Системы контроля качества поверхности iPQ-Surface

Технические характеристики

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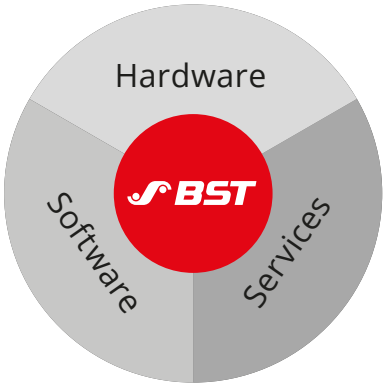
BST iPQ-Surface

When the quality is right. 100 %.

Surface inspection with BST iPQ-Surface convinces through intelligent and integrated networking of hardware, software and service from a single source - for proactive minimization of rejects and errors as well as more efficient processes.

Surface inspection in extrusion, coating, cell production or printing machines only works properly if the camera, illumination and defect classification are perfectly coordinated. That requires not only precise knowledge of your requirements, but above all technical experience is necessary. In addition, a system must be able to interact with both your network and the machine and fit into the existing IT landscape.



“What's special about an iPQ-Surface system from BST?
The optimal combination of the individual components. This creates the best solution for your individual application. Flexible, modular and above all demand-optimized - in other words 100 % thought ahead."

Jan Jostmeier,
Product Manager Surface Inspection

BST iPQ-Surface

The hardware:
100 % proven & thought ahead.

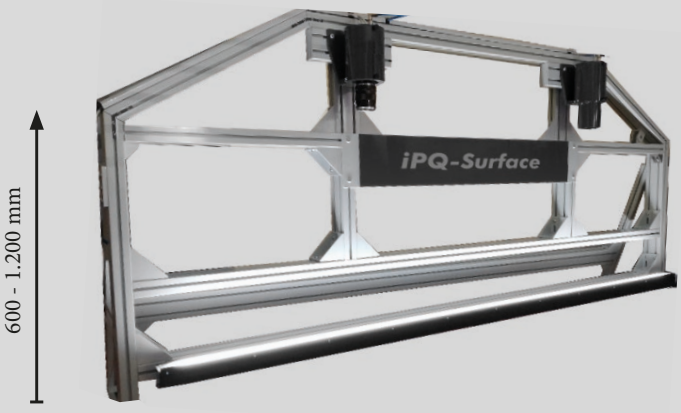
Machines and systems are becoming increasingly more compact - and an end to this development is not in sight. The smallest possible installation space is therefore crucial for the integration of the inspection solution into the machine. Here we set standards and enable smooth processes with individually adaptable solutions. As a member of the BST iPQ family, the iPQ-Surface combines state-of-the-art camera technology with innovative multiplex illumination and reveals even the smallest defects in a compact installation space. Thus defects appear in the truest sense of the of the word "in a different light". This makes the necessary intelligent classification of the conspicuous possible.

High-speed image capturing

- Cameras with a line frequency up to 300 kHz and 16,384 pixels for the highest line speeds and maximum resolution
- Multiple cameras cascadable for almost unlimited path width
- FPGA for real-time recording (e.g. error marking)

Customized lighting

- Modular concept
- RGB, IR, UV, polarized
- Brightfield, darkfield, sidelight, transmitted light, etc.
- Multiplex illumination for up to four different illuminations with one camera line



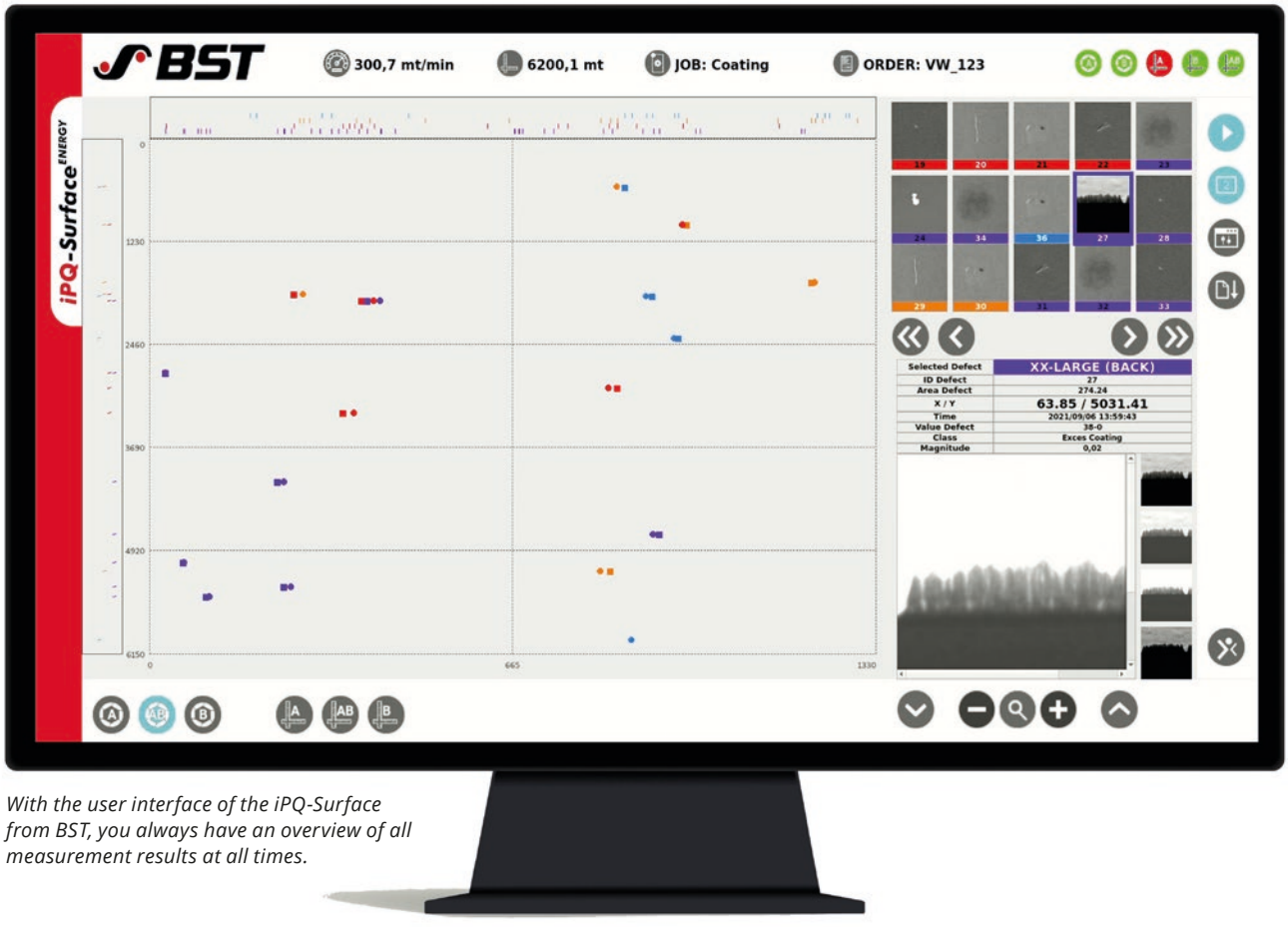
Line scan cameras mounted on frame unit

Minimum space requirement due to ready-to-install CIS sensor incl. illumination unit

BST iPQ-Surface

The software:
100 % reliable & intuitive.

With numerous interfaces and a flexible architecture, our software solutions are perfect for use in connected Industry 4.0 environments. Powerful algorithms allow reactions in real time, even at the highest web speeds.
And the latest AI-based classifiers separate the important from the unimportant defects and are the basis for meaningful protocols, that enable you to draw the right conclusions for process optimization. Because we know that that it is not enough to just show: Digital documentation of quality and individually customizable statistical evaluations for roles and orders are equally important. In addition, the transfer of quality data to subsequent processes is also required. This is an important building block for the sustainable improvement of quality and productivity.



With the user interface of the iPQ-Surface from BST, you always have an overview of all measurement results at all times.

Intuitive operation

- Automatic setup for new materials
- Easy configuration of error classification
- Supported parameterization

Customizable interfaces

- Super Imposed Image - superimposed front to back display
- Clear defect map and detail display for each defect
- Clear display of the measurement results

The services:
100 % competent & personal.

No two BST iPQ-Surface solutions are alike. Each installation is a combination of standardized modules and application-specific elements. This makes it possible for the BST iPQ-Surface to be perfectly integrated into your plant. Together with you our highly qualified experts will find out which configuration fits your requirements.

And of course, outstanding service does not stop for us after installation. Ideally, this is just another milestone in our partnership. And we maintain this at eye level, with respect and appreciation. This also means that we are there for you when you need us. Because we want you to become (even) better.

Application expertise

- Deep process understanding
- More than 30 years of experience in surface inspection
- Passion for innovative technology

Globally present, locally rooted

- Experts available at all times in over 80 countries
- Responsive service staff
- Pragmatic support at all times

Your advantages at a glance: 100 % the right decision.

Your only deliver optimal quality:
More satisfied customers, more successful projects and more sales.

You recognize the causes of errors in time and eliminate them sustainably:
Increased productivity, more efficient processes and better goods.

You avoid rejects or eliminate them in a targeted manner:
Resource-saving production, less effort and a contribution to climate protection.

Costly inspection in the laboratory becomes superfluous:
Noticeably reduced production costs, leaner processes and more time for value-adding activities.

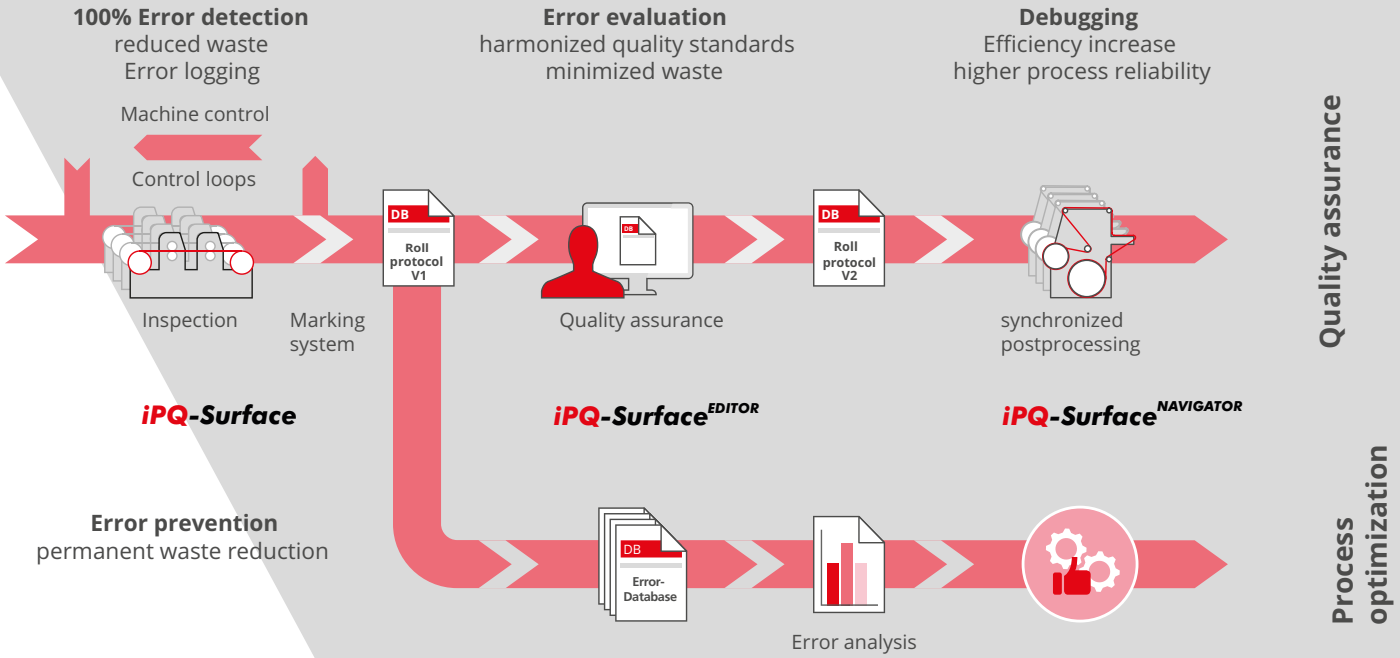
You collect quantifiable quality data:
Long-term process optimization, improved transparency and more control.

BST iPQ-Surface

Quality assurance processes with BST: 100 % efficient & error-free.

In the development of our products and solutions, we always have your complete process in mind. Our goal is clear: We want to optimize your processes. With surface inspection with iPQ-Surface from BST, you can be sure that only flawless material will be delivered to the customer. The use of our offline tools enables you to view the material quality. In post-processing and subsequent processes the inspection results can be used to eliminate defects.

For permanent waste reduction and process optimization inspection results can be analyzed and evaluated over the long term.



BST iPQ-Surface

Always the right solution:
100 % tailored to your requirement.

After more than 30 years of experience in the development of surface inspection solutions we know exactly what is important here. The BST iPQ-Surface solutions are the optimal choice for numerous applications. Benefit now from our many years of experience and choose the solution that combines efficiency with future-proofing and fits perfectly to your application.

Solution	iPQ-Surface	iPQ-Surface ENERGY	iPQ-Surface COLDSEAL
Process	Extrusion, Coating, Laminating, Calendering, Racking, Paper Production, etc.	Solutions for all process steps of cell production for battery and fuel cell	Printing presses, trailing printing unit in laminator, rewinder, doctor machines, etc.
Material	Plastic films of all kinds, metallic films, coatings paper, etc.	Laminates from substrates of film, foil and paper, adhesive tapes	Cold seal printed on foil and paper
Measuring task		Measurement of the coating, measurement front to back, measurements crosswise and in running direction.	Measurement "Front to Back", Register measurement seal to print
Fault type	Insects, gels, dirt, peels, wrinkles, inclusions, burns, and more.	missing coating, "spots", wrinkles, indentations, "streaks", agglomerates, contamination, etc.	Completeness, extractor, hazing, dirt, paint splashes, and more.

BST iPQ-Surface

The system learns along with you: 100 % AI support.

By understanding the user and the system as partners, you can teach the BST iPQ-Surface with error classes. These are then continuously automatically assigned to better and better defect classes.

More time for value-adding activities
- Shorter makeready times and reduced downtimes thanks to intuitive and fast setup.
- Fast recipe selection by scanning of barcodes
- Automatic or manual recipe setup for different orders or orders or products

More sustainable production
- Fewer rejects due to exact localization of defects over the entire the entire web width
- Support of multiple webs and lanes
- Automatic web edge tracking

Time saving over the entire workflow
- Accurate classification during inspection for less effort in the rejection of defects
- Precise detection of repeat defects

No defect remains undetected
- Configurable warning or alarm messages depending on defect class, defect density and distribution
- Statistical data evaluation and visualization in real time

Documented quality
- Role- and order-related error report

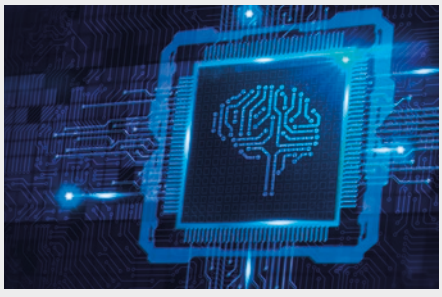
Guaranteed availability
- Less downtime due to unexpected failure
- Predictive maintenance e.g.: Measurement of contamination and aging of components

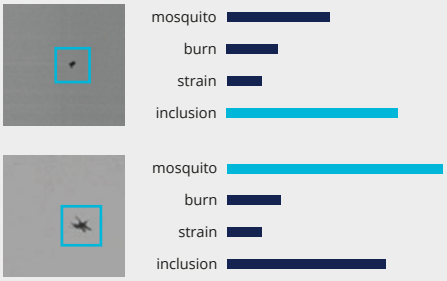
Learning system
- Trainable classifier based on advanced artificial intelligence
- Toolbox for measurement tasks: Lengths, distances, multiple widths, front to back and much more

Eliminate quality deviations, before they occur
- Digital outputs for controlling alarm signals, marking systems or for the control of error-dependent subsequent processes (e.g.: Discharge of faulty material) material)
- Intelligent interaction with other BST solutions in closed control loops (e.g.: combination of defect detection incl. geometric measurements with web guiding systems)

User-trained AI

User-trained AI means the partnership between the user and the system.
Defect classes are trained by the user and are thus continuously better automatically assigned by the system.





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