

# Valmet IQ Web Inspection System

The IQ Web Inspection System (WIS) provides new information to reduce the origins of web defects in the effort to optimize production quality and efficiency. The result is a customer product, which meets the highest standards for visual quality, printing performance and high efficiency converting.



## See the difference - IQ Web Inspection System to ensure uniform end-product quality

### Key elements for high-quality web inspection systems:

- Picture quality: Light and camera solution forms the base for good and reliable defect detection
- Defect detection: Mathematical algorithms detect defects from camera image and define system's performance
- Defect classification: Classification SW uses detection information and sorting defects to defined defect categories
- Information handling: Analyze classified defect data and show categorized information structure

The IQ Web Inspection System utilizes the newest machine vision technology for finding out the origins of defects and quality problems. The system consists of high performance industrial digital matrix cameras with synchronized high power stroboscopic LED lights to provide the sharpest images in industry. The video signal is transferred through fiber optic cables to avoid any electrical signal disturbances. The latest sensitive defect detection and classification software algorithms run in the state-of-the-art image analysis platform units to identify and classify all relevant web defects from the complete web. The result is showed on a defect map or in the form of a statistic overview including the photographic defect images for machine operators and quality control.

With the IQ Web Inspection System operators can quickly focus in the specific quality problems, which result in profitability loss. Using this new information the operator can make the necessary changes in the machine operations. Optimized machine efficiency and high product quality deliver fast payback on investment.

IQ Web Inspection System is one of the two elements of the Valmet IQ Process and Quality Vision (PQV) System, a comprehensive machine vision solution. The other element in this system is Valmet IQ Web Monitoring System.

## Web inspection functions

- Defect detection
- Integration to web monitoring system (WMS) for finding the origins of quality problems
- Real-time defect map with defect viewer
- Defect classification studio
- Periodical defect analysis linked to machine component lengths
- Defect trend and profile
- Formation analysis
- Reel and defect reports
- Trim planning tools to optimize customer roll quality
- Automatic target stop control for re-reelers and winders



*Base paper inspection for information from wet end to dry end. Formation inspection provides cross direction profile from variables and MD trends from variables.*



*Surface inspection measures degree of purity from the visible web surface. Optimal 60 degree light angle highlight low contrast defects such as starch drops.*

## Web inspection geometries

### Transmission beam

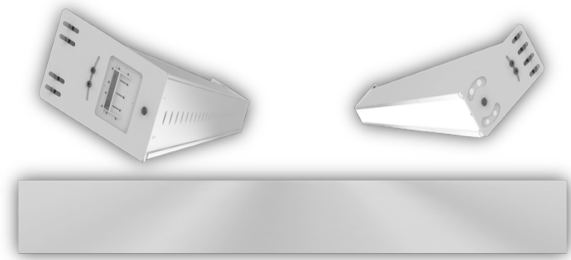
- Typical resolutions 0.30 - 0.80 mm
- Detection achieved; Holes, slime holes, dirt, thin areas, forming defects, felt hair, shives, slime spots, edge cuts, wrinkles
- MD&CD formation analysis

### Low angle reflection beam

- Typical resolution 0.10 - 0.30 mm
- Beams in 17 degree angle
- Produces 3D like image of the surface
- Detection achieved; Coating defects, indents, missing coating, streaks, etc.

### High angle reflection beam

- Typical resolution 0.30 - 0.80 mm
- Detection achieved; Oil, dirt, shives, bugs



*In coating inspection degree of coating uniformity is inspected from the visible web surface. Beams are in 17 degree mirror angle to detect uneven surface gloss, backing roll marks and streaks.*