

## Turbidity Meter

### General information

The turbidity of the beer is an important quality parameter as this affects the product shelf life and serves as acceptance criterion for the consumer. With the laboratory turbidity meter, VOS ROTA 90/25 the latest recommendations from MEBAK (Mitteleuropäische Brautechnische Analysekommision) have been adopted. Smaller particles below  $1\mu\text{m}$ , such as proteins, mainly cause scattered light under  $90^\circ$ . Particles larger than  $1\mu\text{m}$ , such as kieselguhr and yeasts, mainly cause forward scattered light. Furthermore, Haffmans delivers also the VOS ROTA 90 measuring scattered light only under  $90^\circ$ .

### Principle of operation

VOS ROTA 90/25:

Scattered light caused by haze particles is measured at  $90^\circ$  and  $25^\circ$  angles. A red light source is used, operating at a light wavelength of  $650 \pm 30 \text{ nm}$  (as recommended by MEBAK). The operator can, if desired, also work with white light by removing the light filter.

VOS ROTA 90:

The measurement of turbidity with VOS ROTA 90 works according to the same principle and measures the scattered light only under  $90^\circ$  and guarantees a 100% correlation with the VOS ROTA 90/25.

The measurement is started in pressing the START button. The measurement runs automatically and the result is displayed on the large LCD display.



## Beverage Quality Control



## Technical information

### Features

Robust housing with protection for the measuring chamber,  
Shows measurement progress and results on one screen,  
Storage of up to 10 calibration curves to avoid influence of various bottles,  
Convenient calibration with an optimum fit against non-linearity of haze standard,  
Memory capacity for up to 999 measurements,  
Different measurements units: EBC, FTU, ASBC formazin and Helm units.

### Advantages

Automatic centring and rotation of the sample for accurate measurement,  
Stabilised lamp voltage,  
Halogen lamp with lifetime of over 2000 service hours,  
Light wavelength  $650 \pm 30\text{nm}$  by means of exchangeable light filter,  
Hermetically sealed optics for absolute prevention of condensation,  
Water bath with the possibility of continuous water flow.

### Benefits

Automatic measurement,  
No influence of bottle colour or size,  
Possible use for different products types,  
Determination of the product shelf life with the forcier-test,  
Control of the process performance (e.g. filtration),  
Exchangeable light filters,  
Different turbidity units available.

### Scope of supply

- Turbidity Meter, type VOS ROTA 90/25 or VOS ROTA 90
- Mains cable with Euro plug\* (CEE-7 / VII, IEC-83/C4)
- Cuvette
- RS-232 connector cable
- Data transfer software
- Service set
- Operating manual

\* Mains cable can also be delivered on request with the following plugs:

- American plug (NEMA 5-15P, IEC-83/A5-15)
- British plug (BS 1363A, IEC-83/B2)
- Swiss plug (SEV Type 12)
- Australian plug (ASC 112)

### Technical data

Measuring range:		Bottle dimensions:	
EBC units:	0.00 - 100.00	Height:	max. 320 mm
ASBC units:	0.0 - 6,920.0	Diameter:	min. 50 mm
Helm units:	0.0 - 4,000.0		max. 90 mm
FTU units:	0.00 - 400.00		
Memory capacity:	Up to 999 measurements	Interfaces:	Centronics RS-232 Bar code reader
Number of calibration curves:	10	Dimensions:	430 x 330 x 455 (H x W x D in mm)
Display:	Graphic LCD, 1000 x 80 mm Back illuminated	Weight:	19 kg

Haffmans B.V. reserves the right to make changes in the technical specifications at any time.



### Haffmans B.V.

P.O. Box 3150 NL-5902 RD Venlo, The Netherlands  
T: (+31) (0)77 323 23 00 F: (+31) (0)77 323 23 23  
E: customersupport@haffmans.nl I: www.haffmans.nl



**NORIT** The Purification Company

**VOS Rota 90/25, 90**