



# L&W Autoline

Improve product quality and minimize operational costs with the fastest and most reliable automated paper testing system

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**Faster tests.  
More information.  
Better results.**

**Introducing the newest, fastest  
and most reliable automated paper  
testing system – from the company  
that pioneered the solution.**

# Paper mills face multiple challenges when monitoring and optimizing product quality

Heightened competition, increasing margin pressure and elevated customer demands are driving pulp and paper mill management to identify additional efficiency and profit potential opportunities.

Manufacturing a quality product cost-effectively is required to reach these performance improvements.

But achieving optimal quality is challenging using manual testing methods that are time-consuming, resource intensive and not representative of the entire jumbo-roll produced.

## Critical quality control challenges facing papermakers:



### Incomplete data

Manual testing results in less-reliable quality information and insufficient statistics for making correct production decisions.



### Time-consuming test methods

Traditional testing involves extensive manual labor, leading to slower results that are prone to error.



### Inadequate CD information

Manual testing doesn't provide necessary quality information for all customer rolls produced.



### High cost of rejects

Testing for quality manually can lead to higher costs from increased customer claims.



### Increased customer demands

Some mills are facing tighter specifications from customers, creating a need for higher accuracy in testing.



### Unsatisfactory testing variance

Variance comes from multiple sources, including inconsistent sample positions, improper MD/CD orientation, inaccurate data entry and more.



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# L&W Autoline

## The next-generation automated paper testing system

**For paper and board producers looking for more efficient results on sample profiles, ABB's newest L&W Autoline delivers fast, accurate and repeatable quality reports.**

L&W Autoline is an automated paper testing system that handles everything from sample preparation to the final reel report with minimal operator involvement. The scalable system (Figure 01) provides:

- measurement methods that conform to industry standards
- quick and accurate measurement and reporting of the most important paper properties
- improved efficiency as it can support several paper machines with a minimum of staff

### Complete profile report in under 10 minutes

Sequential testing capabilities coupled with the ability to capture more than **100 quality parameters** by CD position provides unparalleled amounts of precise data points. Corrective action can be taken sooner with immediate access to measurement results.

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01 L&W Autoline comes in two sizes, S (left) and L (right), to meet the paper testing requirements of mills of all sizes.



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# Close the quality control loop

## Rapid feedback on sample testing

**With the L&W Autoline, you quickly and accurately measure most necessary paper properties, access results in real time, and take immediate steps to improve quality and optimize production.**



**Cut** precise samples directly from the reel in a uniform manner using one of the L&W profile cutters



**Identify** the reel number by barcode to ensure that correct test sequence and grade specification are selected



**Load** the sample quickly and easily into the L&W Autoline using the new reliable paper-feeding system



**Measure** and calculate more than 100 quality parameters per position to easily detect deviation



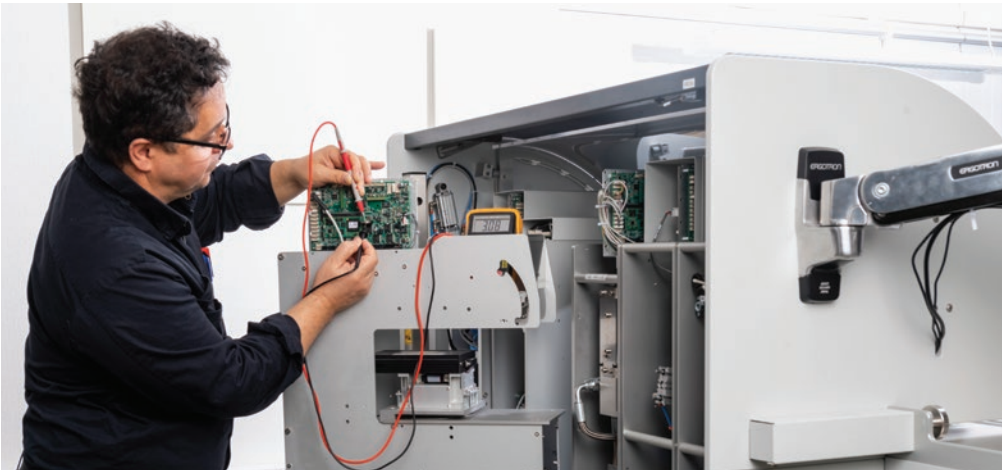
**Optimize** the process and minimize variations by accessing test results immediately, anywhere in the mill



# Key features

Customizable	Scalable solution allows papermakers to select the size of equipment and modules they need to fit their needs.
Unique paper feeding	The new design ensures reliable and trouble-free feeding.
Dual-test functionality	Testing two strips simultaneously reduces queuing time.
High-volume data storage	Stores high volumes of measurement data for identifying quality trends over time.
Real-time reporting	Delivers direct feedback to operators via real-time viewing on the unit and throughout the mill.
Key quality information	Typically reports more than 100 vital quality parameters per CD position.
Automated sample registration	Registers the sample by barcode so that test sequence and grade specifications are selected automatically.
Automatic distribution	Easy access to quality information throughout the mill.
Intuitive interface	Touchscreen interface is easy to use and navigate with minimal training.
Eliminates correlation	Modules use same technology as L&W standalone equipment, conforming to industry standards and eliminating need for correlation.
Easy installation & maintenance	Module design makes maintenance and installation easier than ever. Built-in diagnostics let ABB connect remotely to troubleshoot issues.

02 Module design makes maintenance easy. Service one module while the rest of the modules remain in operation.

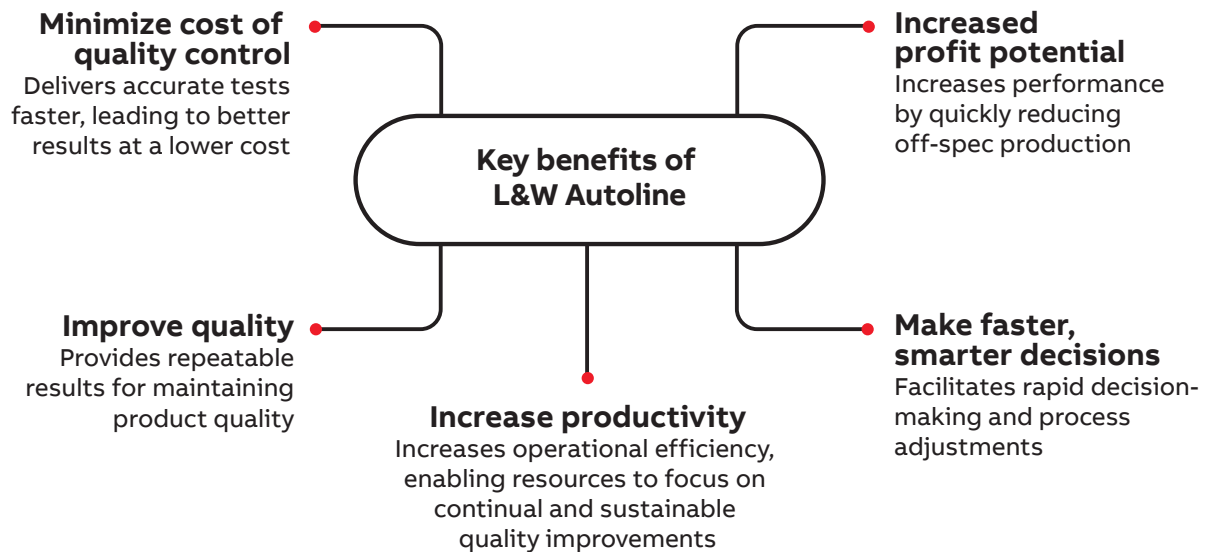


## Better quality control. Sooner.

Increase productivity. Reduce customer complaints. Lower total cost of ownership.

Choosing L&W Autoline means you're making a long-term investment in rigorous quality control, developed and supported by the company that pioneered automated paper testing.

Plus, you're backed by a global service organization supporting over 1,000 service agreements. You'll ensure the long-term reliability of your equipment while minimizing total cost of ownership.



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## Customizable measurement

L&W Autoline is a modular system with more than 20 module combinations that comply with ISO and TAPPI standards

### Optical and surface properties

**L&W Autoline Formation** is an image-based analyzer that uses pass-through illumination. The analyzing software employs advanced algorithms to quantify formation quality at several different scales of formation.

**L&W Autoline Surface Formation** is an image-based analyzer that uses reflection illumination. The analyzing software uses advanced algorithms to quantify formation quality at several different scales of formation.

**L&W Autoline Gloss** measures the gloss value in a paper sample. This is performed at the reflection angles 75°/20° (according to TAPPI standards).

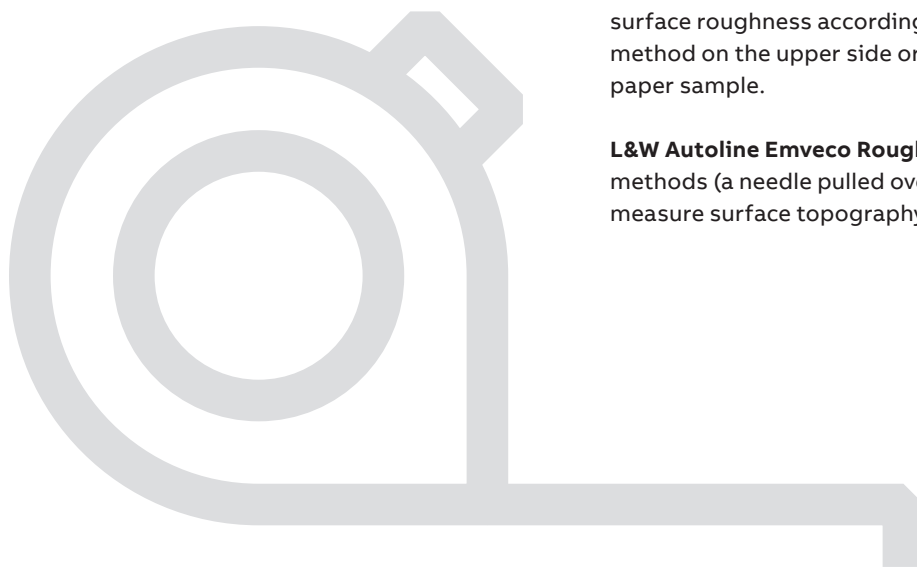
**L&W Autoline Elrepho** measures brightness, opacity and color of paper samples on the upper or lower side by using a diffuse illuminant and a zero-degree observation angle according to ISO standards. Based on the same technology that made L&W Elrepho the market leader.

**L&W Autoline PPS Roughness** measures surface roughness according to the PPS method on the upper side or both the lower and the upper side.

**L&W Autoline Sheffield Roughness** measures surface roughness according to the Sheffield method. It can be measured on the upper side or both sides of the paper sample.

**L&W Autoline Bendtsen Roughness** measures surface roughness according to the Bendtsen method on the upper side or both sides of the paper sample.

**L&W Autoline Emveco Roughness** uses physical methods (a needle pulled over the surface) to measure surface topography.







## Structural properties

**L&W Autoline Moisture** measures the water content in paper using the well-proven microwave method with double-frequency resonance.

**L&W Autoline Air Permeance** uses the latest technology to measure air permeance complying with the most common measuring methods.

**L&W Autoline Grammage** measures the grammage (basis weight) of paper samples.

**L&W Autoline Thickness** measures thickness (caliper) of a paper sample. It is based on the well-proven L&W Micrometer.



## Strength properties

**L&W Autoline Tensile** measures the tensile strength, tensile stretch, tensile energy absorption and tensile stiffness of paper or board.

**L&W Autoline Tear** measures tearing strength of a paper sample, in machine and cross directions.

**L&W Autoline Burst** measures standard bursting strength, bursting strength compensated, and bursting energy absorption on the upper or lower side of the sample. It is available in two models (P-model for paper, B-model for board).

**L&W Autoline Bending** measures the bending resistance of paper and board in the machine and cross directions of the paper sample and in two directions, from the upper and lower side of the sample.

**L&W Autoline SCT** measures the compressive strength of liner and fluting, according to the short-span compression test (SCT) method, developed by the Swedish Pulp and Paper Institute (STFI, now Innventia) in collaboration with Lorentzen & Wettré.

**L&W Autoline TSO** measures TSO (Tensile Stiffness Orientation) and TSI (Tensile Stiffness Index) properties. It uses a non-destructive ultrasonic measurement.

**L&W Autoline S-test** measures strength for fluting using the co-developed S-test method that is easier, faster and more repeatable compared with traditional CMT.

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**“ABB’s new compact model, the L&W Autoline S, was installed in early 2019 and is today the central test system in our quality control,” says Linda Verneresson, Quality Manager, Ahlstrom-Munksjö. “The newest L&W Autoline is the best automated paper testing system ever tried by the mill.”**

# Service and support for your L&W Autoline system

## Helping maximize the return on your capital investments

Pulp and paper is a high-technology industry, with new developments taking place all the time. To ensure all capital investments yield a long lifecycle, maintenance on assets is critical to achieve the desired return.

We remain the worldwide technical support market leader for paper testing, including both calibration and maintenance services. We provide specialized testing using L&W-specific calibration devices that are regularly certified with traceable calibration from global certification institutes.



### ISO9001-2015 Certified

ABB ensures high-quality service and support by maintaining ISO 9001 compliance and ensuring calibration and service follow best practices and strict processes. Not only does this help us in meeting customer and regulatory requirements, but also enables us to deliver superior customer service.



### Reliable and accurate

Through our service contract, we can offer the specialist skills, proprietary tools and expertise that measuring equipment demands. This is a cost-effective way to ensure that your equipment remains reliable and accurate.



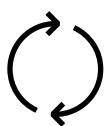
### A complete offering

ABB offers Pulp and Paper Care agreements, which can include services for your laboratory and automated paper testing equipment. These solutions can be tailored to meet your needs. Choose from services such as remote diagnostics, supplier-independent calibration and training.

### 24/7 support for automated paper testing

We know how important it is to support quality testing whenever the machine is running. That's why we have developed special service packages exclusively for L&W Autoline customers with a

24/7 service commitment. That means you can receive immediate help, every day of the year, from one of our highly experienced and factory-trained service engineer.



### Quick response

Customer support  
7 days a week, 24  
hours a day



### Upgrades

The latest hardware  
and software to  
keep you current



### Spare parts

Replacement of  
consumables and  
parts (preventive)



### Site visits

Annual site visits  
for diagnostics,  
maintenance PMAs,  
and more



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For more information, please contact:

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