

High Performance Refractometers - ABBEMAT (automatic)

Product group(s): Food, Fuel, Lubricant, Oil

User group(s): Antifreeze, Benzene, Cooling Lubricant, Diesel, Distillate Fuel, Engine Oil, Food, Fuel Oil, Gas Oil, Gasoline, Gear Oil, Hydraulic Fluid, Hydraulic Oil, Insulating Oil, Jet, Jet Fuel, Kerosene, Light Oil, Lube Oil, Lubricant, Lubricating Oil, Oil, Pharmaceuticals, Refrigerating Oil, Transmission Fluid, Turbine Fuel, Turbine Oil

Scope: Only two models of ABBEMAT refractometers cover the whole range of laboratory applications:

The HP Model is the best choice for the food, beverage and petrochemical industries as well as for technical and medical applications.

The WR Model is recommended for substances of high refractive index, such as flavors, fragrances, chemicals and pharmaceuticals.

The ABBEMAT refractometers offer highest, verifiable accuracy due to following design features:

- The effective wavelength is exactly tuned to the sodium-D standard wavelength 589.3 nm.
- Within the measuring temperature range of 10 to 70 °C, the sample and prism temperature are precisely controlled by an internal solid state Peltier thermostat featuring an accuracy of ± 0.03 °C and a stability of ± 0.002 °C.
- A second Peltier thermostat is used to keep the LED lamp, the imaging system, and the linear photodiode array at a constant temperature of 20 °C, independent from the measuring and ambient temperatures.
- Position and shape of the shadow-line are evaluated in compliance with Fresnel's formula for the refraction of light, which yields refractive index values that are neither affected by the color nor by the turbidity of the sample.



High Performance Refractometers

available as:

- ABBEMAT-HP Model
- ABBEMAT-WR Model

Technical Data

<u>Measuring Range:</u>	nD=1.32 to 1.56 or Brix 0 to 100% (ABBEMAT-HP) nD=1.32 to 1.72 or Brix 0 to 100% (ABBEMAT-WR)
<u>Resolution:</u>	0.000001 R.I. units or 0.001 Brix
<u>Accuracy:</u>	0.00002 R.I. units or 0.015 Brix (ABBEMAT-HP) 0.00004 R.I. units or 0.03 Brix (ABBEMAT-WR)
<u>Dimensions (WxHxD):</u>	180 x 120 x 250 mm (ABBEMAT-HP)
<u>Weight:</u>	approx. 6 kg (ABBEMAT-HP)

Main Unit

13-1585 Automatic Refractometer ABBEMAT-HP
for operation in combination with a PC
Consisting of:
measuring unit with 2 built-in Peltier temperature controllers, power supply and interface unit, connection cable and Windows program.
Power supply: 100/240 V, 50/60 Hz (+10%/-15%)

13-1586 Automatic Refractometer ABBEMAT-WR
Like 13-1585 but:
(see "Technical Data" section)
Power supply: 100/240 V, 50/60 Hz (+10%/-15%)

Spare Parts

13-1590	Flow Through Cuvette, 50 ml with filler funnel and connector for drain-hose
13-1591	O-Ring gasket , VITON, 12.42 x 1.78 mm for through cuvette 13-1590/13-1592
13-1592	Flow Through Cuvette, Polypropylene O-ring gaskets of VITON, equipped with outer Ø 6 mm / inner Ø 4 mm hose nozzles on either end
13-1594	Micro Flow Through Cuvette, Polypropylene O-ring gaskets made of VITON, equipped with two 1/4"-28 UNF-connectors, suited for sample injection via auto-sampler or syringe
13-1596	Reference Fluid (tetrachlorethylene) nD = 1.505794 at 20 °C with PTB certificate, bottle of 100 ml

Order Guideline

Minimum equipment: 1x 13-1585 or 1x 13-1586
 Spares (approx. 1 year): 13-1591, 13-1593, 13-1596
 Additional requirements: