

Single & Dual Wavelength

Colorimeters

Designed Specifically for Sugar Colour Measurement



- **Conforming to I.C.U.M.S.A.**
- **Single and Dual Wavelength Models**
- **Highest Accuracy for White Sugars**
- **Dark and Raw Sugar Test Kits**

ATM X2

The measurement of SUGAR COLOUR is an important function of the laboratories of sugar refineries and raw sugar mills, and also for the users of refined sugar products.

The ATM X2 COLORIMETER is an instrument dedicated to this important quality control function. The ATM (420nm) single wavelength version conforms to the ICUMSA Method GS2/3-18 (2007) - The Determination of the Turbidity of White Sugar Solutions.

The ATM X2 has been specially designed to make the measurement, calculation and recording of sugar colour as easy as possible.

Accuracy is improved by having fixed wavelength, very narrow bandwidth filters to select the measuring wavelength.

The highest accuracy for **White Sugars** is achieved by using the longest path length cell (163mm).

Darker Sugars can also be measured simply, quickly and accurately using our set of shorter path length cells (the sizes recommended by I.C.U.M.S.A.). These fit directly into the ATM X2 without the need for a special cell holder or adapter.

ICUMSA COLOUR

I.C.U.M.S.A. (International Commission for Uniform Methods of Sugar Analysis) recommend the use of 420nm as the wavelength for colour measurements of white and light coloured products, and a wavelength of 560nm for darker sugars. One version of the ATM X2 measures at either 420nm or 560nm (one key to select the wavelength required) and then displays the absorption and the result in I.U. (ICUMSA Colour Units) at the wavelength selected.

BOTTLER'S METHOD

This is the method for colour determination commonly used in the soft drinks industry. Another version of the ATM X2 offers simultaneous measurement at 420nm and 720nm as specified by the 'Bottler's Method' and displays the absorption reading at both wavelengths along with the calculated result in RBU (Reference Basis Colour Units). A Single wavelength version of the ATM X2 is also available for anyone wanting to make all measurements at one wavelength.

All displayed results can be output to a printer or computer via the ATM Colorimeter's RS232 output port.

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CAPABILITY OF THE ATM X2

Calculated ICUMSA Colour Units or RBU's depend on the cell length and the Brix of the sample. Pre-set cell lengths can be scrolled using built in keys on the basic ATM X2. Deviations from the standard 50 Brix concentration of the solution can also be scrolled, ensuring correct calculations whatever the sample.

It is also possible to further automate the readings by connecting a refractometer (one of the GPR, PTR or TCR series from Index Instruments Ltd) to the RS232 port of the ATM X2. To operate the Colorimeter when connected to a refractometer, place the sample to be measured in the ATM in the normal way and place a small amount of the same sample on the refractometer prism. When the operate/print key on the refractometer is pressed, the resulting Brix measurement will be sent to the ATM for use in the ATM's calculation of IU or RBU. The ATM will beep to indicate receipt of the information and the Brix will be shown in the top right hand corner of the ATM display.

If a printer is connected to the ATM, the displayed results will be printed automatically.

The ATM X2 is a compact colorimeter, and having no moving parts makes the unit extremely reliable. The lamp life is typically in excess of 2000 hours, and is easy to change upon failure.

One of the main features provide the ATM X2 Colorimeter with a long path length sample cell, the 163mm cell recommended for white sugar measurement, is unbreakable. Long glass cells are easily cracked or broken and so we have designed a 163mm long stainless steel cell specially for this instrument. The cell has been made 20mm wide with a wider top for easier filling, handling and cleaning.

The shorter glass cells are also specially designed for the ATM, 20mm wide with thick walls to simplify filling and cleaning and resistant to breakage.

Technical Specification

Part Number:	10-0-10	10-0-20	10-0-30
Wavelength:	420nm	420nm and 560nm	420nm and 720nm
	All selected by very narrow bandwidth filters		
Scale:	mau (milli-absorbance units) I.U. (ICUMSA colour units)	mau and I.U.	mau and I.U. at 420um mau & RBU at 720 um
Range:	0 to 2500 mau		
Resolution:	1 mau, 0.1 I.U.	1 mau, 0.1 I.U.	1 mau, 0.1 RBU, 0.1 I.U.
Accuracy / Reproducibility:	± 3 mau		
Maximum path length:	163mm		
Sample compartment:	Open access for easy cleaning with simple to wipe windows which prevent spillage into optics		
Lamp:	12V 20W halogen lamp, typical life in excess of 2000 hours		
Display:	Liquid crystal panel giving simultaneously, absorption reading, calculated colour and set wavelength, cell length and Brix		
Data output:	Two RS232 ports (USB adapter available with Data Acquisition software as optional accessory)		
Controls:	Mains ON/OFF switch three keys for ZERO, PRINT and SCROLL		
Power requirements:	90 to 260v AC, 47 to 63 Hz		
Size:	Approximately 390mm wide x 205mm deep x 90mm high		
Weight:	Approximately 6 kg net, 8.5 kg packed		

Cells and Dark & Raw Sugar Kit

Part No. 10-1-10	163mm path length, stainless steel (316 grade). With zinc crown optical glass windows
Part No. 10-1-11	Dark & Raw Sugar Kit - Set of 3 glass cells, path lengths 10, 20 and 50mm. Supplied with a copy of ICUMSA Method GS 1-7

Optional Accessories

Part No. 05-4-10	Printer 220 / 240v 80 character width RS232 input
Part No. 05-4-15	Printer 110 / 115v 80 character width RS232 input



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