



# Thermo Scientific x-ray inspection and checkweigher combination unit

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## Introduction

X-ray food inspection systems enable the detection of both metallic and non-metallic foreign objects in all types of packaging; ensuring no foreign contaminants leave the production facility, safeguarding consumer safety. Advanced design and technology allow for additional quality control capabilities such as detection of missing pieces and under- and over-fills. Checkweighing systems enable food processors and manufacturers to weigh, count, and reject in a single, dynamic system, and be assured that the weight of a packaged product being shipped out the door matches the weight on the label. This application note will discuss the multiple advantages of purchasing x-ray inspection as part of a combination system with an inline checkweigher; which allows for products to be inspected for foreign contaminants and also precision weight control check.

## Our offering

Our Thermo Scientific x-ray and checkweigher combination system includes the Thermo Scientific™ NextGuard™ C330 X-ray inspection and the Thermo Scientific™ Global Versa checkweigher systems with integrated conveyor belts and dual rejection systems. The NextGuard C330 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 Versa checkweigher has proprietary software with advanced automatic-zero algorithms to ensure accuracy standards are maintained over time, regardless of environment, and is engineered for ease of maintenance.

## Point of inspection

Our x-ray inspection and checkweigher combination can be installed within production and packaging lines for food and beverage, pharmaceutical, or personal care product manufacturers.

The combination system is generally installed at the end of the production line after packaging, before labeling and packing into masterpacks. The x-ray inspection system is prior to the checkweigher to ensure recorded statistics are accurate; therefore, products that will be rejected due to foreign contaminants or under-or over-fill are not weighed and included in those batch statistics.

## Benefits

There are many benefits to combining x-ray inspection and a checkweigher into one system, providing maximum product safety and the protection of your brand.

### 1. Single point of operation for personnel

- Many companies have quality control procedures where critical control points within their production process need to be monitored. Having the x-ray inspection combined with the checkweigher, enables both systems to easily be monitored by the employee on the production floor and not have to move a great distance between the two systems.
- Reduces safety risk to the operator as the reject systems of both the x-ray system and checkweigher system are located next to each other.

### 2. Single point for maintenance

- Set-up and calibration of the x-ray and checkweigher systems can be done together at the same time.

### 3. Space saving

- Production facilities are often very crowded and constrained by lack of extra space. Even a space savings of 200 cm is valuable within a constricted manufacturing plant. This combination system can save from 200 cm to 1,000 cm in length of valuable packaging line space.

### 4. Budget saving

- Combination units save on the purchase of hardware. Since the conveyor belt of the NextGuard x-ray is also used as the infeed for the Versa checkweigher this eliminates the need for an extra conveyor belt which can be a cost savings of several thousand dollars compared to buying two separate systems.

### 5. Single point for quality control

- Rejection of out-of-range weight and contaminated products are side by side for easy removal.
- Each system has its own HMI control screen, and both are visible from a single point allowing simultaneous review of real time data from both systems.
- X-ray belt can help pull pitch of products, regulating product presentation going onto the checkweigher.

## X-ray safety concerns

Although food x-ray systems generate radiation during their normal use, a worker standing at the control panel of an x-ray food inspection machine will likely not receive any radiation from the machine due to shielding. In fact, these machines emit 0.1 millirems per hour or less, and that emission is typically at the inlet or outlet where workers are not present. The image below shows the exposure comparison between an x-ray inspection system and other everyday occurrences, such as eating a banana or a CT scan. According to the U.S. Food and Drug Administration (FDA) website:

*“There are no known adverse effects from eating food, drinking beverages, using medicine, or applying cosmetics that have been irradiated by a cabinet x-ray system.”*

One Banana	Food X-ray Inspection	Dental X-ray	Trans-Atlantic Flight	Full Body CT Scan
.01 mrem 	0.5 mrem/hour** 	1.5 mrem 	2.5 mrem 	1,000 mrem 
				

## Conclusion

In today's competitive global economy, consumer safety and brand protection are more important than ever. The Thermo Scientific x-ray and checkweigher combination system enables compliance with worldwide HACCP and retailer food safety requirements. Allowing for products to be inspected for foreign contaminants and also precision weight control check for food and beverage, pharmaceutical, and personal care product manufacturers.



**NextGuard C330 X-ray inspection and Global Versa checkweigher combination system**

Learn more at [thermofisher.com/productinspection](https://thermofisher.com/productinspection)

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