



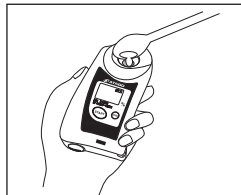
PAL-BX/RI has dual scale of Brix (Wide range 0.0-93.0%) and Refractive Index (Resolution 0.0001). And the measurement temperature will be displayed continuously.

Digital Hand-held "Pocket" Refractometer

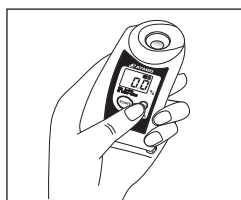
PAL-BX/RI

Cat.No.3851

Measurement Method



1. Place the sample onto the prism surface.



2. Press the START key.

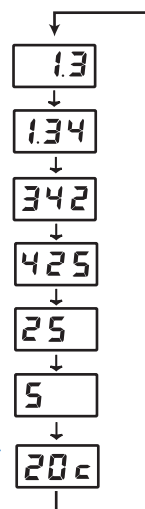


3. The measurement value will be displayed in 3 seconds.

4. Press the START key for 2 seconds while the main scale (Brix) is displayed to switch to the secondary scale (Refractive Index). Repeat to return to the main scale.

Example of display

i.e.) display of the measurement values "1.3425" and "20°C".



The measurement value will scroll from right to left on the display in intervals of 0.8 seconds.



Quick & Easy cleanup!



Actual size

Features

- Requires only a few drops of sample
- Measurement in 3 seconds
- Ergonomically designed for easy, one-handed operation
- Light & Compact, 100g
- Designed with a strap holder option
- Highly water resistant (IP65)
- Convenient storage case
- Battery power indicator

Specifications

Measurement range	Brix : 0.0~93.0%	Refractive Index (RI) : 1.3306~1.5284
Resolution	Brix : 0.1%	Refractive Index : 0.0001
Measurement accuracy	Brix : $\pm 0.1\%$	Refractive Index : ± 0.0003 (Water at 20°C)
Measurement temperature (Automatic Temperature Compensation)	10~75°C (Brix only)	
Ambient temperature	10~40°C	
Power supply	Size AAA alkaline battery $\times 2$	
Battery life	About 11, 000 times measurement (when an alkaline battery is used)	
International Protection Class	IP65 Water resistant	
Dimensions and weight	55(W) $\times$ 31(D) $\times$ 109(H)mm, 100g	

* The displayed refractive index is not the temperature compensated value.
It is the refractive index for the displayed measurement temperature.

All ATAGO refractometers are designed and manufactured in Japan.



HACCP G.M.P. G.L.P.

ATAGO products are acknowledged by HACCP, G.M.P. and G.L.P.

ATAGO CO., LTD.

Headquarters: 32-10, Honcho, Itabashi-ku, Tokyo 173-0001 Japan
TEL: 81-3-3964-6156 FAX: 81-3-3964-6137
overseas@atago.net <http://www.atago.net/>

ATAGO U.S.A., Inc.

12011 NE First Street, Bldg. C, Suite 110 Bellevue, WA 98005 U.S.A.
TEL: 1-425-637-2107 FAX: 1-425-637-2110
customerservice@atago-usa.com <http://www.atago.net/>

ATAGO INDIA Instruments Pvt. Ltd.

A-501, Mangal Aarambh Business Centre, Near Kora Kendra, Off. S.V. Road, Borivali (West), Mumbai-400 092 India
TEL: 91-22-2833-8038 / 8076 FAX: 91-22-2899-8164
customerservice@atago-india.com



※Specifications and appearance are subject to change without notice.

DIGITAL HAND-HELD "POCKET" REFRACTOMETER

65th
anniversary

PAL-α

Cat.No.3840

Special Anniversary model
with a wide Brix range **0 to 85%!!**



Actual
Size

Application

- * Outdoors in the vegetable fields and fruit orchards
- * Indoors for beverages (fruits juice, coffee, soft drink, etc) and foods (soy sauce, sauce, seasoning, soup, jam, marmalade, maple syrup, etc.)
- * At fruit and vegetable packing facilities and in the supermarket
- * At restaurants or shops
- * At junior high schools, high schools, or universities as course material

Features

- * Calibration with water only
- * Measurement in 3 seconds
- * Extremely water resistant (IP65)
- * Light & Compact, 100g
- * Ergonomically designed for easy, one-handed operation
- * Convenient storage case
- * Automatic Temperature Compensation (ATC)
- * Designed with a strap holder option



Measurement Method



Apply 2-3 drops onto the prism surface.



Press the START key.



The measurement value will be displayed in 3 seconds.

Specifications

Measurement range	: Brix 0.0 to 85.0%
Resolution	: Brix 0.1%
Measurement accuracy	: Brix ±0.2%
Repeatability	: Brix ±0.1%
Ambient Temperature	: 10 to 40°C
Measurement Temperature	: 10 to 75°C (Automatic Temperature Compensation)
Sample volume	: 0.3ml or more
Measurement time	: 3 seconds
Power supply	: AAA alkaline battery × 2
Battery life	: Approx. 11,000 measurements (Using new alkaline batteries)
International Protection Class	: IP65 Water resistant
Dimensions and weight	: 55(W)×31(D)×109(H)mm, 100g

All ATAGO refractometers are designed and manufactured in Japan.

HACCP GMP GLP

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

ATAGO CO., LTD.

Headquarters: The Front Tower Shiba Koen, 23rd Floor
2-6-3 Shiba-koen, Minato-ku, Tokyo 105-0011, Japan
TEL : 81-3-3431-1943 FAX : 81-3-3431-1945
overseas@atago.net http://www.atago.net/

ATAGO U.S.A., Inc.

TEL : 1-425-637-2107 customerservice@atago-usa.com

ATAGO INDIA Instruments Pvt. Ltd.

TEL : 91-22-2833-8038 / 8076 customerservice@atago-india.com

ATAGO (THAILAND) Co., Ltd.

TEL : 662-982-8718-9 customerservice@atago-thailand.com

ATAGO BRASIL Ltda.

TEL : 55 16 3916-6000 customerservice@atago-brasil.com

ATAGO ITALIA s.r.l.

TEL : 39 2 36557267 customerservice@atago-italia.com

ATAGO CHINA Guangzhou Co., Ltd.

TEL : 86 20-38106065 info@atago-china.com



* Specifications and appearance are subject to change without notice.

DIGITAL BUTYRO REFRACTOMETER

PAL-BUTYRO

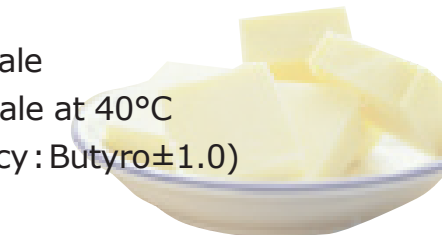
Cat.No.4515

New ATAGO Digital Model PAL-BUTYRO perfect for Butter, Ghee & Edible Oil industry for checking purity / adulteration.

Features

- Calibration with Standard liquid
- Large, easy to read display
- External Light Interference (ELI)*
- Display of both Butyro & RI scale
- Temperature Compensated Scale at 40°C
- Automatic & Accurate (Accuracy : Butyro $\pm$ 1.0)

Dual scale of Butyro & Refractive Index !



Specifications

Measurement Range (Automatic Temperature Compensation)	Butyro 30.0 to 90.0 RI 1.4450 to 1.4850 (Converted at 40°C)
Minimum Indication	Butyro 0.1 RI 0.0001
Measurement Accuracy	Butyro $\pm$ 1.0 RI $\pm$ 0.0005
Measurement Temperature	10 to 50°C (Automatic Temperature Compensation)
Ambient Temperature	10 to 40°C
Sample Volume	0.3 mL or more
Measurement Time	3 seconds (approximately)
Power Supply	006P dry battery (9V)
International Protection Class	IP 65 Water Resistant
Dimensions and Weight	55(W) $\times$ 31(D) $\times$ 109(H)mm, 100g (Main unit only)

*External Light Interference (ELI)

When intense light penetrates the prism of a digital refractometer, the light waves may interfere with the sensor resulting in inaccurate readings.

To ensure accurate measurement results each time, the PR-BUTYRO is programmed with the ELI function to display the warning message "nnn" when intense direct light is detected. Forming a habit of shading the sample stage with your hand and re-pressing the START/OFF Switch (when the warning message from the ELI function is displayed) will ensure accurate measurement results each time.

All ATAGO products are designed and manufactured in Japan.

ATAGO CO., LTD.

<https://www.atago.net/> overseas@atago.net

Headquarters: The Front Tower Shiba Koen, 23rd Floor
2-6-3 Shiba-koen, Minato-ku, Tokyo 105-0011, Japan
TEL : 81-3-3431-1943 FAX : 81-3-3431-1945



HACCP GMP GLP

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

ATAGO U.S.A., Inc.
ATAGO INDIA Instruments Pvt. Ltd.
ATAGO THAILAND Co., Ltd.
ATAGO BRASIL Ltda.
ATAGO ITALIA s.r.l.
ATAGO CHINA Guangzhou Co., Ltd.
ATAGO RUSSIA Ltd.
ATAGO KAZAKHSTAN Ltd.

TEL : 1-425-637-2107 customerservice@atago-usa.com
 TEL : 91-22-28544915 / 40713232 customerservice@atago-india.com
 TEL : 66-21948727-9, 66-21171549 customerservice@atago-thailand.com
 TEL : 55 16 3913-8400 customerservice@atago-brasil.com
 TEL : 39 02 36557267 customerservice@atago-italia.com
 TEL : 86-20-38108256 info@atago-china.com
 TEL : 7-812-777-96-96 info@atago-russia.com
 TEL : 7-727-257-08-95 info@atago-kazakhstan.com

* Specifications and appearance are subject to change without notice.

DIGITAL BUTYRO REFRACTOMETER

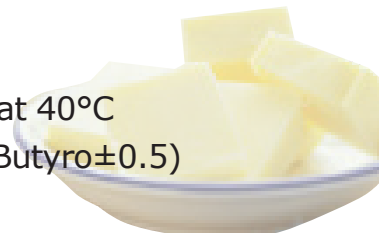
PR-BUTYRO

Cat.No.3454

New ATAGO Digital Model PR-BUTYRO perfect for Butter, Ghee & Edible Oil industry for checking purity / adulteration.

Features

- Calibration with Standard liquid
- Large, easy to read display
- External Light Interference (ELI)*
- Display of both Butyro & RI scale
- Temperature Compensated Scale at 40°C
- Automatic & Accurate (Accuracy : Butyro±0.5)



Specifications

Measurement Range (Automatic Temperature Compensation)	Butyro 30.0 to 90.0 RI 1.4450 to 1.4850 (Converted at 40°C)
Minimum Indication	Butyro 0.1 RI 0.0001
Measurement Accuracy	Butyro ±0.5 (at 40°C) RI ±0.0003 (at 40°C)
Measurement Temperature	10 to 50°C (Automatic Temperature Compensation)
Ambient Temperature	10 to 40°C
Sample Volume	0.1ml or more
Measurement Time	3 seconds (approximately)
Power Supply	006P dry battery (9V)
International Protection Class	IP 65 Water Resistant
Dimensions and Weight	17(W)×9(D)×4(H)cm, 300g (Main unit only)

*External Light Interference (ELI)

When intense light penetrates the prism of a digital refractometer, the light waves may interfere with the sensor resulting in inaccurate readings.

To ensure accurate measurement results each time, the PR-BUTYRO is programmed with the ELI function to display the warning message "nnn" when intense direct light is detected. Forming a habit of shading the sample stage with your hand and re-pressing the START/OFF Switch (when the warning message from the ELI function is displayed) will ensure accurate measurement results each time.

All ATAGO products are designed and manufactured in Japan.

ATAGO CO.,LTD.

<https://www.atago.net/> overseas@atago.net

Headquarters: The Front Tower Shiba Koen, 23rd Floor
2-6-3 Shiba-koen, Minato-ku, Tokyo 105-0011, Japan
TEL : 81-3-3431-1943 FAX : 81-3-3431-1945



HACCP GMP GLP

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

ATAGO U.S.A., Inc.
ATAGO INDIA Instruments Pvt. Ltd.
ATAGO THAILAND Co., Ltd.
ATAGO BRASIL Ltda.
ATAGO ITALIA s.r.l.
ATAGO CHINA Guangzhou Co., Ltd.
ATAGO RUSSIA Ltd.
ATAGO KAZAKHSTAN Ltd.

TEL : 1-425-637-2107
TEL : 91-22-28544915 / 40713232
TEL : 66-21948727-9, 66-21171549
TEL : 55 16 3913-8400
TEL : 39 02 36557267
TEL : 86-20-38108256
TEL : 7-812-777-96-96
TEL : 7-727-257-08-95
customerservice@atago-usa.com
customerservice@atago-india.com
customerservice@atago-thailand.com
customerservice@atago-brasil.com
customerservice@atago-italia.com
info@atago-china.com
info@atago-russia.com
info@atago-kazakhstan.com

* Specifications and appearance are subject to change without notice.

Applications



World's first! Dilution-free Salt Measurement

'Yes, I was looking for something like this!'

Not only providing the means to measure the balance between concentration and salt content in one unit, the decisive factor in taste for all food, with our proprietary algorithm we also took away the stress that comes with dilution.

Anyone can measure easily

When using for the first time, a simple programming with 1 undiluted and 2 diluted versions of the sample is needed. After measuring the Brix and salt of the three samples, the user scale is automatically created from those values. From then on, that sample can be dropped on the unit and measured without any dilution!

PAL-BX|SALT

C a t . N o .	PAL-BX SALT	4921
	PAL-BX SALT+5	4922
R a n g e	Brix : 0.0 to 90.0%	
	Salt concentration : 0.00 to 15.00%	
A c c u r a c y	Brix: ±0.2%	
	Salt concentration:	
	Displayed value ±0.05%(0.00 to 0.99%)	
	Relative precision ±5%(1.00 to 9.99%)	
	Relative precision ±10%(10.00 to 15.00%)	

Resolution	Brix : 0.1% Salt concentration : 0.01%
Ambient Temperature	10 to 40°C
Power Supply	2 × AAA Batteries
International Protection Class	IP65 Water resistant
Dimensions & Weight	5.5×3.1×10.9cm 100g(main unit only)



Only the PAL-BX | SALT + 5 has the user scale function to measure salt content without dilution.



PAL-BX|SALT



PAL-BX|SALT+5

No reagents or glassware required

Costly and hard to dispose of reagents were needed for the titration method. Glass hydrometers needed to be handled carefully in food facilities due to the danger of dropping and shattering glass. Now with the Brix and Salt Meter, you don't have to worry about reagents or damaged glass!

Pursuing SDGs, it can withstand long-term use.

The concept of 'anyone', 'anywhere' and 'easily' being able to measure has been our standard, but now we have added 'for a long time' to our list for the strongest of specifications. Working towards sustainability, the PAL-BX/SALT is made of durable materials designed for long term use without worry.

BX | SALT

NEW

It is equipped with a temperature compensation feature to accurately measure high-temperature samples.

Display the salt reduction index (salt concentration ÷ Brix).

Brix & Salt shown simultaneously!

Two types of model are available! Standard type PAL-BXISALT is a simple combination of refractometer and salt meter. PAL-BXISALT+5 is equipped with an algorithm that saves dilution.

* User scales is available only with PAL-BXISALT +5

-2 in 1-Brix and Salt Hybrid Meter

A hybrid brix and salt meter born by the fusion of optics and metal.

An optical prism is used for the concentration via light refraction, and for salt concentration via electrical conductivity.



Unbreakable glass electrode

In conventional pH meters the glass electrode has a protrusion-like shape and is easily broken requiring delicate handling. The PAL-pH succeeded in developing a durable glass electrode that can withstand large loads. In various fields as well as food production sites, the risk of contamination and injuries can be reduced and it can be used daily without hesitation. Also, the electrode does not require a storage solution.

Easy to clean with full flat sample stage, and hygienic

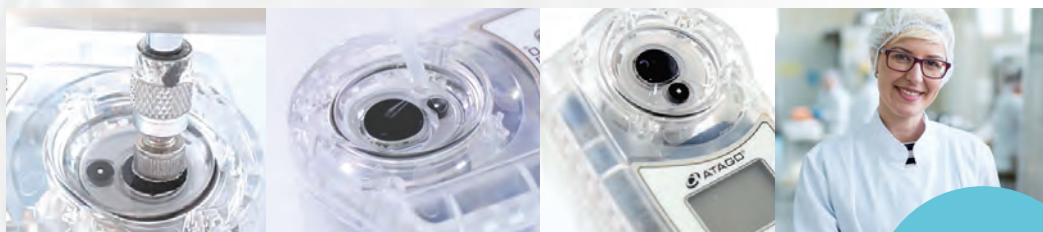
It is a pH meter with IP65 that can be "washed" under running tap water. Most of the conventional pH meters require careful attention when washing due to the complex shape of the measurement section or sensor unit, but PAL-pH is easy to wash because the measurement unit is completely flat and samples can be easily wiped off. PAL-pH is easy to maintain and clean, so contamination can be avoided. Using PAL-pH is a relief from daily stress.

Measure merely with 3 drops

The PAL-pH can measure pH with only 0.6 mL of sample and the measurement time is as fast as 3 seconds. This is an advance that dip-style pH meters did not offer. There is no need to prepare a beaker to hold the sample, and the trouble of preparation and cleaning can be omitted. Of course, there is no need to purchase a large volume of calibration standard.

Unconsumable KCl

Electrode's internal liquid, KCl is inseparable from the pH meter. Ordinary pH meters are designed so that KCl will flow out little by little, and it will need to be replaced and filled regularly as it flows out. We took it upon ourselves to get rid of these stresses our users endured. We made every effort to figure out how to make KCl last longer. With PAL-pH, you do not have to worry about KCl depletion. The pride and effort of ATAGO developers, who wanted to create an easy-to-use device, created PAL-pH.



PAL-pH

Droplet type

Cat. No.	PAL-pH 4311
Range	0.00 to 14.00
Resolution	0.01
Accuracy	±0.10
Calibration	Calibration at 3 points at 4.01, 6.86, 9.18.

Ambient Temperature	10 to 40°C
Sample Volume	0.6mL
Power Supply	2xAAA Batteries
International Protection Class	IP65 Water resistant
Dimensions & Weight	5.5x3.1x10.9cm 100g(main unit only)



Equipped with NFC that allows data transfer just by holding it over

ATAGO CO., LTD.

Headquarters: The Front Tower Shiba Koen, 23rd Floor
2-6-3 Shiba-koen, Minato-ku, Tokyo 105-0011, Japan
TEL : 81-3-3431-1943 FAX : 81-3-3431-1945



PAL-pH

Cat.No.4311

Equipped with a hard-to-break electrode, safe and secure, drop-type pH meter that can measure with a small amount of sample

JP 1538952
CN ZL 2015 3 0301440.6

TW D174679
US US D788,923 S

KR 30-0846054
EUIPO 002750265-0001