

L LABORATORY

P PROCESS

S SOFTWARE

A AUTOMATION



**SCHMIDT
HAENSCH**
innovators by tradition since 1864

ATR L Refractometer

Our spectral-refractometer for automatic dispersion measurements at seven wavelengths over the full visible range



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 Operational temperature Temperature stability Temperature precision | Solid state Peltier-thermostatisation + 10°C to + 80°C 0.01°C ± 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 according to ASTM 1218
- Testing of fiber-optic components
- Material engineering of polymer compounds