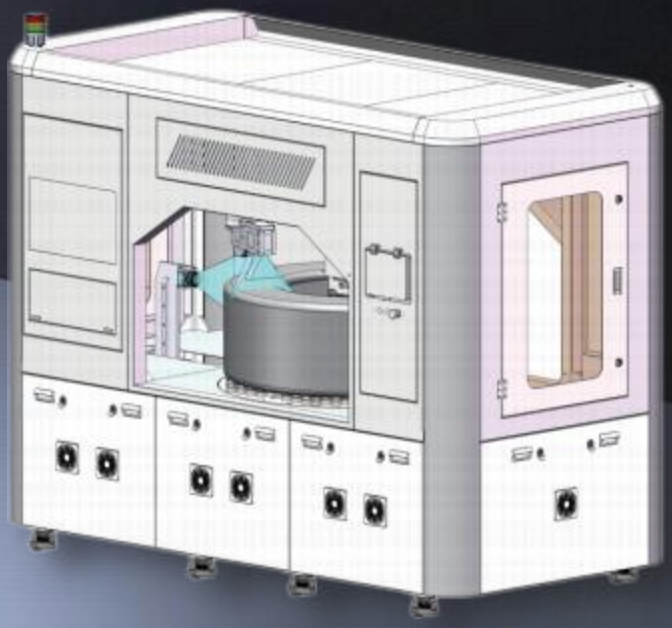
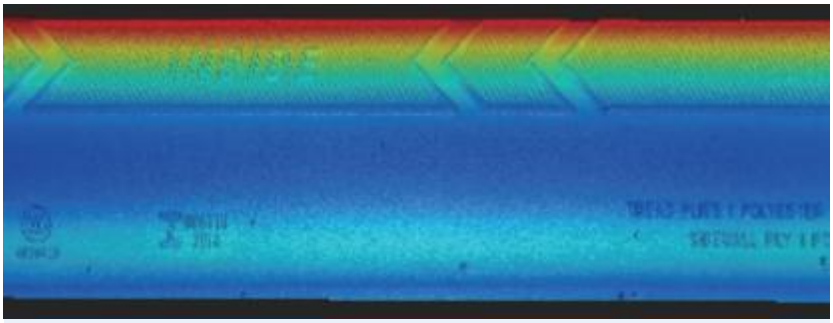
Letter Check For Sidewall System



Applying 3D machine vision to letter check for sidewall system. The laser 3D sensor scans out a 3D image of the tire sidewall. Image processing algorithms then extract the character information. Character recognition algorithms compare the information with standard templates for conformity judgment, verifying whether errors, omissions, false additions, wear and other defects exist in the sidewall text and patterns.

*Steel belt characters and tread markings not included for now



Tire Sidewall Character Point Cloud Imaging

Software compares processed charactersfor identification

Inspection Content

Brand name
Size

Ply construction
Load rating

Inflation pressure
DOT code-DOT

UTQG label-UTQG

Other regulatory marks:

- E-Mark
- ECE / Sound Mark Number
- I-Mark Number
- China (CCC) Mark
- India (BIS) Mark

Mold serial number Safety label

Other user-defined text and non-text fields

Developed based on 0I-SMART-VISION machine vision software platform

OiTireX Letter Check For Sidewall System Supporting Software

Clear Interface

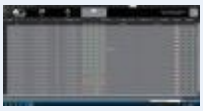
Real-time display of scanned images,detection results,error messages.

Simple Operation

Graphical interface completely written according to detection workflow and user logic.

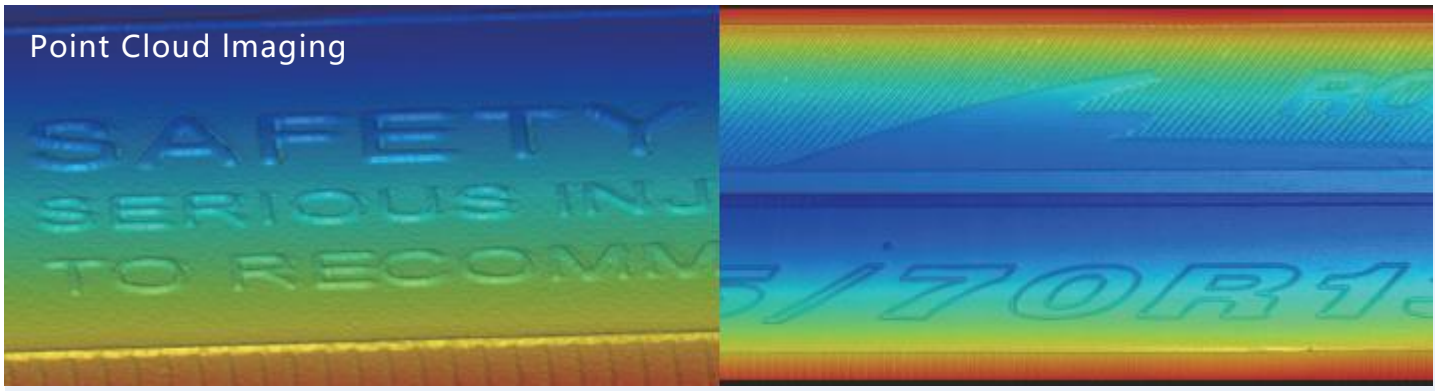
Abundant Functions

Easily realize one-click detection, template building, graphics library management and other functions.



Data Empowerment

Automatically generate detection records and reports to help companies grasp production quality in a timely manner.



Greatly Improved Detection Accuracy

- Inspection rate increased to100%.
- False inspection rate strictly controlled below 5%.
- Software generates independent results for each Inspectlon block, can be used for result training to continuously improve recognition accuracy.

Greatly Reduced Detection Time

- Inspection process reduced from 2 hours to just 3 minutes, with real-time output of results and one-click report generation.

Greatly Enhanced Detection Intelligence

- Auto focus and auto scan are a generation based on 3D sidewall surface info.
- Auto scan posture and lap determination based on tire sldewall profile.
- World's first to automatically analyze and identify PDF/CAD tire spec documents to generate detection templates.

3rd Gen Product Integrates cutting-Edge In-houseTechnologies

- Based on user feedback,we have developed,tested,verifled, and iterated through 3 generations of products. integrating the latest character recognition algorithms, auto allgnment algorlthms, autotemplate generation algorithms,launching more mature,stable and efficlent detection solutions.

One Device Meets Entire Plant Detection Needs

- Can store 3000+ tire specs, achieving full coverage first tire detection for the whole plant.

Senor		
Working ScanningFrequency(KHz)	8	
Single Scan Period (s)	4.5	
Resolution (mm)	Radial direction	0.085
	Circumferential direction	0.097
	Vertical direction	0.052
Field of View Range(mm)	217	
Working Distance (m m)	180	
Laser		
Wavelength(nm)	660	
Output Power(mw)	50 ... 100	
IEC Rating	Level 4	3R/3B (EN 60825-1)
Electrical Interface		
Power(w)	Rated 8, Max10	
Power Supply(Vdc)	20VAC (±10%) 50/60Hz	
Trigger input(Vdc)	+5 ... +30	
Encoder Input(Vdc)	RS422 / AB Trigger (-7 ... +7)	
Environment andCertification		
Operating Temperature(C)	0 ... +40	
Operating Humidity(%)	+5 ... +75(non-condensing)	
Protection Rating	IP65(customizable toP67)	
Certification	CE + RoHS	