

HI83746

Photometer for the Determination of Concentration of Reducing Sugars

- **Built-in timer**
 - Display of time remaining before a measurement is taken. Ensures that all readings are taken at the appropriate reaction intervals for the test being performed.
- **Zero key**
 - A simple press of the zero key on the face of the meter will account for the color and imperfections in the oil sample before reagent addition.
- **GLP**
 - Review of the last calibration date.
- **Auto shut-off**
 - Automatic shut-off after 15 minutes of non-use when the meter is in measurement mode. Prevents wastage of batteries in the event the meter is accidentally left on.
- **Battery status indicator**
 - Indicates the amount of battery life left.
- **Error messages**
 - Messages on display alerting to problems including no cap, high zero, and standard too low.
- **Units of measure**
 - Appropriate unit of measure is displayed along with reading.

The HI83746 photometer is for the determination of reducing sugars in wine. Hanna's photometers feature an advanced optical system; the combination of a special tungsten lamp, a narrow band interference filter, and silicon photodetector ensure accurate photometric readings every time. The exclusive cuvette locking system ensures that the cuvette is inserted into the measurement cell in the same position every time to maintain a consistent path length.

Typical content of reducing sugars in must and wine

Must	sweet must	20-25 %	200-250 g/L
	normal	10-20 %	100-200 g/L
	in fermentation	4-12.5 %	40-125 g/L
Wine	sweet	2.5-12.5 %	25-125 g/L
	semi sweet	0.8-2.5 %	8-25 g/L
	almost dry	0.2-0.8 %	2-8 g/L
	dry	0-0.2 %	0-2 g/L





Supplied in a rigid carrying case

Specifications	HI83746
Range	0.00 to 50.00 g/L (ppt)
Resolution	0.25 g/L
Accuracy @25°C (77°F)	± 0.50 g/L ±5% of reading
Precision	±0.015 @ 0.350 g/L
Light Source	tungsten lamp
Light Detector	silicon photocell with narrow band interference filter @ 610 nm
Method	Fehling
Environment	0 to 50°C; RH max 95% non-condensing
Battery Type	1.5V AA batteries (4)/ 12 VDC adapter
Auto Shut-off	after 15 minutes of non-use
Dimensions	224 x 87 x 77 mm (8.7 x 3.3 x 3.1")
Weight	512 g (17.6 oz.)
Ordering Information	HI83746-01 (115V) and HI83746-02 (230V) is supplied with glass cuvettes and caps (4), reagents for about 20 tests (HI83746-20), HI93703-59 Charcoal, 200 µL automatic pipette with two plastic tips, 1000 µL automatic pipette with plastic tips (2), instruction sheet for automatic pipette, spoon, funnel, filter paper (25), cuvette wiping cloth, 12 VDC adapter, batteries, instructions and Instrument quality certificate, rigid carrying case.
Optional Reagents	HI83746-20 reducing sugar reagent set (20 tests) HI93703-59 charcoal for decoloration of red wine (about 100 tests) HI839800 COD test tube heater (required)

Significance of Use

Sugar is an essential component in the production of wine. During alcoholic fermentation, yeast consume sugars found in the grape juice, or must, and converts it to ethyl alcohol and carbon dioxide. In the case of certain styles of wine such as semi-sweet or dessert wines, some sugar is allowed to remain post-fermentation. This residual sugar can serve to provide a sweeter character to the final blend or play a role in microbial stability.

The primary fermentable sugars found in grapes are glucose and fructose. These two simple sugars are also known as reducing sugars because they contain functional groups capable of being oxidized under certain conditions. After reaction with excess alkaline cupric tartrate (Fehling reagents), the content of reducing sugars can be determined colorimetrically. The Fehling method is not an exact determination but an index of the reducing sugar concentration, because the reaction depends upon the amount and type of reducing sugars present. When the reducing sugar content is known at the beginning of fermentation, the potential alcohol degree can be estimated by multiplying the sugar concentration (in g/L) by 0.06.

