

IX-PD

Photon Counting Dual Energy
X-ray Inspection System





X-ray Inspection System



Photon Counting Dual Energy X-ray Machine

A new type of X-ray sensing technology from Ishida, dual-energy processing combined with a new sensor achieves high sensitivity on both extra-small and low-density foreign objects.



Excellent Accuracy

Combined with Ishida's already proven Genetic Algorithm (GA) and Dual Energy technologies, the new machine produces an ultra-high resolution and clearer image than conventional X-ray systems. This allows the Ishida IX-PD to offer enhanced detection for low-density items including bones in fish fillets and also minute foreign bodies such as stainless steel wires.



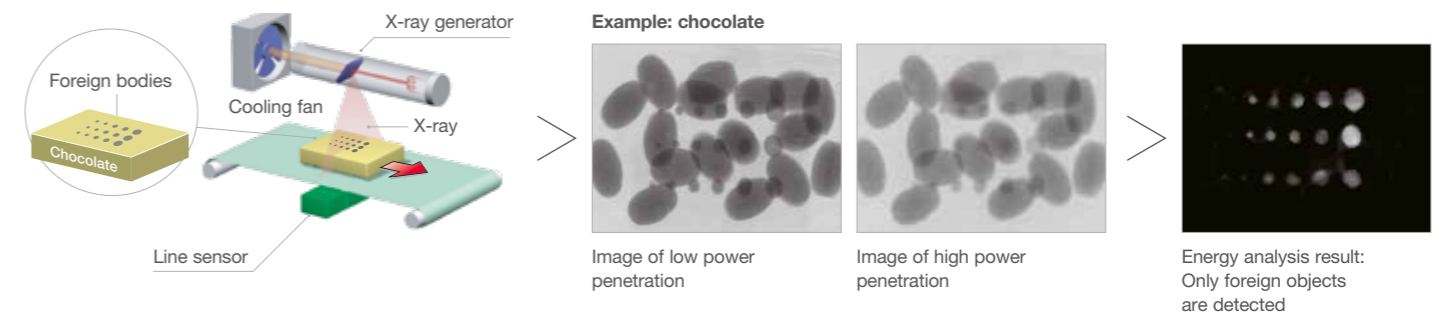
Performance

In tests, the IX-PD demonstrated near 100% detection rates for bones in a variety of products including chicken, diced meat and sausages, for example achieving an increase from 40% to 100% compared to existing X-ray technologies for the detection of bone in chicken breast fillets.

The performance enhancement of the IX-PD has been designed for high-volume production lines and where there is a tendency of overlapping or standing up in a pack in densely packed food products, which makes fine contaminants difficult to detect.

Dual energy analysis

Image processing compares two images with different characteristics and detects foreign objects by recognising the differences of the physical property.



Examples of complex products



Features and Benefits



Easy Integration

Compact dimensions for easy integration into packing lines. The Ishida IX-PD will be available in two sizes to meet the requirements of the widest variety of product and pack sizes. The options of 360mm and 450mm width allows flexibility of application detection from unpackaged meat products to boxed food applications where products are overlapped.



Energy Efficient

Direct Conversion technology enables the X-rays to be directly converted to electrons rather than through a photodiode. Removing one of the stages in the inspection process increases the energy efficiency of the IX-PD. Maximum output for the system is 300W, while tube voltage is between 25 and 75kv, with Ishida's GA self-learning technology adapting this to the precise requirement of the foreign bodies to be detected. The energy-efficient operation also helps to extend the shelf life of the X-ray tube.



High Productivity Rates

The enhanced detection capabilities of the IX-PD further minimise the need for manual inspections, and the machine's ability to recognise the difference between food and foreign bodies with high accuracy reduces the rate of detection errors. In this way, companies can maintain stringent quality control procedures without compromising on throughput rates.



Flexible

Like all Ishida X-ray inspection systems, the IX-PD also has the ability to carry out other quality control functions including weight estimation and identifying damaged product or packaging or missing items.

Performance Tests

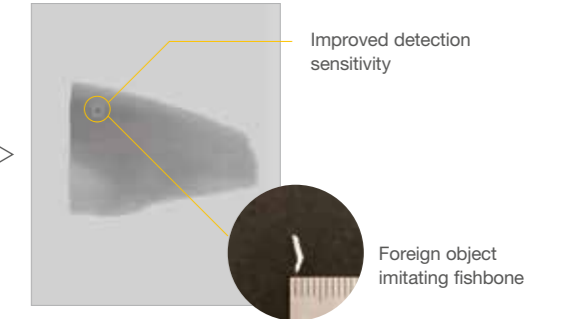
Fish Fillet



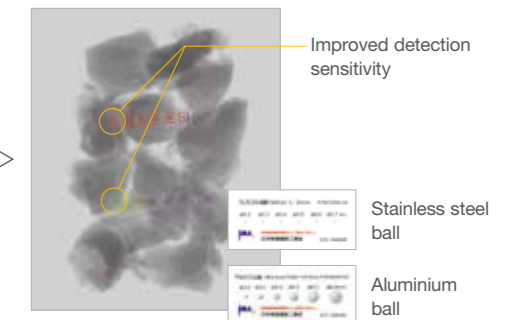
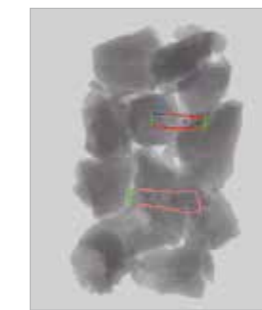
Inspection image Conventional model



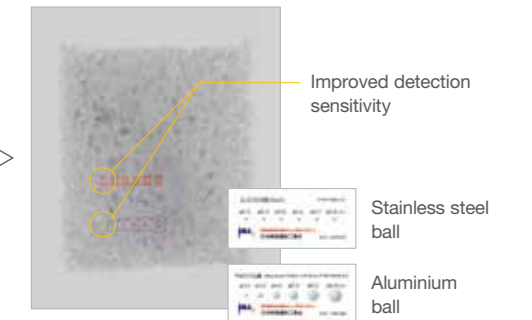
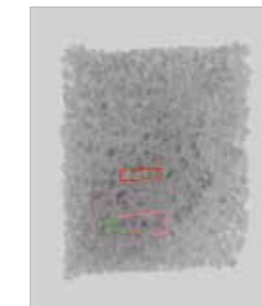
Inspection image IX-PD-36A2



Diced meat

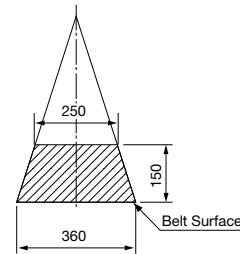


Cereal



Performance		IX-PD-36A2
Inspection area (max)		360(w)* x 150(h)mm
X-ray	Maximum output	300W
	Tube voltage	25-75kV
	Tube current	1-8mA
Belt speed**		10-60m/min
Product length***		20-450mm
Loaded weight****		5kg
Protective curtain		Tungsten curtain (Detachable)
Cooling unit		1.0kW Air conditioner originally installed
HMI		17" colour LCD touch
Number of presets		100 items
Specification		
Power supply		1-phase AC200V 240V 1400W
Material		Stainless steel
Ingress Protection		IP66***** (This rating is applied to only Conveyor chamber)
Operating Environment	Temperature	0-35
	Humidity	30-85 %6 (without dew condensation)
Weight		Approx. 340kg

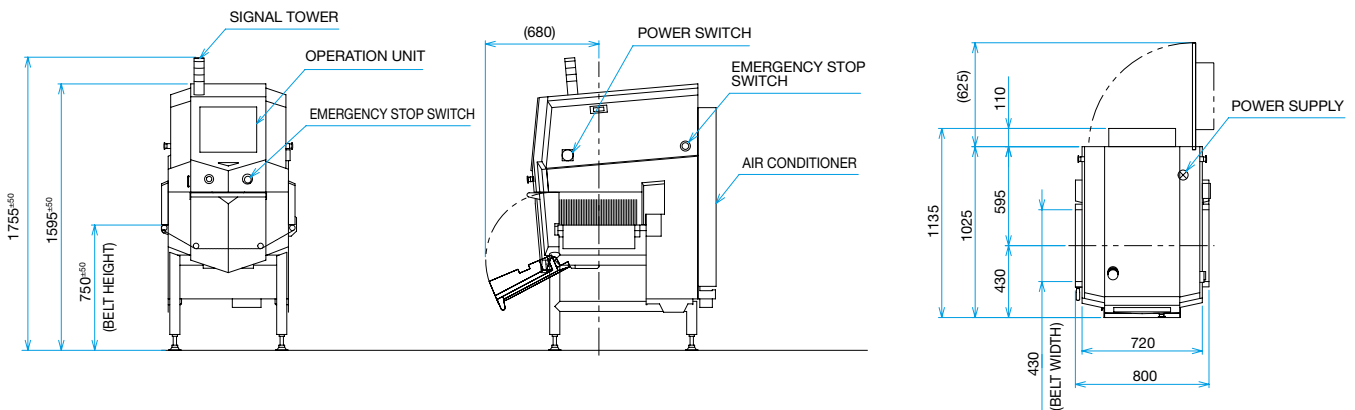
* Conveyor width
 ** 1m/min interval setting is available
 *** This dimension should be followed under Snap-Mode only. Do not apply under Bulk-Mode
 **** On a whole conveyor
 ***** Based on internal test results *6) In the case of 25-35 , 30-55% RH (without dew condensation)



Inspection area

The figures show the permissible inspection range. Portions of the product which are not within the shaded area are not irradiated.

Product Size (mm)	
Height	Width
0	360
10	352
20	345
30	338
40	330
50	323
60	316
70	308
80	301
90	294
100	286
110	279
120	272
130	264
140	257
150	250



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