

# FOREIGN MATERIAL

X-RAY INSPECTION  
PRODUCTION REWORK



# PXT

## PHOTON COUNTING TECHNOLOGY

### PXT X-RAY DETECTORS

The quality of your device directly affects your results. X-Ray technology has been around for over 40 years but the most recent innovation of photon counting detectors is providing unparalleled detection.



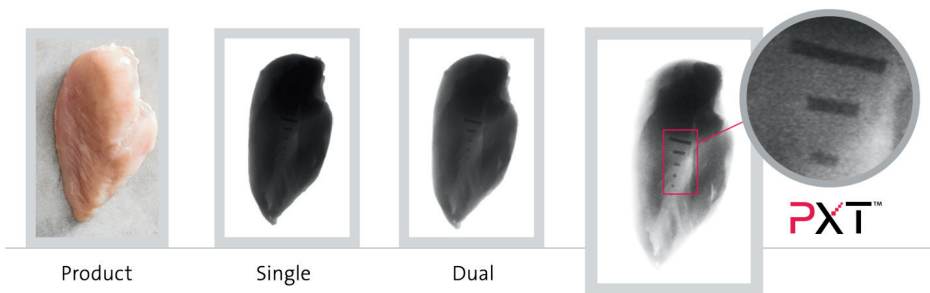
# X-RAY 101

## Image Generation & Analysis

In basic functionality, most x-ray inspection systems today aren't that different from their technological origins. A grayscale image is produced and then analyzed (automatically or by an operator).

When it comes to foreign material detection (Probability of Detection), there have been significant advancements in both image generation technology and the automated analytical tools (software) to inspect those images. In food inspection x-rays, the quality of image generation relates to advancements in x-ray detectors:

- 1st generation Single-Energy Diode Detectors (**worst**)
- 2nd generation Dual-Energy Diode Detectors (**better**)
- 3rd generation PXT (photon counting) – elimination of diodes (**best**)



## Image Quality | Detector Technology Summary

The advent of 2nd generation detectors allowed for the filtration of images removing organic material greatly enhancing image quality and increasing POD with non-organic foreign materials (plastics & rubbers). Photon Counting Detectors (PXT) dramatically enhanced this level of image by replacing diode detectors with a Crystal Semi Conductor CdTe, improving image quality by 300%.

# X-RAY IMAGE ANALYSIS - AUTOMATED VS HUMAN VISUAL

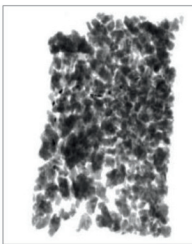
---

## Visual Image Inspection

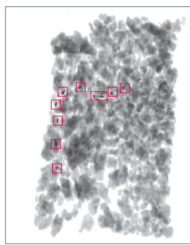
Relying on an operator to inspect each x-ray image assumes that they are capable of repeatability in accurately inspecting for foreign material. When using this method, validating the process is very difficult and questionable.

## Automated Image Inspection

Automated image inspection is performed by a variety of software algorithms that analyze the image using over 10 different of inspection algorithm tools that do not vary from inspection to inspection. Based on repeatable software performance, this method can deliver a guaranteed Probability of Detection (POD) and the process can be validated within standard food safety programs.



**Single Energy**

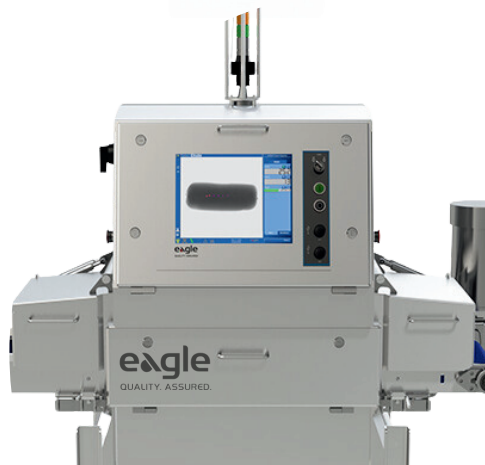


**Dual Energy**



**PXT**

Xray Reclaim only use Automated Eagle PI PXT solutions that not only provide for best image generation and automated analysis with redundancy, the inspection process can be validated with client food safety standards and inspection can be 8 - 10 times faster.



# OUR PROCESS



## A-B-C

**A.** All inspection & production rework projects begin with an inspection validation test performed at one of our 3 testing facilities. Testing results validate the necessary x-ray algorithm set-up to provide your inspection statistical Probability of Detection (POD).

**B.** Team and x-rays are scheduled to perform inspection within 24-72 hours and are deployed from an inventory of over 20 x-rays located throughout the U.S and Canada. U.S State x-ray safety certifications are established by Xray Reclaim with no involvement from the client necessary.

**C.** Inspections are conducted within food safety standards, calibrating and validating the x-ray throughout the effort at prescribed intervals. And when complete, a full traceability inspection report is generated for the client.

## MANAGEMENT TEAM

### Mat Bedard



#### Chief Operations Officer

Over 20 years in x-ray implementation and food safety inspection

### Casey Toothman



#### Director Applications

Over 10 years of x-ray inspection technical applications management

### JP Perreault



#### President

Over 30 years experience in food & beverage food safety inspection industry

### Marcello LaGotta



#### CFO

Over 30 years finance and accounting in the industrial and service sector