



Innovator In Spectroscopy Equipment

LAB GAMMA BETA SPECTROMETER 2INCH MODEL LGBS2715





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Features:

- Connection for scintillator probes (Zns(Ag) + 0.5mm Thin Plastic (PVT))
- Graphical color display (800 x 480) with touch panel
- 2 Bank Spectrum presentation (2x2048 channels)
- RS232 and USB interface for printer/PC
- One or two regions of interest (ROI)
- Weight entry and spillover correction
- Storage of spectra or ROI data
- 4 different energy ranges (digital gain Adjustable)
- Half-life correction
- Real-time clock
- Nuclide library
- USB Host support
- LAN port support
- Calibrated with Cs-137
- Gain stabilization



Description:

Phoswich Detectors can measure more than one type of radiation in the same detector and distinguish between them. This not only enhances the accuracy of the measurement, it also drastically cuts instrumentation and operating cost.

The LGBS 2715 is a modern gamma & beta & beta spectroscopy system for activity measurements in laboratories. It is easy to operate and provides quick and reliable measurement results which are presented clearly arranged on a large graphical display with touch panel.

Using modern digital signal processing the system can accurately distinguish between gamma & beta-rays detected in the mixed gamma and beta particles detected in the PVT.

The instrument is ideally suited for nuclide-specific activity measurements in the radionuclide laboratory. The measurement electronics LGBS 2715 is a modular designed 1/2 19" system accommodated in a desktop housing comprising computer unit, graphical display with touch panel and power supply unit. For data acquisition the measurement electronics includes two additional plug-in cards, a high voltage unit with preamplifier and an ADC for the acquisition of spectra.

The gamma & beta spectrometer LGBS 2715 has been designed for use in nuclear medicine, e.g. for in-vitro tests, radioimmunoassays or for the analysis of environmental samples, e.g. waste water, or for the detection of extremely low activities in food samples.

Various scintillation probes are available.

The measurement electronics LGBS 2715 is operated via soft keys (graphical buttons on the display) which are queried via a pressure-sensitive foil (touch panel). This allows very intuitive user guidance. Pulse height spectra can be depicted graphically and evaluated, for example, via (ROI's). Several service functions are available: background measurement, energy calibration and spectrum recording.

For single sample measurements there is an interactive start and stop mode with corresponding protocol printouts. To facilitate measurement operation, a comprehensive nuclide library with one parameter set for each nuclide is available to the user. The LGBS 2715 supports communication with an external PC via RS232 interface. Thus, it is possible to query and set parameters on the PC. Also, stored



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measurement data can be queried from the PC and processed on the PC. New program versions can easily be downloaded from PC to the flash E2prom using a terminal program. Parameters and service functions are contained in a hierarchically structured, very clearly arranged and user-friendly menu.

Specifications:

• Measurement/Spectrum

- ADC
 - Channels: 4096 (80Mhz)
 - Conversion time 200 nsec max
- High Voltage: +500V to +1500V or -75V to -1500V
- Energy ranges
 - From 0 to 1024 keV
 - From 0 to 2048 keV
 - From 0 to 3072 keV
 - From 0 to 4096 keV
- Energy calibration
 - non-linear empirical function or linear Calibration (polynomial fit)
- Region of interest
 - Max. 2 ROIs
- Nuclide library
 - Max. 50 nuclides
- NaI/PVT β/α Counter Performance
 - PVT thickness: 0.5mm
 - Gamma & beta-ray rejection:
 - Am-241 (60keV): > 1:550
 - Co-60 (1172, 1332keV): > 1:185

• Data Acquisition/Computer

- Processor: Arm9 32 bit 200MHz
- Real-time clock
 - Integrated crystal Frequency tolerance: 50 ppm
 - Ageing: 5 ppm/year
- Watchdog: Built
- Display/Touch panel
 - Graphical Color LCD display
 - Touch screen: 800 x 480 pixels 4-line touch screen
- Memory Capacity: Max. 1000 spectra or 10000 ROI values
- Memory Type
 - SD RAM: 64MB
 - Nand Flash: 128MB
 - Data Flash: Optional
 - SD card Support 4G SDIO mode Support hot-swappable





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- Communication
 - Serial port:
 - COM0: RS232/TTL 3-wire
 - COM1: RS232/TTL 5-wire
 - COM2: RS232/TTL / RS485 5-wire
 - Net: 10/100Mbps with status indicator
 - USB Host: 2-channel USB 2.0 HOST 12Mbps support USB Keyboard USB Mouse, USB storage
 - USB Device: 1-channel USB 2.0 device
 - Piezo signal generator, 83 dB in 10 cm distance
- Serial interface: Asynchronous serial interface RS 232, Cable length max. 30 m, transfer rate 2400 to 38400 baud selectable Parameter: 8 data bits, 1 start bit, 1 stop bit, no parity, RTS/CTS handshake
- Program: Can be downloaded via serial interface
- Languages: English
- Access protection: Password
- Ext bus: Sys bus interface A1-A22, D0-D15 with buffer for Ext drive
- High voltage supply: 0 – 2000 Volt , Polarity positive , Resolution 12 bit
- Temperature range & Relative humidity: -5 °C to +40 °C & 0 % – 90 %, no condensation

Accessories:

- **Scintillation Probe:** NaI crystal 1" x 2" , with photomultiplier and voltage divider, External diameter 65 mm, with complete cable set 2 m PVT 0.5mm thin Plastic scintillator crystal 2" x 0.2" , with photomultiplier and voltage divider
- **Lab table shielding:** All-sides approx. 20 mm Pb, with complete cable set , Weight approx. 8 kg
- **Test source:** Need Cs-137 check source for Calibration (Not included)
- **Printer:** with serial or USB interface (optional)

Electrical and Mechanical Power Required:

- **Typical Power Requirements**
 - Power input: range (7-30V) to propose 12V-2A DC power the system can provide USB with 500mA limited, and they can be protected by fuse
 - Power consumption: 12V-0.2A (with network cable, SD card, 1 U disk, MP3 play, 3.5"LCD)
- **Physical**
 - Weight: Net: 2 kg & Shipping: 4 kg
 - Size: 220 mm x 145 mm x 50 mm (Lx W x H)
- **LGBS2715 Rev 1.0 150219**



