



SAWIN

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 **WINCOL**
SAWIN

WINCOL DIGITAL COLORIMETER



**OPERATIONAL
MANUAL**



Cuvette Holder

ON/OFF Switch

Filter Display

Filter Set Key

Display Unit

Main Key Board

CHECK LIST

Colorimeter	1 Unit
Cuvettes	6 Nos.
Dust Cover	1 No.

Our other products from Instruments division



WINLAB

India's first Semi Auto Analyser with Reagent management and stock notification by email, Automatic download of test parameters from cloud



SB-501^{PLUS}

Semi Automatic Biochemistry Analyzer
(With Coagulation & Incubator)

SB22^{PLUS}

Auto Hematology Analyzer
3-Part Hematology Analyzer



TECHNICAL FEATURES :

Wincol Digital Colorimeter designed and developed uniquely with special features :

1. User-friendly instrument for professional users.
2. Wincol is microprocessor based electronically controlled digital colorimeter with 9 filters.
3. Wincol is compact and simple to use with 1 ml solution.
4. Display in Percentage Transmission (%T), Absorbance (O.D) and 2 Concentration scales (C1 & C2) for final reporting values of samples/analytes.
5. Suitable for end point chemistries and absorbance measurement.
6. Inbuilt memory retains last K factor for concentration even after power off.
7. Long life LED light source.
8. Electronic Filters specially made with lens system.
9. Unique Facility of 410nm for Glycosylated Hemoglobin estimation

DESCRIPTION :

The unit is compactly designed and contains the following parts.

A. Cuvette Holder :

It is used to place the Cuvette containing colored solution to be measured in absorbance/transmission/concentration.

B. Right Side Digital Display and keyboard :

1. The instrument panel has two keyboards and two displays. The right display and key board is marked for FILTER SET and is used to electronically select the wavelength to be used. Wait for approximately one minute for the source to stabilize after the selection.

2. Select the filter by pressing 'FILTER SET' key. This will cycle the display below :

Display	Wavelength (nm)	Colour
00	None	
41	410	Deep Violet
43	430	Violet Blue
47	470	Deep Blue
49	490	Blue Green
52	520	True Green
54	540	Greenish Yellow
58	580	Yellow / Amber
61	610	Orange
64	640	Red

C. Left Side Digital Display and Main keyboard:

The left display will display the scales and values. The main keyboard has four buttons and four LED indicators. The buttons are :

1. Mode :

This selects the scale to work in. The options are :

Scale	Marking	Range
Percentage Transmission :	%T 0 to	250
Optical Density :	OD -0.31 to	2.00
Concentration 1 :	C1 000 to	999
Concentration 2 :	C2 00.0 to	99.9

When the display is below 1 %T, it will show "-".

When the signal is too low to Auto Calibrate, display will show "-E-".

2. CAL Key :

CAL key is used to calibrate the standard in both C1 & C2 modes (Concentration Modes)

Use MODE key to select the C1 or C2

Insert the Cuvette along with Standard solution in Cuvette holder. Then press the CAL key, the respective LED (C1 or C2) starts blinking.

Then the main display shows some value, by using UP/DOWN keys you can set the standard concentration of the respective solution.

Again press CAL key to stop the blinking and the value of standard (K Factor) will be stored in respective keys.

C1 or C2

- ★ Please remember which programme stored in C1/C2 and wavelength
- ★ Inbuilt memory retains last “K” factor for concentration even after power off.

3. UP/Auto Zero :

This is a dual function key. One is for Auto Zero setting for blank solution and the other one is UP key to be used to set standard concentration.

UP key will be activated when LED starts blinking at C1 or C2 by pressing CAL key.

4. Down Key :

Down key to be used to set standard concentration. Down key will be activated when LED starts blinking at C1 or C2 by pressing CAL key.

D. Light Source :

Light from cluster of LED's is focussed by a lens system on the detector through a test tube containing the solution.

Inserting a test tube automatically moves the light shutter away and allows light on to the photocell. The output from the photocell is processed on the main microprocessor card and displayed.

The LED cluster is mounted on the test tube holder and connected to the controller by two connectors. The controller card and display card are mounted on the panel of the Wincol.

E. Electrical Connection :

The unit is complete with a 3 pin mains plug suitable for 230V AC single phase with ground.

Operation :

Switch ON the Wincol with ON/OFF switch provided on the lower right side of the Wincol. The main display will count down from 999 to 000 and then displays CAL.

Select required filter with FILTER SET key then insert cuvette containing blank solution and press “Auto Zero”. Unless this is done, no further operations will be possible from the main keyboard.

- a. Allow approximately one minute for the source to stabilize after the selection before taking a reading or doing “Auto Zero” again.
- b. Select required measurement %T, OD, C1 & C2 by pressing ‘MODE’ key
- c. Insert cuvette containing sample solution in cuvette holder for displaying results directly on left side display.
- d. Again press CAL key to stop the blinking and the value of standard (K Factor) will be stored in respective keys

Important Notes :

1. The display is in the mode chosen earlier. Ideally estimations should be in the range of 0.2 to 0.6 Density. There may be variations in the test tube up to about 1% Transmission. This is inherent in the nature of the test tubes. It is to minimize the effect of this variation that the preferred range of 0.2 to 0.6 Density has been indicated. When the shutter is closed (no test tube), the display will show “-” only. This is an over range indication and equivalent to 0% Transmission. A table showing the relation of Transmission and Optical Density at salient points of the scale is in this manual.
2. One ml of solution is adequate to cover the light path of the test tubes. Please take care not to grossly overfill the test tubes.
3. If the unit is not in use for more than 15 to 20 minutes, the FILTER SET can be brought to 00 to shut down the LED being used.
4. The unit will remember the factors used in calibration of the C1 and C2 scales, along with the last wavelength used and the last scale used when power is turned off. Once power switched ON again, the last scale used and the last wavelength used will come on.
5. When trying to set the value of standard in C1 or C2, ensure that the OD of the standard is at least 0.02 or so. For an OD which is too small, eg. 0.01 or so, the display will not increment and will remain at 000 or 00.0

% TRANSMITTANCE vs ABSORBANCE

%T	A	%T	A
0	-	50	0.3010
5	1.3010	60	0.2218
10	1.0000	70	0.1549
20	0.6990	80	0.0969
30	0.5229	90	0.0458
40	0.3979	100	0.0000

MAINTENANCE :

Apart from routine cleaning, the Wincol is not user serviceable and must be returned to Sawin Biomedicals Pvt. Ltd. or its authorised distributor at your nearest area for repair.

PRECAUTIONS :

1. Read Operational Manual carefully before use
2. Strictly follow the test procedure & Incubation time of the respective test
3. Before pressing “Auto Zero” key insert cuvette containing blank solution or distilled water in cuvette holder.

SPECIFICATIONS :

Weight	:	1300 gms
Dimension	:	260 x 200 x 85 mm
Power	:	230V AC single phase with ground
Current	:	15 ma @ 220V AC (typical)
Regulation	:	190V to 250V AC.
Cuvettes	:	75 x 12 mm with 10 mm path length and 1 ml min. vol.
Display	:	LED 14 mm 4 digits
Range	:	Percentage
	:	Transmission : %T 0 to 250
	:	Optical Density : OD -0.31 to 2.00
	:	Concentration 1 : C1 000 to 999
	:	Concentration 2 : C2 00.0 to 99.9
Filters / Source	:	Hermetically sealed LED cluster with peak emission wavelengths of 410, 470, 490, 520, 540, 580, 610 and 640 nm
Detector	:	Silicon, hermetically sealed.
Accuracy	:	$\pm 1\%T$ with test tubes
Repeatability	:	More than $\pm 0.5\%T$

Specifications subject to change due to continual development

Manual - batt - mains with C1 C2 card

Additional Instructions for Battery / Mains operated units

This unit has a specially designed power supply and display card along with a 6.2V 700 mAH Ni-Card battery pack. The battery pack is supplied in charged condition and will retain its charge upto 20% for approximately two months. It will then need to be recharged again from the mains. The unit can be operated on the inbuilt battery pack continuously for about 3 hours.

Instructions for use :

1. Plug in the unit to the mains supply and using the mains switch at the side of the unit, switch ON the unit. The display will come ON.
2. Use the unit as in the instruction manual.
3. After use, SWITCH OFF THE UNIT from the side. The mains switch cuts off the battery as well to conserve battery power. If this is not switched off, the unit will remain ON powered by the battery.
4. If the battery is down, the unit will stop functioning. Plug into the mains and allow charging for about 8 hours to charge the battery. Ensure to switch off the unit when it is not in use and battery charging is not required.
5. When there is a mains failure, the unit will automatically change over to the battery without affecting the functioning on the mains being available again, the unit automatically changeover to the mains and battery charging will start.

The NiCad pack will last a long time - typically about 1½ to 2 years or more if the battery duration becomes very short, the NiCad pack needs to be charged. Open the top cover of the instrument as in the manual and the battery pack will be visible on the bottom.

Unscrew one end of the strap and unplug the battery pack from the power card. Fit new pack and close the bottom.

Spare battery packs are available from us.
Please dispose spent batteries carefully.