

# The J357 Series of Automatic Refractometers



**Ask about our  
Auto Measure Option**

**TECHNICAL BULLETIN 917**

## APPLICATION

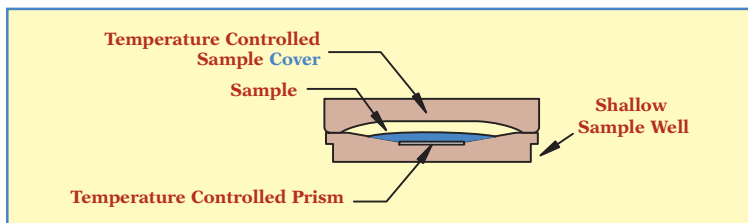
Designed as a research quality instrument the J357 has the highest performance of any refractometer in the Rudolph range. This instrument offers the same extra wide range as our chemical industry models combined with the high accuracy of our food industry models. It also offers the most powerful temperature control and is able to measure at up to 120°C

## OPERATION

Operating the J357 is as simple as placing a sample on the artificial sapphire prism, closing the presser and reading the answer – all in just a few seconds. There are no shadow lines to match and there is no eyepiece requiring any kind of operator determination or manual adjustment. When the “measure when stable mode” is selected, the J357 automatically waits until the sample has been heated or cooled to a predefined temperature before initiating a measurement.

## DUAL ELECTRONIC TEMPERATURE CONTROL TO 120°C

**Unlike other temperature controlled refractometers, the J357 has temperature control from both above and below the sample.** The sample **Cover** is controlled to the same temperature as the prism and, when lowered, is designed to provide a temperature controlled micro environment that provides unrivaled temperature stability, fast measurement time and minimal evaporation. With the Auto Measure option, the sample **Cover** can also be used to initiate measurement.



## OPTIONAL SAMPLE PRESSER

The J357 is available with an optional Temperature Controlled Sample **Presser** that touches the sample. Compared with the standard temperature controlled **Cover**, the optional **Presser** reduces the empty volume of the measurement area thereby decreasing evaporation and at the same time helping to evenly spread semi solid materials over the measurement prism. This feature offers improved performance on many samples.



## CALIBRATION

The J357 offers 1 point, 2 point or a full multi-point calibration. Calibration can be done at 20°C, 25°C or any user selectable temperature within the available range. Regardless of how many times the refractometer has been calibrated, it can always be restored to the initial factory calibration if required.

## CUSTOM SCALES

The J357 is available with 100 possible programmable scales. Custom scales can be set up in a few minutes. Simply enter 2, 6 or 10 data points of concentration and corresponding RI value, press **[Compute]** and the instrument creates a new custom scale.

## HIGH DURABILITY SAPPHIRE PRISM

The J series refractometer offers a sapphire prism for high mechanical and chemical durability. The sample well is acid resistant 316 stainless steel with a techtron sealing ring. There is no lamp to change, the LED light source is guaranteed for 1,000,000 measurements.

## EASY TO CLEAN

No matter how good the refractometer is, accurate results will only be obtained if the instrument is clean. The Rudolph J Series offers a flat, easy to clean prism that makes this process simple even with sticky samples. (See brochure labeled “Important Design Note”.)



## BUILT IN 21 CFR PART 11

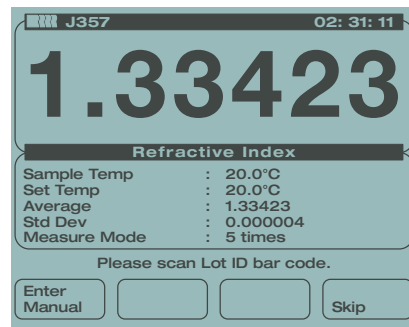
### COMPLIANT DATA STORAGE

The J357 is available with data storage on a removable media card. In 21 CFR mode the data storage system provides a secure password system for storing raw data to comply with FDA specifications. When using non 21 CFR 11 mode the data storage system is a powerful tool for kinetics experiments and an excellent system for QA traceability and to help laboratories meet the requirements of ISO and similar quality systems.



## INTERFACE

A large 7.5 cm x 10cm cold cathode fluorescent back lit graphics LCD allows the scale, sample temperature, set temperature, air temperature, time, date and temperature correction status to be easily viewed. All functions are activated through a touchscreen panel which will not wear out or get misplaced like traditional or detachable keypads. The touchscreen is resistant to fingernails, sharp objects, chemicals, and acids.



## OPTIONS AND ACCESSORIES

- NIST Traceable Calibration liquids
- IQ/OQ/PQ Package
- Acid resistant sample well and plate
- Printer
- Pre programmed custom scales
- Data capture software
- Small volume sample well
- Different measurement wavelengths
- Barcode reader
- 21CFR Part 11 compliance software

# Refractometer Specifications - J357

<b>Measurement Scales:</b>	Refractive Index (RI), BRIX (% sucrose), and 100 User Programmable Scales
<b>Measurement Range:</b>	1.26 - 1.70 RI, 0 - 95 BRIX
<b>Resolution:</b>	0.00001 RI
<b>Reproducibility:</b>	±0.00002 RI, ±0.015 BRIX
<b>Accuracy:</b>	±0.00004 RI, ±0.03 BRIX
<b>Optical Wavelength:</b>	589.3nm (other wavelengths available)
<b>Response Time:</b>	User configurable – generally less than 30 seconds

<b>Communication Interface:</b>	Two RS232 ports, one parallel printer port
<b>Temp. Control Range:</b>	15°C - 100°C (10 – 120°C Optional)
<b>Temp. Accuracy:</b>	0.05°C
<b>Ambient Temp. Limit:</b>	10°C - 40°C
<b>Temp. Correction Range:</b>	18°C - 80°C (for pure sucrose solutions)
<b>Calibration:</b>	Using water or NIST traceable standards
<b>Operating Dimensions/Weight:</b>	L: 15 1/2" W: 10" H: 4 1/2" / 23 lbs. L: 39.5 cm W: 25.5 cm H: 11.5 cm / 10.4 kg
<b>Power Requirements:</b>	100-240 volts, 50 Hz - 60 Hz