

L LABORATORY

P PROCESS

S SOFTWARE

A AUTOMATION



**SCHMIDT
HAENSCH**
innovators by tradition since 1864

VariRef Series

Full-Range Refractometer

Delivering precise measurements, featuring multi-point calibration, rapid temperature control and an adjustable sample compartment



21 CFR
Part 11 
COMPLIANCE *on request*

SPECIFICATIONS	VariRef C	VariRef B	VariRef A
Measuring scales	Refractive Index (RI), Sucrose (% Brix) Standard scales included, freely definable scales		Refractive Index (RI), Sucrose (% Brix), USG
Measuring range	1.2900 - 1.5800 RI / 100% Brix	1.29000 - 1.58000 RI / 100% Brix 1.32000 - 1.70000 RI / 100% Brix	1.320000 - 1.580000 RI / 100% Brix
Specifications Precision Repeatability Resolution	± 0.0001 RI* / $\pm 0.05\%$ Brix* ± 0.0001 RI / $\pm 0.05\%$ Brix 0.0001 RI / 0.05% Brix	± 0.00002 RI* / $\pm 0.02\%$ Brix* ± 0.00002 RI / $\pm 0.02\%$ Brix 0.00001 RI / 0.01% Brix	± 0.00002 RI / $\pm 0.02\%$ Brix* \pm 0.000005 RI / $\pm 0.006\%$ Brix 0.000001 RI / 0.001% Brix
Ambient temperature	+ 10 °C to + 40 °C		
Temperature measurement	NTC sensor		
Temperature range	5 °C to 80 °C	5 °C to 100 °C	20 °C (others upon request)
Temperature precision / resolution	± 0.03 °C* / 0.01 °C		
Minimum sample volume	0,6 ml		
Temperature stabilization time	25 °C to 20 °C, ± 0.1 °C, in 1 minute (valid for ambient temp. = 20 °C)		
Measurement mode	Single sample or flow through measurement (with optional compartment door)		
Prism	Sapphire	Sapphire / YAG	Sapphire
Light source / wavelength	LED, interference filter 589 nm		
Display	7" Touchscreen**, 800 x 480 Pixel		
Operation	Touchscreen**, Keyboard***, Mouse***, Barcode Reader***, Remote via PC / Tablet / Smartphone***		
Interfaces	Ethernet 10/100/1000, RS232, SH connector, USB, WLAN**, Modbus**, Canbus**, Profibus**		
Conformity	International Pharmacopoeia, ASTM, AOAC, DIN, FDA, ICUMSA and others		
Power	VAC 90-265; 50/60 Hz; 150 W max.		
Dimensions	With display: 310 x 220 x 250 mm (w x d x h); without display: 310 x 220 x 150 mm (w x d x h)		
Highlights	Modularity; user friendliness; fast temperature control; easy cleaning; variety of complete special sample room doors, e.g. for single or flow through measurements or for solid samples; the self-checking capabilities for cleanliness; environment temperature effects; calibration and more result in a virtually maintenance free product; 21 CFR Part 11 conform; ELN; LIMS ready		

* Standard conditions (589 nm, $t \approx 20^\circ\text{C}$, $t \approx 23^\circ\text{C}$)
 ** Optional
 *** not included in delivery

Combining over 150 years of experience with the endless strive for innovation

VariRef possesses the well-established flat and easy to clean SCHMIDT + HAENSCH sample room. When dealing with sticky, hard to clean or hazardous materials we offer you a variety of sample room doors to ensure proper sampling. The new double isolated peltier systems allows fastest and precise temperature control. The newly developed ATC (Ambient T-Control) takes temperature variations of the ambience of the instrument into account as well.

