Kett

SCIENCE OF SENSING

NIR Moisture Analyzer
KB-230

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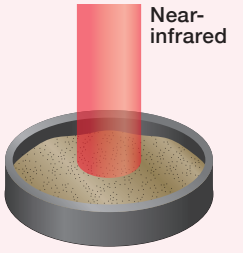
NIR Moisture Analyzer KB-230

NIR Moisture Analyzer KB-230 is a moisture analyzer utilizing near-infrared reflection. It is an nondestructive measurement method, and the moisture can be measured in real-time.
With the conventional infrared moisture analyzer, the distance adjustment between the sample and the light source was complicated. Also, the measurement error was generated due to difference of the grain size.

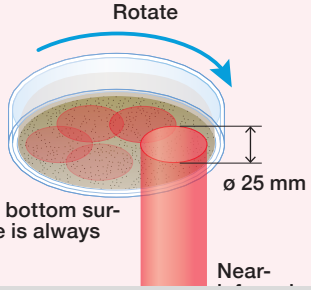
The NIR Moisture Analyzer KB-230 has been developed solving the above issues as a key concept.
The idea of "equally emitting light at the bottom of the sample" became a solution. The distance between the sample and the light source is maintained equally, and the error due to grain size is eliminated.
Also, the sample cell is selectable from the variety of choices.
Other than the Petri dish, disposable polyethylene bag or sheet can be used, which will save time before and after the measurement.
The KB-230 is suitable for the site where multiple samples need to be measured, or quick response is required.
It is ideal for those who need efficiency and accuracy.

Conventionally, the near-infrared is emitted at the top surface of the sample.
In this method, how you can make the surface of the sample flat affected the measurement.



Needed to make

The KB-230 measures by emitting near-infrared at the flat bottom plane, rotating the rotation table to obtain higher uniformity.
In this method, variation in measurement is reduced.



- ***Instant response***
  Just place the sample on the measurement window, close the light shielding cover, and then press the measurement button.

The moisture will be displayed in a few seconds. The continuous

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ore taking time for moisture measurement; no more breaking the sample

- ***Two types of measuring mode***

  There is a normal measurement mode, in which the average of the measurements will be displayed; a continuous measurement mode, in which chronological change of the moisture can be checked.

- ***Selectable sample cell and measuring method***

  Not only the accessory Petri dish, the sample cell can be selected from disposable polyethylene bag or sheet. Otherwise, the sample can be placed directly. For the samples that is impenetrable to near-infrared, the light shielding cover is not necessary. Therefore, the cover can be removed and the work efficiency will improve.

Petri dish: Grains

It is suitable for uneven grains, large grains, or grains whose moisture degree largely fluctuates.

Plastic bag: Flour

It is suitable for grains, powders, sheets, or ones whose moisture degree largely fluctuates.

Polyethylene sheet: Chocolate, etc.

It is suitable for large solid that may taint the measurement window.

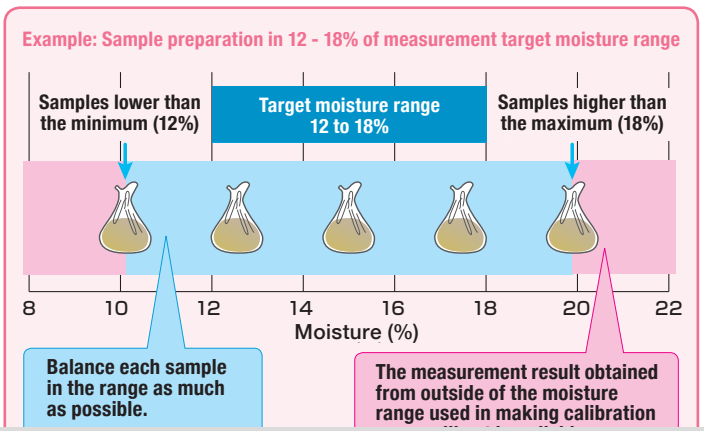
Direct placement: Dried noodles, etc.

It is suitable for large solid that will not taint the measurement window.

The light shielding cover can be easily removed by lifting it up.

- ***A function to make a calibration curve***

  If samples are prepared so that they cover the target moisture range equally, the calibration curve can be made just using this device.



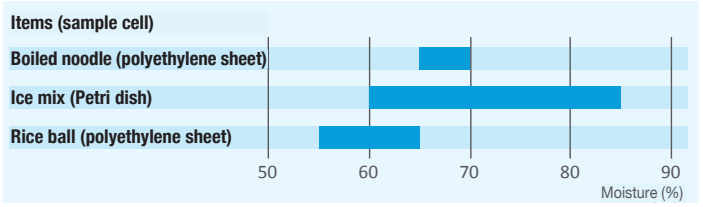
- ***Covers wide range of measuring objects***

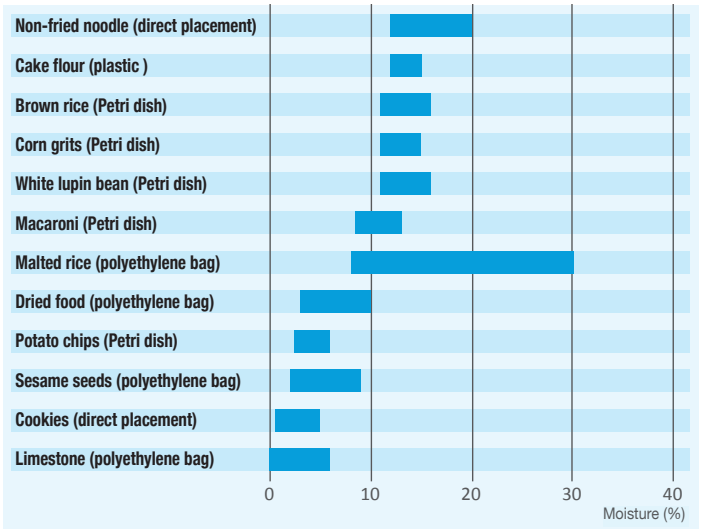
  Wide variety of samples can be measured including agricultural products, food product materials, processed goods, medical and pharmaceutical products, papers, and minerals. Also, any types and forms can be measured.* Making a calibration curve is necessary.



■ Items to be measured and moisture range

* The following is an example of a test result in making calibration curve.
Other than the range described below can be measured if a calibration curve is made.

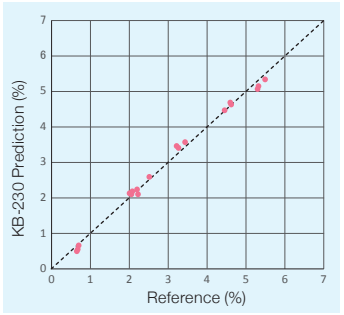




■ Comparison between the standard value (moisture based on the official method) and KB-230 predicted value

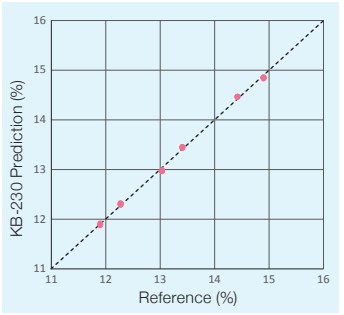
* The following is an example of a test result in making calibration curve. It does not guarantee that the same type of sample will have the same measurement result.

Cookies



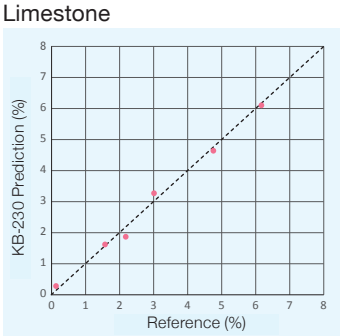
Correlation coefficient: 0.997
Standard error: 0.135

Flour

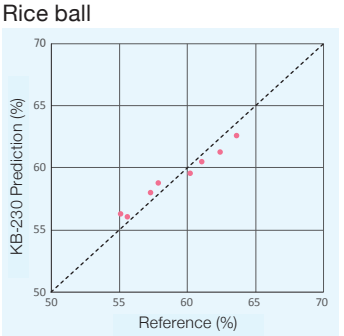


Correlation coefficient: 0.999
Standard error: 0.041

Limestone



Rice ball



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Options

Large Petri dish (ø90 mm)

It is used for measuring the samples that will not fit into the Petri dish supplied as an accessory.
The light shielding cover can be used as well. Therefore, it is applicable for the samples whose light transmittancy is high.

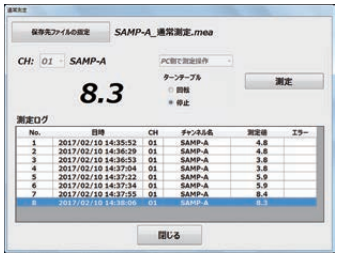
VZ-800 Printer

A thermal printer with 58 mm of paper size.
It can swiftly print out measurement result.

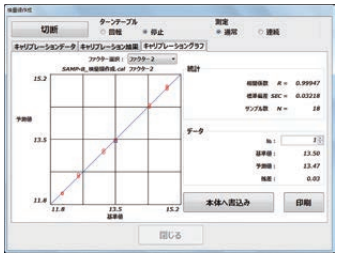
PC software

It enables simple operation of monitoring the moisture change in moisture absorption on the trend graph, PLS calibration using a function to make a calibration curve, or editing the calibration curve, as well as displaying measurement result and saving the data.
It is capable of making full use of this device, and provides easy-to-use functions.

Normal measurement



Making the calibration curve



Correction

CH parameter editing

Specifications

Measurement method	Near-infrared reflection, light projected/ received at the bottom plane
Spectroscopy	Filter
Measurement spot	Diameter: approximately 25 mm
Number of calibration curves	50
Measurement time	Normal measurement: 7 sec. (subject to the setting) Continuous measurement: 0.5 sec. interval
Display	Organic EL
Input/Output	USB (for PC I/O), RS-232C (for printer output)
Light source	Tungsten lamp
Operating humidity range	5 to 35°C (no condensation) / 30 to 80%RH
Power supply	100-240 V AC (50/60Hz), 40W
Dimensions/Weight	415 (W) x 370 (D) x 226 (H) mm / 13 kg
Accessories	Light shielding cover, Sample cell (Petri dish, ø90 mm), Zero-adjustment plate, Sample cell holder, Power cable, Fuse (spare), First Guide, Operating Manual

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Requests