LUSTER

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NARROW WEB LABEL

PRINTING QUALITY INSPECTION SOLUTIONS

en.lusterinc.com

Flexible Packaging
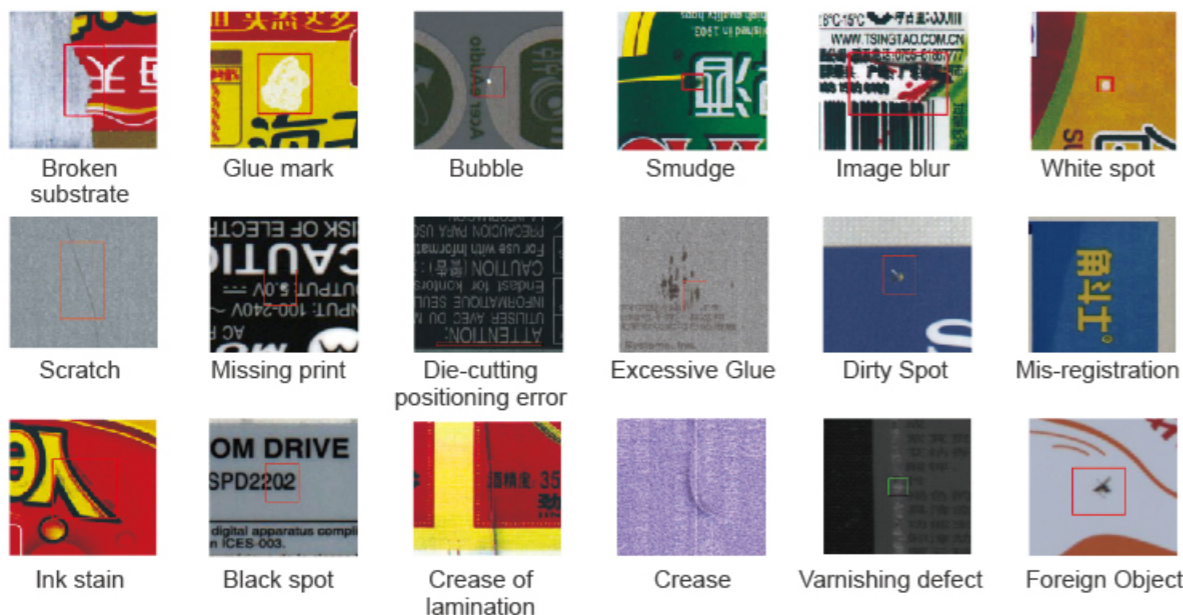Sheet-fed Packaging
Label
Tobacco Packaging

Label Inspection

The LabelRoll series are specifically developed for quality inspection of narrow web applications and labels such as beauty & personal care label, food label, healthcare label, beverage, wine and premium drink label, pharmaceutical label and other narrow web applications and labels. Being able to be applied on the whole label printing workflow, the LabelRoll products not only can help users to reduce production cost, but also enhance production efficiency and quality management level, which means more profit and competitiveness for your business.
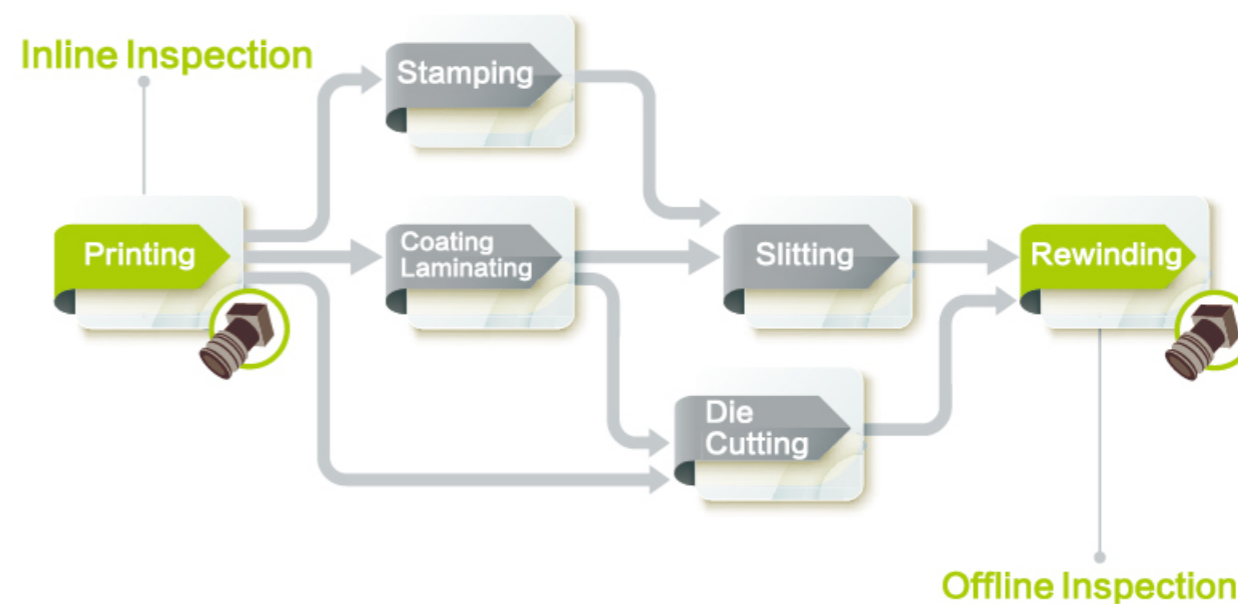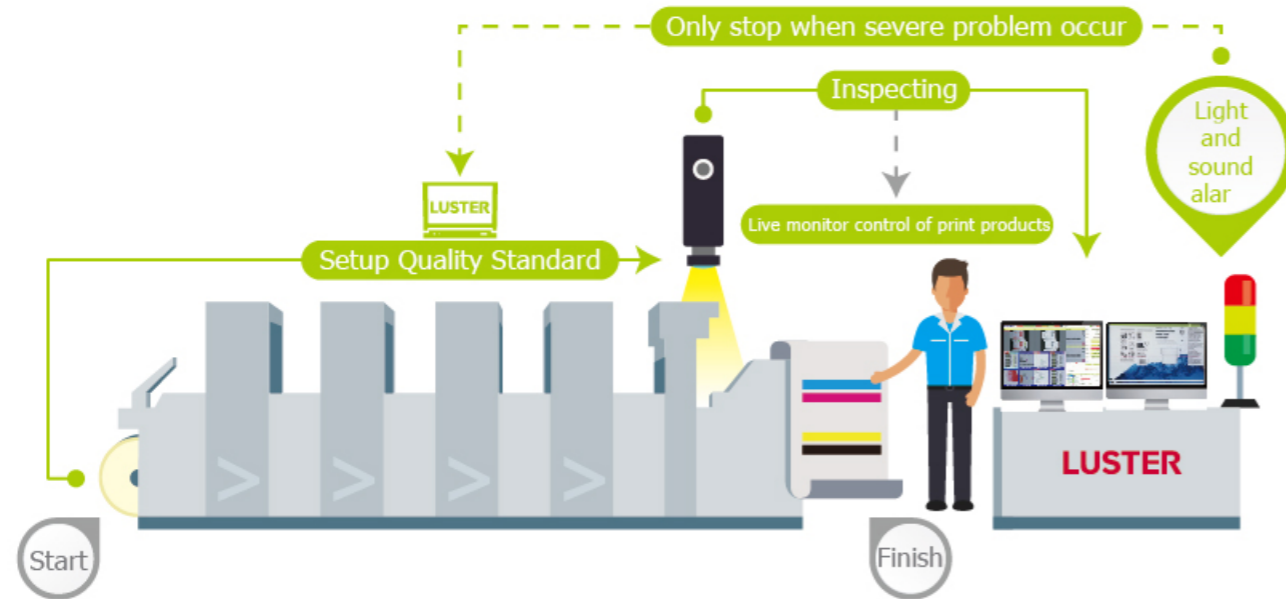
■ Product Samples

▶ Sample of Defects

Broken substrate	Glue mark	Bubble	Smudge	Image blur	White spot
Scratch	Missing print	Die-cutting positioning error	Excessive Glue	Dirty Spot	Mis-registration
Ink stain	Black spot	Crease of lamination	Crease	Varnishing defect	Foreign Object

■ Variable Data Defects

DM Code	QR Code	Barcode	SN Code	OCR

▶ Workflow

Inline Inspection

Printing → Stamping
Printing → Coating Laminating
Coating Laminating → Slitting
Slitting → Rewinding
Die Cutting → Rewinding

Offline Inspection

■ Solutions

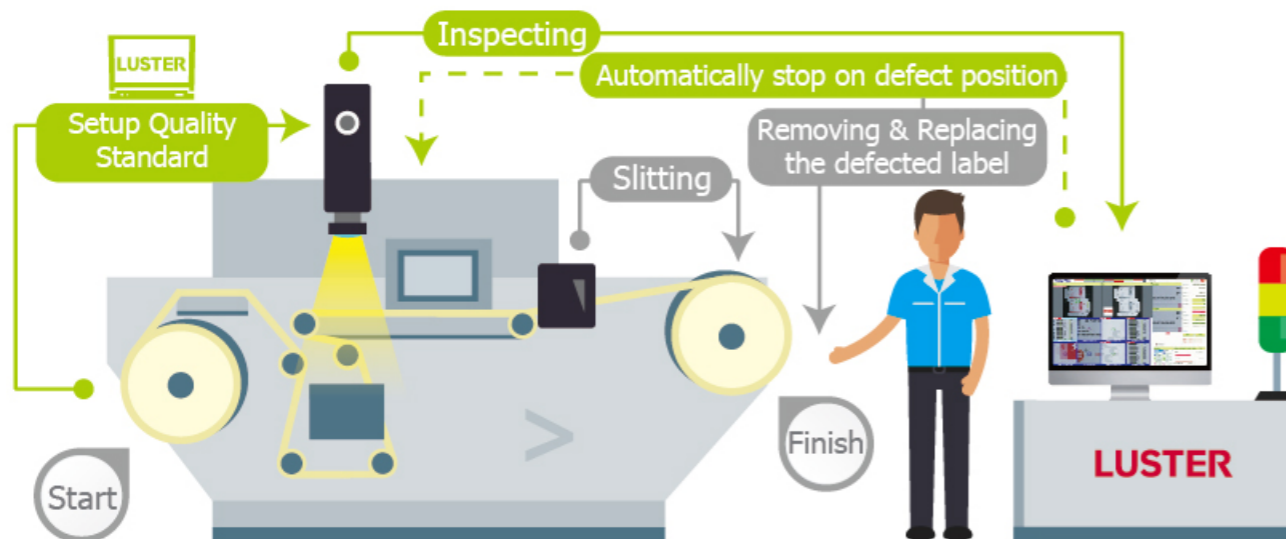| Solutions	Applied Model
Printing Press: Inline Inspection	LabelRoll-P inspection system
Slitter Rewinder: Offline Inspection, automatic control and stop on defects	LabelRoll-F inspection system
Workflow Solution: Inline Inspection and Rewinder/Doctor Machine	LabelRoll-P/F inspection system, Central Server, Data Viewer Software and Rewinder/Doctor Machine

■ Inline Inspection Solution

Only stop when severe problem occur

Inspecting

Light and sound alar

LUSTER

Setup Quality Standard

Live monitor control of print products

LUSTER

Start

Finish

● Installed on printing machine, to effectively control print quality, avoid large amount of waste and save production cost, and also control color consistency.
● Real-time light and sound alarm, as well as visual alarm
● High-speed and accurate inspection performance to optimize production efficiency, and relief dependence on human experiences.
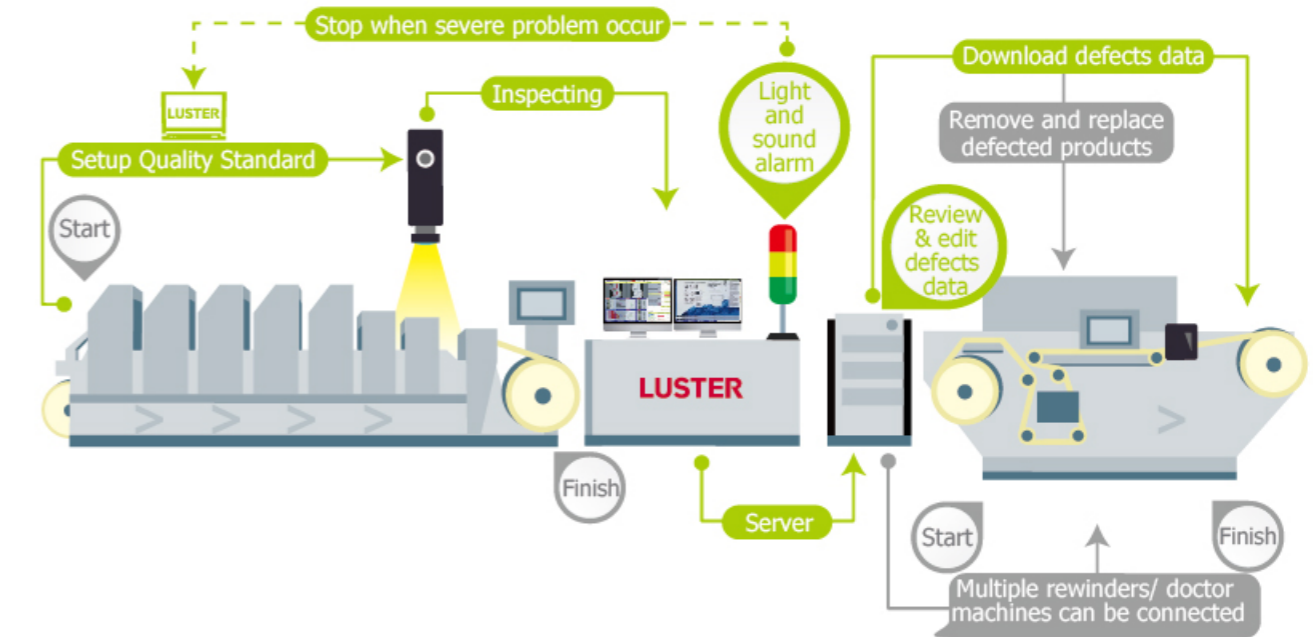
■ Offline Inspection Solution

Mainly installed on rewinder for final quality check before delivery. System will control rewinder to automatic stop on the defect position to remove and replace the defect product. The operator can also control and skip the defects that do not need to stop to enhance working efficiency.

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Setup Quality Standard

Inspecting

Automatically stop on defect position

Removing & Replacing the defected label

Slitting

Finish

LUSTER

Start

■ Inline Inspection and Doctor Machine Workflow Solution

Inline inspection system installed on printing machine to monitor product quality, avoid continuous waste and record defects data which will be automatically transferred to central server for review and data editing. Rewinder/Doctor machine will automatically download defects data and stop on the critical defect positions for removal and replacement. This workflow solution can greatly enhance work efficiency by separating inspection and eliminating process.

Stop when severe problem occur

Download defects data

LUSTER

Inspecting

Light and sound alarm

Remove and replace defected products

Setup Quality Standard

Review & edit defects data

Start

LUSTER

Finish

Server

Start

Finish

Multiple rewinders/ doctor machines can be connected

▶ LabelRoll-P Series Inline Quality Inspection

Installed on printing machine like flexo press, letter press and digital press, the LabelRoll-P series inline quality inspectionsystem can 100% control print quality for all narrow web applications and labels to reduce waste, production cost and improveefficiency. It is able to inspect defects like incomplete/missing print, dirty spot, ink spot, mis-registration, color variation, improper stamping& die-cutting, variable data etc.. Integrates optical system into one box, camera and light source can be easily change to fulfil inspection requirements on different material. One machine can satisfy ALL needs.

【Main Features】

Excellent Optical System

Wide-adaptive optical design and illumination enables LUSTER's system to stably detect all kinds of defects on different substrates, including high-reflective, transparent, clear on clear and opaque ones. Compact and modular design to fit different integration requirements and easy to maintain.

Easy to Use

Only need one master image as reference for job setup, no learning or training process of multiple images or previous image, to achieve the most genuine and accurate result. PDF proof reference job setup also supported.Automatic recognition, automatic calibration, automatic extraction and positioning and other automatic features to greatly reduce setup time to have quick start. Wizard and simple user interface enable operators to easily understand and operate.

Quality Report and Analysis for Production Improvement

After every inspection job, a quality report can be generated with detailed inspection statistical analysis, defect images, distribution map and other results to provide tools and evidences for future production improvement. Up to 6 months of defects data will be saved for customer to track historical quality issues at any time.

"All in one" Quality Control

Not only will the system provide alarm and real-time defects control of print quality, the system also integrates live web monitoring function to zoom and monitor real-time printing quality in pixel level to save cost for additional investment and enhance inspection result.

Model	LabelRoll-P			
Application	Beauty & personal care label, food label, healthcare label, beverage, wine and premium drink label, pharmaceutical label and other narrow web applications and labels			
Material Type	Opaque, transparent, reflective materials, also clear on clear labels			
Defect Type	◆ Common defects: Dirty spot, ink spot, white spot, missing print, mis-registration, improper die-cutting & stamping, broken writing, color variation, foreign objects etc. ◆ 3D defects: bubble, scratch, excessive glue, varnishing and coating errors etc..			
Web Width	330mm	370mm	420mm	520mm
Max. Speed	300m/min	300m/min	300m/min	300m/min
Camera Options	4K resolution, 7K resolution, 8K resolution color & mono line scan camera			
Min. Defect Accuracy	0.03mm2	0.04mm2	0.05mm2	0.07mm2
Mis-registration Accuracy	0.1mm	0.1mm	0.1mm	0.1mm
Other Modules	◆ Sound and Light Alarm ◆ Quality Report and Analysis ◆ Double Monitor: Live web monitoring + Inspection control ◆ Variable Data Inspection ◆ Workflow Solution Connection ◆ Color variation inspection and color management ◆ PDF proof job reference			

LabelRoll-F Series Offline Quality Inspection

Integrated with rewinder/slitting rewinder, LabelRoll-F offers 100% quality control on finished rolls for final quality check to reduce customer rejection and complaints. Up to 300m/min speed, the production efficiency is optimized meanwhile to achieve 100% quality inspection of common and very small defects, 3D defects and variable data defects like missing print, dirty spot, broken writing, bubble, scratch and excessive glue etc. In addition, Luster also supply own slitting rewinder to provide all-in-one platform for better performance and customer support.

【Main Features】

Easy to Use

Only need one master image as reference for job setup, no learning or training process. PDF proof reference job setup also supported. Operator can setup different tolerance on different region of interest and different defect type, to enhance inspection accuracy and reduce false alarm. Wizard and simple user interface enable operators to easily understand and operate.

Strong Inspection Performance

It can inspect min. 0.03mm² defects under speed of 300m/min. High speed variable data inspection and verification also available to meet the current trend. Optional 3D vision system can effectively detect defects like bubble, excessive glue, scratch and other varnishing/coating quality issues.

Quality Report and Analysis for Production Improvement

After every inspection job, a quality report can be generated with detailed inspection statistical analysis, defect images, distribution map and other results to provide tools and evidences for future production improvement. Up to 6 months of defects data will be saved for customer to track historical quality issues at any time.

Model	LabelRoll-F			
Application	Beauty & personal care label, food label, healthcare label, beverage, wine and premium drink label, pharmaceutical label and other narrow web applications and labels			
Material Type	Opaque, transparent, reflective materials, also clear on clear labels			
Defect Type	◆ Common defects: Dirty spot, ink spot, white spot, missing print, mis-registration, improper die-cutting & stamping, broken writing, color variation, foreign objects etc. ◆ 3D defects: bubble, scratch, excessive glue, varnishing and coating errors etc..			
Web Width	330mm	370mm	420mm	520mm
Max. Speed	300m/min	300m/min	300m/min	300m/min
Camera Options	4K resolution, 7K resolution, 8K resolution color & mono line scan camera			
Min. Defect Accuracy	$0.03mm^2$	$0.04mm^2$	$0.05mm^2$	$0.07mm^2$
Mis-registration Accuracy	0.1mm	0.1mm	0.1mm	0.1mm
Variable Data Type (Optional)	1D-Codes	CODE128, CODE39, CODE93, EAN8, EAN13, UPCA, UPCE, ITF, CODABAR		
	2D-Codes	QR, DM, PDF 417		
	SN Codes	SN Code that contains numbers and capital letters		
	Sequence Inspection	Sequence mistake, repeated number, wrong number		

Standard Slitting Rewinder Specifications (330mm)

Thickness	20μm ~ 500μm
Web width	40mm ~ 330mm
Max. operation speed	300m/min (without inspeciton)
Max. unwinding dia.	Φ800mm
Max. rewinding dia.	Φ700mm (2 rewinding reels)
Web guider	Two
Rewinding accuracy	±0.2mm
Slitting	Standard (6 slitting knifes)
Shaft size	Φ76mm
Accounting Sensor	Standard: 1 photoelectric counter Optional: 1 ultrasonic counter
Defect stop precision	±20mm
Tension setup range	15N-120N
Air pressure	0.4 MPa~0.6 MPa clean compressed air
Dimensions	3100 mm (L) × 1250 mm (W) × 1500 mm (H)
Weight	About 1.5 tons

LabelRoll-RS Series Roll-to-Sheet Offline Quality Inspection

LabelRoll-RS has the same function with LabelRoll-F, but added sheet cutting unit in the end. It integrates function of printing quality inspection, sheet cutting, eliminating defect sheet and stacking of good sheets.
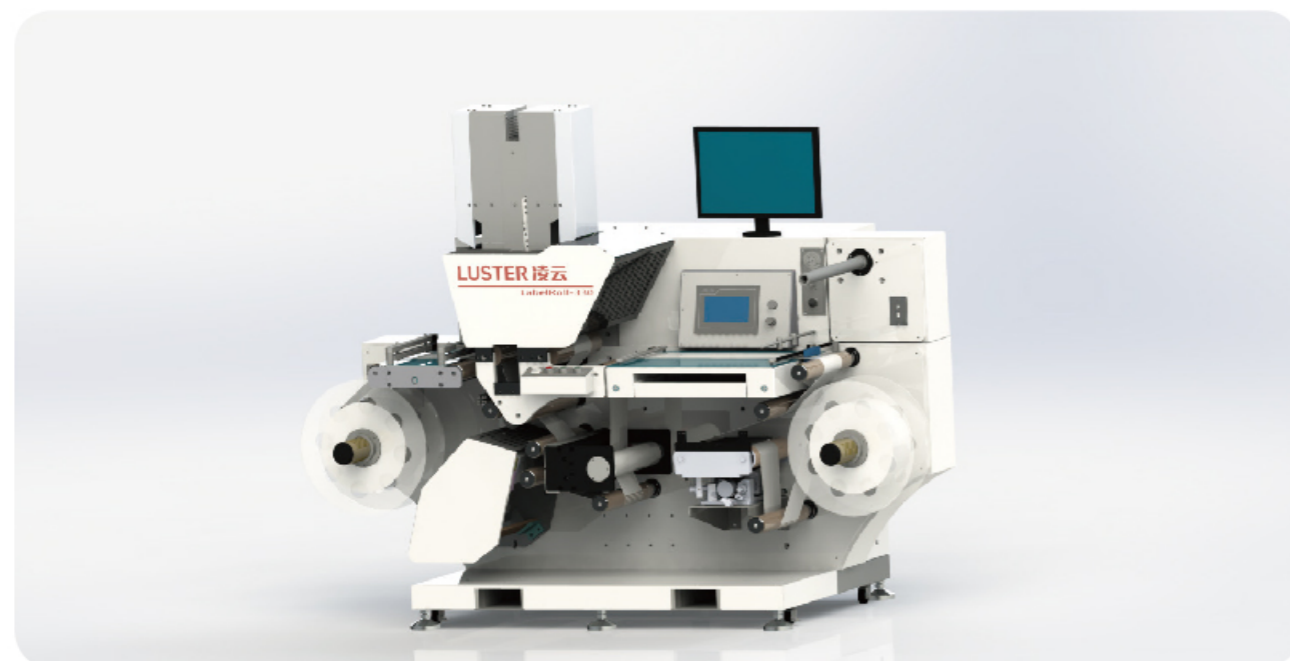

【Technical Specifications】

Mechanical Platform Specifications (330mm)

Material thickness	100μm ~ 300μm
Material width	40mm ~ 330mm
Platform speed	200m/min(rewinding)　60m/min(sheet cutting)
Max. unwinding dia.	Φ800mm
Max. rewinding dia.	Φ800mm
Sheet cutting length	100mm~450mm
Stacking height	100mm
Air pressure	0.4 MPa~0.6 MPa clean compressed air
Dimensions	5815 mm × 1200 mm × 1500 mm (L ×W × H)
Weight	About 1.8 tons

LabelRoll-LT Series Offline Quality Inspection

LabelRoll-LT series is specially developed for printing quality inspection of electronic label, textile label, irregular die-cutting label and other label type with high sensitivity of tension. Our innovative hardware and structure designsimulate manual rewinding action to achieve low tension, neat edge and zero excessive glue issue.

【Main Features】

Strong inspection performance

It can detect min. 0.03mm² size of defects to achieve extraordinary inspection results and less false alarm, especially for defects like broken writing, missing print often occurs on intermittent rotary letter press and PS plate press.Customer can also add variable data inspection module for accurate barcode, 2D code inspection andverification. 3D defect inspection is also available for defects like bubble, crease, scratch and excessive glue.

Easy to use

Quick and easy to finish job setup. Support tolerance setup on different region of interest and different defect type. The operator can save the job template of same product and re-use it for quick start. For inspection of different batch of same products, you can also quickly replace reference image by clicking one button to start the whole inspection process.

Low Tension Control

Innovative hardware and structure design that simulate manual rewinding action to achieve low tension, neat edge and zero excessive glue issue during inspection.

【Technical Specifications】

Model	LabelRoll-LT	
Application	Electronic label, textile label, irregular die-cutting label and other label type with high sensitivity of tension	
Material Type	Opaque, transparent, reflective materials, and clear on clear labels	
Defect Type	◆ Common defects: Dirty spot, ink spot, white spot, missing print, mis-registration, improper die-cutting & stamping, broken writing, color variation, foreign objects etc. ◆ 3D defects: bubble, scratch, excessive glue, varnishing and coating errors etc..	
Variable Data (Optional)	1D-Codes	CODE128, CODE39, CODE93, EAN8, EAN13, UPCA, UPCE,ITF, CODABAR
	2D-Codes	QR, DM, PDF 417
	SN Codes	SN Code that contains numbers and capital letters
	Sequence Inspection	Sequence mistake, repeated number, wrong number
Web Width	20mm-330mm	
Speed	60m/min-80m/min	
Mechanical Platform Specifications (330mm)		
Max. web width	330mm	
Max. operation speed	Manual mode: 40m/min; Auto mode: 60m/min	
Max. unwinding dia.	Φ450mm	
Max. rewinding dia.	Φ450mm	
Web guider	One	
Rewinding accuracy	±0.35mm	
Size of rewinding/ unwinding	Unwinding: Φ75 mm air shaft; Rewinding: Φ75 mm slip shaft	
Defect stop precision	±20mm	
Rewinding/unwinding tension	0~30N	
Air pressure	0.4 MPa~0.6 MPa clean compressed air	
External dimensions	2200 mm × 1200 mm × 1350 mm (L ×W× H)	
Weight	About 0.8 tons	