

# CLINICAL REFRACTOMETERS

**ATAGO®**

Refractive index of a solution varies according to its concentration. Hence, its concentration is obtained from its refractive index. The refractive index of blood serum or plasma depends mainly upon its protein concentration, as proteins are one of the major constituents.

This instrument has been designed to use the refractive index method for measuring total protein in serum. The protein scale has been prepared after extensive clinical analyses undertaken by Dr. Matsumura, Professor of Biochemistry at the Tokyo Woman's Medical University. The scale developed by Dr. Matsumura is based on the results obtained from over 1400 cases and has been incorporated into ATAGO refractometers. This is the most reliable scale currently available. As the same as serum protein, there is a correlation between refractive index by a refractometer and urine specific gravity by a hydrometer. Urine specific gravity can be taken from refractive index.

**High accuracy!**



## Digital Urine Specific Gravity Refractometer **UG-α** Cat.No.3464

This new Digital Urine Specific Gravity Refractometer UG-α(alpha) is an upgraded version of the UG-1. The minimum scale indication has been improved to display the fourth decimal. After pressing the START key, with the sample placed on the prism, the measurement values will be displayed on the LCD streaming as an electric message board.

Measurement range : Urine S.G. 1.0000 to 1.0600  
 Minimum indication : 0.0001  
 Measurement accuracy :  $\pm 0.0010$   
 Measurement temperature : 10 to 35°C (Automatic Temperature Compensation)  
 Sample volume : 0.1ml  
 Power supply : 006P Dry battery (9V)  
 International Protection Class : IP64 Water Resistant  
 Dimensions and weight : 17×9×4cm, 300g (main unit only)

### Measurement Method



1 Apply 1 drop of sample solution onto the prism surface.



2 Press the START/OFF Switch.

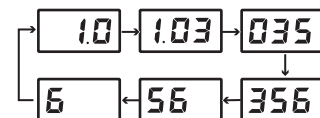


3 Measurement value displayed in 3 seconds!

The measurement value will scroll from right to left.

\*Example of display

Display of the measurement value "1.0356".



## Digital Hand-held Compact Refractometer **PAL-10S** Cat.No.4410

The PAL-10S is a digital hand-held compact refractometer that measures Urine Specific Gravity. To operate, simply place a drop of urine on the prism surface and press the START key. The Urine Specific Gravity value will be displayed on the LCD.

Measurement range : Urine S.G. 1.000 to 1.060  
 Minimum indication : 0.001  
 Measurement accuracy :  $\pm 0.001$   
 Measurement temperature : 10 to 35°C (Automatic Temperature Compensation)  
 Sample volume : 0.3ml  
 Power supply : 2×AAA Batteries  
 International Protection Class : IP65 Water Resistant  
 Dimensions and weight : 5.5×3.1×10.9cm, 100g (main unit only)



**Can be washed under running water.**

**Ergonomically designed for one-handed operation!**



# CLINICAL REFRACTOMETERS -MASTER-

## CLINICAL REFRACTOMETER

### **MASTER-SUR/N $\alpha$** Cat.No.2771

Water Resistant &  
Automatic Temperature  
Compensation

MASTER-SUR/N $\alpha$

## CLINICAL REFRACTOMETER

### **MASTER-SUR/NM** Cat.No.2773

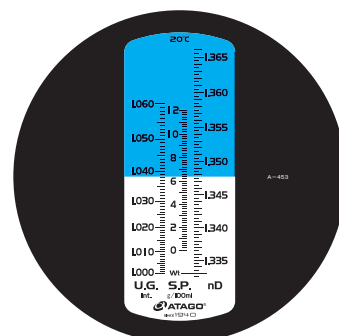
Manual



MASTER-SUR/NM

The MASTER-SUR/N $\alpha$  and MASTER-SUR/NM are designed for clinical applications: Serum Protein, Urine Specific Gravity and Refractive Index scales. Three scales in one instrument allow for quick and easy measurements.

	MASTER-SUR/N $\alpha$	MASTER-SUR/NM
Scale range	Urine S.G.: 1.000 to 1.060, Serum protein: 0.0 to 12.0g/100ml, Refractive Index(nD)1.3330 to 1.3660	
Minimum scale	Urine S.G.: 0.001, Serum protein: 0.2g/100ml, Refractive Index: 0.0005	
Accuracy	Urine S.G.: $\pm 0.001$ , Serum protein: $\pm 0.2$ g/100ml, Refractive Index: (nD) $\pm 0.0005$ (10 to 30°C Automatic Temperature Compensation)	Non Automatic Temperature Compensation
International Protection Class	IP65 Water Resistant (except for eyepiece)	Non Water Resistant
Size & Weight	3.2×3.4×20.7cm, 110g	



MASTER-URC/N $\alpha$

## URINE SPECIFIC GRAVITY REFRACTOMETER

### **MASTER-URC/N $\alpha$** Cat.No.2791

Water Resistant &  
Automatic Temperature  
Compensation

## URINE SPECIFIC GRAVITY REFRACTOMETER

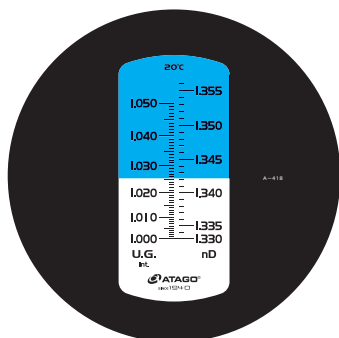
### **MASTER-URC/NM** Cat.No.2793

Manual



MASTER-URC/NM

The MASTER-URC/N $\alpha$  and MASTER-URC/NM are designed for clinical applications: specific gravity and refractive index of urine can be measured with only a single drop. These units are very simple to use and easy carry.



	MASTER-URC/N $\alpha$	MASTER-URC/NM
Scale range	Urine S.G.: 1.000 to 1.050, Refractive Index (nD): 1.333 to 1.356	
Minimum scale	Urine S.G.: 0.001, Refractive Index (nD): 0.001	
Accuracy	Urine S.G.: $\pm 0.001$ , Refractive Index: (nD) $\pm 0.0005$ (10 to 30°C Automatic Temperature Compensation)	Non Automatic Temperature Compensation
International Protection Class	IP65 Water Resistant (except for eyepiece)	Non Water Resistant
Size & Weight	3.2×3.4×20.7cm, 110g	

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

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