

Brix  
 Inverted sugar concentration  
 HFCS-55  
 (High Fructose Corn Syrup)  
 HFCS-42  
 (High Fructose Corn Syrup)

# SMART-1

Food Fields

## Samples

Fruit juice  
 Tea drinks  
 Coffee drinks  
 Lactic drinks  
 Concentrated fruit juice  
 Puree  
 Liquid sugar  
 Glucose  
 Honey  
 Marmalade  
 Condensed milk  
 Soy sauce  
 Sauce  
 Ketchup  
 Soup  
 Wort  
 Vinegar  
 Pickle(liquid)  
 Waste liquid of sugar,  
 etc.

Industrial fields

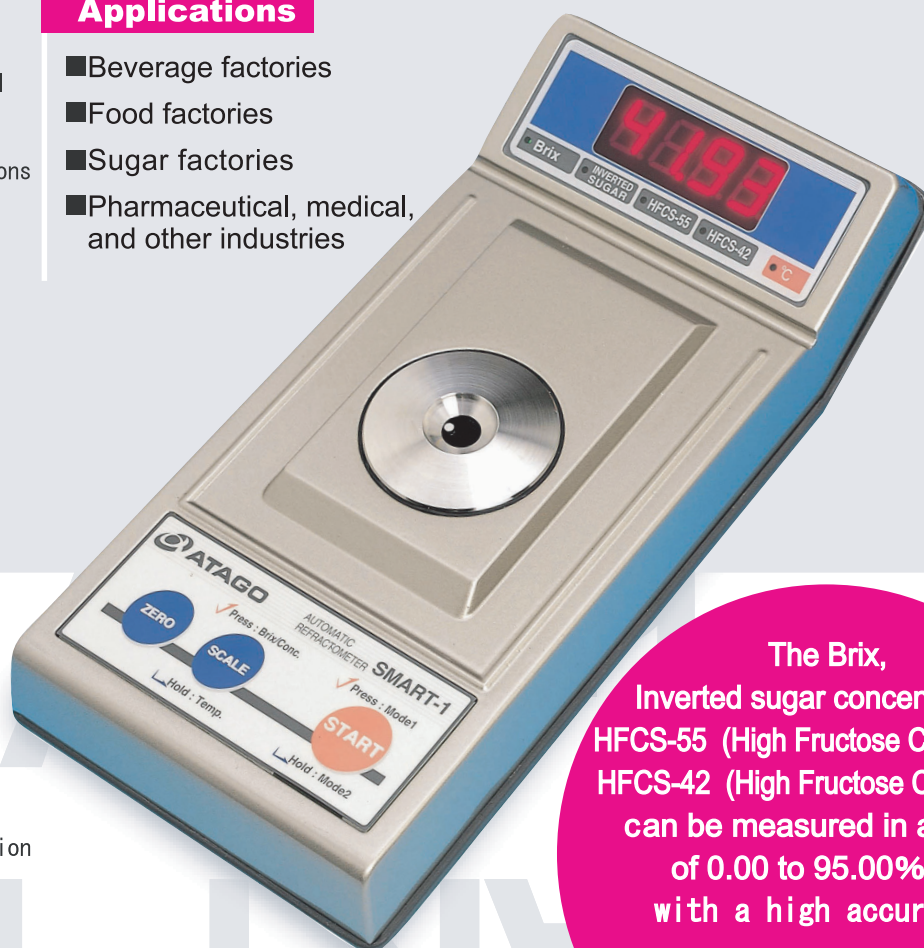
Water-soluble cutting oil  
 Quenching oil  
 Water-soluble detergent  
 Coolant and brine solutions  
 Ethylene glycol  
 Propylene glycol  
 Rust Preventive  
 IPA  
 PVA  
 Ethanol  
 Alkaline solution  
 Sodium carbonate  
 Acetic acid  
 Amino acid  
 Protein  
 Gelatin  
 Salt water  
 Seawater  
 Coating solution  
 Waste liquid of alcohol  
 Sodium hydroxide  
 Sodium glutamate  
 Citric acid  
 Glycerin  
 Cesium chloride  
 Calcium chloride  
 Fire extinguishing solution  
 Coating liquid  
 etc.

## Features

- Wide measurement range of 0.00 to 95.00%
- High accuracy of  $\pm 0.05\%$
- Automatic Temperature Compensation (ATC) from 5 to 40°C
- Four sugar concentration scales : Brix, inverted sugar, HFCS-55 (High Fructose Corn Syrup) and HFCS-42 (High Fructose Corn Syrup)
- Featuring a second measurement mode designed to continuously take measurements and display an accurate value once readings are stabilized, thus allowing for solutions above or below room temperature to be measured with confidence
- Printer and computer outputs through RS-232C communication
- Three-button design (ZERO, START, and SCALE) for simple, efficient operation

## Applications

- Beverage factories
- Food factories
- Sugar factories
- Pharmaceutical, medical,  
and other industries



The Brix,  
 Inverted sugar concentration,  
 HFCS-55 (High Fructose Corn Syrup),  
 HFCS-42 (High Fructose Corn Syrup)  
 can be measured in a range  
 of 0.00 to 95.00% and  
 with a high accuracy of

**$\pm 0.05\%$**



Specifications

<b>Cat.No.</b>	3150
<b>Measuring system</b>	Optical refraction critical angle detection system
<b>Measurement items</b>	① Brix (Automatic Temperature Compensation) ② Inverted sugar concentration (Automatic Temperature Compensation) ③ HFCS-55 (High Fructose Corn Syrup) (Automatic Temperature Compensation) ④ HFCS-42 (High Fructose Corn Syrup) (Automatic Temperature Compensation)
<b>Measurement range</b>	① Brix : 0.00 to 95.00% ② Inverted sugar concentration : 0.00 to 95.00% ③ HFCS-55 (High Fructose Corn Syrup) : 0.00 to 95.00% ④ HFCS-42 (High Fructose Corn Syrup) : 0.00 to 95.00%
<b>Minimum indication</b>	① Brix : 0.01% ② Inverted sugar concentration : 0.01% ③ HFCS-55 (High Fructose Corn Syrup) : 0.01% ④ HFCS-42 (High Fructose Corn Syrup) : 0.01% ⑤ Temperature : 0.05°C
<b>Measurement accuracy</b>	① Brix (on measurement of sucrose) : ±0.05% ② Inverted sugar concentration : ±0.05% ③ HFCS-55 (High Fructose Corn Syrup) : ±0.05% ④ HFCS-42 (High Fructose Corn Syrup) : ±0.05% ⑤ Temperature : ±0.05°C
<b>Repeatability</b>	① Brix : 0.01% ② Inverted sugar concentration : 0.01% ③ HFCS-55 (High Fructose Corn Syrup) : 0.01% ④ HFCS-42 (High Fructose Corn Syrup) : 0.01%
<b>Temperature compensation range</b>	5.00~40.00°C

<b>Temperature indication accuracy</b>	±0.10°C
<b>Environmental conditions</b>	Ambient temperature: 5 to 40°C Ambient humidity: Max. 90%RH Ambient altitude (Above sea level): Max. 5,000m
<b>Display method</b>	LED
<b>Printer output</b>	Digital Printer DP-22 (A)(optional) is used. Output system: RS-232C Printing items: Either Brix or concentration, and sample No.
<b>Computer communication</b>	Communication system: RS-232C Output item: Either Brix or concentration Input items: Zero setting and measurements can be started from the computer.
<b>Zero setting</b>	Zero is to be set with distilled water.
<b>Light source</b>	LED (D line wavelength approximation)
<b>Material</b>	① Prism: optical glass ② Sample stage: SUS316
<b>Input power supply</b>	AC100V, 50/60Hz
<b>Power consumption</b>	65VA
<b>Size and weight</b>	Refractometer: 12×27×9cm, 2.0kg AC adapter: 10.5×17.5×4cm, 0.7kg
<b>International Protection Class</b>	IP64 (Excluding AC adapter) Dust-tight and protected against splashing water.

Measuring method



1. Place sample on the surface of the prism.



2. Press and release the START key one time.



3. The measured value is displayed.

Simple

Option

Digital Printer DP-22(A)

<b>Cat. No.</b>	3124
<b>Input method</b>	RS-232C
<b>Type of printer</b>	Thermal dot matrix printer
<b>Printing item</b>	Either Brix or concentration, and sample No.
<b>Printer power supply</b>	AC adapter ( Input voltage: AC100 to 240V )
<b>Power consumption</b>	26VA
<b>Size and weight</b>	13×10×4cm、390g (main unit only)



Sucrose Solution (for Brix confirmation)

<b>Parts.No.</b>	RE-110010	RE-110030	RE-110050
<b>Parts Name</b>	10 % Sucrose	30 % Sucrose	50 % Sucrose
<b>Brix Concentration</b>	10.00±0.03%	30.00±0.03%	50.00±0.05%
<b>Contents</b>	Approx. 5ml	Approx. 5ml	Approx. 5ml

\* Shelf life for those solution is for 6 weeks.



Sucrose Solution

Explanation of icons



- \* Calibration with water
- \* Calibration 1 point\* sur eau distillée
- \* Kalibrierung mit Wasser
- \* Calibrazione con acqua
- \* Calibración con agua
- \* 用水歸零



- \* Digital display
- \* Affichage numérique
- \* Digital Anzeige
- \* Display digitale
- \* Pantalla digital
- \* 數字顯示



- \* AC outlet (AC100 to 240V)
- \* Alimentation secteur (CA 100 à 240 V)
- \* AC Ausgang (AC100 bis 240V)
- \* Uscita AC (AC100 240V)
- \* Conexión a 240V CA
- \* AC插座 (AC100 至 240V)



- \* Can be connected to a printer
- \* Sortie imprimante
- \* Verbindung mit Personalcomputer
- \* Collegabile a stampante esterna
- \* Conexión para impresora
- \* 可與印表機連結



- \* RS-232C Interface
- \* Interface RS232C pour PC
- \* Interface RS232C
- \* Interfaccia RS232C
- \* Interface RS232C
- \* RS-232C輸出



- \* Automatic Temperature Compensation
- \* Compensation automatique de température
- \* Automatische Temperaturkompensation
- \* Compensazione automatica della temperatura
- \* Compensación de automática de temperatura
- \* 自動溫度補償

All ATAGO refractometers are designed and manufactured in Japan.



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