

X-ray Inspection



Foreign Material

X-ray Inspection

Production Rework



PXT™ Photon Counting Technology Dual Energy for Food Inspection

METTLER TOLEDO

X-ray 101

Image Generation and 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)

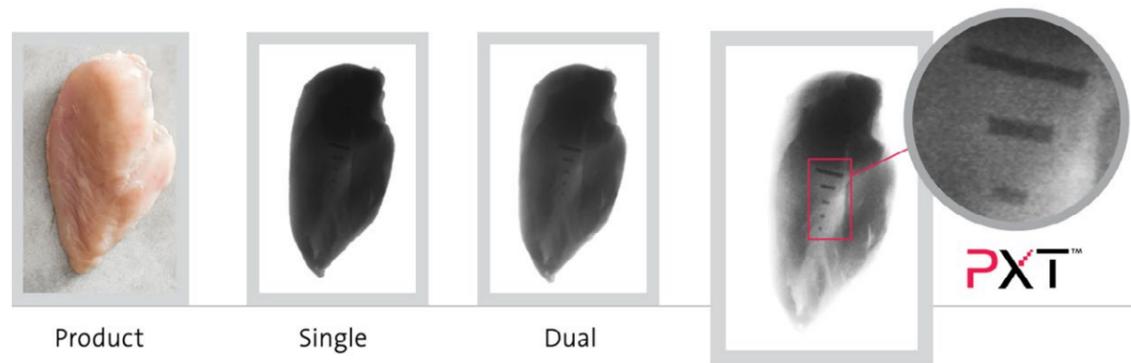


Image Quality | Detector Technology Summary

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%.

We 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.

X-ray Image Analysis

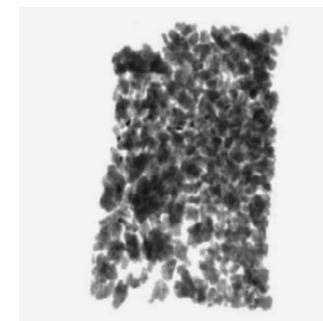
Automated vs Human Visual

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.

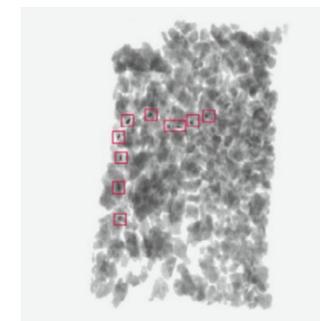
Automated Image Inspection

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.

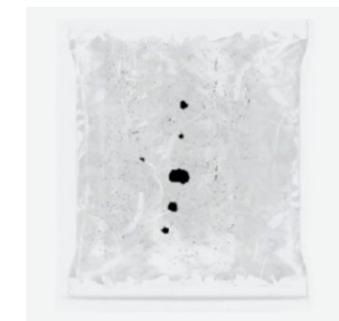


Single Energy

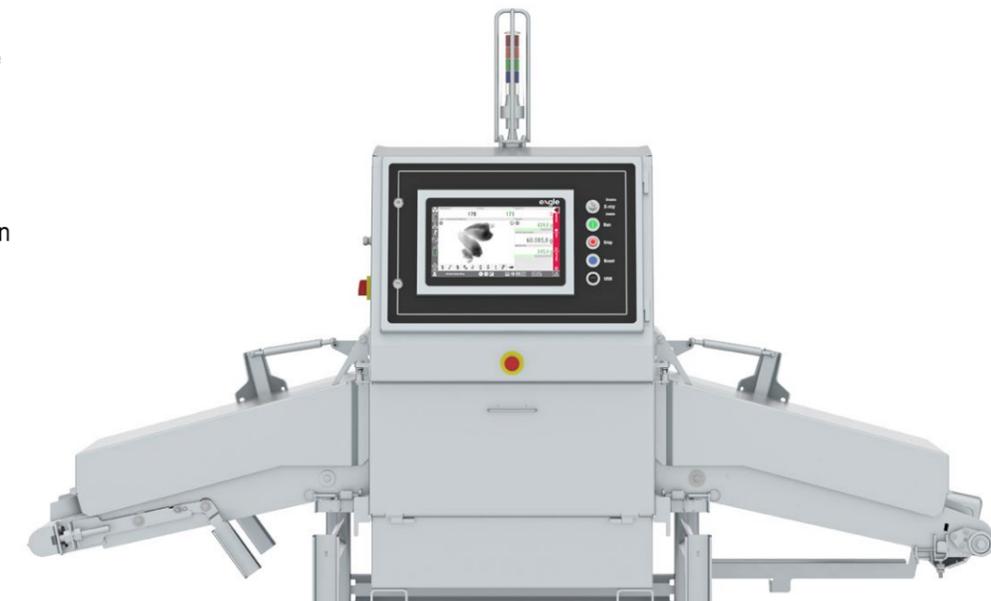
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Dual Energy



PXT Technology



Our Process

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

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.

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.

xrayreclaim.com

For more information

METTLER TOLEDO Group

Product Inspection Division

Local contact: www.mt.com/contacts

Subject to technical changes

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