XRAY SHARK®
XBD20/XBD20+/XBD40/XDB40+
X-Ray Inspection System

Stone Glass

SS Wire Copper Wire

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X-Ray Inspection System

The Most Advanced Detector Design for Highest Speed and Sensitivity

Inspection of the product is achieved by the computer controlled family of low energy generators (XBD20) or high energy generators (XBD40) and the XIA high performance computer image analysis system. That makes Cassel inspection systems superior in detecting product contamination or deviation from accepted specifications. Sophisticated image processing software provides immediate analysis, detection and rejection – automatically.

Designed for Industry Standards

In order to comply certification programs and satisfy HACCP requirements, the XBD20 and XBD40 are available with a certified process control package for automatic data collection and image storage (SHARKNET®2). This system is optionally available and equipped with an Ethernet network for data collection, quality control and production scheduling.

Straightforward operation with minimal effort

The XBD20/XBD40 series of conveyor inspection systems is designed for simple and efficient operation, with easy operating.
The software can be adjusted perfectly to the product making possible full use of image data. The software adjusts all complex settings on its own. The "normal x-ray image" of the product is automatically calculated and tested for abnormalities. With a few settings you can reduce or increase the tolerance towards deviations.

Easy maintaining

The inner workings of the XRAY SHARK® are clearly structured and all components can be connected and disconnected very easily. This allows quick and easy maintenance.

Detectable contaminants

The size of the detectable contaminants depends basically on the consistence, density, thickness and structure of the product. Therefore the exact sizes of detectable contaminants can only be specified after a product test.

XRAY SHARK® - the better solution

The XRAY SHARK ® is an x-ray scanner with integrated conveyor belt for integration into an existing production line. It includes automatic image analysis.
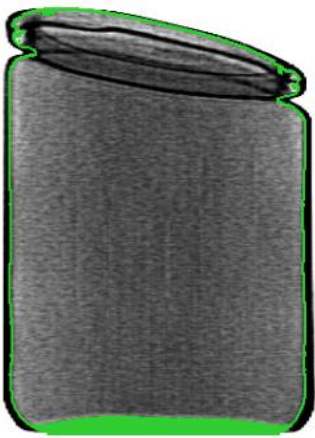
The XRAY SHARK® XBD20 and XBD40 are the third generation of x-ray systems, using the latest high sensitivity linear sensors. The combination of low energy inspection technology, up-to-the-minute hardware and high performance image processing software provide this systems a clear advantage for the optimal protection of your product and your Brand.
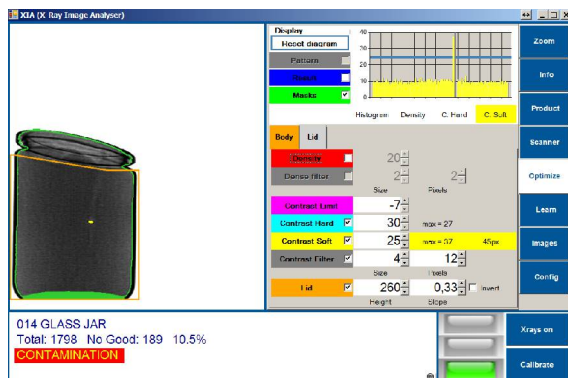
Inspection Features

Mask

The mask features exclude certain areas of the image from foreign object detection, e.g. the very dense jar bottom. This improves the detection performance in the remaining product.

SuperContrast

The SuperContrast function enhances small dense (dark) structures in the image. This improves significantly detection of small foreign bodies, which only then become visible.

Regular X-Ray Image   With SuperContrast

Easy Control

Color coded and graphical sensitivity settings. The impact of an adjustment is simultaneously projected into the x-ray image.
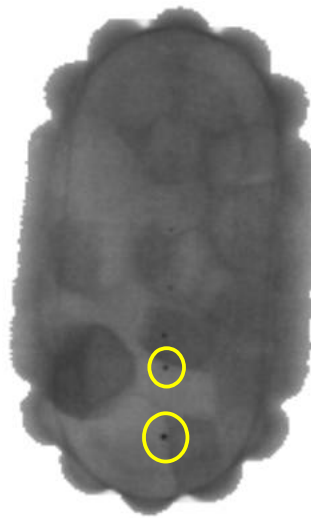
Data Transfer and Reporting

Cassel's SHARKNET ® 2 software networks XRAY ® SHARK x-ray scanners to a Windows computer. The operating data are automatically recorded and displayed as a report. Manual records are no longer required. With SHARKNET ® 2, the IFS and HACCP documentation is simple. The software collects all necessary data into a SQL database and prints the required report at specified intervals automatically.

IFS/ HACCP-Report
X-Ray System
SHARKNET UNIT #1- XBD40 Xray

Safety

Topnotch german safety standards certified by TÜV.

The Cassel XBD20/ XBD40 series possess long In/Outfeed tunnels, thus preventing operators from x-ray exposure. Their hand cannot reach the radiation zone easily.

Maximum Operation Time

The product tunnel is equipped with quick access doors. Any product jam can be cleared immediately within minutes. Opening the access doors automatically stopps the x-ray radiation.

Reject Devices

As an optional equipment Cassel offers two reject device options.

Competitor: Human arm is easily exposed to radiation. Safety only rely on a photo sensor.

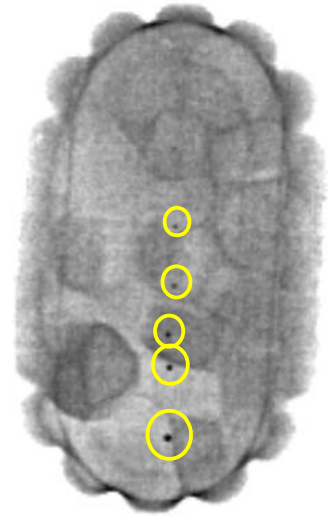XBD20/XBD40: Human arm cannot reach the radiation zone due to the mechanical protection.

TP Pusher and reject bin integrated with XBD20/ XBD40. For small sized products.

TP Pusher and reject receive roller table, at a separate conveyor. For bigger sized products.

XBD20/XBD20+/XBD40/XBD40+ Data Sheet

Model	XRAY SHARK® XBD20 Downshoot	XRAY SHARK® XBD20+ Downshoot	XRAY SHARK® XBD40 Downshoot	XRAY SHARK® XBD40+ Downshoot
X-ray source	1 pc. low power x-ray generator, with max. 70kV (140W), variable in voltage + current	1 pc. low power x-ray generator, with max. 70kV (140W), variable in voltage + current	1 pc. high power x-ray generator, with max. 120kV (400W), variable in voltage + current	1 pc. high power x-ray generator, with max. 120kV (400W), variable in voltage + current
Leakage radiation	X-ray emission max 1 µSv/h or less, at using all safety devices		X-ray emission max 3 µSv/h or less, at using all safety devices	
Safety	X-ray protective curtains Magnetic safety switches at cabinet doors and tunnel hatches, emergency stop push button, x-ray off key switch, Emergency stop in/out interfaces to safety circuits of production line			
X-ray detector	Diode size 0.8 mm, optional 0.4 and 0.2 mm			
Cooling	Integrated oil cooling: sealed circuit, maintenance free Optional: Addtional cooling device, for ambient temperatures above 30 °C			
Housing finish	Stainless steel grade AISI 304 / ISO 1.4301 (CrNi 18/10)			
Degree of protection	Overall: IP42 (due to the required cooling air slots) With optional wet room package: overall IP54 and product tunnel IP66			
Conveyor type	Polyurethane belt conveyor, included			
Conveyor speed	depends on application			
Display	15" Color-TFT Touchscreen		17" Color-TFT Touchscreen	
Max. Product Dimensions WxH in mm product aligned to aperture center	250x50 / 230x100 / 200x140	340x60 / 300x100 / 250x160 - or - 500x100 / 400x200	340x60 / 300x100 / 250x160	540x50 / 500x100 / 460x150 /300x350 / 260x400
Product memory	250 different product set-ups			
False reject rate	1/5000 … 1/10000			
Weight	0,4 t	0,8 t	0,9 t	0,9 t
Environmental conditions	0 to +30 ° C, with relative humidity max 90% non-condensing With optional additional cooling device: 0 to +45 ° C			
Power supply	220 – 240 VAC 1 phase 50 to 60 Hz			
Power consumption	<1 kW	<1 kW	1,7 kW	1,7 kW
Compressed air consumption	Without pusher 0 (zero) liters / hour. With optional pusher system depending on application			
Inspection features	Density, Hard Contrast, Soft Contrast, Masking Technology, SuperContrast, AutoEdge, Images AutoSave/Load, Multi Segment Inspection, Metal Can and Metal Foil inspection, Fill Level, Generator Energy by Product, Password protection			
Data transfer and reporting	USB, ethernet, Sharknet interface for auto reporting and auto recording, internet remote maintenance			
Supplied test equipment	Certified test cards with glass, ceramics, steel spheres in various diameter			
Other features	Direct variable conveyor speed by product, barcode reader interface, MultiCore CPU, Win OS			
In/Outputs	Programmable outputs (contamination, ready, Emergency OFF) Programmable inputs (Emergency OFF, wake up, optional control signals)			
Conformity	CE, compliant to German x-ray regulations, specific adaptation for other countries			
Available accessories	Radiation detector, Sharknet software, BRC Kit (British Retailer Compliance), pusher devices, barcode reader			

* All information is based on standard devices. There possibly will be differences depending on the application.