Reasons to choose the MASTER

1 Water Resistant α·H

IP65

The concept 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).

The world's first feature

2 Hygienic Design

The MASTER series was also designed with a smooth and easy-to-clean grip, eliminating the possibility of food and samples being trapped which can result in contamination and bacterial growth.

3 Visibility

Efficiently using an analog unit depends on how easily the measured value can be read. Extensive research and the use of quality optics result in a measurement scale that is very bright, creating a high contrast to see clearly where the boundary intersects the memory lines of the scale.

4 Automatic Temperature Compensation (ATC) α·T·H

ATC

The newly designed ATC system allows the MASTER series to read more accurately than any comparable unit. ATAGO has applied for a patent on the design of the improved ATC system. The MASTER series reads more accurately than any comparable unit in the market.

5 Durability

The MASTER series has passed all water resistance, dust resistance, and drop tests. instruments were subjected to water jets form four directions, dropped from a height of one meter onto an oak platfoam, and withstood the pressure changes of air travel.

6 Calibration

The α and H types can now be calibrated with the new waterproof calibration screw.
All MASTER models can be calibrated by end-user.

7 Automatic Sample Distribution (ASD)

ASD

ATAGO has developed a spoon-shaped tip that automatically spreads the sample across the prism. This makes the instrument even more user-friendly. saving valuable time.

8 Repair and Service

ATAGO has established a close network of customers by providing excellent customer service and support . When an ATAGO instrument needs servicing, not only is each customer treated with respect, but they are also provided with detailed methods and userspecific suggestions on sampling and taking measurements, based on individual needs.

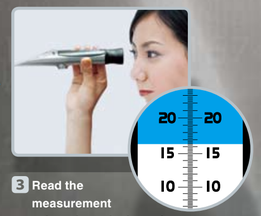
9 Reputation for Quality

ATAGO has built a firm reputation for reliability and quality during its over 70 years history. We are a strong company that exports to over 154 countries with continued growth expectations. ISO 9001 certified, along with our integrated system for producing and marketing our products, based on the "Plan-Do-Check-Act" cycle, is essential to the continued quality and to the promoting of the ATAGO name.

Simple Operation

1 Apply 1-2 drops onto the prism.

2 Close the daylight plate. View the scale through the eyepiece.



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

Applications -Measuring sugar concentration,concentration, Brix and Refractive Index-

Honey

Honey

Jam, Syrup

Jam, syrup, confectioneries

Soymilk

Soy milk

Condiments

Condiment, seasonings, ketchup, various sauces, soy sauce

Wine

Grapes, wine must

Drink

Fruit juice, soft drink, carbonated beverage

Cooking

Chinese noodle soup, various soup, various sauces

Agriculture

Fruit and vegetable juice, leaf juice, stem juice, root juice

Salinity

Sodium chloride solution, sea water, pickles

Machine Tools

Firefighting foam, soluble cutting oil

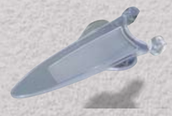
Chemicals and medicine

Brine, deicing solution, medicine, chemical, cosmetics, cleaning solution

Clinical

Urine, serum

Optional Accessories



Small Volume Daylight Plate With Hinge Pin
For metal body model
Parts.No. RE-2311-58M
For plastic body model
Parts.No. RE-2391-50M

Super Extractor
Parts.No. RE-29401

Sucrose solution (for Brix confirmation)
Parts.No. RE-110010 10% Sucrose
Parts.No. RE-110020 20% Sucrose
Parts.No. RE-110030 30% Sucrose
Parts.No. RE-110040 40% Sucrose
Parts.No. RE-110050 50% Sucrose
Parts.No. RE-110060 60% Sucrose

All ATAGO refractometers are designed and manufactured in Japan.

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

※Specifications and appearance are subject to change without notice.

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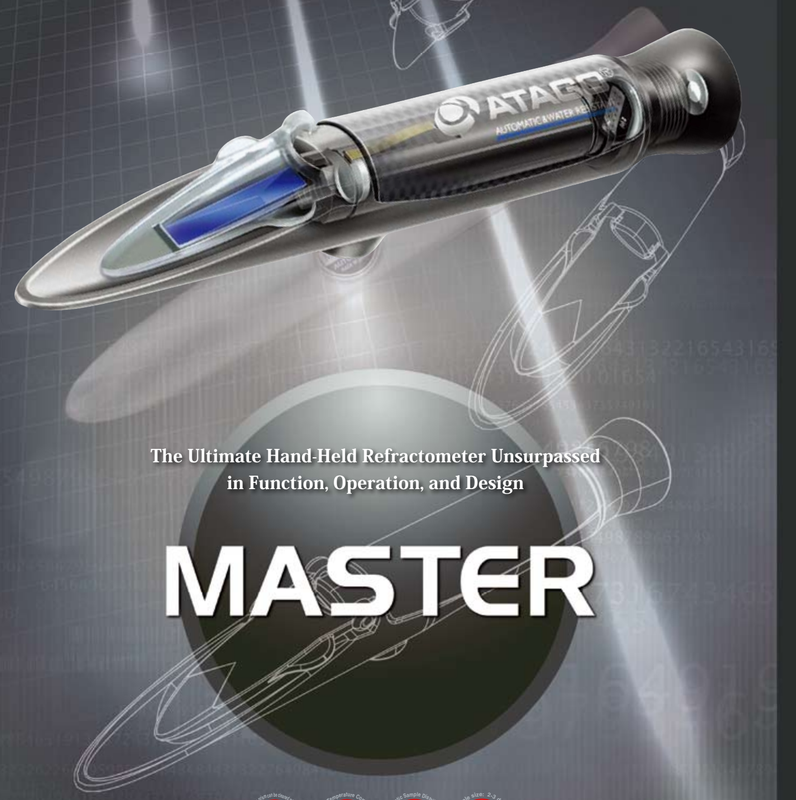
ATAGO®
MASTER of REFRACTOMETRY

1000 BEST INVENTIONS 2007 | Grand Prize of Invention Award 2007 | JPO Commissioner Encouragement Prize 2007 | MEXT 2008 | Patent 特許



The Ultimate Hand-Held Refractometer Unsurpassed in Function, Operation, and Design

MASTER

IP65 α·H Series | A.T.C. α·T·H Series | A.S.D. | 2-3 drops

Design Registration No.000379326-0001, 000379326-0002 (EU)
ZL 2005 3 0116403.4.5 (China), D111526 (Taiwan), D555, 549 (U.S.A.), 1255763, 1255764, 1255765, 1255766, 1255767 (Japan)
Patent Granted in countries around the world.

About the Trade Mark:
Year 2005:ATAGO was established 65 years ago and we have been developing, manufacturing, and marketing Refractometers based on our in-depth study of optics. Thisyear we have released our NEW Hand-Held Refractometer series, the "MASTER" to support and meet our customer's needs. The NEW "MASTER" series is a fitting name to match its ultimate performance. The trade mark, "光" is the Japanese Kanji which means "light" The decision to use this Kanji as a trade mark for the MASTER series is to emphasize that this product was designed and manufactured in Japan. With the multitude of imitation products [illegible] market today, ATAGO is maintaining our identity as the master of [illegible]uring quality instruments. We, ATAGO, would like to be your business [illegible]d to be the "light" to continue towards a bright future together.

ATAGO —Capture the light, measure the future!!™

Hand-held Refractometer

MASTER series

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

Material 2 types

Choose either metal or plastic.

Metal

Die-cast aluminum

Ideal for the agriculture industry, metal working fluids, and various high-temperature samples.
Resistant to organic solvents.

Plastic

PBT (polybutylene terephthalate)

Resistant to salty and acidic samples.

Features 4 types

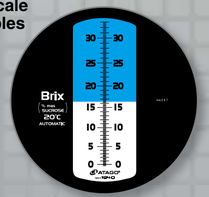
Both the α and T types are equipped with the Automatic Temperature Compensation feature.
Choose the α type for the added feature of IP 65 water-resistance. The H type is the heat-resistant version of the α type.

Series	α	T	M	H
Water resistant	●	—	—	●
Automatic temperature compensation	●	●	—	●
Heat resistant	—	—	—	●
Calibration	● NEW	●	●	● NEW

Scale Brix or other special scales

Custom scales are available upon request.

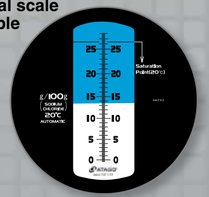
Brix scale examples



MASTER-α
Brix 0～33%

MASTER-100α
Brix 0～10%

Special scale example



MASTER-S28α

Understanding model names

A model name consists of the scale (sample name), material, and feature type.

Brix Scale MASTER- **2** **P** **α**

Example **Measuring sauces**

Sample information
- About 40% Brix (see A in chart below)
- Salty
- Oily

2 Scale: Choose **2** **28-62%** (see B in chart below).

P Material: Choose the salt-resistant **P** **plastic body.**
Metal ···Blank
Plastic ···· P

α Features: Choose the washable type for easy cleaning. **Choose α**

Special Scale MASTER- **S28** **α**

Example **Measuring brine**

Sample information
- Salty
- Running/standing water around
- High in salt concentration

S28 Scale: Choose the corrosion-resistant **P** plastic body with a **wide-range salinity scale.**

α Features: Choose the water-resistant type for safe handling in an environment where running/standing water is readily available. **Choose α**

Brix of Various Samples Refractive index and Brix of various types of samples

Brix (%) (RI)	Food industry	Chemical industry	Medical Science industry	Memory (Brix) □ = Memory No.
1.333 0	**Drinks**: Green tea, Beer, Coffee, Soy milk, Cola, Milk; **Water**	Cutting oil (emulsion)	Methanol, Saline, Aloe extract, Sea water	(1) 0～33%
1.34 5	**Fruits / Vegetables**: Tomato, Strawberry, Lemon, Orange, Apple, Prince melon; **Seasonings**: Miso soup	Nickel plate liquid	Chlorella extract	10 0～10%
1.35 10		Gelatin liquid	Serum	20 0～20%
15	Beef curry, Demiglace (sauce), Orange jelly	Freon113		53 0～53%
1.36 20	Lactic acid-bacteria beverage	Silicone solution (emulsion)	Acetone, Ethanol	
1.37	Canned syrup	Electrolyte Freon 11	Acetic acid	
1.38 30			Saturated saline	B 2 28～62%
1.39	Ketchup	Acrylonitrile		
1.40 40	Soy sauce, Sauce A; **Jam**: Low-sugar jam			
50	Egg yolk	Silicone oil	Octane	4 45～82%
Fats: Butter, Olive oil		Ethylene glycol, Propylene glycol		
60				3 58～90%
70	**Honey**: Honey, Starch Syrup	Diesel oil, Ricinus	Glycerin	
80		Polyvinyl chloride (PCV), Styrene, Asphalt		
1.50 90				

Specifications

Brix Scale

Range (Minimum)	Series	α		T		M	
	Material	Metal	Plastic	Metal	Plastic	Metal	Plastic
(1) 0～33% (0.2%)	Model	MASTER-α	MASTER-Pα	MASTER-T	MASTER-PT	MASTER-M	MASTER-PM
	Cat.No.	2311	2391	2312	2392	2313	2393
	Accuracy	±0.2% *±0.1% (10～30℃)		±0.2% *±0.1% (10～30℃)		—	
	Size & Weight	3.2×3.4×20.3cm/155g	3.2×3.4×20.3cm/105g	3.2×3.4×20.3cm/155g	3.2×3.4×20.3cm/105g	3.2×3.4×20.3cm/155g	3.2×3.4×20.3cm/105g
2 28～62% (0.2%)	Model	MASTER-2α	MASTER-2Pα	MASTER-2T	MASTER-2PT	MASTER-2M	MASTER-2PM
	Cat.No.	2321	2941	2322	2942	2323	2943
	Accuracy	±0.2% *±0.1% (10～40℃)		±0.2% *±0.1% (10～40℃)		—	
	Size & Weight	3.2×3.4×20.3cm/155g	3.2×3.4×20.3cm/105g	3.2×3.4×20.3cm/155g	3.2×3.4×20.3cm/105g	3.2×3.4×20.3cm/155g	3.2×3.4×20.3cm/105g
3 58～90% (0.2%)	Model	MASTER-3α	MASTER-3Pα	MASTER-3T	MASTER-3PT	MASTER-3M	MASTER-3PM
	Cat.No.	2331	2951	2332	2952	2333	2953
	Accuracy	±0.2% *±0.1% (10～40℃)		±0.2% *±0.1% (10～40℃)		—	
	Size & Weight	3.2×3.4×16.8cm/130g	3.2×3.4×16.8cm/90g	3.2×3.4×16.8cm/130g	3.2×3.4×16.8cm/90g	3.2×3.4×16.8cm/130g	3.2×3.4×16.8cm/90g
4 45～82% (0.2%)	Model	MASTER-4α	MASTER-4Pα	MASTER-4T	MASTER-4PT	MASTER-4M	MASTER-4PM
	Cat.No.	2341	2961	2342	2962	2343	2963
	Accuracy	±0.2% *±0.1% (10～40℃)		±0.2% *±0.1% (10～40℃)		—	
	Size & Weight	3.2×3.4×16.8cm/130g	3.2×3.4×16.8cm/90g	3.2×3.4×16.8cm/130g	3.2×3.4×16.8cm/90g	3.2×3.4×16.8cm/130g	3.2×3.4×16.8cm/90g
10 0～10% (0.1%)	Model	MASTER-10α	MASTER-10Pα	MASTER-10T	MASTER-10PT	MASTER-10M	MASTER-10PM
	Cat.No.	2371	2981	2372	2982	2373	2983
	Accuracy	±0.2% *±0.1% (10～30℃)		±0.2% *±0.1% (10～30℃)		—	
	Size & Weight	3.2×3.4×20.3cm/155g	3.2×3.4×20.3cm/105g	3.2×3.4×20.3cm/155g	3.2×3.4×20.3cm/105g	3.2×3.4×20.3cm/155g	3.2×3.4×20.3cm/105g
20 0～20% (0.1%)	Model	MASTER-20α	MASTER-20Pα	MASTER-20T	MASTER-20PT	MASTER-20M	MASTER-20PM
	Cat.No.	2381	2991	2382	2992	2383	2993
	Accuracy	±0.2% *±0.1% (10～30℃)		±0.2% *±0.1% (10～30℃)		—	
	Size & Weight	3.2×3.4×20.7cm/165g	3.2×3.4×20.7cm/110g	3.2×3.4×20.7cm/165g	3.2×3.4×20.7cm/110g	3.2×3.4×20.7cm/165g	3.2×3.4×20.7cm/110g
53 0～53% (0.5%)	Model	MASTER-53α	MASTER-53Pα	MASTER-53T	MASTER-53PT	MASTER-53M	MASTER-53PM
	Cat.No.	2351	2971	2352	2972	2353	2973
	Accuracy	±0.5% *±0.25% (10～30℃)		±0.5% *±0.25% (10～30℃)		—	
	Size & Weight	3.2×3.4×16.8cm/130g	3.2×3.4×16.8cm/90g	3.2×3.4×16.8cm/130g	3.2×3.4×16.8cm/90g	3.2×3.4×16.8cm/130g	3.2×3.4×16.8cm/90g

▶ Heat resistant

Series	H			
Material	Metal			
Model	MASTER-50H	MASTER-80H	MASTER-93H	MASTER-100H
Cat.No.	2354	2364	2374	2384
Range	Brix 0.0～50.0%	Brix 30.0～80.0%	Brix 45.0～93.0%	Brix 60.0～100.0%
Minimum	0.5%			
Accuracy	±0.5% *±0.25%			
Size & Weight	3.2×3.4× 16.8cm/130g			

Special Scale

Sample	Coolant	Battery Coolant	Battery Coolant	Refractive index
Series	M	M	M	M
Material	Plastic	Plastic	Plastic	Metal
Model	MASTER-BR	MASTER-BC	MASTER-BCF	MASTER-RI
Cat.No.	2930	2931	2932	2612
Scale	① propylene glycol ② ethylene glycol	① ethylene glycol freezing temp ② propylene glycol freezing temp ③ battery fluid ⌀20/20	① ethylene glycol freezing temp ② propylene glycol freezing temp ③ battery fluid ⌀20/20	Refractive index
Range	① 0 to 70% 0 to −50℃ ② 0 to 70% 0 to −50℃	① 0 to −50℃ ② 0 to −50℃ ③ 1.150 to 1.300	① 32 to −60℉ ② 32 to −50℉ ③ 1.150 to 1.300	1.435 to 1.520
Minimum Scale	5% 5℃	① 5℃ ② 5℃ ③ 0.01	① 10℉ ② 10℉ ③ 0.01	0.001
Size & Weight	3.3×3.3×16.8cm , 90g			3.3×3.3×16.8cm, 120g

Sample	Seawater	Seawater	Salinity	Salinity	Salinity (Wide range)	Salinity (Wide range)
Series	α	M	α	M	α	M
Material	Plastic	Plastic	Plastic	Plastic	Plastic	Plastic
Model	MASTER-S/Mill α	MASTER-S/Mill M	MASTER-S10α	MASTER-S10 M	MASTER-S28α	MASTER-S28 M
Cat.No.	2491	2493	2471	2473	2481	2483
Scale	① Salinity ② Specific gravity		Sodium chloride		Sodium chloride	
Range	① 1‰ ② 0.001		0.0 to 10.0g/100g		0.0 to 28.0g/100g	
Minimum Scale	① 0 to 100‰ ② 1.000 to 1.070		0.1g /100g		0.2 g /100g	
Measurement Accuracy	① ±2‰ *±1‰ ② ±0.001 *±0.0005 (10 to 30%)	—	±0.2g/100g *±0.1g/100g (10 to 30℃)	—	±0.2g/100g *±0.1g/100g (10 to 30℃)	—
International Protection Class	IP65	—	IP65	—	IP65	—
Size & Weight	3.3×3.3×20.4cm, 100g		3.3×3.3×20.4cm, 100g		3.3×3.3×20.4cm, 100g	

IP65 = dust-tight and protected against water jets (except eye piece)
*Repeatability

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