

Human Food Products



Application notes

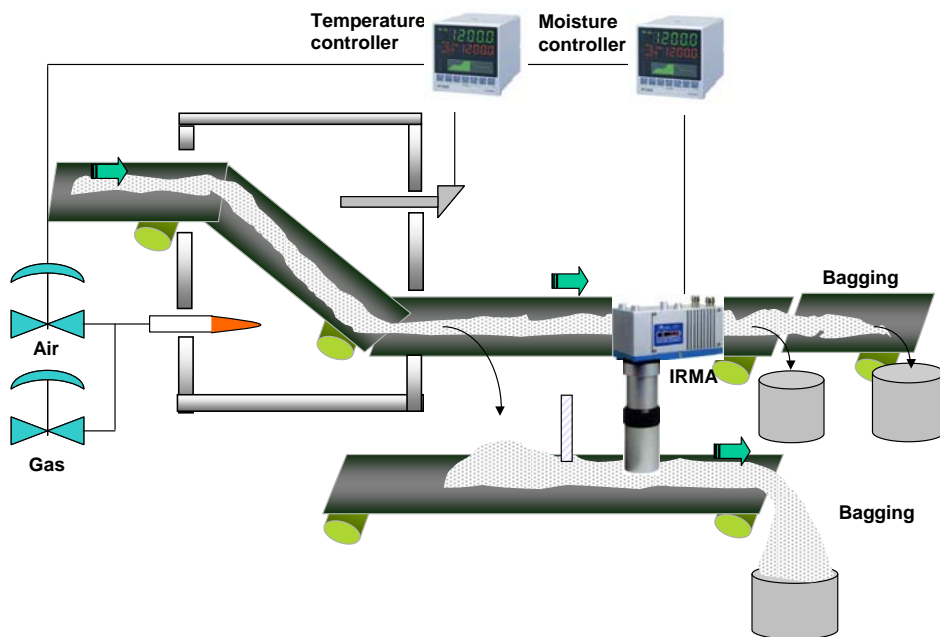
Moisture in wheat flour / milk powder

Wheat flour requires to be observed under a subtle and accurate moisture control, because powdery wheat flour is easy to be transformed into a sticky dough with excess moisture.

CHINO's IM series can measure from 5 to 15% moisture ($\pm 0.2\%$ accuracy) in the flour during the last process before packed into bags. It can maintain a steady quality of the flour and also cut production cost of its drying process. And to prevent flour from over-dried, IM series can apply cascade control, a combination of feedback system. The signals from moisture gauge can be used to control temperature of the drier.

Flour has high reflecting characteristic on any particular Infrared wavelength. Because of this reason, the Fiber type IM Series can be applied to the system.

IM Series is equipped w/ 4-20mA Analog output which can be easily incorporated with existing process control systems.



Products / Location	Parameter	Range
Flour	Moisture	5 to 15%
Milk powder	Moisture	0 to 10%

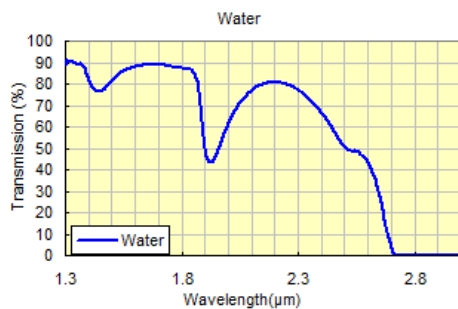
Recommended model / Item

- * General moisture unit
Model : IRMA1100S Qty : 1
- * Air purge hood
Model : IR-WEA Qty : 1
- * Calibration checker plate
Model : IR-WEB Qty : 1
- ** You can also use fiber type of IRMA2100.

Installation

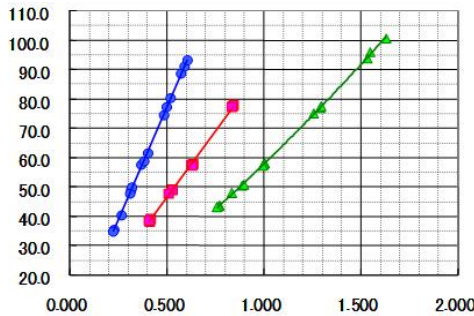
Mount IRMA at the 90° angle to direct the light beam onto the target. To prevent the lens surface from dust or fine particle, apply air purging with filtered instrument air if needed. Use leveling plow (leveler) to level uneven flour powder. Leveled surface can lead to a stable measurement. To keep accurate measurements, we highly recommend cleaning lens AND conducting Zero-Calibration over IR-WEB(calibration mirror) once every three months.

Absorption characteristic



Moisture(water) has a unique infrared absorption spectrum regions. Water absorbs at wavelength of 1.43, 1.94, and 3 micrometers.

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

Contact

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