HIKARi

Digital Hand-held “Pocket” IR Brix Meter

ATAGO®

Proudly made in Japan 100%TM

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2 ways to measure

Press against an apple, then press the side button

Place an apple, then press the START button

Touch the surface of fruit

The Brix (sugar level) can be measured by placing the fruit on the sample stage with no need of cutting or squeezing.
It requires no more cumbersome wiping and cleansing after each measurement.

Total inspection is possible.

All it takes is to put it against a fruit so each individual fruits' Brix (sugar level) can be inspected. The measured fruits are intact and can then be shipped and sold after measurement.
Fruits that were measured then can be shipped and sold thereupon.

Super lightweight that fits in your pocket

PAL-HIKARi is the world most compact nondestructive Brix meter. The button located on the lateral side of the unit makes it possible to take measurements with one hand while the fruits that are on the tree. The unit is battery powered which makes it possible to take measurements anywhere.

Fits well on the surface of a fruit

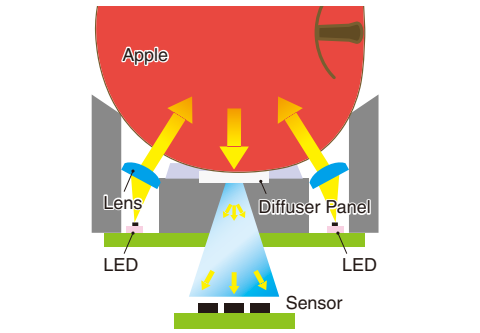
The cushion on PAL-HIKARi allows for a secure surface contact with fruits. Regardless of the fruit shape, PAL-HIKARi's fits snug which eliminates measurement discrepancies caused by external light interference or placement of the fruits.

Series total 360,000 unit

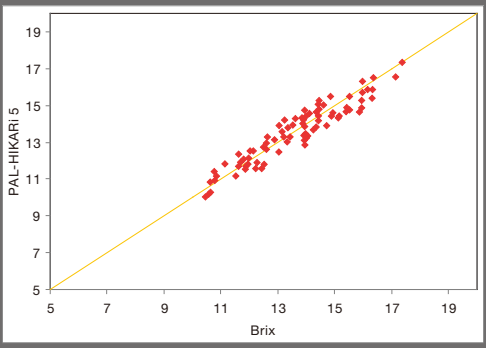
*PAL series

ATAGO is an established manufacture of Brix meters since 1940. For Brix (sugar level), with ATAGO's proven track of history in technology, PAL-HIKARi is developed on basis of this accomplished technology.
ATAGO products are used in 154 countries worldwide.

PAL-HIKARi's principal measurement method



Correlation between PAL-HIKARi and Brix (sugar level)



Offset feature

This function allows to adjust fixed numeric value to the measurement value. Please use the offset feature to match the measurement value with already owned Brix meter.

PAL-HIKARi is patent pending.

Uses

Orchard

Customs inspection/import

Market

Grocery store

Besides aforementioned, pâtissier chefs who uses fruits as an ingredient,
gardening hobbyist that enjoys home gardening and may more can be use it.

Natsu Midori	Sansa	Tsugaru	Akibae
Jul.-Aug.	Aug.-Sept.	Aug.-Sept.	Sept.-Oct.

Story

A very well familiar fruit, apples are eaten as-is for light meals or turned into pies, however, the situation is a little different in Japan. Many fruits in Japan were originally imported and were considered rare luxury items. This matched with the gift giving culture and it has since then been cherished as a gift.

Matching to various needs, apple products have improved in size, color and flavor by competing amongst different variety creating individually rich creative market. One of the distinctive characteristics in Japan is branding which is different from development by breeding.

"Fuji" and "Sun Fuji"

Originating in Fujisaki machi, a town located in Aomori prefecture, "Fuji apple" is grown worldwide with highest global production in the world. "Sun Fuji" and "Fuji" are thought as a different variety from each other but is both "Fuji apple."

Matured "Fuji" is enclosed in brown paper bags to keep insect pests from getting to them before harvesting. Its distinctive characteristics are thin skin and vibrant color.

On the other hand, "Sun Fuji" is not bagged and is exposed to sunlight for a long duration of time. The color may not be quite as good but its sugar level is very high.

"Sun Fuji" branching from "Fuji" was branded to have sweet flavor while "Fuji" was branded for its pretty reddish color. From this branding, one variety of apple made it possible to satisfy different market needs such as "good color and storability" and "naturally distinct sweetness."

1,200,000 yen apple

The focus of attention, "Esashi Apple" is the top brand selected by JA (Japan Agricultural Co-operatives) Esashi from among apples grown in unique environment of Esashi region of Okushu city in Iwate prefecture in characteristic regional soil, climate, dwarfing technique, and keeping them unbagged.

After selective selection process, only those with the right color, size, shape and sugar level are allowed to be called "Esashi Apple" . From the entire harvest, only 1% is selected as the special of the top grade.

In recent years, the auctioned price of the special selection grade is the fall' s biggest news. A box of 10kg special selection grade was sold during auctioned for 1,200,000 yen. The cost of an apple was 43,000 yen.

Esashi apple is proudly locally made over 40 years. Following the example of Esashi apple, many unique savory brands are beginning to appear Japan.

The most expensive variety apple brand was "Sun Fuji."

Jonathan	Shinano Gold	Sun Mutsu	Sun Fuji and Fuji	Mutsu	Orin
Oct.	Oct.-Nov.	Oct.-Jan.	Oct.-Jan.	Nov.-Jan.	Nov.-Jan.

Q What fruit can be measured?

A Apple
*Please reference pg.7 “Future Planning.”

Q Does fruit need to be prepared?

A No need to cut, strain, or squeeze fruit.

Q Does skin color affect measurement? (Red and green apple)

A Color does not affect.

Q Battery life?

A About 4,000 times (AAA alkaline batteries x 2).

Q Can measurement be taken for fruits during its growth?

A Measurement can be taken while the fruit is on the tree. Carefully place the cushion on the fruit not to let it fall off the branch.

Q Measuring the same fruit, the value is different.

A Brix level of fruit differs depending on such factor as exposure to sunlight and area of the fruit. This unit measures the area where the sample stage is placed against. *Please reference “ When measurement value does not seem to be correct…”

Q I would like to measure Brix of processed apple products.

A Packaged sets products are available that comes with pocket Brix meter (PAL-0) and pocket acidity Brix meter. *Reference pg. 7 “Set Items”

Q How do you calibrate?

A PAL-HIKARi is designed to require no calibration. (Equipped with offset feature. Please reference pg.2.)

Q What to look out for when storing.

A Make sure to dry the cushion well. Take out batteries when planning to not to use for a long duration of time.

When measurement value does not seem to be correct…

POINT External light interference

Avoid light from entering the sample stage. Light entering the samplestage will cause measurement error and cause greater margin of error.

POINT Effect of contact between the sample stage and fruit

Properly place the sample stage of PAL-HIKARi Sensor against a fruit. Improper contact will allow external light to enter.

POINT Effect of fruit temperature

Be sure to take measurement after allowing the sample fruit to acclimate to PAL-HIKARi Sensor.
*Place them under same condition for a period of time.

POINT Effect of water droplet, soiled area,and condition of the fruit

Avoid fruit’s surface with water droplets or soiled area. Correct measurements cannot be achieved for soft and spotty fruits caused by elapsed time since harvesting.

Future planning

Set items

Cat.no.5555

IR Brix Meter PAL-HIKARi 5 × **Brix Meter** PAL-0

Light x Refraction
from outside, from inside, good flavor

Cat.no.5655

IR Brix Meter PAL-HIKARi 5 × **Brix Acidity Meter** PAL-BX|ACID5

Acidity x Brix
good sourness, good sweetness, perfect flavor

Optional

Part Name	Part No.
Spare cushion R (3 sets)	RE-39003

Specifications

Model	PAL-HIKARi 5
Cat.No.	5455
Measurement fruit	Apple
Measurement Scale	Brix
Measurement method	Abssorptionmetric analysis using multiwavelengths (Interactance Mode)
Measurement Range	10.0 to 18.0%
Resolution	0.1%
Measurement Accuracy	±1% *Apple varieties and measurement environment may affect accuracy.

Repeatability	±0.5%
Measurement Temperature	Apple ambient temperature 5.0 to 35.0℃ *acclimate apple to ambient temperature
Automatic temperature control range	5.0 to 35.0℃
International Protection class	IP64
Battery Life	Approx. 4,000 times measurement (when alkaline batteries are used)
Power Supply	2 x AAA alkaline batteries
Dimensions & Weight	61 × 44 × 115mm, 120g (Main Unit only)

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