

ATAGO® IR BRIX METER

1572703(JPN)
Patent Granted in countries around the world.

PAL™-HIKARi

Measuring Brix (Sweetness) Just by Touch

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.

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 are on trees. The unit is battery powered which makes it possible to take measurements anywhere.

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.

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.

Equipped with ELI Function

PAL™-HIKARi is equipped with ELI function that will detect interfering external light allowing to take measurement outdoors, while the fruits are on the tree. When external light is detected, "nnn" is displayed.

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.

2 ways to measure



Press against an apple, then press the side button.



Place an apple, then press the START button.



The 7th Shibusawa Eiichi Business Grand Prize



The 30th Small and Medium Enterprise Excellent New Technology New Product



2018 Kanto Plain 'Haisumer' (Invention) Commendation



The Tokyo Venture Technology Awards Honorable Mention



Apple

PAL™-HIKARi 5

Cat.No.5455

Measurement fruit	Apple
Measurement range	Brix 10.0 to 18.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix ±1% *Apple varieties and measurement environment may affect accuracy.
Automatic temperature compensation range	5.0 to 35.0°C *acclimate apple to ambient temperature
Dimensions and weight	6.1×4.4×11.5cm, 120g (main unit only)

Common Specifications

Power supply	2×AAA alkaline batteries
International protection class	IP64

Grapes

PAL™ -HIKARI 2

Cat.No.5452

Measurement fruit	Grapes (Recommended sample size is 15 mm or greater in diameter.)
Measurement range	Brix 10.0 to 25.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 1.5\%$ * (Guaranteed accuracy range:15.0 to 30.0°C)
Automatic temperature compensation range	15.0 to 30.0°C *acclimate grape to ambient temperature
Dimensions and weight	6.1x6.4x11.5cm, 153g (main unit and small sample stage S only)

*Grape varieties and measurement environment may affect accuracy.



Cherry Tomatoes & Medium Tomatoes

PAL™ -HIKARI 3 MINI

Cat.No.5453

Measurement fruit	① Cherry Tomatoes(Recommended sample size is 15 mm to 25 mm in diameter.) ② Medium Tomatoes(Recommended sample size is 25 mm to 50 mm in diameter.)
Measurement range	Brix 3.0 to 15.0%
Resolution	Brix 0.1%
Measurement accuracy	① Brix $\pm 1.5\%$ * ② Brix $\pm 2.25\%$ *
Automatic temperature compensation range	15.0 to 35.0°C *acclimate Cherry Tomatoes & Medium Tomatoes to ambient temperature
Dimensions and weight	6.1x6.4x11.5cm, 153g (main unit and small sample stage S only)

*Cherry Tomatoes & Medium Tomatoes varieties and measurement environment may affect accuracy.



Peach

PAL™ -HIKARI 10

Cat.No.5460

Measurement fruit	Peach
Measurement range	Brix 8.0 to 20.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 1.5\%$ *
Automatic temperature compensation range	5.0 to 35.0°C *acclimate peach to ambient temperature
Dimensions and weight	6.1x4.4x11.5cm, 120g (main unit only)

*Peach varieties and measurement environment may affect accuracy.



Asian Pear

PAL™ -HIKARI 12

Cat.No.5462

Measurement fruit	Asian Pear
Measurement range	Brix 10.0 to 16.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 1\%$ *
Automatic temperature compensation range	5.0 to 35.0°C *acclimate pear to ambient temperature
Dimensions and weight	6.1x4.4x11.5cm, 120g (main unit only)

*Pear varieties and measurement environment may affect accuracy.



Cherry

PAL™ -HIKARI 16

Cat.No.5466

Measurement fruit	Cherry
Measurement range	Brix 12.0 to 26.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 1.5\%$ *
Automatic temperature compensation range	10.0 to 35.0°C *acclimate cherry to ambient temperature
Dimensions and weight	6.1x6.4x11.5cm, 153g (main unit and small sample stage S only)

*Cherry varieties and measurement environment may affect accuracy.



Prune

PAL™ -HIKARI 18

Cat.No.5468

Measurement fruit	Prune
Measurement range	Brix 11.0 to 29.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 1.5\%$ *
Automatic temperature compensation range	10.0 to 35.0°C *acclimate prune to ambient temperature
Dimensions and weight	6.1x4.4x11.5cm, 120g (main unit only)

*Prune varieties and measurement environment may affect accuracy.



Mango

PAL™ -HIKARI 15

Cat.No.5465

Measurement fruit	Mango
Measurement range	Brix 10.0 to 22.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 1.5\%$ *
Automatic temperature compensation range	10.0 to 35.0°C *acclimate mango to ambient temperature
Dimensions and weight	6.1x4.4x11.5cm, 120g (main unit only)

*Mango varieties and measurement environment may affect accuracy.



Blueberry

PAL™ -HIKARI 7

Cat.No.5457

Measurement fruit	Blueberry
Measurement range	Brix 8.0 to 20.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 2.0\%$ *
Automatic temperature compensation range	10.0 to 30.0°C *acclimate blueberry to ambient temperature
Dimensions and weight	6.1x6.4x11.5cm, 153g (main unit and small sample stage S only)

*Blueberry varieties and measurement environment may affect accuracy.



Strawberry

PAL™ -HIKARI 4

Cat.No.5454

Measurement fruit	Strawberry
Measurement range	Brix 4.0 to 21.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 1.5\%$ *
Automatic temperature compensation range	5.0 to 30.0°C *acclimate strawberry to ambient temperature
Dimensions and weight	6.1x6.4x11.5cm, 153g (main unit and small sample stage S only)

*Strawberry varieties and measurement environment may affect accuracy.



Corn

PAL™ -HIKARI 51

Cat.No.8551

Measurement fruit	Corn
Measurement range	Brix 9.0 to 20.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 2\%$ *
Automatic temperature compensation range	20.0 to 35.0°C *acclimate corn to ambient temperature
Dimensions and weight	6.1x5.0x11.5cm, 115g (main unit only)

*Corn varieties and measurement environment may affect accuracy.



Tomatoes

PAL™ -HIKARI 53

Cat.No.8553

Measurement fruit	Tomatoes
Measurement range	Brix 2.0 to 11.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 1.5\%$ *
Automatic temperature compensation range	15.0 to 35.0°C *acclimate tomatoes to ambient temperature
Dimensions and weight	6.1x4.4x11.5cm, 120g (main unit only)

*Tomatoes varieties and measurement environment may affect accuracy.



Persimmon

PAL™ -HIKARI 19

Cat.No.5469

Measurement fruit	Persimmon
Measurement range	Brix 12.0 to 20.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 1.5\%$ *
Automatic temperature compensation range	5.0 to 30.0°C *acclimate persimmon to ambient temperature
Dimensions and weight	6.1x4.4x11.5cm, 120g (main unit only)

*Persimmon varieties and measurement environment may affect accuracy.



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Kiwi

PAL™ -HIKARI 8

Cat.No.5458

Measurement fruit	Kiwi
Measurement range	Brix 11.0 to 20.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 1.5\%$ *
Automatic temperature compensation range	5.0 to 35.0°C *acclimate kiwi to ambient temperature
Dimensions and weight	6.1×4.4×11.5cm, 120g (main unit only)

*Kiwi varieties and measurement environment may affect accuracy.



Melon

PAL™ -HIKARI 30

Cat.No.5480

Measurement fruit	Melon
Measurement range	7.0 to 16.0%(10-20mm from surface Brix) 7.0 to 21.0%(CoreBrix)
Resolution	Brix 0.1%
Measurement accuracy	$\pm 2.0\%$ (10-20mm from surface Brix) 7.0 to 21.0%(CoreBrix)
Automatic temperature compensation range	10.0 to 40.0°C *acclimate Melon to ambient temperature
Dimensions and weight	6.1×4.4×11.5cm, 120g (main unit only)

*Melon varieties and measurement environment may affect accuracy.



Watermelon

PAL™ -HIKARI 32

Cat.No.5482

Measurement fruit	Watermelon(Recommended sample size is 20 to 25cm in diameter.)
Measurement range	Brix 5.0 to 18.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 2.0\%$ *
Automatic temperature compensation range	10.0 to 40.0°C *acclimate watermelon to ambient temperature
Dimensions and weight	6.1×4.4×11.5cm, 120g (main unit only)

*Watermelon varieties and measurement environment may affect accuracy.



Mini watermelon

PAL™ -HIKARI 33 MINI

Cat.No.5458

Measurement fruit	Minewatermelon
Measurement range	Brix 5.0 to 18.0%
Resolution	Brix 0.1%
Measurement accuracy	Brix $\pm 2.0\%$ *
Automatic temperature compensation range	10.0 to 40.0°C *acclimate mini watermelon to ambient temperature
Dimensions and weight	6.1×4.4×11.5cm, 120g (main unit only)

*Mini watermelon varieties and measurement environment may affect accuracy.



Common Specifications

Power supply	2×AAA alkaline batteries
International protection class	IP64

Optional Accessories

Part No.	Part name
RE-39415	JORDAN for PAL™-HIKARI (Silicon Cover)
RE-39008	Spare silicon cushion S (2 pieces)
RE-39009	Shading Cover(S)
RE-39011	Shading Cover(R)

Part No.	Part name
RE-39012	Cushion RS (3 sets)
RE-39013	Cushion RS Triple (2 sets)
RE-38183	Soft attachment

ATAGO® IR BRIX METER

IR Brix Meter × Brix Meter

IR Brix Meter
PAL™-HIKARI

+

Brix Meter
PAL™-0



A combo set that includes PAL™-HIKARI, a non-destructive IR Brix Meter that can measure the sugar content just by being pressed against the fruit, and a Brix meter that can measure the sugar content of squeezed fruit juice is now available.

Special scales are available for each fruit. Choose the appropriate combo set.

Cat.No.	Part Name
5552	IR Brix Meter × Brix Meter (Grapes) PAL™-HIKARI 2 + PAL™-0
5553	IR Brix Meter × Brix Meter (Cherry Tomatoes & Medium Tomatoes) PAL™-HIKARI 3 MINI + PAL™-0
5554	IR Brix Meter × Brix Meter (Strawberry) PAL™-HIKARI 4 + PAL™-0
5555	IR Brix Meter × Brix Meter (Apple) PAL™-HIKARI 5 + PAL™-0
5557	IR Brix Meter × Brix Meter (Blueberry) PAL™-HIKARI 7 + PAL™-0
5558	IR Brix Meter × Brix Meter (Kiwi) PAL™-HIKARI 8 + PAL™-0
5560	IR Brix Meter × Brix Meter (Peach) PAL™-HIKARI 10 + PAL™-0
5562	IR Brix Meter × Brix Meter (Asian Pear) PAL™-HIKARI 12 + PAL™-0
5565	IR Brix Meter × Brix Meter (Mango) PAL™-HIKARI 15 + PAL™-0
5566	IR Brix Meter × Brix Meter (Cherry) PAL™-HIKARI 16 + PAL™-0
5568	IR Brix Meter × Brix Meter (Prune) PAL™-HIKARI 18 + PAL™-0
5569	IR Brix Meter × Brix Meter (Persimmon) PAL™-HIKARI 19 + PAL™-0
5580	IR Brix Meter × Brix Meter (Melon) PAL™-HIKARI 30 + PAL™-0
5582	IR Brix Meter × Brix Meter (Watermelon) PAL™-HIKARI 32 + PAL™-0
5583	IR Brix Meter × Brix Meter (Miniwatermelon) PAL™-HIKARI 33 MINI + PAL™-0
8651	IR Brix Meter × Brix Meter (Corn) PAL™-HIKARI 51 + PAL™-0
8653	IR Brix Meter × Brix Meter (Tomatoes) PAL™-HIKARI 53 + PAL™-0

PAL™-HIKARI **P.8**

● PAL™-0 Specifications

Measurement Range	Brix: 0.0 to 33.0% Temperature: 10 to 100°C
Resolution	Brix: 0.1% Temperature: 0.1°C
Measurement Accuracy	Brix: ±0.2% Temperature: ±1°C
Automatic temperature compensation range	10 to 100°C

PAL™-0 is not sold separately. PAL™-0 is only available for IR Brix Meter × Brix Meter combo set.

IR Brix Meter × Brix Acidity Meter

IR Brix Meter
PAL™-HIKARI

+

Brix-Acidity Meter
PAL™-BX|ACID



A combo set that includes PAL™-HIKARI, a non-destructive IR Brix Meter that can measure the sugar content just by being pressed against the fruit, and PAL™-BX|ACID, a Brix-acidity meter that can measure the sugar content of squeezed fruit juice is now available.

Special scales are available for each fruit. Choose the appropriate combo set.

Cat.No.	Part Name
5652	IR Brix Meter × Brix Acidity Meter (Grapes) PAL™-HIKARI 2 + PAL™-BX ACID2
5653	IR Brix Meter × Brix Acidity Meter (Cherry Tomatoes & Medium Tomatoes) PAL™-HIKARI 3 MINI + PAL™-BX ACID3
5655	IR Brix Meter × Brix Acidity Meter (Apple) PAL™-HIKARI 5 + PAL™-BX ACID5
5657	IR Brix Meter × Brix Acidity Meter (Blueberry) PAL™-HIKARI 7 + PAL™-BX ACID7
5658	IR Brix Meter × Brix Acidity Meter (Kiwi) PAL™-HIKARI 8 + PAL™-BX ACID8
5662	IR Brix Meter × Brix Acidity Meter (Asian Pear) PAL™-HIKARI 12 + PAL™-BX ACID12
5665	IR Brix Meter × Brix Acidity Meter (Mango) PAL™-HIKARI 15 + PAL™-BX ACID15
5666	IR Brix Meter × Brix Acidity Meter (Cherry) PAL™-HIKARI 16 + PAL™-BX ACID16
8753	IR Brix Meter × Brix Acidity Meter (Tomatoes) PAL™-HIKARI 53 + PAL™-BX ACID3

PAL™-HIKARI **P.8** PAL™-BX|ACID **P.14**

International Protection Class	IP65
Power Supply	2 x AAA alkaline batteries
Dimensions and Weight	5.5(W) × 3.1(D) × 10.9(H)cm, 100g (Main Unit only)

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ATAGO® IR RIPENESS METER

PAL™-HIKARi Ripeness

Ripeness is displayed as 0-100%

PAL™-HIKARi Ripeness appeared in PAL series

PAL™-HIKARi Ripeness measures and converts maturity of the fruits on a scale of 0-100% without destructing the fruits.

Ripeness can be measured with no need to cut and squeeze the samples

This instrument measures amount of light absorbed by shining the light to the sample then converts to ripeness to display.

NFC

Measurement history (up to 100 items) can be read by touching a contactless IC card reader / writer connected to a smartphone or a personal computer.

Fits well on the surface of a fruit

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



2 ways to measure



Press against an apple, then press the side button.



Place an apple, then press the START button.

Optional Accessories

Part No.	Part name
RE-39415	JORDAN for PAL™-HIKARi (Silicon Cover)
RE-39011	Silicon cushion R
RE-39012	Cushion RS (3 sets)

IR Ripeness Meter

PAL™-HIKARi Ripeness

Cat.No.8460

Measurement range	Ripeness 0 to 100%, Temperature 5.0 to 35.0°C
Resolution	Ripeness 1%, Temperature 0.1°C
Measurement accuracy	Ripeness ±5%* Temperature ±1°C
Automatic temperature compensation range	5.0 to 35.0°C
Power supply	2×AAA alkaline batteries
International protection class	IP64
Dimensions and weight	6.1×4.4×11.5cm, 120g (main unit only)

*Sample varieties and measurement environment may affect accuracy.

This product was developed by utilizing the research results of the National Agriculture and Food Research Organization (NARO).

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