an alarm alerts the operator and shows where the developing color problem is located on the web. The result is consistent color from roll-to-roll and job-to-job.

Barcode Check*

Inline barcode quality inspection

On press, barcode quality can change dramatically in a very short period of time. For example: just a slight change in impression can cause a perfectly acceptable bar code to be rendered unreadable in seconds. The *PREMIUS digital LEX* Barcode Check option checks all different types of barcodes and gives the operator safe and reliable warnings, even for the smallest deviation.

Job Report*

An important part of your TQM system

The Job Report option automatically generates a job report with an integrated roll report. The report contains both extensive statistical evaluations of the complete job and detailed information on each roll that was produced for the job. Your customers then have complete proof of their print quality standards.

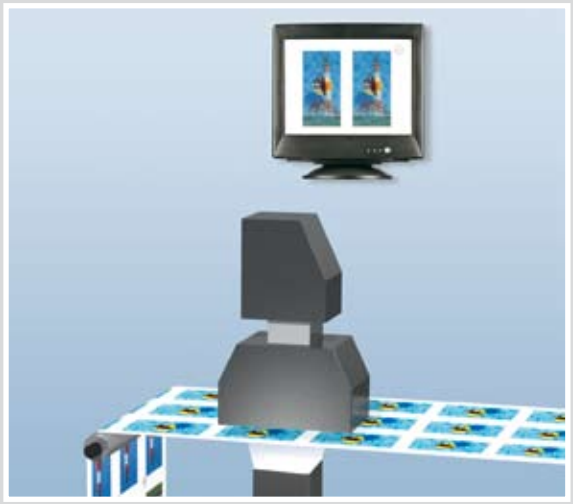
Backstrobe*

A backstrobe assembly is used to visually check the front-to-back print register (FTBR) of translucent and many other substrates by illuminating the web from the opposite side. Mounted opposite the camera, the image on the monitor will show the front side printing with the backside printing shining through.

Strobe options for UV, coatings or lacquers*

Because some applications require special image illumination, *PREMIUS digital LEX* offers a variety of supplemental strobe options – UV strobes (for viewing UV fluorescent materials) or reflective strobes to view lacquer or coatings more easily. Installation adds another dimension of operator functionality to your system.

* optional



The optional backstrobe serves to check front-to-back register accuracy on many different substrates.

After the Sale Service and Support

With over 17,000 installed video inspection systems and 70,000 web guiding systems installed, BST international is known worldwide for quality and reliability in every detail. We work very hard to insure that every product we make is meticulously engineered to provide years of reliable operation. But we believe that to be successful also requires a stringent network of after the sale service support. BST International and other subsidiaries all over the world are dedicated to providing our customers with the very best in every respect.

The BST all-inclusive service (optional)

Start-up
BST service technicians are trained on proper system installation on all current types of printing presses. They work hard to see that downtime during the start-up process is kept to an absolute minimum and that your system will operate properly for years to come.

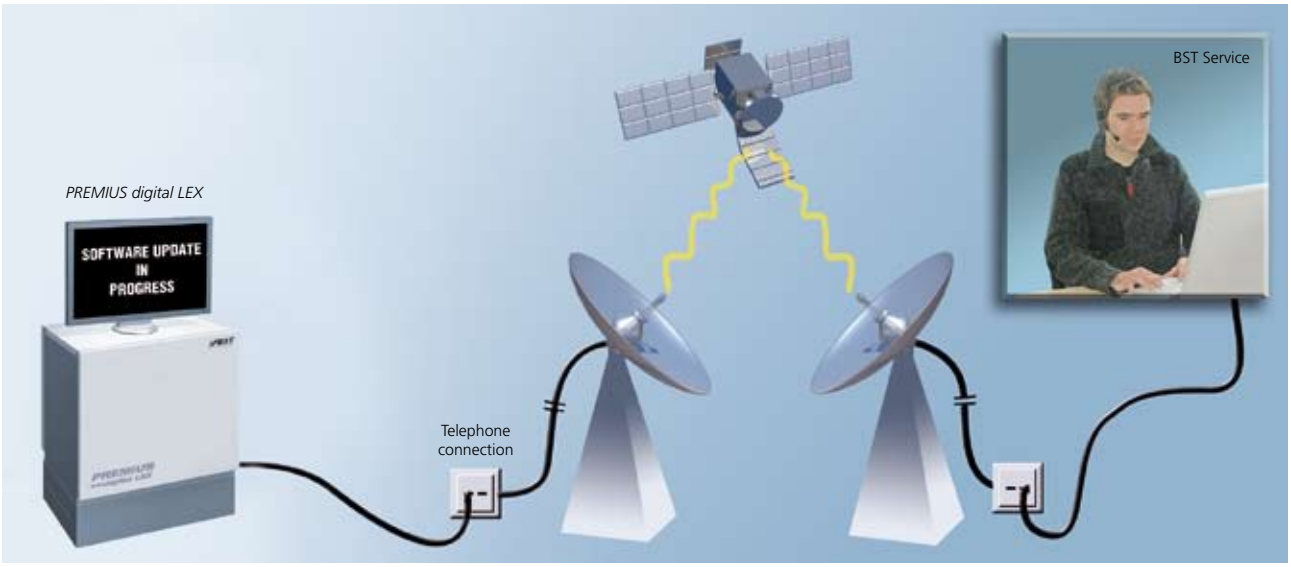
Training
Our experienced technicians train your operators on how to use the *PREMIUS digital LEX* to its full potential, so that your investment in technology is quickly rewarded with reduced waste and improved press productivity.

Hotline service
Our hotline service provides competent technical advice for all questions concerning your system.

BST remote maintenance
No matter where you are in the world, our optional Remote Maintenance Service guarantees a fast and economical solution. Experienced system specialists are waiting in our head-office in Bielefeld to ensure that your inspection system is running trouble-free. All you need to do is provide an analog phone line or Internet connection to the *PREMIUS digital LEX* system. Once logged into your system, our specialists can diagnose and trouble shoot problems, perform routine maintenance and install software upgrades.

The *PREMIUS digital LEX* Remote Maintenance Service means:
- Faster diagnosis and repair of problems
- Minimal downtime
- Eliminate the need for on-site service calls
- An effective way to perform routine maintenance
- Online installation of software updates and new software programs

Ask your local representative for a quote to add the Remote Maintenance Package to your system.



PREMIUS digital LEX Remote Maintenance

Technical Overview

Technical data

Camera

Type:	3-chip digital progressive scan
Resolution:	1360 × 1024 × 3 (4.2 mega-pixels)
Zoom:	32 x (16 × optical, 2 × digital)

Power supply

90 V – 132 V, 50/60 Hz, 400 VA
198 V – 264 V, 50/60 Hz, 400 VA

Uninterruptible power supply (UPS)
115 V/230 V +10 % -15 %, 50/60 Hz, 750 VA

Modem

Internal 56K modem for the remote maintenance

Ambient temperature

min. 0 °C (32 °F)
max. 40 °C (104 °F)

Storage temperature

-10 °C bis +55 °C (14 °F to +131 °F)

Humidity

20 % – 80 % non-condensing

Select the optimum system for your application from two versions of the *PREMIUS digital LEX*

PREMIUS digital LEX M (web widths of up to 540 mm/21,3")

The camera has a medium-sized image section and a movable imaging enclosure. The traverse is available in various lengths. This version is the ideal solution if you often wish to zoom into the print image or monitor webs with a width of more than 330 mm (13").

PREMIUS digital LEX M

Web width:	up to 540 mm/21.3"
Image section:	220 mm × 160 mm/9" × 7"
Traverse lengths:	400 mm/15.8" 500 mm/19.7" 600 mm/23.6" 700 mm/27.6" 800 mm/31.5"
Traversing mounting:	both sides
Position memory:	12

PREMIUS digital LEX L (web widths of up to 330 mm/13")

The camera's large image section moves inside a fixed imaging enclosure. This scans the complete pattern and produces a 1:1 print display. This version is also suitable where installation space is restricted.

PREMIUS digital LEX L

Web width:	up to 330 mm/13"
Image section:	330 mm × 240 mm/13" × 9"
Traverse length:	550 mm/21.7"
Traversing mounting:	single side
Position memory:	12

PREMIUS digital LEX

BST International GmbH
Heidsieker Heide 53
33739 Bielefeld, Germany
Telephone: +49 5206 999-0
Telefax: +49 5206 999-999
Internet: www.bst-international.com
E-mail: info@bst-international.com

BST Pro Mark
650 West Grand Avenue # 301
Elmhurst, Illinois 60126, USA
Telephone: +1 630 833-9900
Telefax: +1 630 833-9909
Internet: www.bstpromark.com
E-mail: sales@bstpromark.com