



Laboratory Flexibility with Industrial Strength and Simplicity

The J47 and J57 Series of Automatic Refractometers



United States of America
National Institute of Standards and Technology



NVLAP LAB CODE: 200898-0
Accreditation to ISO/IEC 17025:2005

Sugar Milling, Refining, Processing Applications

"Just wanted to let you know how pleased our company is with the J57HA Automatic Refractometers. We currently have two of the instruments in service in our sugar testing laboratories and are in the process of ordering three additional refractometers.

Before the decision was made to switch our laboratories to the J57HA Refractometers, rigorous testing was done on the instrument over the past year in our Quality and Research Laboratory.

It has been our policy when doing research type work, using our old refractometers, that we place a sample on the prism, set a timer for two minutes, then press the "Read" button until we get three readings in a row that are identical (this could take up to 12 readings).

With the J57HA instrument, we place the sample on the prism, press the "Measure" button and in about 15 seconds we have a stable number. The instrument is so stable in fact, that I can honestly say after using the instrument for over a year, we have never had a different reading from the original measurement, no matter how many times we repeatedly press the "Measure" button."

- R.R., Senior Process Chemist, Western Sugar Cooperative

- Cane sugar milling and refining
- Beet sugar milling and refining
- Invert sugar
- Liquid sugar
- Confectionery sugar
- Molasses
- Brown sugar



Food and Beverage Applications

- Seed oils
- Dairy products
- HFCS
- Candy
- Sodas
- Sauces
- Soups
- Confections
- Jams
- Milk
- Juice concentrates
- Vegetable products
- Juices
- Edible oils
- Soy bean oils
- Soft drinks
- Syrups
- Coffee extracts
- Fruit products
- Starch
- Teas
- Jellies



Laboratory Quality Refractometer

Superior Performance over ABBE Refractometers

Traditionally the food industry has used an ABBE refractometer either with or without a water bath. Over their comparable useful lives, the cost of replacing the water bath and the Abbe's dual glass prisms compared with the cost of owning a Rudolph Research J57, with its single sapphire prism and electronic temperature control, make the Rudolph actually less expensive to own than the cost of using an ABBE.

ABBE refractometers require the user to make a reading by eye and may result in errors due to shadow-line interpretations. One person says the material is on specification, one person says it's not. In addition, scratches on the glass prisms of an ABBE make visual interpretation even more difficult. The measurement speed and accuracy the J47 and J57 increases productivity and reduces mistakes caused by inaccurate readings.

High Accuracy

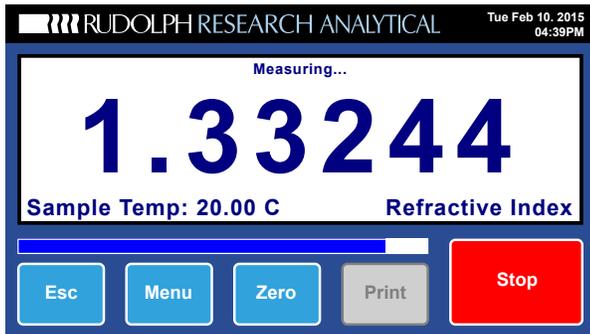
The J47, J57HA, and J57WR offer a level of accuracy, measurement range, and temperature correction or control that the food and beverage industry demand. These instruments are perfectly designed for harsh and demanding applications.

Choose the J47 with **temperature correction** for samples that are primarily sugar and water measured close to ambient temperature. Select the J57 series with **temperature control** for precise measurements when working with samples that are measured very hot or very cold.

The J57HA (High Accuracy) offers ± 0.01 BRIX and ± 0.00002 Refractive Index (RI) accuracy, which matches the accuracy of Rudolph's best refractometers. For samples requiring a wide RI range, choose the J57WR(Wide Range) with a 1.29-1.66 measurement range.

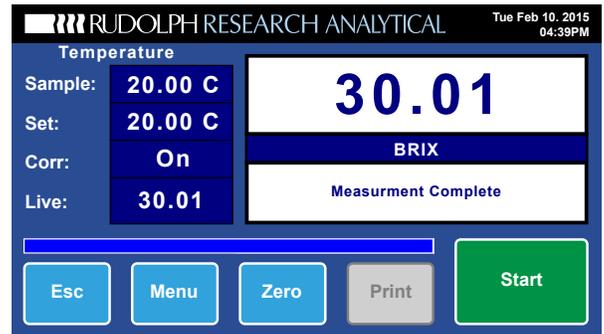


One Instrument Two Display Choices



Load-N-Go Display

Don't touch any buttons the display updates itself continuously



Standard Display

Offers a time delay and temperature stabilization feature so you get 1 reading when your measurement criteria is met.



The Rudolph Advantage

The Rudolph J47 and J57 Automatic Refractometers from Rudolph Research Analytical bring together Exclusive features that provide unmatched performance to improve your process.

The J47 and J57 series of refractometers are specifically designed for food and beverage industry production and quality control and are perfect for 24/7 food industry applications where fast, automatic, and accurate Brix readings are required. The J47/J57 refractometers are easy to operate, produce easy to read digital measurements, clean-up easily, and eliminate errors created by ABBE style refractometers where user errors can occur frequently. The J47/J57 refractometers offer temperature correction using the latest ICUMSA tables. To measure very hot production samples coming from the kettle. Select the J57 with temperature Control to 20°C or 25°C.

Ultra Flat, Ultra Hard and High Durability Industrial Sapphire Prism

Synthetic sapphire prisms have similar hardness to diamond and can be cleaned with paper towel.

Simple To Operate User Friendly Display With Full Digital Read-Out

Touch screen flexibility with key lock out simplicity.

The Standard and Ultra-Flat Sample Dishes are Easy to Clean

Regardless of an instrument's specified accuracy, a refractometer's real world performance depends on how well the instrument is cleaned between samples. The J47 and J57 addresses this issue by providing a very flat easy to clean measurement surface with no corners or crevices that tend to trap samples causing contamination.

J57 Series Has Temperature Control to 20°C or 25°C

Peltier Temperature Control at the Prism surface, allows for improved accuracy and greater stability.

J47 Provides Instant Results with Temperature Correction

The Rudolph J47 refractometer corrects for errors caused by sample temperature variation using the latest ICUMSA temperature correction tables. Temperature correction is a very fast mathematical solution to obtaining measurement results without a temperature control system or a water bath. These measurement results are the most accurate when samples are comprised of predominantly sugar and water and measured near room temperature.

Rugged Construction With Small Footprint

L: 17 1/4 inches W: 12 inches
H: 13 inches / 23 lbs.

USB Port

Save data to any USB Storage Device.

RS232 Printing Capability:

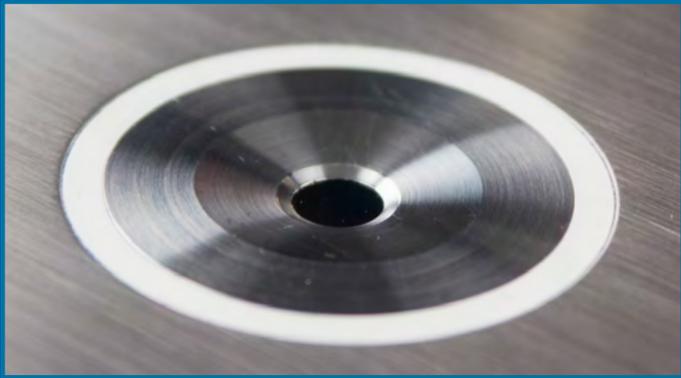
Print to any Small Format Impact or Strip serial printers.



Easy To Clean Measurement Surface

No matter how good a refractometer is, the results will only be right if the prism is clean. Rudolph's flat prism design makes **cleaning easy**, even with sticky syrups. The flat low profile sample well with a sample volume of less than 1ml is easily cleaned by wiping with a common paper towel. A single cleaning surface with **scratch-proof sapphire prism** makes the J Series popular for high throughput laboratories.

Standard Prism and Sample Dish



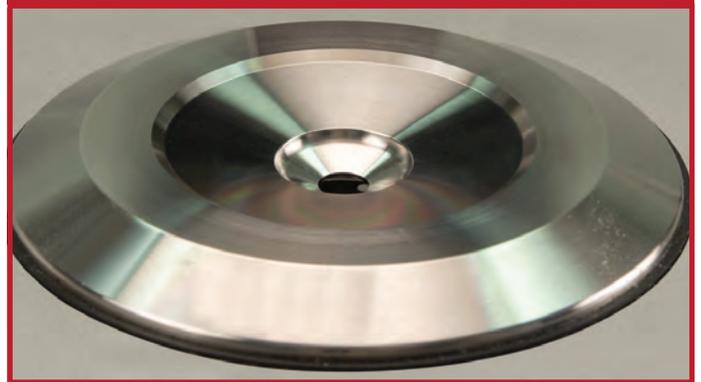
Competitor 1



Ultra - Flat Prism and Sample Dish



Competitor 2



The flat open sample area has no corners to trap even sticky materials and is resistant to almost all solvents including Acetone, Toluene and similar organics. Choose Hastelloy option for acids like HF1 and HCl.

Some manufacturers use glass or YAG (Yttrium-Aluminum-Garnet.) prisms. These prisms are softer than sapphire and have slower temperature transfer coefficients.

Don't worry you can clean the Rudolph prism with regular paper towels, no special cleaning paper is required.

Easy Traceability and Calibration

Traceability

If you are operating a modern, high volume food or beverage business you want to maintain high standards and traceability throughout your production process. The J47/J57 series of refractometers offer NIST Standards to ensure consistent quality and thus consistent products.

Calibration

The J47/J57 series automatic refractometers offer 1 or 2 point calibration. The instruments store the date and the time of the last calibration in line with ISO and similar standards. Regardless of how many times the refractometer is calibrated it can always be restored to the default factory calibration.

