



Applications

- Laboratory turbidity measurement in bottles or cuvettes
- Accelerated aging test in the bottle

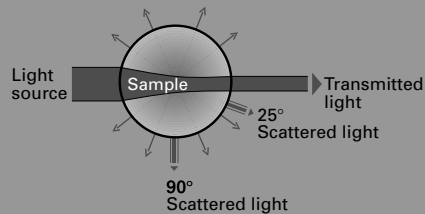
Features

- Measuring span 0 .. 100 (500) EBC
- Dual-angle detection for analysis of particle size trends
- Color-compensated detection in light and dark beers
- Data memory capacity of 999 readings
- Bottle rotation and water bath minimize sources of error
- 10 linearization curves for various bottle types (white, green, brown)
- Secondary glass standard for easy instrument adjustment

LABORATORY TURBIDIMETER LABSCAT

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Turbidity measurement



Measuring method

Calibration

Stability

Checking filter

Linearization

Turbidity in liquids is caused by solid particles. A light beam passed through the sample will be scattered by these particles. Measurement of the scattered light intensity and determination of the turbidity level therefore indicate the concentration of solid particles in the liquid.

In breweries, turbidity measurement is an important tool for safeguarding product quality. It provides a direct indication of the beer's clarity and, in conjunction with the accelerated aging test, also provides information on the product's shelf life. Furthermore, turbidity checks of intermediate products (wort, lager tank, unfiltered beer) help optimize the brewing process.

The LabScat uses a variation of the dual-beam technique that has proven so successfully for SIGRIST. Transmitted light, 90° scattered light and 25° forward scattered light are measured simultaneously using light from a single source. This makes it easy to compensate for beer color, cell window fouling and light source fluctuations to arrive at an accurate, reliable reading.

The SIGRIST LabScat turbidimeter measures the scattered light intensity at two different angles, which yields more information than just one turbidity figure. The 90° scattered light essentially indicates the concentration of small particles or colloidal turbidity. The forward scattered light mainly indicates the turbidity caused by larger particles such as yeast cells or diatomaceous earth particles.

The SIGRIST LabScat is calibrated at the factory with Formazine, the reference substance for the EBC, ASBC, NTU and TE/F units. Other units can be programmed with a conversion factor to meet users' wishes.

The dual-beam method used in the LabScat ensures that this calibration will remain stable over an extremely long period, because all electronic aging effects are compensated automatically.

The calibration can be checked in compliance with ISO 9001 using a checking glass with a fixed turbidity level. This eliminates the problems of handling Formazine in the laboratory.

In addition, 10 linearization curves can be programmed for different types of bottles in order to compensate for the effects of bottle color and size.

Sample handling

The samples can be measured in either bottles or cuvettes. Measurement right in the bottle makes it unnecessary to degas the samples. Any common type or color of bottle may be used. Thanks to the automatic sample rotation system with multiple measurement, irregularities of the bottle surface have no significant effect on measurement accuracy. The water bath eliminates the possibility of errors caused by reflections or condensation on the surface of the bottle or cuvette.

Automatic temperature monitoring and control

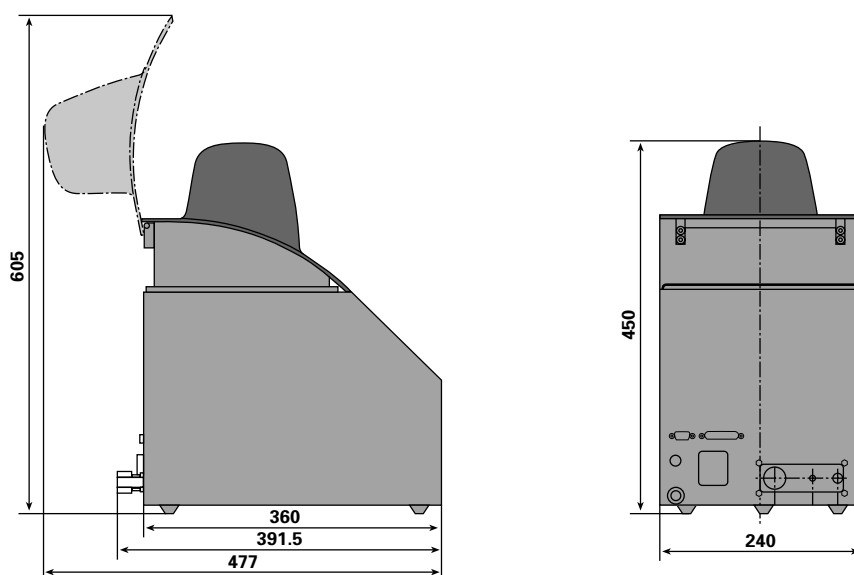
The temperature-controlled LabScat (optional) was especially developed for measuring turbidity in whisky. This modified LabScat is equipped with a temperature sensor and a special measuring cell that guarantee constant sample temperatures. Sample temperature (control is done by a computer software) at the time of measurement.

Operation and communication

The LabScat is operable the instant it is switched on; measuring starts with the press of a single button. Important functions such as printing out, data storage and linearization curves are accessible directly with function keys. The measuring procedure and configuration are set using a menu structure with plain text display.

The LabScat has a memory capacity of 999 readings. Each data item is stored together with a sample ID and the date and time of day of the measurement. The sample ID can either be generated automatically or entered via a connected PC keyboard or a bar code reader. Data output is possible to a printer or as a file on a PC.

Dimensions



SPECIFICATIONS

Turbidity measurement

Measuring principle:	90°/25° scattered light measurement
Measuring span:	0 .. 100 (500) EBC, 0 .. 400 (2'000) NTU
Max. color:	50 EBC at 100 EBC turbidity
Measuring wavelength:	650 nm per MEBAK recommendation
Linearization curves:	10
Data memory:	999 readings
Bottle dimensions:	diameter 50 .. 90 mm, height up to 330 mm
Bottle color:	brown, green, white

Connections

Printer:	Centronics
PC connection:	RS 232
Keypad:	PS/2
Bar code reader:	PS/2
Water bath:	Circulation about 0.5 l/min, max. pressure 0.6 MPa (6 bar)
Power supply:	85 .. 264 V/47 .. 440 Hz
Power input:	25 W

Instrument data

Weight:	10.9 kg
Ambient temperature:	0 °C .. 40 °C
Water bath temperature:	0 °C .. 40 °C

Represented by:

 **SIGRIST**
PROCESS-PHOTOMETER

SIGRIST-PHOTOMETER AG • Hofurlistrasse 1 • CH-6373 Ennetbürgen
Phone +41 (0)41/624 54 54 • Fax +41 (0)41/624 54 55
www.photometer.com • e-mail info@photometer.com

