# IRIS

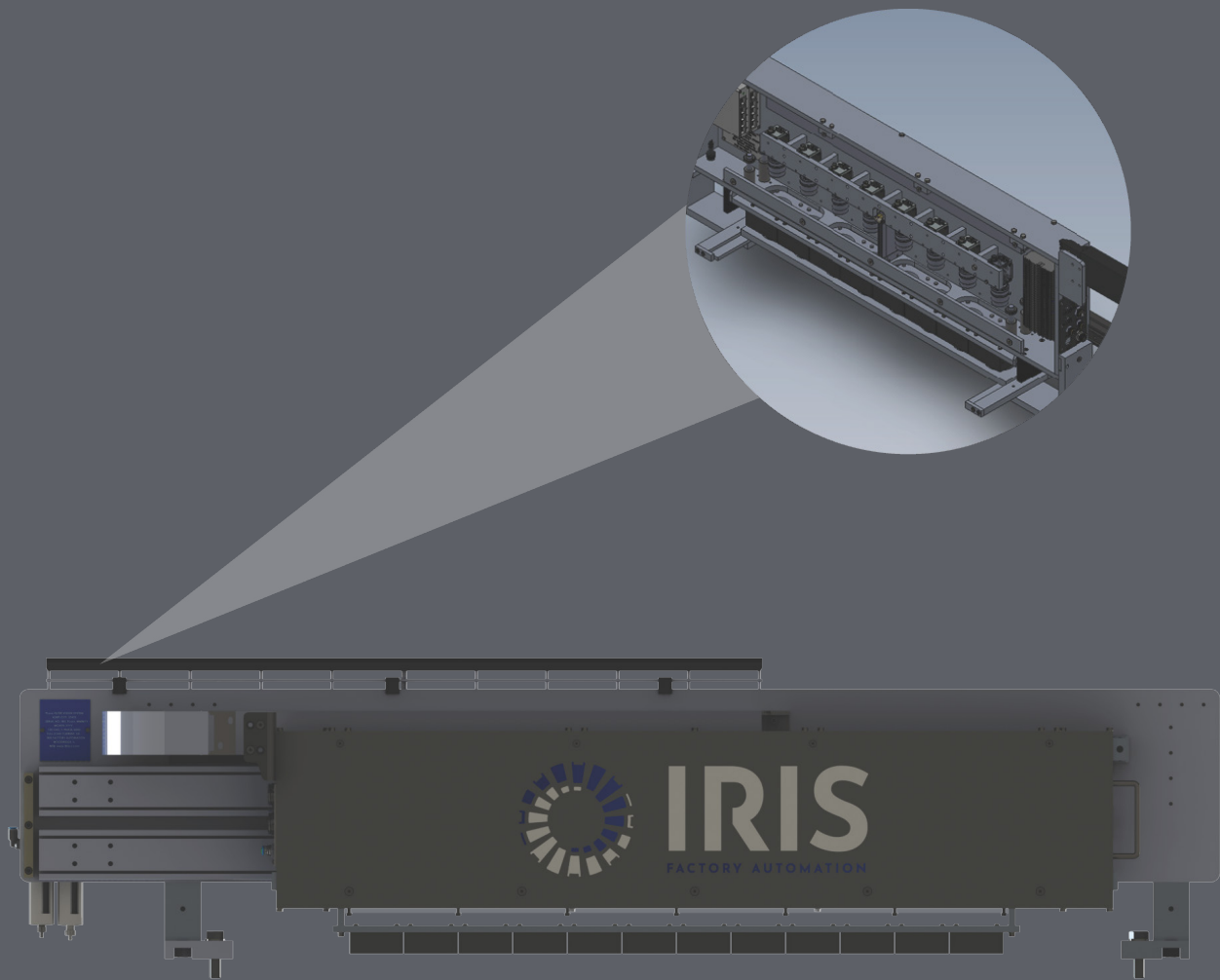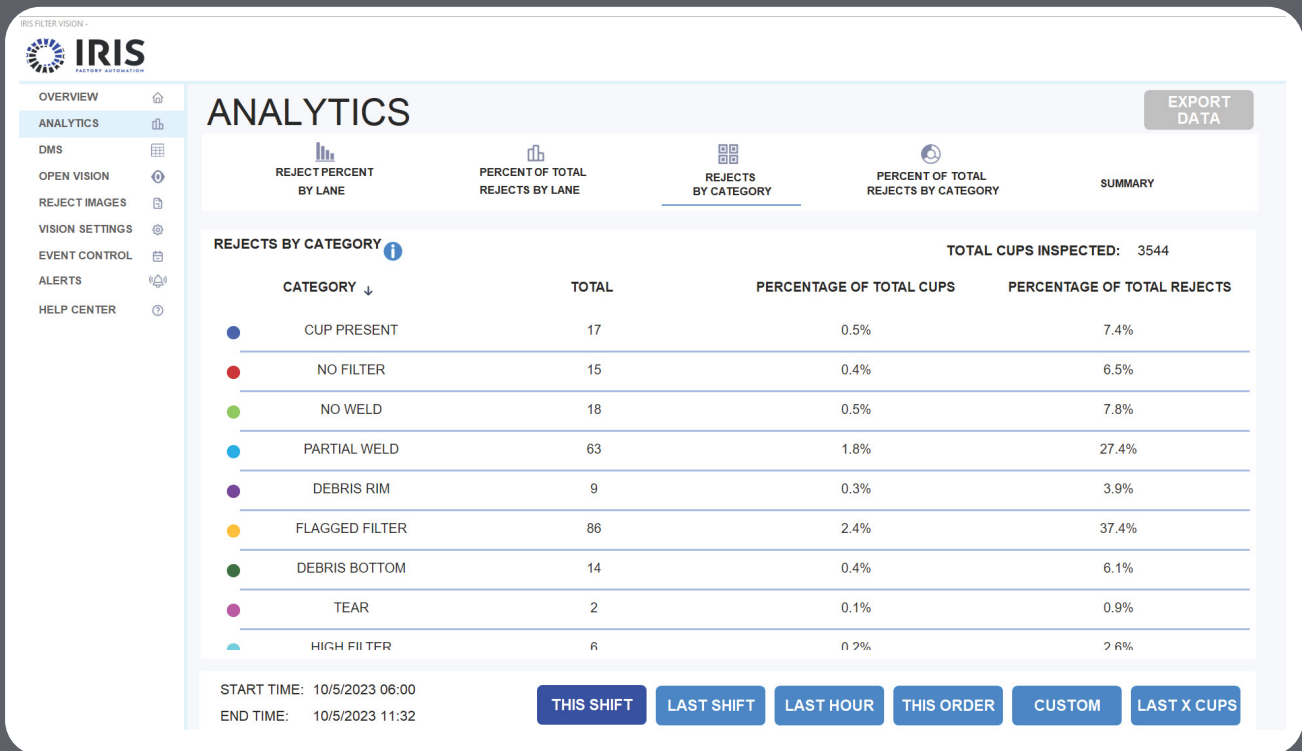## FACTORY AUTOMATION

## FILTER VISION SYSTEM

# SYSTEM OVERVIEW

IRIS Filter Vision Systems provide cutting edge Deep Learning vision inspections with reject classification and advanced data analytics for the single-serve coffee industry.

IRIS seamlessly combines quality control systems and real-time data analytics, empowering rapid machine issue identification and delivering crucial information for enhanced equipment maintenance.

# Real-Time Data Analysis Tools

### IRIS FILTER VISION -

**IRIS** FACTORY AUTOMATION

- OVERVIEW
- ANALYTICS
- DMS
- OPEN VISION
- REJECT IMAGES
- VISION SETTINGS
- EVENT CONTROL
- ALERTS
- HELP CENTER

## ANALYTICS

EXPORT DATA

| REJECT PERCENT BY LANE | PERCENT OF TOTAL REJECTS BY LANE | REJECTS BY CATEGORY | PERCENT OF TOTAL REJECTS BY CATEGORY | SUMMARY |

**REJECTS BY CATEGORY** ⓘ

TOTAL CUPS INSPECTED: 3544

| CATEGORY ↓ | TOTAL | PERCENTAGE OF TOTAL CUPS | PERCENTAGE OF TOTAL REJECTS |
|---|---|---|---|
| ● CUP PRESENT | 17 | 0.5% | 7.4% |
| ● NO FILTER | 15 | 0.4% | 6.5% |
| ● NO WELD | 18 | 0.5% | 7.8% |
| ● PARTIAL WELD | 63 | 1.8% | 27.4% |
| ● DEBRIS RIM | 9 | 0.3% | 3.9% |
| ● FLAGGED FILTER | 86 | 2.4% | 37.4% |
| ● DEBRIS BOTTOM | 14 | 0.4% | 6.1% |
| ● TEAR | 2 | 0.1% | 0.9% |
| ● HIGH FILTER | 6 | 0.2% | 2.6% |

START TIME: 10/5/2023 06:00
END TIME: 10/5/2023 11:32

| THIS SHIFT | LAST SHIFT | LAST HOUR | THIS ORDER | CUSTOM | LAST X CUPS |

## Current & past performance

The IRIS FVS Dashboard allows users to quickly review current and past performance of equipment.

## Identify sources of defects quickly

Quickly identify sources of defects by lane and defect classifications

START TIME: 10/5/2023 06:00
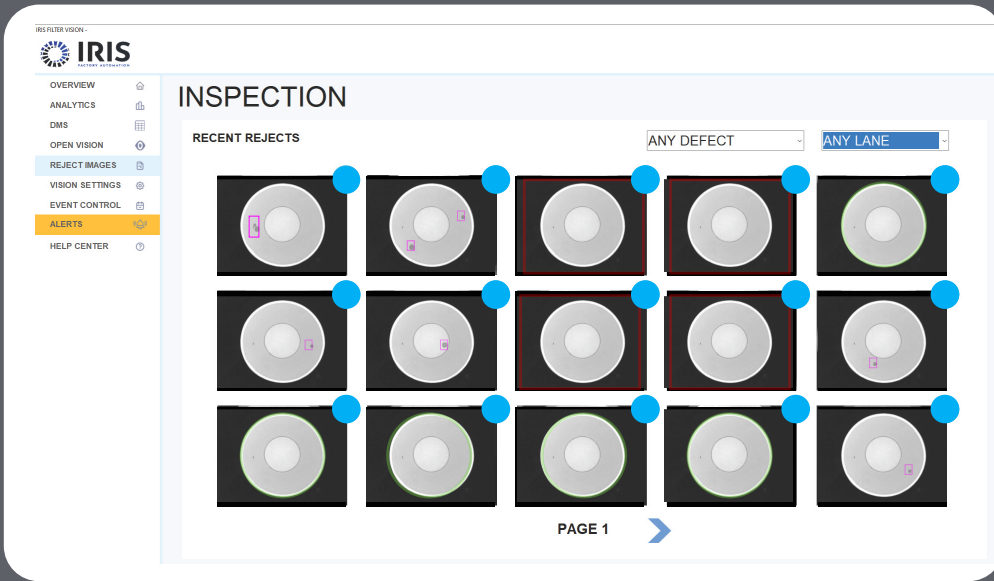END TIME: 10/5/2023 11:32

| THIS SHIFT | LAST SHIFT | LAST HOUR | THIS ORDER | CUSTOM | LAST X CUPS |

## Historical Data

By utilizing customizable time inputs, easily review historical images and inspection data.
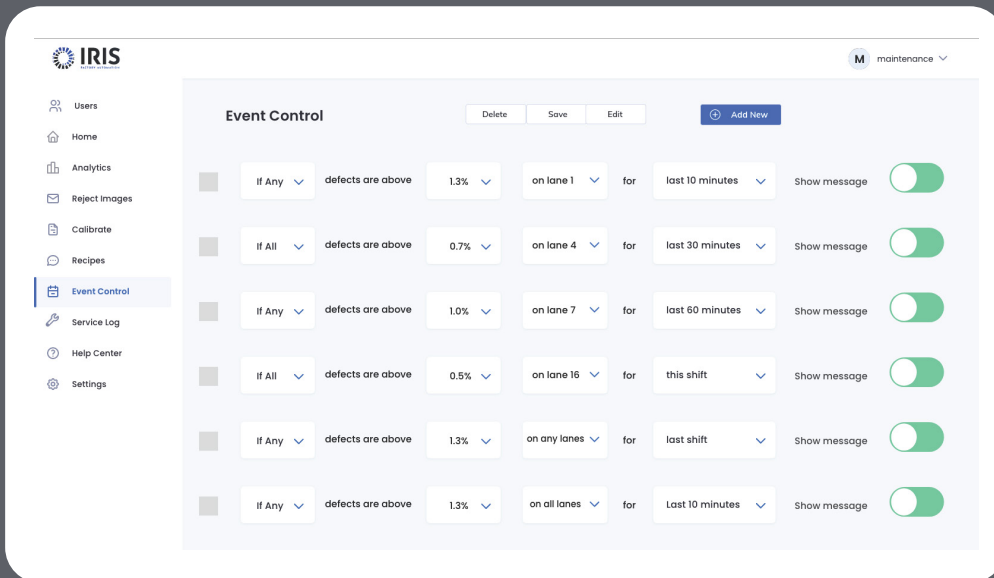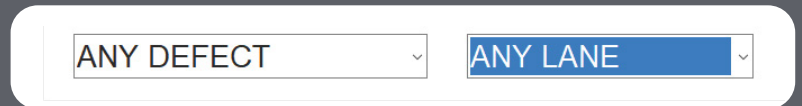
**IRIS** FACTORY AUTOMATION

## Diagnostic Data

The IRIS Filter Vision System allows users to quickly review reject images to help diagnose equipment.

## One-Click Sorting

Easily sort viewing options on system conditions by lane and/or defect classification.
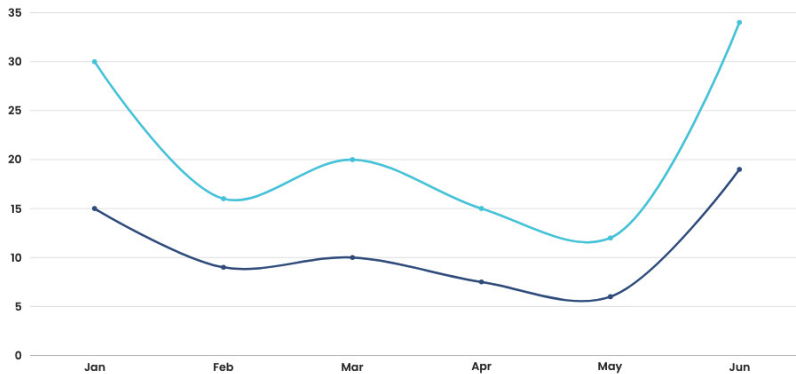


## Customizable Alert Settings and Quick-Viewing

Set alerts based on pre-set thresholds and view current trending alarms.

# Deep Learning Vision Inspection
## with Defect Classification

**TRADITIONAL VISION INSPECTION VS AI**

■ Reject Rate with Traditional Vision Tools
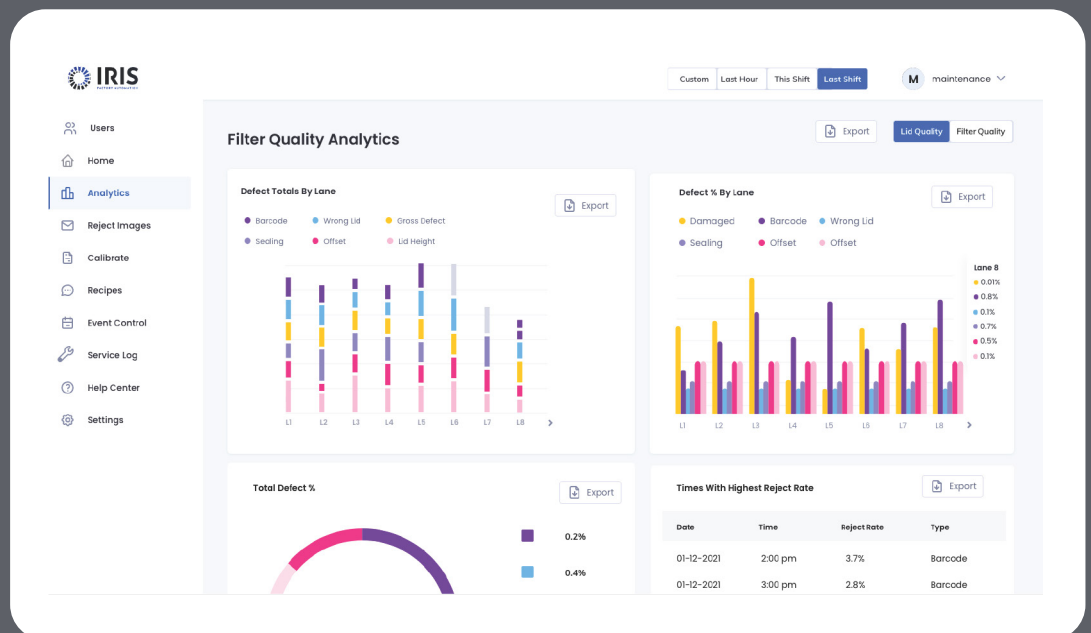
■ Reject Rate Using AI Vison Tools

**50% ↓**

**reduction in false rejects**

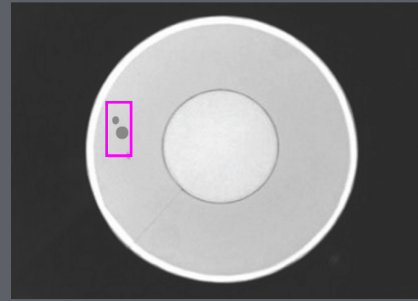AI-Based IRIS Vision systems can reduce the overall reject rate by an average of 50%.

## Root cause analysis

The IRIS FVS Vision systems is able to leverage the use of deep learning algorithms to detect the smallest variation based on predefined classifications customizable to your manufacturing requirements.

IRIS

Custom | Last Hour | This Shift | Last Shift | M maintenance

Users
Home
Analytics
Reject Images
Calibrate
Recipes
Event Control
Service Log
Help Center
Settings

**Filter Quality Analytics**

Export | Lid Quality | Filter Quality

**Defect Totals By Lane**  Export
● Barcode  ● Wrong Lid  ● Gross Defect
● Sealing  ● Offset  ● Lid Height

L1 L2 L3 L4 L5 L6 L7 L8 >

**Defect % By Lane**  Export
● Damaged  ● Barcode  ● Wrong Lid
● Sealing  ● Offset  ● Offset

Lane 8
● 0.01%
● 0.8%
● 0.1%
● 0.7%
● 0.5%
● 0.1%

L1 L2 L3 L4 L5 L6 L7 L8 >

**Total Defect %**  Export
■ 0.2%
■ 0.4%

**Times With Highest Reject Rate**  Export

| Date | Time | Reject Rate | Type |
|---|---|---|---|
| 01-12-2021 | 2:00 pm | 3.7% | Barcode |
| 01-12-2021 | 3:00 pm | 2.8% | Barcode |

## Subtle Defect Detection

Using deep learning algorithms, IRIS FVS allows for inspection of more subtle defects than traditional vision tools.



Tear in filter

## Application Fits

The IRIS Filter Vision System is better suited for standard variation in raw materials such as filter paper.
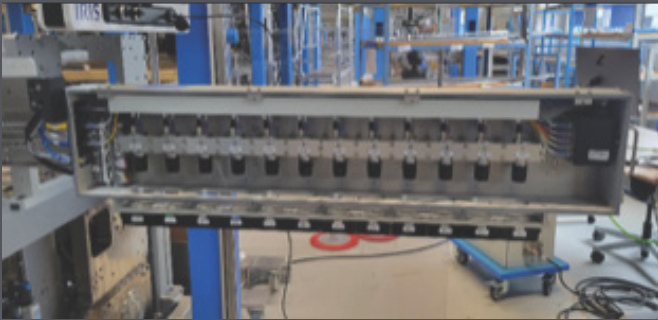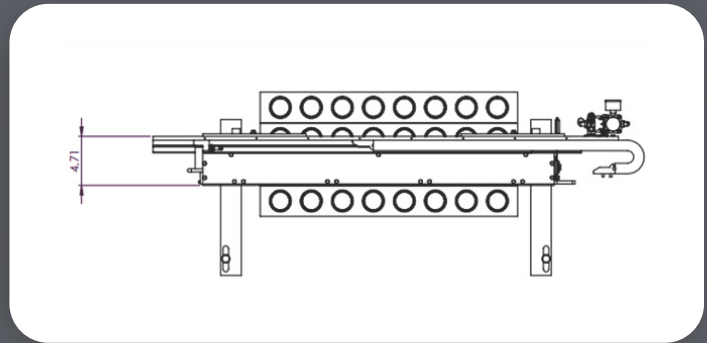
## Common Defect Types

- No cup / filter / weld
- Partial or skip welds
- Flagged / Folded-in filters
- High filter
- Holes/ tears in filter
- Debris / foreign material



Defect % By Lane

- Damaged
- Barcode
- Wrong Lid
- Sealing
- Offset
- Offset

Lane 8
- 0.01%
- 0.8%
- 0.1%
- 0.7%
- 0.5%
- 0.1%

L1  L2  L3  L4  L5  L6  L7  L8

## High Speed Inspection

The IRIS Filter Vision system is capable of inspecting 800 pods / minute and does not require stationary pods for inspection.

**Small Footprint** IRIS FVS only requires 4.7" of space in Filter forming / filler equipment.



## Accessible Design

The IRIS Filter Vision System comes equip with telescopic rails allow for full system extension outside of machine. Specifically designed for as little adjustments as possible, ideal for maintenance activities such as cleaning and calibration.



## Stand alone HMI

Alternative HMI and Electrical Panel mounting options are available for optimal monitoring of the system from anywhere.

# Automated Vision Systems for
# Enhanced **Precision** and **Efficiency**

The Full Line of Vision Offerings



### Filter Vision System

- Real-time data analysis
- Deep learning vision classification with vision inspection
- High speed inspection
- Small footprint
- Accessible design
- Stand alone HMI kiosk for system control monitoring



### Barcode Scanning System

- Advanced user interface
- High speed processing classification with vision inspection
- Low profile design
- Recipe based lighting control
- Intuitive user experience



### Overwatch Vision System

- Traditional Automated Inspection
- AI-Based automation inspection
- Track and trace
- Small footprint
- Predictive analytics

**IRIS**
FACTORY AUTOMATION

# Let's talk solutions

phone:   **(630) 634-7700**

website:   **irisfactoryautomation.com**

email:   **sales@iriscs.com**