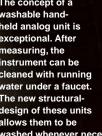
# **Reasons to choose the MASTER**

#### **1** Water Resistant



The concept of a washable handheld analog unit is measuring, the instrument can be cleaned with running water under a faucet The new structuraldesign of these units allows them to be



washed whenever necessary. Rated IP65 (dust tight and water resistant).

## 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

#### 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

#### 4 Automatic Temperature Compensation (ATC) 0.T.H.535



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

#### CV-H-535-500 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  $\alpha$  and H types can now be calibrated with the new waterproof calibration screw. All MASTER models can be calibrated by end-

#### 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

#### 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 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



Jam, Syrup



Jam, syrup, confectioneries



# 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



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**



**Daylight Plate** Parts.No. RE-2315-60M Parts.No. RE-2315-61M

#### **Small Volume Daylight** Plate With Hinge Pin Parts.No. RE-2311-58M

Parts.No. RE-2391-50M





#### **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.



ATAGO U.S.A., Inc.

ATAGO BRASIL Ltda.

ATAGO ITALIA s. r. l.

ATAGO RUSSIA Ltd.

ATAGO INDIA Instruments Pvt, Ltd.

ATAGO CHINA Guangzhou Co.,Ltd.

ATAGO NIGERIA Scientific 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





TEL: 86-20-38108256 TEL: 7-812-777-96-96

TEL: 234-707-558-1552

customerservice@atago-usa.com TEL: 91-22-28544915, 40713232 customerservice@atago-india.com customerservice@atago-brasil.com customerservice@atago-italia.com

info@atago-china.com

info@atago-russia.com

atagonigeria@atago.net



ติดต่อบริษัท นีโอนิคส์ จำกัด Tel: 02-077-7602 หรือ 061-8268939 E-mail: sale@neonics.co.th เว็บไซต์ www.neonics.biz

\* Specifications and appearance are subject to change without notice.

Copyright © 2015 ATAGO CO., LTD. All rights reserved. [ENV.06] 15091000PP Printed in Japan



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

# MASTER









About the Trade Mark:

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, "%" 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 out in the market today, ATAGO is maintaining our identity as the master of manufacturing quality instruments. We, ATAGO, would like to be your business partner and to be the "light" to continue towards a bright future together.



Hand-held Refractometer

# MASTER series

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



# Features 6 types

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

Series / Model	а	Т	M	Н	53S	500
Water resistant	•	_	_	•		
Automatic temperature compensation	•	•	_	•	•	_
Heat resistant	_	_	_	•	- \	•
Milky sample	_	_	_	_	•	_

#### **MASTER-53S**

for Milky sample

0-90% Wide Brix Range

Opaque, inhomogeneous liquids can be difficult to get a clear boundary line with a conventional refractometer. This model is recommended for cream-based sauces, yogurt, mayonnaise, and various emulsions used in industrial processing.





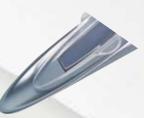


# **■** Understanding model names

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



## Material 2 types Choose either metal or plastic.



#### **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.

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

Brix(%	6)		Foo	d industry	Chemical industry	Medical Science industry				(Brix		
(Ri)	_	B. L. L.				Methanol						П
	0	Green tea  Beer	Fruits / Vegetables	Seasonings Miso soup	Cutting oil (emulsion)	Saline Aloe extract Sea water	(1) 0 5 33 %	10 0 5	20 0 5	53 0 5	500 0 5 90 %	•
	5	Coffee	Tomato Strawberry Lemon		Nickel plate liquid	Chlorella extract	33 %	10 %	\$ 20 %	53 %	90 %	
1.35 —	0	Soy milk Cola Milk	Orange Apple Prince melon	Beef curry	Gelatin liquid Freon113	Serum						
1	5			Demiglace (sauce) Orange jelly								
1.36 –	20	Lactic acid- bacteria be			Silicone solution (emulsion)	Acetone Ethanol						
1.37 —				Canned syrup	Electrolyte Freon 11	Acetic acid Saturated saline		В				
1.38 – 3	30 -			Ketchup	Acrylonitrile			2 28				
1.39 – 1.40 – <b>4</b>	٠٠ ١٠			Soy sauce Jam Sauce A Low-sugar jam				62 %				
	i0 ··			Egg yolk	Silicone oil	Octane			. 4 .			
	0	Fats Butter			Ethylene glycol Propylene glycol		3		45 \$ 82			
7	'O ··	Olive oil		Honey Jam			58 \$		%			
8	30			Honey Starch Syrup	Diesel oil Ricinus	Glycerin	90					
1.50 <sup>1</sup> 9	0				Polyvinyl chloride (PCV)			l				
					Styrene Asphalt							

# **■** Specifications

### **Brix Scale**

Range	Series	(	z c	1	Г	N	Л
(Minimum)	Material	Metal	Plastic	Metal	Plastic	Metal	Plastic
4	Model	MASTER-α	MASTER-Pα	MASTER-T	MASTER-PT	MASTER-M	MASTER-PM
0.4 000/	Cat.No.	2311	2391	2312	2392	2313	2393
0 to 33%	Accuracy	±0.2% *±0.1	(10 to 30°C)	±0.2% *±0.1	% (10 to 30°C)	±0.2%	*±0.1%
(0.2%)	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

2	Model	MASTER-2α	MASTER-2Pα	MASTER-2T	MASTER-2PT	MASTER-2M	MASTER-2PM
2	Cat.No.	2321	2941	2322	2942	2323	2943
8 to 62%	Accuracy	±0.2% *±0.1	% (10 to 40°C)	±0.2% *±0.1	% (10 to 40°C)	±0.2%	*±0.1%
(0.2%)	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

2		Model	MASTER-3α	MASTER-3Pα	MASTER-3T	MASTER-3PT	MASTER-3M	MASTER-3PM
50. (	200/	Cat.No.	2331	2951	2332	2952	2333	2953
58 to 9	/	Accuracy	±0.2% *±0.19	% (10 to 40°C)	±0.2% *±0.10	% (10 to 40°C)	±0.2%	*±0.1%
(0.20	%) Siz	ze & Weight	3.2×3.4×16.8cm, 130a	3.2×3.4×16.8cm, 90a	3.2×3.4×16.8cm, 130a	3.2×3.4×16.8cm, 90a	3.2×3.4×16.8cm, 130a	3.2×3.4×16.8cm, 90a

	Model	MASTER-4α	MASTER-4Pα	MASTER-4T	MASTER-4PT	MASTER-4M	MASTER-4PM
45 + 000/	Cat.No.	2341	2961	2342	2962	2343	2963
45 to 82%	Accuracy	±0.2% *±0.1	% (10 to 40°C)	±0.2% *±0.1	% (10 to 40°C)	±0.2%	*±0.1%
(0.2%)	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, 90q

10	Mode	MASTER-10 α	MASTER-10P α	MASTER-10T	MASTER-10PT	MASTER-10M	MASTER-10PM
0.4	Cat.No	. 2371	2981	2372	2982	2373	2983
0 to 1	Accura	±0.2% *±0	.1% (10 to 30°C)	±0.2% *±0.1	% (10 to 30°C)	±0.2%	*±0.1%
(0.1	(6) Size & We	aht 3.2×3.4×20.3cm 155c	3 2×3 4×20 3cm 105g	3.2×3.4×20.3cm 155g	3.2x3.4x20.3cm 105g	3.2x3.4x20.3cm 155g	3.2×3.4×20.3cm 105g

20	Model	MASTER-20 a	MASTER-20P α	MASTER-20T	MASTER-20PT	MASTER-20M	MASTER-20PM
20	Cat.No.	2381	2991	2382	2992	2383	2993
0 to 20%	Accuracy	±0.2% *±0.1	% (10 to 30°C)	±0.2% *±0.1	% (10 to 30°C)	±0.2%	*±0.1%
(0.1%)	Size & Weight	3.2×3.4×20.7cm, 165q	3.2×3.4×20.7cm, 110g	3.2×3.4×20.7cm, 165a	3.2×3.4×20.7cm, 110a	3.2×3.4×20.7cm, 165a	3.2×3.4×20.7cm, 110a

52	Model	MASTER-53 α	MASTER-53Pα	MASTER-53T	MASTER-53PT	MASTER-53M	MASTER-53PM
53	Cat.No.	2351	2971	2352	2972	2353	2973
0 to 53%	Accuracy	±0.5% *±0.25	i% (10 to 30°C)	±0.5% *±0.25	% (10 to 30°C)	±0.5%	*±0.25%
(0.5%)	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		Н							
Material		Metal							
Model	MASTER-50H	MASTER-80H	MASTER-93H	MASTER-100H					
Cat.No.	2354	2364	2374	2384					
Range	Brix 0.0 to 50.0%	Brix 30.0 to 80.0%	Brix 45.0 to 93.0%	Brix 60.0 to 100.0%					
Minimum		0.5%							
Accuracy		±0.5% *±0.25%							
Size & Weight		3.2×3.4	× 16.8cm, 130g						

#### ► Milky sample ► Wide Brix

Series	535	500			
Material	Metal				
Model	MASTER-53S	MASTER-500			
Cat.No.	2355	2363			
Range	Brix 0.0 to 53.0%	Brix 0.0 to 90.0%			
Minimum	0.5%	1.0%			
Accuracy	±0.5% *±0.25%	±1% *±0.5%			
Size & Weight	3.2×3.4× 16	6.8cm, 130g			

# Special Scale

Sample	Coolant	Battery Coolant	Battery Coolant	Refractive index	Honey
Series	M	M	M	M	α
Material	Plastic	Plastic	Plastic	Metal	Plastic
Model	MASTER-BR	MASTER-BC	MASTER-BCF	MASTER-RI	MASTER-HONEY
Cat.No.	2930	2931	2932	2612	2524
Scale	propylene glycol     ethylene glycol	ethylene glycol freezing temp     propylene glycol freezing temp     stery fluid d20/20	ethylene glycol freezing temp     propylene glycol freezing temp     stery fluid d20/20	Refractive index	Honey moisture
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°F ② 32 to -50°F ③ 1.150 to 1.300	1.435 to 1.520	12.0 to 30.0%
Minimum Scale	5% 5℃	① 5℃ ② 5℃ ③ 0.01	① 10°F ② 10°F ③ 0.01	0.001	0.2%
Size & Weight		3.2×3.4×16.8cm, 90g		3.2×3.4×16.8cm, 130g	3.2×3.4×16.8cm, 90g

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-S10 α	MASTER-S10 M	MASTER-S28 α	MASTER-S28 M
Cat.No.	2491	2493	2471	2473	2481	2483
Scale	Salinity ② Specific gravity		Sodium chloride		Sodium chloride	
Range	① 0 to 100‰ ② 1.000 to 1.070		0.0 to 10.0g/100g		0.0 to 28.0g/100g	
inimum Scale	① 1‰ ② 0.001		0.1g/100g		0.2g/100g	
leasurement Accuracy	① ±2‰ *±1‰ ② ±0.001 *±0.0005 (10 to 30°C)	_	±0.2g/100g *±0.1g/100g (10 to 30°C)	_	±0.2g/100g *±0.1g/100g (10 to 30°C)	_
International otection Class	IP65	_	IP65	_	IP65	_
ize & Weight	3.2×3.4×20.7cm, 110g		3.2×3.4×20.3cm, 105g		3.2×3.4×16.8cm, 90g	

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