The Counter Solution.

LS 6500

SCINTILLATION COUNTING SYSTEM

A Single-System Solution for Unprecedented Flexibility

Now you can create your own customized, integrated scintillation system. The LS 6500 Value Systems combine advanced technology, accuracy, and configurability to meet your exact requirements. With our unique upgradability design, you can even add features at a later date. Beckman Coulter offers unparalleled flexibility in a single system and a partnership that begins before system installation and continues throughout the lifetime of your instrument.

The LS 6500 System Provides:

Advanced Technology. A state-of-the-art basic system that eliminates early obsolescence.

Configurability. Enhancement packs and single options let you tailor the system to meet your needs.

Upgradability. Add features and enhancement packs throughout the lifetime of your instrument, if your applications change.
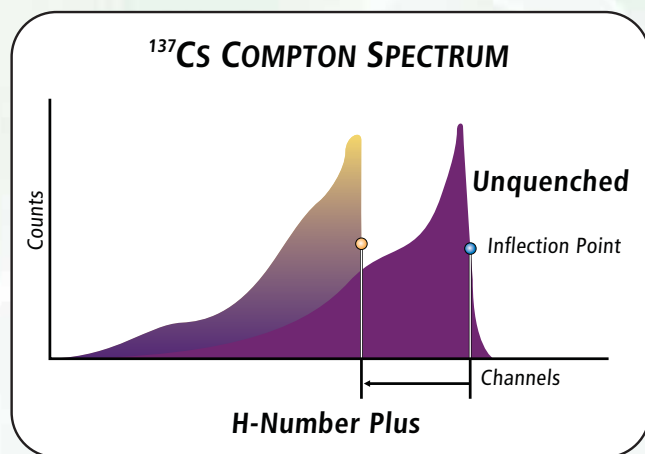

State-of-the-Art Design …

Advanced electronic components — a Motorola microprocessor supported by a digital signal processor — maximize the technological lifetime and make the LS 6500 a fast and efficient liquid scintillation counter.

High Spectral Resolution ...

A 32,768-channel multichannel analyzer gives you an effective resolution of 0.06 keV per channel and an eight-fold improvement over conventional liquid scintillation counters with 0.5 keV per channel. This provides the basis for accurate results for a wider variety of samples:

- DPM without quench curves (Auto-DPM)

- A more precise quench monitor (H-Number Plus)

- Superior multi-label studies with Automatic Quench Compensation (AQC)

- Automatic color detection and correction

^{137}Cs COMPTON SPECTRUM

Unquenched

Counts

Inflection Point

Channels

H-Number Plus

Accurate Results ...

At the heart of the liquid scintillation counter is our patented H-Number Plus. For samples with variable quench, the H-Number Plus significantly improves accuracy and reproducibility. The quench is determined very accurately to a tenth of a channel.

... And Simple Operation

The LS 6500 liquid scintillation counter guides you with easy-to-follow menus and context-sensitive help screens throughout the operation. Actually, after setting up your counting conditions for up to 50 user programs, the system becomes a one-button system –press "Start" and simply add your racks to the sample chamber.

Versa-Rack™, a standard feature on all Value Systems, lets you count samples in any combination. Up to 336 standard vials (20 mL), 648 mini-vials (7 mL), Bio-VialsTM (4 mL), and even Microfuge® tubes.

Customized Value

One system with advanced technology design, the LS 6500 liquid scintillation counter allows you to customize the system to meet your exacting applications requirements. Although the Basic and Value Systems include many features, Enhancement Packs and Single Options give you unprecedented flexibility to create your own liquid scintillation counter.

Standard Features

Hardware and Electronics
- 32,768-channel multichannel analyzer
- Advanced mini-size photomultipliers
- Effective interlocking lead shielding
- Fast/slow component pulse analyzer

User Interface and Output
- Color flat panel display
- Hot-Graph
  - Spectrum display/print
  - Histogram display/print
- Proprietary windowing user interface
- Context-sensitive help screens
- User-selectable output formats

Basic Calculations
- Fixed background subtraction
- First-vial background subtraction
- Half-life correction
- Final result normalization
- Repeat and replicate averaging with %CV
- Single-label % of reference

General
- Automatic power-up diagnostics
- Automatic calibration and verification
- Diagnostic program
- Versa-Rack™ [A, B]
  - 336 standard vials
  - 648 mini- or bio-vials
- Automatic batch repeat
- Bi-directional sample changer
- Positive sample identification
- Electrostatic controller

Instrument Editing
- 20 user programs
- Program protection
- Isotope library
- Auto-Isoset™
- Interrupt mode

Sample Monitors
- H-Number Plus [A, B]
- IC-Number
- High count terminator
- Random coincidence monitor

Enhancement Packs

P/N 510706 Productivity Pack [1]
Enhance productivity by obtaining final DPM results for all types of samples and add computer communications capabilities. Requires Value System or H-Number Plus (P/N 500629).

P/N 510707 Confidence Pack [2]
Obtain accurate results under all circumstances by on-line sample monitoring. Requires Productivity Pack (P/N 510706) or H-Number Plus (P/N 500629) and Single-, Dual-, or Triple-Label DPM (P/N 500657, 500625 or 500626).

P/N 510659 System 96 Plus Pack [3]
Obtain accurate results under all circumstances by on-line sample monitoring and perform detailed analysis of non-radioactive luminescence assays. Requires Value System 96 or H-Number Plus (P/N 500629) and Single-, Dual-, or Triple-Label DPM (P/N 500657, 500625, or 500626).

P/N 510708 Data Management Pack [4]
Provides trouble-free data storage and transfer of data to external computers and eliminates the guesswork when tracking radioactive waste.

P/N 510660 Network Pack [5]
Provides software and hardware to put data on a computer or network.

P/N 510709 Environmental Pack [6]
Ensures highest sensitivity when counting low activity or low-level samples and provides efficient monitoring for samples containing overlapping alpha and beta emitters.

Individual Options

[1]	• Xtalscint CPM/DPM
[1]	• Single- and Dual-Label DPM[B,)1]
[2]	• Luminescence Correction (Lum-EX)[B]
[2] [3]	• Color Detection and Correction[)1]
[2] [3]	• Two-Phase Monitor[)1]
[3]	• Single Photon Monitor
[4]	• Data Buffer and Transfer System
[4]	• Radioactive Waste Manager
[5] [1]	• RS-232 Interface
[5]	• LS WinConnection Suite (PC software)
[6]	• Low-Level Count Mode
[6]	• Alpha/Beta Discrimination
	• Versa Rack[A, B]
	• H-Number Plus[A, B]
	• Auto DPM
	• Single-Label DPM
	• Single-, Dual-, and Triple-Label DPM[)1]
	• Dual-Label % of Reference[)2]
	• 30 Additional Users

Standard Features

[1] Part of Productivity Pack
[2] Part of Confidence Pack
[3] Part of System 96 Plus Pack
[4] Part of Data Management Pack
[5] Part of Network Pack
[6] Part of Environmental Pack
[A] Included in Value System
[B] Included in Value System 96
[)1] Requires H-Number Plus
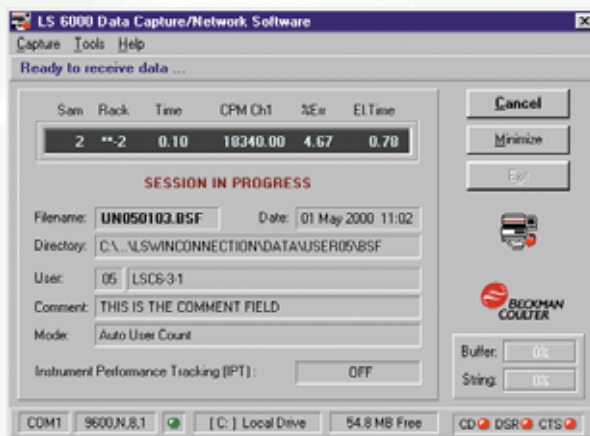[)2] Requires Dual- or Triple-Label DPM

Efficient Data Management

In today's environment, data handling with networked PCs and automatic collection of data on a secure server have become commonplace. The LS 6500 liquid scintillation counter with LS WinConnection is ideally suited for this task. Automatic capturing of data in a variety of formats and further data manipulation with third-party packages are made easy.

LS WinConnection Suite

Efficient reporting and management of data is imperative to enhance overall productivity in today's environment. The LS WinConnection Suite includes Microsoft Windows* (Windows NT 4.0 and later) programs to simplify and automate the collection, storage, and communication of scintillation counter data via an existing network. The LS WinConnection Suite includes three independent but complementary programs:

Data Capture/Network Software

The Data Capture/Network Software can run unattended in the background to collect and save data in a variety of formats. Data are stored in a secure binary format - Beckman Standard File (BSF) – onto the local drive or a network drive.

Other file formats, such as ASCII (print and delimiter format), native Excel* Worksheet, and native Lotus* 1-2-3 Spreadsheet formats can also be obtained automatically.
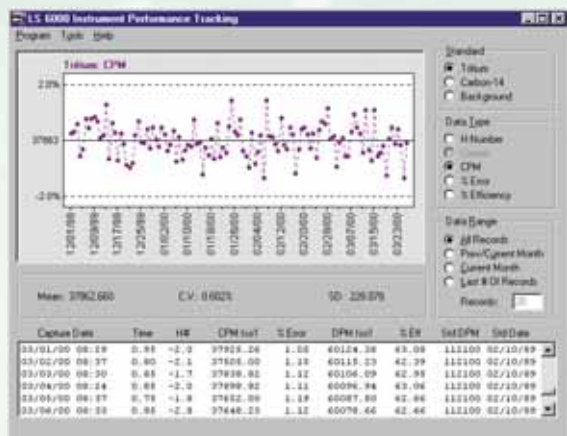
Also, the Data Capture/Network Software will collect quality control data from standards and appends them to a Microsoft Access database for use with Instrument Performance Tracking (IPT).

BSF File Utility

The BSF File Utility allows for the analysis, interpretation, and reporting of collected data and can convert data in BSF format to other formats – on demand. The utility provides the following key benefits:

- Direct review and printing of binary BSF file in an easy-to-read format

- Immediate graphic presentation of the data as histogram, spectrum, or kinetic for chemiluminescence assays.

- On-demand conversion of files into ASCII, Excel, Lotus, applications-specific BSF as well as Hex-Dump formats.

- Adding and/or editing of records in a BSF file for specific purposes.

Instrument Performance Tracking (IPT)

The Data Capture/Network Software automatically generates and expands a Microsoft* Access database that includes performance data of the scintillation counter. This information is then used with the Instrument Performance Tracking (IPT) program to tabulate and graphically display performance parameters, such as H-Number, counts, CPM, counting error, and % efficiency for multiple standards over time. Tolerance levels can be set by the user to clearly indicate outliers. Statistical analyses such as mean, standard deviation, and coefficient of variance (% C.V.) are performed automatically.

As specified by the user, "old" performance records are automatically moved to an archive database to keep the active database small enough and manageable.

Sample Preparation and Support

Beckman Coulter provides an outstanding biodegradable multipurpose cocktail that contains a solvent with rapid biodegradability characteristics and outstanding sample holding capacity. Other pseudocumene-based cocktails are available for specialized sample preparation needs.

Scintillation Cocktails and Solid Scintillators

With the Xtalscint CPM/DPM option, the LS 6500 liquid scintillation counter can efficiently count both liquid samples (e.g., mixture of sample and cocktail, filters in cocktail) and solid scintillators (e.g., proximity assays).

Our Commitment to Total Customer Satisfaction

Creating customer-sensitive solutions, developing state-of-the-art instrumentation, providing responsive, quality service and guiding you with full-scale support is our commitment to you. Beckman Coulter's worldwide team of dedicated professionals will support you for the lifetime of the system.

BASIC SYSTEM

Part No.	Description
510702	LS 6500 Miniature Vial System, 120 V
510703	LS 6500 Standard Vial System, 120 V
510719	LS 6500 Miniature Vial System, 240 V
510720	LS 6500 Standard Vial System, 240 V
510713	LS 6500 Miniature Vial System, 100 V
510714	LS 6500 Standard Vial System, 100 V

VALUE SYSTEM

- **Complete set of miniature and standard vial racks**
- **Versa-Rack to count both miniature and standard vials**
- **H-Number Plus, External Quench Monitor (^{137}Cs) with Automatic Quench Compensation (AQC)**

Part No.	Description
510705	LS 6500 Value System, 120 V
510722	LS 6500 Value System, 240 V
510716	LS 6500 Value System, 100 V

VALUE SYSTEM 96

- **Complete set of miniature and standard vial racks**
- **Versa-Rack to count both miniature and standard vials**
- **H-Number Plus, External Quench Monitor (^{137}Cs) with Automatic Quench Compensation (AQC)**
- **Single- and Dual-Label DPM calculations, with factory stored quench curves for ^{3}H and ^{14}C, pipetting monitor, quench curve setup, correlation table and background quench correction**
- **Luminescence Correction (Lum-EX) automatically corrects for luminescence interferences**

Part No.	Description
510654	LS 6500 Value System, 120 V
510656	LS 6500 Value System, 240 V
510658	LS 6500 Value System, 100 V

TECHNICAL SPECIFICATIONS

Dimensions and Weight†

Width:	91.4 cm (36.2 in.)
Height:	67.3 cm (26.5 in.)
Depth:	80.0 cm (31.5 in.)
Weight:	210 kg (460 lbs.)

†without display, shelf and printer

Minimum Power Requirements

LS 6500	120V	3.0 A
	240 V	1.5 A
	BTU/Hr	1230

Space Requirements

A minimum bench or table space of 132 cm (52 in.) wide and 71 cm (28 in.) deep is required.

The surface must be level and flat and capable of supporting 275 kg (600 lbs.) without bowing or flexing.

To allow for optimal air circulation and ease of service, a recommended space of 152 cm (60 in.) wide and 81 cm (32 in.) deep should be dedicated to the system.

An additional 30.5 cm (12 in.) of width should be free of permanent structures to allow for installation and service.

The area above the bench or table, 91 cm (36 in.), should be clear of shelves or cabinets.

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BECKMAN COULTER®

Developing innovative solutions in Systems Biology.

Innovate SIMPLIFY Automate