

Digital Hand-held "Pocket"

ATAGO®

Honey Refractometer



PAL-22S Cat.No.4422



The easiest, most objective way to check **honey** moisture

Purpose of Use



- To check the quality of outgoing products
- To check the grades of incoming products

How to Measure



1 Place the sample onto the prism surface.



2 Press the START key.



3 The measurement value will be displayed in 3 seconds.

Accessories

- PAL-case
Clipped to your belt



- PAL-strap



Convenient!

Reason to choose PAL-22S



Digital display
-no more boundary line



Calibration with water only
-no more calibration liquids



Rinse under running water



Measurement time, only 3 seconds!



Measure indoors & outdoors



Temperature display



Specification

Measurement Range	Honey Moisture 12.0 to 30.0%, Temperature 10.0 to 40.0°C
Resolution	Honey Moisture 0.1%, Temperature 0.1°C
Measurement Accuracy	Honey Moisture ±0.2%, Temperature ±1°C
Measurement Temperature	10 to 40°C (ATC*)
Ambient Temperature	10 to 40°C (ATC*)
Sample Volume	0.3ml or more
Measurement Time	3 seconds
Power Supply	2 alkaline batteries
Battery Life	Approx. 11,000 measurements (Using a new alkaline battery)
International Protection Class	IP65 Water Resistant
Dimensions and Weight	55 (W)×31(D)×109(H)mm, 100g (Main unit only)

*ATC : Automatic Temperature Compensation

All ATAGO refractometers are designed and manufactured in Japan.

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HACCP GMP GLP

ATAGO products comply with HACCP, GMP, and GLP system standards.

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* Specifications and appearance are subject to change without notice.

ATAGO Products For Honey Quality control

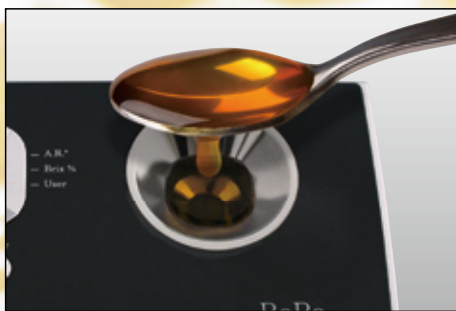


Honey moisture% Fructose%

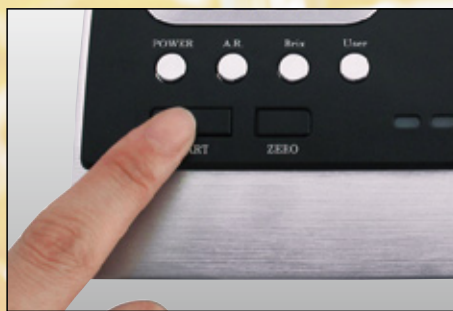
Fusion of refractive index and angle of optical rotation
- Making the invisible, visible -

The ideal All-in-One solution for Honey Quality control. Honey moisture, Brix, Angle of rotation and Fructose to glucose ratio simultaneous check.

Measurement in 3 easy steps



1. Fill the sample stage up to the fill line (approx. 3mL).



2. Press START.



3. Measurement is displayed.

Automatically calculated scales

Press "User" to select the desired scale: Fructose to glucose ratio and Honey moisture.



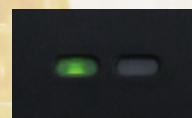
A.R. – Angle of Rotation Brix – Brix

User – Factory Setting:
Fructose to glucose ratio*

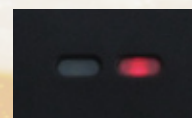
*Pressing "User" switches the scale in the following order:
Fructose to glucose ratio → Honey moisture

Measurement evaluation indicator

Measurements are evaluated against pre-set tolerance limits, and the result is indicated by green or red light.
(Upper and lower tolerance limits must be set in advance to using this function)



Green light
[Within tolerance]



Red light
[Outside tolerance]

Specifications

RePo-4 Cat.No.5014

Measurement scales	Angle of Rotation (°) Brix (%) Fructose % at Honey Honey Moisture % Temperature (°C)	Resolution	Angle of Rotation : 0.01° Brix : 0.1% Fructose % : 0.1% Honey Moisture % : 0.1% Temperature: 0.1°C
Measurement readings	Angle of Rotation (°) Brix (%) Temperature (°C) User (Fructose % / Honey Moisture %) Brix (%) with ATC	Measurement accuracy	Angle of Rotation : ±0.1° (at 20°C) Brix : ±0.2% Honey Moisture % : ±0.2% Temperature: ±1°C
Measurement range	Angle of Rotation : -5.00 to +5.00**2 Brix : 0.0 to 85.0% Fructose %: 0.0 to 99.9% Honey Moisture %: 13.0 to 30.0% Temperature: 15.0 to 40.0°C	Measurement time	12 seconds
Display range	Angle of Rotation : -5.99 to +5.99° Brix : -2.0 to 86.6% Fructose %: -2.0 to 102% Honey Moisture %: 12.5 to 30.5% Temperature: 14.0 to 41.0°C	Ambient temperature	15 to 40°C
		Storage temperature	0 to 65°C
		Temperature compensation range	Brix : 15 to 40°C Honey Moisture % : 15 to 40°C
		Sample volume	3mL
		Measurement wavelength	589nm (near D-line)
		Light source	LED
		Power supply	Size AAA alkaline battery x 4
		International protection class	IP67
		Dimensions and weight	10.1x16.0x3.8cm,325g (Main unit only)

Fields of application

- **Checking honey's moisture**
Which is the quality aspect that determines the ability of honey to remain fresh.
- **Checking honey's brix**
Which gives idea about the total dissolved solids as counterpart of the moisture.
- **Checking honey's angle of rotation**
Which according to international standards, helps to distinguish between blossom and honeydew honeys.
- **Checking Fructose to glucose ratio**
Which is important for understanding the rate of crystallization in honey.

Feel free to contact us on other possible fields of application

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*2 Ranges measured by the device 20mm light path. These are convertible to below ranges: -25.00 to +25.00 with a 100mm observation tube, -50.00 to +50.00 with a 200mm observation tube