

Pre-Installation Guide

PA 800 *plus* **Pharmaceutical Analysis** **System**

32 Karat™ Software Version 9.1 and
PA 800 *plus* Software Version 1.1



A51977AC
February 2011



Beckman Coulter, Inc.
250 S. Kraemer Blvd.
Brea, CA 92821



Pre-Installation Guide
PA 800 *plus* Pharmaceutical Analysis System
32 Karat Software Version 9.1 and
PA 800 *plus* Software Version 1.1
PN A51977AC (February 2011)

Copyright © 2009-2011 Beckman Coulter, Inc.

Beckman Coulter, Inc. grants a limited non-exclusive license to the owner or operator of a PA 800 *plus* instrument to make a copy, solely for laboratory use, of any portion or all of the online help and electronic documents shipped with the PA 800 *plus* instrument.

Trademarks:

Following is a list of Beckman Coulter trademarks:

- Beckman Coulter®
- 32 Karat™

All other trademarks are the property of their respective owners.

Find us on the World Wide Web at:

www.beckmancoulter.com and www.CELeader.com



Beckman Coulter Ireland, Inc.
Mervue Business Park, Mervue Galway, Ireland 353 91 774068

Beckman Coulter do Brasil Com e Imp de Prod de Lab Ltda
Estr dos Romeiros, 220 - Galpao G3 - Km 38.5
06501-001 - Sao Paulo - SP - Brasil
CNPJ: 42.160.812/0001-44

製造販売元：ベックマン・コールター株式会社
東京都江東区有明二丁目 5 番 7 号

贝克曼库尔特有限公司，
美国加利福尼亚州，Brea 市，S. Kraemer 大街 250 号，
邮编：92821 电话：(001) 714-993-5321

Revision History

Second Revision, A51977AC, February 2011

32 Karat Software version 9.1 patch

PA 800 *plus* Software version 1.1 patch

PA 800 *plus* Firmware version 9.2

Numerous syntax and grammatical edits

First Revision, A51977AB, December 2009

Revised corporate address.

Initial Issue, A51977AA, April 2009

32 Karat Software version 9.1

PA 800 *plus* Software version 1.1

PA 800 *plus* Firmware version 9.0

Safety Notices

Symbols and Labels

Introduction

The following is a description of symbols and labels used on the Beckman Coulter PA 800 *plus* Pharmaceutical Analysis System or shown in this manual.



If the equipment is used in a manner not specified by Beckman Coulter, Inc., the protection provided by the instrument may be impaired.

General Biohazard Symbol

This caution symbol indicates a possible biohazard risk from patient specimen contamination.



Caution, Biohazard Label

This caution symbol indicates a caution to operate only with all covers in position to decrease risk of personal injury or biohazard.



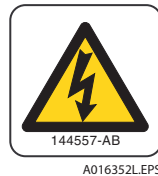
Caution, Moving Parts Label

This caution symbol warns the user of moving parts that can pinch or crush.



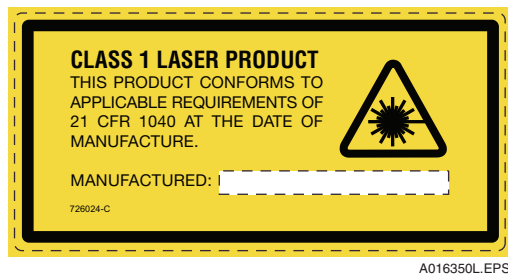
High Voltage Electric Shock Risk Symbol

This symbol indicates that there is high voltage and there is a risk of electric shock when the user works in this area.



Class 1 Laser Caution Label

A label reading “THIS PRODUCT CONFORMS TO APPLICABLE REQUIREMENTS OF 21 CFR 1040 AT THE DATE OF MANUFACTURE” is found near the Name Rating tag. The laser light beam is not visible.



Sharp Object Label

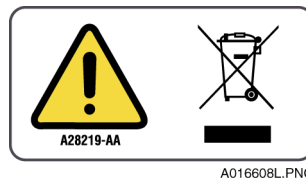
A label reading “CAUTION SHARP OBJECTS” is found on the PA 800 plus.



Recycling Label

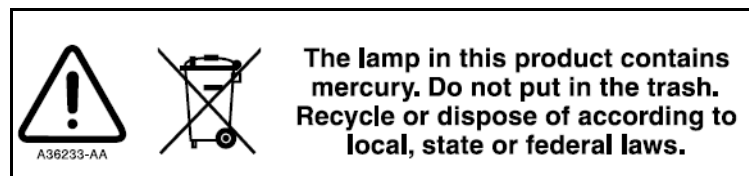
This symbol is required in accordance with the Waste Electrical and Electronic Equipment (WEEE) Directive of the European Union. The presence of this marking on the product indicates:

1. The device was put on the European Market after August 13, 2005.
2. The device is not to be disposed of via the municipal waste collection system of any member state of the European Union.



It is very important that customers understand and follow all laws regarding the proper decontamination and safe disposal of electrical equipment. For Beckman Coulter products bearing this label, please contact your dealer or local Beckman Coulter office for details on the take back program that facilitates the proper collection, treatment, recovery, recycling, and safe disposal of this device.

Disposal of Devices Containing Mercury Components



This product contains a mercury-added part. Recycle or dispose of according to local, state, or federal laws. It is very important that you understand and comply with the safe and proper disposal of devices containing mercury components (switch, lamp, battery, relay, or electrode). The mercury component indicator label can vary depending on the type of device.

Restriction of Hazardous Substances (RoHS) Labels

These labels and materials declaration table (the Table of Hazardous Substance's Name and Concentration) are to meet People's Republic of China Electronic Industry Standard SJ/T11364-2006 "Marking for Control of Pollution Caused by Electronic Information Products" requirements.

RoHS Caution Label

This logo indicates that this electronic information product contains certain toxic or hazardous elements, and can be used safely during its environmental protection use period. The number in the middle of the logo indicates the environmental protection use period for the product. The outer circle indicates that the product can be recycled. The logo also signifies that the product should be recycled immediately after its environmental protection use period has expired. The date on the label indicates the date of manufacture.



RoHS Environmental Label

This logo indicates that the product does not contain any toxic or hazardous substances or elements. The "e" stands for electrical, electronic, and environmental electronic information products. This logo indicates that this electronic information product does not contain any toxic or hazardous substances or elements, and is green and is environmental. The outer circle indicates that the product can be recycled. The logo also signifies that the product can be recycled after being discarded, and should not be casually discarded.



Alerts for Warning, Caution, Important, and Note

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. The warning can be used to indicate the possibility of erroneous data that could result in an incorrect diagnosis (does not apply to all products).

CAUTION

CAUTION indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The caution can be used to indicate the possibility of erroneous data that could result in an incorrect diagnosis (does not apply to all products).

IMPORTANT **IMPORTANT** is used for comments that add value to the step or procedure being performed. Following the advice in the **IMPORTANT** notice adds benefit to the performance of a piece of equipment or to a process.

NOTE **NOTE** is used to call attention to notable information that should be followed during installation, use, or servicing of this equipment.

Contents



Revision History, iii

Safety Notices, v

Symbols and Labels, v

Introduction, xiii

General Description, xiii

CHAPTER 1: Pre-Installation, 1-1

Preparation Check List, 1-1

Technical Support, 1-1

Pre-Installation Check List, 1-2

PA 800 plus, 1-2

Computer, 1-2

Detectors, 1-2

Options, 1-2

CHAPTER 2: Site Requirements, 2-1

Tabletop Space, 2-1

Space Requirements, 2-2

Ventilation Requirements, 2-2

Electrical Requirements, 2-3

CHAPTER 3: Specifications, 3-1

PA 800 plus System, 3-1

Computer Requirements, 3-2

UV Detector, 3-2

PDA Detector, 3-3

LIF Detector, 3-3

Sample Cooling, 3-4

CHAPTER 4: PA 800 plus System Training, 4-1

Pre-Training Requirements, 4-1

Additional Training, 4-1

General Description

This Pre-Installation Guide assists designated operators in identifying the items required for laboratory preparation so that installation can be completed efficiently and the system operated successfully.

The supplies you must have on hand prior to the installation of the instrument are specified. Also provided is a list of accessories available.

For your convenience, a pre-installation checklist is included to help you prepare for the installation.

NOTE This manual applies to instruments running PA 800 *plus* software and also to instruments running field-upgraded PA 800 *Enhanced* software.

Pre-Installation

Preparation Check List

The following is a summarized list of the items that must be addressed prior to installation. Mark each item as it is completed. When these prerequisites have been met, contact your local Beckman Coulter representative to schedule the installation.

- Appropriate table or bench ([Tabletop Space](#) in [CHAPTER 2, Site Requirements](#))
- Suitable power source ([Table 2.1](#) in [CHAPTER 2, Site Requirements](#))
- Suitable laboratory environment ([PA 800 plus System](#) in [CHAPTER 3, Specifications](#))
- Training prerequisites met ([CHAPTER 4, PA 800 plus System Training](#))

Technical Support

If you encounter a problem that is not discussed in this guide, and you need technical support, contact your local dealer, the provider of this product, or contact Beckman Coulter directly by using the information below.

NOTE Whenever you call your local dealer or Beckman Coulter, be sure to have your registration material, instrument serial number, and software version number available.

For future reference, record this information here.

Instrument Serial Number:	
PA 800 <i>plus</i> Software Version:	
32 Karat Software Version:	
Firmware Version:	
Dealer Name:	
Dealer Phone Number:	
Mail	Beckman Coulter, Inc. 250 S. Kraemer Blvd. Brea, CA 92821
Web address:	www.beckmancoulter.com

Pre-Installation Check List

The following is a list of requirements and items necessary for installation of the PA 800 *plus*. Use this list to check off the requirements and items you have and other items as you receive them. To ensure a successful installation, please verify that you have these items prior to scheduling the installation with your local office.

PA 800 *plus*

- Power Requirements
- Bench Space
- Installation Test Mix (shipped separately)

Computer

- Beckman Coulter Supplied
or
Equivalent Computer System
- Windows XP
- 32 Karat and PA 800 *plus* Software
- Printer (Optional)
- GPIB Communications Interface Board and Cable or USB-GPIB Cable

Detectors

- UV Detector (if ordered)
- PDA Detector
- LIF Detector (if ordered)

Options

- Filters (spare for each filter)
- Lasers
- External Detector Adapter

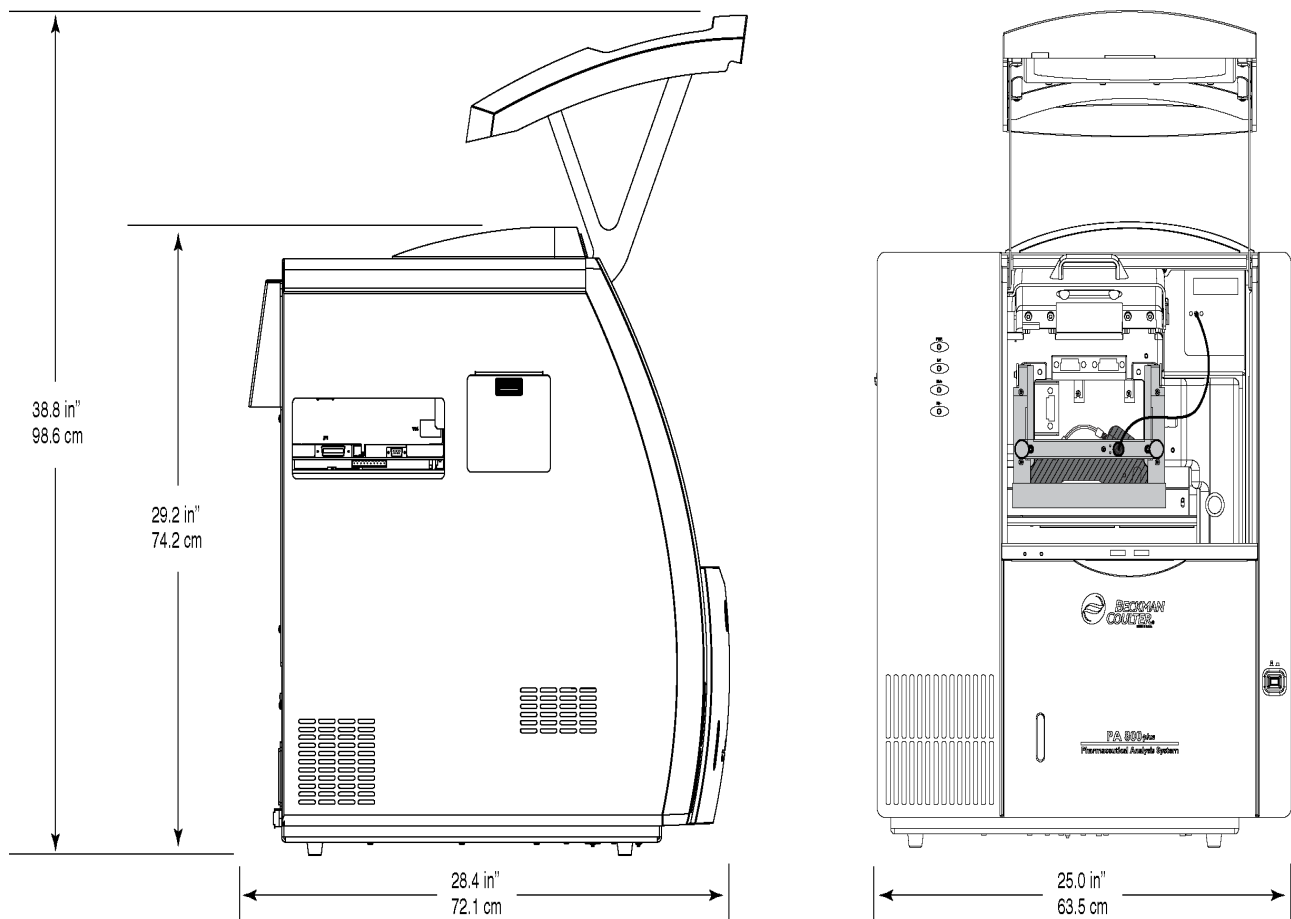
Site Requirements

Tabletop Space

The PA 800 *plus* System is made up of the PA 800 *plus* unit and one each of the following:

- IBM PC Tower
- 22" Monitor
- Keyboard
- Mouse

Figure 2.1 PA 800 *plus* Dimensions



Space Requirements

The instrument dimensions are shown in [Figure 2.1](#). In addition to space for the instrument itself, allow additional space for the computer and printer (if any). [Figure 2.2](#) illustrates the recommended system setup.

Ventilation Requirements

Adequate space must be provided around instrument for ventilation and access to the communication's connector. Allow at least 12 inches on the left side (facing instrument) and at least 4 inches on other sides Refer to [Figure 2.2](#) for overall instrument dimensions.

Figure 2.2 Typical PA 800 *plus* System Setup

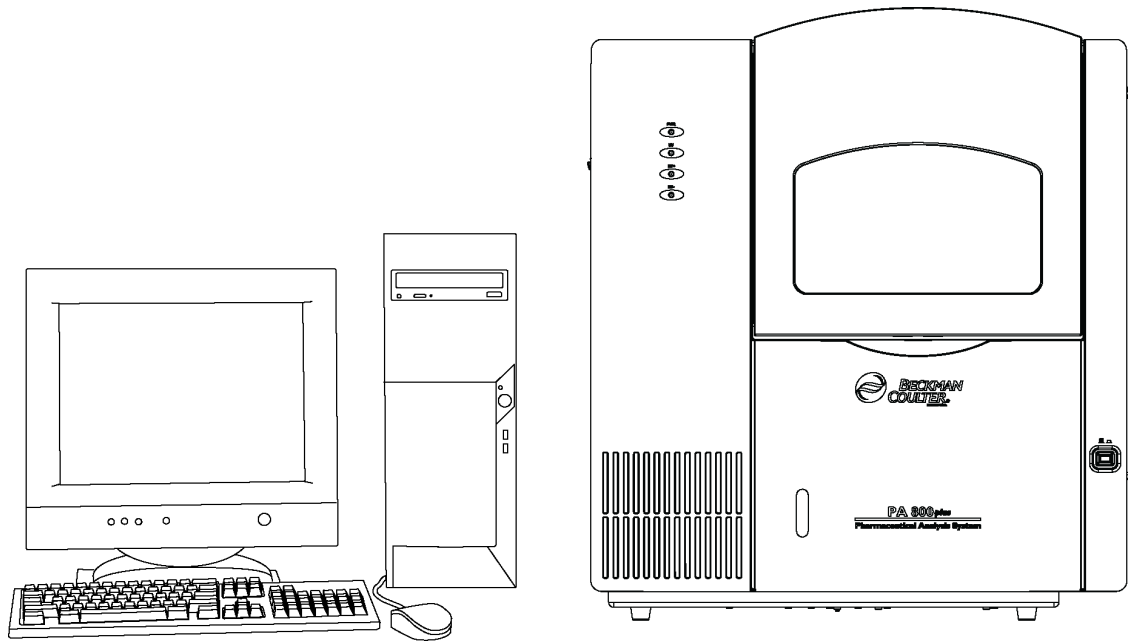


Table 2.1 Site Requirements

Item	Requirement
Bench Dimensions (Minimum Requirements)	Length: 6-8 feet (includes space for the PC Tower, monitor, and keyboard) Width: 3 feet Height: 3 1/2 feet Supportable Weight: 500 - 600 lbs
Environment	Indoor Use Only. Ambient temperature range: 4°C (39°F) to 40° (104°F). 15°C (59°F) to 30°C (86°F) recommended without large temperature fluctuations.
Power Requirements	100-120 or 200-240 VAC, 50-60 Hz, single phase, 130 W (nominal) for each module. Neutral to ground <0.5V

Electrical Requirements

The PA 800 *plus* is shipped with a power cord suitable for North America (nominal 120 VAC, 60 Hz) installations. A power cord suitable for non-North America installations will be provided by Beckman Coulter. The instrument requires one grounded electrical outlet.

The power line to the laboratory should connect directly from a main power line transformer at a power source known to be clear of erratic power loads, spikes, and electromagnetic interference. Power lines reserved for the instrument must have adequate reserve capacity. Normal loading should not exceed 50% of nominal capacity to allow for start-up loads and the addition of new instruments.

Remember that the personal computer, printer, and accessories require additional AC outlets.

Specifications

PA 800 *plus* System

Use this information to prepare the environment where the system is to be located.

Item	Description
Weight (PA 800 <i>plus</i>)	188 lbs (85.3 kg)
Firmware Version	9.0 or Higher
Power Requirements	Supply voltage must not exceed 10% of nominal
PA 800 <i>plus</i>	100-240VAC, 5.0A, 50/60Hz; auto-voltage sensing power supply
PC (typical)	6.0A, 50/60Hz
Monitor (22")	1.5A, 50/60Hz
Fuses (PA 800 <i>plus</i>)	8.0 A Slow Blow; 1/4 inch (2 ea.); 100-120 VAC 6.3 A Time Delay; 20mm (2 ea.); 200-240 VAC
Maximum Heat Dissipation (to room)	
PA 800 <i>plus</i>	400 W (1024 BTUs/Hour)
PC and Monitor	936W (3194 BTUs/Hour)
Ambient Operating Temperature Range	15-40°C (15-30°C recommended)
Humidity Restrictions	RH<80% (non-condensing) @ 30°C
Altitude Restrictions	up to 2000m (6,562 ft)
PC (Tower)	Beckman Coulter certified controller
Installation Category	Category II
Pollution Degree	2
Sound Pressure Level	Maximum sound pressure: 70 dB Maximum sound pressure at 1 meter away: 66 dB

Computer Requirements

Item	Description
CPU	IBM PC (currently validated on IBM M52 and M57 models)
Memory	1024 Mb (minimum)
Hard Drive	40 Gb or larger
CD/DVD RW	Required
USB Ports	Required for license key
Monitor/Resolution/Colors	1680 x 1050/True Color
Keyboard	101 key
Mouse	Microsoft compatible
Interface	GPIB Data Communications Interface PCIe board or USB cable (National Instruments)
Printer	Any Microsoft Windows XP-compatible printer
Operating System	Microsoft Windows XP Pro with Service Pack 2
Software	32 Karat version 9.1 and PA 800 <i>plus</i> version 1.1

IMPORTANT Users must have Administrator or Power user permission on the local workstation.

IMPORTANT Install 32 Karat software in the C:\32Karat folder.

UV Detector

Specification Type	Description
Wavelength Range	190 to 600 nm
Filter Selection	200, 214, 254 and 280 nm (standard); three open positions for additional wavelength selections; filter diameter ½ inch (127 mm); 0.20 in. thick
UV Source	Deuterium Lamp; 30 W; prealigned
Wavelength Accuracy	2 nm
Analog Output	Output 1 is Data; Full scale output is 1.0 AU/V (software selectable multipliers of 1.0, 0.5, 0.2, 0.05, 0.02 and 0.01 providing lower AU/V values). Output 2 not used. Output 3: Current signal when Voltage is programmed; Voltage signal when either Current or Power is programmed.

PDA Detector

Specification Type	Description
Wavelength Range	190 to 600 nm
Detector	256 Element Diode Array
UV Source	Deuterium Lamp; 30 W; pre-aligned
Wavelength Accuracy	2 nm
Bandwidth	6 nm minimum (Absorbance Averaging)
Analog Output	Output 1 is Data Channel 1 and Output 2 is Data Channel 2; Full scale output is 1.0 AU/V (software selectable multipliers of 1.0, 0.5, 0.2, 0.05, 0.02 and 0.01 providing lower AU/V values) Output 3 is Current signal when Voltage is programmed; Voltage signal when either Current or Power is programmed
Scan Collection Frequency	0.5 to 32 Hz

LIF Detector

Specification Type	Description
Relative Fluorescence Units (RFU) range	0 to 1000 RFU
Dynamic Range (at a dynamic range setting of 1000)	> 104
Sensitivity	1 x 10-11M Sodium Fluorescein with a signal-to noise ratio > 2
Baseline Noise	<0.005 RFU peak to peak ^a
Baseline Drift	< 0.2 RFU per hour ^a
635 nm External Laser Module dimensions	Height: 7.5 in. (19.2 cm) Width: 5.25 in. (13.2 cm) Depth: 7.0 in. (17.7 cm) Weight: 5 lbs. (2.3 kg)
Wavelength Ranges (for optics)	Excitation: 300 to 700 nm Emission: 350 to 750 nm
Filters (optional)	For 488 nm laser: 488 Notch filter and 520 nm Band-pass filter For 635 nm laser: 663 nm Long Pass filter (2 required) For user supplied lasers: Each laser configuration requires two filters, a laser filter to block stray laser light and an emission filter to select the wavelength of the emitted light. These filters must have an outside diameter of 0.500" (+.000, -.010") and a thickness not greater than 0.350"; if multiple filters are used in a single channel, the total thickness cannot exceed 0.350".
Fiber cable length for external Laser Module	6 feet (1.83 m)
Software Requirements	32 Karat Software, Version 9.0 or later

Specification Type	Description
Laser	3 mW 635 nm Solid State External Laser 3 mW 488 nm Solid State Laser
Analog Outputs	Output 1 is Data Channel 1 and Output 2 is Data Channel 2; Full scale output is 1.0 AU/V (software selectable multipliers of 1.0, 0.5, 0.2, 0.05, 0.02 and 0.01 providing lower AU/V values) Output 3 is Current signal when Voltage is programmed; Voltage signal when either Current or Power is programmed
Power Requirements	100/120V, 12A, 50/60 Hz 220/240V, 6A, 50/60 Hz
Ambient Temperature Operating Range	15°C to 40°C
Recommended Best Performance Range	15°C to 30°C
Relative Humidity	<95% non-condensing @ 35°C

a. Specifications are for an OPCAL with probe guide/lens.

Sample Cooling

Specification Type	Description
Ambient Operating Temp. Range	15°C to 30°C
Humidity	80%
Temperature Range	20°C below ambient to 60°C (minimum setting 4°C)
Temperature Stability	±1°C
Accuracy	Temperature of environment: ±2°C within the range of ±15°C from ambient; ±3°C outside the range of ±15°C for ambient.

PA 800 *plus* System Training

Pre-Training Requirements

After the system has been installed, a Beckman Coulter Field Engineer will train up to two operators in basic instrument operation.

Successful implementation of the installation is dependent upon the training environment. To ensure a focused and optimized training session, follow these guidelines:

1. It is important that the operators are available and uninterrupted throughout the initial training period.
2. No more than two operators can be trained on the instrument at any given time.

System operation requires a basic knowledge of Windows XP. The operator must have the following skills:

- Use Add/Remove programs
- Create, open, save, edit, move, and copy files
- Perform disk management operations

Additional Training

Our training program has been designed in phases to allow operators to focus on and master basic operational elements. The first phase involves the use of the PA 800 *plus* electronic manuals.

www.beckmancoulter.com and
www.CELeader.com

