

# HAFFMANS OptHaze-i IN-LINE TURBIDITY METER

## GENERAL PRODUCT INFORMATION

In the beer and beverage industries, turbidity is a determining factor in the quality of a beverage and serves as an acceptance criteria for consumers. It is especially important to continuously control and measure the turbidity during production.

The In-line Turbidity Meter, type OptHaze-i, measures the scattered light caused by particles and incorporates the latest standards from MEBAK (Mittleuropäische Brautechnische Analysekommission):

- 90° measuring angle
- Red light 650 ± 30 nm to eliminate most of the effects of color of the beverage
- Formazin calibration standard

Particles smaller than 1 µm, such as proteins, mainly cause the light to be scattered under 90° and are measured with the 90° light detector. Particles that are larger than 1 µm, such as Diatomaceous Earth, yeast and fruit pulp, mainly cause the light to scatter forward. To increase the expressiveness of the turbidity measurement, an additional light detector measures the forward scattered light under a 25° angle.

The In-line Turbidity Meter can be installed anywhere in the process where the determination of turbidity is critical to the quality of the beverage. The turbidity sensor is constructed in accordance with the CE hygienic directive and EHEDG design recommendations. It is easily mounted in a Varivent® process connection and executed as a smart sensor, ready to use, calibrated in a range of 0 to 20 EBC. The OptHaze-i is designed for simultaneous measurement of 90° and 25° turbidity. The user-friendly control unit can be supplied in either field or panel mounted versions and up to two turbidity sensors can be connected to each control unit.



## CUSTOMER BENEFITS

- **Cost saving**
  - one device for different product types means lower investment costs
  - no maintenance
- **Measurement result comparability**
  - correlation with lab turbidity meter, type VOS Rota 90/25 and most of the lab turbidity meters that incorporate the MEBAK standard

## APPLICATIONS

- **In-line, at critical locations in the production line where the determination of turbidity of beverages is required**

# HAFFMANS OptHaze-i

## IN-LINE TURBIDITY METER

### TECHNICAL DATA

#### CONTROL UNIT

##### Power supply

85-264 V / 50-60 Hz (optional 24 VDC)

##### Dimensions

235 x 205 x 165 mm/9.25 x 8.07 x 6.50 in (LxWxH)

##### Mounting

Wall mounting/Panel mounting

#### TURBIDITY SENSOR

##### Pipe diameter

> DN 40

##### Process connection

Varivent®

##### Dimensions

84 x 175 mm

#### MEASURING RANGE

##### Measuring range

0.00 - 500.00 EBC

(Standard calibration

0.00-20.00 EBC)

##### Measuring units

EBC, ASBC, Helm, FTU

##### Wave length

650 + 30 nm

##### Beverage color

Max. 50 EBC

##### Resolution

0.01 EBC

##### Measuring angle

90° and 25°

##### Temperature Range

Measuring

Product -5 to 100 °C

Ambient -5 to 60 °C

Cleaning -5 to 130 °C

##### Process pressure

Max. 16 bar(g)/232 psi

##### Memory capacity

Up to 500 measurements per sensor with trending ability

##### Number of calibration curves

7

##### Protection class

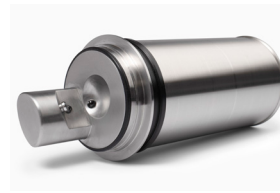
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### SCOPE OF SUPPLY

- Control unit
- Turbidity sensor
- Sensor communication cable
- Control unit wall mounting set
- Mains cable
- I/O cable for analog output
- Calibration beaker with spare O-ring for Varivent® connection
- Software set (CD, RS and sensor calibration cable)
- Instruction manual

### OPTIONS

- Second turbidity sensor
- **NEW: HAFFMANS CONNECT+ INTERFACE MODULE**  
Connects Haffmans QC instruments to all modern PLCs with following standards:  
**PROFIBUS DP, PROFINET, EtherNet/IP, IoT ready!**
- Control unit pipe/sensor mounting set (DN 40 - DN 125)
- Control unit panel mounting set
- Certificate of measurement
- In-line housing with Varivent® connection, inspection glasses and clamps for turbidity sensor (pipe dimension to be specified at time of enquiry)
- Calibration liquid, type Formazin 500 ml, 1000 EBC
- Calibration liquid, type AEPA 200 ml, available in various concentrations



Turbidity sensor



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