



Mi450 - Photometer

for the determination of COLOR & PHENOLS in wine analysis



Mi450 is a user-friendly photometer for monitoring phenols and color in wine analysis.

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

Phenols and color develop during the entire course of life of the wine, and are dependent from factors such as pH, sulfur dioxide (SO₂) and Dissolved oxygen (O₂). The most important molecules are tannins and anthocyanins (see the table below).

Milwaukee's Wine - Photometer are manufactured for easy use, are practical and accurate. Ideal for laboratory use.

The photometer has an advanced optical system based on a special tungsten lamp and a narrow band interference filter that allows most accurate and repeatable readings. The instruments are factory calibrated.

Step 1

Prepare the sample to be measured with wine or with reagents to measure Color, Phenols or Tint and zero the instrument.



Step 2

Insert each cuvet in the instrument and see the respective reading.



Mi450		Color & Total Phenol	
Range	Color Density (I.C.)	White Wine 0.000 to 1.000	Red Wine 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 and 610 nm	
Sensor		silicon photocell	
Method		colorimetric	
Environment		0 to 50°C; max RH 95%	
Battery Type		4 x 1.5V AA (included)	
Auto-off		after 15 minutes of non-use	
Dimensions		225 x 85 x 80 mm	
Weight		0.5 kg	

Accessories

Mi550-020	Total phenols reagent set (20 tests)
Mi550S1-040	Wine solvent 1 (4 x 100 mL bottle)
Mi550S3-040	Wine solvent 3 (4 x 100 mL bottle)
Mi0004	Tissue for wiping cuvetts (4 pcs)
Mi0022	2000 µL pipette (1 pc)
Mi0023	Pipette tips for 2000 µL pipette (4 pcs)
Mi0026	200 µL pipette (1 pc)
Mi0027	Pipette tips for 200 µL pipette (25 pcs)
Mi0011	10 mL glass small cuvetts (2 pcs)
Mi0014	Caps for cuvetts for wine colorimeters (2 pcs)
Mi0013	Stopper 10 mL small cuvetts (2 pcs)
Mi0006	Battery 1.5V AA (4 pcs)

Ordering Information

Mi450 is supplied complete with:
Total phenols reagents for 20 tests, Wine solvents (8 x 100 mL bottle), 2000 µL pipette, 200 µL pipette, 5 mL syringe, 1 mL short pipette, 3 mL pipette, 2 small cuvetts with cap, stopper 10 mL small cuvetts, tissue for wiping cuvetts, 4 x 1.5V AA batteries and instruction manual.



Accumulation of Anthocyanin and Tannins during grape growth

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

(*) The grapes color change