



Thermo Scientific NextGuard
X-Ray Inspection System

- Detects a wide variety of foreign objects
- Simple to install, operate and service
- Flexible software to verify product integrity

cost-effective yet sensitive

contaminant detection and product quality inspection for packaged products

The Thermo Scientific™ NextGuard™ x-ray system is designed to make moving from metal detection to x-ray detection easy, fast and inexpensive. It is ideal for finding dense or sharp objects in a wide variety of products as well as detecting errors like over/under fill or missing, misplaced, cracked or incorrectly formed products.

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Thermo Scientific NextGuard

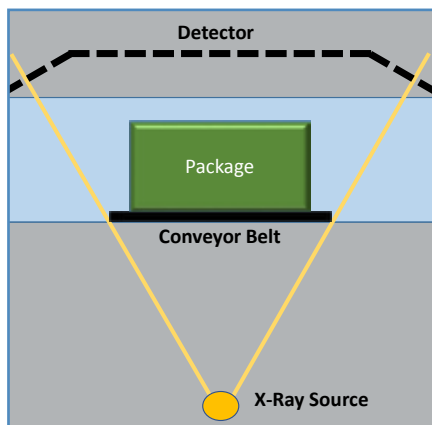
X-ray inspection for a wide variety of food products

The Thermo Scientific™ NextGuard™ detection system enables compliance with worldwide HACCP and retailer food safety requirements. It is an easy to use, cost effective, thoughtfully designed system that eliminates the barriers associated with moving from metal detection to x-ray detection.

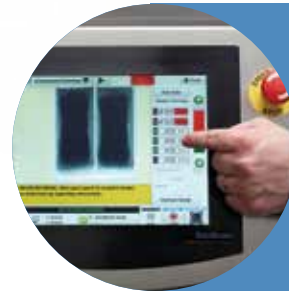


Innovative X-Ray Design Assures 100% Detection of Any Product

Most x-ray detection systems project the x-ray beam from the top down in a narrow beam to a linear detector. This makes using the x-ray image for product inspections easier, but also means as the product being inspected gets taller it must get narrower to always fit in the beam. With NextGuard we wanted to make it simple for users, so we project a wide x-ray beam from the bottom up to a non-linear detector that assures everything passing through the inspection tunnel is completely inspected. Any differences in x-ray signal across the arch-shaped detector are automatically calibrated out when you set-up your product. So no matter where the product passes through the beam, you always get the best detection possible! This architecture has the added benefit of limiting the height of the total machine and providing for optimum cooling, thus extending the life of the source.

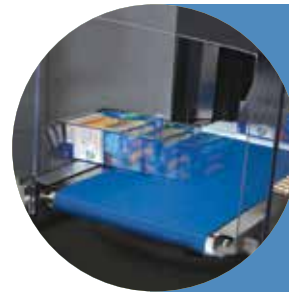


NextGuard X-Ray Source and Detector Arrangement



Touchscreen

Protected, large touchscreen for washdown and durability. Adjust image function for on-the-fly detection adjustment while the system is inspecting.



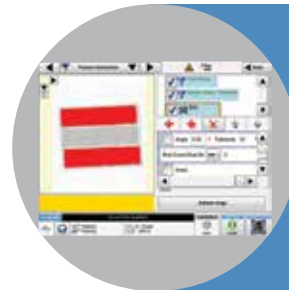
Rejection Systems

Configurable rejection systems based on the VersaWeigh checkweigher. Variable speed controlled by the NextGuard. Dual rejection to separate foreign objects from quality defects.



QA Check Function

Unique, configurable software feature allows definition of up to three audit types. Prompts the operator to run the audit and saves statistics/images from the process separately from production data.



Product Verification Software

Flexible inspection software to find product quality defects such as missing pieces, incorrect product sizes and cracks all without having to create customized software specific to your application.



Through the Thermo Scientific Product Assurance Services & Solutions (PASS) program, we can thoroughly test every suspected product for contaminants so that you can continue producing products that your consumers rely on! Learn more at www.thermoscientific.com/PASS.

x-ray inspection system

Features & Benefits

- Compact size makes installation and use easy
- Unique non-linear detector eliminates inspection blind spots
- Removable conveyor makes directional change and maintenance simple
- Software based on popular, intuitive VersaWeigh user interface
- Modular design for high reliability and quick diagnosis and repair
- Source and detector lifetime indicators to minimize expensive downtime
- Built-in remote monitoring for quick problem determination
- Field upgradable x-ray sources and detectors

Options to Customize Your Systems

- Complete rejection systems or rejection mechanisms for use on your downstream conveyor
- High resolution detectors
- Product Verification and Mass Estimation software
- Stainless steel air conditioner for washdown environments
- Alarm horn; no lead curtains, casters, guiderails
- Radiation safety meters
- Full Marks and Spencer COP compliance
- Spare parts kits



Certified around the world

Safety is assured with an LED light stack, multiple e-stops, x-ray key switch and safety interlocks on all doors and covers.



USB and Ethernet ports

Standard watertight connections are available for data input/output and remote connection for help and troubleshooting.



Radiation shielding curtains (with cover removed)

Lead and no-lead shielding curtains available. Easy to replace and adjust.



Modular conveyor

Transport system is completely removable in minutes for thorough cleaning, belt change and maintenance/repair. Conveyor direction can be changed in the field by service technicians in less than one hour.



Modular feet, extensions and frames to fit any line height needed.

Thermo Scientific NextGuard X-Ray Detection System

Application and X-Ray Specifications

X-Ray Power	160 Watts or 100 Watts, 40-80kV
X-Ray Detector	Unique design with no inspection blind spots, 0.8mm or optional 0.4mm pixel size
Scan Rate	Up to 1667 lines per second
Typical Sensitivity	≥0.5mm diameter for steel, ≥ 1.5 mm for other dense contaminants (depends on the relative density of the contaminant as compared to the package)
Detection Algorithms Available	Simple threshold, gradient, morphologies and contaminant area measure
Aperture/Product Width and Height	340 mm X 185 mm (13.4 in X 7.3 in)
Inspection Algorithms Available	Image processing/thresholding/blob analysis, grayscale profiling and mass estimation
Belt Speed	Variable speed - 10-80m/min (262 ft/min)
Conveyor Heights	800 mm (31.5 in), 900 mm (35.4 in), 1000 mm (39.4 in), 1100 mm (43.3 in) - specify at order time
Conveyor Length	1 m (3.28 ft), optional reject systems extend system length
Belt Material	USDA/FDA approved urethane
Security/Safety Features	X-ray power key, four level password system, emergency X-ray/conveyor stop button, lead/lead-free curtains, failsafe LED x-ray imminent and on indication light
Human Machine Interface (HMI)	Windows® 7, touchscreen, 307 mm (12.1 in) diagonal
Language Interfaces Available	English, Spanish, French, Italian, German, simplified Chinese, Russian and Polish. Contact the factory for additional languages.
Data File Export/Import	Images, event logs, statistics, audit reports, product files and machine parameters
Remote Access	Teamviewer built-in
External Rejecter Options	Integrated variable speed conveyors. Air blast or pusher. Lockable reject bin and reject/bin full photo sensors. Dual rejectors possible.

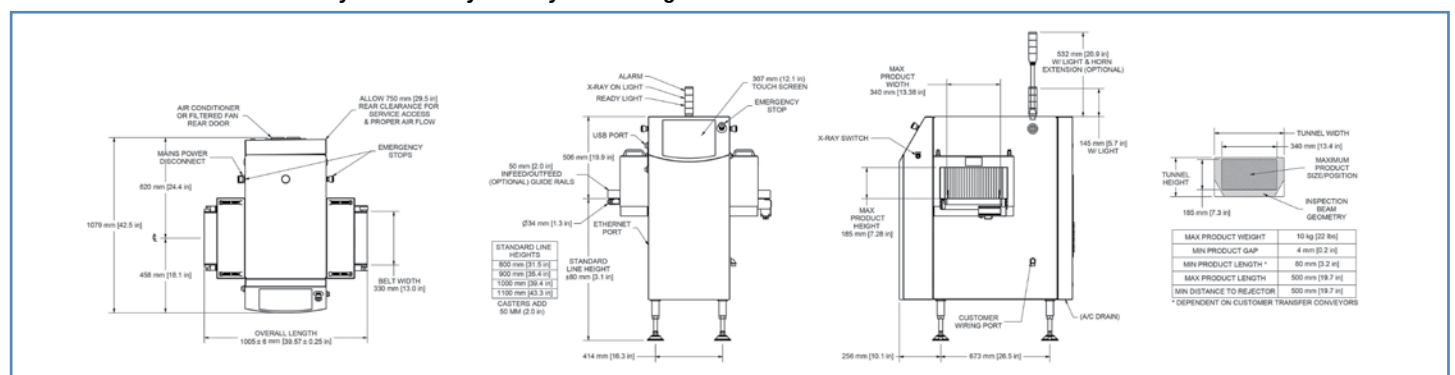
Environment, Electrical and Operational Specifications

Operating Temperature	5°C to 30°C (41°F to 86°F) with cooling fan or 5°C to 40°C (41°F to 104°F) with air conditioner
Relative Humidity	20% to 90% non-condensing
Electrical Supply	195 VAC to 250 VAC, 50/60 Hz, autosensing, single phase, 10 amps.
Digital Outputs/Allocation	Four outputs, 24 VDC 0.5 A, assignable function
Digital Inputs/Allocation	Four inputs, 24VDC 25 mA, NPN/PNP (jumper selectable), assignable function
USB Port	Watertight USB 2.0 standard
Ethernet Port	Watertight Ethernet port standard
Machine Weight	320 kg (700 lbs)

Conformance Tests and Certifications

Radiation Safety Conformance	FDA CFR 21 part 1020.40, RED act. Others available, contact the factory.
Export/Safety Certificate	CE, IRR99, NCF 74-100, UNE 73-302
IP Washdown Conformance	IP65 with air conditioner, IP54 with cooling fans. Full stainless steel type 304 construction.
Manufacturing Quality	ISO9001 certified facility

Thermo Scientific NextGuard X-Ray Detection System layout drawing



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