

- L** LABORATORY
- P** PROCESS
- S** SOFTWARE
- A** AUTOMATION



iPR FR²

Full-Range Inline Process Refractometer

Our process refractometer designed to provide a particularly wide measuring range from 1.3200 – 1.6000 RI



Specifications

Full-Range Inline Process Refractometer

Measurement principle	Total internal reflection refractometer
Measuring scales	100+ standard scales, freely definable custom scales, internal storage 4 simultaneous scales
Measuring range	1.3200 - 1.5300 RI / 0-100 Brix or 1.4200 - 1.6000 RI / 50 - 100 Brix
Accuracy	± 0.00007 RI / ± 0.05 Brix*
Resolution	0.00001 RI / 0.01 Brix
Reproducibility	0.00003 RI / 0.02 Brix
Process temperature	- 10 to + 150 °C (with water cooling) CIP/SIP up to 150 °C for 30 minutes
Ambient temperature	- 10 to + 55 °C
Temperature sensor accuracy	± 0.1 °C
Temperature measurement	NTC sensor for measurement of sample temperature placed inside the prism
Process pressure	0 - 10 bar (up to 30 bar with APV connection)
Interface standard	2 insulated 4 - 20 mA active analog outputs ($\leq 500 \Omega$) 2 digital output switch (up to 1 A) 1 serial output (RS232) User programmable 2 line illuminated display
Interface optional	1 serial output (RS485 or USB)
Mechanical interface standard	VariVent type N 1.4404 Stainless steel
Mechanical interface optional	VariVent type N Hastelloy C276 APV 1.4404 Stainless steel
Cooling water connection	Straight screw-in fitting, G 1/8 o., for flexible hose 6 mm ID 8 mm OD, a/f 14 mm, 1.4571 Stainless steel
Dimension	264 mm x Ø 149 mm
Weight	5300 g
IP class	IP69K
Light source, wavelength	LED, 589 nm
Power supply	24 V DC
Current consumption	< 120 mA (20 - 28 V)
Wetted Parts	YAG, FFKM, 1.4404 Stainless steel (optional Hastelloy C276)
Housing material	1.4404 Stainless steel
Available immersion depths	0 - 90 mm

Typical refractometer applications:

- Determination of refractive index
- Determination of dry substance
- Determination of mass percent
- Brix measurement
- Standard scales (Brix, Oechsle, Degree Plato, Zeiss, Fat, Honey) with automatic temperature compensation
- Qualitative analysis – identification of samples
- Interface detection
- Quantitative analysis of dissolved solids in water or other solvents
- Quantitative analysis of sugars, solves, glycol, fat, oechsle
- Starch according to Ewers
- Peptid synthesis
- Distillation
- Dairy Fat Content
- Lactose content in Food & Beverage
- Betaine and many more

Typical industries for the model:

- Chemical industry
- Cosmetics
- Food & Beverage
- Packaging Industry
- Pharmaceutical and medical industry
- Polymers
- Semiconductor industry

