HI 83742 Photometer

FOR THE DETERMINATION OF COLOR
& TOTAL PHENOLS IN WINE

HANNA® instruments
With Great Products, Come Great Results™

HI 83742
Photometer

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OF COLOR & TOTAL PHENOLS
IN WINE

$595.00
ESTIMATED RETAIL PRICE

Wine contains a large number of phenolic compounds in variable quantities. Total phenols characterize the wine in terms of complexity and quality. They are responsible for red wine color, astringency, and bitterness and they contribute to the olfactory profile of wine. The most important molecules are tannins (taste) and anthocyanins (color). These are found in the grape's skin, and they accumulate during aging. Phenols and Color develop during the entire course of "life" of the wine, and are dependent from factors such as pH, sulfur dioxide (SO_2) and dissolved oxygen (O_2).

Determination of total phenols and color in wine is extremely important in order to decide the production process to be used.

	Color Density (I.C.)	Total Phenols (g/L)
White Wines	0.05 to 0.15	0.4 to 1.2
Red Wines	4 to 6	2 to 5

Tint	State	Value ($O.D_{420}/O.D_{525}$)
Purple-Red	Young wine	less than 0.44
Red	Mature wine	0.44 to 1
Red-Yellow	Very mature wine	greater than 1

HI 83742 is a photometer dedicated for the measurement of total phenols and the color of wine. Extremely easy to use, this instrument allows quick and accurate analysis. At the touch of a button, users can select the range of operation. The HI 83742 automatically calculates the results so that you don't have to perform time consuming complex calculations.

Measure 3 Different Parameters in Minutes

Color

1 Zero the instrument with demineralized water.

2 Fill the cuvet with 10 ml of white wine or 2 ml of red wine and 8 ml of reagent.

3 Insert the cuvet and press "READ".

Total Phenols

1 Prepare the sample by adding reagents to the wine and wait for the reaction.

2 Zero the instrument with demineralized water.

3 Insert the cuvet and press "READ".

Tint

1 Prepare the sample to be measured by mixing 2 ml of wine with 8 ml of reagent.

2 Zero the instrument with demineralized water.

3 Insert the cuvet and press "READ".

Optical system of HI 83742

In order to measure color, tint and total phenols, HI 83742 is equipped with 3 independent optical channels. Each channel has a tungsten light source and a narrow band interference filter. The filters are 420 nm, 525 nm and 610 nm. The analytical procedure to measure these parameters requires calculation of ratios at different wavelengths. HI 83742 automatically calculates the ratios and provides direct results.

Accumulation of Anthocyanin and Tannins during grape growth.

Wine	Grape Growth	Anthocyanin (mg)	Tannins (g)	Tannins of Seeds (g)
Merlot	Halfway to Invaiatura*	310	1.55	3.75
	Before Maturity	881	2.40	2.18
	Mature	784	2.14	1.54
Cabernet Sauvignon	Halfway to Invaiatura*	350	2.10	1.95
	Before Maturity	822	2.10	1.00
	Mature	950	2.05	1.00
Cabernet Franc	Halfway to Invaiatura*	291	1.66	2.75
	Before Maturity	665	2.00	2.60
	Mature	722	1.85	2.10

*The grapes color change

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Ordering Information

HI 83742 is supplied complete with reagents for 5 tests, 2000 µl pipette, 200 µl pipette, 1 ml pipette, 3 ml pipette, 5 ml syringe, (2) cuvets with caps, tissue for wiping cuvets, 12 VDC power adapter, (4) 1.5V AA batteries and instruction manual in a hard carrying case.

Specifications	HI 83742 Phenol and Color Photometer		
		White Wine	***Red Wine***
Range	Color Density (I.C.)	0.000 to 1.000	0.00 to 15.00
	Tint ($O.D._{420}/O.D._{525}$)	0.00 to 9.99	0.00 to 9.99
	Total Phenols (g/l)	0.000 to 0.750	0.00 to 5.00
Accuracy	Color Density (I.C.)	Typical ±5%	Typical ±4%
	Tint ($O.D._{420}/O.D._{525}$)	Typical ±4%	Typical ±4%
	Total Phenols (g/l)	Typical ±4%	Typical ±5%
Light Source		Tungsten lamp with narrow band interference filter @ 420 nm, 525 nm and 610 nm	
Sensor		Silicon photocell	
Method		Colorimetric	
Environment		0 to 50°C; max 95% RH non-condensing	
Battery Type		(4) 1.5V AA batteries/12 VDC adapter	
Auto Shut-off		After 15 minutes of non-use	
Dimensions		225 x 85 x 80 mm	
Weight		500 g	

Recommended Accessories

HI 83742-20 Total phenols and color reagents (20 tests)
HI 83742-25 Wine solvent (20 tests)
HI 731318 Cuvet tissue (4 pcs)
HI 731342 2000 µl pipette
HI 731352 2000 µl pipette tips
HI 731340 200 µl pipette
HI 731350 200 µl pipette tips
HI 740142P 5 ml graduated syringe (10 pcs)
HI 740144P 5 ml graduated syringe tips (10 pcs)
HI 731321 Glass cuvets (4 pcs)
HI 710006 12 VDC power supply

3 year LIMITED WARRANTY

Authorized Distributor

ISO 9001 CERTIFIED

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