



Innovator In Spectroscopy Equipment

# LGBS2715-2"



**LAB GAMMA BETA  
SPECTROSCOPT  
SYSTEM  
MODEL LGBS2715-2"**

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# LAB GAMMA BETA SPECTROSCOPT SYSTEM

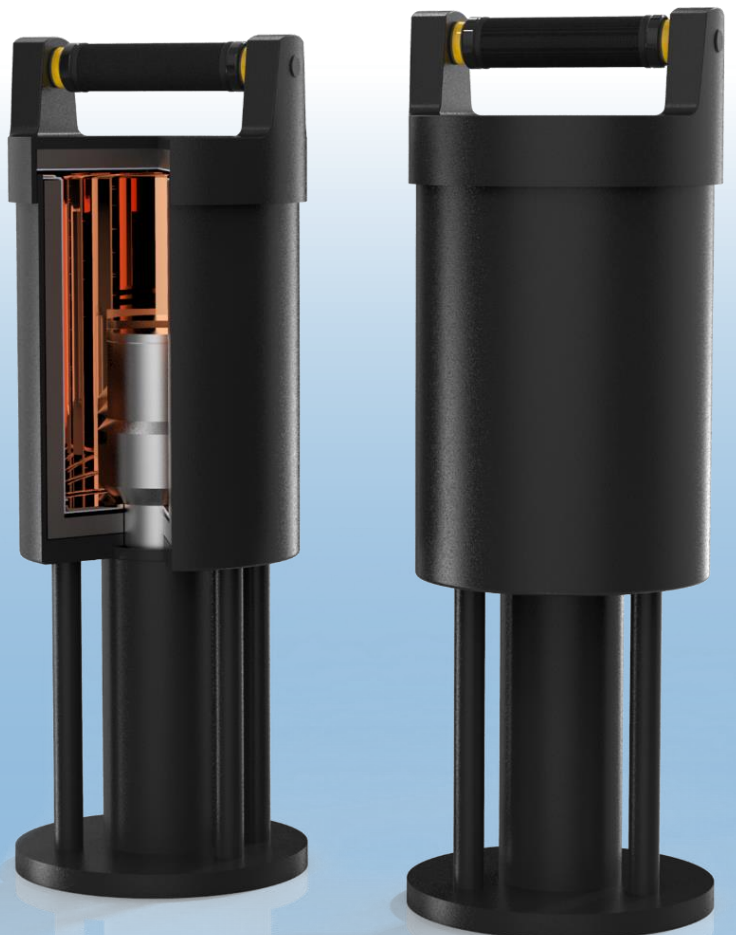
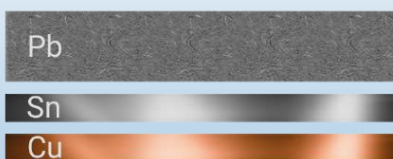
## MODEL LGBS2715-2"

### Features

- Efficient scintillator probes (2" NaI(Tl) + 0.25mm PVT)
- Planchet with up to 52mm diameter and 6.5mm height
- Closed measuring chamber with scintillation detector
- 4 Different energy ranges (adjustable digital gain)
- 2 Bank spectrum presentation (2x2048 channels)
- Supports all data extraction and reanalysis data
- Simultaneous and separate measurement
- Time gained by multiple measurement
- High sensitivity and uniform response
- Low limits of detection and decision
- Documentation of measured values
- Wide temperature range

## HIGH RESOLUTION AND ACCURATE GAMMA AND BETA SPECTROSCOPY BASED ON CUSTOMIZED SHIELD

### Beta and Gamma Low Background Shield



## Description

LGBS2715-2" is a well-shielded gamma-beta activity measurement system offering both simultaneous and separate measurement of gamma and beta activities in the sample. The system can be utilized in various applications including environmental analysis, food samples and nuclear medicine. The device is equipped with a 2" NaI(Tl) detector and 0.25mm plastic scintillator (PVT) which leads to impressively high spectrum resolution. The holder considered for the sample comes with two versions. In the first version, the shield comprises 3 layers including copper, tin and lead from interior to exterior, respectively. The second version is similar while tin layer has been excluded. The overall dimension of the system is 562.4mm height and 200mm diameter while the cavity for sample holder has diameter of 148mm and depth of 219mm. Using modern digital signal processing algorithms, the usbBase can accurately distinguish between the two types of radiation and accurately measure their energies. It is easy to operate and provides quick and reliable measurement results. The system can accurately distinguish between gamma, beta and mixed pulses. The instrument is ideally suited for nuclide-specific activity measurements in the radionuclide laboratory. The measurement electronics is a modular designed system including a high voltage unit with preamplifier and an ADC for the acquisition of spectra. The measurement electronics LGBS2715-2" is operated via PC software. This allows very intuitive user guidance. Pulse height spectra can be depicted graphically and evaluated. Several service functions are available including background measurement, energy calibration and spectrum recording.

## Specifications

### Inputs/outputs

#### Inputs

USB

#### Outputs

USB

### Performance

#### False beta to true gamma

1:10000 (In true gamma window)

#### False gamma to true beta

1:2000 (in true beta window)

### Shield Properties

#### Materials and Thickness

Copper, Tin, Lead (version 1) – 2mm,1mm,13mm respectively

Copper, Lead (version 2) –2mm,13mm respectively

#### Cavity

219mm x 148mm (Depth x Diameter)

### Background Measurement (Background is measured with closed shield opening)

#### Gamma

60CPS (with shield)

#### Beta

<0.1CPS

### Detector

#### Gamma Detector

NaI(Tl), 2"

#### Beta detector

PVT, 0.25mm

#### PMT

14-pin 10-stage PMTs

### Data Acquisition and Analysis

#### OS Requirement

Windows 7 or higher versions

#### Software

CFP-DMCA software

### Measurement/Spectrum

#### High Voltage

0-2000V, Positive, 12 Bit resolution

#### Energy Calibration

Linear calibration

#### ROI Selection

4 ROIs to select on store

#### Spectrum Type

2 simultaneous cumulative spectrums

### ADC

#### Channels

12bit in 4096CH @120Mhz FRQ

#### Conversion time

200nsec with

8.3nsec time interval

### Digital Signal Processing

12-bit and 80 MHz ADC

Software selectable coarse gain: (x1 to 150x) in 15 step

Software selectable fine gain: (0 - 2x) in 65536 step

Integration time filter for the energy calculation with software adjustable rise time in the range 0 to 0.819ms @80Mhz in 0-65536 step

Trigger threshold software adjustment (0 to 100% scale) in 1024 step

Software fine tuning of the Pole-Zero cancellation

Software gain stabilization

Pile-up rejection and Live Time correction

Baseline restorer with programmable averaging

## Application

- Nuclear medicine
- In-vitro test
- Radio-immunoassay and analysis of environmental samples
- Food samples inspection
- 



## Electrical and Mechanical

### Power required

USB port - DC -5V- 200mA (1W)

### Physical

Dimensions	562.4mmx200mm (Height x Diameter)
Weight	36.00kg (3 Layers) 34.75kg (2 Layers)
Storage temperature	0°C to 50°C
Operating temperature	10°C to 45°C.

## Software

DMCA software containing fast access toolbar, menu bar, and different panels including new gamma histogram, new beta histogram, 3D separation, gamma trace, beta trace and state info.

Fast access toolbar provide several functionalities usually used by user.

New gamma histogram panel represents the gamma spectrum in real-time manner.

New beta histogram panel represents the Beta spectrum in real-time manner.

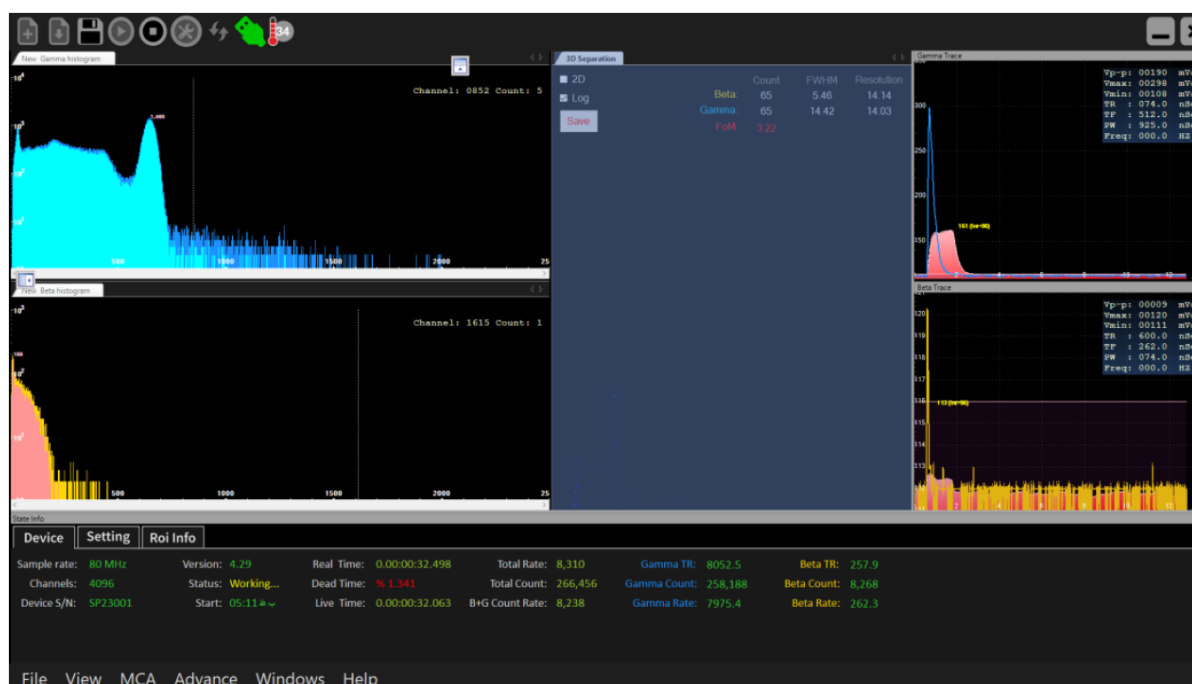
3D separation panel indicates the separated version of all pulses based on their shape in 3d dimensions.

Gamma trace panel shows the gamma pulses sensed by detector.

Beta trace panel shows the beta pulses sensed by detector.

State info panel shows some information of detector parameters along with real time measurement results.

Menu bar shows the total command needed throughout the device functioning.



Software main window

## Ordering info

### Standard package includes Version 1 (3 Layers Shield)

Part #	Image	Description
LGBS2715-2" main (Ver1)		Includes the main body of device (Detection system, linear stage, integrated display)
ACCE2715001-2"		CD User guide (1 Pack)

### Standard package includes Version 2 (2 Layers Shield)

Part #	Image	Description
LGBS2715-2" main (Ver2)		Includes the main body of device (Detection system, linear stage, integrated display)
ACCE2715001-2"		CD User guide (1 Pack)

### Optional accessories and services

Part #	Image	Description
ACCE2715002-2"		installation
ACCE2715003-2"		Training
ACCE2715004-2"		Hard case with foam insert
ACCE2715005-2"		Plastic planchet 2"
ACCE2715006-2"		Aluminum planchet 2"



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