

Cost effective yet sensitive  
quality inspection

Thermo Scientific NextGuard X-ray  
Inspection System for packaged products

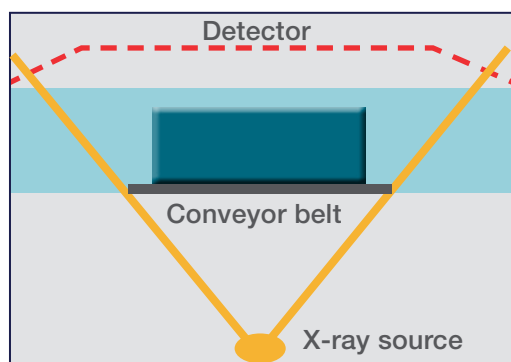


# X-ray inspection for a wide variety of food products

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. The system enables compliance with worldwide HACCP and retailer food safety requirements.

## 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 taller products 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 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.



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](http://www.thermoscientific.com/PASS).



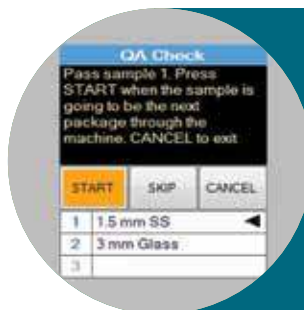
### Touchscreen

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



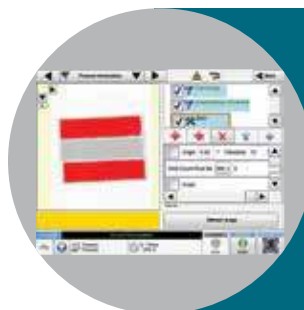
### Rejection systems

Configurable rejection systems customized for any application. 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.

## Features and 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 Thermo Scientific™ 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 and multiple X-ray sources
- Product Verification and Mass Estimation software
- Stainless steel air conditioner for washdown environments
- Alarm horn; Teflon coated lightweight no-lead curtains, casters, guiderails
- Radiation safety meters
- Full Marks and Spencer COP compliance
- Spare parts kits
- Configurations for lightweight or unwrapped products



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

### 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)  
Food safe, no-lead curtains that are easy to adjust and maintain.



### 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.



## Application and X-ray specifications

X-ray Power	C330: 100 W (80kV/1.25mA) or 160W (80kV/2mA), C500: 160W (80kV/2mA) or 200W (90kV, 2.2mA)
X-ray Detector	Unique design with no inspection blind spots, 0.8mm or optional 0.4mm pixel size (Note 0.4mm only available on the C330)
Scan Rate	Up to 1667 lines per second
Typical Sensitivity	>= 1mm diameter for Fe, non-Fe, SS, >=3mm for other dense contaminants such as glass or stone (always verify application performance via a product test)
Detection Algorithms Available	Simple threshold, gradient, morphologies and contaminant area measure
Maximum Product Width and Height	C330: 340mm X 185mm (13.4in X 7.3in), C500: 500mm X 250mm (19.7in X 9.8in)
Inspection Algorithms Available	Image processing/thresholding/blob analysis, grayscale profiling and mass estimation
Belt Speed	C330SPSR, C330 HPSR, C330 HPHR: 10-80m/min (33-262ft/min), C330HPSR: 10-120m/min (33-393ft/min), C500 (all models): 5-50m/min (16-164ft/min)
Maximum Product Weight on the Conveyor	C330: 10kg (22lbs), C500: 11kg (25lbs)
Conveyor Heights	800 mm (31.5 in), 900 mm (35.4 in), 1000 mm (39.4 in), 1100 mm (43.3 in) all ± 80 mm
Conveyor Length	C330: Standard Length 1m (3.3ft), C330: Extended 1.4m (4.6 ft), C500: 1.2m (4.7ft)
Belt Material	USDA/FDA approved urethane
Roller Diameter	C330: 34mm (1.3in), C500: 49mm (1.9in)
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, Chinese, Russian, Polish, Czech, Portuguese, Dutch, Thai, Indonesian. Contact 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

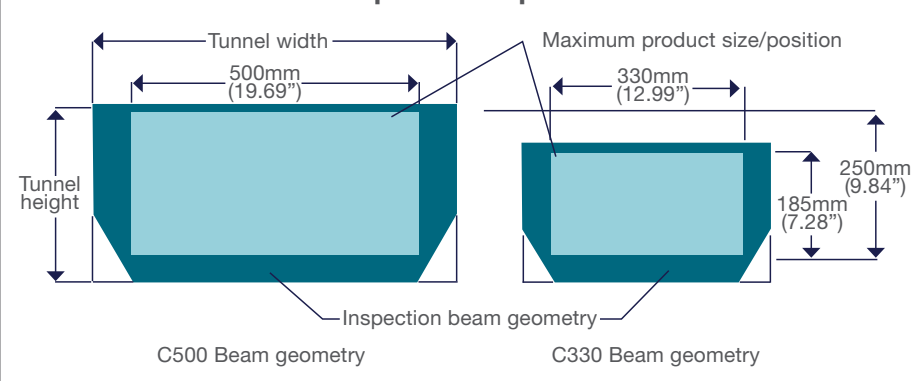
## Environment, electrical and operational specifications

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 (Note C500 only available 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	C330: 320kg (700lbs), C500: 335kg (740lbs)

## Conformance tests and certifications

Radiation Conformance	FDA CFR 21 part 1020.40, RED act (Canada), IRR99 (UK), NCF 74-100 (France), UNE 73-302 (Spain), GB18871-2002 (China) and others. Note UK, Canada and Spain require optional extended guarding and France requires optional extended shielding
Export and Safety	CE, cCSAus
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 apertures/inspectable area



## NextGuard C330 and C500 Models



Find out more at [thermofisher.com/nextguard](http://thermofisher.com/nextguard)

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