

AccureX3

IN-LINE X-RAY THICKNESS GAUGE

Evolved multi-channel system with high speed
and high-density measurement

Comparable level is achieved with the use of
soft X-rays, instead of using beta ray.
No qualified operator. No need for calibration ray.

■ High precision

- Datum of 1mm interval in CD is measured and displayed.
- Margin of measurement error is minimized by correcting influences of temperature and humidity at every traverse.
- The precise traverse mechanism has been adopted.

■ Safe and secure

- Low-energy X-ray ensures safe condition. (No influence on human body even in normal operation.)
- No need for an X-ray supervisor.
- X-rays are not emitted when the power is off.

■ User friendly operation

- Automatic absorption condition acquisition.
- Up to 1000 items of condition for a measurement can be registered.
- Graphs to suit various purposes can be displayed.

■ Long lifetime

- The lifetime of X-ray tube has been 3 times compared with the former model by changing power device.

■ Applicable to wide material

- Wide materials also can be measured by adopting a new driving system.

■ Possible to measure the coating layer thickness.

- Thickness measurement is available. e. g. adhesive layer of adhesive tape, coating layer of dry film resist, and etc.

■ Light weight and compact body.

- Driving system, including X-ray head and sensor head, are composed compactly.



Measurement theory

The law of an X-ray penetration

$$I = I_0 \cdot \text{EXP}(-A \cdot T)$$

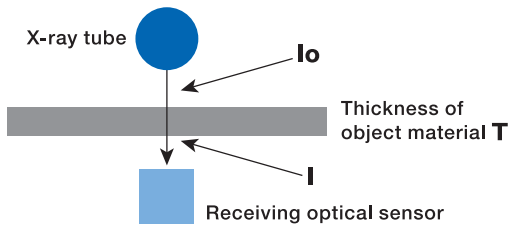
T Thickness of measurement material

A The absorption coefficient object material

I₀ Intensity of a signal when no object material between sensors

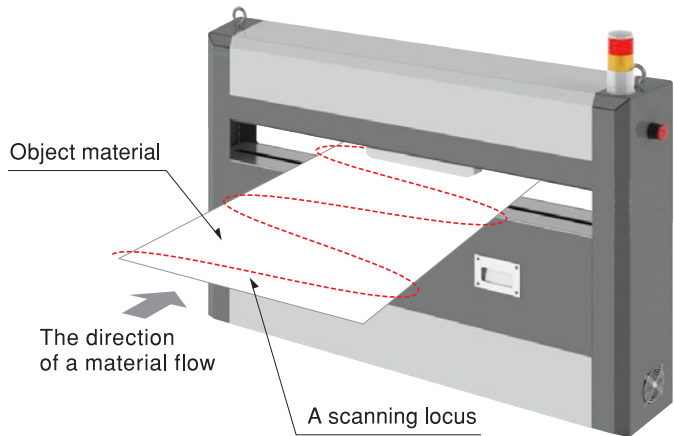
I Intensity of a signal when object material between sensors

As shown in the below figure, the magnitude of absorption of object material is measured, and thickness is measured by correlating it.



System Configuration

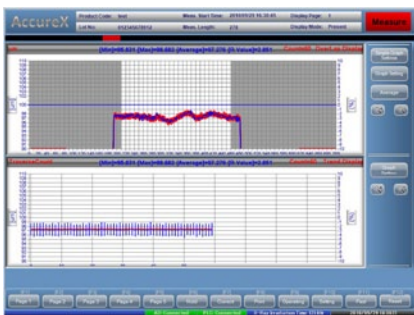
■ Measurement area



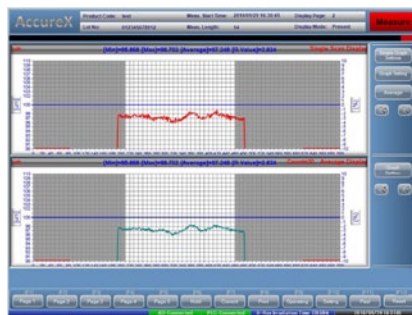
■ Usage

- Plastic Film Sheet
- Metal foil
- Resin/Adhesive coating
- Non-woven fabric
- Paper
- Various paint coatings

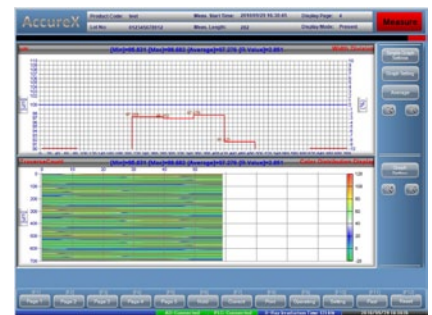
Various data display methods



Over Lapping and trend graph



Single scan display + average scan display



Width division and Color distribution

Measurement sample

Material Name	Maximum Thickness Measurement Available	Measurement Accuracy	Appendix
PP (Polypropylene)	4000μm	±0.3%	Accuracy is ±0.2% if Ti Tube is used.
PE (Polyethylene)	3500μm	±0.3%	Accuracy is ±0.2% if Ti Tube is used.
PET(Polyethylene terephthalate)	2000μm	±0.25%	
Polycarbonate	2000μm	±0.3%	
Non-woven Sheet	2000g/m ²	±0.5%	
Aluminum Foil	200μm	±0.2%	
Copper Foil	60μm	±0.2%	

General Specification

■ General specification

Power supply	AC100V 1.5kVA
Detection algorithm	X-ray transmission method
Path line gap	15mm
Measurement spot width	About 5.0mm
Measurement speed	150mm/sec (MAX250mm/sec)
Measurement pitch	1.0mm
X-ray tube pipe voltage	9.5kV※
X-ray energy	5~6keV (9.5kV)

※ There is also tube available 15kV.