

ATAGO® HAND-HELD REFRACTOMETER

3934652, 1255763, 1255764, 1255765, 1255766, 1255767, 1356117, 4653148(JPN)
7,369,221 B2, US D554,549 S(USA)
000379326-0001/0002(EU)
Patent Granted in countries around the world.

MASTER™ Series

Ultimate Functionality. Unsurpassed Quality.
Seamless Usability.



Eyepiece is numbered to help easily focus.



Water Resistant
MASTER™-α•H•53S•500



Focusing is done by turning the eyepiece. The numbers printed around the eyepiece can be used as a reference for the focus position.

Numbered eyepiece
Applicable for all models of MASTER™ series

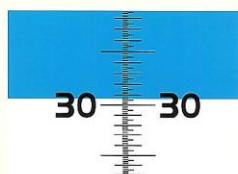
Measurement Method



Apply 1 to 2 drops onto the prism.



Close the daylight plate. Look through the eyepiece.



Read the measurement value where the boundary line intersects the scale.



1. Water Resistant

MASTER™-α•H•53S•500

The value of a washable hand-held analog unit is exceptional. After measuring, the instrument can be cleaned with running water under a faucet. The new structural design of these units allows them to be washed whenever necessary. Rated IP65 (dust tight and water resistant).



2. Visibility

Efficiently using an analog unit depends on how easily the boundary line can be read. Extensive research on the quality of optics was undertaken to produce a bright, high-contrast field of vision with large numbers for easy reading.



3. Hygienic Design

The smooth and easy-to-clean grip eliminates the possibility of food and samples being trapped, resulting in contamination and bacterial growth.



4. Automatic Temperature Compensation (ATC)

MASTER™-α•H•T

The newly designed ATC system allows the MASTER series to be used in a range of temperature conditions without the need to manually convert the readings. ATAGO has applied for a patent on the design of the improved ATC system. The MASTER series reads more accurately than other comparable models in the market.



5. Durability

The MASTER™ series has passed all water resistance, dust resistance, and drop tests. Instruments were subjected to water jets from four directions, dropped from one meter high onto an oak platform, and withstood pressure changes during air travel.



6. Automatic Sample Distribution (ASD)

ATAGO has developed a spoon-shaped tip that automatically spreads the sample across the prism. This revolutionary, time-saving feature adds to the user-friendliness of the MASTER series.

ATAGO® HAND-HELD REFRACTOMETER

MASTER™ Series

Choose the right model for your sample, based on the features and materials of the instrument.

Body Material

Metal

Die-cast aluminum

Ideal for a wide range of applications from agriculture and food to industrial and chemical, including high-temperature samples.



Plastic

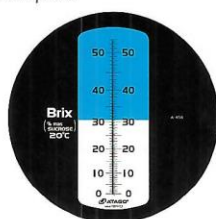
PBT (polybutylene terephthalate)

Resistant to salty and acidic samples.



Scale

Scale examples



MASTER™ -53 series

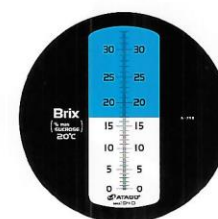
Left 0.2% Right 0.5% increment double scale.



MASTER™ -20 series



MASTER™ -10 series



Reprint MASTER™ series

Metal

	α		T		M	
Scale range	ATC & Water Resistant Refractometer		ATC Refractometer		Refractometer	
Brix 0 to 53%	MASTER™ -53 α	Cat.No.2351	MASTER™ -53T	Cat.No.2352	MASTER™ -53M	Cat.No.2353
Min. scale 0.2%	Accuracy : Brix $\pm 0.2\%$ (at 20°C) ATC		Size and weight : 3.2×3.4×16.8cm, 130g		Accuracy : Brix $\pm 0.2\%$ (at 20°C)	
Wide range						
Brix 0 to 33%	MASTER™ - α	Cat.No.2311	MASTER™ -T	Cat.No.2312	MASTER™ -M	Cat.No.2313
Min. scale 0.2%	Accuracy : Brix $\pm 0.2\%$ (10 to 30°C) ATC		Size and weight : 3.2×3.4×20.3cm, 155g		Accuracy : Brix $\pm 0.2\%$ (10 to 30°C)	
Low concentration						
Brix 0 to 20%	MASTER™ -20 α	Cat.No.2381	MASTER™ -20T	Cat.No.2382	MASTER™ -20M	Cat.No.2383
Min. scale 0.2%	Accuracy : Brix $\pm 0.2\%$ (10 to 30°C) ATC		Size and weight : 3.2×3.4×20.7cm, 165g		Accuracy : Brix $\pm 0.2\%$ (10 to 30°C)	
Low concentration						
Brix 0 to 10%	MASTER™ -10 α	Cat.No.2371	MASTER™ -10T	Cat.No.2372	MASTER™ -10M	Cat.No.2373
Min. scale 0.1%	Accuracy : Brix $\pm 0.2\%$ (10 to 30°C) ATC		Size and weight : 3.2×3.4×20.7cm, 155g		Accuracy : Brix $\pm 0.2\%$ (10 to 30°C)	
Low concentration						

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<Brix Scale>

Function

Both the **α** and T types are equipped with the Automatic Temperature Compensation feature. Choose the **α** type for the added feature of IP 65 water-resistance. The H type is the heat-resistant version of the **α** type.

* MASTER™-α·H·53S·500 : IP65 (except eyepiece)

Series	α	T	M	H	53S	500
Water resistant	●	—	—	●	●	●
Automatic Temperature Compensation (ATC)	●	●	—	●	●	—
Heat resistant	—	—	—	●	—	●
Milky sample	—	—	—	—	●	—

Heat Resistant



•Heat Resistant Common Specifications

Accuracy : ±0.5% *±0.25% ATC

Min. scale : 0.5%

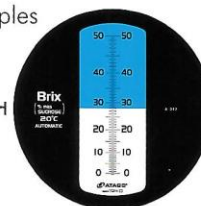
Size and weight :

3.2×3.4×16.8cm, 130g

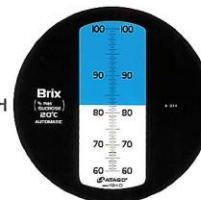
H		
ATC & Water Resistant Refractometer		Scale range
MASTER™-50H	Cat.No.2354	Brix 0 to 50%
MASTER™-80H	Cat.No.2364	Brix 30 to 80%
MASTER™-93H	Cat.No.2374	Brix 45 to 93%
MASTER™-100H	Cat.No.2384	Brix 60 to 100%

Scale examples

MASTER™-50H



MASTER™-100H



Plastic

	α		T		M	
測定範囲	ATC & Water Resistant Refractometer		ATC Refractometer		Refractometer	
Brix 0 to 53% Min. scale 0.2% Wide range	MASTER™-53Pα	Cat.No.2971	MASTER™-53PT	Cat.No.2972	MASTER™-53PM	Cat.No.2973
	Accuracy : Brix ±0.2%(at 20°C) *±0.1% (20°C) ATC Size and weight : 3.2×3.4×16.8cm, 90g				Accuracy : Brix ±0.2%(at 20°C)	
Brix 0 to 33% Min. scale 0.2% Low concentration	MASTER™-Pα	Cat.No.2391	MASTER™-PT	Cat.No.2392	MASTER™-PM	Cat.No.2393
	Accuracy : Brix ±0.2%(10 to 30°C) ATC Size and weight : 3.2×3.4×20.3cm, 105g				Accuracy : Brix ±0.2%(10 to 30°C)	
Brix 0 to 20% Min. scale 0.2% Low concentration	MASTER™-20Pα	Cat.No.2991	MASTER™-20PT	Cat.No.2992	MASTER™-20PM	Cat.No.2993
	Accuracy : Brix ±0.2%(10 to 30°C) ATC Size and weight : 3.2×3.4×20.7cm, 110g				Accuracy : Brix ±0.2%(10 to 30°C)	
Brix 0 to 10% Min. scale 0.1% Low concentration	MASTER™-10Pα	Cat.No.2981	MASTER™-10PT	Cat.No.2982	MASTER™-10PM	Cat.No.2983
	Accuracy : Brix ±0.2%(10 to 30°C) ATC Size and weight : 3.2×3.4×20.7cm, 105g				Accuracy : Brix ±0.2%(10 to 30°C)	



Calibration solutions on Page 99

ATAGO® HAND-HELD REFRACTOMETER

MASTER™ Series <Special Scales>

Soy Milk



Plastic

Dual Scale

ATC & Water Resistant Soy Milk Refractometer

MASTER™-Soy Milk α Cat.No.2681

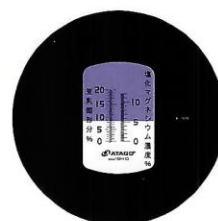
Accuracy : [1]±0.5% *±0.25%
[2]±0.2% *±0.1% (10 to 30°C)

Range : [1]Soy Milk Concentration (soybean solids) 0.0 to 20.0% Min.scale : 0.2%
[2]Magnesium chloride concentration 0.0 to 12.0% Min.scale : 0.2%

Size and weight : 3.2×3.4×16.8cm, 90g

Soy Milk Refractometer

MASTER™-Soy Milk M Cat.No.2683



Honey & Brix



Plastic

Dual Scale

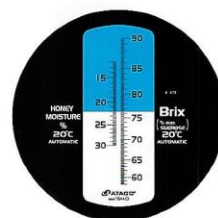
ATC & Water Resistant Honey & Brix Refractometer

MASTER™-HONEY/BX Cat.No.2514

Accuracy : [1]±0.2% *±0.1% [2]±0.2% *±0.1% (10 to 40°C)

Range : [1]Honey Moisture 12.0 to 30.0% Min.scale : 0.2%
[2]Brix 58.0 to 90.0% Min.scale : 0.2%

Size and weight : 3.2×3.4×16.8cm, 90g



Vegetable & Fruit



Metal

Vegetable

For small-volume measurement

- Optimized for measuring concentrations (Brix) of plant juices from leaves, stems and roots.
- Only a small amount of liquid is needed for measurement.
- Perfectly apt to measure fruit juices and more.

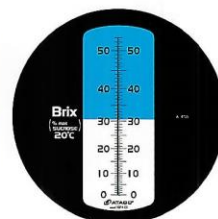
Vegetable & Fruit Refractometer

MASTER™-AGRI Cat.No.2462

Accuracy : Brix ±0.2% (at 20°C) *±0.1% (20°C)

Range : Brix 0.0 to 53.0% Min.scale : 0.2%

Size and weight : 3.2×3.4×16.8cm, 130g



Refractive Index



Metal

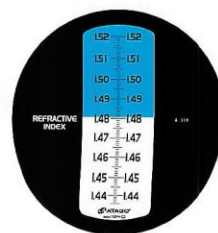
nD Scale

nD Refractometer

MASTER™-RI Cat.No.2612

Range : Refractive Index (RI) 1.435 to 1.520 Min.scale 0.001

Size and weight : 3.2×3.4×16.8cm, 130g



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*Repeatability

Seawater



Plastic



ATC & Water Resistant Seawater Refractometer		Seawater Refractometer	
MASTER™ -S/Millα	Cat.No.2491	MASTER™ -S/MillM	Cat.No.2493
Accuracy : [1]±2‰ *±1‰ [2]±0.001 *±0.0005 (10 to 30°C)		_____	
Range : [1]Salinity 0 to 100‰ Min.scale 1‰ [2]Specific gravity 1.000 to 1.070 Min.scale 0.001		_____	
Size and weight : 3.2×3.4×20.7cm, 110g		_____	



Salinity

High Accuracy



Plastic



ATC & Water Resistant Salinity Refractometer		Salinity Refractometer	
MASTER™ -S10α	Cat.No.2471	MASTER™ -S10M	Cat.No.2473
Accuracy : ±0.2g/100g *±0.1g/100g (10 to 30°C)		_____	
Range : Sodium chloride 0.0 to 10.0g/100g Min.scale : 0.1g/100g		_____	
Size and weight : 3.2×3.4×20.3cm, 105g		_____	



Salinity

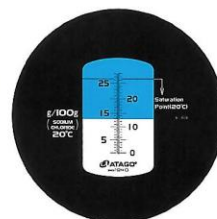
Wide Range



Plastic



ATC & Water Resistant Salinity Refractometer		Salinity Refractometer	
MASTER™ -S28α	Cat.No.2481	MASTER™ -S28M	Cat.No.2483
Accuracy : ±0.2g/100g *±0.1g/100g (10 to 30°C)		_____	
Range : Sodium chloride 0.0 to 28.0g/100g Min.scale 0.2g/100g		_____	
Size and weight : 3.2×3.4×16.8cm, 90g		_____	



Brix & Salinity



Plastic



Brix & Salinity Refractometer			
MASTER™ -BX/S28M Cat.No.2484			
Range : [1]Brix 0.0 to 33.0% Min.scale 0.5% [2]Sodium chloride 0.0 to 28.0g/100g Min.scale 0.5g/100g			
Size and weight : 3.2×3.4×16.8cm, 90g			



*Repeatability

Calibration solutions on Page 99

ATAGO® HAND-HELD REFRACTOMETER

<Special Scales>

Coolant



Plastic

Dual Scale

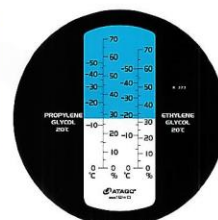
Coolant Refractometer

MASTER™ -BR

Cat.No.2930

Range : [1]Propylene glycol 0 to 70%, Temp 0 to -50°C Min.scale 5%, 5°C
[2]Ethylene glycol 0 to 70%, Temp 0 to -50°C Min.scale 5%, 5°C

Size and weight : 3.2×3.4×16.8cm, 90g



Battery Coolant



Plastic

Triple Scale

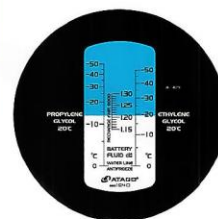
Battery Coolant Refractometer

MASTER™ -BC

Cat.No.2931

Range : [1]Ethylene glycol freezing temp 0 to -50°C Min.scale 5°C
[2]Propylene glycol freezing temp 0 to -50°C Min.scale 5°C
[3]Battery fluid d20/20 1.150 to 1.300 Min.scale 0.01

Size and weight : 3.2×3.4×16.8cm, 90g



Battery Coolant



Plastic

Triple Scale

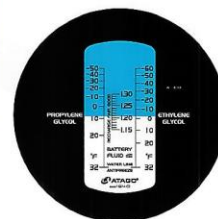
Battery Coolant Refractometer

MASTER™ -BCF

Cat.No.2932

Range : [1]Ethylene glycol freezing temp 32 to -60°F Min.scale 10°F
[2]Propylene glycol freezing temp 32 to -50°F Min.scale 10°F
[3]Battery fluid d20/20 1.150 to 1.300 Min.scale 0.01

Size and weight : 3.2×3.4×16.8cm, 90g



Optional Accessories

● MASTER Daylight plate



For metal body model



For plastic body model

For metal body model
Part No.RE-2315-60M

For plastic body model
Part No.RE-2315-61M

Small Volume Daylight Plate with Hinge Pin

For metal body model
Part No.RE-2311-67M

For plastic body model
Part No.RE-2391-67M

● SUPER EXTRACTOR

Part No.RE-29401



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OTHER HAND-HELD REFRACTOMETER

<Hand-Held Refractometer>

Brix



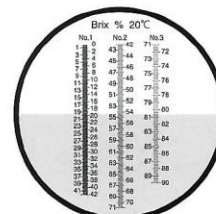
Wide
Brix

Refractometer

HSR-500™

Cat.No.2340

Range : Brix 0.0 to 90.0 (3steps) Min.scale 0.2%
Size and weight : 4x4x20cm, 600g



Refractive Index



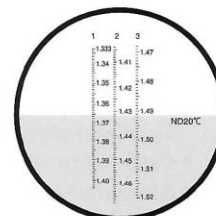
Wide
nD

nD Refractometer

R-5000™

Cat.No.2350

Range : Refractive Index (nD) 1.333 to 1.520 (3steps) Min.scale 0.001
Size and weight : 4x4x20cm, 600g



Honey



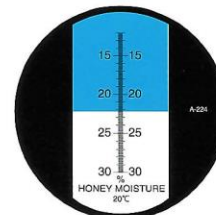
Honey

Honey Refractometer

HHR-2N™

Cat.No.2522

Range : Honey moisture 12.0 to 30.0% Min.scale : 0.1%
Size and weight : 4x4x17cm, 260g



<Desktop Refractometer>



Desk
Top

This is a desktop refractometer that allows for hands-free operations.
Designed for ease of use and simplicity, the stand has a space for a receptacle, and the daylight plate has a handle for opening/closing.

Desktop Refractometer

T3-BX/RI™

Cat.No.2745

Range : [1]Brix 0.0 to 18.0% Min.scale 0.2%
[2]Refractive Index (RI) 1.3300 to 1.3605 Min.scale 0.0005
Size and weight : 10x17.3x21.5cm, 910g

