

LUSTER

en.lusterinc.com



Flexible
packaging



Label
& Narrow
web



Carton
packaging



FLEXIBLE PACKAGING PRINT INSPECTION

PRINTING QUALITY INSPECTION AND MANAGEMENT SOLUTIONS

“

Towards the starry sky of industrial artificial intelligence!

”

A stylized, handwritten signature in white ink, appearing to read 'Yong', with a long horizontal stroke extending to the right.

CHAIRMAN AND FOUNDER OF LUSTER

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Global Service Network 30

WHO IS LUSTER?

LUSTER LightTech Co., Ltd. (hereinafter referred to as "LUSTER") takes innovation in optical technology as its foundation to develop businesses of vision imaging and fiber optics, with the aim of becoming a global leader in the fields of vision AI and opto-electronic information.

Focusing on vision imaging technology, LUSTER insists on "Implant Eyes and Brains in Machines", and provides customers with leading products and solutions such as configurable vision system, intelligent vision equipment and vision components.

LUSTER has always adhered to the business philosophy of customer-orientation to promote intelligent "manufacturing" in different industries such as Electronic Manufacturing, Display, Printing, Packaging, New Energy, Plastic Web, Television, Animation, Scientific Imaging, Rail Transportation. With over 20 years' experiences of optical imaging, vision software and algorithms, innovative vision components etc., LUSTER continues to innovate its products and strives to be the optimal, strategic, trusted and honorable choice for its customers. In the field of fiber optics, LUSTER is a solution provider of high-end optical devices and instruments, and it also provides independent broadband optical access and smart home networking solutions for the radio and television industry.

LUSTER currently has over 500 patents and property rights, and won one first prize of National Technological Invention Award and two second prize of National Awards for Science and Technology Progress which are the highest awards for technology innovation.

LUSTER has undertaken numerous major national science and technology projects to help promote the national science and technology level and industrial development.



MISSION

To implant eyes and brains in machines, to empower optical inter-connection, to create and realize customer's dream.

VISION

To become the world leader in vision artificial intelligence and optoelectronic information fields!

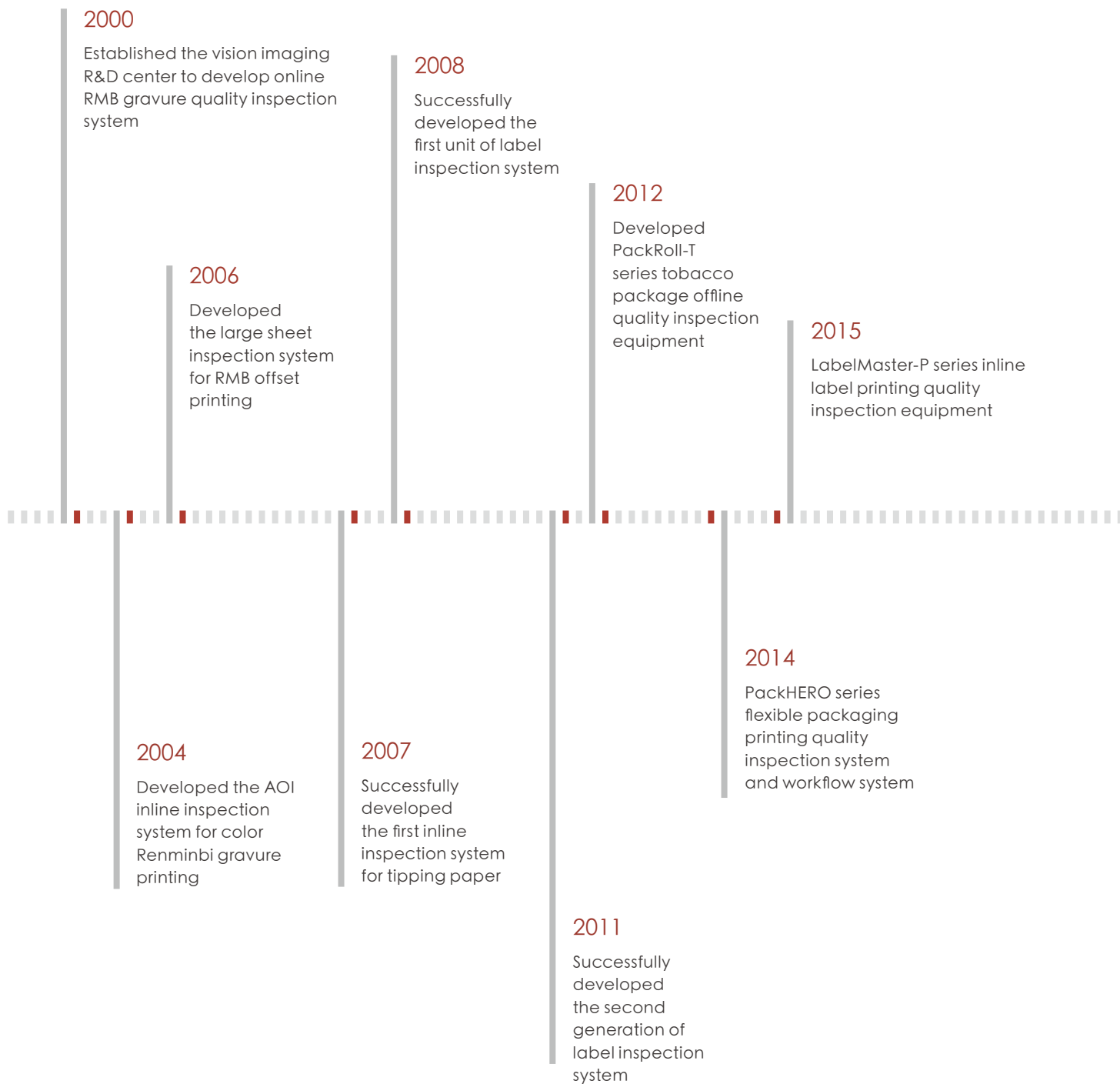
VALUE

To take the responsibility of promoting industry development and strive together.

To transform knowledge into fortune, and to let the fortune belongs to its own creators!



MILESTONES



2017

PrintMan series of carton box packaging printing quality solution

2019

PackSheet series offset inline inspection system BNOS-2000/BNOS-4000 offset printing online/offline quality proofing equipment

2021

CartonTANK-650S carton offline quality inspection equipment
CartonTANK-650B folder gluer inline quality inspection equipment
ScanTANK Proofing system with non-contact scanner solution

2016

Successfully developed the third generation of label inspection system
LabelMaster-LT series low tension offline printing quality inspection equipment
LabelMaster-R series high-

2020

CartonTANK folder gluer full connected inspection equipment
LabelMan-220T tabletop label inspection rewinder
SmartFAB management system

2022

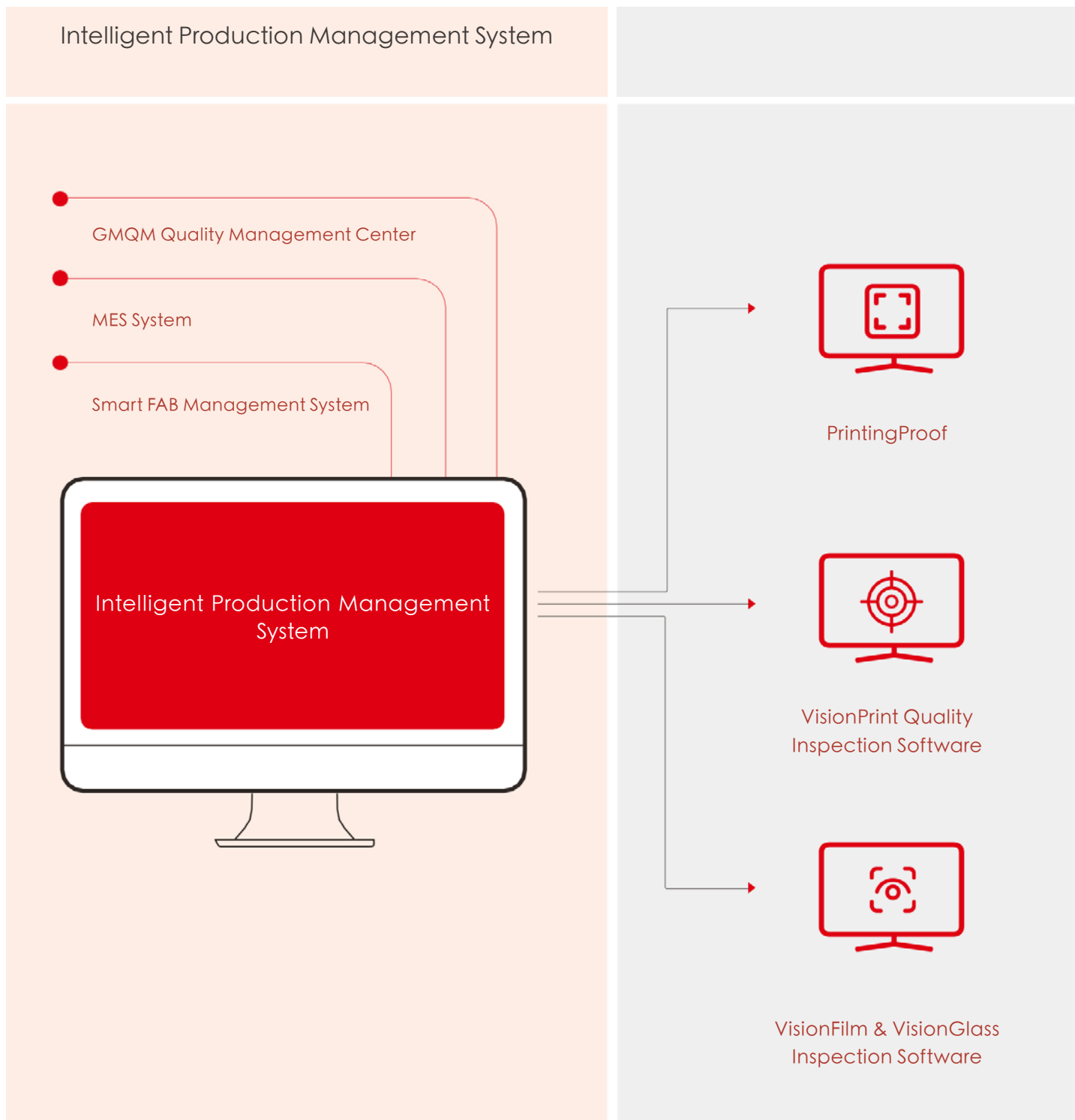
IPO of A-STAR Share Market
PackHERO Intelligent Printing Quality Inspection System Released

2018

PrintMan-650S inkjet printing and quality inspection all-in-one machine
PrintMan-650S folder gluer inline quality inspection equipment
PrintMan-200 tag inspection machine
PrintingProof inspection system

PRINTING QUALITY INSPECTION AND MAN

1 COMPLETE PRINTING QUALITY INSPECTION SOLUTIONS



AGEMENT SOLUTIONS

Printing Quality Inspection and Management Solutions



Carton Packaging Inspection Products

- CartonHERO Offset Inline Printing Inspection System
- CartonTANK-650B Folder Gluer Inline Quality Inspection Equipment
- CartonTANK-650S Offline Quality Inspection & Ink-jet Equipment
- CartonTANK-430S Tobacco Printing Quality Inspection Equipment
- ScanTANK Proofing System with Non-contact Scanner Solution
- TagTANK-200 Tag Quality Inspection Equipment



Flexible Packaging Inspection Products

- PackHERO-P Inline Inspection System
- PackHERO-F Offline Inspection System
- SlitTANK series Slitting Machine
- RewindTANK series Inspection Rewinding Machine



Narrow-web Inspection Products

- LabelHERO-P Inline Inspection System
- LabelHERO-F Offline Inspection System
- LabelTANK-220T Table Top Inspection Rewinder
- LabelRoll-LT series Low Tension Offline Inspection Equipment
- LabelRoll-RS series Roll-to-sheet Offline Inspection Equipment

2 FLEXIBLE PACKAGING INSPECTION

With high precision and efficiency, the PackHERO series are specifically developed for 100% quality control of flexible packaging, web tobacco packaging, tipping paper, aseptic pack, aluminum foil, lithium battery separator film, plastic film as well as other wide web applications.

From extrusion, printing, laminating/coating, rewinding to slitting, it can be applied on the whole production workflow to achieve 100% automatic quality inspection, optimize productivity reduce production cost.

2.1 Inspection Overview



2.2 Sample Products



2.3 Sample Defects

- Printing Defects



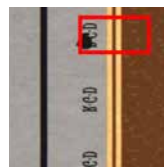
Blade Line



Blade Line



Mis-
registration



Ink Spot



Insects



Dirty spot



Ink stain



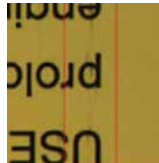
Missing print



Colour variation



Deckle



Ink streak

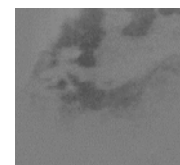
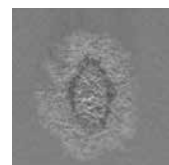
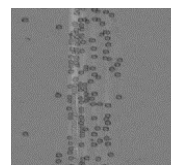
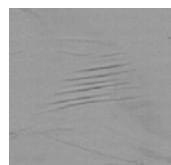
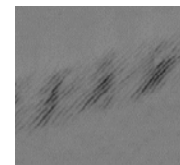
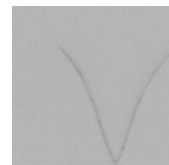
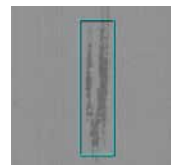
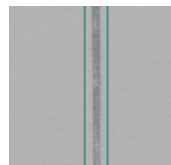
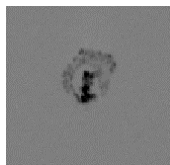


Missing stamping

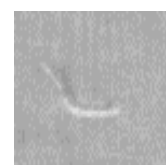
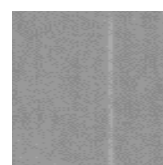
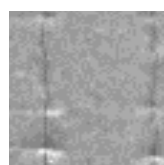
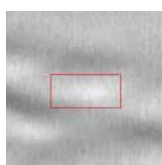
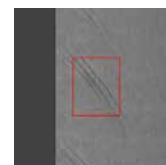
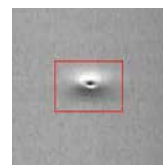
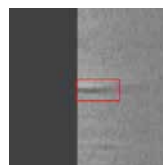
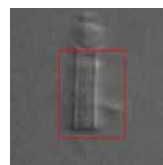


Smudge

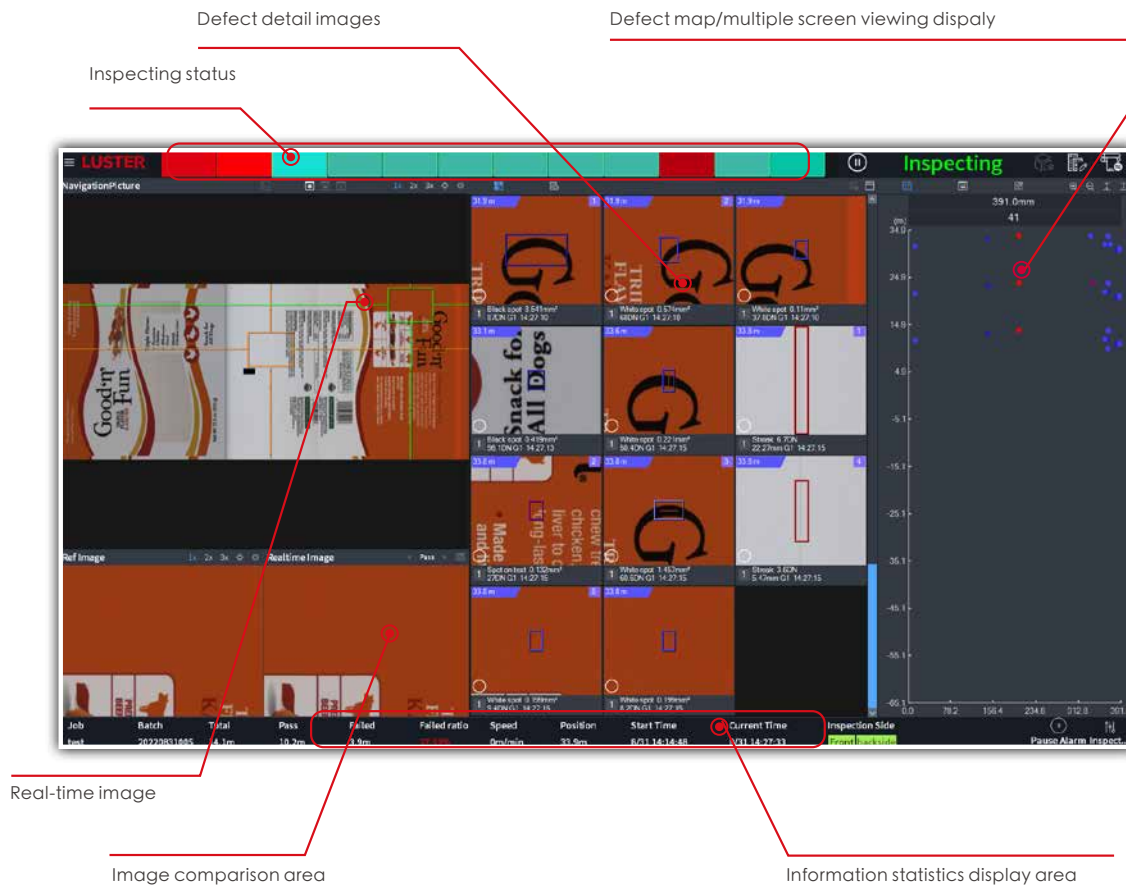
• Film Defects



• Foil Defects



3 PRINTING INSPECTION SOFTWARE FEATURES AND FUNCTIONS



Main Features

01. VP7 Simplify - one-click template setup, easier to learn

- Simply one-click extraction of background area, die-cutting area, text area, and variable code area.
- Automatic parameter setting, no manual adjustment required.
- Template setup time in 30 seconds only.

02. Easy Parameter modification

- Template parameters can be modified without stopping the machine, and the current detection is not affected. The detection efficiency and software usability are greatly improved.
- One-click resolution switching between code detection and standard printing detection.

03. New features in VP7

- Multiple screen viewing display-still image function: Especially for online inspection systems, it helps customers to focus on multiple important areas, such as logo, color, and other important areas.
- Defect map: It helps customers clearly understand the defect distribution on current printing job.

04. Super intelligent software

- The Defect Viewer software can be opened directly from the main menu of inspection software, making it convenient and quick.
- The unified UI interface combines new functions of Defect Map and Analysis Diagram, which are visually appealing.
- The machine control program is integrated into the software.

Optional Modules

CodeHERO

Variable Code Reading and Inspection

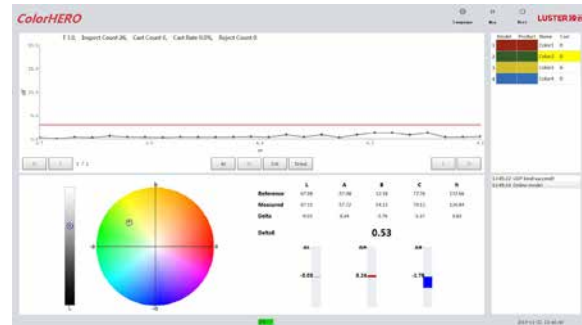
- Barcode, 2D code, Sequence number, OCR and other variable data type accurate reading and inspection.
- Achieves decoding speed of 400 codes per second.
- Automatically recognition of variable data when setup.



ColorHERO

Color Monitoring and Inspection

- Live monitor of max. 20 color zones for color control.
- Color fluctuation curve monitoring and real-time visual, light and sound alarm.
- Color variation detection accuracy of $\Delta E \geq 2$.
- Real-time demonstration of Delta E value, and L.a.b. value.



ProofHERO

PDF Proof and Job Verification

- Support printing jobs proofing against PDF, JPEG, TIFF, BMP etc.
- Supported different PDF layer setup.
- Avoid loading errors before job start.
- All master templates can be saved in the system, for repeated jobs.



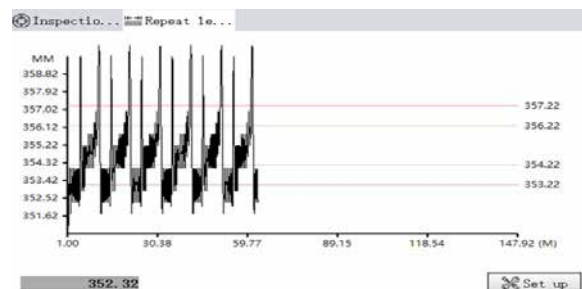
GradingHERO

- Special alarm and handling process of severe or continuous quality issues to prevent any human-caused errors.
- Intelligent and precise defects classification.
- Traceable of every quality issue.

物料名称	规格	产量	产量单位	合格率	缺陷数	合格率
2019-11-11 11:27:36	2019111101	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111102	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111103	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111104	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111105	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111106	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111107	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111108	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111109	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111110	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111111	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111112	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111113	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111114	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111115	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111116	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111117	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111118	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111119	1	个	100.00%	0	100.00%
2019-11-11 11:27:36	2019111120	1	个	100.00%	0	100.00%

Repeat Length Monitoring

- Special tool to provide continuous inline monitoring for the length of the package and repeat.
- Identify live repeat length trend and alert on any changes in the package length above a defined threshold due to changes in tension, temperature, and other parameters to effectively prevent production issues

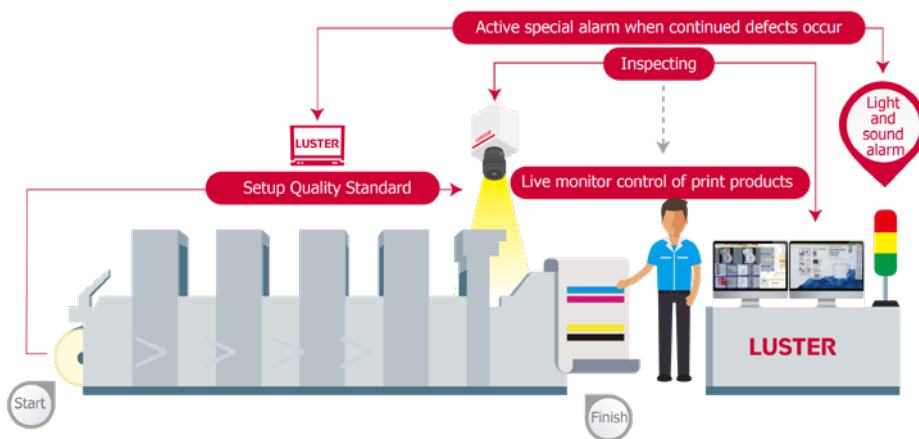


4 FLEXIBLE PACKAGING INSPECTION SOLUTIONS

4.1 Product Application

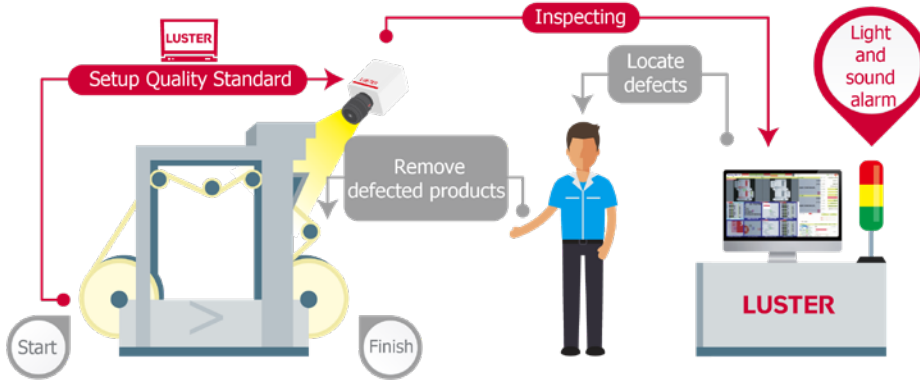
Print Type	Application	100% Inspection System Integration
Web Printing	Tobacco Packaging	<ul style="list-style-type: none"> Printing Machine (Rotogravure, Flexo), Stamping Machine, Slitting Machine, Rewinding Machine
	Tipping Paper	
	Flexible Packaging	<ul style="list-style-type: none"> Extrusion/Casting Machine, Printing Machine (Rotogravure, Flexo), Lamination Machine, Slitting Machine, Rewinding Machine
	Tetra Pak	<ul style="list-style-type: none"> Printing Machine, Lamination/Coating Machine, Slitting Machine, Rewinding Machine
	Plastic Film	<ul style="list-style-type: none"> Coating Machine, Casting Machine, Slitting Machine, Rewinder

Inline Inspection Solution



- Installation on extrusion/casting machine, printing machine, lamination machine and slitting machine, to optimize production speed and efficiency.
- Real-time sound and light alarm, as well as visual alarm.
- Prevent continuous defects and waste, reduce production cost.
- Live web monitoring function to control roll quality.

Offline Inspection Solution



- Mainly installed on high-speed inspection rewinding to achieve defect inspection, automatic defect stops and defect removal at once.
- Customer can choose to inspect after printing before lamination or after lamination before slitting/bag making, or before final delivery, to ensure delivered quality to end user or next process, and reduce cost and customer complaints.

4.2 PackHERO Series Inspection System

With advanced optical system, high-speed image processing system and strong inspection software, LUSTER's PackHERO series are specially developed for 100% printing quality inspection of wide web packaging such as flexible packaging, web, tobacco packaging, tipping paper, aseptic pack, aluminum foil, plastic film etc.

Main features

Efficiency Optimization

- New upgrade of data processing computer, high-speed camera and inspection software, it can support max. 600m/min inspection speed without sacrificing inspection resolution. Same inspection accuracy of

High Inspection Precision and Stability

- Upgraded inspection hardware design to improve imaging quality, long machine life and best illumination level for better inspection performance. New version of software enable to check even lighter and smaller defects such as light blade line,

Easy to use

- LUSTER understands printer's actual needs and design for it. LUSTER software only needs one reference as master, user simply follows step-by-step guide to complete whole setup process. It also supports auto job setup, wand auto selection, different tolerance setting on different defect type, tolerance setting on different region of interest and other user-friendly features.

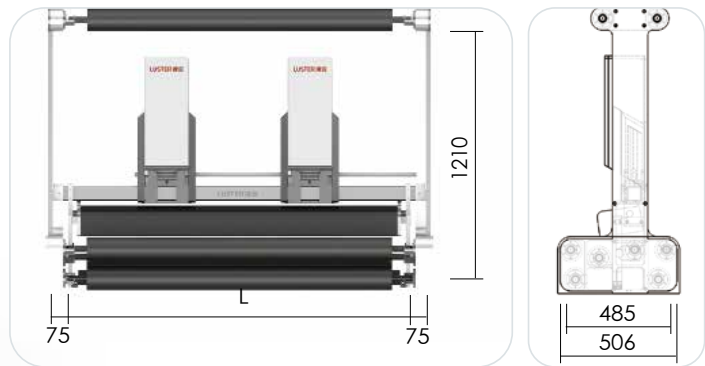
Innovative solutions for special needs

- LUSTER provides double side or multiple inspection camera inspection solutions for high-end packaging QC such as pharma and food packaging. All camera stations only need one set of inspection system, all defects from each station will be processed, marked and demonstrated on one system and one interface for easy tracking and monitoring.

Specifications

Application	Flexible Packaging, Tipping Paper, Tobacco Packaging, Aseptic Pack, Plastic Film etc
Typical Defects	Streak, blade line, dirty spot, ink/white spot, missing print, mis-registration, color variation, foreign objects, splash, insects etc
Material Type	PET, MPET, BOPP, PE, PA, PVC, Nylon, Paper etc
Typical Inspection Width	650mm, 850mm, 1050mm, 1250mm, 1500mm....2800mm
Max. Inspection Speed	600m/min (Can achieve same inspection accuracy as 300m/min)
Camera Options	4K resolution, 7K resolution, 8K resolution color & mono industrial line scan camera
Back-side inspection	Available under request
Inspection Software	Printing Plus software multi language version (Win 10 OS)

Inspection machine picture



Inspection System Sample Diagram
(Might change without turn bar)

Applied Scenarios



Inline inspection on printing machine



Offline Inspection on Rewinder



Inline Inspection on Slitting Machine



Inline Inspection on Extrusion Machine



Inline inspection system on lamination machine



Double side inspection system (on rewinder)

4.3 RewindTANK Series High-speed Inspection Rewinder

RewindTANK series high-speed inspection rewinder are developed for high-speed rewinding and inspection of flexible packaging, plastic films and laminated films. The machine is composed of unwind, rewind, two splicing tables, traction, BST web guiding and observation lightbox.



■ Features

Stable Performance

- The whole machine is driven by high-precision servo control system, with stable tension control technology to ensure stable tension under 500m/min speed.
- Combined with LUSTER inspection technology and knowledge, this machine is designed and tested to have best stability with minimum machine jumping, strong and stable like a TANK.

High Quality and Reliability

- All key machine components are from top European/Japan manufacturers to achieve high reliability through constantly good quality.

Together with full servo-driven system from Yasakawa/MK and closed-loop tension control system, to ensure stable operation and accurate rewinding and inspection performance of max. 500m/min. Various optional parts and user-friendly design will provide flexibility for daily use.



User Friendly Design

- Two splicing tables on both side of the machine with nip bars to fix the material for flexible operation.
- Equipped with an IoT system which can monitor the working conditions remotely and provide remote diagnosis and service.
- Clear user interface with two touch screen navigations on both rewind and unwind side for easy operation. All settings can be pre-set and saved for re-use to greatly reduce set-up times.

Flexible Options

- Optional of full integration of LUSTER's 100% quality inspection system or LUSTER's workflow system for full quality control.
- Optional waste trimming function with trimming blade and air suction.
- Optional edge winding machine and unloading arm.

Specifications

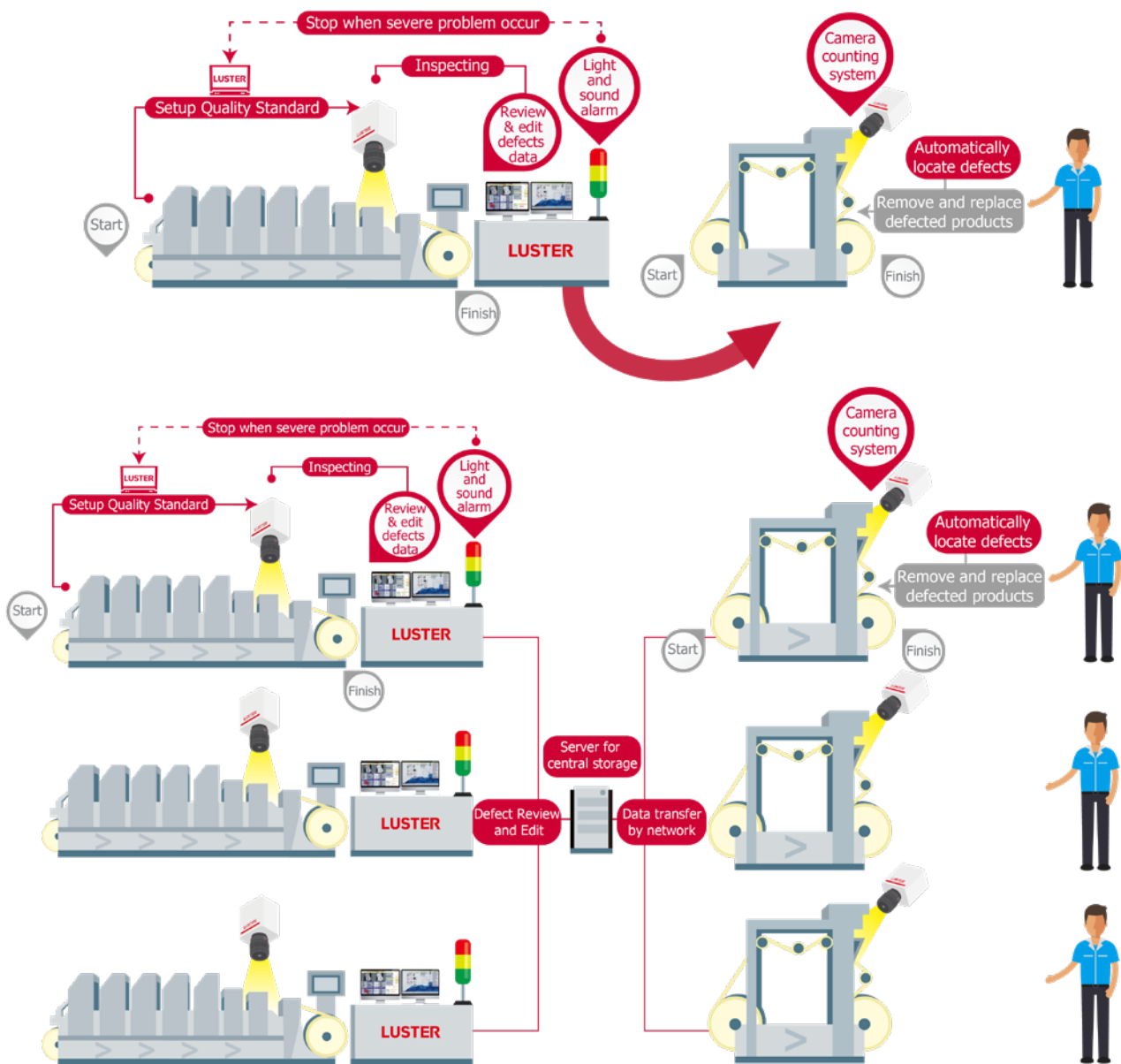
Model	RewindTANK-P500
Material	Single layer film and laminated films
Material Thickness Range	12-250µm
Max. Machine Speed	500m/min
Web Width	200-1250mm
Max. Unwind Diameter	800mm
Max. Rewind Diameter	800mm
Tension control	Automatic constant tension control system
Servo Motor	Yasakawa + MK
PLC System	Siemens
Web Guiding	BST
Function	Forward & reverse operation
Options	LUSTER 100% inspection system LUSTER workflow system Waste trimming function with trimming blade and air suction Edge winding machine Others under request
Weight	> 4000Kg
Dimensions (L×W×H)	2200×3150×2420mm

4.4 Inline Inspection and Waste Removal Workflows

Inline Inspection and Waste Removal Workflows combines both inline inspection process control and offline waste removal into one cost-effective, automatic and efficient solutions for defect material handling.

Inline inspection system is installed on printing machine, lamination machine or slitting machine to monitor real-time quality, prevent continuous waste and record all defect data into database.

After defect reviewing and editing, all the selected data will be transferred and downloaded to rewinder which will automatically stop on defect position for removal. Customer can choose for 1-to-1 workflow or N-to-N workflows on actual conditions.



4.5 SlitTANK High Speed Slitting Machine

SlitTANK series slitting machines are perfect for high-speed slitting of flexible packaging, plastic films and laminated films. The machine is composed of rewinding, traction, slitting, unwinding and edge trim collection parts, together with servo-driven closed-loop tension control system, to ensure stable operation and accurate slitting performance. Various optional modules and user-friendly design will provide flexibility for daily use.

■ Features

Excellent Stability

- The whole machine is driven by high-precision servo control system, with stable tension control technology to ensure the accurate and flat slitting end.

High Quality and Reliability

- All key machine components are from European/Japan manufacturers to achieve high reliability through constantly good quality.

User Friendly Operation

- Clear user interface with two touch screen navigations on both rewind and unwind side for easy operation. All settings can be pre-set and saved for re-use to greatly reduce set-up times.

Remote Monitoring and Support

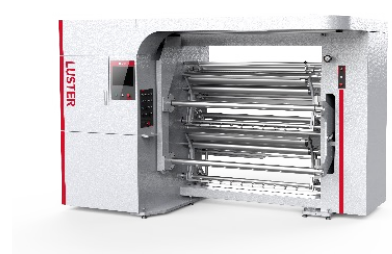
- The machine is equipped with an IoT system which can monitor the working conditions remotely and provide remote diagnosis and service.



SlitTANK-P400L



SlitTANK-P400S



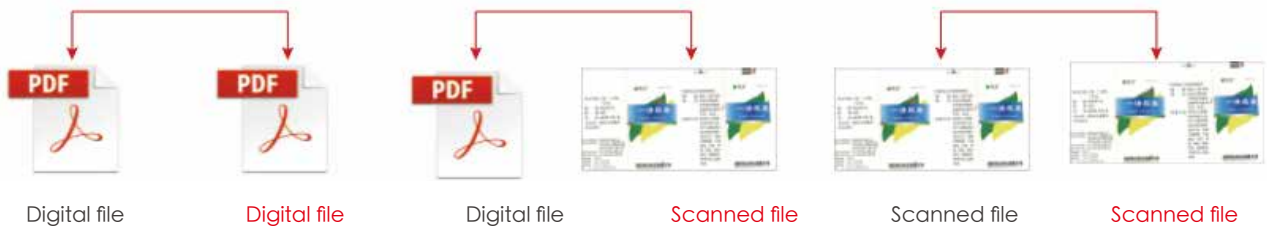
SlitTANK-P500L

Model	SlitTANK-P400L	SlitTANK-P400S	SlitTANK-P500L
Servo Configuration	Rexroth three-servo	Rexroth three-servo	Yaskawa frequency converter and MK four-servo
Max. Machine Speed	400m/min		500m/min
Materials	Single-layer films and laminated films		
Web Width	200-1300mm		
Thickness	12-250 μ m		
Max. Parent Roll Diameters	Φ 800mm		
Max. Parent Roll Weight	800Kg		
Max. Finished Roll Diameter	Upper/lower Φ 600mm	Upper/lower Φ 450mm	Upper/lower Φ 600mm
Machine Dimension (L×W×H)	2550×3920×1660mm	2380×4675×2160mm	2210×3080×2145mm
Air Supply	\geq 0.6MPa clean compressed air		
Power Supply	380V/50Hz/35A		
Optional Functions	Circular knife and edge Rewinding machine		

4.6 PrintingProof Inspection

The PrintingProof Inspection System can effectively proof digital files, printing samples, and sample files to control the quality in pre-press stage. It can be used to detect the errors in the pre-printing process, such as mis-registration, dirty spots, missing content, color variation, text/graphics/print errors, etc. The system is applicable throughout the whole process of printing, such as proofreading for the original sample and film assembly, initial printing, random printing sample inspection, etc. The system features high inspection efficiency and accuracy, which can significantly improve your work efficiency.

Solutions



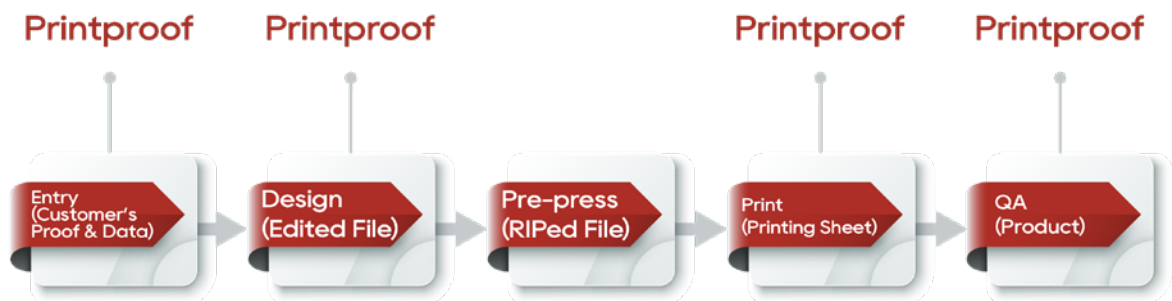
Files Supported



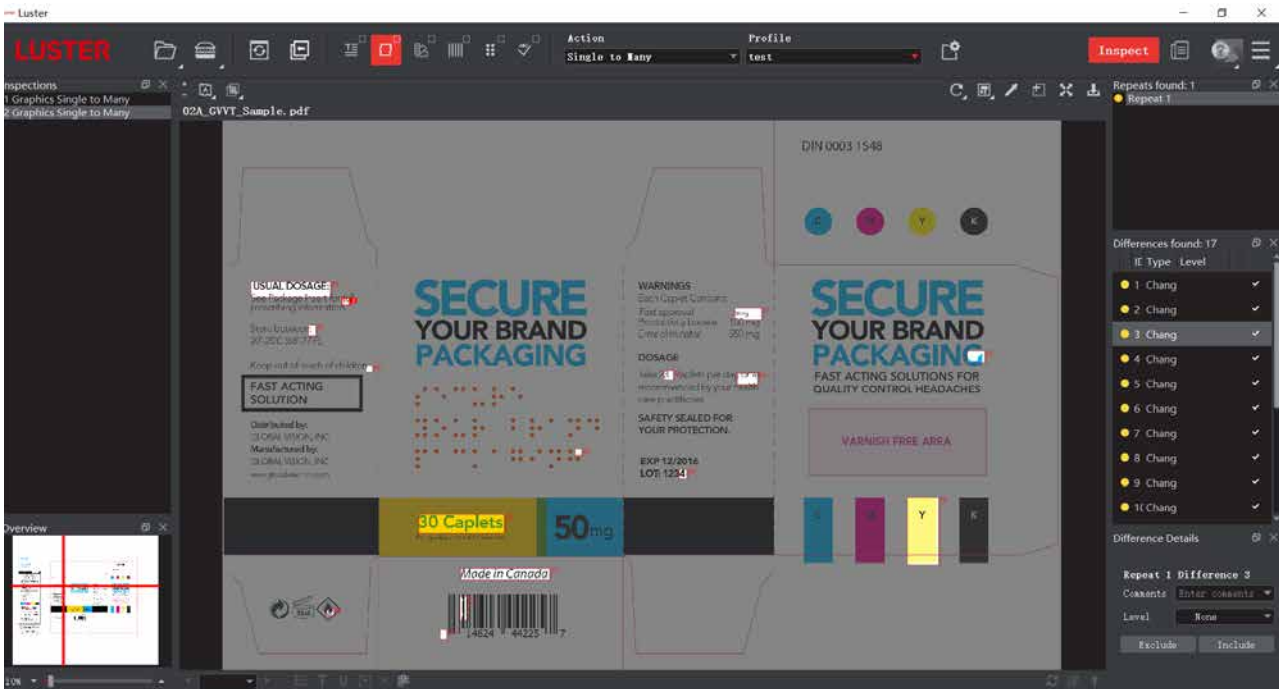
Sample of Defects



Workflow



Printing Proof Software



Scanner Options



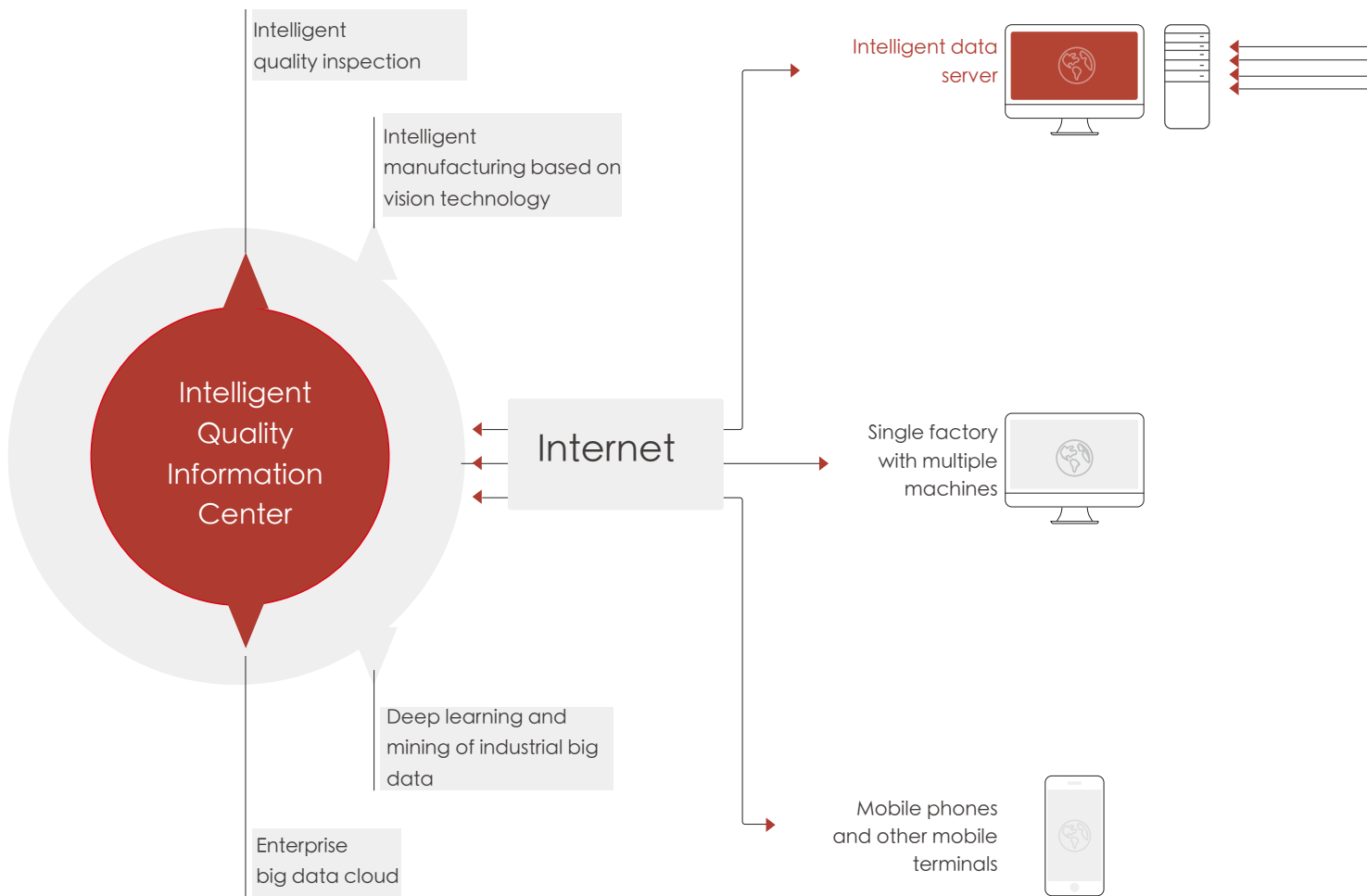
Roll Sanner (Web width 1067mm)

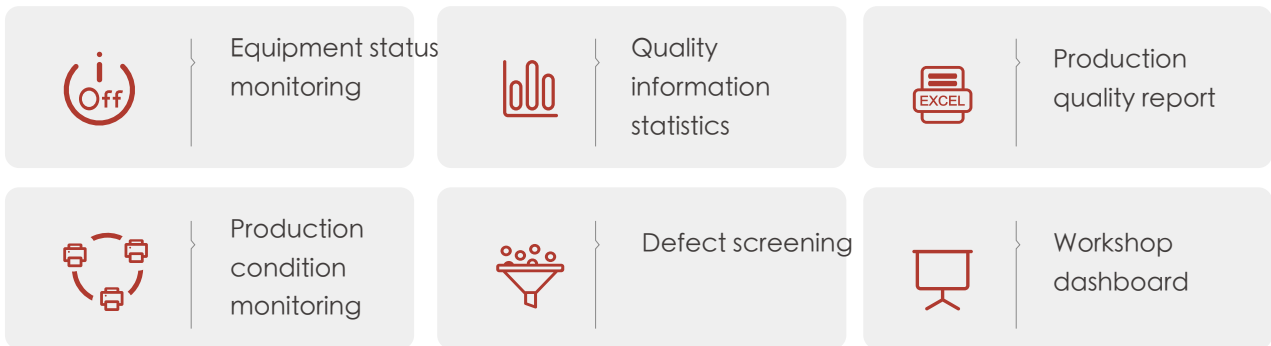
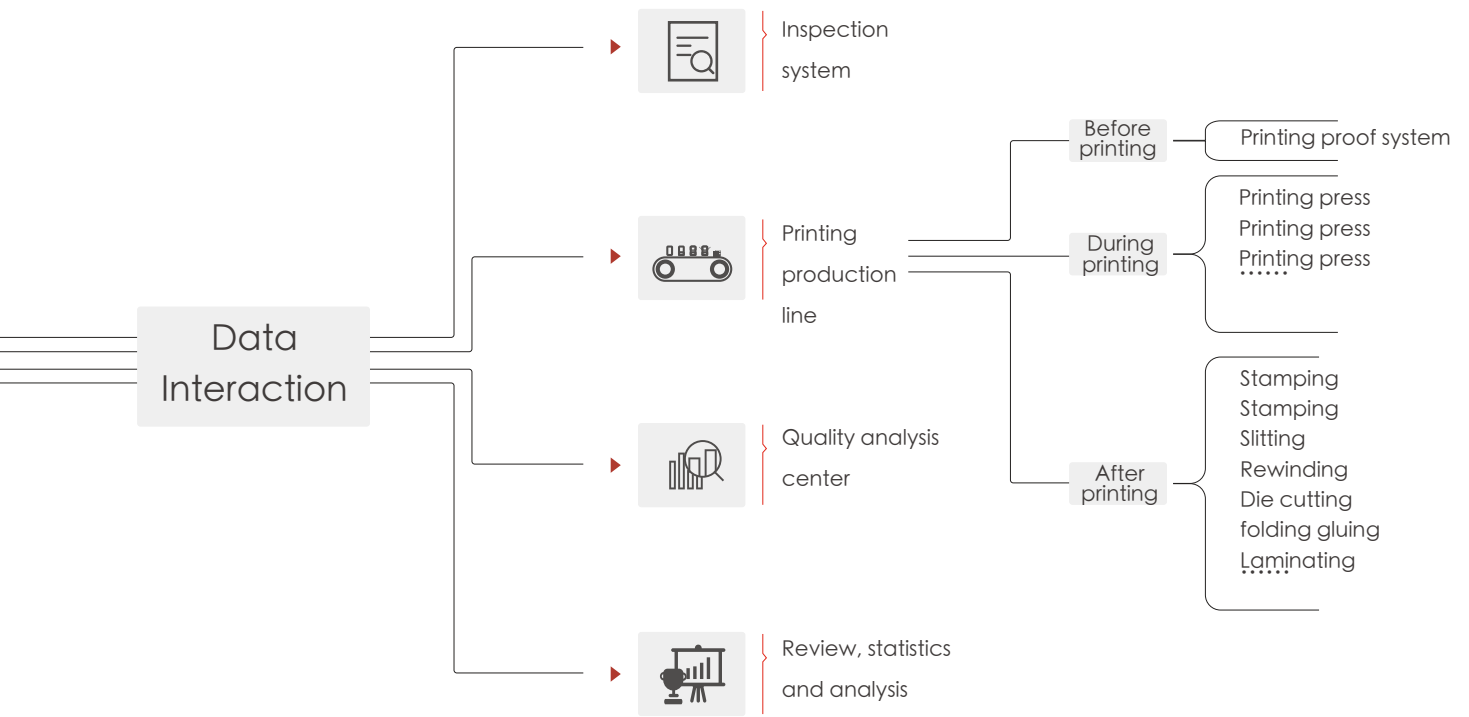
5 QUALITY MANAGEMENT AND SMART PRODUCTION

5.1 GMQM Quality Management Center

GMQM center provides customers with integrated quality management solutions. All inspection terminals can be connected to the central server and upload data information to the quality information center.

Managers can monitor and manage the whole production process in real time through a variety of inspection terminals, so as to realize the informatization, visionization and intelligence of production and quality management.





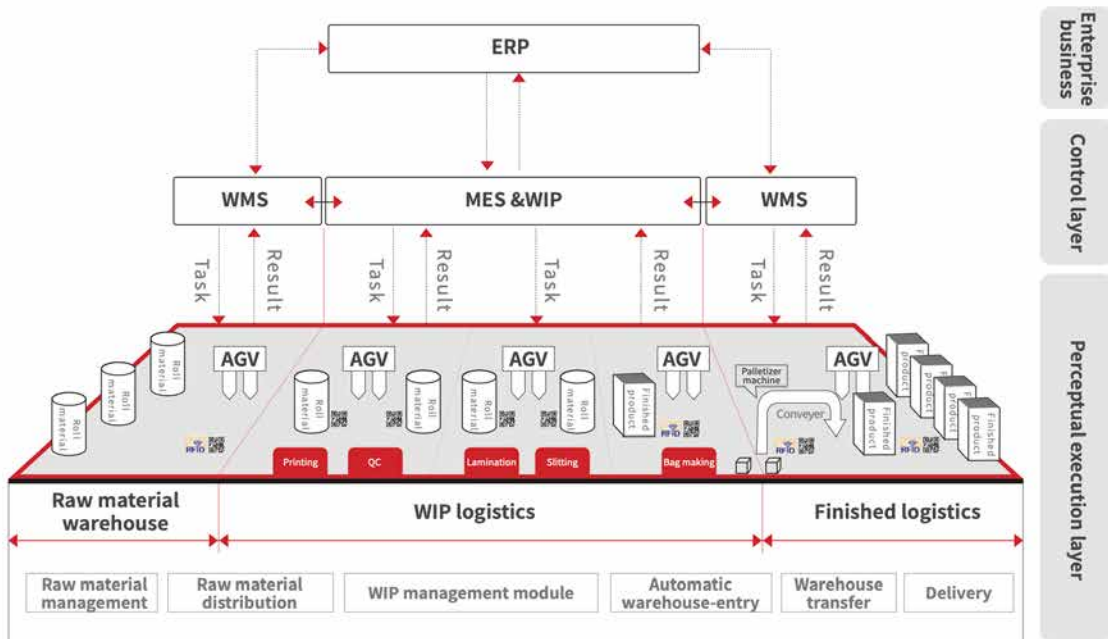
5.2 SmartFAB Management System

The SmartFAB management system is based on the digitization of printing and packaging production, driven by production data analysis and intelligent planning, to help printers to build an efficient, high-quality, accurate, transparent and smart printing and packaging factory.



By devoting ourselves to printing and packaging industry for more than 20 years, LUSTER uses printing language to create a management system belonging to the printing industry.

Decision-making Level	Management Cockpit	Closed-loop Decision Tracking	Risk Warning	Business Indicator	Data Capitalization				
Manufacturing Execution	Planning	Production&Execution (MES)		Quality Management (GMQM)	Inventory Management (WMS)	Equipment Management (EMS)			
	Procurement plan	Intelligent dashboard	Sample management	IOQC	AGV	Equipment information			
	Production plan	Product tracing	Automatic loading and unloading	Quality inspection	Warehouse in/out operations	Equipment log			
	Planning and scheduling	Semi-finished management	Cylinder management	Process control	Sluggish warning	Maintenance plan			
	Plan review	Error warning	Automatic job reporting	NG product management	Warehouse inventory	Intelligent repair service			
Consumables management	PDA	Virtual factory	Quality improvement	Intelligent three-dimensional warehouse	Equipment monitoring				
Platform layer	Multiple heterogeneous data platform	Cloud platform	Safety protection	In-depth learning	Knowledge graph				
Industrial interconnector	PLC	Bus	Sensor	Peripheral devices	Barcode	ModBus	OPC UA/DA	CAN	Web service.....



Deep combination of hardware and software creates an intelligent factory exclusive to the printing industry.



Intelligent semi-finished shelves



AGV

GLOBAL SERVICE NETWORK







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