

## X-ray Analytical Microscope **XGT-9000**

The evolution of **micro XRF!**

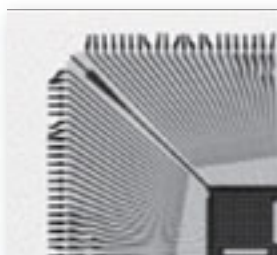
Combination of **high sensitivity, new imaging technology** and **high-speed analysis of foreign materials** in one unit.

- Nondestructive analysis with no or little sample preparation.
- Ability to obtain high quality optical images and possibility to access points of interest in just one click.
- Software package with chemical, thickness, and image analysis features.

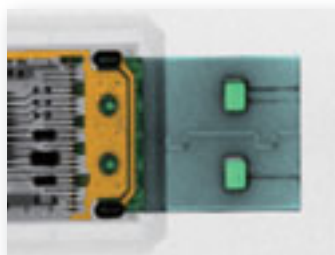


### High speed Imaging

- Quick analysis due to the high brightness of X-ray beam.
- High contrast x-ray transmission image.



Transmitted X-ray image of an IC chip

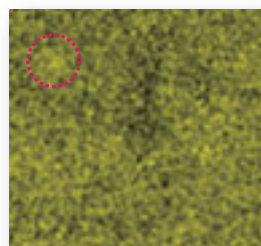


Elemental composition image of USB memory

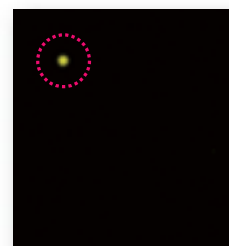
### Image Processing

Deconvolution of the elements of interest from entire micro-XRF image.

Elemental mapping image (raw data)

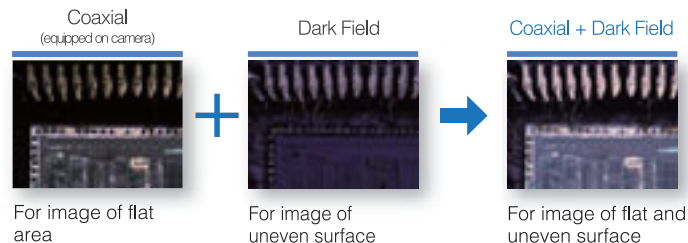


After Image Processing



### Coaxial X-ray and Optical Design

- Equipped with three types of optical illumination: coaxial (reflection), dark field, and transmission. The combining of coaxial and dark field illuminations enables clear observation of the samples with flat or uneven areas.

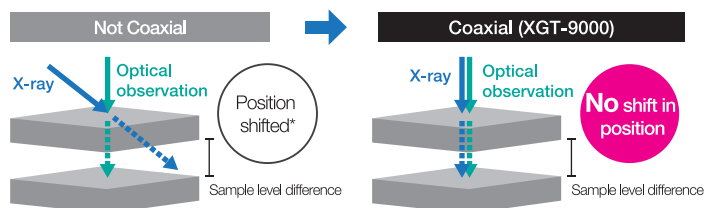


For image of flat area

For image of uneven surface

For image of flat and uneven surface

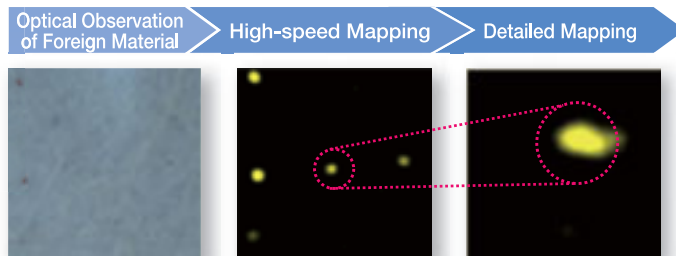
- Coaxial x-ray and optical design prevents misalignment of optical and x-ray images.



\* With no correction

### A New Solution in Foreign Material Analysis

Particles of foreign material can be detected quickly through high-speed screening and can be visualized using image processing. The small x-ray spot size (down to 10 microns) and high spatial resolution allows for detailed analysis of the particles of tens of microns in size.



Optical observation image

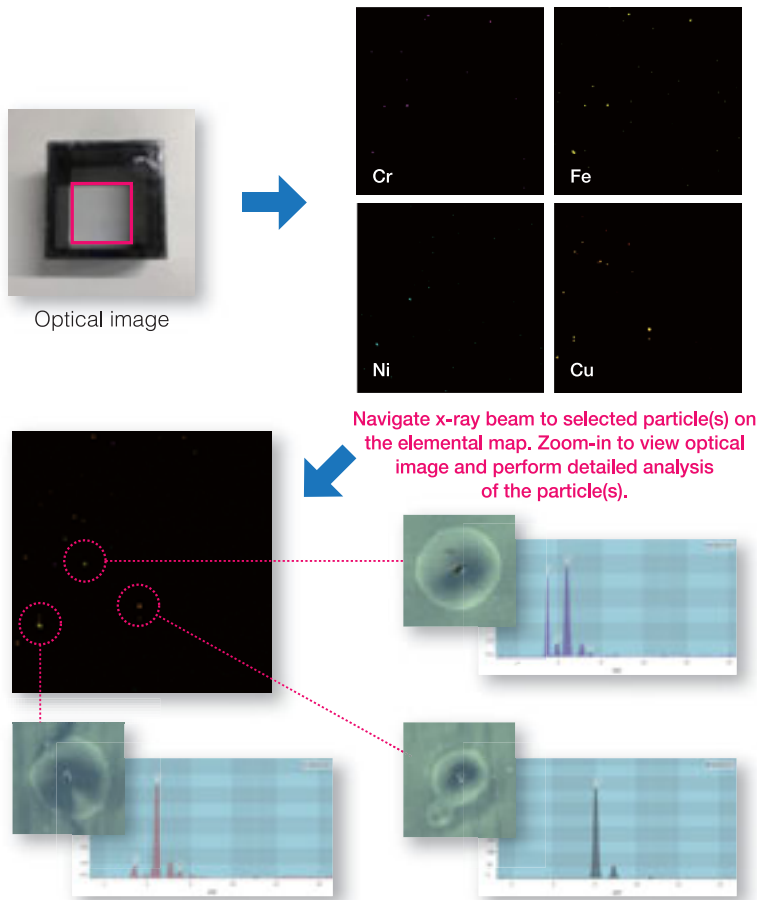
High-speed analysis with high-intensity X-ray beam

Detailed analysis with high resolution X-ray beam

## Applications

### Analysis of Foreign Material in Films

Fast micro-XRF screening of large area allows one to visualize particles of foreign materials that are not visible in optical image.

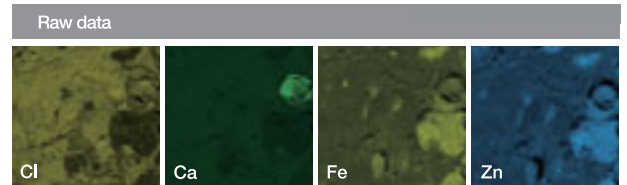


### Analysis of Food Sample

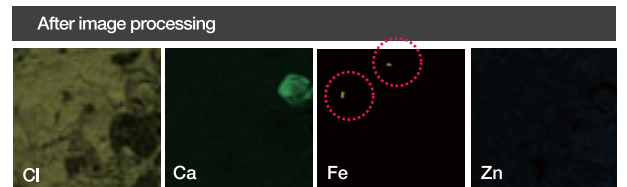
Food and other water or oil-containing samples can be analyzed and contaminants / impurities may be detected.



Optical observation image (Salami)



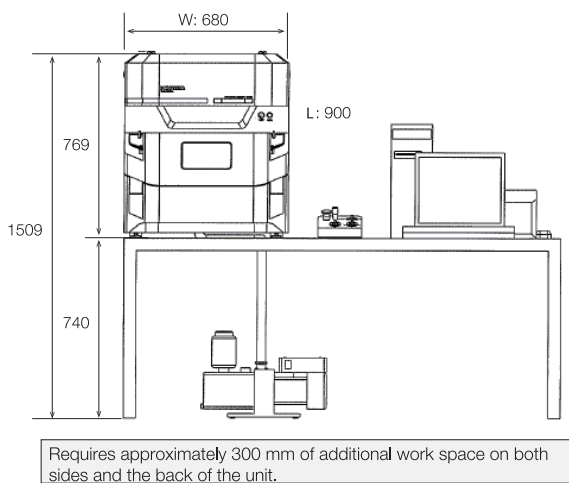
↓ Impurities (foreign materials) detected after image processing!



Check out our video for information on XGT-9000 features and operations!



### External Dimensions (unit: mm)



\* When installing the product, please follow the related laws and/or regulations of your country.

### Specifications

Basic Information		Detector	
Principle	Energy dispersive X-ray fluorescence	X-ray Fluorescence detector	LN <sub>2</sub> Free detector (SDD)
Detected elements	Na (11) ~ U (92)	Transmission X-ray detector	Yes
Maximum sample size [W x D x H]	300 x 250 x 80 mm	Mapping	
Stage movable range [W x D x H]	100 x 200 x 20 mm	Mapping area	100 x 100 mm (max)
Optical image	Whole/detailed area	Optical camera (for detailed observation)	
Direction of optical observation and X-ray beam	Coaxial	Observation range	2.5 x 2.5 mm
X-ray Tube		Optical resolution	<10 μm
Tube voltage	15 kV, 30 kV, 50 kV	Working distance	Variable between 1 – 10 mm
Tube current	Max 1 mA	illumination	Coaxial (reflection), transmission, dark field
Target material	Rh	Other	
X-ray optics		Vacuum	Sample chamber, partial vacuum, and ambient condition
Maximum No. of capillary	3		

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