



## RFM300+ Refractometers



RFM300+ series refractometers are considered by many leading companies as the ultimate instrument for installation in demanding factory environments, as well as for use as a primary quality control tool. Since its original launch in 1992, over 5,000 models have been installed across the globe, and following a complete re-design in 2008, the RFM300+ series of refractometers still offers all the original design attributes but with a wider refractive index range, Peltier temperature control and a more versatile software structure. A shallow, easy-to-clean prism dish houses a single sapphire prism optical system protected by a sample presser that may also be used to instigate a measurement without the need to press the read button.

A large sampling area on the prism surface allows measurement of not only homogenous fluids like juices, sodas, sauces and edible oils, but also difficult to read samples like fruit pulps and industrial resins.

Intelligent software ensures rapid temperature response to changes in prism temperature, whilst the SMART temperature stability check makes sure that the result is displayed only when the sample is stable. A Methods system allows rapid configuration of instrument setup and provides limit checks against stored data as well as product-specific offsets and acid corrections. Over 700 readings may be stored within the instrument memory and the on-screen menu may be displayed in a number of different languages.

The instrument is available in two formats, the most popular being the 2-decimal place RFM340+ refractometer, which, following improvements to the thermodynamic control system, now has an increased measurement performance between 0-20°Brix and so reduces potential measurement error in the critical range covering finished products like the aforementioned juices and sodas. By improving the performance at the low end of the scale, users may now trim syrup dilution to the absolute minimum without the risk of breaching manufacturing specifications.

SG scales for sucrose are also common to the series. These scales may be used to express the relative density of pure sucrose solutions and, when used in conjunction with a product offset from





within the Methods system, can express finished beverages as an equivalent SG. By doing so, contract packers of beverage products may now use a refractometer in situations where density °Brix or SG is dictated as the method of analysis, whilst retaining all the measurement advantages held by a refractometer.

Additionally, all RFM300+ series refractometers have the ability to display the measured result in two scale formats such as a Brix value based on SG alongside the original refractive index measurement. Optional software is also available at point of order to allow use in an environment controlled by FDA regulation 21 CFR Part 11, as well as optional devices that allow use in wet and humid factory environments, offering ultimate protection under the worst of environmental conditions.

- **High accuracy ( $\pm 0.01^\circ\text{Brix}$ )**
- **Robust factory model**
- **Easy clean prism**
- **Smart temperature stability**
- **PIN menu protection**

Specifications	RFM330+ (RFM33F)	RFM340+ (RFM34F)	RFM340+ Refractometer Enhanced Performance		
			RFM340+	RI	°Brix
Order Code	22-30	22-40			
Scales Refractive Index Sugar (°Brix) User Defined	1.32 - 1.58 0 - 100 100	1.32 - 1.58 0 - 100 100	Scale	1.32-1.58 1) 1.32-1.36 2) 1.36-1.58	0-100 1) 0-20 2) 20-100
Resolution Refractive Index Sugar (°Brix)	0.0001 0.1	0.00001 0.01	Accuracy	1) $\pm 0.00002$ 2) $\pm 0.00004$	1) $\pm 0.01$ 2) $\pm 0.03$
Accuracy Refractive Index Sugar (°Brix)	$\pm 0.0001$  $\pm 0.1$	$\pm 0.00002$ (1.32 - 1.36 RI) $\pm 0.00004$ (1.36 - 1.58 RI) $\pm 0.01$ (0 - 20 °Brix) $\pm 0.03$ (20 - 100 °Brix)			
User Scale Library on-board	20+ preprogrammed scales including HFCS (3), wine (5), sugar (4), urine SG (3), Urea, sucrose SG (3), FSII, NaCl, Butyro etc. Plus customer programmable scales via PC.				
Presser Type	Polyacetal				
Reading Time	Minimum 4 seconds				
Measuring Temperature Range	10°C below ambient to 70°C				
Temperature Sensor Accuracy	$\pm 0.03^\circ\text{C}$				
Sample Temperature Stability	$\pm 0.05^\circ\text{C}$				
Temperature Compensation Sucrose (°Brix) AG Fluids User Defined	5 - 70 °C 5 - 40 °C Simple coefficient (units/°C) or polynomial function				
Temperature Stability Checks	None/delay time/repeatability/ Smart (independently selectable by Method)				
Interfaces	1 Parallel (printer), 2 x Serial (RS232)				
Prism Seal	Silicon/Resin				

