

TMR 33-37 Refractometer

The acclaimed TMR 33-37 high accuracy refractometer has been further improved. New features give traceability of every measurement, automatic print options and built in measurement intelligence for fast, reliable results.

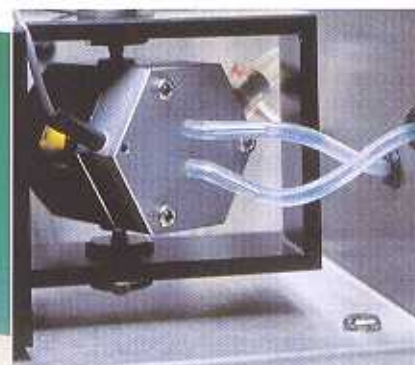
- Fifth or sixth decimal place resolution of refractive index (0.00001 / 0.000001RI) or equivalent in other scales.
- Integral programmable sample pump.
- Multiple measuring scales.
- NEW Wider range - now 0 to 25 Brix or equivalent in other scales.
- NEW, Date & Time of every measurement displayed and output.
- NEW, Autoprint mode.
- NEW, Built in intelligent stability option.

The TMR 33-37 high accuracy refractometer is ideal for demanding applications in the soft drinks, fruit juices and sugar refining industries. See our separate data sheet for full details of TMR 33-37 uses in the brewing, distilling and blending industries.

With close temperature control, the TMR 33-37 will give repeatability of better than 0.000003RI. This makes it the first choice for analysis in other fields such as water purity monitoring.

Built in menu guide the user through the analysis set up procedure, ensuring simple, error free operation. Multiple measuring scales include Refractive Index (RI), Brix (% sucrose), Temperature Corrected Brix, Zeiss and a user programmable scale. The User Scale is very simple to set up needing just two standard solutions. The units can be defined in any way the user wants.

In the Sugar Purity mode, special built in software provides automatic calculation of Apparent Sugar Purity when linked to a suitable Optical Activity polarimeter. The calculation allows for the sample clarification process (Wet Lead, Dry Lead or No Lead) and has a simple set up procedure to interface with AA-10, PolAAR or SacchAAR model polarimeters. Ask for a copy of our Sugar Purity Systems brochure giving full details and also data on sugar colour measurement.



With the TMR 33-37, maintenance is virtually eliminated. The instrument has a stabilised LED light source with an expected life of more than 500,000 hours. Sampling is by peristaltic pump giving excellent precision and reproducibility. The synthetic sapphire prism surface provides reliable, accurate reading even with the most aggressive samples. Additionally, there is a choice of sample cell configurations. The standard simple cell has 1.6mm bore fittings and is designed for non viscous fluids. Liquids containing suspended matter such as natural fruit pulp can be measured using the specially designed 'Orange juice' cell. Both cells have a small internal volume (less than 0.5ml) to ensure negligible carry over from previous samples. There is no need to flush the cell between samples. At the end of a sample batch or shift, the cell can be flushed clean using a single button control. This avoids the need to reset the sampling conditions and eliminates errors.

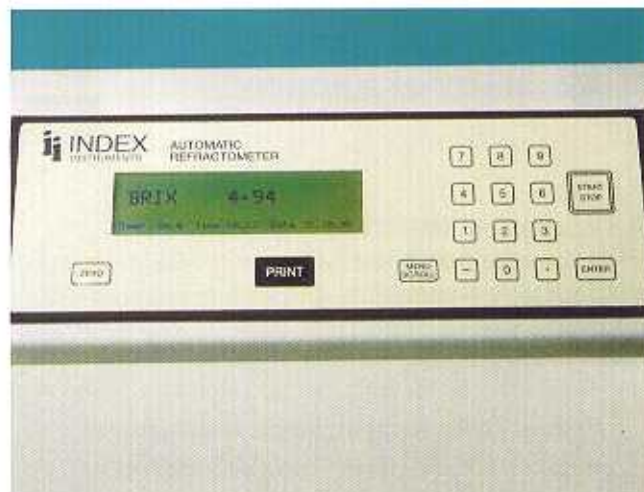
For the soft drinks industry, there is an optional 'Re-sorb' feature allowing direct readings to be made using carbonated samples and makes the instrument ideal for 'beside-the-line' use in a packing hall. Fast, precise analysis is delivered direct to the final production stage to ensure the highest possible quality at lowest cost.

In a busy manufacturing environment you need fast, reliable measurement. The TMR 33-37 has a user defined intelligent stability mode that automatically senses when the sample has come to a constant value. On reaching this point, the instrument reads the sample and outputs the result. This avoids lost measuring time and improves efficiency without any compromise to analytical integrity.

With initiatives such as GMP, GLP and VAM now commonplace in manufacturing and laboratory analysis, traceability of measurements is essential. The TMR 33-37 outputs the date and time of every measurement along with the scale, temperature and measured value. Two RS232 outputs are provided for data collection using a printer and/or computer. There is also a remote input socket to trigger the instrument sampling pump in an automatic on-line set up.

If a computer is connected, all this data can be downloaded and stored for future reference or statistical analysis. A barcode wand and 'Qwerty' keyboard, giving up to 32 characters of sample identifier, are also available.

Calibration of the TMR 33-37 can be checked and the set point (zero) adjusted using a few simple keystrokes on the display. Calibration standards are available from Index Instruments for routine instrument checking. They are non-toxic and safe for use in a food-processing environment. For further details ask for a copy of our Refractometer Calibration Standards data sheet.



TMR 33-37 TECHNICAL SPECIFICATION

SCALES	Touch button selection of 'Zeiss', Refractive Index (RI), Brix, Temperature Corrected Brix or user Programmable scale
RANGE	'Zeiss' -5 to 105 RI 1.33 to 1.37 Brix 0 to 25% (other ranges available by means of interchangeable prisms to special order)
READABILITY	'Zeiss' 0.01 RI 0.00001/0.00001 Brix 0.01%/0.001%
ACCURACY	'Zeiss' ± 0.05 RI ± 0.00002 Brix $\pm 0.01\%$
WAVELENGTH	589nm
READOUT TIME	Approx. 3 seconds, continuous update
DISPLAY	Alphanumeric, 35mm x 123mm backlit LCD graphics panel, six lines of data
TEMPERATURE	Displayed continuously to 0.1°C
THERMOSTATIC CONTROL	By use of circulating fluid, temperature range 5° to 95°C
CONTROLS	Set point; print; Keyboard for programming functions. Sampling pump control button
SAMPLE INGESTION	By means of peristaltic pump; Sample tubing: silicone, i.d. 1.6mm, o.d. 3.2mm or 3.5mm i.d., 6.7mm o.d. Pump tubing: silicone rubber, 1.6mm wall thickness, 4.8mm i.d.
SAMPLE CELL MATERIALS	In a standard cell, the following materials contact the sample: chromium plated brass, synthetic sapphire, stainless steel, nitrile rubber and silicone tubing.
OUTPUTS/INPUTS	2 X RS232, 1 x remote
POWER REQUIREMENTS	87-264VAC, 47-63 Hz, less than seven watts
DIMENSIONS	w 500 x d 290 x h 190mm
WEIGHT	16.5kg
PACKED WEIGHT	25kg
DIMENSIONS OF PACK	810 X 410 X 300mm

All sizes and weights are approximate.

The TMR 33-37 is CE marked to indicate compliance with the appropriate European safety, emission and immunity standards.

Due to continuing research and technical advances, we reserve the right to alter the specifications of any of the products in this leaflet.

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