

**L** LABORATORY

**P** PROCESS

**S** SOFTWARE

**A** AUTOMATION



**SCHMIDT  
HAENSCH**  
innovators by tradition since 1864

# VariRef<sup>2</sup> Series

Modular refractometer for routine analysis  
with 21 CFR Part 11 compliance



21 CFR  
Part 11   
COMPLIANCE *on request*

SPECIFICATIONS	VariRef 301	VariRef 401	VariRef 501	VariRef 601
Light source, wavelength	LED, Interference filter 589 nm			
Measuring scales	Refractive Index (RI), Sucrose (Brix), Standard scales included, up to 1000 scales freely definable			
Measuring range	1.3200 - 1.5800 RI / 0 - 100 Brix	1.30000 - 1.66000 RI / 0 - 100 Brix	1.27000 - 1.71000 RI / 0 - 100 Brix	1.27000 - 1.72000 RI / 0 - 100 Brix
Accuracy	± 0.0001 RI / ± 0.05 Brix	± 0.00003 RI / ± 0.02 Brix	± 0.00002 RI / ± 0.015 Brix	± 0.00002 RI / ± 0.015 Brix
Reproducibility (Precision)	± 0.0001 RI / ± 0.05 Brix	± 0.00001 RI / ± 0.01 Brix	± 0.000005 RI / ± 0.006 Brix	± 0.000005 RI / ± 0.006 Brix
Resolution	0.0001 RI / 0.05 Brix	0.00001 RI / 0.01 Brix	0.000001 RI / 0.001 Brix	0.000001 RI / 0.001 Brix
Temperature control	Integrated peltier sample temperature control system			
Temperature control range	5 °C to 80 °C	5 °C to 80 °C	5 °C to 100 °C	5 °C to 100 °C (- 5 °C to 105 °C on request)
Temperature stabilization time	25 °C to 20 °C, ±0.1 °C, in 1 minute (valid for ambient temp. = 20 °C)			
Automatic temperature compensation	Automatic temperature compensation for Brix according to ICUMSA and other measuring scales with temperature compensation			
Temperature sensor	4-wire Pt1000 sensor for measurement of sample temperature placed inside the prism			
Temperature sensor accuracy / resolution	0.1 °C / 0.01 °C			
Ambient temperature	5 °C to 40 °C			
Minimum sample volume	600 µL, with insert for micro volume: < 10 µL			
Sample compartment / wetted parts	Sapphire, FFKM, 1.4404 Stainless Steel (Hastelloy on request)			
Housing material	Aluminium			
Interfaces / Communication	Ethernet, RS232, USB (Type A), WLAN (by WLAN adapter)			
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)			
Weight	5.5 kg			
Software	Aquisys3 Premium / Aquisys3 Premium Pharma			
Display	Optional: 7" TFT Touchscreen, 800 x 480 Pixel, 16 Bit colors			
Conformity / Standards	International Pharmacopoeia, ASTM, AOAC, DIN, FDA, ICUMSA and others			
Peripherals / Operation	Optional: Keyboard, Mouse, Barcode Reader, Remote via PC/Tablet/Smartphone			
Power supply	VAC 90 - 265, 50/60 Hz, max. 150 W			