

HI 96801 • HI 96802 • HI 96803 • HI 96804

Digital Refractometers for Sugar Analysis Throughout the Food Industry

- **Ideal for the analysis of:**
fruits, energy drinks, puddings, soy milk juices, jam, marmalade, honey, soups, jelly, tofu and condiments
- **Dual-level LCD**
The dual-level LCD displays measurement and temperature readings simultaneously
- **Automatic Temperature Compensation**
For accurate measurements
- **Easy measurement**
Place a few drops of the sample in the well and press the READ key
- **BEPS**
(Battery Error Prevention System) alerts the user in the event that low battery power could adversely affect readings.
- **IP65 water protection**
Built to perform under harsh laboratory and field conditions.
- **Quick, accurate results**
Readings are displayed in approximately 1.5 seconds.
- **Single point calibration**
Calibrate with distilled or deionized water
- **Small sample size**
Sample size can be as small as 2 metric drops.
- **Automatic shut-off**
After three minutes of non-use
- **Stainless steel sample well**
Easy to clean and corrosion resistant
- **ABS thermoplastic casing**



HANNA offers four sugar refractometers to meet the requirements of the food industry. The HI 96801 Sucrose, HI 96802 Fructose, HI 96803 Glucose and HI 96804 Invert Sugar digital refractometers are rugged, portable and water resistant for measurements in the lab or field. Each instrument offers a specific analysis to determine accurate sugar concentration.

These optical instruments employ the measurement of the refractive index to determine parameters pertinent for sugar concentration analysis.

The actual measurement of refractive index is simple and quick and provides the operator a standard accepted method for sugar content analysis. Samples are measured after a simple user calibration with

deionized or distilled water. Within seconds these instruments measure the refractive index of the sample and convert it to percent by weight concentration units (or %Brix for HI 96801). These digital refractometers eliminate the uncertainty associated with mechanical refractometers and are easily portable for measurements in the field.

These four instruments utilize internationally recognized references for unit conversion and temperature compensation and employ methodology recommended in the ICUMSA Methods Book (internationally recognized body for sugar analysis).

Temperature (in °C or °F) is displayed simultaneously with the measurement on the large dual level display along with icons for low power and other helpful messages.

**HI 96801**

Measures the refractive index to determine the % Brix of sugar in aqueous solutions. The refractive index of the sample is converted to % Brix concentration units.

**HI 96802**

Measures the refractive index to determine the % fructose in aqueous solutions. The refractive index of the sample is converted to % by weight concentration units.

**HI 96803**

Measures the refractive index to determine the % glucose in aqueous solutions. The refractive index of the sample is converted to % by weight concentration units.

**HI 96804**

Measures the refractive index to determine the % invert sugar in aqueous solutions. The refractive index of the sample is converted to % by weight concentration units.

SPECIFICATIONS		HI 96801	HI 96802	HI 96803	HI 96804
Range	Sugar Content	0 to 85% Brix (% Brix)	0 to 85% (by weight) (% fructose)	0 to 85% (by weight) (% glucose)	0 to 85% (by weight) (% invert sugar)
	Temperature	0 to 80°C (32 to 176°F)			
Resolution	Sugar Content	0.1 % Brix	0.1	0.1	0.1
	Temperature	0.1°C (0.1°F)			
Accuracy (@20°C/68°F)	Sugar Content	±0.2% Brix	±0.2%	±0.2%	±0.2%
	Temperature	0.3°C (0.5°F)			
Temperature Compensation		automatic between 10 and 40°C (50 to 104°F)			
Measurement Time		approximately 1.5 seconds			
Minimum Sample Volume		100 µL (to cover prism totally)			
Light Source		yellow LED			
Sample Cell		stainless steel ring and flint glass prism			
Auto-off		after three minutes of non-use			
Enclosure Rating		IP65			
Battery Type / Battery Life		9V / approximately 5000 readings			
Dimensions / Weight		192 x 104 x 69 mm (7.6 x 4.1 x 2.7") / 420 g (14.8 oz.)			

Making a standard % Brix solution

To make a Brix Solution, follow the procedure below:

- Place container (such as a glass vial or dropper bottle that has a cover) on an analytical balance.
- Tare the balance.
- To make an X BRUX solution weigh out X grams of high purity sucrose (CAS #: 57-50-1) directly into the container.
- Add distilled or deionized water to the container so the total weight of the solution is 100 g.

Note: Solutions above 60 %Brix need to be vigorously stirred or shaken and heated in a water bath. Remove solution from bath when sucrose has dissolved. The total quantity can be scaled proportionally for smaller containers but accuracy may be sacrificed.

Example with 25 %Brix:

% Brix	25
g Sucrose	25.000
g Water	75.000
g Total	100.000



ORDERING INFORMATION

HI 96801, HI 96802, HI 96803 and HI 96804 are supplied with battery and instruction manual.