

Paper/Converting



## Application notes

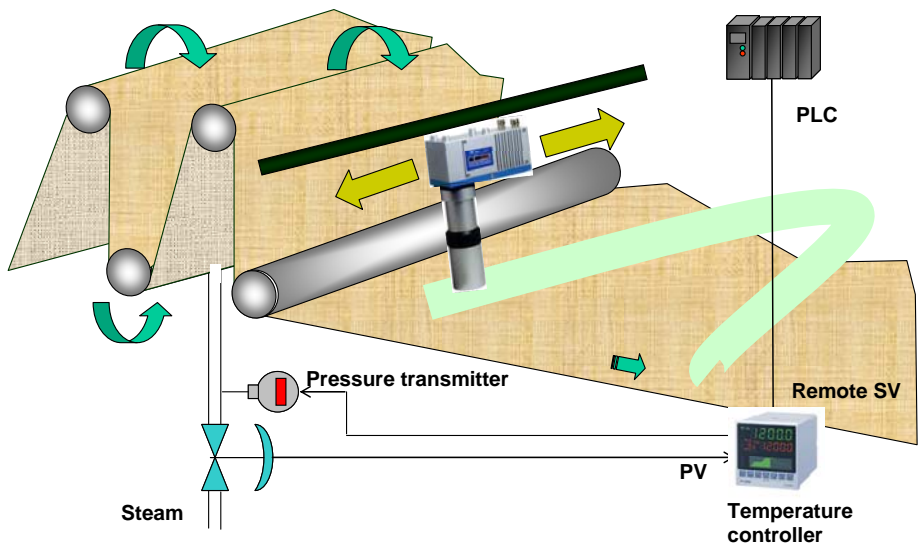
### Moisture in paper

The CHINO IM series is an on-line multi wavelength liquid analyzer utilizing infrared absorption technology to measure percent water in paper production. The standard moisture range of the unit is 2.0% to 12.0% with a 0.2% resolution or 0.0% to 30.0% with a 0.8% resolution.

Moisture values of paper in the paper making process and humidification process must be suppressed to be within several % H<sub>2</sub>O with the reference value for the purpose of attaining the uniform quality and energy-saving. After winding, the moisture value is normally controlled by a sample test. With CHINO IM series, it will be measured in on-line mode and the dryer temperature is controlled to set the moisture value to conform to its aimed specified value as increasing examples in recent years.

Signal processing capabilities are built into the compact designed detector unit for easy installation and operation. A maximum of 99 calibration curves can be stored into the detector memory for numerous measurement applications.

The detector can be used by itself or connected to a PC or DCS plant control system. Both analog (4 to 20mA DC) and digital (RS-485 or LAN Ethernet) outputs are provided. A remote setting display unit, which connects up to 9 detector units, can be used to set various detector functions and also displays measured values.



Products / Location	Parameter	Range
Paper	Moisture	2 to 12%
Paper	Moisture	0 to 30%

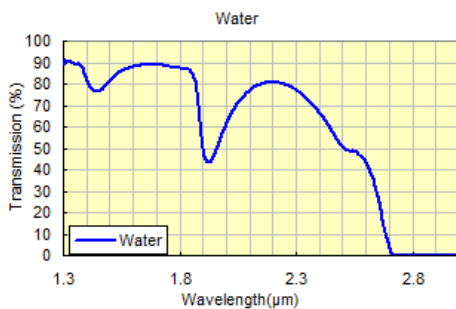
**Recommended model / Item**

- \* General moisture unit  
Model : IRMA1100S Qty : 1
- \* Air purge hood  
Model : IR-WEA Qty : 1
- \* Calibration checker plate  
Model : IR-WEB Qty : 1

**Installation**

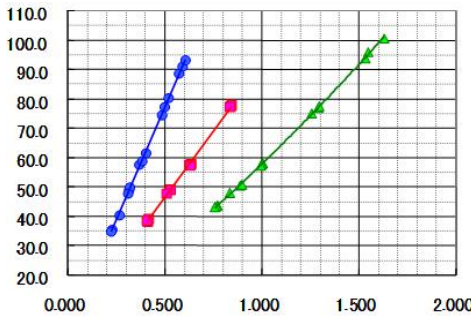
There are many points the moisture level needs to be monitored and controlled in order to create certain type of paper, such as after press, before initial dry or after several dryers. Some customers may need a traversing mechanism in order to have moisture profiling.

**Absorption characteristic**



Above chart indicated coalition between infrared spectrum and substance transmission.

**Calibration curve**



Calibration curve is a correlation between moisture determined by customer's reference instrument and IR absorption measured by IRMA.

[Basic sample test for moisture]

1. Prepare samples with various moisture content
  2. Show each sample to IRMA and record absorption level
  3. As conducting step-2, determine moisture level with your reference instrument
  4. Put all data points on a X/Y graph and see if there's a correlation
- Note: Reference instrument may vary depending on the method (by volume or weight).



Mirror type



Fiber type



Liquid cell type



Setting & Display unit



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