RUDOLPH RESEARCH ANALYTICAL

For High Throughput Food Applications

The J57HA Series of Automatic Refractometers

TECHNICAL BULLETIN 915

NEW FOR 2011!

ACCURACY ±0.00002RI
±0.02BRIX

Rudolph Research Analytical serving its customers with Integrity, Quality, and Innovation for over fifty years.

APPLICATION
The J57HA was designed to meet the unique needs of food quality testing where the refractometer is viewed as a QC tool rather than a laboratory instrument. A single flat measurement surface, electronic temperature control and one button measurement capability make it perfect for heavy use applications.

AUTOMATIC MEASURING SYSTEM
The Rudolph J57HA features a fully automatic measuring system. The operator simply places the sample on the prism, presses a button and the result is displayed on a 7.5cm x 10cm back lit LCD. There are no shadow lines to match and there is no eyepiece requiring operator determination or manual adjustment.

ELECTRONIC TEMPERATURE CONTROL
Brix readings are very sensitive to temperature changes. However these changes in BRIX readings can be minimized by using the ICUMSA temperature correction for sucrose, but only minimized, not eliminated. The ICUMSA Temperature Correction Table was developed for a sucrose and water solution and the further from pure sucrose and water the sample is, the more inaccurate Temperature Correction becomes. Temperature Correction also requires that the sample temperature remain stable during the measurement. So a room temperature sugar solution measurement works reasonably well, but if a sauce sample comes from a kettle or a refrigerator, temperature correction will be almost useless. The solution to measuring hot samples has always been to control the sample temperature with a circulating water bath and then clean and maintain the water bath. The J57HA's built in electronic temperature control provides the best solution for these real world problems: absolute accuracy regardless of sample type and excellent thermo stability no matter what the sample or environmental temperatures are.

HIGH ACCURACY
The J57HA was designed for the food industry with a BRIX range of 0 - 95% and a Refractive Index range of 1.33 - 1.53 RI. The J57HA has a ±0.03 BRIX and ±0.00004 Refractive Index accuracy, which matches the accuracy of Rudolph's best refractometers.

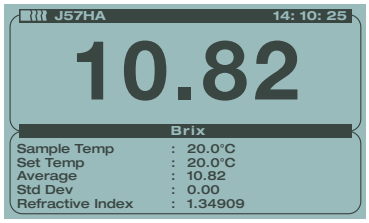
EASY TO CLEAN MEASUREMENT SURFACE
Regardless of the specified instrument accuracy the real world performance will always depend on how well the instrument is cleaned between samples. The J57HA addresses this issue by providing a very flat easy to clean measurement surface with no corners or crevices that tend to trap samples.

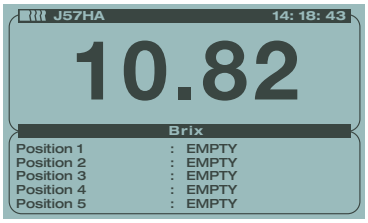
HIGH DURABILITY SAPPHIRE PRISM
When a traditional refractometer is used in a high throughput application prism replacement becomes a regular task. This is because traditional Abbe refractometers have glass prisms which are much softer than the sapphire prism of the J Series and thus more prone to scratching and general wear and tear.

LOWER COST OF USE
Traditionally industry has used an Abbe refractometer either with or without a water bath. The cost of replacing the water bath and the Abbe dual glass prism over time makes the cost of owning a J57HA with its single sapphire prism and electronic temperature control, actually less than the cost of an Abbe over their comparable useful lives.

CALIBRATION
The J57HA offers a 1 or 2 point user calibration. The instrument stores the calibration information in line with ISO and similar standards. The calibration system is password protected enabling an administrator to control who can calibrate the instrument.

USER CONFIGURABLE
Versatile instruments have advantages when applications change however this versatility can also lead to confusion with extra buttons and by forcing operators to interpret extra results that have no relevance. The J Series customizable display allows the instrument to be configured to exactly what is required for each application. The customizable keypad can be "locked out" or just a few keys can be operable, making for an even faster learning curve. The lockout function, calibration and other functions are all password protected.





OPTIONS AND ACCESSORIES
- NIST Traceable Calibration liquids
- Data capture software
- IQ/OQ/PQ Package
- Small volume sample well
- Acid resistant sample well and plate
- Different measurement wavelengths
- Printer
- Barcode reader

* For a wider refractive index range covering chemical applications, see J57WR Technical Bulletin 925

Refractometer Specifications - J57HA

Measurement Scales:	Refractive Index (RI) Brix (% sucrose)
Measurement Range:	1.33 - 1.53 RI, 0 - 95 Brix
Reproducibility and Accuracy:	±0.00004 RI, ±0.03 Brix
Control Temperature:	20°C and 25°C
Ambient Temperature Limit:	10°C to 40°C
Sample Temperature Limit:	- 20°C to +250°C
Temperature Correction Range:	18 - 95°C (for pure sucrose)
Wavelength:	589.3nm (other wavelengths available)
Light Source:	Light Emitting Diode (exp life> 1,000,000 measurements)
Calibration:	1, 2 or 10 point
Communication Interface:	2 x R232 port, 1 x Parallel port, (USB adaptor available)
Operating Dimensions (LxWxH):	16"/40cm x 14"/35cm x 6"/15cm
Operating Weight:	13.6lbs/7kg
Shipping Dimensions (LxWxH):	26"/66cm x 21"/54cm x 16"/40cm
Shipping Weight:	30lbs/14kg
Power Requirements:	100 - 240V/50 - 60Hz

Rudolph Research Analytical 55 Newburg Road, Hackettstown, NJ 07840 USA • Phone: 973-584-1558 • Fax: 973-584-5440 • E-mail: info@rudolphresearch.com • Internet: www.rudolphresearch.com