



iSight Lightning for Empty Containers

- 5 to 14 Camera PC-Based Turnkey Vision Inspection Solution
- Available Deep Learning Tools Make Once Difficult Inspections Easy

Complete Inspection Solution for ANY Rigid Container

Our PC-based iSight Lightning for Empty Containers inspection system utilizes 5 to 12 cameras to inspect any and all aspects of an empty rigged container. The solution's advanced controls allow for multiple inspection modules to work side by side inside the same enclosure. Deep Learning vision tools make once-difficult inspections easy and reliable.

Inspections include:

- Neck, Opening & Sealing Surfaces
- Absolute T, E, & H
- Flash, Angel Hairs
- G R & R
- Sidewall Contamination
- Parting Lines
- Bottom Contamination
- Blown or Off Center Gate
- Rocker Bottom
- IML Label (Deep Learning)
- Label Wrinkles, Blisters, Bubbles & Tears (DL)
- Absolute Label Position (DL)
- Swarf Detection (DL)
- Dielines and Thin Spots (DL)
- Heavy Globes & Unmelted Pellets (DL)
- Mold Cavity ID Tracking (DL)

Combine Multiple Inspections to Meet Your Needs

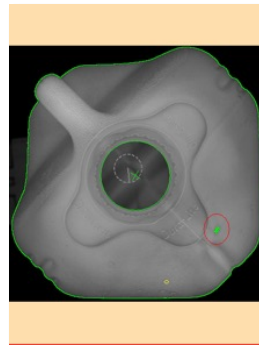
The iSight Lightning for Empty Bottles utilizes advanced controls which allow for multiple inspection modules to work side by side inside the same enclosure. Any combination of inspections can be incorporated into one system to meet your specific inspection requirements. **Our iSight Lightning+ solutions utilize Deep Learning tools to reliably help you inspect for things that just were possible before with rules-based vision tools!**

iSight Lightning for Empty Container systems have been deployed to inspect containers of varying sizes, shapes, colors, and materials for many different quality issues. Below are a few examples of containers and inspections.

Gallon Milk Jug Inspection



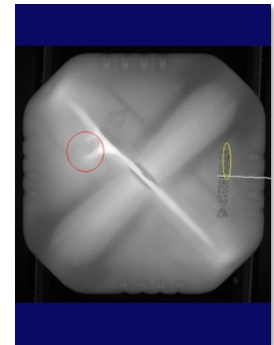
Die Lines



Ovality and Contamination



Handle Web



Excess Tail

In-Mold Label Inspection

Deep Learning tools are utilized to inspect for label position, X, Y and skew as well as detect flaws such as wrinkles, blisters, tears, bubbles and burn-throughs on front and rear IML labels.



Good Label



Blisters



Torn Edge



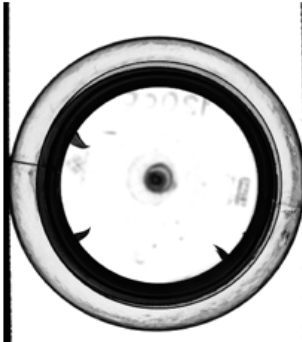
Burn Through

PET Bottle Inspection + Cavity ID Tracking

Deep Learning tools are utilized to track Cavity ID in real time and detect flaws and contamination on the bottom, sides, neck profile and neck opening. All defects found can be correlated back to an individual mold cavity.



Cavity ID



Ovality and Opening



Neck Profile



Sidewall

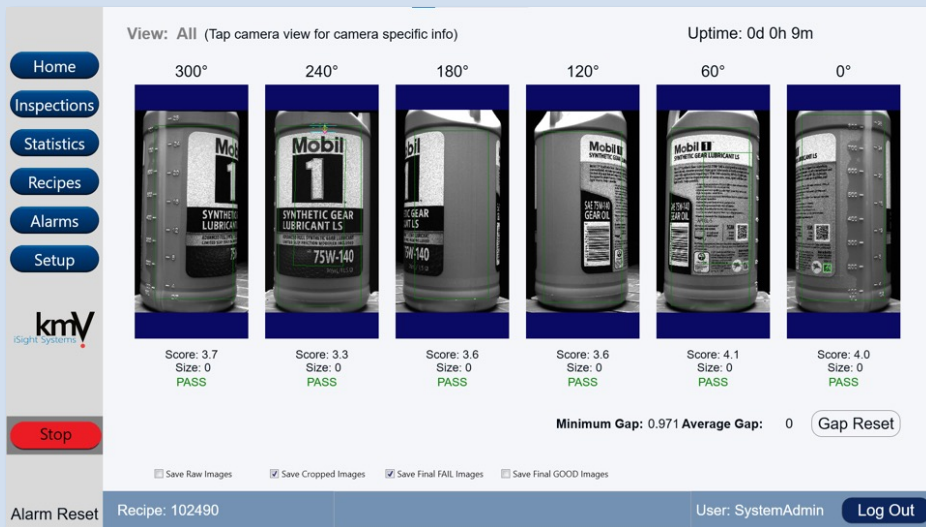
iSight Lightning Vision Solutions are Truly Turn-Key

Every kmV iSight Solution includes the following:

- A comprehensive vision lab evaluation of your product
- Optimal cameras, optics and lighting for your application
- Complete Mechanical frame appropriate for the application
- Easy to use vision tools HMI interface
- Recipe management
- Conveyors
- Encoder-based part tracking
- Reject mechanism for purging defective product
- Reject verification
- FAT, Installation, SAT and on-site training
- Secure cloud based system backup
- Remote Support



Clean and Easy to Use Lightning HMI



kmV has developed a clean and easy to use HMI for our PC-based iSight Lightning inspection solutions with the goal of insulating the end user from the complicated technology.

No Programming Skills Required!

System administrators can set up user groups or individual users with permission to access system controls and actions based on their jobs or skill.

iSight Lightning Data Correlation

Using the inspection data collected along with the Cavity ID, kmV has implemented Data Correlation pages that inform plant personnel which cavities have the lowest yields and what defects are causing the failures.



iSight Lightning for Empty Containers Specifications

Feature	iSight Lightning for Empty Containers	iSight Lightning for Empty Containers +
Vision Tool Suite	Standard Rules-Based Vision Tools	Smart AI Vision Tools
Camera Resolution/Optics	Standard Resolution	May Include: Hi-Res Cameras w/ Telecentric Lens
Camera Position	Factory Preset (Adjustable Optional)	Adjustable
Neck Attributes Detected	Major Gouges, Choked Neck, Ovality, Gross High Mill, etc	+ Minor Land Flash, Angel Hairs, Curls, Chips, etc
Neck Measurements	NA	Absolute T, E & H
Sidewall Attributes Detected	Inclusions & Contamination, Mold line Flash, Handle Slug	+ Dieline, Thin spots, Handle web, Heavy Globs, Unmelted Pellets, etc
Bottom Attributes Detected	Gate Inspections, Rocker Bottom	+ Cavity ID, Swarf Detection
IML Attributes Detected	Label Presence, Position & Skew; Label ID	+ Blisters, Wrinkles, Bubbles, Burn Throughs, Absolute Position
Vision Interface	21" Touch Screen	21" Touch Screen
Product Tracking	Encoder	Encoder
Production Counts with Yield Tracking	✓	✓
Stack Light Notification	✓	✓
Pneumatic Rejector with Reject Verify	✓	✓
Downstream Jam Alert	✓	✓
Recipe Management	✓	✓
Cloud-based Backups	✓	✓
Remote Support	✓	✓



Learn more about the iSight Lightning for Empty Containers by visiting our website <https://kmvvision.com/isight-for-empty-containers/> or use the QR code for instant access.

