

Anexa 9 Analizator biochimic cu cuva, semiautomat

Analizator biochimic cu cuva , semiautomat, Cod 150240			
Descriere	Analizator semiautomat destinat analizelor biochimice		Specificatii tehnice Stat Fax 3300 Nr. De inregistrara AMDM DM000437979
Parametrul		Specificația solicitata	Specificația ofertata
Tip probă	Ser	da	Da, manual, pag.1
	Plasmă	da	Da, manual, pag.1
	Urina	da	Da, manual, pag.1
Reagenți	Lichid	da	Da, manual, pag.62
	Cu posibilitatea de a fi substituiți	da	Da, broșura, manual. Pag.3
Incubator	Temperatura termostatare	37°C	37°C, broșura
	Capacitatea	≥ 8 tuburi	18 tuburi, broșura
Cuva absorbanta	cuva	da	Da (Flowcell), manual, pag.1
	tip	reutilizabila	Reutilizabila, manual, pag.24
	Volum reactiv/investigatie	≤500 mcl	250-750 mcl, broșura
Regimuri de masurare	Punct final	da	Da, manual, pag.1
	Cinetic	da	Da, manual, pag.1
	Multipoint cinetic	da	Da, manual, pag.1
Sursa de lumină		≥ 6 lungimi de undă	6 lungimi de unda incluse in configuratia standarta - 340, 405, 450, 505, 545, 600nm, broșura
Data management	Display	da	Da, LCD, manual, pag.4
	Memorie internă	da	Da, broșura
	Imprimantă integrata	da	Da, manual, pag.19
Calibrarea	automată	da	Da, broșura
Alimentarea	Rețeaua electrică 220 V, 50 Hz	da	100 -240V, 50-60 Hz, broșura
Accesorii			
Accesorii Consumabile	Sa fie incluse eprubete (cuve) pentru incubarea reactivelor compatibile cu incubatorul analizatorului ≥ 50 analize (pentru testare/instruire).	≥50 buc	Eprubeta compatibile cu incubatorul analizatorului, eprubeta borosilicate - 250 buc
Note	Oferta de preț trebuie să includă reactivii necesari pentru testele indicate, soluțiile QC și calibrare Cantitatea soluțiilor propuse trebuie să asigure efectuarea procedurilor de control al calității și calibrare, ori de câte ori este necesar. Furnizorul va asigura: Transmiterea către spital documentația completă privind conectarea analizatorului la sistemul informatic (H3 SIA AMS/AMP) și să asigure suportul tehnic necesar echipei desemnate de spital sau firmei de software care realizează efectiv conectarea. Instruirea personalului. Mentenanța preventivă și corectivă gratuită pe toată durata de 4 ani atât pentru analizator cât și pentru dispozitivele auxiliare livrate.		Oferta de preț include reactivii necesari pentru testele indicate, soluțiile QC și calibrare Cantitatea soluțiilor propuse asigura efectuarea procedurilor de control al calității și calibrare, ori de câte ori este necesar. Furnizorul va asigura: Transmiterea către spital documentația completă privind conectarea analizatorului la sistemul informatic (H3 SIA AMS/AMP) și va asigura suportul tehnic necesar echipei desemnate de spital sau firmei de software care realizează efectiv conectarea.

	Seturile de mentenanță și piesele de schimb gratuite pe toată durata de 4 ani atât pentru analizator cât și pentru dispozitivele auxiliare livrate. Toate consumabilele necesare gratuite pe toată durata de 4 ani atât pentru analizator cât și pentru dispozitivele auxiliare livrate, dacă acestea nu au fost incluse în oferta inițială. Timpul de intervenție în caz de defect: maxim 24 ore de la solicitarea telefonică. Preț pentru reactivi nemodificat pentru toată perioada. Perioada de valabilitate pentru reagenții livrați: La momentul livrării: Minim 6 luni, dar nu mai puțin de 80% din termenul total de valabilitate. Să se indice timpul de stabilitate a reactivilor după deschidere. Termenele mai mari vor fi considerate un avantaj. Operatorul Economic va include în oferta prețul dispozitivului medical și prețurile fiecare test considerând: - Efectuarea controlului calității pentru fiecare test în fiecare zi lucrătoare. - Efectuarea calibrării ori de câte ori va fi necesar (în baza rezultatului controlului calității). - Toate piesele și kiturile de mentenanță necesare bunei funcționării pe întreaga perioadă a contractului. - Sistemul de filtrare (stație purificare apă) și toate filtrele necesare pentru funcționarea stației de purificare al apei pe toată perioada contractului. - Toate consumabilele, inclusiv: soluții de spălare, soluții de buffer, electrozi/modul ISE, cuve/rotor pentru reacție, lămpi și tot spectrul de consumabile necesare bunei funcționări pentru efectuarea tuturor testelor solicitate de IMSP. - Toate serviciile de mentenanță preventivă și corectivă necesare bunei funcționări pe perioada contractului. Respectiv, se vor lua în calculul toate cheltuielile care ar putea apărea în întreaga perioadă a contractului.	Instruirea personalului. Mentenanța preventivă și corectivă gratuită pe toată durata de 4 ani atât pentru analizator cât și pentru dispozitivele auxiliare livrate. Seturile de mentenanță și piesele de schimb gratuite pe toată durata de 4 ani atât pentru analizator cât și pentru dispozitivele auxiliare livrate. Toate consumabilele necesare pe toată durata de 4 ani atât pentru analizator cât și pentru dispozitivele auxiliare au fost incluse în oferta inițială. Timpul de intervenție în caz de defect: maxim 24 ore de la solicitarea telefonică. Preț pentru reactivi nemodificat pentru toată perioada. Perioada de valabilitate pentru reagenții livrați: la momentul livrării: Minim 6 luni, dar nu mai puțin de 80% din termenul total de valabilitate. Timpul de stabilitate a reactivilor este indicat în instrucția de utilizare, a fiecărui reactiv în parte. Oferta va include prețul dispozitivului medical și prețurile fiecare test considerând: - Efectuarea controlului calității pentru fiecare test în fiecare zi lucrătoare. - Efectuarea calibrării ori de câte ori va fi necesar (în baza rezultatului controlului calității). - Toate piesele și kiturile de mentenanță necesare bunei funcționării pe întreaga perioadă a contractului. - Sistemul de filtrare -nu necesita sistem de filtrare - Toate consumabilele, inclusiv: soluții de spălare, lămpi și tot spectrul de consumabile necesare bunei funcționări pentru efectuarea tuturor testelor solicitate de IMSP. - Toate serviciile de mentenanță preventivă și corectivă necesare bunei funcționări pe perioada contractului.
--	--	--

Stat Fax® 3300 Technical Specifications

Photometer

Tube or cuvette	0 to 2.5 absorbance units.
With flowcell	0 to 3.5 absorbance units.
Stability	Drift of no more than 0.005A in 8 hours/bichromatic.
Light source	Tungsten halogen lamp, with lamp saver feature.
Standard wavelengths	340, 405, 505, 545, 580, 630nm plus 2 optional.
Optional filters	340 - 700nm.
Filter types	Ultra long life multiple cavity IAD hard coat.

Sampling

Sample Volume - Flowcell	Programmable 250 μ L-750 μ L.
Flowcell Body	Surgical grade stainless steel.
Windows	Pyrex.
Illuminated volume	21 μ L.
Minimum Volume - Tube (12mm)	1mL.
Minimum Volume - Cuvette	400 μ L.

Electronic

Processor	Z180.
Program Memory	1 megabit.
Non-volatile Memory	1 megabit.
RAM	32K byte.
Internal printer	40/80 column thermal.
Display	Graphical LCD 240x128.
Keyboard	20 key, domed membrane.
PC keyboard	Compatible with standard PS2 keyboard.
Output - RS232	9600 8 data, 1 stop, no parity.
Output - Parallel	Any IBM printer with simple ASCII compatibility.

Operating Modes

Single and multipoint standardization	
Rate (factor/standard)	live graphic display of reaction.
Curve fit	linear, point to point, or regression.
Miscellaneous	blank and curve recall, sample blanking.

Special Features

Password Protection for test results and parameters.	
Levey-Jennings QC tracking, patient reports, job creation.	
User tests	More than 100.
Stored patient results	More than 500.
Stored control results	More than 500.
Optional external heat block	18 wells, controlled temp @ 37°C.
Optional read cell cooling	Peltier cooling system - cell only.
Cell Temperature selections	25°C, 30°C, or 37°C.

Enclosure	fire retardant ABS and steel.
Dimensions	16" (40cm) x 14.5" (37 cm) x 5.5" (14 cm)*.
	*12" - 30 cm tall with screen up.
Weight	(17 lbs) 6.4 kg.

Power	100-240 VAC (auto-sensing) 50/60 HZ input, 90 watts.
-------	--

Awareness Technology reserves the right to change specifications without notice due to design improvements.

Stat Fax® 3300

Chemistry Analyzer



**Flip-up display
screen**

Shown with optional incubation
accessory and external keyboard

**Welcome to a new
generation of
Stat Fax®**



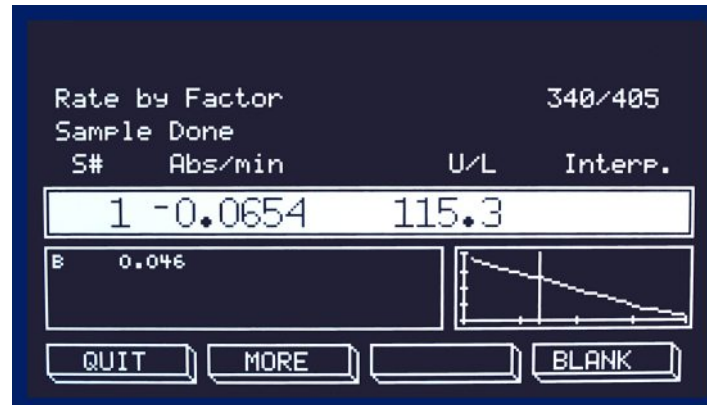
Awareness Technology, Inc. PO Drawer 1679, Palm City, FL 34991 (772) 283 6540, fax (772) 283 8020
web site: <http://www.awaretech.com> email: info@awaretech.com
Doc. Stat Fax® Model 3300, S3V1 - 2/09



AWARENESS TECHNOLOGY, INC.
Cost Effective by Design®

Stat Fax® 3300

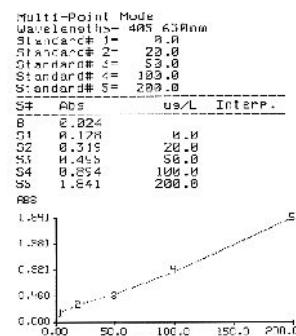
View kinetic plots in real time



See the curve,
then calculate kinetic
results based on the
entire read time
OR
the segment
you choose.

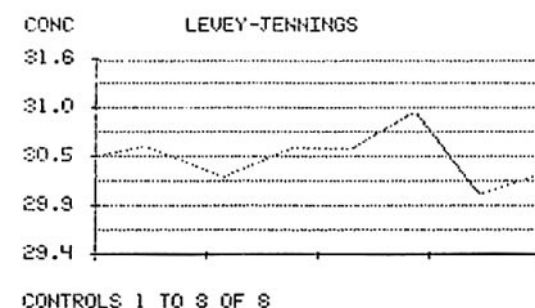
Large 240 x128 pixel graphic display is easy to view and use

Stat Fax® 3300 stores calibration and standard curves



For each run,
choose a new
curve or use a
stored curve with
options to modify
multi-point curves
and revert to
previous curve.

Stat Fax® 3300 stores control values with many QC options to assure linear kinetics and reliable results.



Create Levey-Jennings plots for QC

Stat Fax® 3300 stores and reports patient data

Create a work list.

Run the tests.

Print Patient Reports.

PATIENT REPORT: Capitol Labs				
Patient ID: George Brogan				
Date	Result	Intep.	Normal Range:	
glucose	20/09/02 101.7	NORMAL	60.0 to 110.0	
CHOLESTEROL	20/09/02 284.3	ABNORM	120.0 to 250.0	
SGOT	20/09/02 28.9	NORMAL	8.0 to 40.0	

Output data to:

- On-board 40-column Thermal printer
- External printer
- PC and LIS

Designed and manufactured in the USA by
AWARENESS TECHNOLOGY, INC.

A world leader in semi-automatic biochemistry analyzers
and other laboratory instruments.



Bichromatic optical system with
6 filters and spaces for 2 optional
additional filters (340-700nm).

Adapts for use with 12mm round
tubes, 1cm square cuvettes, or
built-in flow cell.

Optional external keyboard for
easy entry of patient names
and data.

Vacuum system speeds sampling
and reduces carryover.

Read cell temperature controlled
to 37°C.

Peltier cell cooling available as
an option.

Calibration traceable to NIST
standard.

Optional incubation block
available with 18 wells,
temperature controlled to 37°C.

Use Redi-Check® Photometer QA,
the easy way to monitor accuracy,
linearity, and repeatability.



Stat Fax® and Redi-Check® are registered trademarks of
Awareness Technology, Inc.

<http://www.awaretech.com>



STAT FAX® 3300

OPERATOR'S MANUAL



1. INTRODUCTION	1
1.1 APPLICATIONS	1
1.1.1 Intended Use	1
1.1.2 Summary of the Instrument	1
1.2 SPECIFICATIONS	3
1.3 WARNING MARKINGS	7
1.3.1 Safety Symbols.....	7
1.3.2 Safety Terms	7
1.4 SAFETY PRECAUTIONS.....	8
1.5 SETUP.....	11
1.5.1 Unpacking.....	11
1.5.2 Installation/Preparation.....	15
1.5.3 Keypad Description	20
1.6 CHECKOUT PROCEDURE	22
1.7 FIRST START UP PROCEDURE.....	24
2. MAIN MENU / GENERAL SELECTIONS	25
2.1 F1 = RUN TEST	25
2.1.1 Utility Tests.....	26
2.1.2 Run a Stored User Test.....	27
2.1.3 Password Control Menu	30
2.1.4 Entering a New Password	32
2.1.5 Login with Administrator Password	33
2.1.6 Change Password	34
2.1.7 Lock Menus	35
2.1.8 Log Off.....	36
2.2 F2 = PROGRAM	37
2.2.1 Create / Run a New User Test in Program Mode.....	37
2.3 F3 = WORKLIST	39
2.3.1 Modify the Patient Worklist.....	39
2.4 F4 = TOOLS	44
2.4.1 Stored Data Utilities.....	45
2.4.1.1 User Test Menu	46
2.4.1.2 Control Data Menu	47
2.4.1.3 Patient Result Data Menu.....	48
2.4.2 Flowcell Configuration	49
2.4.3 Printer Setup.....	51
2.4.3.1 Internal Printer.....	52
2.4.3.2 External Printer.....	53
2.4.3.3 Internal Printer Font Sample.....	54
2.4.3.4 Serial Port Data Output	55
2.4.3.5 Print on Demand Feature	56
2.4.4 Diagnostics Menu	57
2.4.4.1 Filter Voltages.....	58
2.4.4.2 Filter Wheel Speed	58
2.4.4.3 Usage Count.....	59
2.4.4.4 Cell, Block Heat Calibration.....	59
2.4.4.5 Current Vacuum, Temperature, Waste Count.....	60
2.4.4.6 Self Check	61

2.4.5 General Configuration	62
2.4.5.1 Set Date and Time.....	63
2.4.5.2 Laboratory Name Options	64
2.4.5.3 Sample/Reagent Volume Option	66
2.4.5.4 Cell & Block Heat Control	67
2.4.5.5 Custom Unit Setup	70
3. OPERATING PROCEDURES	72
3.1 GENERAL SELECTIONS.....	72
3.1.1 External Ports	72
3.1.2 Serial Port.....	72
3.1.3 PC Connection	72
3.1.4 External Keyboard	72
3.1.5 Units of Measurement	73
3.1.6 Entering Names	73
3.1.7 Ranges and Controls.....	75
3.1.7.1 Setup Ranges.....	75
3.1.7.2 Setup Controls.....	78
3.1.8 Blanking.....	83
3.1.9 Reading Samples	84
3.1.9.1 Using Tubes or Cuvettes	84
3.1.9.2 Using the Flowcell	84
3.1.10 Bichromatic Operation (Differential Filter)	86
3.1.11 Saving Tests.....	87
3.1.12 Reports	89
4. CALCULATION PROGRAMS	91
4.1 ABSORBANCE MODE	91
4.2 SINGLE STANDARD MODE	95
4.3 FACTOR MODE	102
4.4 MULTI-POINT MODE.....	109
4.5 RATE MODE.....	117
4.6 INDEX MODE.....	130
5. CLEANING AND MAINTENANCE	133
5.1 CLEANING	133
5.1.1 Exterior	133
5.1.2 Flowcell.....	133
5.1.3 Waste Bottle	134
5.2 MAINTENANCE	135
5.2.1 Calibration and Linearity	135
5.2.2 Opening the Instrument.....	135
5.2.3 Lamp replacement.....	137
5.2.4 Flowcell Tubing Replacement	141
5.2.5 Valve Tubing Replacement	143
5.2.6 Storage	144

6. TROUBLESHOOTING	145
6.1 FLAGS AND ERROR MESSAGES	145
6.1.1 Flags.....	145
6.1.2 Error Messages	146
6.2 INCORRECT CONTROL READINGS	149
6.3 POOR LINEARITY.....	149
6.4 ERRATIC READINGS	149
6.5 LAMP FAILURE	149
6.6 NO SAMPLING	150
6.7 RESTORE CALIBRATION DATA	151
6.7.1 Restore Electronic Calibration	151
6.7.2 Restore Filter Labels	153
6.8 FLOWCELL ALIGNMENT	154
7. ACCESSORIES.....	155
7.1 EXTERNAL KEYBOARD	155
7.2 INCUBATION UNIT.....	155
7.3 PELTIER COOLING ACCESSORY.....	155
7.4 THERMAL PRINTER PAPER	155
7.5 REDI-CHECK® PHOTOMETER QA KIT	155
8. USER TEST MENU LOG	156
9. CONTACT INFORMATION	157

1. INTRODUCTION

1.1 Applications

1.1.1 Intended Use

This instrument is intended to be used to read and calculate the results of in-vitro clinical diagnostic assays, as well as any other application requiring absorbance or concentration readings at or near the available wavelengths. This general purpose instrument is intended to be used by laboratory professionals capable of selecting the appropriate features and options for each specific clinical application.

1.1.2 Summary of the Instrument

Stat Fax® 3300 is designed for the processing of biochemistries, tube method immuno assays, and drug assays from human serum, plasma, or urine. A removable Flowcell installs in the read well to provide extremely rapid fluid sampling with low carryover. A built-in vacuum pump and an external waste bottle with level sensing are supplied standard. When the Flowcell is removed, the instrument accepts standard 12 mm round tubes as well as 1 cm square cuvettes. The design of the instrument includes many features to minimize operator error, such as stable factory calibration, automatic zeroing, complete operator prompting, detailed labeling, pre-programmed calculations, visual and audible feedback, flags and error messages, and minimal maintenance requirements; and user-friendly features such as the print on demand feature in Rate Mode. The operating modes are:

- **Absorbance Mode**
Reads monochromatic or bichromatic differential absorbances at user-selected wavelengths.
- **Standard Mode**
Reports concentrations based on a single standard concentration. Differential samples (against sample blanks) are supported
- **Rate Mode**
Reports concentrations either based on the average Δ absorbance per minute multiplied by a user supplied factor (Rate by Factor), or based on the Δ absorbance per minute of a standard (Rate by Standard). A fixed-time kinetic mode calculates based on Δ absorbance over a specified interval. The Rate Mode includes a "Batch" option that permits kinetic assays to be run simultaneously. There is also a Multi-Point Fixed Time Kinetic Mode available. The print on demand feature allows the user to turn the internal printer on to print patient data or a graph while the internal and external printers are set to off in the printer setup [Tools menu] by pressing the More key.
- **Factor Mode**
Reports concentrations by multiplying absorbance values by a specified factor. Differential samples (against sample blanks) are supported.



- **Multi-Point Mode**

Reports concentrations or percent absorbance values based on the point-to-point connection of up to seven user-entered standards. These are used to calculate the concentrations of unknown samples according to Beer's Law. The resulting calibrator curve is a series of line segments connecting the calibrator points. If you wish to use the point (0,0), you must include it as a calibrator. Differential samples (against sample blanks) are supported.

- **Index Mode**

A calculating feature where you enter the values for each assay upon the prompt for that assay result and print what is entered. The instrument calculates the index result, saves the index result, and includes it in the patient report.

Test parameters, and standard curves are stored in memory for later recall. The **Stat Fax® 3300** will store up to 120 tests in memory to be recalled for later use; allows for creation of Levey-Jennings plots for QC. In addition, it will store 512 Patient Results, 512 Control Results, 20 Patients on Worklist, and 15 tests per patient.



1.2 Specifications

Specification Date 21 September, 2002
Model Name **Stat Fax® 3300**
Spectrophotometer Type Filter photometer
Optical Configuration:
 o Single beam with continuously rotating filter wheel
 o Monochromatic or bichromatic reading 8 filter positions
Usable Spectral Range 330 to 770 nm
System Procedures Open and by stored menu

Calculating Modes:

- o Absorbance
- o Single Standard
 - o Differential samples
- o Factor Mode
 - o Differential samples
- o Multi Standard Mode (up to 7 standards)
 - o Differential samples
- o Multi Standard % Abs (up to 7 standards)
 - o Differential samples
- o Kinetic Mode (consecutively, or simultaneously (Batch))
 - o By Factor or by Standard
- o Fixed Time Kinetic
 - o By Factor or by Standard
- o Index Mode

Channels..... 120 Open

Source of Radiation:

- o Tungsten Halogen, 10 Watt, with automatic lamp saver

Selection of Wavelength By filter

Filter Type:

- o 4-cavity interference, long-life ion beam-assisted deposition

Wavelength Accuracy +/- 3 nm

Filter Location:

- o After sample (heat absorbing filter before sample)

Filter Selection:

- o Automatic by software or via keyboard



Wavelengths:

- o 340, 405, 505, 545, 580, 630 nm supplied standard
- o Other/additional filters optional

Half Bandwidth..... < 10 nm

1/100 Bandwidth 14 nm at 340 nm

False Radiant Energy Ratio < 0.001 at 340 and 405 nm

Cuvette:

- o 1 cm square, 12 cm round, flow through

Supplied Type..... Flow-through

Material:

- o 316 stainless, borosilicate windows

Geometry:

- o Cylindrical, 2.3 mm dia x 5 mm +/- 0.05 mm

Illuminated Volume 21 μ l

Minimum Read Volume..... 250 μ l

Aspiration/Purge:

- o Vacuum pump at 18 cm of Hg

Valve..... Silicone pinch type

Cuvette Holder:

- o Thermostatically controlled compartment at 37° C

Detector:

- o Gallium-Arsenide-Phosphide photodiode

Signal Processing and Display

Display Type:

- o 240x128 Graphic LCD w/ Backlight

Scale of Display

Absorbance:

- o -0.5 to 3.5 (flow-through mode)
- o -0.5 to 2.5 (tube or 1 cm cuvette)

Concentration Maximum 999,999

Kinetic Results:

- o Abs/min with resolution of 0.0002 A/min

Zero Compensation Automatic

Range -0.5 to 2.5 absorbance



Signal Outputs:

Parallel Centronics/IBM-PC compatible

Serial:

- o RS-232 at 9600 baud, 8 data, 1 stop, no parity Bi-Directional

Data Input:

- o 1) 20 Key Keypad,
- o 2) PS2 101 Keyboard (connector available at back of instrument)

Spectrophotometric Inaccuracy

Flow-through:

- o < 0.5 % at 1 absorbance, 340/630 nm NADH solution
- o < 1% at 2 absorbance, 340/630 nm NADH solution
- o < 3 % at 3 absorbance , 340/630 nm NADH solution
- o < 0.5 % at 1 absorbance, 405/630 nm PNP solution
- o < 1 % at 2 absorbance, 405/630 nm PNP solution
- o < 3 % at 3 absorbance, 405/630 nm PNP solution

Stability:

- o Better than 0.003 A/hr monochromatic after warm-up
- o Better than 0.001 A/hr bichromatic after warm-up

Warm-up Time:

- o 90 seconds photometric
- o 15 minutes for temperature compartment

Electronics:

- o Z180 Microprocessor 18 MHz
- o 128k EEPROM
- o 32 K bytes Nonvolatile RAM (NVRAM)

Power:

- o Auto-Switching Power Supply
- o Voltage source: 90 – 264 VAC Frequency: 50/60 Hz
- o Power consumption: 60 watts
- o Installation Category: CAT II
- o Fuses:
 - o 2.5A/250V Fast 5-20 mm Glass Fuse,
 - o 2.0A/250V Fast 5-20 mm Ceramic Fuse,
 - o (2) 6/10 250V Slow Blow 3AG Fuses

Dimensions and Weight:

- o 40cm (L) x 37 cm (W) x 14 cm (H) lid closed (30 cm lid opened), 6.4 kg
- o Space Requirements 10 cm clearance on all sides



Environmental Conditions for Safe Operation:

- o Indoor Use
- o Altitude up to 2000m.
- o Temperature 5°C to 40°C. (Although it may be safe to operate in these conditions, it may not be suitable for the performance of the user's tests. Check with supplier.)
- o Humidity 85% for temperatures up to 31°C decreasing linearly to 50% humidity at 40°C.
- o Mains supply voltage fluctuations not to exceed $\pm 10\%$ of the nominal voltage.

Recommended Operating Temperature 15-35°C

Recommended Operating Humidity Between 10 and 85%, non-condensing

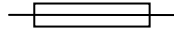
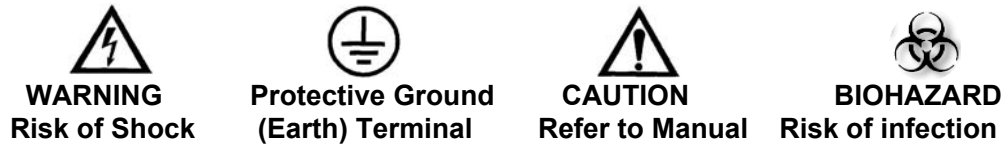
Design and instrument specifications are subject to change without notice.



1.3 Warning Markings

1.3.1 Safety Symbols

Safety symbols which may appear on the product:



FUSE: For continued protection against the risk of fire, replace only with fuse of the specified type and current ratings. Disconnect equipment from supply before replacing fuse.

1.3.2 Safety Terms

<i>These terms may appear on the product:</i>	
DANGER	indicates an injury immediately accessible as you read this marking
WARNING	indicates an injury hazard not immediately accessible as you read this marking
CAUTION	indicates a hazard to property, including the product

<i>These terms may appear in this manual:</i>	
WARNING	WARNING statements identify conditions or practices that could result in injury or loss of life. WARNING indicates an injury hazard not immediately accessible as you read this marking.
CAUTION	CAUTION statements identify conditions or practices that could result in damage to this product or other property.
BIOHAZARD	BIOHAZARDS are biological agents that can cause disease in humans. Lab workers handling potentially infectious materials must use universal precautions to reduce the risk of exposure to these agents.



1.4 Safety Precautions

<i>To assure operator safety and prolong the life of your instrument, carefully follow all instructions outlined below.</i>	
Read Instructions	Take time to read this manual carefully before using this instrument. Review the following safety precautions to avoid injury and prevent damage to this instrument or any products connected to it. To avoid potential hazards, use this instrument only as specified. For best results, familiarize yourself with the instrument and its capabilities before attempting any clinical diagnostic tests. Refer any questions to your instrument service provider.
Servicing	There are no user-serviceable parts inside the instrument. Refer servicing to qualified service personnel. Use only factory-authorized parts. Failure to do so may void the warranty.
Wear Protective Apparel	Many diagnostic assays utilize materials that are potential biohazards. WARNING: Always wear protective apparel and eye protection while using this instrument.
Follow Operating Instructions	WARNING: Do not use this instrument in a manner not specified by the manual, or the protection provided by the instrument may be impaired.
Use Proper Power Cord	WARNING: Use only the power cord specified for this product and certified for the country of use.
Observe All Terminal Ratings	WARNING: To avoid fire or shock hazard, observe all ratings and markings on the instrument. Consult this manual for further ratings information before making connections to the instrument.
Install as Directed	Stat Fax® 3300 should be installed on a sturdy, level surface capable of safely supporting the instrument's weight (10 kg). The mounting surface should be at least 61cm deep and free of vibrations.
Provide Proper Ventilation	Refer to the installation instructions for details on installing the product so it has proper ventilation. The instrument should be surrounded by the following clearances: 10cm around perimeter of unit and 10cm on top.
Do Not Operate Without Protective Covers	WARNING: Do not operate this instrument with covers and panels removed.



Safety Precautions (Continued)	
Use Proper Fuse	WARNING: Use only the fuse type and rating specified by the manufacturer for this instrument.
Avoid Exposed Circuitry	WARNING: Do not touch exposed connections and components when power is present.
Avoid Excessive Dust	Do not operate in an area with excessive dust.
Do Not Operate With Suspected Failures	WARNING: If you suspect there is damage to this instrument, have it inspected by a qualified service person.
Do Not Operate in Wet/Damp Conditions	WARNING: Do not operate instrument in wet/damp conditions.
Do Not Operate In An Explosive Atmosphere	WARNING: Do not operate instrument in an explosive atmosphere.
Keep Instrument Surfaces Clean and Dry	CAUTION: Solvents such as acetone or thinner will damage the instrument. √ Do not use solvents to clean the unit. Avoid abrasive cleaners; the display overlay is liquid-resistant, but easily scratched. √ Clean the exterior of the instrument with a soft cloth using plain water. If needed, a mild all-purpose or nonabrasive cleaner may be used. √ Use as a disinfectant a 10% solution of chlorine bleach (5.25% Sodium Hypochlorite) or 70% isopropyl alcohol. √ Take special care not to spill liquid inside the instrument
Operating Precautions	Be sure to run a sufficient number of controls in each assay. If controls are not within their acceptable limits, disregard test results.



Safety Precautions (Continued)	
Biohazard Precautions 	 BIOHAZARD WARNING - If the Waste bottle is overturned during operation, immediately set the power switch to OFF (0). If this occurs, the instrument may discharge a small amount of waste material from the waste bottle via the fitting on the bottom of the instrument. This material should be treated as potentially bio-hazardous. Appropriate clean up of the material should be observed.



1.5 Setup

1.5.1 Unpacking

Carefully unpack the instrument, removing it from its plastic bag. Report any damage to your freight carrier at once. Retain the original packing material for future use in the event that the instrument is shipped to another location or returned for service. The following items should be packed with the instrument. Please locate each item now before continuing.

ITEM	DESCRIPTION
Heat Block (optional accessory)	External Incubation Block
Waste bottle	Plastic bottle
Cleaning solution	Plastic bottle containing Flowcell cleaning solution
Bottle cap assembly	Bottle caps, tubes, sensor wires
Thermal printer paper P/N 15003	(1) roll Thermal Printer Paper
Paper roll cover	Black, Flat, Rectangular
Power cable	Heavy cord
Flowcell	"T"-shaped object with square extension, in plastic box
Tool Kit	Not applicable
Spare Parts Kit P/N 033011	Contents: (1) Replacement Thermal Printer Paper Roll P/N 150003 (1) Replacement Lamp P/N 112004
Operator's Manual	This document



Unpacking (Continued)

ITEM	DESCRIPTION
Flowcell Spare Tubing Kit P/N 033040	Contents: (1) pc 9" Silicone Valve Tubing (2) pcs 8.5" Teflon Sample Tubing, swaged, for Sample volume >200µl (1) pc 5" Teflon Exit Tubing (1) male Luer (1) pc 9/16" PVC Tubing Support, white opaque (1) pc Insulating Tube Gasket, foam rectangle with round hole (1) pc Tubing Gripper, rectangle of emery paper (1) Hex Wrench – 1.6 mm

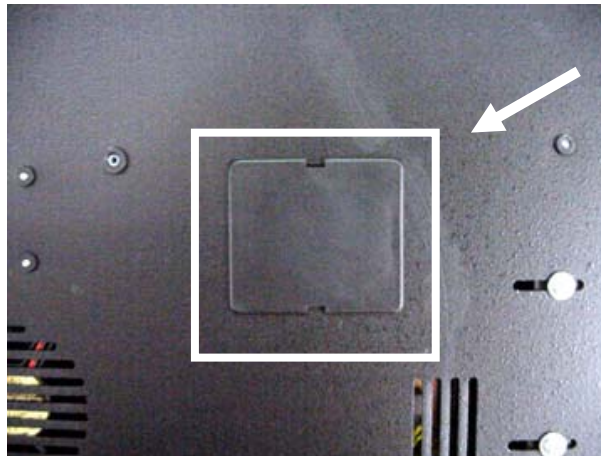
Contact your distributor if anything is missing.



NOTICE: REMOVE THE SHIPPING VALVE BLOCK AS DESCRIBED BELOW BEFORE OPERATING THE INSTRUMENT.

Take notice of Document 953355A which is shown below and accompanies your instrument. The shipping valve block must be removed. Failure to remove the valve block will affect the operation of the instrument.

Step 1: Turn the instrument over. On the bottom, near the front, find the square plastic cover (**Figure 1**).

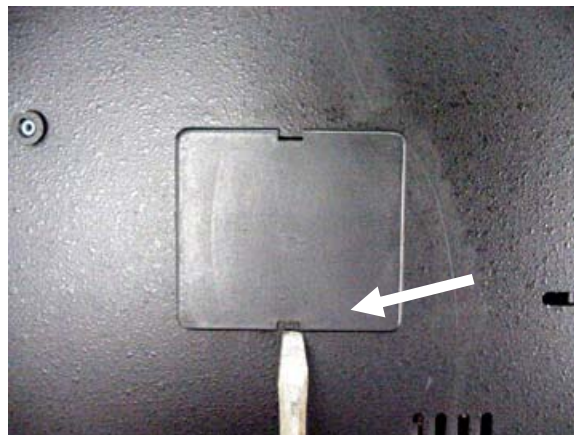


Bottom of instrument shown.

Find the square plastic cover.

Figure 1

Step 2: Using a flat blade screwdriver, or similar instrument, pry off the plastic cover at the slot shown (**Figure 2**).



Use a flat blade screwdriver to pry off the plastic cover at the slot as shown.

Figure 2



Step 3: Locate the small green valve block. Grasp the valve block and pull up to remove. Make sure that the tubing remains in place in the valve.

Replace the cover back into the slot and snap into place.

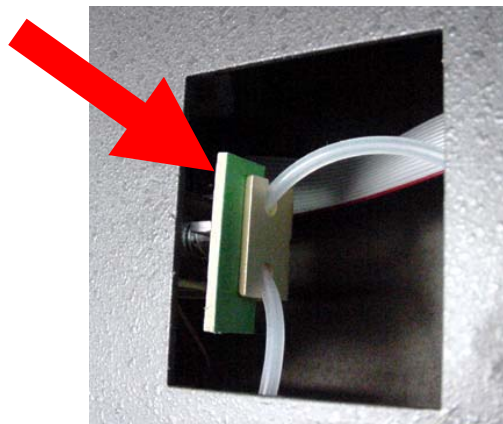


Figure 3

1.5.2 Installation/Preparation

Installation/Preparation:	
Instrument Placement and Use Complete this procedure to prepare the instrument for operation	Place the instrument on a flat working surface capable of safely supporting the weight of the instrument, approximately 10 kg (22 lbs.). A clearance of at least 10 cm (4") around the instrument is required to assure optimal ventilation. Place the Waste bottle on the work surface behind the instrument. Position the Waste bottle so that the tubing and sensor lead are not kinked, twisted, or strained. CAUTION: Do not place undue stress on the tubing connections or sensor lead connector. Tighten the bottle cap firmly. Connect the Waste bottle tubes to the rear panel fittings. The tubing connections are color-coded; match the male Luer cap to the color-coded ring on the rear panel. The vacuum line fittings are blue and the waste line fittings are black. Turn the fittings clockwise only until finger-tight. Do not over tighten. Plug the sensor lead into the sensor jack on the rear panel. Place the Waste bottle into the harness provided for it on the rear of the unit. Pull the strap so that the bottle is held tightly then press it together so that the Velcro seals.
Assure Clean Power Availability	The circuit used should be substantially free of large voltage transients (Kilovolt amp loads) such as large pumps, large centrifuges, refrigerators and freezers, air conditioners, large autoclaves, ovens, and dryers. The instrument may fail to operate normally if the power supply is interrupted. If this occurs, turn the instrument off for a moment. When the instrument is turned back on, it will resume normal operation, but data that was not stored in nonvolatile memory will be lost.



Installation/Preparation: (Continued)	
Power Switch Position	Look at the rear panel of the instrument (Figure 1.5.2-1) to check that the power switch is in the OFF (0) position. Install the power cord with the unit power switch in the OFF (0) position. Power Switch Power Cord Connection  Figure 1.5.2-1 Rear Panel of Instrument-
Power Cord Requirements	Connect the supplied power cable to the rear of the instrument (see Figure 1.5.2-1). Plug the other end of the power cable into an AC outlet. Use only the power cord specified for this product and certified for the country of use. For 110-120 V units used in the US, use a UL listed cord set consisting of a minimum 18 AWG, Type SVT or SJT three conductor cord, maximum 3 meters (10 feet) in length, rated 10 A, 125 V, with a parallel blade, grounding type attachment plug. For 220-240 V units used inside the US, use a UL listed cord as above, except rated <u>250 V</u>, with a <u>tandem</u> blade, with grounding type attachment plug. The cord set provided by the manufacturer meets these requirements. For other locations, use the power cord certified for the country of use. For 220-240 V units used inside the US, use a UL listed cord as above, except rated <u>250 V</u>, with a <u>tandem</u> blade, with grounding type attachment plug. The cord set provided by the manufacturer meets these requirements. For other locations, use the power cord certified for the country of use.



Installation/Preparation: (Continued)	
Safety Grounding 	WARNING: Do NOT alter or defeat the safety grounding methods provided. To avoid the risk of electric shock, the third prong of the AC power plug must be connected to conductive parts internal to the equipment. Internal fasteners to grounding points are marked by the IEC 417 symbol 5019 . WARNING: Do NOT loosen or remove these fasteners or connections. An alternate method of grounding is provided by connecting the grounding terminal located on the rear panel to a suitable ground. WARNING: To avoid electric shock, the power cord protection ground conductor must be connected to ground.
Fuse Requirements 	The fuses are located inside the instrument; there is a fuse in both power supplies and one in the Main AC Supply. Fuse failure is a very rare occurrence and should indicate malfunction of the equipment requiring service by qualified personnel. The power supply mounted on top requires a 2.5A/250V Fast 5-20 mm Glass Fuse. The power supply mounted to the chassis requires a 2.0A/250V Fast 5-20 mm Ceramic Fuse. The Main AC Supply requires (2) 6/10 250V Slow Blow 3AG Fuses. WARNING: For continued protection against risk of fire, always use the specified fuse for replacement. Disconnect power cord from mains supply before replacing fuses. Set the power switch at the left rear of the instrument to ON (I). The display shows:



Installation/Preparation: (Continued)	
Fuse Requirements (Continued)	Set the power switch at the left rear of the instrument to ON (I). The display shows:

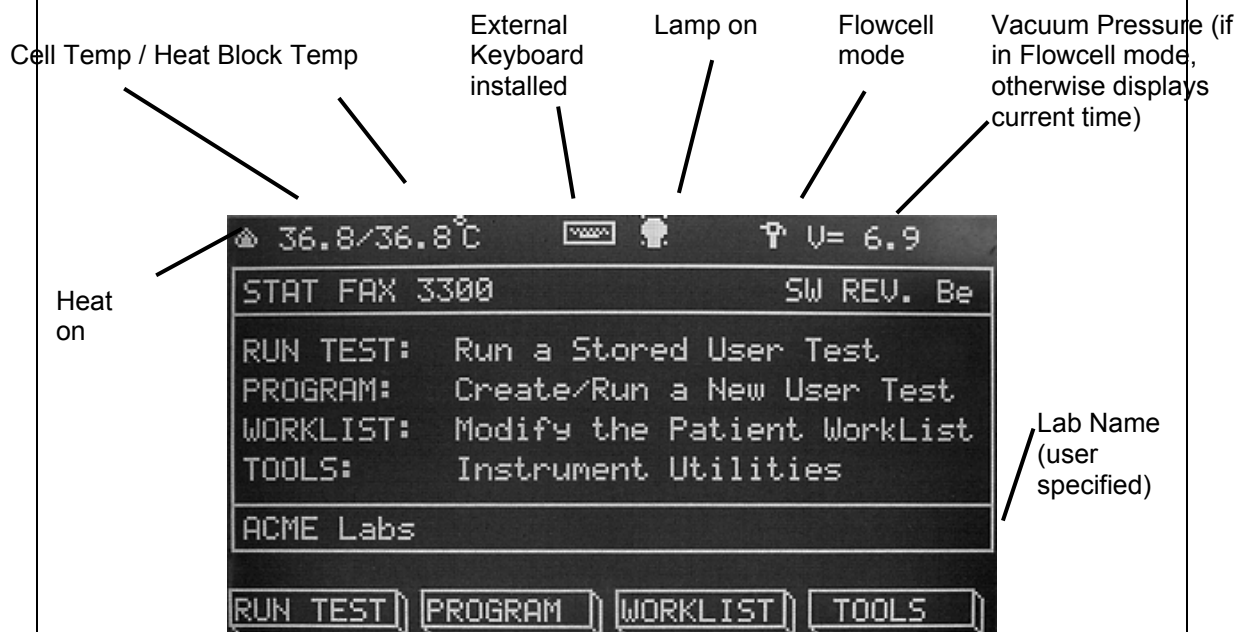
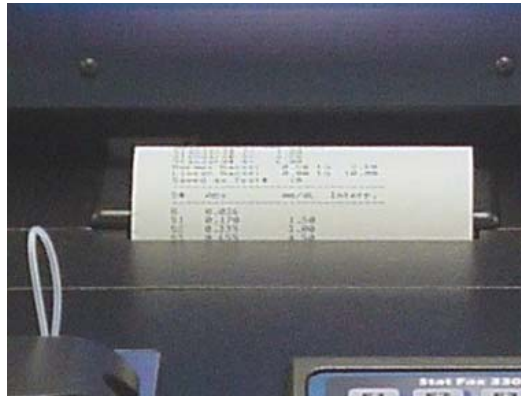


Figure 1.5.2-1 Screen Display

NOTE: For the “External Keyboard” icon and the “Heat Block Temp” information to display on the screen, plug them in.

Installation/Preparation (Continued)

The printer will print several lines. Wait until it has stopped. If there is no printing, the internal printer is disabled. Refer to **Section 2.4.3 Printer Set-Up**.



Load paper

- Locate the roll of printer paper.
- Roll out 15 cm (6") of paper from the roll. Be sure that the leading edge of the paper is straight.
- Feed the leading edge of the paper into the slot inside the printer paper compartment.
- While feeding the paper, press the **Line Feed key** (see **Figure 1.5.3-1 Keypad Layout**) on the key pad repeatedly until the paper "catches" and begins to feed into the printer.
- Stop pressing the **Line Feed key** when the paper is seen at the top of the printer.
- Pull the paper to help with alignment.
- Place the paper roll into the printer well.



1.5.3 Keypad Description



Figure 1.5.3-1 Keypad Layout

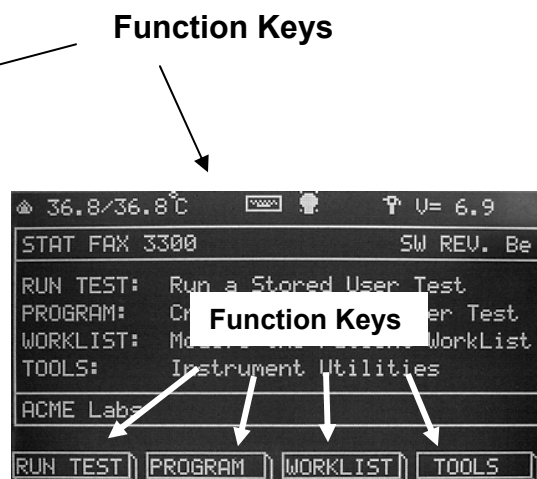


Figure 1.5.3-2 Screen Display

The Function Keys (**F1** through **F4**) shown in **Figure 1.5.3-1 Keypad Layout** correspond to the four keys shown at the bottom of the screen in the same order in **Figure 1.5.3-2 Screen Display**.

Function Key	Function
F1	RUN TEST
F2	PROGRAM
F3	WORKLIST
F4	TOOLS

NOTE: The instrument keypad will be overridden in the event of a keypad key sticking. The instrument will emit a series of beeps and the external keyboard (optional) will be enabled.

Keypad Description (Continued)



Figure 1.5.3-1 Keypad Layout

When applicable, the **Enter Key** on the main keypad performs the same function as the **ENTER Function Key** shown on the display screen.

Lamp	Toggles the lamp ON or OFF.
Line Feed	Internal Printer feeds one line at a time. External Printer skips one line.
Form Feed	External Printer initiates the printer to print all data stored in its internal memory.
READY Light	Instrument is ready to read samples or blanks.
STANDBY Light	When using the instrument, but not yet using the read screen, this light is ON. It is also ON when reading a sample.



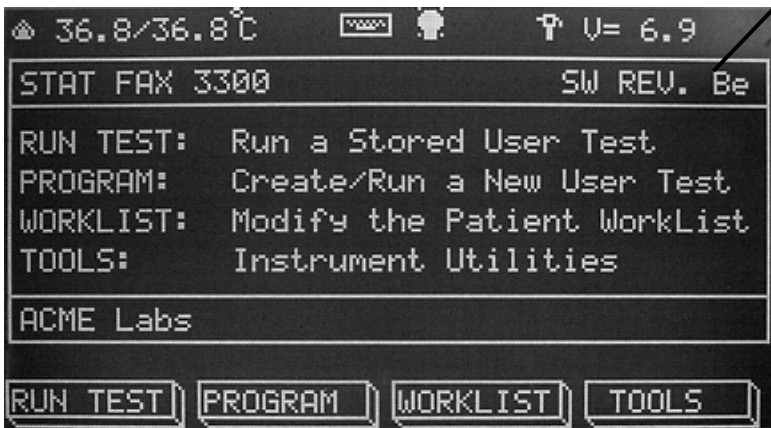
1.6 Checkout Procedure

Follow this procedure to verify that the instrument is ready for use.

In this procedure, it is assumed that the Flowcell is being used. If using the instrument with tubes or square cuvettes, disregard the Flowcell information.

Checkout Procedure:	
Visually confirm the following items:	
√ Waste bottle is connected to the correct fittings.	
√ Sensor lead is plugged in.	
√ Waste bottle is empty.	
√ Waste bottle cap is tight.	
√ Power cable is plugged into rear of unit and into an AC outlet.	
INSERTING THE FLOWCELL:	
 Use extreme caution: Forcing the Flowcell to seat improperly may damage it or the instrument.	√ Flowcell is fully seated in read well and luer fitting is connected (if Flowcell is in use.) ▪ Insert the Flowcell in the read well so that the sample tube is toward the front. ▪ Press the Flowcell gently down and towards the rear into the read well. ▪ Verify that the Flowcell is seated firmly.
√ Heat Block is connected. (Optional Accessory)	
√ External Keyboard is connected. (Optional Accessory)	
√ Power switch is set to OFF (0).	



Checkout Procedure: (Continued)	
The instrument is now ready for power-up.	Confirm that the instrument responds as described.
Set the power switch at the right rear of the instrument to ON (1).	The screen will display as shown in Figure 1.6-1 Screen Display (Checkout) .
The screen will display: the instrument model, software revision, and the date and time.	
 SW REV stands for software revision. The letters following SW REV. indicate the software revision.	
Figure 1.6-1 Screen Display (Checkout)	
NOTE: If the Flowcell is enabled, “Time” is replaced by “V= #.#” (software version) on the status line; the Tube icon will be replaced by a Flowcell icon.	
If using either an internal or external printer, a header will be printed at power-up, showing the instrument model, software revision, date and time.	
If “Date and Time” are not correct, refer to Section: 2.4.5 General Configurations .	
Allow the instrument to equilibrate for at least 15 minutes.	
Cell and Block temperature can be set, if required. See Section 2.4.5 General Configurations .	
If the instrument produces results other than those described here, set the power switch to OFF (O). Refer to the Section 1.5.2 Installation/Preparation and review all steps carefully. Repeat the Checkout Procedure. If the instrument still produces results other than those described here, refer to Section 6 Troubleshooting, or contact your dealer for assistance.	



1.7 First Start Up Procedure

First Start Up Procedure:

- Clean the Flowcell. Refer to Section 5.1.2 Cleaning the Flowcell.
- Run Self Check. Refer to Section 2.4.4.6 Self Check.
- At the beginning of every test run in Flowcell Mode, the valve will be checked for proper operation.
- The instrument will emit a noise as it checks the aspiration valve. Do not be alarmed, this is typical.
- The EEPROM, NV RAM, Vacuum System, and Photometer are all checked.
- Test results will be reported on the display and printer.
- An error will be immediately reported on the display and the printout.



2. MAIN MENU / GENERAL SELECTIONS

2.1 F1 = RUN TEST

F1 (RUN TEST) is used to run utility tests and user tests stored in the instrument's memory.

Tests programmed and saved on the instrument will be displayed in the Test Menu and sorted by their test number.

The **Stat Fax® 3300** stores up to 120 complete test setups in nonvolatile memory, making it easy for the user to recall complete test configurations.

Each of the test parameters, including the mode, wavelengths, standards, units, and the ranges are all stored for reuse.

Blanks and standards (including entire standard curves) that have been read are also saved.

When the test is recalled, the user has the option of using the previous curve or reading a new one.



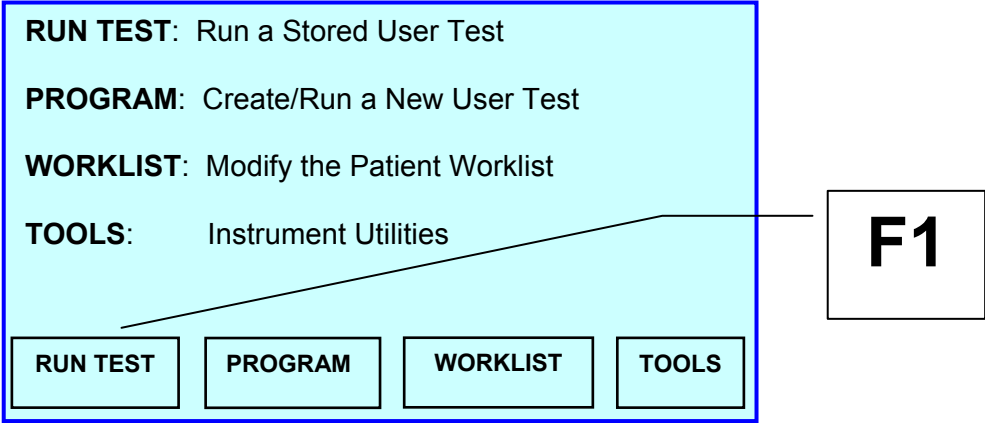
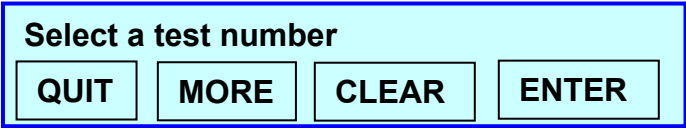
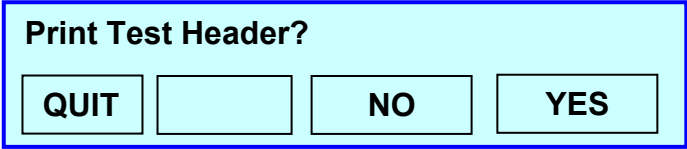
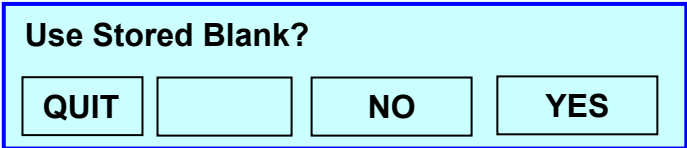
2.1.1 Utility Tests

To access the six Utility Tests see steps in **Section 2.1.2 Run a Stored User Test**. Enter the test number when prompted to select a test number.

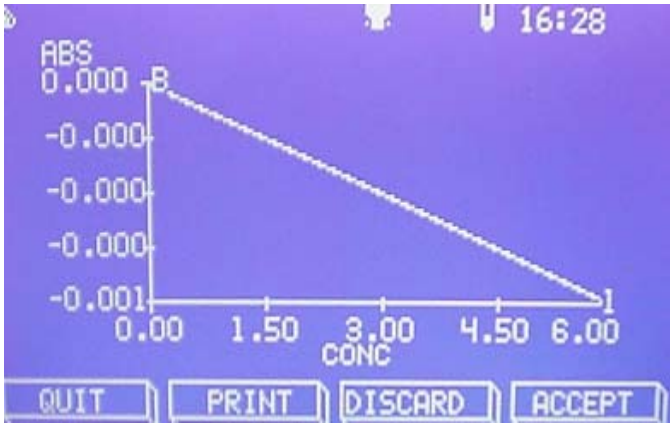
Utility Test	Test Description
213	Prints stored serial number, absorbance factor, cell temperature correction, block temperature correction
214	Sets the lamp shut off to one hour and enables Flowcell
222	Keypad test
223	Password feature (allows user to disable or change password) See Sections 2.1.3 through 2.1.6 for details.
248	Enter Filter Labels for #7 and #8
249	Resets the filter labels to their default settings



2.1.2 Run a Stored User Test

Run a Stored User Test:	Prompt/Response:
To run a stored user test, press:	F1 RUN TEST
	
The screen will display a list of available stored tests and prompt: 	Select a test number Use the numeric keys to select the test number of the test to run, and press ENTER
Press: Function Key 1 F1 QUIT: To return to Main Menu. Function Key 2 F2 MORE: To advance the screen to the next page. Function Key 3 F3 CLEAR: To clear a typed entry.	
The display will prompt: 	Print Test Header Y/N
The display will prompt: 	Use Stored Blank Y/N



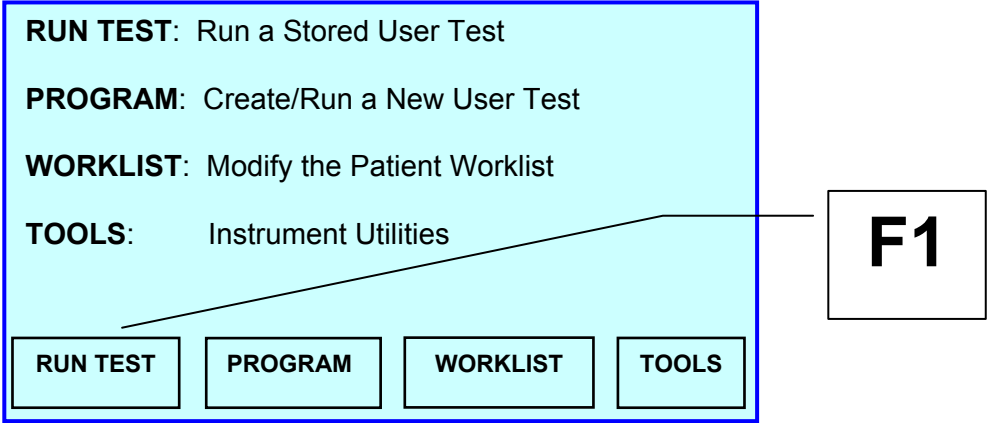
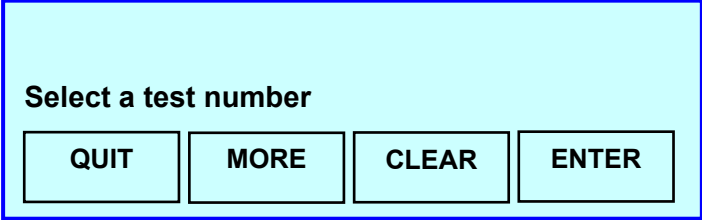
Run a Stored User Test: (Continued)	Prompt/Response:
Press: Function Key 4 F4 YES: To use the stored blank. The stored value will be used as if it had just been read. Function Key 3 F3 NO: To read a new blank. Function Key 1 F1 QUIT: To return to Main Menu.	
The curve data will display: 	
Press: Function Key F4 ACCEPT: To accept curve. Function Key F3 DISCARD: To discard curve. Function Key F2 PRINT: To print the curve. Function Key F1 QUIT: To return to the Main Menu.	Plotting to Internal Printer
If recalling a Multi-Point % Abs Mode, and choosing to use the stored calibration, the user will be prompted to read the first calibrator and displays the curve as shown above. If a stored curve is not used, the display prompts the user to read the sample.	READ THE BLANK Y/N



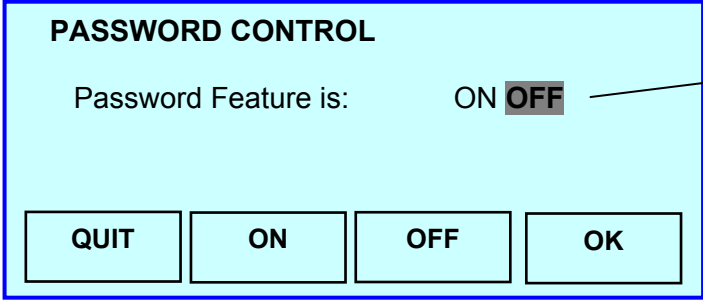
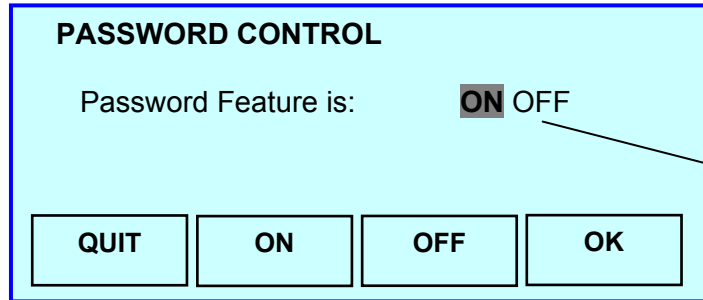
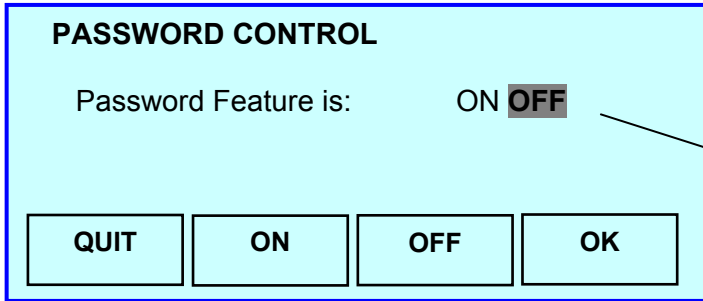
Run a Stored User Test: (Continued)	Prompt/Response:
If the test is assigned to a patient in the Worklist, the display prompts: (See Section 2.3 F3=WORKLIST for details.) To use the current stored Worklist, select: To continue without using Worklist, select: Finally, the screen will display one of three prompts: If there were no stored blank or standard curve, or the user has chosen not to use them, the values that are read will be automatically saved under the recalled test, unless an “Invalid Curve” is created.	Run Current Worklist? YES NO READ THE BLANK READ STANDARD # READ SAMPLE #
When recalling the test the next time, the option to use the stored calibration as described above will be displayed.	



2.1.3 Password Control Menu

Password Control Menu:	Prompt/Response:
To access the Password Control Menu , press:	F1 RUN TEST
	
The display will prompt:  Using the numeric keypad type in test number:	Select a test number 223 Press Enter key
Press: Function Key 4 F4 ENTER: To accept entry. Function Key 3 F3 CLEAR: To clear a typed entry. Function Key 2 F2 MORE: To advance the screen to the next page. Function Key 1 F1 QUIT: To return to Main Menu.	



Password Control Menu: (Continued)	Prompt/Response:
The Password Control Menu will appear on the screen. The display will read: 	The current status of the password feature will be highlighted (ON or OFF). Password Feature is: OFF
Password Control Menu Function Keys: F1 QUIT return to Main Menu with no changes F2 ON ENABLE password feature F3 OFF DISABLE password feature F4 OK accept change of status	The current status of password control will be highlighted (see below).
To ENABLE password protection, press: 	Function Key F2 ON Password Feature is: ON
To DISABLE password protection, press: 	Function Key F3 OFF Password Feature is: OFF



2.1.4 Entering a New Password

Entering a New Password:	Prompt/Response:
Enable password protection (as shown in the steps above for Password Control Menu) by pressing:	F2 ON
To ENTER A NEW PASSWORD , press:	F2 ON followed by the Enter key
The display prompts: Enter New Password: (up to 15 characters) CHARACTER SELECTION: ABCDEFGHIJKLMN OPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#\$%&()*+,-./0123456789: ;<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK Position the cursor under the character desired using the numeric keys, press F3 to select. When finished press F4 OK.	Enter New Password: (up to 15 characters) (See <i>Section 3.1.6 Entering Names</i> for details). <u>Numeric and Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN
NOTE: Password is CaSe SeNsItIvE.	

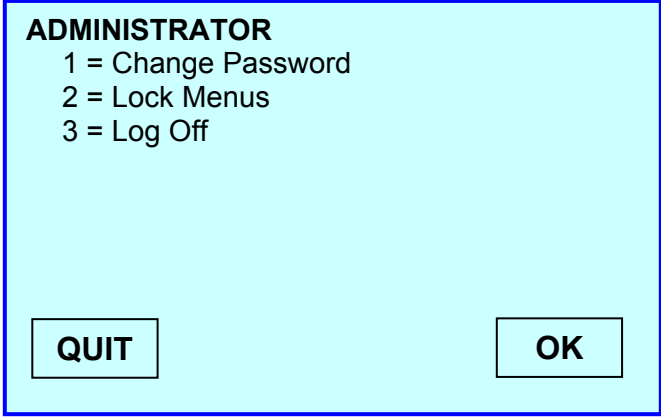
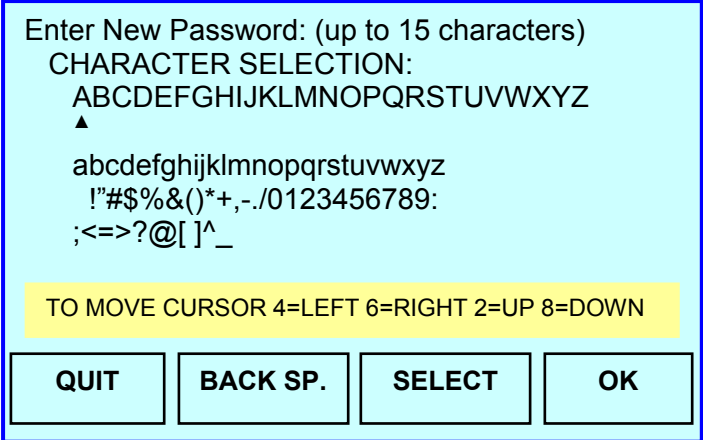


2.1.5 Login with Administrator Password

Login with Administrator Password:	Prompt/Response:
To login using the Administrator Password, press: RUN TEST: Run a Stored User Test PROGRAM: Create/Run a New User Test WORKLIST: Modify the Patient Worklist TOOLS: Instrument Utilities RUN TEST PROGRAM WORKLIST TOOLS	F1 TEST Type 223 Press Enter
The display will prompt: ACCESS DENIED The instrument must be in Administrator mode to use this feature QUIT CANCEL LOGIN	Press F4 LOGIN
The display will prompt: Enter New Password: (up to 15 characters) CHARACTER SELECTION: ABCDEFGHIJKLMNOPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#\$%&()*+,-./0123456789: ;<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK Position the cursor under the character desired using the numeric keys, press F3 to select. When finished press F4 OK.	Enter Administrator Password <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN NOTE: Password is CaSe SeNsItIvE.



2.1.6 Change Password

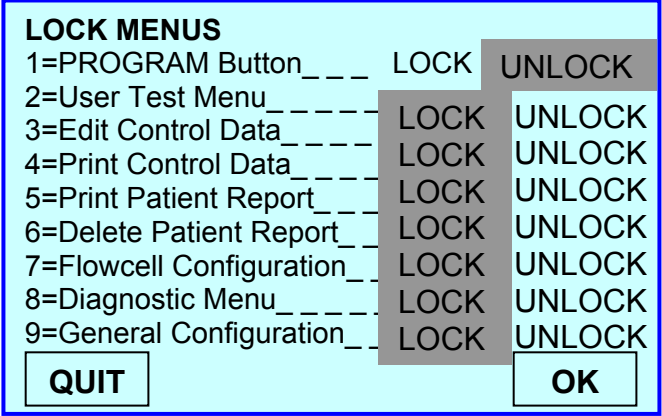
Change Password:	Prompt/Response:
The screen will display: 	ADMINISTRATOR Administrator Menu Options: CHANGE PASSWORD Press: Numeric Key 1 LOCK MENUS Press: Numeric Key 2 LOG OFF Press: Numeric Key 3
To change the password, press:	Numeric Key 1 Change Password
The display will prompt:  Position the cursor under the character desired using the numeric keys, press F3 to select. When finished press F4 OK. NOTE: Password is CaSe SeNsItIvE.	Enter New Password (up to 15 characters) (See <i>Section 3.1.6 Entering Names</i> for details). <u>Numeric and Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN



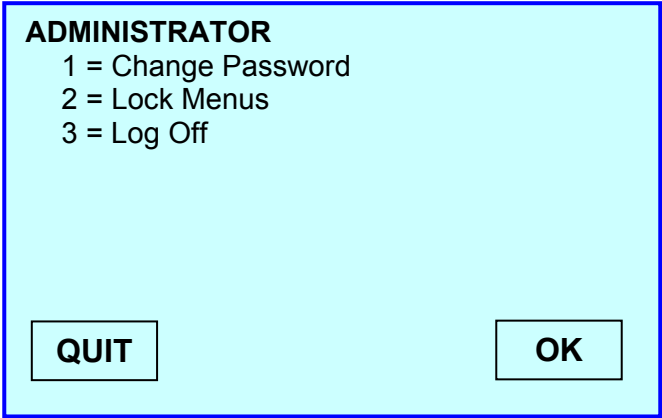
2.1.7 Lock Menus

Lock Menus	Prompt/Response:																											
To Lock Menus, press: ADMINISTRATOR 1 = Change Password 2 = Lock Menus 3 = Log Off QUIT OK	Numeric Key 2 LOCK MENUS																											
The Lock Menu will display menu items available to be locked or unlocked: LOCK MENUS <table><tr><td>1=PROGRAM Button_ _ _</td><td>LOCK</td><td>UNLOCK</td></tr><tr><td>2=User Test Menu_ _ _ _</td><td>LOCK</td><td>UNLOCK</td></tr><tr><td>3=Edit Control Data_ _ _ _</td><td>LOCK</td><td>UNLOCK</td></tr><tr><td>4=Print Control Data_ _ _ _</td><td>LOCK</td><td>UNLOCK</td></tr><tr><td>5=Print Patient Report_ _ _</td><td>LOCK</td><td>UNLOCK</td></tr><tr><td>6=Delete Patient Report_ _</td><td>LOCK</td><td>UNLOCK</td></tr><tr><td>7=Flowcell Configuration_ _</td><td>LOCK</td><td>UNLOCK</td></tr><tr><td>8=Diagnostic Menu_ _ _ _</td><td>LOCK</td><td>UNLOCK</td></tr><tr><td>9=General Configuration_ _</td><td>LOCK</td><td>UNLOCK</td></tr></table> QUIT OK Press the item number corresponding to the menu to toggle between LOCK and UNLOCK (indicated by the status being highlighted when chosen). NOTE: Users without password access will not be allowed access to any menus marked “LOCK” from this point forward unless the Administrator a) logs off, or b) changes the selections.	1=PROGRAM Button_ _ _	LOCK	UNLOCK	2=User Test Menu_ _ _ _	LOCK	UNLOCK	3=Edit Control Data_ _ _ _	LOCK	UNLOCK	4=Print Control Data_ _ _ _	LOCK	UNLOCK	5=Print Patient Report_ _ _	LOCK	UNLOCK	6=Delete Patient Report_ _	LOCK	UNLOCK	7=Flowcell Configuration_ _	LOCK	UNLOCK	8=Diagnostic Menu_ _ _ _	LOCK	UNLOCK	9=General Configuration_ _	LOCK	UNLOCK	Press the numeric key that corresponds with the menu item on the LOCK MENUS. The current status is highlighted.
1=PROGRAM Button_ _ _	LOCK	UNLOCK																										
2=User Test Menu_ _ _ _	LOCK	UNLOCK																										
3=Edit Control Data_ _ _ _	LOCK	UNLOCK																										
4=Print Control Data_ _ _ _	LOCK	UNLOCK																										
5=Print Patient Report_ _ _	LOCK	UNLOCK																										
6=Delete Patient Report_ _	LOCK	UNLOCK																										
7=Flowcell Configuration_ _	LOCK	UNLOCK																										
8=Diagnostic Menu_ _ _ _	LOCK	UNLOCK																										
9=General Configuration_ _	LOCK	UNLOCK																										



Lock Menu: (Continued)	Prompt/Response:
For example, by pressing the numeric key 1 the PROGRAM menu was changed from LOCK to UNLOCK in the display below. To change status back to LOCK, press the numeric key again. 	LOCK MENUS (Continued)

2.1.8 Log Off

Log Off	Prompt/Response:
To LOG OFF and return to Main Menu screen, press: 	Numeric Key 3 LOG OFF



2.2 F2 = PROGRAM

2.2.1 Create / Run a New User Test in Program Mode

Program Mode Menu	Prompt/Response:
To Create / Run a New User Test, press:	F2 PROGRAM

RUN TEST: Run a Stored User Test

PROGRAM: Create/Run a New User Test

WORKLIST: Modify the Patient Worklist

TOOLS: Instrument Utilities

RUN TEST

PROGRAM

WORKLIST

TOOLS

F2

MODE MENU

- 1 = Absorbance Mode
- 2 = Single Standard Mode
- 3 = Factor Mode
- 4 = Multi-Point Mode
- 5 = Rate Mode
- 6 = Index Mode

Enter Menu Number:

QUIT

Use the numeric keys to select a mode option from the **Mode Menu**.

See the chart below for option descriptions and the section to turn to for more information on each mode.



F2 Program Mode Menu Options:		Section No.
1	Absorbance Mode Reads monochromatic or bichromatic differential absorbance values at user-selected wavelengths.	Section 4.1
2	Single Standard Mode Reports concentrations based on a single standard concentration. Differential samples (against sample blanks) are supported.	Section 4.2
3	Factor Mode Reports concentrations by multiplying absorbance values by a specified factor. Differential samples (against sample blanks) are supported.	Section 4.3
4	Multi-Point Mode Reports concentrations or percent absorbances based on the point-to-point connection of up to seven user-entered Calibrators. Differential samples (against sample blanks) are supported.	Section 4.4
5	Rate Mode Reports concentrations either based on the average Δ absorbance per minute multiplied by a user supplied factor (Rate by Factor), or based on the Δ absorbance per minute of a standard (Rate by Standard). A fixed- time kinetic mode calculates based on Δ absorbance over a specified interval. A multi-point fixed time kinetic mode is also available. The Rate Mode includes a "Batch" option that permits kinetic assays to be run simultaneously.	Section 4.5
6	Index Mode A calculating feature where test results are user entered and index results are calculated and compared with normal ranges and printed on test reports. The instrument saves the index result, and includes it in the patient report.	Section 4.6



2.3 F3 = WORKLIST

2.3.1 Modify the Patient Worklist

Modify the Patient Worklist:	Prompt/Response:
To Modify the Patient Worklist, press:	F3 WORKLIST
RUN TEST: Run a Stored User Test PROGRAM: Create/Run a New User Test WORKLIST: Modify the Patient Worklist TOOLS: Instrument Utilities RUN TEST PROGRAM WORKLIST TOOLS F3	

NOTE: Before adding patients to a worklist consider the following options to prevent running out of room for patients on the worklist:

- Print the current worklist
- Delete all of current worklist
- Delete “patient by patient” to delete the patients no longer being used and then enter the needed additional patients.



Modify the Patient Worklist: (Continued)	Prompt/Response:
The screen will display: PATIENT WORKLIST MENU 1 = Add a Patient to Work List 2 = Delete a Patient from Work List 3 = Print the Current Work List 4 = Delete all of Current Work List 5 = Print all Patients Enter Menu Number: QUIT	Patient Worklist Menu
To add a patient select press:	Numeric key 1 Add a Patient To Work List
The display will prompt: Enter Patient Name for ID # 1 CHARACTER SELECTION: ABCDEFGHIJKLMNOPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#\$%&()*+,-./0123456789: ;=<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK Use the numeric keys to move the cursor to create the alpha numeric patient name. Use F3 to select each alpha/numeric character. Press F4 OK when finished.	Enter Patient Name for ID # <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN Refer to <i>Section 3.1.6 Entering Names</i>



Modify the Patient Worklist: (Continued)	Prompt/Response:
The display will prompt: Create a List of Test Numbers for this Patient To END type 0 Maximum # of Test/Patient = 15 The printer will printout: The screen will display the Test Menu and prompt: Select a test number: QUIT MORE CLEAR ENTER As tests are entered for the patient, the printer will add them to Patient Job List.	Create a List of Test Numbers for this Patient. New Patient Job List Select a test number: NOTE: Fifteen tests per patient is the maximum allowed.
Press: Function Key 1 F1 QUIT: To return to Main Menu. Function Key 2 F2 MORE: To advance the screen to the next page. Function Key 3 F3 CLEAR: To clear a typed entry.	
To delete a patient from work list, press: PATIENT WORKLIST MENU 1 = Add a Patient to Work List 2 = Delete a Patient from Work List 3 = Print the Current Work List 4 = Delete all of Current Work List 5 = Print all Patients Enter Menu Number: QUIT	Numeric key 2 Delete a Patient from Work List

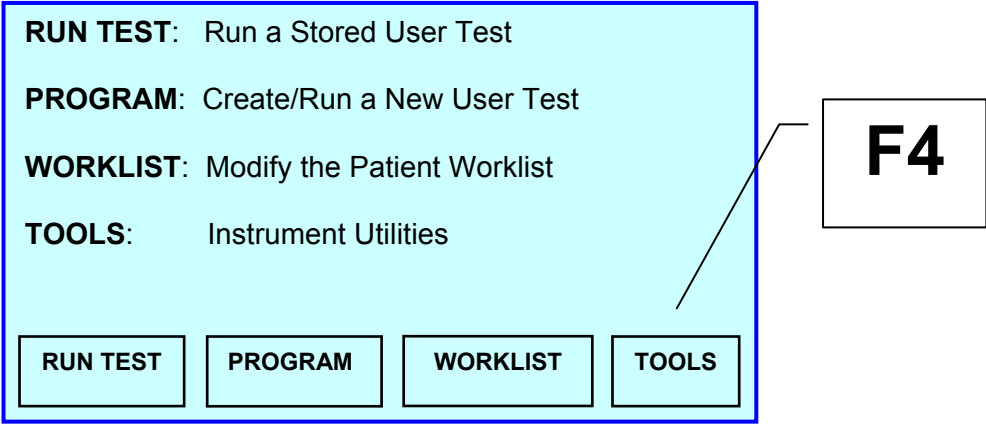
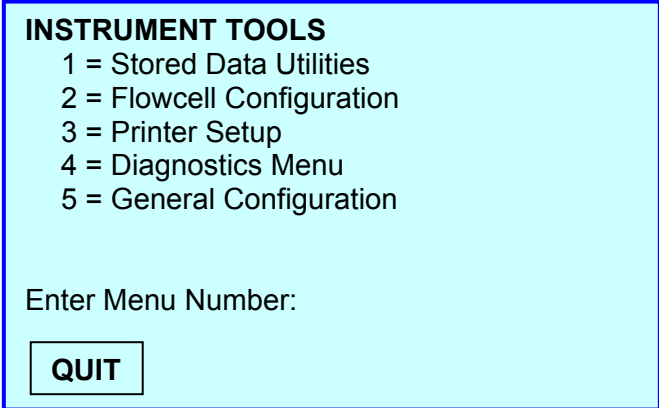


Modify the Patient Worklist: (Continued)	Prompt/Response:
To delete the entire work list, press: PATIENT WORKLIST MENU 1 = Add a Patient to Work List 2 = Delete a Patient from Work List 3 = Print the Current Work List 4 = Delete all of Current Work List 5 = Print all Patients Enter Menu Number: QUIT	Numeric key 4 Delete all of Current Work List Press Yes to confirm Press No to continue
NOTE: When running a test, if patients in the Work List are scheduled for the test, the instrument will prompt: Run the Current Work List? QUIT NO YES To run the patients in the Work List that need this test, select: The instrument will prompt for the corresponding samples.	Run the Current Work List? YES
PATIENT WORKLIST MENU 1 = Add a Patient to Work List 2 = Delete a Patient from Work List 3 = Print the Current Work List 4 = Delete all of Current Work List 5 = Print all Patients Enter Menu Number: QUIT	Numeric key 5 Print all Patients



2.4 F4 = TOOLS

F4 TOOLS is used to access Instrument Utilities.

Instrument Utilities:	Prompt/Response:
To access Instrument Utilities, press:	F4 TOOLS
	
Display will prompt: 	Instrument Tools Menu Enter Menu Number: Select the numeric key that corresponds with the Instrument Tool desired. See Sections 2.4.1 through 2.4.5 for further details.
Press: ▪ Numeric Key 1 Stored Data Utilities. See 2.4.1 Stored Data Utilities. ▪ Numeric Key 2 Flowcell Configuration. See 2.4.2 Flowcell Configuration. ▪ Numeric Key 3 Printer Setup. See 2.4.3 Printer Setup. ▪ Numeric Key 4 Diagnostics Menu. See 2.4.4 Diagnostic Menu. ▪ Numeric Key 5 General Configuration. See 2.4.5 General Configuration. ▪ Function Key F1 QUIT returns to Main Menu	



2.4.1 Stored Data Utilities

Stored Data Utilities:	Prompt/Response:
To access Stored Data Utilities from the Instrument Tools Menu, press:	Numeric key 1
The display will prompt: STORED DATA UTILITIES 1 = User Test Menu 2 = Control Data Menu 3 = Patient Result Data Menu 4 = Return to the TOOLS Menu Enter Menu Number: QUIT	STORED DATA UTILITIES Enter Menu Number: A short description of each utility follows below. Select the numeric key that corresponds with the utility desired.
Press: ▪ Numeric Key 1 To manipulate stored user tests. See 2.4.1.1 User Test Menu. ▪ Numeric Key 2 To manipulate stored controls. See 2.4.1.2 Control Data Menu. ▪ Numeric Key 3 To manipulate stored patient results. See 2.4.1.3 Patient Result Data Menu. ▪ Numeric Key 4 Return to Instrument Tools Menu ▪ Function Key F1 QUIT To return to Main Menu	



2.4.1.1 User Test Menu

User Test Menu:	Prompt/Response:
To access Stored User Test Menu from the Stored Data Utilities menu, press:	Numeric key 1
The display will prompt: Stored User Test Menu 1 = Print Menu of Stored Tests 2 = Delete all Stored Tests 3 = Delete a Stored Test 4 = Edit A Stored Test 5 = Return to Previous Menu Enter Menu Number: QUIT	STORED USER TEST MENU Enter Menu Number: A short description of each option follows below. Select the numeric key that corresponds with the option desired.
Press: ▪ Numeric Key 1 To print a menu of all stored user tests ▪ Numeric Key 2 To delete all of the stored user tests ▪ Numeric Key 3 To delete a single stored user test ▪ Numeric Key 4 To edit a stored user test (See NOTE) ▪ Numeric Key 5 To return to the Stored Data Utilities Menu ▪ Function Key F1 QUIT To return to Main Menu	
NOTE: Editing a test will erase any stored blank or standard values for that test, as well as any patient results and stored results (if available). All of the test's parameters will be recalled and printed. The instrument will prompt a series of questions. The questions depend on the mode of the test being edited. For example, if editing a Factor Mode Test, the user can change the "Factor". When editing a Rate Mode Test, the user is prompted if the "Lag" and "Read" times will change. If choosing YES, enter the new value just as when the test was originally stored. Upon completing the questions, the instrument prints "Edit Complete".	



2.4.1.2 Control Data Menu

Control Data Menu:	Prompt/Response:
To access Stored Controls Menu from the Stored Data Utilities menu, press:	Numeric key 2
The display will prompt: STORED CONTROLS MENU 1 = Modify Stored Control Setup 2 = Delete all Stored Controls 3 = Delete Ctrl's by Test/Lot # 4 = Print Stored Ctrl's by Test # 5 = Levey-Jennings Report 6 = Return to Previous Menu Enter Menu Number: QUIT	Stored Controls Menu Enter Menu Number: A short description of each option follows below. Select the numeric key that corresponds with the option desired.
Press: ▪ Numeric Key 1 To modify the stored control setup associated with a selected stored user test. ▪ Numeric Key 2 To delete all of the stored controls in the instrument. ▪ Numeric Key 3 To delete controls associated with a test and lot # the user selects. ▪ Numeric Key 4 To print the controls associated with a stored test # the user selects. ▪ Numeric Key 5 To print a Levy-Jennings report. Select the test to use as well as the type of controls. ▪ Numeric Key 6 To return to the Stored Data Utilities Menu. ▪ Function Key F1 QUIT To return to the Main Menu.	

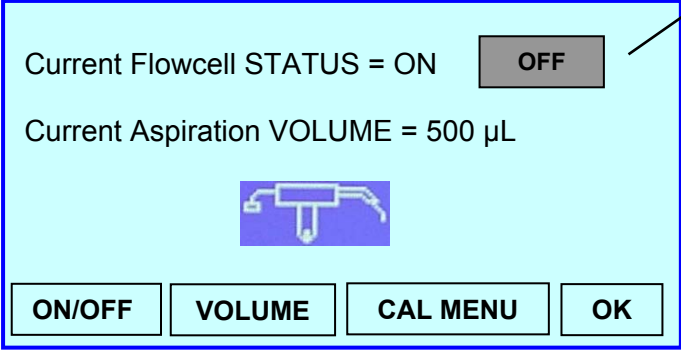
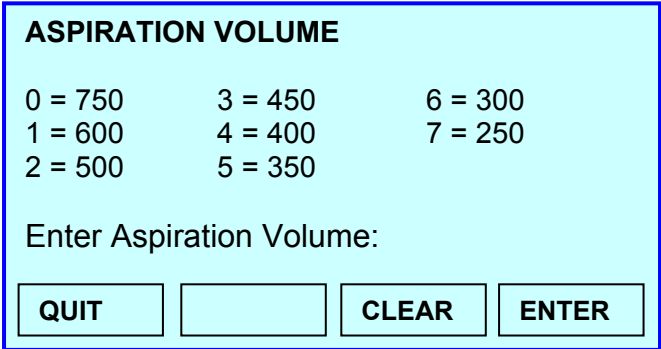


2.4.1.3 Patient Result Data Menu

Patient Result Data Menu:	Prompt/Response:
To access Stored Patient Result Menu from the Stored Data Utilities menu, press:	Numeric key 3
The display will prompt: STORED PATIENT RESULT MENU 1 = Print Patient Report by Pat. ID 2 = Delete ALL Results by Pat. ID 3 = Delete ALL Results by Test # 4 = Delete ALL Patient Results 5 = Print ALL Patient Reports 6 = Return to Previous Menu Enter Menu Number: QUIT	Stored Patient Result Menu Enter Menu Number: A short description of each option follows below. Select the numeric key that corresponds with the option desired.
Press: ▪ Numeric Key 1 - To print a patient report by entering the patient's ID number. ▪ Numeric Key 2 - To delete all results associated with a patient ID number the user entered. ▪ Numeric Key 3 - To delete all stored patient results associated with a test number the user entered. ▪ Numeric Key 4 - To delete all stored patient results. ▪ Numeric Key 5 - To print all patient reports using the stored results. ▪ Numeric Key 6 - To return to the Stored Data Utilities Menu. ▪ Function Key F1 QUIT to return to the Main Menu.	
NOTE: Every "result" is stored by this instrument. If a Patient ID was entered using the Work List or the "Instant Patient ID" feature, the result will be stored referencing the ID the user enter. If no ID is entered, "No Name" will be used as the default Patient ID. The "No Name" patient can be removed by deleting "Patient by ID number". The storage feature is capable of saving the last 512 results. Beyond that, the oldest result is overwritten with each new result.	



2.4.2 Flowcell Configuration

Flowcell Configuration:	Prompt/Response:
To access Flowcell Configuration from the Instrument Tools Menu, press:	Numeric Key 2
The screen will display: 	Current Flowcell STATUS = The current status of the Flowcell will be highlighted (ON or OFF). To toggle between Flowcell Mode (ON) and Tube Mode (OFF), press: F1 ON/OFF
The screen will display the current aspiration volume. To change the volume, press:	Current Aspiration VOLUME = F2 VOLUME
The display will prompt: 	Enter Aspiration Volume: Make a selection from the seven volume choices. Press ENTER (F4) to accept. Press CLEAR (F3) to entry. Press QUIT (F1) to return to the Main Menu.
NOTE: When reading sample in Flowcell Mode, remember to have more sample than the aspiration volume selected. Attempting to aspirate the exact amount of sample may result in poor results due to air mixing with sample. User technique, the shape of the bottom of vessel being used, and the location of the tube during sampling can affect this process.	



Flowcell Configuration: (Continued)	Prompt/Response:
To calibrate the Flowcell from the Flowcell Configuration menu, press:	F3 CAL MENU
The screen will display: FLOWCELL CALIBRATION 1 = Read Water Reference 2 = Flowcell Alignment Enter Menu Number: QUIT NOTE: These options may only be used if the Flowcell is active.	FLOWCELL CALIBRATION Enter Menu Number: A short description of each option follows below. Select the numeric key that corresponds with the option desired.
Press: ▪ Numeric Key 1 Read Water Reference: The instrument references water instead of air when reading with the Flowcell. These reference values are stored in non-volatile memory and used whenever the Flowcell is active and until new values are read. In order to insure good <i>blanks</i> when using the Flowcell, conduct Read Water Reference on a regular basis; time intervals depend upon instrument usage and when encountering unexpected (very high, very low) blank values. ▪ Numeric Key 2 Flowcell Alignment: NOTE: This option is not necessary under normal operating conditions. Necessary when a new Flowcell is used, or if a lamp replacement has occurred. Conduct Read Water Reference before and after Flowcell Alignment. ▪ Function Key F1 QUIT to return to Main Menu	



2.4.3 Printer Setup

The built-in 40 column thermal graphics printer is used to list information and provide a record of the samples. Connection to an external printer is via the parallel or serial port, located on the rear of the instrument. The internal and external printers can be used at the same time.

NOTE: Before connecting to an external printer or a computer, power OFF the instrument. To advance the paper or send a line feed, press Line Feed. Make sure to set the external printer status to ON.

Printer Setup:	Prompt/Response:
To access Printer Setup from the Instrument Tools Menu, press:	Numeric Key 3
The screen will display: PRINTER TYPE 1 = Internal Printer 2 = External Printer 3 = Internal Printer Font Sample 4 = Serial Port Data Output 5 = Return To Previous Menu Enter Menu Number: QUIT	PRINTER TYPE Enter Menu Number: A short description of each option follows below. Select the numeric key that corresponds with the option desired.
Press: ▪ Numeric Key 1 For Internal Printer see 2.4.3.1 Internal Printer. ▪ Numeric Key 2 For External Printer see 2.4.3.2 External Printer. ▪ Numeric Key 3 For Internal Printer Font Sample see 2.4.3.3 Internal Printer Font Sample. ▪ Numeric Key 4 Serial Port Data Output see 2.4.3.4 Serial Port Data Output. ▪ Numeric Key 5 To return to Instrument Tools Menu. ▪ Function Key 1 F1 QUIT To return to Main Menu.	



2.4.3.1 Internal Printer

It is advisable to print at contrast level 3. Higher contrast levels may degrade after several lengthy printouts.

Internal Printer:	Prompt/Response:
To access Printer Setup from the Instrument Tools Menu, press:	Numeric Key 3
The screen will display: PRINTER TYPE 1 = Internal Printer 2 = External Printer 3 = Internal Printer Font Sample 4 = Serial Port Data Output 5 = Return To Previous Menu Enter Menu Number: QUIT	PRINTER TYPE Enter Menu Number: Press Numeric Key 1 for Internal Printer
The screen will display: Internal Printer STATUS = ON Internal Printer Status CONTRAST = 1 2 3 4 5 Adjustment Range: 1 (Light) to 5 (Dark) Internal Print QUALITY = Letter X Draft X STATUS CONTRAST QUALITY OK	Internal Printer STATUS = The current STATUS of the internal printer is highlighted (ON or OFF). The current CONTRAST setting is highlighted. The current QUALITY setting is highlighted. NOTE: It is advisable to print at contrast level 3. Higher contrast levels may degrade after several lengthy printouts.
Press: ▪ Function Key 1 F1 STATUS: Choose printer type (Internal or External). ▪ Function Key 2 F2 CONTRAST: Press F2 to move to the desired setting (lighter contrast settings print faster). It is advisable to print at contrast level 3. Higher contrast levels may degrade after several lengthy printouts. ▪ Function Key 3 F3 QUALITY: The Letter setting is a higher quality print compared to the Draft setting and has a much slower print time. Function Key 4 F4 OK: To return to the Instrument Tools menu.	



2.4.3.2 External Printer

External Printer:	Prompt/Response:
To access Printer Setup from the Instrument Tools Menu, press:	Numeric Key 3
The screen will display: PRINTER TYPE 1 = Internal Printer 2 = External Printer 3 = Internal Printer Font Sample 4 = Serial Port Data Output 5 = Return To Previous Menu Enter Menu Number: QUIT	PRINTER TYPE Enter Menu Number: Press Numeric Key 2 for External Printer
The screen will display: External Printer STATUS = ON OFF Current Maximum LINES per PAGE = 18  STATUS LINES/PG OK	External Printer STATUS = The current STATUS of the external printer is highlighted (ON or OFF). The current LINES/PG is displayed.
Press: ▪ Function Key F1 STATUS: To toggle Status ON or OFF. ▪ Function Key F2 LINES/PG: To change the lines per page. Use the numeric keys to type at the “Enter Maximum Lines /Page” prompt. Press F4 ENTER when finished. ▪ Function Key F4 OK: To return to the Instrument Tools menu.	



2.4.3.3 Internal Printer Font Sample

Internal Printer Font Sample:	Prompt/Response:
To access Printer Setup from the Instrument Tools Menu, press:	Numeric Key 3
The screen will display: PRINTER TYPE 1 = Internal Printer 2 = External Printer 3 = Internal Printer Font Sample 4 = Serial Port Data Output 5 = Return To Previous Menu Enter Menu Number: QUIT	PRINTER TYPE Enter Menu Number: Press Numeric Key 3 for Internal Printer Font Sample
The internal printer will print a list of characters in both Letter and Draft quality in the five available contrast settings: Internal Printer ON Quality = Letter Contrast = 5 ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz !"#\$%&() *+,-./0123456789: ;<=>?@[] ^ _ NOTE: Internal Printer STATUS = ON	



2.4.3.4 Serial Port Data Output

Serial Port Data Output:	Prompt/Response:
To access Printer Setup from the Instrument Tools Menu, press:	Numeric Key 3
The screen will display: PRINTER TYPE 1 = Internal Printer 2 = External Printer 3 = Internal Printer Font Sample 4 = Serial Port Data Output 5 = Return To Previous Menu Enter Menu Number: QUIT	PRINTER TYPE Enter Menu Number: Press Numeric Key 4 Serial Port Data Output
The screen will display: SERIAL OUTPUT 1 = Printer Data 2 = Laboratory Information System 3 = Return To Previous Menu Enter Menu Number: QUIT OK	SERIAL OUTPUT Enter Menu Number: A short description of each option follows below. Select the numeric key that corresponds with the option desired.
Press: ▪ Numeric Key 1 Printer Data: Sends the same data as the internal printer. ▪ Numeric Key 2 Laboratory Information System (LIS): Sends data via a serial cable to an external personal computer. To enable/disable the LIS feature, press F4 TOOLS/Printer Setup/Serial Port Data Output. ▪ Numeric Key 3 Return to Previous Menu: To return to the Printer Type menu. ▪ Function Key F1 QUIT: to return to Main Menu.	



Serial Port Data Output: (Continued)	Prompt/Response:
Serial Port Data Output format is:	
▪ Date ▪ Time ▪ ID of Reading [(such as B(Blank), S(Standard))] ▪ %Abs (only in Multi-Point %Abs Mode) ▪ NOTE: Regarding Column 4, “%Abs”, this column will be blank if not a “%Abs” mode. The column will contain a number from 0 to 100 with no decimal places if the test mode is % Absorbance. ▪ Absorbance ▪ Result ▪ Flagging ▪ Patient Name ▪ Test Number ▪ Test Name	

2.4.3.5 Print on Demand Feature

Specific to Rate Mode, the print on demand feature allows the user to print an individual sample by pressing the More key while the internal and external printers are set to OFF in printer options [Tools Menu].



2.4.4 Diagnostics Menu

Diagnostics Menu:	Prompt/Response:
To access Diagnostics Menu from the Instrument Tools Menu, press:	Numeric Key 4
The screen will display: DIAGNOSTICS MENU 1 = Filter Voltages 2 = Filter Wheel Speed 3 = Usage Count 4 = Cell, Block Heat Calibration 5 = Current Vac, Temp, Waste Count 6 = Self Check 7 = Return to the TOOLS Menu Enter Menu Number: QUIT	DIAGNOSTICS MENU Enter Menu Number: A short description of each option follows below. Select the numeric key that corresponds with the option desired.
Summary: ▪ Numeric Key 1 Filter Voltages: Displays all filter voltages for the instrument. See 2.4.4.1. ▪ Numeric Key 2 Filter Wheel Speed: Displays the filter wheel speed in seconds per revolution. See 2.4.4.2. ▪ Numeric Key 3 Usage Count: Shows the number of “Blanks”, “Standards”, “Samples”, “Controls”, and the total of those items. See 2.4.4.3. ▪ Numeric Key 4 Cell, Block Heat Calibration: Enables cell temperature correction and heat block (optional item) temperature correction. See 2.4.4.4. ▪ Numeric Key 5 Current Vac, Temp, Waste Count: Displays the current “Vacuum”, “Heat Cell”, “Heat Block”, and “Waste” counts. See 2.4.4.5. ▪ Numeric Key 6 Self Check: The instrument continuously self-checks to insure proper operation. Any error will be immediately reported. The “Self-Check” feature provides additional tests. See 2.4.4.6. ▪ Numeric Key 7 Return to the TOOLS Menu: To return to the Instrument Tools Menu. ▪ Function Key 1 F1 QUIT: to return to Main Menu.	



2.4.4.1 Filter Voltages

Filter Voltages:	Prompt/Response:																																																						
To access Filter Voltages from the Diagnostics Menu, press:	Numeric Key 1																																																						
The screen will display: Where xx Secs is the time in seconds.	Lamp Warmup: xx Secs Calculating Filter Voltages																																																						
The screen will display all filter voltages for the instrument:																																																							
<table><tr><td>nm</td><td>Abs</td><td>Count</td><td>Volt</td><td>Pot</td></tr><tr><td>SP2</td><td>3.670</td><td>59384</td><td>0.002</td><td>32</td></tr><tr><td>340</td><td>0.080</td><td>1307</td><td>9.943</td><td>95</td></tr><tr><td>405</td><td>0.227</td><td>3679</td><td>7.069</td><td>79</td></tr><tr><td>505</td><td>0.194</td><td>3152</td><td>7.625</td><td>55</td></tr><tr><td>545</td><td>0.282</td><td>4572</td><td>6.217</td><td>79</td></tr><tr><td>580</td><td>0.326</td><td>5285</td><td>5.611</td><td>32</td></tr><tr><td>630</td><td>0.307</td><td>4975</td><td>5.867</td><td>40</td></tr><tr><td>SP1</td><td>3.625</td><td>58658</td><td>0.002</td><td>32</td></tr><tr><td colspan="5"><table><tr><td>QUIT</td><td></td><td>PRINT</td><td>OK</td></tr></table></td></tr></table>		nm	Abs	Count	Volt	Pot	SP2	3.670	59384	0.002	32	340	0.080	1307	9.943	95	405	0.227	3679	7.069	79	505	0.194	3152	7.625	55	545	0.282	4572	6.217	79	580	0.326	5285	5.611	32	630	0.307	4975	5.867	40	SP1	3.625	58658	0.002	32	<table><tr><td>QUIT</td><td></td><td>PRINT</td><td>OK</td></tr></table>					QUIT		PRINT	OK
nm	Abs	Count	Volt	Pot																																																			
SP2	3.670	59384	0.002	32																																																			
340	0.080	1307	9.943	95																																																			
405	0.227	3679	7.069	79																																																			
505	0.194	3152	7.625	55																																																			
545	0.282	4572	6.217	79																																																			
580	0.326	5285	5.611	32																																																			
630	0.307	4975	5.867	40																																																			
SP1	3.625	58658	0.002	32																																																			
<table><tr><td>QUIT</td><td></td><td>PRINT</td><td>OK</td></tr></table>					QUIT		PRINT	OK																																															
QUIT		PRINT	OK																																																				
Press:																																																							
Function Key 4 F4 OK: To return to the Diagnostics Menu																																																							
Function Key 3 F3 PRINT: To print the results																																																							
Function Key 1 F1 QUIT: To return to the Main Menu																																																							

2.4.4.2 Filter Wheel Speed

Filter Wheel Speed:	Prompt/Response:
To access Filter Wheel Speed from the Diagnostics Menu, press:	Numeric Key 2
The screen will display the filter wheel speed in seconds per revolution. Print result and return to Diagnostics Menu.	Wheel Speed x.xxx Secs/rev Press ENTER to print result and return
To return to the Main Menu, press:	Function Key 1 F1 QUIT



2.4.4.3 Usage Count

Usage Count:	Prompt/Response:
To access Usage Count from the Diagnostics Menu, press:	Numeric Key 3
The screen will display the number of blanks, standards, samples, controls, and the total of those items.	
Press: Function Key 4 F4 ENTER: To return to the Diagnostics Menu Function Key 3 F3 CLEAR: To reset all categories to zero Function Key 1 F1 QUIT: To return to the Main Menu	

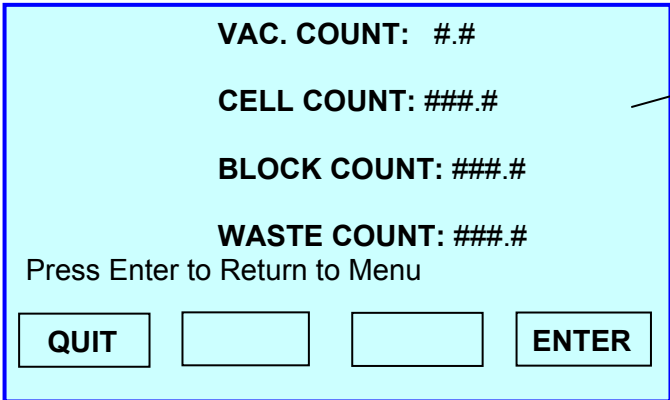
2.4.4.4 Cell, Block Heat Calibration

Cell, Block Heat Calibration:	Prompt/Response:
To access Cell, Block Heat Calibration from the Diagnostics Menu, press:	Numeric Key 4
The screen will display: HEATER MENU 1 = Cell Heat Calibration 2 = Block Heat Calibration 3 = Return to the Previous Menu Enter Menu Number: QUIT	HEATER MENU Enter Menu Number: Select the numeric key that corresponds with the option desired.



Cell, Block Heat Calibration: (Continued)	Prompt/Response:
For Cell Heat Calibration, press: Display will prompt: Type in cell temp correction, press:	Numeric Key 1 Cell Temp Correction = ENTER
For Block Heat Calibration, press: Display will prompt: Type in block temp correction, press:	Numeric Key 2 Block Temp Correction = ENTER
Press: Numeric Key 3 Return to Previous Menu: To return to the Diagnostics Menu Function Key 1 F1 QUIT: To return to Main Menu	

2.4.4.5 Current Vacuum, Temperature, Waste Count

Current Vacuum, Temperature, Waste Count:	Prompt/Response:
To access option Current Vac, Temp, Waste Count from the Diagnostics Menu, press:	Numeric Key 5
The screen will display:  where ## represents numbers	Current Vacuum, Heat Cell, Heat Block, and Waste Count Press Function Key 4 F4 ENTER to return to Diagnostics Menu
To return to the Main Menu, press:	Function Key 1 F1 QUIT



2.4.4.6 Self Check

Self Check:	Prompt/Response:										
To access Self Check from the Diagnostics Menu, press: NOTE: Remove the Flowcell or tubes to use this function.	Numeric Key 6										
The screen will display: Lamp Warmup: xx Secs QUIT ENTER where xx represents Seconds	Lamp Warmup: xx Secs										
The screen will display: System Diagnostics: <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 60%;">EEPROM</td><td>OK</td></tr> <tr> <td>NV RAM</td><td>OK</td></tr> <tr> <td>Vacuum System</td><td>OK</td></tr> <tr> <td>Aspiration Valve</td><td>OK</td></tr> <tr> <td>Photometer</td><td>OK</td></tr> </tbody> </table> QUIT REPEAT ENTER	EEPROM	OK	NV RAM	OK	Vacuum System	OK	Aspiration Valve	OK	Photometer	OK	The EEPROM, NV RAM, Vacuum System, Aspiration Valve, and Photometer are all checked. Test results will be reported on the display and printer. An error will be immediately reported on the display and the printout. For more information on error messages, see Section 6 Troubleshooting.
EEPROM	OK										
NV RAM	OK										
Vacuum System	OK										
Aspiration Valve	OK										
Photometer	OK										
To return to the Main Menu, press:	Function Key 1 (F1) QUIT										



2.4.5 General Configuration

General Configuration:	Prompt/Response:
To access General Configuration Menu from the Instrument Tools Menu, press:	Numeric Key 5
The screen will display: GENERAL CONFIGURATION 1 = Set Date and Time 2 = Laboratory Name Option 3 = Sample/Reagent Vol. Option 4 = Cell & Block Heat Control 5 = Custom Unit Setup 6 = Return to the TOOLS Menu Enter Menu Number: QUIT	GENERAL CONFIGURATION Enter Menu Number: A short description of each option follows below. Select the numeric key that corresponds with the option desired.
Summary: ▪ Numeric Key 1 Set Date and Time: Display will prompt to choose Date Format. See 2.4.5.1. ▪ Numeric Key 2 Laboratory Name Option: Allows user to enter a specific laboratory name. See 2.4.5.2. ▪ Numeric Key 3 Sample/Reagent Vol. Option: Allows user to enter a reagent and sample volume when programming a test when this feature is enabled. The values are stored with the test and printed during recall. This feature remains active until disabled. See 2.4.5.3. ▪ Numeric Key 4 Cell & Block Heat Control: Enables cell temperature control and heat block (optional item) temperature control. See 2.4.5.4. ▪ Numeric Key 5 Custom Unit Setup: Allows user to enter or delete a custom unit. See 2.4.5.5. ▪ Numeric Key 6 Return to the TOOLS Menu: To return to the Instrument Tools Menu. ▪ Function Key 1 F1 QUIT: to return to Main Menu.	



2.4.5.1 Set Date and Time

Set Date and Time:	Prompt/Response:
To access Set Date and Time from the General Configuration Menu, press:	Numeric Key 1
The display will prompt: Select a Date Format: 0 = MM/DD/YY 1 = DD.MM.YY QUIT CLEAR ENTER NOTE: If using a Chinese instrument, the date format is fixed at YY.MM.DD.	Select a Date Format: 0 = MM/DD/YY 1 = DD.MM.YY
For MM/DD/YY date format, press:	Numeric Key 0 Press Enter
For Eurodate format DD.MM.YY, press: NOTE: Remember to separate entries with a decimal point before pressing Enter.	Numeric Key 1 Press Enter
Press: Numeric Key 3 CLEAR: To clear the entry. Function Key F1 QUIT: To return to Main Menu.	
The display will prompt: Enter Date as: QUIT CLEAR ENTER	Enter Date as: The date format will display based on option chosen above.



Set Date and Time: (Continued)	Prompt/Response:
The display will prompt: Enter Time as: HH.MM.SS QUIT CLEAR ENTER	Enter Time as: HH.MM.SS Where HH equals Hours, MM equals Minutes, SS equals Seconds. Enter time remembering to insert decimals as separators. Press ENTER.
Press: Function Key 1 F1 QUIT to return to the Main Menu. Function Key 4 F4 ENTER to return to the General Configurations Menu.	

2.4.5.2 Laboratory Name Options

Laboratory Name Options:	Prompt/Response:
To access Laboratory Name Options from the General Configuration Menu, press:	Numeric Key 2
The display will prompt: LABORATORY NAME: 1 = Enter Laboratory Name 2 = Delete Laboratory Name 3 = Return to Previous Menu Enter Menu Number: QUIT 	LABORATORY NAME: Enter Menu Number: Select the numeric key that corresponds with the option desired.
To enter laboratory name, press:	Numeric Key 1



Laboratory Name Options: (Continued)	Prompt/Response:
The display will prompt: Enter Your Laboratory Name: CHARACTER SELECTION: ABCDEFGHIJKLMNOPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#\$%&()*+,-./0123456789: ;=<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK	Enter Your Laboratory Name: <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN Refer to <i>Section 3.1.6 Entering Names</i>
To delete laboratory name, press:	Numeric Key 2
To return to the previous menu, press:	Numeric Key 3



2.4.5.3 Sample/Reagent Volume Option

Sample/Reagent Volume Option:	Prompt/Response:
To access Laboratory Name Options from the General Configuration Menu, press:	Numeric Key 3
The display will prompt: When programming a test, the User will be prompted for a Reagent and a Sample Volume. These values will be stored with the test and printed during recall. Enable this Feature? QUIT NO YES	Enable this Feature? NOTE: This feature remains active until turned off.
Press: Function Key F4 YES Enable: Enables this feature to prompt user for a reagent and sample volume when programming a test. Function Key F3 NO Disable: Disables this feature. Function Key F1 QUIT: To return to the Main Menu.	

2.4.5.4 Cell & Block Heat Control

NOTE: Allow at least 15 minutes for the instrument to equilibrate after enabling or disabling cell or block temperature control. When installing a room-temperature cuvette or the flowcell to an instrument that has already reached temperature equilibration, allow at least 5 minutes for the cuvette or the flowcell to equilibrate after insertion.

Cell & Block Heat Control:	Prompt/Response:
To access Cell & Block Heat Control from the General Configuration Menu, press:	Numeric Key 4
The display will prompt: TEMPERATURE CONTROL: 1 = Cell Temperature Control 2 = External Block Temp. Control 3 = Return to Previous Menu Enter Menu Number: QUIT	TEMPERATURE CONTROL: Enter Menu Number: Select the numeric key that corresponds with the option desired.
For Cell Temperature Control, press:	Numeric Key 1 Cell Temperature Control
Screen will display: Cell Temperature Control: Heat / Cool Display Temperature Setting ON OFF ON OFF 25 30 37 C Enable Menu Number: ON/OFF DISPLAY TEMP OK	Cell Temperature Control: The current STATUS is highlighted (ON or OFF). NOTE: Temperature settings 25 and 30 are only displayed if the Peltier option is available.

Cell & Block Heat Control: (Continued)	Prompt/Response:
--	------------------



Press: ▪ Function Key F1 ON/OFF: Toggle ON to enable the cell holder or read well temperature to be set at 37° C. Toggle OFF to leave the cell holder at ambient temperature. NOTE: Even with temperature control disabled, the ambient temperature of the cell is somewhat higher than room temperature. ▪ Function Key F2 DISPLAY: With cell temperature ON, allows user to display the temperature on the instrument. ▪ Function Key F3 TEMP: Allows user to select temperature setting. ▪ Function Key F4 OK: To return to the Temperature Control menu.	
To access Cell & Block Heat Control from the General Configuration Menu, press:	Numeric Key 4
The display will prompt: TEMPERATURE CONTROL: 1 = Cell Temperature Control 2 = External Block Temp. Control 3 = Return to Previous Menu Enter Menu Number: QUIT	TEMPERATURE CONTROL: Enter Menu Number: Select the numeric key that corresponds with the option desired.
For External Block Temperature Control (available as an optional accessory), press:	Numeric Key 2 External Block Temperature Control



Cell & Block Heat Control: (Continued)	Prompt/Response:
Screen will display: External Block Temperature Control: Heat Display Temperature Setting ON ON OFF OFF 37 C Enter Menu Number: ON/OFF DISPLAY OK	External Block Temperature Control: The current STATUS is highlighted (ON or OFF).
Press: Function Key F1 ON/OFF: Toggle ON to enable the cell holder or read well temperature to be set at 37° C. Toggle OFF to leave the cell holder at ambient temperature. NOTE: Even with temperature control disabled, the ambient temperature of the cell is somewhat higher than room temperature. Function Key F2 DISPLAY: With cell temperature ON, allows user to display the temperature on the instrument. Function Key F4 OK: To return to the Temperature Control menu.	



2.4.5.5 Custom Unit Setup

NOTE: If a Custom Unit has been entered previously, entering a new one will overwrite it. The Custom Unit appears as the last one in the list when the “Select Unit” screen is displayed during programming of a Calculation Mode.

Custom Unit Setup:	Prompt/Response:
To access Custom Unit Setup from the General Configuration Menu, press:	Numeric Key 5
The display will prompt: CUSTOM UNIT SETUP: 1 = Enter Custom Unit 2 = Delete Custom Unit 3 = Return to Previous Menu Enter Menu Number: QUIT	CUSTOM UNIT SETUP: Enter Menu Number: Select the numeric key that corresponds with the option desired.
For option Enter Custom Unit, press:	Numeric Key 1
Screen will display: Enter Custom Unit (6 Chars Max): CHARACTER SELECTION: ABCDEFGHIJKLMNOPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#\$%&()*+,-./0123456789: ;<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK Use the numeric keys to move the cursor to create the alpha/numeric custom unit name. One character at a time, use F3 to select the alpha/numeric characters. Press F4 OK when finished.	Enter Custom Unit (6 Chars Max): <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN



Custom Unit Setup: (Continued)	Prompt/Response:
Refer to Section 3.1.6 Entering Names	
Press: ▪ Numeric Key 2 Delete Custom Unit: To delete the custom unit. ▪ Numeric Key 3 Return to Previous Menu: To return to the General Configuration Menu. ▪ Function Key F1 QUIT: To return to the Main Menu.	



3. OPERATING PROCEDURES

3.1 General Selections

3.1.1 External Ports

An external printer may be connected to the parallel port on the rear of the unit. Use any IBM® compatible printer and standard parallel cable with the parallel port. The serial port on the *Stat Fax*® 3300 is “Multi-Directional” (transmits and receives data).

The receiving device may stop the transmission from the instrument momentarily. It will resume automatically when the receiving device is ready. Refer to Section 6 Troubleshooting if any error messages occur.

3.1.2 Serial Port

To connect a computer with a serial port to the instrument, use a standard RS232 Cable (Null Modem Serial Cable). The data format is 9600 baud, 8 bits, 1 stop bit, and no parity. Contact your distributor to obtain a serial printer cable.

3.1.3 PC Connection

The serial port pinout is configured to allow direct connection to a PC. To view the output on a PC use a program such as HyperTerminal® once the communications protocol in the program has been set to the *Stat Fax*® 3300 data format.

3 TD (TRANSMIT DATA output)

5 GND (SIGNAL GROUND)

8 CTS (CLEAR TO SEND input)

3.1.4 External Keyboard

The *Stat Fax*® 3300 can also be operated using an external keyboard (optional) attached to the port on the rear panel.

The lamp, line feed, form feed and Enter key functions may be executed via the external keyboard as shown below:

Function Key	Description
F9	LAMP
F10	LINE FEED
F11	FORM FEED
F12	ENTER

NOTE: The instrument keypad will be overridden in the event of a keypad key sticking. The instrument will emit a series of beeps and the external keyboard (optional) will be enabled.



3.1.5 Units of Measurement

In all modes except “Absorbance Mode”, the option of selecting units of measurement is given. Units are provided to label the calculated concentrations, but have no bearing on the actual calculation.

The display shows the “Available Units / Enter Unit Code” screen. Press the numeric key that corresponds to the choice and **ENTER**. The units selected must be confirmed.

To leave units blank, use Unit #14.

NOTE: Unit #14 will only be blank if custom units were not created. (Refer to Item 5 Custom Unit Setup in **Section 2.4.5 General Configuration**.)

3.1.6 Entering Names

The following explains Keypad Entry and External Keyboard Entry:

Keypad Entry:

The keypad menu screen will appear when the opportunity to enter a “name” arises such as for tests, controls, patients, and the laboratory:

Cursor
positioned
under the
capital letter
“A”

CHARACTER SELECTION:
ABCDEFGHIJKLMNOPQRSTUVWXYZ
▲
abcdefghijklmnopqrstuvwxyz
!"#\$%&()*+,-./0123456789:
;<=>?@[]^_

TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN

QUIT

BACK SP.

SELECT

OK

The “cursor” displays on the screen as a small triangle (shown above positioned under the capital letter “A” on the top line).

Use the numeric keys to move the cursor to create the alpha/numeric name.



Keypad Entry: (Continued)

Function key attributes:

F1 QUIT

F2 BACK SPACE

F3 SELECT

F4 OK

Numeric key attributes:

Numeric 4 key MOVE CURSOR LEFT

Numeric 6 key MOVE CURSOR RIGHT

Numeric 2 key MOVE CURSOR UP

Numeric 8 key MOVE CURSOR DOWN

To move the cursor left, press and hold numeric key 4 on the keypad.

Press and hold numeric key 6 and the cursor will move to the right.

To move the cursor up, press and hold numeric key 2.

Press and hold numeric key 8 and the cursor moves down.

One character at a time, use function key F3 to select the alpha/numeric characters.

Use
numeric
keys for
positioning
cursor.

Use
function
keys to
select,
accept, or
delete a
character.

CHARACTER SELECTION:
ABCDEFGHIJKLMNOPQRSTUVWXYZ
▲
abcdefghijklmnopqrstuvwxyz
!"#\$%&()*+,-./0123456789:
;<=>?@[]^_

TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN

QUIT

BACK SP.

SELECT

OK

Press:

Function Key 4 OK: Press OK when finished.

Function Key 3 SELECT: To select one alpha/numeric character at a time.

Function Key 2 BACK SP.: To remove a character from the entry.

Function Key 1 QUIT: To cancel and return to the main prompt.



External Keyboard Entry:

The keypad menu screen will not appear if the External Keyboard is active.

NOTE: Instant Patient ID - When running a test, a Patient # (or name, if using External Keyboard) can be entered just before the patient's Sample is read. The corresponding results will be saved referencing this Patient ID.

3.1.7 Ranges and Controls

In all modes except "Absorbance Mode", the user has the option of entering ranges and/or controls.

3.1.7.1 Setup Ranges

Setup Ranges:	Prompt/Response:
At the Results Parameters Menu the display will prompt: RESULT PARAMETERS 1 = Setup Ranges 2 = Setup Controls 3 = Setup is Complete Enter Menu Number: QUIT To select Setup Ranges, press:	Enter Menu Number: Select the numeric key that corresponds with the option desired. Numeric Key 1 Set Up Ranges



Setup Ranges: (Continued) If applicable, enter the range values as prompted: RANGES: Blank Abs. Normal Range Linear Range MIN: MAX: Low Normal Limit = QUIT → CLEAR ENTER COMPLETE	Prompt/Response: Minimum Blank Abs = Maximum Blank Abs = Low Normal Range = High Normal Range = Low Linearity Range = High Linearity Range = Press Enter to accept value, otherwise use Enter to skip a value field.
RANGES: Blank Abs. Normal Range Linear Range MIN: 25.0 MAX: 65.0 45.0 55.0 COMPLETE Press Enter to Save QUIT → CLEAR ENTER To save all values, press:	When Setup Ranges is finished, COMPLETE appears highlighted in the lower corner of the display screen. Press Enter to Save
Press: Function Key F4 ENTER to skip over a value field, or accept an entry. Function Key F3 CLEAR to erase a value before pressing the enter key. Function Key F2 ARROW to move to any of the range fields.	



Setup Ranges: (Continued)	Prompt/Response:
When the instrument takes a reading that is not within the "Normal" or "Linear" Range, one of the following will appear as a "FLAG" at the right of the concentration on both the Display and the Printer. If the concentration is within the "Normal" range, there will be no flag. NOTE: To view the "SD" and "%CV" data for the Rate Modes, the user must enter a maximum "SD" value in the "Set Ranges" segment of the test setup. After each sample, the user may press the "MORE" key to view the interval results and the "SD" and "%CV" data.	LOW The concentration is lower than the "Minimum" value of the Normal range, but within the Linear range. HIGH The concentration is higher than the "Maximum" value of the Normal range, but within the Linear range. OUT The concentration is outside the Linear range.



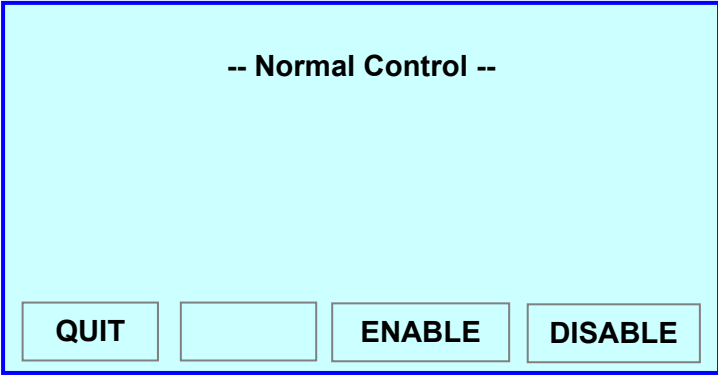
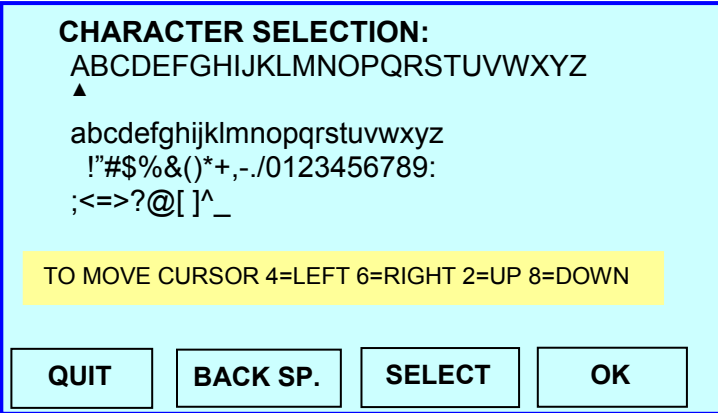
3.1.7.2 Setup Controls

Controls are designated samples with specified concentration ranges that provide a reference for comparison.

Up to three Controls per test can be entered and named.

Setup Controls:	Prompt/Response:
At the Result Parameters Menu, the display will prompt: RESULT PARAMETERS 1 = Setup Ranges 2 = Setup Controls 3 = Setup is Complete Enter Menu Number: QUIT To setup controls, press:	Enter Menu Number: Numeric Key 2 Set Up Controls
The display will display the Control Selection Menu and prompt: CONTROL SELECTION 1 = Normal Control 2 = Abnormal Control 3 = Other Control 4 = Save All Changes, Return Enter Menu Number: QUIT	CONTROL SELECTION Enter Menu Number: Select the numeric key that corresponds with the option desired.
NOTE: The information and screen prompts shown in this section, Setup Controls, apply to each option shown on the Control Selection menu.	



Setup Controls: (Continued)	Prompt/Response:
To access the Normal Control option on the Control Selection Menu, press:	Numeric Key 1 Normal Control
The screen will display: 	Normal Control
To enable normal control, press:	Function Key 3 ENABLE
The display will prompt:  Use the numeric keys to move the cursor to create the alpha/numeric normal control name. One character at a time, use F3 to select the alpha/numeric characters. Press F4 OK when finished.	Enter Normal Control Name: <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN



Setup Controls: (Continued)	Prompt/Response:
The display will prompt: CHARACTER SELECTION: ABCDEFGHIJKLMNOPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#%&()*+,-./0123456789: ;<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK Use the numeric keys to move the cursor to create the alpha/numeric normal control name. One character at a time, use F3 to select the alpha/numeric characters. Press F4 OK when finished.	Enter Normal Control Lot Number: <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN
The display will prompt: -- Normal Control -- Enter Control Expiration Date: Use Format MM.YY QUIT CLEAR ENTER	Enter Control Expiration Date: Use Format MM.YY
Use the keypad or keyboard to enter the expiration date in the MM.YY format. When finished, press:	For example, for expiration date September 2007, enter 09.07 F4 ENTER



Setup Controls: (Continued)	Prompt/Response:
The display will prompt: -- Normal Control -- Choose a Reaction for a FAILED Control 1 = Warn, Save to Q.C., Continue 2 = Warn, Do Not Save to Q.C. Continue W/No Interp. & Saving 3 = Warn, Do Not Save, End Test 4 = Warn, Never Saves Ctrl Data Enter Menu Number: QUIT	Choose a Reaction for a FAILED Control Enter Menu Number: Select the numeric key that corresponds with the option desired. The display will return to the Control Selection Menu.
Select another control from the Control Selection Menu CONTROL SELECTION 1 = Normal Control 2 = Abnormal Control 3 = Other Control 4 = Save All Changes, Return Enter Menu Number: QUIT	NOTE: The information and screen prompts shown in this section, Setup Controls, apply to each option shown on the Control Selection menu.
To save all changes and return to the Result Parameters Menu, press:	Numeric Key 4 Save All Changes, Return
Control results can be saved (see Section 2.4.1.2 Control Data Menu) and used later to generate a Levey-Jennings report (refer to Section 3.1.12 Report).	



Setup Controls: (Continued)	Prompt/Response:
At the Result Parameters Menu, the display will prompt: RESULT PARAMETERS 1 = Setup Ranges 2 = Setup Controls 3 = Setup is Complete Enter Menu Number: QUIT	Enter Menu Number: Select the numeric key that corresponds with the option desired.
When finished, select Setup is Complete, press: NOTE: During the test, a Controls button will display allowing the user the opportunity to initiate the next sample to be one of the predefined controls.	Numeric Key 3 Setup is Complete
To return to the Main Menu, press:	Function Key 1 QUIT)

3.1.8 Blanking

By pressing the **BLANK** key, blanking can be done anytime and as many times as the user chooses.

The blank absorbance that is printed is relative to air when in Tube Mode. In Flowcell Mode, it is relative to the stored water values. The user should evaluate the suitability of the blank before using it.

Blanking:	Prompt/Response:
Each time a mode is selected or a test is recalled (optional) the instrument prompts:	Read the Blank
Insert a tube containing blank material, or sample the blank material using the Flowcell.	
The absorbance of the blank will print with a 'B' in place of the sample number.	
NOTE: In "Rate Mode" the value of the blank is not printed. To re-blank the instrument without re-selecting the mode, press:	BLANK



3.1.9 Reading Samples

Procedures for reading samples with tubes or cuvettes, and using the Flowcell follow.

3.1.9.1 Using Tubes or Cuvettes

Using Tubes or Cuvettes:	Prompt/Response:
The display will prompt:	Read Blank or Read Sample
Insert the tube or cuvette into the read well.	
The instrument takes the reading, and displays and prints the result.	
After the result is displayed, the tube may be removed.	
The instrument prompts to insert the next tube.	

3.1.9.2 Using the Flowcell

Using the Flowcell:	Prompt/Response:
When the ready indicator light is on, the screen display will prompt::	Read Blank or Read Sample
Hold the container with the fluid to be sampled so that the sample tube is below the fluid surface.	
Do not allow the sample tube to lie against the bottom of the container.	
Activate the sample sensor.	The instrument will sample the preset amount.
The screen will display:	READING
Remove the sample container from the sample tube.	
When the reading is complete the Sample will be automatically purged from the Flowcell and drawn into the Waste Bottle at the rear of the instrument.	
If the Waste bottle becomes full while running a test in Flowcell Mode, the instrument will display the warning:	WASTE IS FULL!!!



Using the Flowcell: (Continued)	Prompt/Response:
After approximately five aspirations, a continuous beeping sound will be emitted, and a new warning will be displayed:	EMPTY WASTE - PRESS ENTER TO GET SAMPLE
The pump will turn off, and the message will continue to display until the Enter key is pressed. Empty Waste bottle and press Enter.	Press ENTER
The instrument is ready for the next sample when the indicator lights on the keypad:	READY
A Standby button is available for use at any time, while in Flowcell Mode. This option pauses the aspiration vacuum allowing the Waste bottle to be emptied without exiting the test. Select Function Key F2 MORE, and then select Function Key F3 Standby.	STANDBY



3.1.10 Bichromatic Operation (Differential Filter)

The instrument allows the user to read bichromatically with no increase in read time.

- Bichromatic readings should be performed whenever possible, especially in Rate Mode. The absorbance at the differential wavelength is subtracted from the absorbance at the primary wavelength.
- Differential (bichromatic) reading is recommended. Precision is significantly improved by removing the effect of optical imperfections and non-uniform wall thickness when using disposable plastic cuvettes or glass tubes.
- In order to preserve sensitivity, it is important to choose a differential wavelength for which the chromophore being assayed exhibits minimal absorbance.

WAVELENGTH	CHROMOPHORE
340	UV
405	Purple
505	Blue Green
545	Emerald Green
580	Yellow
630	Red

To test a chromophore, read a darkly colored solution in the absorbance mode at the operating wavelength with no differential filter, and again at the operating wavelength with the differential filter selection.

If the two absorbance readings are within 10% of each other, then bichromatic differential reading is beneficial. If the difference between the absorbance readings with and without a differential wavelength is greater than 25%, then the chromophore is absorbing at or near the differential wavelength and bichromatic reading at this wavelength is probably not desirable.



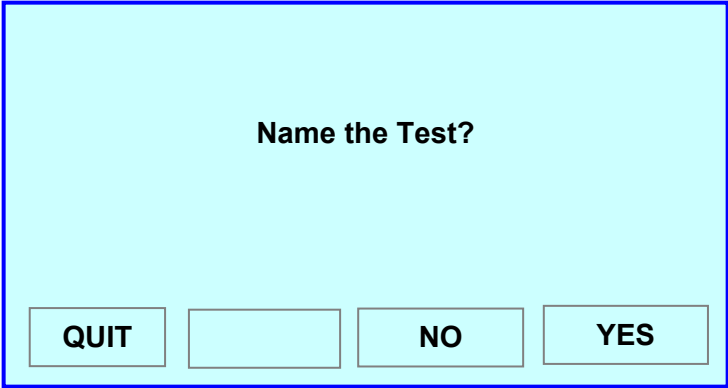
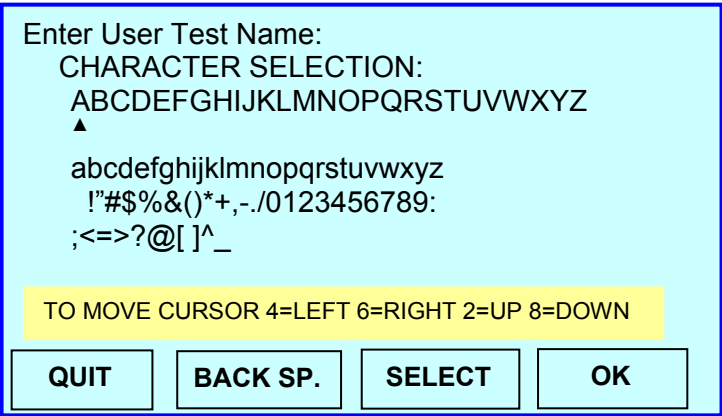
If a bichromatic wavelength is not selected, exercise every measure to enhance repeatability. Choose a better quality reading vessel and wipe fingerprints from each tube before reading. Mark each tube for uniform orientation when multiple readings are desired. Determine the acceptability of the precision by reading the same tube several times and observing the variation of the readings. Depending on the precision requirements of the assay, monochromatic reading may or may not be acceptable with certain plastic tubes.

- √ Wipe any dust, moisture, or fingerprints from the tubes before using.
- √ Do not read tubes that contain bubbles or condensation.
- √ Use a blank material with absorbance of less than 0.400A.
- √ Use the same type and size of tube for the blank and samples.

3.1.11 Saving Tests

Saving Tests:	Prompt/Response:
During programming of a test, the user will be prompted to save and name the test. When a test is saved, it will always be saved as the next available number - 1, 2, 3, 4, etc.	
The display will prompt: Save the Test? QUIT NO YES	SAVE THE TEST?



Saving Tests: (Continued)	Prompt/Response:
If YES, the display will prompt: 	NAME THE TEST?
The display will prompt:  Use the numeric keys to move the cursor to create the alpha/numeric user test name. One character at a time, use F3 to select the alpha/numeric characters. Press F4 OK when finished.	Enter User Test Name: <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN
The screen will display the test number and test name:	Saving Test #



3.1.12 Reports

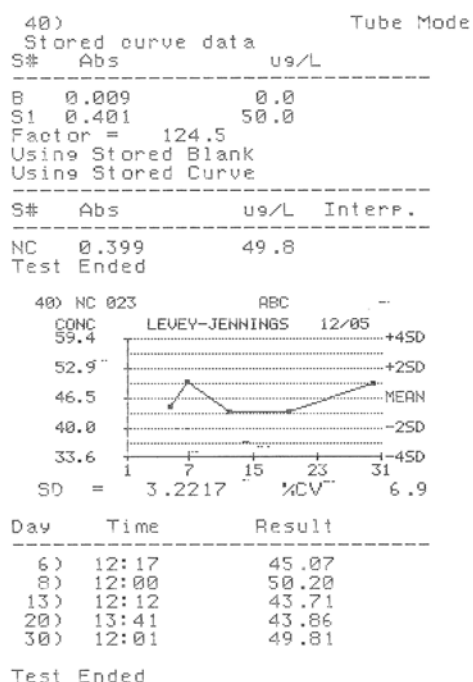
The instrument provides reports to the internal and/or external printer, showing the stored patient data, an interpretation along with logged information, such as: the test name, date and time, and space for laboratory information.

Patient data is stored and retrieved by “Patient Name” with room provided for 512 results. See **Section 2.4.1 Stored Data Utilities** for more information.

Using new or stored control values the **Stat Fax® 3300** creates Levey-Jennings plots for quality control. A separate chart for each test and for each lot, with up to 31 points on a graph can be created. When a shift in the value occurs due to a new lot it is explained on the chart, as new SDs are calculated from that point forward.

See Section 2.4.1.2 Control Data Menu for the following information:

- Modify the stored control setup associated with a selected stored user test.
- Delete all of the stored controls in the instrument.
- Delete controls associated with a test and lot number the user selects.
- Print the controls associated with a stored test number the user selects.
- Print a Levey-Jennings Report. Select the test to use as well as the type of controls such as Normal, Abnormal, or Other. The instrument will prompt the user to enter "Which Month.Year?" Enter the MM.YY of the "stored" date. If the search does not result in finding the date and year entered, the instrument will emit a series of beeps, display and print "No Stored Controls matched the criteria".



Sample Levey-Jennings printout

NOTES:



4. CALCULATION PROGRAMS

4.1 Absorbance Mode

In **Absorbance Mode**, the instrument reads and prints sample absorbances at selected wavelengths. The instrument prints the date and time and the mode of operation.

Absorbance Mode Menu:	Prompt/Response:
Press Function Key 2 Program to access Mode Menu:	F2 PROGRAM
RUN TEST: Run a Stored User Test PROGRAM: Create/Run a New User Test WORKLIST: Modify the Patient Worklist TOOLS: Instrument Utilities RUN TESTPROGRAMWORKLISTTOOLS F2	
The screen will display:	Enter Menu Number: Press Numeric Key 1 for Absorbance Mode
MODE MENU 1 = Absorbance Mode 2 = Single Standard Mode 3 = Factor Mode 4 = Multi-Point Mode 5 = Rate Mode 6 = Index Mode Enter Menu Number: QUIT	



Absorbance Mode Menu: (Continued)	Prompt/Response:
The screen will display::	SELECT FILTERS
SELECT FILTERS PRIMARY FILTER 1 = 340 2 = 405 3 = 505 4 = 545 5 = 580 6 = 630 DIFFERENTIAL FILTER 1 = 340 2 = 405 3 = 505 4 = 545 5 = 580 6 = 630 0 = NO DIFFERENTIAL QUIT ENTER	Use the numeric keys to select the desired wavelengths, press Enter. Refer to Section 3.1.10 Bichromatic Operation for details.
The display will prompt: Save the Test? QUIT NO YES	SAVE THE TEST? Refer to Section 3.1.11 Saving Tests.
Press: Function Key 4 YES to save the test and continue. Function Key 3 NO to continue without saving test. Function Key 1 QUIT and return to the Main Menu.	



Absorbance Mode Menu: (Continued)	Prompt/Response:
If YES, the display will prompt: Name the Test? QUIT NO YES	NAME THE TEST?
Press: Function Key 4 YES to name the test and continue. Function Key 3 NO to continue without naming test. Function Key 1 QUIT and return to the Main Menu.	
If YES, the display will prompt: Enter User Test Name: CHARACTER SELECTION: ABCDEFGHIJKLMN OPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#\$%&()*+,-./0123456789: ;=<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK Use the numeric keys to move the cursor to create the alpha/numeric user test name. One character at a time, use F3 to select the alpha/numeric characters. Press F4 OK when finished.	Enter User Test Name: <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN



Absorbance Mode Menu: (Continued)	Prompt/Response:
If YES, the display will prompt: Absorbance Mode Read the Blank QUIT 	Read the Blank
NOTE: In Tube Mode, the instrument takes an air reference reading. If Flowcell is active, the instrument references the stored water blank.	
Insert the blank tube or sample the blank material. When finished reading, remove the tube or sample material. To re-blank at any point, press:	See Section 3.1.8 Blanking for details Function Key F4 BLANK
The display will prompt: Absorbance Mode Read Sample 1 QUIT 	Read Sample 1 Read the sample and repeat as necessary. Refer to Section 3.1.9 Reading Samples.
Press Function Key 1 QUIT to exit Absorbance Mode and return to the main prompt. The instrument prints "Test Ended" and returns to the Main Menu screen.	



4.2 Single Standard Mode

In Single Standard Mode, the instrument reads and prints absorbance values, and calculates concentrations based on a standard material of known concentration. Results are calculated according to Beer's Law. The calibration factor is printed for future use.

Single Standard Mode Menu:	Prompt/Response:
Press Function Key 2 Program to access Mode Menu:	F2 PROGRAM
RUN TEST: Run a Stored User Test PROGRAM: Create/Run a New User Test WORKLIST: Modify the Patient Worklist TOOLS: Instrument Utilities RUN TESTPROGRAMWORKLISTTOOLS F2	
The screen will display:	Enter Menu Number: Press Numeric Key 2 for Single Standard Mode
MODE MENU 1 = Absorbance Mode 2 = Single Standard Mode 3 = Factor Mode 4 = Multi-Point Mode 5 = Rate Mode 6 = Index Mode Enter Menu Number: QUIT	



Single Standard Mode Menu: (Continued)	Prompt/Response:
The display will prompt: Standard Mode Differential Samples? QUIT NO YES	Differential Samples?
Press: Function Key 4 YES to use differential samples. Each sample will have its own Blank. The instrument will prompt for the Blank preceding each Sample. Function Key 3 NO to continue without using differential samples. Function Key 1 QUIT and return to the Main Menu.	
The display will prompt: SELECT FILTERS PRIMARY FILTER 1 = 340 2 = 405 3 = 505 4 = 545 5 = 580 6 = 630 DIFFERENTIAL FILTER 1 = 340 2 = 405 3 = 505 4 = 545 5 = 580 6 = 630 0 = NO DIFFERENTIAL QUIT ENTER	Use the numeric keys to select the desired wavelengths, press Enter. Refer to Section 3.1.10 Bichromatic Operation for details.



Single Standard Mode Menu: (Continued)	Prompt/Response:
The display will prompt: Standard Mode Enter Standard #1 Value: QUIT CLEAR ENTER	Enter Standard #1 Value: Enter the value of the standard (or calibrator) and press ENTER. NOTE: The instrument will not accept a factor that is up to seven digits, and there can be up to two decimal places.
Press: Function Key 3 CLEAR to clear an error and re-enter the value. Function Key 1 QUIT and return to the Main Menu.	
The display will prompt: AVAILABLE UNITS 0) Conc 3) mg/dL 6) U/L 9) mcmo/L 12) umol/L 1) g/L 4) ug/L 7) meg/dL 10) IU/mL 13) mol/L 2) g/dL 5) ug/dL 8) mmol/L 11) ukat/L 14) Enter Unit Code: QUIT MORE CLEAR ENTER	Enter Unit Code: Enter the Unit Code 0 – 17 and press ENTER. See Section 3.1.5 Units of Measurement for details.



Single Standard Mode Menu: (Continued)	Prompt/Response:																			
Press: Function Key 4 ENTER to accept the value. Function Key 3 CLEAR to clear an error and re-enter the value. Function Key 2 MORE to display Units 15, 16 and 17. Function Key 1 QUIT and return to the Main Menu.																				
The screen will display: AVAILABLE UNITS <table><tr><td>0) Conc</td><td>1) g/L</td><td>2) g/dL</td></tr><tr><td>3) mg/dL</td><td>4) ug/L</td><td>5) ug/dL</td></tr><tr><td>6) U/L</td><td>7) meg/dL</td><td>8) mmol/L</td></tr><tr><td>9) mcmo/L</td><td>10) IU/mL</td><td>11) ukat/L</td></tr><tr><td>12) umol/L</td><td>13) mol/L</td><td>14)</td></tr></table> Unit Selected = xx ACCEPT? x <table><tr><td>QUIT</td><td></td><td>NO</td><td>YES</td></tr></table> where X equals the selected entry.	0) Conc	1) g/L	2) g/dL	3) mg/dL	4) ug/L	5) ug/dL	6) U/L	7) meg/dL	8) mmol/L	9) mcmo/L	10) IU/mL	11) ukat/L	12) umol/L	13) mol/L	14)	QUIT		NO	YES	Unit Selected = xx ACCEPT? x
0) Conc	1) g/L	2) g/dL																		
3) mg/dL	4) ug/L	5) ug/dL																		
6) U/L	7) meg/dL	8) mmol/L																		
9) mcmo/L	10) IU/mL	11) ukat/L																		
12) umol/L	13) mol/L	14)																		
QUIT		NO	YES																	
Press: Function Key 3 NO to clear and re-enter a value. Function Key 4 YES to accept selected unit. Function Key 1 QUIT and return to the Main Menu.																				



Single Standard Mode Menu: (Continued)	Prompt/Response:
The display will prompt: RESULT PARAMETERS 1 = Setup Ranges 2 = Setup Controls 3 = Setup is Complete Enter Menu Number: QUIT	Result Parameters Enter Menu Number: Use the numeric keys to select the desired result parameters, press Enter. See Section 3.1.7 Ranges and Controls for more on this option.
The display will prompt: Save the Test? QUIT NO YES	SAVE THE TEST? Refer to Section 3.1.11 Saving Tests.
Press: Function Key 4 YES to save the test and continue. Function Key 3 NO to continue without saving test. Function Key 1 QUIT and return to the Main Menu.	



Single Standard Mode Menu: (Continued)	Prompt/Response:
If YES, the display will prompt: Name the Test ? QUIT NO YES	NAME THE TEST?
Press: Function Key 4 YES to save the test and continue. Function Key 3 NO to continue without saving test. Function Key 1 QUIT and return to the Main Menu.	
If YES, the display will prompt: Enter User Test Name: CHARACTER SELECTION: ABCDEFGHIJKLMNOPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#\$%&()*+,-./0123456789: ;<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK Use the numeric keys to move the cursor to create the alpha/numeric user test name. One character at a time, use F3 to select the alpha/numeric characters. Press F4 OK when finished.	Enter User Test Name: <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN

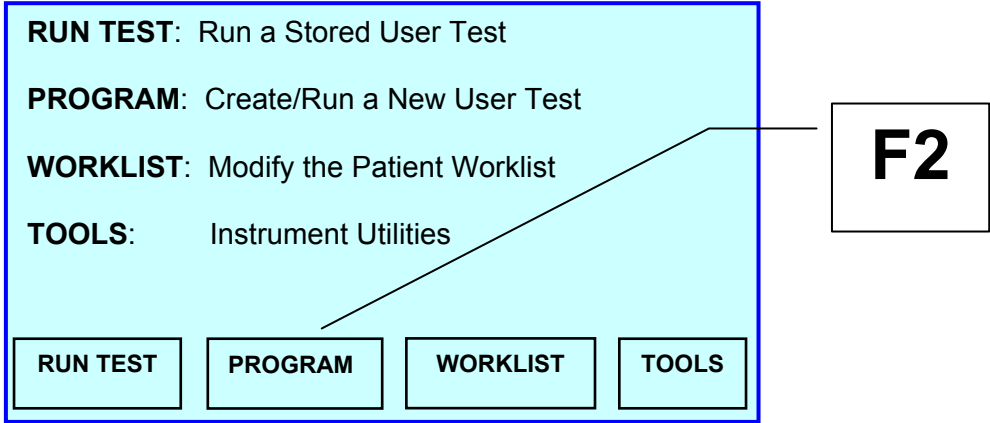
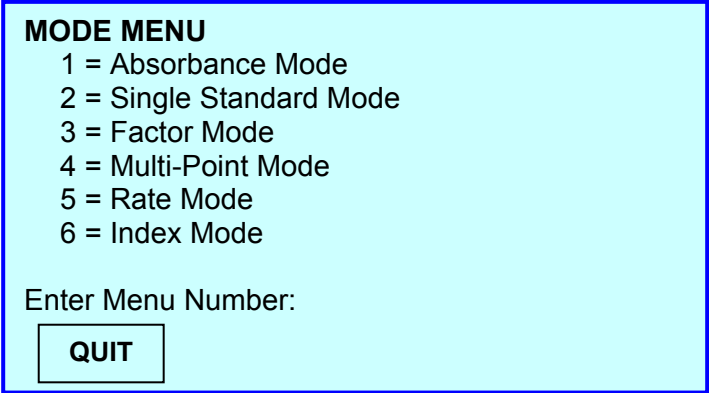


Single Standard Mode Menu: (Continued)	Prompt/Response:
If YES, the display will prompt: Standard Mode Read the Blank QUIT 	Read the Blank See Section 3.1.8 Blanking for details.
NOTE: In Tube Mode, the instrument takes an air reference reading. If Flowcell is active, the instrument references the stored water blank.	
Insert the standard tube or sample the standard material. The instrument will read the absorbance and determine the factor such that the concentration of the standard is the value specified. When finished reading, remove the tube or standard material. To re-blank at any point, press:	Refer to Section 3.1.9 Reading Samples. BLANK
The display will prompt: Standard Mode Read Standard # 1 QUIT 	Read Standard # 1 Read the standard and repeat as necessary.
Press Function Key 1 QUIT to exit Single Standard Mode. The instrument prints "Test Ended" and returns to the Main Menu screen.	



4.3 Factor Mode

In Factor Mode, the instrument reads absorbances at the selected wavelengths, and calculates concentrations by multiplying the absorbance by the user supplied factor.

Factor Mode Menu:	Prompt/Response:
Press Function Key 2 Program to access Mode Menu:	F2 PROGRAM
	
The screen will display: 	MODE MENU Enter Menu Number: Press Numeric Key 3 for Factor Mode



Factor Mode Menu: (Continued)	Prompt/Response:
The display will prompt: Factor Mode Differential Samples? QUIT NO YES	Differential Samples?
Press: Function Key 4 YES to use differential samples. Each sample will have its own blank. The instrument will prompt for the blank preceding each sample. Function Key 3 NO to continue without using differential samples. Function Key 1 QUIT and return to the Main Menu.	
The screen will display: SELECT FILTERS PRIMARY FILTER 1 = 340 2 = 405 3 = 505 4 = 545 5 = 580 6 = 630 DIFFERENTIAL FILTER 1 = 340 2 = 405 3 = 505 4 = 545 5 = 580 6 = 630 0 = NO DIFFERENTIAL QUIT ENTER	SELECT FILTERS Use the numeric keys to select the desired wavelengths, press Enter. Refer to Section 3.1.10 Bichromatic Operation for details.



Factor Mode Menu: (Continued)	Prompt/Response:
The display will prompt: FACTOR MODE Enter Factor: QUIT CLEAR ENTER	Enter Factor: NOTE: The instrument will not accept a factor that is up to seven digits, and there can be up to two decimal places.
Press: Function Key 4 ENTER to accept the value. Function Key 3 CLEAR to clear an error and re-enter the value. Function Key 1 QUIT and return to the Main Menu.	
The display will prompt: AVAILABLE UNITS 0) Conc 3) mg/dL 6) U/L 9) mcmo/L 12) umol/L 1) g/L 4) ug/L 7) meg/dL 10) IU/mL 13) mol/L 2) g/dL 5) ug/dL 8) mmol/L 11) ukat/L 14) Enter Unit Code: QUIT MORE CLEAR ENTER	Enter Unit Code: Enter the Unit Code 0 – 17 and press ENTER. See Section 3.1.5 Units of Measurement for details.



Factor Mode Menu: (Continued)	Prompt/Response:																			
Press: Function Key 4 ENTER to accept the value. Function Key 3 CLEAR to clear an error and re-enter the value. Function Key 2 MORE to display Units 15, 16 and 17. Function Key 1 QUIT and return to the Main Menu.																				
The screen will display: AVAILABLE UNITS <table><tr><td>0) Conc</td><td>1) g/L</td><td>2) g/dL</td></tr><tr><td>3) mg/dL</td><td>4) ug/L</td><td>5) ug/dL</td></tr><tr><td>6) U/L</td><td>7) meg/dL</td><td>8) mmol/L</td></tr><tr><td>9) mcmo/L</td><td>10) IU/mL</td><td>11) ukat/L</td></tr><tr><td>12) umol/L</td><td>13) mol/L</td><td>14)</td></tr></table> Unit Selected = xx ACCEPT? x <table><tr><td>QUIT</td><td></td><td>NO</td><td>YES</td></tr></table> where X equals the selected entry.	0) Conc	1) g/L	2) g/dL	3) mg/dL	4) ug/L	5) ug/dL	6) U/L	7) meg/dL	8) mmol/L	9) mcmo/L	10) IU/mL	11) ukat/L	12) umol/L	13) mol/L	14)	QUIT		NO	YES	Unit Selected = xx ACCEPT? x
0) Conc	1) g/L	2) g/dL																		
3) mg/dL	4) ug/L	5) ug/dL																		
6) U/L	7) meg/dL	8) mmol/L																		
9) mcmo/L	10) IU/mL	11) ukat/L																		
12) umol/L	13) mol/L	14)																		
QUIT		NO	YES																	
The display will prompt: RESULT PARAMETERS 1 = Setup Ranges 2 = Setup Controls 3 = Setup is Complete Enter Menu Number: QUIT	Result Parameters Enter Menu Number: Use the numeric keys to select the desired result parameters, press Enter. See Section 3.1.7 Ranges and Controls for more on this option.																			



Factor Mode Menu: (Continued)	Prompt/Response:
The display will prompt: Save the Test ? QUIT NO YES	SAVE THE TEST? Refer to Section 3.1.11 Saving Tests.
Press: Function Key 4 YES to save the test and continue. Function Key 3 NO to continue without saving test. Function Key 1 QUIT and return to the Main Menu.	
If YES, the display will prompt: Name the Test ? QUIT NO YES	NAME THE TEST?
Press: Function Key 4 YES to save the test and continue. Function Key 3 NO to continue without saving test. Function Key 1 QUIT and return to the Main Menu.	



Factor Mode Menu: (Continued)	Prompt/Response:
If YES, the display will prompt: Enter User Test Name: CHARACTER SELECTION: ABCDEFGHIJKLMNOPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#\$%&()*+,-./0123456789: ;,<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK Use the numeric keys to move the cursor to create the alpha/numeric user test name. One character at a time, use F3 to select the alpha/numeric characters. Press F4 OK when finished.	Enter User Test Name: <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN
If YES, the display will prompt: Factor Mode Read the Blank QUIT 	Read the Blank
NOTE: In Tube Mode, the instrument takes an air reference reading. If Flowcell is active, the instrument references the stored water blank.	



Factor Mode Menu: (Continued)	Prompt/Response:
Continue with normal sampling following the prompts given by the instrument. See Section 3.1.8 Blanking and Section 3.1.9 Reading Samples for details.	
To re-blank at any point, press:	BLANK
To exit Factor Mode and return to the Main Menu, press:	Function Key 1 QUIT



4.4 Multi-Point Mode

The instrument reads a number of calibrators (up to 7) and calculates concentrations based on the point-to-point calibration curve. Calibrator materials of known concentrations are used to calibrate the instrument so that concentrations of unknown samples may be calculated.

The resulting calibrator curve is a series of lines connecting the calibrator points, which may be entered in ascending or descending order of absorbance.

The direction of slope between the first and second calibrators determines the direction of the curve. If the direction of the curve changes direction, the curve will be flagged as being "invalid" and no interpretations will be printed.

Differential samples (against sample blanks) are supported. Reference Section 3.1.8 Blanking and Section 3.1.9 Reading Samples.

Unknown samples are calculated as follows:

- The unknown sample's absorbance is read and compared to the absorbance of the calibrator.

The line selected as the calibration curve used to determine the concentration of the unknown Sample is the line that connects the pair of Calibrators with absorbance values closest above and below the value of the unknown absorbance of the Sample.

(An unknown Sample, with absorbance higher than the calibrator with the highest absorbance value, is calculated using a line that passes through the two Calibrator points with the highest absorbance value. An unknown Sample with absorbance lower than the lowest Calibrator absorbance is calculated from the line that passes through the two Calibrators with the lowest absorbance values.)

Multi-Point Mode Menu:	Prompt/Response:
Press Function Key 2 Program to access Mode Menu:	F2 PROGRAM
RUN TEST: Run a Stored User Test PROGRAM: Create/Run a New User Test WORKLIST: Modify the Patient Worklist TOOLS: Instrument Utilities RUN TEST PROGRAM WORKLIST TOOLS F2	



Multi-Point Mode Menu: (Continued)	Prompt/Response:
The screen will display: MODE MENU 1 = Absorbance Mode 2 = Single Standard Mode 3 = Factor Mode 4 = Multi-Point Mode 5 = Rate Mode 6 = Index Mode Enter Menu Number: QUIT	MODE MENU Enter Menu Number: Press Numeric Key 4 for Multi-Point Mode
The display will prompt: SELECT MODE TYPE 1 = Standard Multi-Point Mode 2 = Multi-Point % Absorbance Mode Enter Menu Number: QUIT	SELECT MODE TYPE Enter Menu Number: Select the numeric key that corresponds with the option desired.
The Multi-Point % Absorbance Mode is similar in calculation to the Standard Multi-Point Mode, except that the percent absorbance (%Abs) is calculated and printed, and the standards must be in descending order. In Standard Multi-Point Mode, the standards should be in order from <u>lightest to darkest</u>. In Multi-Point % Absorbance Mode, standards must be in order from <u>darkest to lightest</u>.	
Press: Numeric Key 1 for Standard Multi-Point Mode Numeric Key 2 for Multi-Point % Absorbance Mode Function Key 1 QUIT and return to the Main Menu.	



Multi-Point Mode Menu: (Continued)	Prompt/Response:
The screen will display:: SELECT FILTERS PRIMARY FILTER 1 = 340 2 = 405 3 = 505 4 = 545 5 = 580 6 = 630 DIFFERENTIAL FILTER 1 = 340 2 = 405 3 = 505 4 = 545 5 = 580 6 = 630 0 = NO DIFFERENTIAL QUIT ENTER	SELECT FILTERS Use the numeric keys to select the desired wavelengths, press Enter. Refer to Section 3.1.10 Bichromatic Operation for details.
The display will prompt: MULTI-POINT MODE Number of Standards = QUIT CLEAR ENTER	Number of Standards = Type in the number of standards and press ENTER.
Press: Function Key 4 ENTER to accept the value. Function Key 3 CLEAR to clear an error and re-enter the value. Function Key 1 QUIT and return to the Main Menu.	



Multi-Point Mode Menu: (Continued)	Prompt/Response:
The display will prompt: MULTI-POINT MODE Enter Standard #1 Value QUIT CLEAR ENTER	Enter Standard #1 Value Type in the standard value in units and press ENTER.
Press: Function Key 4 ENTER to accept the value. Function Key 3 CLEAR to clear an error and re-enter the value. Function Key 1 QUIT and return to the Main Menu.	
The display will prompt: AVAILABLE UNITS 0) Conc 3) mg/dL 6) U/L 9) mcmo/L 12) umol/L 1) g/L 4) ug/L 7) meg/dL 10) IU/mL 13) mol/L 2) g/dL 5) ug/dL 8) mmol/L 11) ukat/L 14) Enter Unit Code: QUIT MORE CLEAR ENTER	Enter Unit Code: Enter the Unit Code 0 – 17 and press ENTER. See Section 3.1.5 Units of Measurement for details.



Multi-Point Mode Menu: (Continued)	Prompt/Response:																			
Press: Function Key 4 ENTER to accept the value. Function Key 3 CLEAR to clear an error and re-enter the value. Function Key 2 MORE to display Units 15, 16 and 17. Function Key 1 QUIT and return to the Main Menu.																				
The screen will display: AVAILABLE UNITS <table><tr><td>0) Conc</td><td>1) g/L</td><td>2) g/dL</td></tr><tr><td>3) mg/dL</td><td>4) ug/L</td><td>5) ug/dL</td></tr><tr><td>6) U/L</td><td>7) meg/dL</td><td>8) mmol/L</td></tr><tr><td>9) mcmo/L</td><td>10) IU/mL</td><td>11) ukat/L</td></tr><tr><td>12) umol/L</td><td>13) mol/L</td><td>14)</td></tr></table> Unit Selected = xx ACCEPT? x <table><tr><td>QUIT</td><td></td><td>NO</td><td>YES</td></tr></table> where X equals the selected entry.	0) Conc	1) g/L	2) g/dL	3) mg/dL	4) ug/L	5) ug/dL	6) U/L	7) meg/dL	8) mmol/L	9) mcmo/L	10) IU/mL	11) ukat/L	12) umol/L	13) mol/L	14)	QUIT		NO	YES	Unit Selected = xx ACCEPT? x
0) Conc	1) g/L	2) g/dL																		
3) mg/dL	4) ug/L	5) ug/dL																		
6) U/L	7) meg/dL	8) mmol/L																		
9) mcmo/L	10) IU/mL	11) ukat/L																		
12) umol/L	13) mol/L	14)																		
QUIT		NO	YES																	
The display will prompt: RESULT PARAMETERS 1 = Setup Ranges 2 = Setup Controls 3 = Setup is Complete Enter Menu Number: QUIT	Result Parameters Enter Menu Number: Use the numeric keys to select the desired result parameters, press Enter. See Section 3.1.7 Ranges and Controls for more on this option.																			

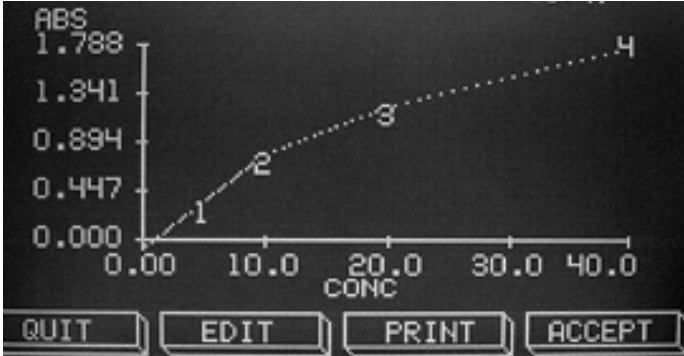


Multi-Point Mode Menu: (Continued)	Prompt/Response:
The display will prompt: Save the Test ? QUIT NO YES	SAVE THE TEST? Refer to Section 3.1.11 Saving Tests.
Press: Function Key 4 YES to save the test and continue. Function Key 3 NO to continue without saving test. Function Key 1 QUIT and return to the Main Menu.	
If YES, the display will prompt: Name the Test ? QUIT NO YES	NAME THE TEST?
If YES, the display will prompt: Enter User Test Name: CHARACTER SELECTION: ABCDEFGHIJKLMNOPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#\$%&()*+,-./0123456789: ;<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK Use the numeric keys to move the cursor to create the alpha/numeric user test name. One character at a time, use F3 to select the alpha/numeric characters. Press F4 OK when finished.	Enter User Test Name: <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN



Multi-Point Mode Menu: (Continued)	Prompt/Response:
If YES, the display will prompt: Multi-Point Mode Read the Blank QUIT 	Read the Blank
NOTE: In Tube Mode, the instrument takes an air reference reading. The lamp will warmup. If Flowcell is active, the instrument references the stored water blank.	
The instrument prompts to read each of the standards in turn. Insert the standard tube or sample the standard material.	Read Standard #1
If any of the standards is less than the previous standard (greater than if using Multi-Point % Abs Mode), it will be marked with an "X" and the instrument will print: Since this invalidates the results, repeat the procedure from the beginning.	—CURVE INVALID!
Continue with normal sampling following the prompts given by the instrument. The instrument will prompt to Read Sample. Insert the tube or sample the material. The concentration is calculated as described above. Repeat this step as desired.	See Section 3.1.8 Blanking and Section 3.1.9 Reading Samples for details.
To re-blank at any point, press:	BLANK
The screen displays the standard curve on the graph.	



Multi-Point Mode Menu: (Continued)	Prompt/Response:
The Absorbance (ABS) is shown along the vertical (Y) axis, the Concentration (CONC) is shown along the horizontal (X) axis, and the standard numbers are shown along the plotted line. Y Axis ABS  Standard Numbers X Axis CONC	
Press: Function Key F4 ACCEPT to accept the curve and begin sampling. Function Key F3 PRINT to print the curve. Function Key F2 EDIT to edit the points. • The display will prompt: Delete Standard (1-4). • Enter the point to be deleted and press ENTER. • The point is displayed with an X and the curve is plotted again. • If the test is saved, the curve will be shown as modified. • Press Function Key F2 UN-EDIT to display the curve in its original form.	
To re-blank at any point, press:	BLANK
To exit Multi-Point Mode and return to the Main Menu, press:	Function Key 1 QUIT
"Test Ended" prints, and the instrument returns to the main menu.	



4.5 Rate Mode

In Rate Mode, the instrument takes periodic readings of a sample at intervals.

The user supplies the Lag Time and the Read Time, both in seconds:

- Lag Time is the length of time that the instrument pauses before it takes the first reading, and is measured from the point at which the user inserts the tube or aspirates the sample.
- Read Time is the total length of time over which the reaction is monitored.
 - The Lag Time is two seconds minimum.
 - The Read Time can be any number of seconds 30 or more, but no greater than 1798.
 - The combined total of Lag Time plus Read Time cannot exceed 1800 seconds.

$$\text{Lag Time} + \text{Read Time} \leq 1800 \text{ seconds}$$

- Read Interval is the interval at which the intermediate readings are taken and recorded, and is fixed at 30 seconds.
- The $\Delta A/\text{min.}$ or rate of the standard is determined by a linear regression calculation covering the read interval. This $\Delta A/\text{min.}$ is printed beside S1 and is used to determine the rate factor.

$$\frac{\text{Concentration of Standard}}{\Delta A/\text{min}} = \text{Factor}$$

Choose from four calculation methods in Rate Mode:	
Rate by Factor:	Enter a factor that the instrument uses to calculate the concentration of the sample at each reading.
Rate by Standard:	Supply a standard material that the instrument reads and uses to calculate a factor to obtain the concentration of each sample.
Fixed Time Kinetic:	Enter a factor or supply a standard material as described above. However, results are based on total Δ , not $\Delta A/\text{min.}$
Multi-Point Fixed Time Kinetic:	Similar to Fixed Time Kinetic, except users enter multiple calibrators. The calibrators must be read before running the samples. As in Multi-Point, the standard curve can be edited.



In addition, Rate by Factor and Rate by Standard tests may be performed individually (consecutively) or in batch mode (simultaneously).

NOTE: Most rate reactions are temperature dependent. Make sure that the cell temperature control is enabled as described in the section “Temperature Control”. Allow a minimum of 15 minutes for the cell temperature to equilibrate.

- If the instrument is left idle in Rate Mode, the lamp may be OFF. Be sure to turn the lamp on and allow the instrument warm-up time before starting a reaction.
- Bichromatic readings should be used in any Rate Mode test. Always select a differential filter. 630 nm is suggested for readings at 340 or 405 nm. (Reference “Bichromatic Readings”)
- When using round test tubes in Rate Mode, the tube gasket supplied **MUST** be used. Place the gasket (included with the instrument) on the surface of the read well.

Rate factors for determining units per liter (U/L) must be derived from the following standard formula: $U/L = \frac{\Delta A/min. \times 1000 \times TVmL}{MA \times SVmL \times LPcm} \times TF$ where:	
U/L	units per Liter
$\Delta A/min$	mean change in absorbance per minute
TV	total volume of the reaction mixture (in ml)
MA	molar absorptivity (ie, the MA of NADH at 340nm = 6.22×10^3)
SV	sample volume (in ml)
LP	cuvette light path (in cm)
TF	temperature factor used to convert assayed activity to the desired temperature

Refer to the sections “Rate by Standard” and “Fixed Time Kinetics”.

Specific to Rate Mode, the print on demand feature allows the user to print an individual sample by pressing the More key while the internal and external printers are set to OFF in printer options [Tools Menu].



Rate Mode Menu:	Prompt/Response:
Press Function Key 2 Program to access Mode Menu:	F2 PROGRAM
RUN TEST: Run a Stored User Test PROGRAM: Create/Run a New User Test WORKLIST: Modify the Patient Worklist TOOLS: Instrument Utilities F2 RUN TEST PROGRAM WORKLIST TOOLS	
The screen will display: MODE MENU 1 = Absorbance Mode 2 = Single Standard Mode 3 = Factor Mode 4 = Multi-Point Mode 5 = Rate Mode 6 = Index Mode Enter Menu Number: QUIT	MODE MENU Enter Menu Number: Press Numeric Key 5 for Rate Mode
The screen will display: RATE MODE SELECTIONS 1 = Rate by Standard 2 = Rate by Factor 3 = Batch Mode, Rate By Standard 4 = Batch Mode, Rate By Factor 5 = Fixed Time Kinetic, By Standard 6 = Fixed Time Kinetic, By Factor 7 = Multipoint Fixed Time Kinetic Enter Menu Number: QUIT	Rate Mode Selections Enter Menu Number: A description of each option follows. Select the numeric key that corresponds with the option desired.



Rate Mode Menu: (Continued)	Prompt/Response:
Summary: • Numeric Keys 1 & 2 Rate By Standard/Rate By Factor: Similar to Rate by Factor except that the factor is determined by dividing the given concentration of the standard by its $\Delta A/\text{min}$. This factor is used to determine the concentration of the unknown samples. The prompts are similar to those listed above for Rate by Factor. If the standard absorbance is greater than 2.50 the mode is cancelled and the instrument returns to the main prompt. • Numeric Keys 3 & 4 Batch Mode- Rate By Standard/Rate By Factor: Batch Rate Mode is used in conjunction with Rate by Standard or Rate by Factor to read tests simultaneously, rather than consecutively. Because Fixed Time cannot be performed this way, the prompt is unavailable. Also, prior to running the blank, the instrument prompts to enter the number of samples. Note that if running Rate by Standard, the Calibrator (or Standard) must be included as one of the samples. The maximum number of samples = 12. After the blank is read, the display shows: Rate by (Factor or Standard) Add Serum/ Press Enter Add the patient samples to the pre-warmed reagent tubes. Adding them in a uniformly-timed manner will ensure that the lag time is consistent across the batch. After all samples have been added, press ENTER to begin the lag time countdown. After the lag time is completed, the display will prompt to read the samples. Read the samples in the same uniformly-timed manner in which the samples were added. Assign control labeling when the display is prompting to read that sample. (The read time will begin when the initial reading of the first sample is taken.) NOTE: The choice to set up controls does not function in Batch Mode. To use a control in Batch Mode treat it like a sample and count it as one of the samples.	



Rate Mode Menu: (Continued)	Prompt/Response:
Summary: Numeric Keys 3 & 4 Batch Mode- Rate By Standard/Rate By Factor: (Continued) After all samples in the batch have had their initial reading, the instrument will count down the remainder of the read time. At the end of the read time, the user will be prompted again to read the samples. Again, read the samples in the same uniformly-timed manner in which the samples were added. After each sample is read, its results will be printed. The instrument will print the actual read time for each sample, and will compensate with a corrected Abs/min result. Note that interval data and plotting are not available, because the sample does not remain in the cuvette well during the rate reaction. After the last sample has been read, the Rate Mode will discontinue and the printer will print: *** END OF BATCH *** Numeric Keys 5 & 6 Fixed Time Kinetics - By Standard/By Factor: Similar to the other Rate Mode variations. However, instead of basing the final calculation on the $\Delta A/\text{min.}$ of the sample, the calculation is based on the change in absorbance over the read interval. In addition, the Low Activity and Check Linearity conditions will not be displayed, and neither Batch Rate nor interval data reporting is available. This is also true for Batch Rate Modes. Numeric Key 7 Multi-Point Fixed Time Kinetic: Similar to Fixed Time Kinetic mode. However, in this mode, the user enters multiple calibrators. These calibrators are read before the Samples are read. The specific points are then plotted. Also uses a user entered lag and read time. As in Multi-Point Mode, the standards curve can be edited (reference 4.4 Multi-Point Mode).	



Rate Mode Menu: (Continued)	Prompt/Response:
The screen will display: RATE MODE SELECTIONS 1 = Rate by Standard 2 = Rate by Factor 3 = Batch Mode, Rate By Standard 4 = Batch Mode, Rate By Factor 5 = Fixed Time Kinetic, By Standard 6 = Fixed Time Kinetic, By Factor 7 = Multipoint Fixed Time Kinetic Enter Menu Number: QUIT	Enter Menu Number: Press Numeric Key 1 for Rate by Standard
The screen will display: SELECT FILTERS PRIMARY FILTER 1 = 340 2 = 405 3 = 505 4 = 545 5 = 580 6 = 630 DIFFERENTIAL FILTER 1 = 340 2 = 405 3 = 505 4 = 545 5 = 580 6 = 630 0 = NO DIFFERENTIAL QUIT ENTER	SELECT FILTERS Use the numeric keys to select the desired wavelengths, press Enter. Refer to Section 3.1.10 Bichromatic Operation for details.
The screen will display: Standard Lag Time Read Time Number of Read Intervals Seconds per Interval COMPLETE Standard = QUIT → CLEAR ENTER	Standard = Input the value of the Standard, press ENTER



Rate Mode Menu: (Continued)	Prompt/Response:
NOTE: The combination of the Lag and Read times cannot add up to more than 1800 seconds.	
Standard Lag Time Read Time Number of Read Intervals Seconds per Interval COMPLETE Lag Time = QUIT → CLEAR ENTER NOTE: If the user enters a Seconds/Interval that does not divide evenly into the Read Time, then the Seconds Per Interval will automatically adjust so that it will divide evenly into the Read Time.	Enter the value of the Lag Time (2 seconds minimum) and press ENTER. Enter the Read Time (must be greater than or equal to 30 seconds) and press ENTER. Enter the Number of Read Intervals (may range from 1 to 80) and press ENTER. Enter the Seconds per Interval (may range from 5.0 to Read Time and will default to 30.0). An Invalid Entry message will appear if inputs are not within range.
Press: Function Key 4 ENTER to accept the values. Function Key 3 CLEAR to clear an error and re-enter the value. Function Key 2 ARROW to return to any of the entered variables. Function Key 1 QUIT to return to the Main Menu.	
AVAILABLE UNITS 0) Conc 3) mg/dL 6) U/L 9) mcmo/L 12) umol/L 1) g/L 4) ug/L 7) meg/dL 10) IU/mL 13) mol/L 2) g/dL 5) ug/dL 8) mmol/L 11) ukat/L 14) Enter Unit Code: QUIT MORE CLEAR ENTER Enter Unit Code: Enter the Unit Code 0 – 17 and press ENTER. See Section 3.1.5 Units of Measurement for details.	

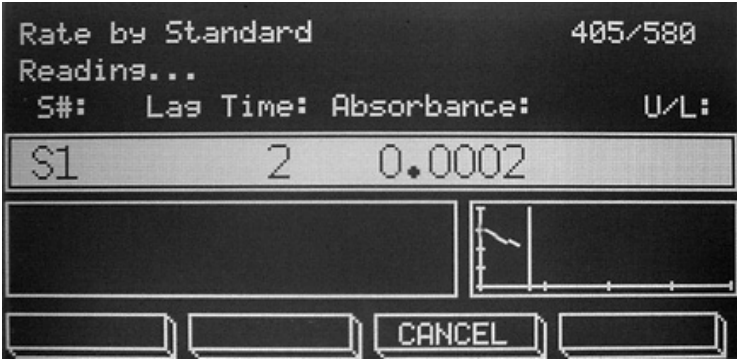


Rate Mode Menu: (Continued)	Prompt/Response:
Press: Function Key 4 ENTER to accept the value. Function Key 3 CLEAR to clear an error and re-enter the value. Function Key 2 MORE to display Units 15, 16, and 17. Function Key 1 QUIT and return to Main Menu.	
The screen will display: AVAILABLE UNITS 0) Conc 3) mg/dL 6) U/L 9) mcmo/L 12) umol/L 1) g/L 4) ug/L 7) meg/dL 10) IU/mL 13) mol/L 2) g/dL 5) ug/dL 8) mmol/L 11) ukat/L 14) Unit Selected = xx ACCEPT? x QUIT NO YES where X equals the selected entry.	Unit Selected = xx ACCEPT? X Press Function Key 4 YES Press Function Key 3 NO Press Function Key 1 QUIT
The display will prompt: RESULT PARAMETERS 1 = Setup Ranges 2 = Setup Controls 3 = Setup is Complete Enter Menu Number: QUIT	Result Parameters Enter Menu Number: Use the numeric keys to select the desired result parameters, press Enter. See Section 3.1.7 Ranges and Controls for more on this option.
NOTE: To view the SD and %CV data for the Rate modes, the user must enter a maximum SD value in the "Set Ranges" segment of the test setup. After each sample, the user may press the "More" key to view the interval results and the SD and %CV data.	

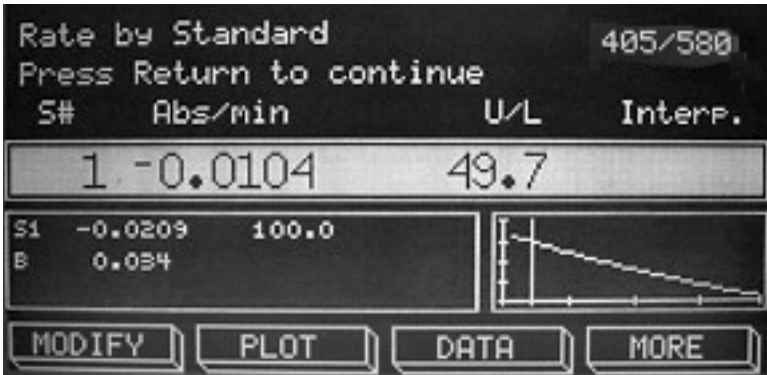
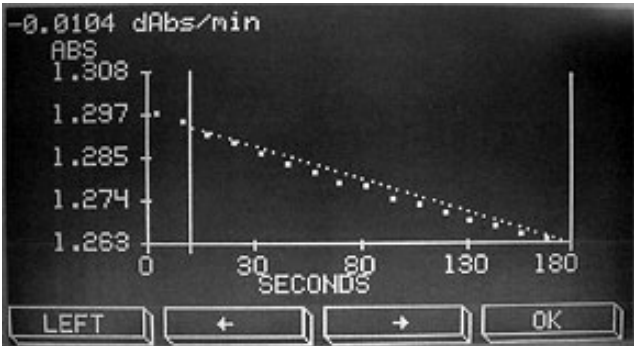


Rate Mode Menu: (Continued)	Prompt/Response:
The display will prompt: Save the Test ? QUIT NO YES	SAVE THE TEST? Refer to Section 3.1.11 Saving Tests.
Press: Function Key 4 YES to save the test and continue. Function Key 3 NO to continue without saving test. Function Key 1 QUIT and return to the Main Menu.	
If YES, the display will prompt: Enter User Test Name: CHARACTER SELECTION: ABCDEFGHIJKLMNOPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#\$%&()*+,-./0123456789: ;,<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK Use the numeric keys to move the cursor to create the alpha/numeric user test name. One character at a time, use F3 to select the alpha/numeric characters. Press F4 OK when finished.	NAME THE TEST? Enter User Test Name: <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN
The display will prompt:	Referencing Air...



Rate Mode Menu: (Continued)	Prompt/Response:
The screen will display: Reference Sections 3.1.8 Blanking and Section 3.1.9 Reading Samples. The value of the blank will print.	Rate by Standard Read the Blank
The display will prompt: Insert the tube or sample the material.	Read the Standard
The Lag Time will begin to count down.	
The screen will display:  The Read Time will count down while charting the activity on the bottom right side of the screen.	
Press: Function Key F4 ACCEPT button at any time after the lag time counts down if there is sufficient data to report a valid result.	
After the instrument is finished reading a sample, there will be three buttons displayed at the bottom of the screen: QUIT (F1), MORE (F2), and BLANK (F4).	Press Function Key F2 MORE



Rate Mode Menu: (Continued)	Prompt/Response:
The screen will display more options:	
	
Summary: Function Key F4 MORE: Press to view more options. Function Key F3 DATA: Press any time before pressing RETURN to print the interval data. Function Key F2 PLOT: Press to plot and print the graph. Function Key F1 MODIFY: Press to change the Read Interval.	
To change the Read Interval, press:	Function Key F1 MODIFY
The screen will display: 	



Rate Mode Menu: (Continued)	Prompt/Response:
Summary: Function Key F1 LEFT used to toggle between the two lines. The far right line indicating the end of read interval and the left line at the beginning of the read interval. Pressing this button once will change its label to RIGHT. Function Key F2 and F3 ARROWS allow the user to move the two lines in order to select a portion of the graph for purposes of calculating $\Delta A/\text{Min.}$ by Linear Regression. Function Key F4 OK press to end. The instrument then prints the new $\Delta A/\text{Min.}$ and Factor. NOTE: After modifying starting and/or ending times, the print data function still gives the original readings. If you want to record the changes, you must print the modified graph.	
To plot and print the graph, press: The plot shows the absorbance along the vertical axis and the time along the horizontal axis. Note that a vertical line indicates the break between the lag phase and the read phase, and the read time label of the horizontal axis begins at the left bar. If ranges were entered, the range interpretation is printed to the right of the concentration.	Function Key F2 PLOT
To print the interval data, press: The absorbance at 0 and each 30 second interval is printed along with the mean absorbance per minute for each interval. The instrument will automatically add a linefeed after printing interval data for one Sample, and before printing results for the next Sample. If any of the absorbance values for the sample are greater than 2.5 in tube mode, or 3.5 in Flowcell, a message is printed stating "Absorbance > 2.5 or 3.5" and the display shows the same. If the absorbance per minute for any of the intervals is less than 0.010, the printer outputs "Low Activity" and the display shows "Low Activity" next to "Sample Done". The option to print the data may then be taken by pressing the DATA button. The data can be examined to determine if the sample was not active, if the substrate was exhausted early, or if the reaction started later in the Read Time. If the latter is the case, the Lag Time may need to be increased.	Function Key F3 DATA



Rate Mode Menu: (Continued)	Prompt/Response:
If the absorbance per minute for any of the intervals was more than 20% from the mean absorbance per minute, the printer shows "Check Linearity" and the display shows the same next to "Sample Done". Once again, the DATA button may be pressed to examine the data. If both Low Activity and Check Linearity are not flagged, the interval data may still be printed by pressing the DATA key.	Function Key F3 DATA (Continued)
To view more options, press: The screen will display: Function Key F2 PURGE: Press this key to purge the Flowcell. Function Key F4 RETURN: Press this key to return to sampling.	Function Key F4 MORE
Re-Blanking may be done at any point by pressing:	BLANK
To exit Rate Mode and return to the main prompt, press:	QUIT
The instrument returns to the main prompt, and the printer outputs:	Test Ended

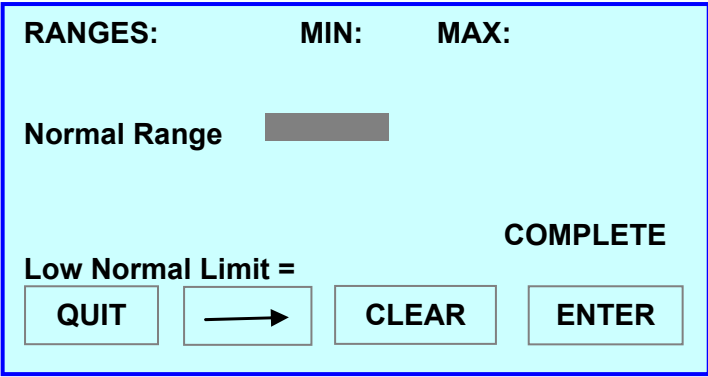
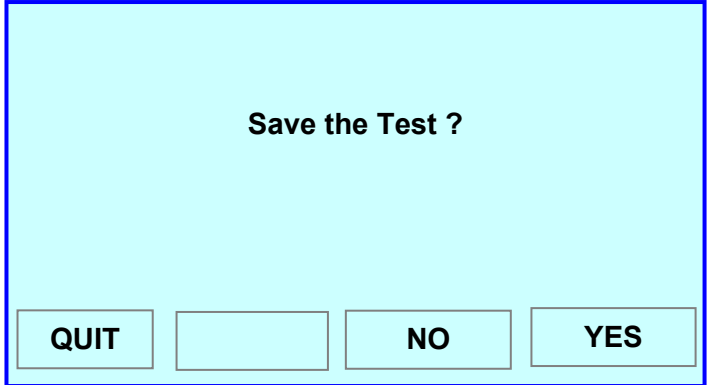


4.6 Index Mode

Sometimes a test result is not a measurement, but a calculation made from other measurements. Index Mode is a calculating feature where test results are user entered and index results are calculated and compared with normal ranges based on a formula entered. These are printed on test reports and saved with patient results as any other test would be.

Index Mode Menu:	Prompt/Response:
Press Function Key F2 Program to access Mode Menu:	F2 PROGRAM
RUN TEST: Run a Stored User Test PROGRAM: Create/Run a New User Test WORKLIST: Modify the Patient Worklist TOOLS: Instrument Utilities RUN TEST PROGRAM WORKLIST TOOLS F2	
The screen will display: MODE MENU 1 = Absorbance Mode 2 = Single Standard Mode 3 = Factor Mode 4 = Multi-Point Mode 5 = Rate Mode 6 = Index Mode Enter Menu Number: QUIT	MODE MENU Enter Menu Number: Press Numeric Key 6 for Index Mode
The screen will display: CREATE A FORMULA USING MENU ITEMS 1 = Enter a Constant 2 = Enter a Parameter (Maximum 4) 3 = Enter an Operator + - * / 4 = Enter Parenthesis () 5 = Formula Complete = Enter Menu Number: QUIT	CREATE A FORMULA USING MENU ITEMS Enter Menu Number: A short description of each option follows below. Select the numeric key that corresponds with the option desired.



Index Mode:	Prompt/Response:
Summary: Numeric Key 1 Enter a Constant: Enter a non-variable number, if necessary, for the formula. Numeric Key 2 Enter a Parameter (Maximum 4): Enter a name for the parameter to be used in the calculation using either an external keyboard or the keypad. Parameters are assigned letters A – D. Numeric Key 3 Enter an Operator: Enter the operator type using the Function keys. Numeric Key 4 Enter Parenthesis (): Place parentheses in the formula using the corresponding Function key. Numeric Key 5 Formula Complete =: Finish the formula.	
The instrument prints the formula and the parameters.	Formula and parameters print
The display will prompt: 	Enter Ranges: Reference Section 3.1.7 Ranges and Controls.
The display will prompt: 	Save the Test? Reference Section 3.1.11 Saving Tests.



Index Mode:	Prompt/Response:
If yes, the display will prompt:	Name the Test?
If yes, the display will prompt: Enter User Test Name: CHARACTER SELECTION: ABCDEFGHIJKLMNOPQRSTUVWXYZ ▲ abcdefghijklmnopqrstuvwxyz !"#\$%&()*+,-./0123456789: ;,<=>?@[]^_ TO MOVE CURSOR 4=LEFT 6=RIGHT 2=UP 8=DOWN QUIT BACK SP. SELECT OK Use the numeric keys to move the cursor to create the alpha/numeric user test name. One character at a time, use F3 to select the alpha/numeric characters. Press F4 OK when finished.	Enter User Test Name: <u>Function key attributes:</u> F1 QUIT F2 BACK SPACE F3 SELECT F4 OK <u>Numeric key attributes:</u> Numeric 4 key MOVE CURSOR LEFT Numeric 6 key MOVE CURSOR RIGHT Numeric 2 key MOVE CURSOR UP Numeric 8 key MOVE CURSOR DOWN
The display will prompt:	Ready to Run Sample #1:
Press: Function Key F4 RUN SMPL: Runs the stored formula. The user will be prompted to enter the parameter values as needed. The formula results are printed along with the interpretations. Function Key F3 PAT ID.: Enter a Patient ID using either the optional external keyboard or the keypad. When finished, the Sample Patient ID = is displayed on the screen. The result will be stored with this Patient ID and is available to be printed later (see Section 3.1.11 Reports for details on printing the Patient Results). Function Key F1 QUIT: To exit the mode and return to the Main Menu.	



5. CLEANING AND MAINTENANCE

5.1 Cleaning

5.1.1 Exterior



CAUTION: Solvents such as acetone or thinner will damage the instrument! Use only water and recommended cleaners! Avoid abrasive cleaners. The keypad and display areas are liquid-resistant, but are easily scratched.

The exterior of the instrument may be cleaned with a soft cloth using plain water. If needed, a mild all-purpose (nonabrasive) cleaner may be used. A 1.5% solution of chlorine bleach or 70% isopropyl alcohol may be used as a disinfectant. Take special care not to spill any liquid into the read well.

5.1.2 Flowcell

The Flowcell should be cleaned when the instrument will not be used for an extended period, e.g. overnight, end of shift, and when storing the Flowcell. Proper cleaning will help to prevent clogging of the Flowcell tubing and valve tubing. Cleaning is extremely important to obtaining accurate, repeatable results. If reagent, serum, or other proteinaceous fluid is allowed to dry in the Flowcell, it is difficult to remove and its presence can affect test results.

To clean the Flowcell:	
1)	From the Main Menu, press Function Key 4 TOOLS.
2)	The Instrument Tools Menu will display. Enter Menu Number 2, Flowcell Configuration.
3)	The screen will display: Current Flowcell STATUS =. If Status is not ON, press Function Key 1 ON/OFF. If Status is ON, press Function Key 4 OK.
4)	Purge with air for at least five seconds.
5)	Locate the bottle of Flowcell cleaning solution. Open the bottle and position the sample tube immersing it in the solution.
6)	Aspirate a small amount of Flowcell cleaning solution into the Flowcell by pressing the sample bar. Allow the solution to remain in the Flowcell for three minutes.
7)	Remove the bottle of Flowcell cleaning solution and replace the cap.
8)	Position a container of distilled water so that the sample tube remains immersed.
9)	Press the sample bar to aspirate distilled water into the Flowcell. Allow the water to remain in the Flowcell for three minutes.



To clean the Flowcell: (Continued)	
OPTIONAL STEP:	Aspirate 0.1N hydrochloric acid (HCl). Allow the solution to remain in the Flowcell for three minutes. Purge with at least 15 mL of deionized water.
10)	Press and hold the sample bar to purge until no more liquid can be seen flowing into the Waste bottle.
11)	Leave the Flowcell filled with water.
NOTE: If preparing the Flowcell for storage, follow same instructions but purge completely after cleaning.	

5.1.3 Waste Bottle

The waste bottle may be cleaned with a commercially available all-purpose cleaner or disinfectant. A 1.5% chlorine bleach solution or 70% isopropyl alcohol may also be used. Always turn instrument "OFF" before disconnecting the waste bottle.



5.2 Maintenance

5.2.1 Calibration and Linearity

Each instrument is calibrated during manufacturing using standards that are traceable to the National Institute for Standards and Testing (NIST), and is tested to verify its linearity to 2A. This preset calibration is very stable. Absolute calibration can be verified with the use of NIST filters, or by periodic comparison to a reference instrument that is known to be calibrated to NIST filters.

Calibration may be confirmed using Awareness Technology's Redi-Check[®]; a commercially available calibration check set which can be obtained from your distributor. A periodic verification of instrument linearity is advised.

Since most lab test results are based upon standards rather than upon absolute absorbance, the linearity of the instrument is the more critical indicator of instrument performance. A reduction in linearity with age may be indicative of optical filter deterioration. In this event, filter replacement is required for continued reliable operation.

The best way to assure quality instrument performance is to include a sufficient number of controls in each assay to cover the entire operational range.

5.2.2 Opening the Instrument

Refer to Figure 2 - Instrument Interior.

The cover is hinged at the rear panel, and can be raised to allow access to the inside of the instrument.

Disconnect the power cable, the tubing, and the sensor lead from the rear panel. Move the instrument forward until the front edge overhangs the work surface.

Locate and remove the two cover screws from the underside, one on each side.

Gently lift the front of the cover upward, taking care to clear the photometer. Prop the cover open with a suitable object.

Do not force the cover backwards. Damage to the cover or fittings may result.

To reinstall the cover, reverse the procedure. Carefully lower the cover until it seats on the chassis, taking care to clear the incubation block and the Flowcell Luer fitting.



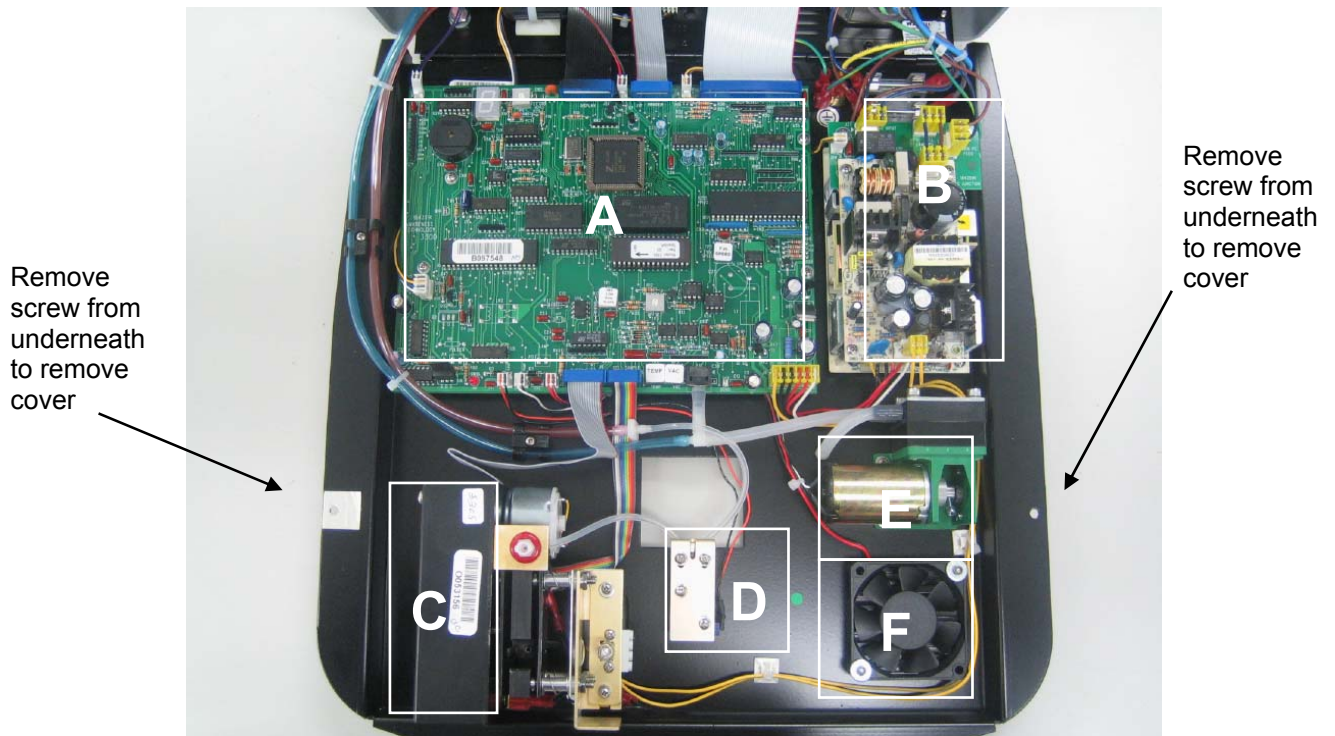


Figure 2 – Instrument Interior

Component Identification Table	
Reference Figure 2 – Instrument Interior	
A	Main PCB
B	Power Supply
C	Photometer
D	Valve
E	Pump
F	Fan

NOTE: Figure 2 view has the back plastic hatch door removed.

5.2.3 Lamp replacement

The lamp should be replaced only if it fails to light, or several filter voltages are reported as low.

To replace the lamp, follow the procedure below. Turn Power “Off” and unplug instrument.

Open the instrument as described in “Opening the Instrument”.

Locate the photometer and the lamp at the right side of the photometer.

Lamp removal

- Refer to Figure 3, for lamp removal and replacement diagram. The figure shows the right side view of the photometer assembly.



CAUTION: LAMP IS HOT. ALLOW THE LAMP TO COOL BEFORE HANDLING.

- Loosen but do not remove the two center lamp connector screws. Remove the lamp by lifting upward.
- Use a pair of tweezers to handle the new lamp.
- **CAUTION: Avoid handling with bare skin.**
- Insert the lamp leads into the connector until they hit bottom.



Lamp alignment

- Refer to Figure 3, for lamp alignment. The lamp filament must be centered on the lens and the lamp body must be parallel with the lens bracket. While holding the lamp in alignment, tighten the lamp connector screws.

Spot alignment

- Set the power switch to ON.
- Observe the projection of the light from the lamp onto the cell holder (behind the lens).
- Refer to Figure 3, for spot alignment.
- The spot should be small and centered on the oval hole in the cell block (behind the lens).
- If the spot is not centered, use the adjustment screws to position the spot.
- The vertical adjustment screw raises and lowers the lamp bracket.
- The lamp bracket is slotted at the horizontal adjustment screw, so that the lamp bracket can be moved.
- The horizontal adjustment screw serves to lock down the lamp bracket.



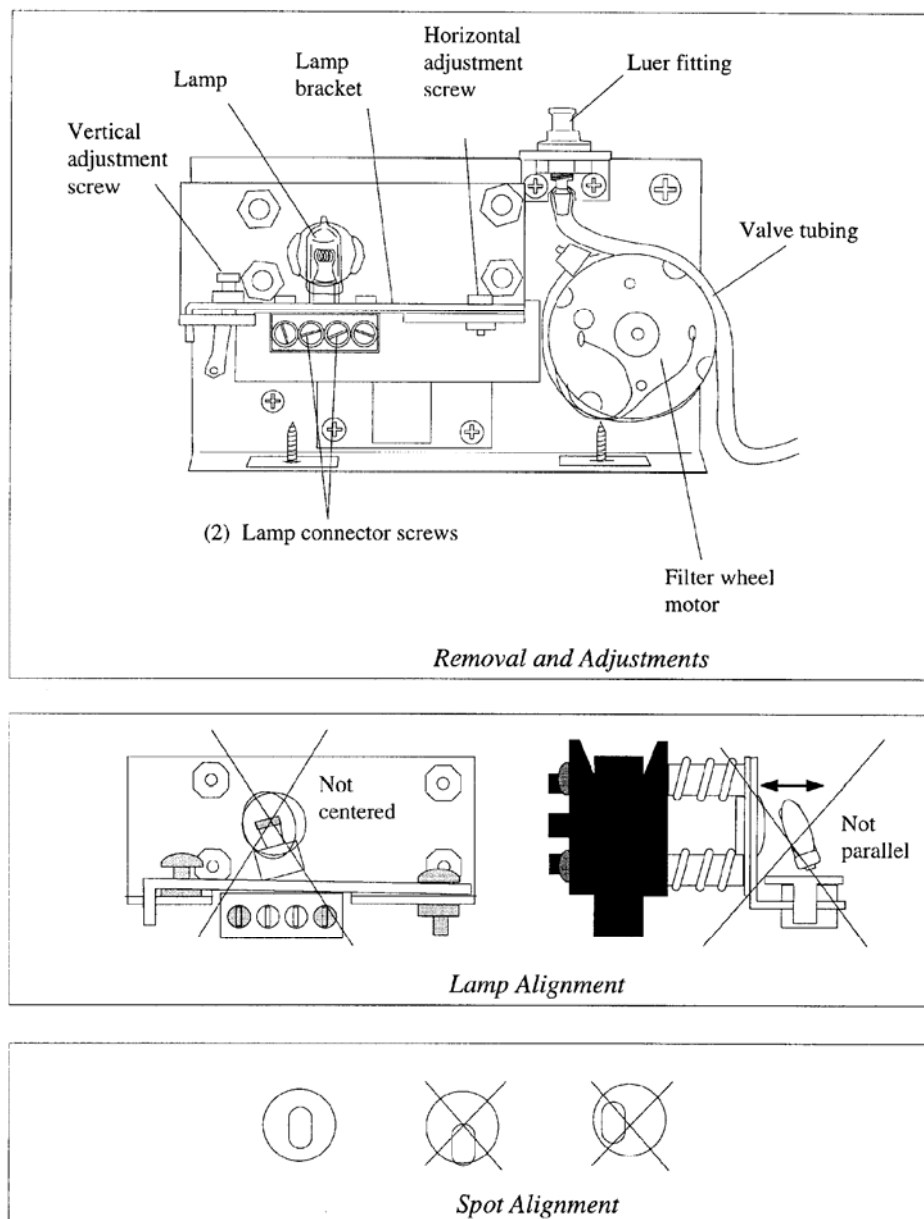


Figure 3 – Lamp Replacement



- Test the alignment by inserting a borosilicate 12 mm tube filled with plain water into the read well.
- **CAUTION: Do not use a soda-lime glass tube as it does not transmit at 340nm.**
- Follow the instruction below to test the alignment. Peak values should be between 4 to 10 volts.

Test the lamp alignment.	Prompt/Response:
From the Main Menu: Press Function Key F4 TOOLS to access Instrument Utilities:	F4 TOOLS
RUN TEST: Run a Stored User Test PROGRAM: Create/Run a New User Test WORKLIST: Modify the Patient Worklist TOOLS: Instrument Utilities RUN TEST PROGRAM WORKLIST TOOLS F4	
Display will prompt: INSTRUMENT TOOLS 1 = Stored Data Utilities 2 = Flowcell Configuration 3 = Printer Setup 4 = Diagnostics Menu 5 = General Configuration Enter Menu Number: QUIT	Instrument Tools Menu Enter Menu Number: 4 Select Diagnostic Menu
The screen will display: DIAGNOSTICS MENU 1 = Filter Voltages 2 = Filter Wheel Speed 3 = Usage Count 4 = Cell, Block Heat Calibration 5 = Current Vac, Temp, Waste Count 6 = Self Check 7 = Return to the TOOLS Menu Enter Menu Number: QUIT	DIAGNOSTICS MENU Enter Menu Number: 1 Select Filter Voltages Peak values should be between 4 to 10 volts. If not re-align lamp.



Test the alignment. From the Main Menu:	Prompt/Response:
The screen will display: DIAGNOSTICS MENU 1 = Filter Voltages 2 = Filter Wheel Speed 3 = Usage Count 4 = Cell, Block Heat Calibration 5 = Current Vac, Temp, Waste Count 6 = Self Check 7 = Return to the TOOLS Menu Enter Menu Number: QUIT	DIAGNOSTICS MENU Enter Menu Number: 1 Select Filter Voltages
The screen will display: nm Abs Count Volt Pot SP2 3.670 59384 0.002 32 340 0.080 1307 9.943 95 405 0.227 3679 7.069 79 505 0.194 3152 7.625 55 545 0.282 4572 6.217 79 580 0.326 5285 5.611 32 630 0.307 4975 5.867 40 SP1 3.625 58658 0.002 32 QUIT PRINT OK	Peak values should be between 4 to 10 volts. If not re-align lamp.

NOTE: The peak values shown here are for example purposes.

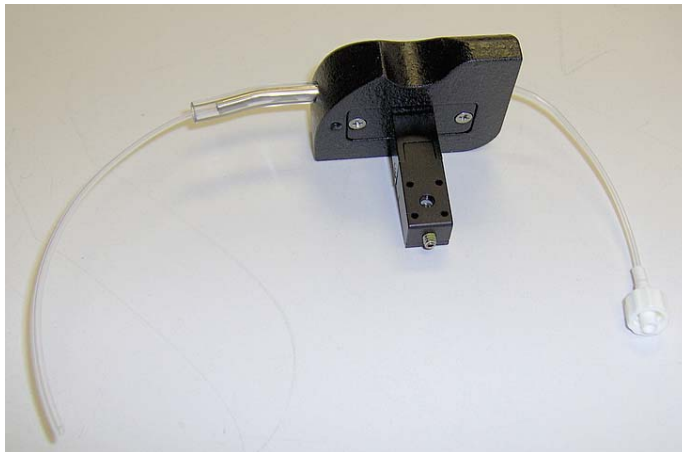


5.2.4 Flowcell Tubing Replacement

The Flowcell utilizes 1.2 mm I.D. Teflon tubing for the sample and exit tubes.

Replacement tubing is included with the tubing kit. Follow this procedure to replace the Flowcell tubing.

- Remove the Flowcell. Gently lift the Flowcell out of the read well.



- Remove the cover screws and lift off the upper Flowcell cover.

Reference Figure 4 as you read the following instructions:

- Disconnect the exit tube from the steel tube.
- Pull the exit tube out through the bulkhead.
- Remove the cell insert screws and pull the cell insert and the sample tube out.
- Remove the sample tube from the steel tube.
- Locate the sample tube in the tubing kit.
- Carefully press fit the end of the sample tube, swaged end, to the steel tube on the cell insert, and feed the other end upward through the cell body.



- **Hint: grasp the tubing with a small piece of #400 grit emery paper.**
- Do not kink the tubing.
- Refer to Figure 4 for the proper orientation.
- Do not reverse the orientation as improper sampling will result.
- Install the cell body and screws.
- Feed the exit tube in through the rear of the Flowcell.
- Press the exit tube over the steel tube.
- **CAUTION: Use extreme caution not to damage the fitting.**



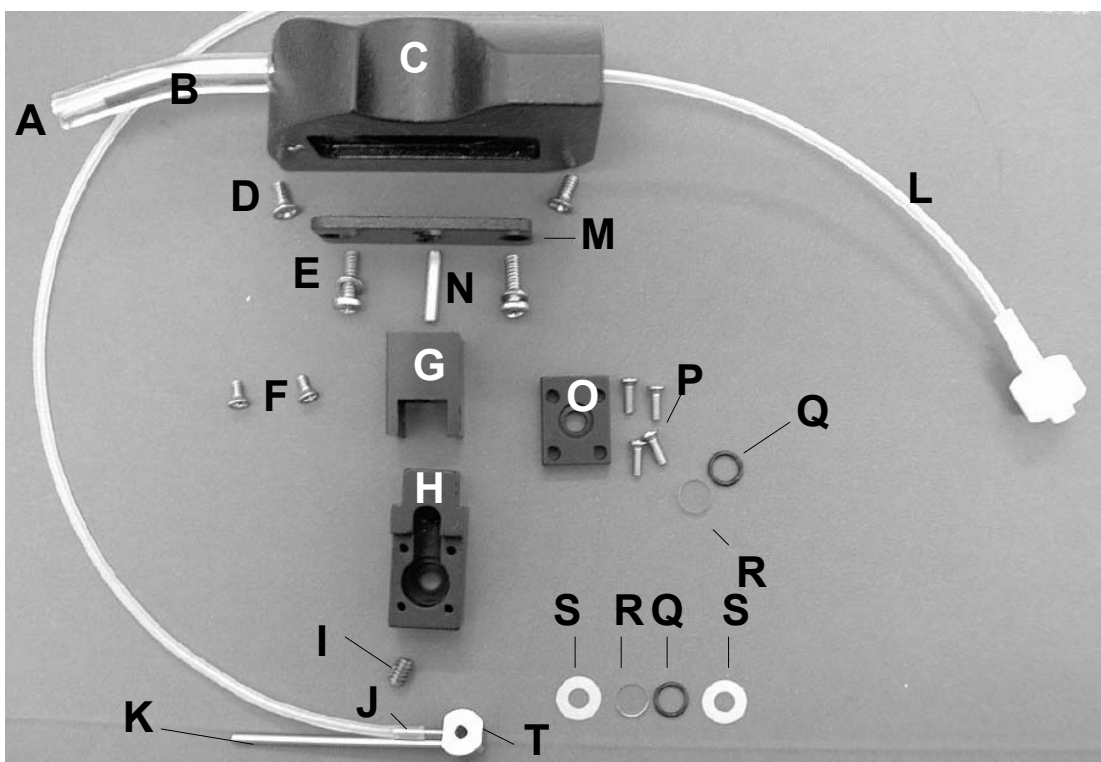


Figure 4 - Flowcell Tubing Replacement

Flowcell Tubing Replacement Parts List			
A	PVC tubing	K	Outlet tube
B	Tube support	L	Exit tube
C	Flowcell handle	M	Flow cell handle base
D	Machine screws (2) 4-40 x 1/4	N	Flow cell contact
E	Pan head screws (2) 4-40 x 3/8 w/split lock washers	O	Retainer plate
F	Flat head machine screws (2) 2-56 x 3/16	P	Machine screws (4) 1-72 x 1/4
G	Upper cell body	Q	O-ring
H	Lower cell body	R	Cell window
I	Adjustment set screw	S	Seals (2)
J	Inlet tube	T	Cell insert



5.2.5 Valve Tubing Replacement

It is not recommended to replace any tubing while the instrument is performing properly. However, the short length of silicone tubing used in the sampling valve may become clogged or worn with age. A replacement is included in the tubing kit.

- Set the power switch to OFF (O).
- Open the instrument as described in “Opening the instrument”.
- Refer to Figure 5. Locate the valve beside the photometer. Note: The valve is shown inverted in the callout view in Figure 5.
- Pull back the pinch bracket and remove the valve tubing from the valve body.
- Disconnect the valve tubing from the fittings at both ends noting orientation.
- Install the replacement tubing to the valve body in a similar manner.
- Push the tubing over the tubing barbs until seated. Be especially careful not to kink, stretch, or tension the tubing.
- Lower the cover and replace the screw.

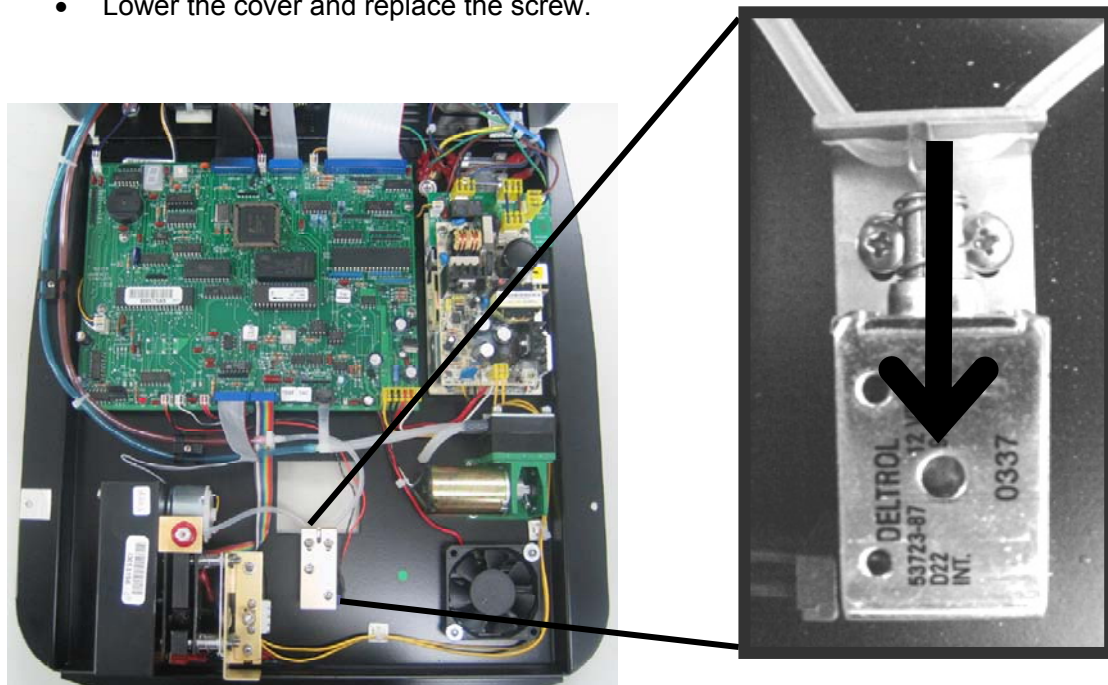


Figure 5 – Valve Tubing Replacement



NOTE: Callout view shows valve inverted.



5.2.6 Storage

The instrument may be stored under the following recommended environmental conditions:

- Temperature: 10 to 50°C
- Humidity: Less than 80% relative humidity, non-condensing.

Before storing the instrument, clean the Flowcell as described in Section 5.1 Cleaning. Store the instrument using original packaging if possible.

Perform the following steps before storing:	
✓	Set the power switch to OFF (O) and remove the power cord.
✓	Disconnect tubing and the sensor lead from the rear panel. Unhook the waste bottle strap and remove the waste bottle. Remove the waste bottle cap.
✓	Empty the waste bottle and autoclave, or disinfect with a 1.5% chlorine bleach solution.
✓	Remove the Flowcell and allow the Flowcell and waste bottle to dry overnight.
✓	Place the instrument, Flowcell, waste bottle in the original packaging material.
✓	When returning the instrument to service from storage, it is recommended that functional tests be performed as if setting up the instrument for the first time.
NOTE: It is especially important to verify sample volume accuracy and photometric linearity before performing any clinical assays.	



6. TROUBLESHOOTING

6.1 Flags and Error Messages

Flags are displayed to alert the operator when certain limits are approached. After displaying the warning the instrument will continue to function normally.

Error Messages are displayed when the instrument fails to operate correctly. They are intended to help the operator locate the problem.

6.1.1 Flags

Flag Alert Messages:	
*****	Printed in the concentration field if the absorbance is greater than 2.5 when using tubes, or greater than 3.5 when using the Flowcell. To obtain an accurate absorbance and/or concentration for this sample it is necessary to further dilute the sample(s), or dilute the specimen(s) and rerun the assay.
>10**7	Printed in the concentration column when the result of the concentration is greater than 7 digits and cannot be printed in the concentration column.
—CURVE INVALID!!—	Printed in the Multi-Point Mode when a curve cannot be drawn between the standards that were read. An “X” will be printed after the standard which causes the curve to be invalid. Check to make sure the standards were in decreasing order of absorbance in the Multi-Point % Abs, or in increasing order if in Multi-Point Mode. Since this invalidates the results, the test must be restarted.



6.1.2 Error Messages

Error Message / Problem:	Solution:
Aspiration Valve Error – Check Valve Tubing	At the beginning of every test run in Flowcell Mode, the valve will be checked for proper operation. If the valve fails the check, the message “Aspiration Valve Error – Check Valve Tubing” will display and print. Refer to section “No Sampling”.
Check Linearity	In Rate Mode, if the absorbance per minute for any of the intervals is more than 20% from the mean absorbance per minute, the printer shows “Check Linearity”, and the screen will display this message next to “Sample Done”. Press the DATA button to examine the data. See section “Rate Mode”.
Check Vac System	The instrument detected an inability to achieve vacuum. Check the waste bottle cap and fittings.
External Printer Not Ready. Retry? Y/N	If the receiving device does not have a large enough buffer, the instrument times out and the “Ext Printer Not Ready, Retry? Y/N” error message appears on the display. This error message refers to any receiving device (printer, PC, external serial or parallel port).
Lamp Failure	The lamp does not appear to be sufficiently illuminated. This can be caused by either lamp failure or degraded filters. See the section “Lamp Replacement”. If replacing the lamp does not correct this, the instrument may require service to replace the filters.
Low Activity	In Rate Mode, if the absorbance per minute for any of the intervals is less than 0.010, the printer outputs “Low Activity” and the screen will display the message next to “Sample Done”. To print the data, press the DATA button. The data can be examined to determine if the sample was active, if the substrate was exhausted early, or if the reaction started later in the Read Time. See section “Rate Mode”.
Memory is full	The test cannot be stored because there is no available memory. Delete unused tests.
Printer Not Ready	The external printer attached to the parallel port or serial port is out of paper or otherwise unable to print.



Error Message / Problem: (Continued)	Solution:
Printer Paper Jam	The internal printer paper path is obstructed. The internal printer will be disabled, and the user will be allowed to continue. Clear the paper path by gently pulling the obstruction from the printer, and restarting the instrument.
Retry? Y/N	In the event that the external printer or PC buffer becomes full (the instrument has sent as much data as the printer's memory can hold), the instrument will display "Retry? Y/N". Press Yes to continue to output once the printer or PC has emptied its buffer. Press No to turn off communication to external ports.
Serial Receiver Not Ready	If the external printer or PC is enabled, and the printer or PC is connected but is off-line, an error results only while in a mode, the instrument attempts to communicate. Until the problem is corrected, the instrument stops and displays "serial receiver not ready".
Stuck key on keypad	If a key on the keypad becomes stuck in position, the firmware will produce an override to enable an external keyboard to be used with the device. The device will emit a series of thirty beeps before disabling the keypad.
Vacuum High! --Check System--	Visual warning appears while in Flowcell Mode if vacuum > 8.0 Check the tubing connection at blue luer.
Vacuum Standby (1)	Vacuum Standby when the Waste bottle is full: When running a test in the Flowcell Mode, if the Waste bottle becomes full, the pump will shut off while the message "WASTE IS FULL!! Empty Waste – Press Enter to Get Sample" is displayed. Select Enter. The Waste bottle can be emptied without exiting the test.
Vacuum Standby (2)	Vacuum Standby when the Waste bottle is not full: In Rate Mode tests, the Waste bottle can be emptied at any time. Press Function Key F2 MORE. Select F3 STANDBY. The display will beep. Proceed to remove the waste bottle as needed; press ENTER when ready to resume.



Error Message / Problem: (Continued)	Solution:
Waste is Full!!! (Bottle in top right corner of screen)	Displayed when the waste material has reached the level sensors. The instrument will begin “beeping” and will not stop until the waste bottle is emptied.

The following messages may indicate an electronic problem with the main PCB. If these messages appear frequently, the instrument may require service.

Error Message / Problem:	Solution:
Canceled	This message will display immediately following a filter wheel error to indicate that the test or mode has ended.
Do ABS Calibration Test	The stored absorbance adjustment has been lost or corrupted. Refer to the section “Restore Calibration Data”.
Do Temperature Calibration Test	The stored temperature adjustment has been lost or corrupted. Refer to the section “Restore Calibration Data”.
Filter Labels 7&8 Clrd!	The stored filter labels have been lost or corrupted. Refer to the section “Restore Filter Labels”.
Filter Wheel Err	There is a mechanical problem with the instrument. Turn off the power switch, wait 15 seconds, then turn on the power switch.
Memory Error	The checksum is invalid for a test that is being recalled. The corrupted test will automatically delete.
Water Values Reset	The Flowcell is active and no water values are found in memory. The stored water values are reset to 0.000. New water values must be read to ensure correct results. Refer to “Flowcell Configuration”.



6.2 Incorrect Control Readings

Check that the procedures and materials used were valid. Turbid or contaminated reagents may affect absorbance readings. Reading reference dyes can be very helpful in separating instrument problems from reagent problems. Be sure that the appropriate wavelengths were selected for the chromophore being read. Tubes should have no bubbles, condensation, scratches or smudges.

6.3 Poor Linearity

If the instrument is several years old, or has been operated in very humid conditions, new optical filters may be needed. The instrument incorporates interference filters of an advanced technology, and will provide extended life in humid environments when compared to standard soft interference filters. However, excessive humidity should be avoided. The instrument will require service to replace the filters.

6.4 Erratic Readings

One possible source of erratic readings (excessive dither) is trapped air in the Flowcell. This can be caused by improper installation of the Flowcell tubing. Refer to the section "Flowcell Tubing Replacement". Check the insertion depth of the Flowcell tubes. Ensure that a leak-free seal is made.

6.5 Lamp failure

The lamp is rated to read over 300,000 tubes, and the lamp saver feature minimizes lamp idle time. Lamp replacement is only indicated when the lamp fails to light, or when the message "Lamp output low!" is displayed. Press LAMP to turn the lamp on or off. If the lamp fails to light, refer to the sub-section "Lamp Replacement" under the Maintenance section.



6.6 No sampling

At the beginning of every test, the valve will be checked for proper operation.

If the valve fails the check then the message "Aspiration valve error - Check valve tubing" will be displayed and printed.

If you can hear the valve cycle, but no sample is drawn up, the valve tubing may be blocked.

- Press and hold PURGE several times.
- Disconnect the Luer fitting at the rear of the Flowcell.
- Press PURGE and listen for aspiration. If air is heard entering the fitting, the valve tubing is clear, but the Flowcell is blocked.
- Refer to the sections "Cleaning" and "Replacing Flowcell tubing".

If the valve clicks but the pump does not run when pressing the **PURGE** key, the valve tubing may be stuck closed.

- If this happens, remove the front cover screw and lift open the cover.
- Pull the pinch bracket against the spring tension (to open the valve manually).
- Gently pull the tubing slightly to break the seal.
- See the section "Valve Tubing Replacement" for a diagram and more information about the valve tubing.



6.7 Restore Calibration Data

Each unit is electronically calibrated at the factory. The calibration values are entered by the keyboard and stored in nonvolatile memory. The instrument will not accept a change greater than +/- 10% (.900-1.100) for the absorbance factor, nor will it accept a temperature offset change greater than +/- 2.5°C. Only minimal calibration adjustments are accepted from the keyboard.

Do Temperature Calibration Test
Do ABS Calibration Test

If either of these messages are printed or displayed, it indicates that the calibration values have been lost. These messages will be printed each time the instrument is turned on, a mode is selected, or a test is recalled.

The instrument will continue to operate, but the calibration must be restored to ensure the accuracy of the instrument.



WARNING:

DO NOT ALTER ANY POTENTIOMETER SETTINGS! CHANGING THESE SETTINGS WILL MAKE THE FACTORY CALIBRATION DATA INVALID.

DO NOT ENTER VALUES OTHER THAN THOSE RECORDED ON THE CALIBRATION LABEL.

6.7.1 Restore Electronic Calibration

Restore Electronic Calibration:	
1)	Set the power switch to OFF (0) . Remove any tubes or cuvettes from the read well. Carefully lift up the instrument and locate the Calibration Data Label on the underside of the unit. The Absorbance, Cell Temperature, and Block Temperature values are recorded there. Make note of these numbers as they will be used in the steps that follow.
2)	Set the power switch to ON (1) .
3)	If the date and time have been reset or are incorrect, enter the correct date and time. See the section "Set Date and Time".
4)	Access the Instrument Utilities feature by pressing Function Key 4 TOOLS on the main menu. Select numeric key 4 Diagnostics Menu.



Restore Electronic Calibration: (Continued)	
	The screen will display: DIAGNOSTICS MENU 1 = Filter Voltages 2 = Filter Wheel Speed 3 = Usage Count 4 = Cell, Block Heat Calibration 5 = Current Vac, Temp, Waste Count 6 = Self Check 7 = Return to the TOOLS Menu Enter Menu Number: QUIT Enter Menu Number: Numeric Key 4 Cell, Block Heat Calibration: Enables cell temperature correction and heat block (optional item) temperature correction. (Reference Section 2.4.4 Diagnostics Menu for additional information.)
5)	Select numeric key 4 Cell, Block Heat Calibration.
6)	The screen will display: HEATER MENU 1 = Cell Heat Calibration 2 = Block Heat Calibration 3 = Return to the Previous Menu Enter Menu Number: QUIT
7)	Select numeric key 1 Cell Heat Calibration, press Enter. The display will prompt: Cell Temp Correction =. Enter the number and press Enter.
8)	Select numeric key 2 Block Heat Calibration, press Enter. The display will prompt: Block Temp Correction =. Enter the number and press Enter.
9)	Press Function Key 1 QUIT.
10)	From the Main Menu, press Function Key 1 RUN TEST. The display will prompt: Select a test number. Type in test number 213 and press Enter. The screen and printer will display the current Abs Factor, Cell Temp Correction, and Block Temp Correction values. Ensure these values are the same as those found on the Calibration Data Label. Contact technical support with any questions.



6.7.2 Restore Filter Labels

Like the calibration data, the wavelengths for the two optional filters are stored in nonvolatile memory. In the event this data is lost or corrupted, the following message will display and print:

Filter Labels 7&8 Clrd!

Restore Filter Labels:							
1)	Set the power switch to OFF (0) . Open the instrument and locate the filter label on the side of the photometer cover. Make note of these numbers as they will be used in the steps that follow.						
2)	Filter labels need to be re-entered for two of the filters. Open the instrument and locate the filter label on the side of the photometer cover. Make note of the filter numbers shown in position 7 and 8. These numbers are necessary for the steps that follow.						
3)	<table><tr><td><u>Position</u></td><td><u>Filter</u></td></tr><tr><td>7</td><td>xxx</td></tr><tr><td>8</td><td>xxx</td></tr></table> where "xxx" is a three-digit wavelength value. NOTE: If there are no 7th or 8th filters, they are listed as BLOCKED.	<u>Position</u>	<u>Filter</u>	7	xxx	8	xxx
<u>Position</u>	<u>Filter</u>						
7	xxx						
8	xxx						
4)	Close the instrument. Set the power switch to ON (1) .						
5)	From the Main Menu, press Function Key 1 RUN TEST. At the Select a test number prompt, type in 248, and press Enter.						
6)	The display will prompt: Key 7 = ??? nm. Type in the wavelength numbers that was shown on the label, and press Enter.						
7)	The display will prompt: Key 8 = ??? nm. Type in the wavelength numbers that was shown on the label, and press Enter.						
8)	The instrument will return to Main Menu.						
NOTE: If values for Key 7 and Key 8 are entered when there are no filters present, the filters will be flagged as "low" when Self Check is run.							



6.8 Flowcell Alignment

Flowcell Alignment	Prompt/Response:
Flowcell Alignment. Not needed under normal operating conditions. Necessary when a new Flowcell is to be used, or if a lamp replacement has occurred. Read Water Reference should be done before AND after Flowcell Alignment.	Choosing 2 and Enter shows the Flowcell Alignment Screen.
First, the Flowcell should be active but NOT inserted into the read well. To print the current reading, press: Insert the Flowcell into the read well. Submerge the end of the tubing into a container of water and press: The Sample Bar should be held until water starts to flow into the Waste Bottle to decrease the likelihood of air bubbles interfering with an accurate reading. This reading should be slightly over half of the original reading. If it is not, the Flowcell must be adjusted.	Press F3 (PRINT) Press the Sample bar
If the displayed value is less than 50% of the reading with the Flowcell removed, purge and remove the Flowcell.	
Adjust the set screw with the hex wrench supplied. Sample water again. If the value increases, turn the set screw in the same direction. If the value decreases, turn the setscrew in the opposite direction. Repeat until the value is >50%. When complete, press:	Turn the set screw 1/4 turns in either direction and replace the Flowcell. ENTER to return to the previous prompt. New water values must be read as described above in Read Water Reference.
To return to the Tools menu, press:	F4 (COMPLETE)



7. ACCESSORIES

7.1 External Keyboard

The **Stat Fax 3300** instrument is compatible with a standard computer keyboard for ease of data input.

7.2 Incubation Unit

The optional 37°C incubation block contains twelve stations. The incubator will accommodate 12 mm diameter round test tubes.

When the instrument is powered on, heating begins. In 20-30 minutes, depending on ambient temperatures, stable temperatures are reached.

Refer to the accessory manual for details on precautionary warnings and user instructions.

7.3 Peltier Cooling Accessory

The Peltier Cooling Accessory is an electronic cooling device which, when an electric current passes through it, gets very hot on one side, and very cold on the other. At ambient temperature, the Peltier Cooling Accessory is capable of maintaining 25, 30 and 37 degree temperatures within + or -.5.

7.4 Thermal Printer Paper

Reorder replacement Thermal Printer Paper Roll P/N 150003.

7.5 REDI-CHECK® Photometer QA Kit

REDI-CHECK® is a photometer check set used to verify the absorbance calibration, linearity, and precision of filter photometers on a routine basis. The kit contains four different chromophore solutions to cover a wide range of wavelengths between 340nm and 630nm. Instructions are included for preparing dilutions of the chromophore to check linearity.

Acceptance ranges are provided for both bichromatic and monochromatic readings, with technical information traceable to NIST. The kit, which is designed for monthly use, also includes a record keeping system which visually indicates instrument performance and performance trends.

For more information on REDI-CHECK®, contact your dealer.



8. USER TEST MENU LOG

[illegible]

9. CONTACT INFORMATION

In the unlikely event that a problem occurs with the instrument, please consult your dealer first.

Dealer:

If the dealer is unable to resolve the problem, support staff at Awareness Technology, Inc. are happy to assist, and can be reached in the United States by:

Telephone: USA 772-283-6540

Fax: USA 772-283-8020

E-mail: support@awaretech.com

Mailing Address:

Awareness Technology, Inc. P.O. Drawer 1679 Palm City FL 34991 USA
--

Important: When contacting us, please have the Model and Serial Number of the instrument in question. Have a description of the problem with as much detail as possible. Save any relevant printouts and send or e-mail us the information.

