

# Adhesive Coat Weight Measurement System

**web***control*

The coat weight measurement system is an accurate meter that uses infrared light technology



# Thickness Meter Advantages

Adhesive measured separately  
by infrared

Base film and ink do not  
affect measurement

Non-contact, non-destruction  
and on-line measurement



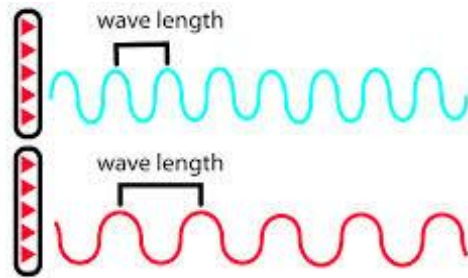
" The thickness meter with chemical eyes"

# Specifications

| Item                                 | Specifications  |   |
|--------------------------------------|---|---|
| Measuring method                     | Infrared reflection absorption                                |   |
| Spectroscopic method                 | Rotating filter (6 filters can be installed)                  |   |
| Measurement distance                 | 25 mm (from bottom of main unit)                              |   |
| Measurement area                     | 5mm x 8mm (oval)  |   |
| Dimensions, weight, and power supply | Sensor head   | 230mm (W) x 134mm (D) x 90mm (H), approx. 4.5 kg (excluding any protruding part)  |
|                                      | Data processing unit  | 275mm (W) x 300mm (D) x 165mm (H), approx. 6.7 kg (excluding any protruding part) |
|                                      | Relay unit  | 250mm (W) x 140mm (D) x 113mm (H), approx. 3 kg (excluding any protruding part)   |
| External output                      | Selectable from analog 0 to 10V or 4 to 20mA (set at factory) |   |
| Ambient temperature                  | 0-40°C without condensation                                   |   |
| Power supply                         | AC100V±10% 50/60Hz  |   |

# Infrared Measuring Process

First infrared rays are irradiated towards the coated section. The infrared absorption for each specific wavelength occurs in relation with the thickness of the coated section. The range or deepness of the wave will determine key parameters.



The amount of this absorption is determined from the transmitted light or mirror-reflected incident light. The relational expression for the previously obtained absorbance and moisture value is then used to calculate the thickness.

Our original P-polarized incident light technology is used to eliminate errors from surface reflection or internal multi-reflection. This provides the ideal hardware for a infrared thickness meter.

# Features

- **Applicable for small space (inline):** The small sensor head requires no special installation space, allowing it to be installed in any small space available on the existing production line.
- **Instant measurement:** No pretreatment is required, so thickness can be measured immediately without damage or contact.
- **Applicable in a broad range:** The thickness and moisture of various materials can be measured using combinations of filters for up to 6 wavelengths.
- **Excellent measurement accuracy:** Our original P-polarized incident light technology allows you to obtain stable measurements, even of film that is several  $\mu\text{m}$  or less in thickness.
- **Reliable long-term stability:** The use of three-wavelength photometry ensures long-term accuracy against changes in ambient conditions and equipment.

# In-line Coat Weight Measurement Benefits

## MINIMIZE QUALITY PROBLEMS

Inspect if any factors causing defects:

1. Over coating, insufficient coating, and uneven coating
2. The incorrect mixing ratio
3. The usage of the reacted adhesive

## MONITOR PRODUCTION

With on-line measurement, it is possible to continuously monitor production

## IMPROVE PRODUCTION EFFICIENCY

Shorten the confirmation time before production

## REDUCE COSTS

Find out the quality problems in time to reduce the lot loss

Early detection of quality problems will reduce material loss and customer returns

# Quality Control

## COATING WEIGHT MANAGEMENT

Simple and fast procedure to measure coating weight compared with traditional weigh-scale method. By using on-line and non-contact system to measure the coating weight, the operators can perform the suitable adjustments without wasting time.

## ADHESIVE MIXING RATIO CONFIRMATION

It is possible to confirm the mixing ratio and the mixing status by checking the measurement values.

## ADHESIVE REACTION CONFIRMATION

Especially for controlling the adhesive with quick reactive time to ensure that the lamination has been done before reaction.



# Machine Model – Configurations

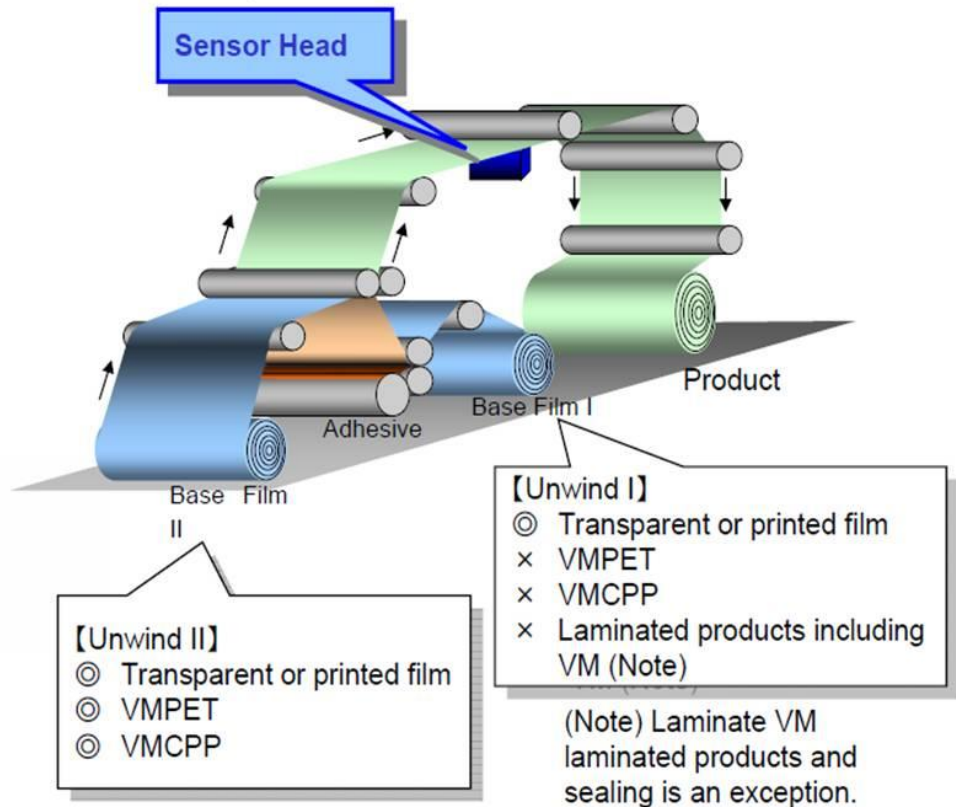
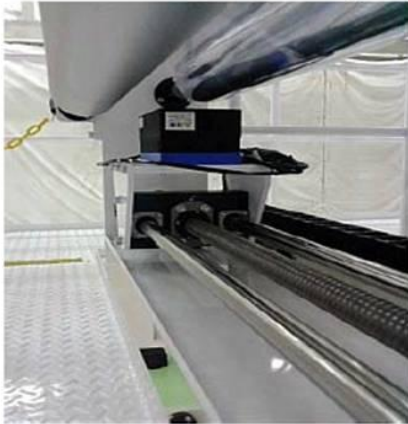
## Compact Model

- Only one web path required
- Sensor will be positioned on top of the web and will measure
- Adhesive thickness before lamination

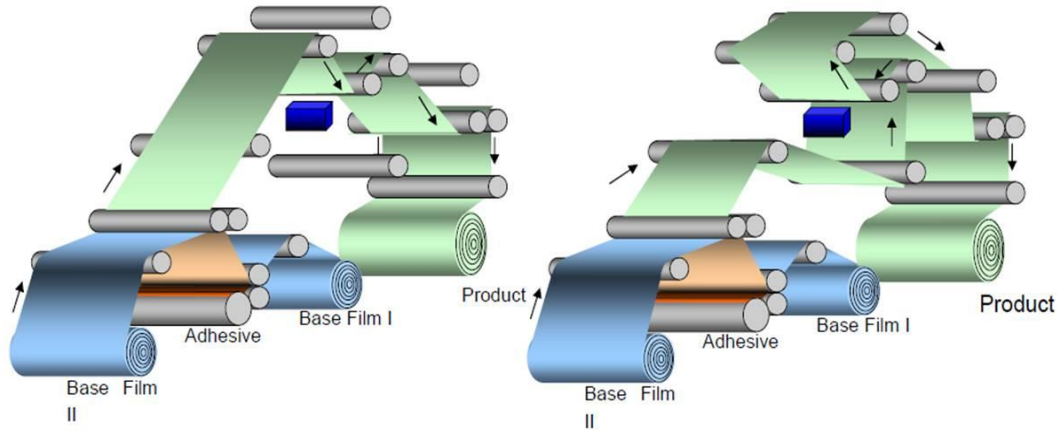
## Pro Series and Turret Models

- Requires two web path configuration
- Sensor will be positioned on one side of the web and will measure adhesive thickness after lamination

# System Configuration – One Web Path



# System Configuration – Two Web Paths



This is an example of web paths for running laminates with metalized/foil material on either inside or outside of laminate structure. By changing the web path based on the construction of the film, it is possible to measure the thickness of the adhesive for different laminate constructions with metalized/foil material.

Limitations: it is necessary for light to be able to penetrate thru one of the material layers. The sensor cannot penetrate materials such as paper or other flexible materials with black ink, golden ink, and silver ink.

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