HI847492

Haze Meters

for Beer Quality Analysis

- Connectivity
  - PC compatible via USB
- GLP Features
  - Meets Good Laboratory Practices
- Logging
  - Log-on-demand
- Backlight
  - Large, backlit LCD

No more judging by eye!

The HI847492 is auto-diagnostic meter designed to measure the haze in beer. Each instrument features a different measuring unit or light source to comply with different standard requirements.

HI847492 is designed according to the ASBC (American Society of Brewing Chemists) standard for haze in beer measurements.

These instruments compensate beer color to guarantee accurate readings during the brew process. The optical system consists of an LED and multiple detectors. A two, three or four-point calibration can be easily performed at any time using the supplied or user-prepared standards.

These meters have all the necessary GLP (Good Laboratory Practice) features to allow maximum traceability of data. Features include a real time clock, log on demand (up to 200 measurements), and Fast Tracker™ –Tag Identification System.

These meters also incorporate a continuous measurement mode to measure the settling rate of suspended matter, and a signal average (AVG) mode to accumulate multiple readings, giving a final average value. The average mode is particularly useful to measure samples with suspended particles with different dimensions.

All three meters feature a user-friendly interface, with a large backlit LCD. Acoustic signals and display codes to guide the user step-by-step through routine operations.

Why this instrument is so important...

Beer haze may be defined as an insoluble or semi-soluble particulate matter which is small enough to form a colloidal suspension in beer. These particles scatter transmitted light and are observed as a degradation in the transparency of the beer.

The beer clarity is a parameter constantly controlled in a brewery, and to assure a consistent product quality, the brewmaster needs more than visual inspection.

Several substances can cause haze in beer, but the most frequently encountered problem is due to a cross-linking of polyphenol and protein.

A range of stabilization treatments are available for avoiding haze problems. The products have to be controlled on several steps during the brewing process, in particular after filtration and before the beer enters the single tanks.

Beer Haze Table

Grade	EBC	ASBC
Brilliant	0.0 to 0.5	0.0 to 34.5
Almost Brilliant	0.5 to 1.0	34.5 to 69
Very Slightly Hazy	1.0 to 2.0	69 to 138
Slightly Hazy	2.0 to 4.0	138 to 276
Hazy	4.0 to 8.0	276 to 552
Very Hazy	> 8.0	> 552

Methods

Many methods were used to measure turbidity over the years. The Jackson Candle Turbidimeter was used to measure turbidity as Jackson turbidity units (JTU). The method is visual and is not considered very accurate. To obtain more accurate readings, a nephelometer should be used as a turbidity reading instrument.

HI847492 reports the measurements in FTU (Formazin Turbidity Units). FTU units are equal to NTU units (Nephelometric Turbidity Units). The conversion table between these measurement units is shown below.

	NTU/ FNU/FTU	EBC	ASBC	HELM
1 NTU/1 FNU/1 FTU	1	0.25	17.25	10
1 EBC	4	1	69	40
1 ASBC	0.058	0.014	1	0.579
1 HELM	0.1	0.025	1.725	1

Specifications	HI847492
Range	0.00 to 1000 FTU
Range Selection	automatic
Resolution	0.01 (0.00 to 9.99 FTU); 0.1 (10.0 to 99.9 FTU); 1 (100 to 1000 FTU)
Accuracy	±2% of reading plus 0.05 FTU
Repeatability	±1% of reading or 0.02 FTU, whichever is greater
Stray Light	< 0.1 FTU
Light Source	LED @ 580 nm
Light Detector	silicon photocell
Method	ratio nephelometric method.
Display	60 x 90 mm backlit LCD
Calibration	two, three or four-point calibration
Log Memory	200 records
Serial Interface	RS232 or USB
Environment	0 to 50°C (32 to 122°F); RH max 95% non-condensing
Power Supply	1.5V AA alkaline batteries (4) or AC adapter
Auto-off	after 15 minutes of non-use
Dimensions	224 x 87 x 77 mm (8.8 x 3.4 x 3.0")
Weight	512 g (18 oz.)
Ordering Information	**HI847492-01** (115V) and **HI847492-02** (230V) is supplied with sample cuvettes and caps (6), calibration cuvettes (4), 25 mL glass vials with caps (4), cuvette cleaning cloth, batteries, AC adapter, instrument quality certificate, instructions and rugged carrying case.
Accessories	**HI847492-11** Calibration standard cuvette

See page 12.20 for reagents and accessories

Solutions and Accessories

HI83414 Solutions and Accessories

Reagent Code	Description
HI93414-11	CAL Check™ calibration standards for free and total chlorine
HI93701-01	free chlorine (Cl_2) reagent kit, 100 tests
HI93701-03	free chlorine (Cl_2) reagent kit, 300 tests
HI93711-01	total chlorine (Cl_2) reagent kit, 100 tests
HI93711-03	total chlorine (Cl_2) reagent kit, 300 tests
HI88703-11	turbidity calibration standards (<0.1, 15, 100, 750 and 2000 NTU)

Accessory Code	Description
HI93703-50	cuvette cleaning solution, 230 mL
HI98703-58	silicone oil, 15 mL
HI731318	cuvette wiping cloth (4)
HI731331	glass cuvettes, large (4)
HI731335N	caps for cuvettes, large (4)
HI740234	replacement lamp for EPA turbidimeter
HI92000	Windows® compatible software
HI920013	USB cable for PC connection

HI88703 Solutions and Accessories

Reagent Code	Description
HI88703-11	turbidity calibration standards (<0.1, 15, 100, 750 and 2000 NTU)

Accessory Code	Description
HI93703-50	cuvette cleaning solution, 230 mL
HI98703-58	silicone oil, 15 mL
HI731318	cuvette wiping cloth (4)
HI731331	glass cuvettes, large (4)
HI731335N	caps for cuvettes, large (4)
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