

# ***RFM990-Flow Refractometer***

***High accuracy Peltier temperature controlled refractometer for laboratory flow-through applications and automated systems***

- **High Accuracy Refractive Index**
- **High Accuracy Brix**
- **Choice of cell type**
- **Materials traceability (ISO 10204)**
- **RFID User Identification**
- **GLP and Audit Trails**



**Bellingham  
+ Stanley**

## RFM990-Flow Refractometer

The RFM990-Flow Refractometer is a wide range Peltier temperature controlled instrument that has been specifically designed for flow applications. The instrument incorporates a special stand that elevates the instrument to an optimum angle as well as a bubble loop on specific cells, ensuring that sample is presented to the prism without entrapped air and therefore ensuring best performance in the most difficult flow configurations.

Supplied as an instrument module only, the customer can choose from a number of standard cells or for special applications, a custom design chamber may be offered at extra cost depending on viability.

Available as a five decimal place RI instrument only, customers requiring a lower level of accuracy have the option to switch the resolution.

### Micro Flowcell

Micro flowcells are typically used in conjunction with an autosampler. Typical applications include use with density meters and/or polarimeters in breweries for calculating alcohol content and flavours & fragrance applications. Micro flowcells are also used in beverage applications, especially in 'audit laboratories.'

### Macro Flowcell

Macro flowcells are used where sample viscosity limits the use of micro-flowcells or for connection to a *pilot plant* or *small-batch process line*, where a normal process refractometer may not be suitable.

### Macro Funnel Flowcell

Where larger volumes of sample are available, a funnel flowcell may be used. These negate the need to clean the instrument prism between sample measurements, providing a rapid sample turnaround, such as in Tare Houses of grape grower's co-operatives and sugar mill receiving stations. There are two funnel sizes available.

Instrument Specification	
Scales	0-95
°Brix	1.30 – 1.70
RI	
Resolution (°Brix)	0.1 or 0.01 (selectable)
Refractive Index	0.0001 or 0.00001 (selectable)
Accuracy (°Brix)	±0.02 ±0.00002
Other Scales	User defined – Invert, HFCS, FSII etc. or custom scales, loaded by PC software
Automatic Temperature Compensation	ICUMSA (sugar), AG, None or User Defined
Temperature Control	Internal Peltier Device
Temperature Accuracy	±0.03 °C
Temperature Stability	±0.05 °C
Working Temperature Range	0 °C or 10°C below ambient which ever is greater To 80°C
Temperature Stability Checks	None/delay time/repeatability/Smart (independently set by Method)
Reading Time (seconds)	4
Interface	1 Parallel (printer) 2 x serial (RS232)
Ambient Humidity Range	< 90% RH
Prism	Artificial Sapphire
Prism Dish	316 Stainless Steel
Interfaces	RS232
Sample Illumination	Light Emitting Diode (life 100,000hr +) 589nm
Case Material/Sealing	Polyurethane Foam/ IP65
Prism Gasket	Kalrez®
Order Code	22-90

Flowcell Specifications		Micro	Macro	Funnel*
Order Code		22-91 22-95	22-92	22-93 22-94
Cell volume (including nozzle)	ml	0.6	1.2	1.2
Flushing volume	ml	-	-	50-100
Sample inlet tubing bore	mm	2	4	-
Sample inlet/waste nozzle outer diameter	mm	3	6	6
Sample waste tubing bore	mm	2	4	6
Sample pressure (max.)	bar	2	2	-
Chamber material	PEEK			
Nozzle material	316 Stainless Steel			
Sealing Ring	Chemraz ®			
Connections	Push fit or 1/4" UNF code 22-95			

\*Funnel Diameter: 85mm (code 22-93). 150mm (code 22-94)

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