

**L** LABORATORY

**P** PROCESS

**S** SOFTWARE

**A** AUTOMATION



**SCHMIDT  
HAENSCH**  
innovators by tradition since 1864

# ATR-L

## Refractometer

Spectral-Refractometer  
for automatic dispersion  
measurement



## SPECIFICATIONS

## ATR-L

Measuring scales	Refractive index (RI)
Measuring range	1.33200 - 1.70000 RI* / 100% Brix
Resolution	0.00001 RI* / 0.01 Brix
Precision	± 0.00004 RI* / ± 0.03 Brix
Reproducibility	± 0.00004 RI* / ± 0.03 Brix
Measuring time per sample	20 sec for all 7 wavelength after temperature stabilisation; single sample measurement
Ambient temperature	+ 15° to + 40°C
Automatic temperature compensation	Solid state Peltier-thermostatisation
Operational temperature	+ 10°C to + 80°C
Temperature stability	0.01°C
Temperature precision	± 0.03°C
Detector	CCD-linear array with 2048 elements
Sample compartment	Used materials: stainless steel, Black Delrin®, Teflon®, Viton®, FFKM sealing
Prism	YAG
Light source / Wavelength	7 discrete LED's with fixed wavelengths 400, 450, 490, 545, 590, 660, 700 nm (others on request), wavelength accuracy ± 2 nm
Display	LCD, 16 x 16 characters, back illuminated
Operation	20 key membrane including function keys
Interfaces /Communication	1 x RS232 C, 1x parallel, USB optional
Standards	European and international Pharmacopoeia, various ASTM, ISO and DIN standards
Dimensions / Weight	Mesuring head, stainless steel: 260 x 190 x 220 mm (w x h x d); control unit: 220 x 110 x 290 mm (w x h x d); complete unit 8 kg
Highlights	Automatic dispersion measurement at 7 wavelengths over the full range of visible light (intermediate values interpolated)**; Powerful, internal Peltier temperature control guarantees the fastest measurements with highest accuracy

\* Standard conditions (589 nm, 20°C)

\*\* Automatic Abbé number measurement

### Refractometer applications

The applications of Refractometers are highly diverse for fast and non-destructive determination of refractive index.

#### Applications often used

- Determination of product purity
- Quality control
- Product fingerprinting
- Optical material characterization

#### Typical applications of the model

- Measurement of dispersion and calculation of Abbé number
- Measurement of lenses made of plastic or glass
- Quality control of hydrophobic and hydrophilic intraocular lenses (IOL)
- Standard test method for refractive index and refractive index dispersion determination of hydrocarbon liquids accord. to ASTM 1218
- Testing of fiber-optic components
- Material engineering of polymer compounds

