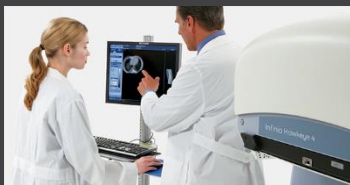




Innovator In Spectroscopy Equipment

# LGSQC2619



## LAB GAMMA SPECTROMETER FOR QUALITY CONTROL MODEL LGSQC2619

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CATALOG



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# LAB GAMMA SPECTROMETER FOR QUALITY CONTROL

## MODEL LGSQC2619

### Features

- Protocol-driven software package for QC operation
- Precise analysis of radiopharmaceutical purity
- Closed measuring chamber with scintillation detector
- Efficient shield design for low background
- 4 Different energy ranges (adjustable digital gain)
- Daily quality control of radiopharmaceuticals used in Nuclear Medicine procedures
- Automatic energy calibration
- Live spectrum display
- Nuclide purity in %
- Efficient 2" and 3" NaI(Tl) scintillator probes
- 4096 channels spectrum presentation
- Supports all data extraction and reanalysis data
- High sensitivity and uniform response
- Low limits of detection and decision
- Documentation of measured values
- Wide temperature range

## HIGH PRECISION SPECTROSCOPY SYSTEM FOR QUALITY CONTROL



## Description

LGSQC2619 is a spectroscopy system specially designed for radionuclide identification during radiopharmaceutical quality control and quantitative determination of radio-contaminants coming from cyclotron target or radioisotope generators. The device comes in two models namely, LGSQC2619-2" and LGSQC2619-3" that are equipped with 2" and 3" NaI(Tl) detectors, respectively.

Resolution in LGSQC2619-2" is superior that LGSQC2619-3" which makes LGSQC2619-2" a suitable choice for applications where the spectrum peaks are highly overlapped. On the other hand, due to higher crystal size in LGSQC2619-3", this version is best suited for applications where higher speed measurement is needed.

The shielding parts are designed so as to minimize the interference in the measurements and minimizing the MDA presented by LGSQC2619.

The system can be utilized in various applications including radiopharmaceutical quality control, quantitative determination of radio-contaminants coming from cyclotron target or radioisotope generators, analysis of environmental samples and determination of low level activities in food, water and waste samples. The instrument is also ideally suited for nuclide-specific activity measurements in the radionuclide laboratory.

Using modern digital signal processing algorithms, the usbBase can accurately detect the pulses corresponding to gamma radiation with low dead time. It is easy to operate and provides quick and reliable measurement results.

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 LGSQC2619 is operated via PC software. This allows very intuitive user guidance. Several service functions are available including background measurement, energy calibration and spectrum recording.

## Specifications

<b>Inputs/outputs</b>
Inputs
USB
Outputs
USB
<b>Detector</b>
NaI(Tl)
2" (LGSQC2619-2")
3" (LGSQC2619-3")
Photomultiplier Tube
14-pin 10-stage PMTs
<b>Shield Properties</b>
Martials and Thickness
Lead, 50 mm (Both versions)
<b>Data Acquisition</b>

<b>Processor</b>
FPGA technology with Arm9 32 bit 200MHz
<b>Watchdog</b>
Built in
<b>Measurement/Spectrum</b>
<b>High Voltage</b>
0 - 1500V (DAC 12bit) 0.2mA
<b>Energy channel (Selective by Admin)</b>
From 0 to 1024 keV
From 0 to 2048 keV
From 0 to 3072 keV
From 0 to 4096 keV
<b>Energy calibration</b>
Non-linear empirical function or linear Calibration (polynomial fit)
<b>ADC</b>
<b>Channels</b>
12bit in 4096CH @120Mhz FRQ
<b>Conversion time</b>
200nsec with 8.3nsec time interval
<b>Digital Signal Processing</b>
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

- radiopharmaceutical quality control
- Nuclide determination
- Nuclide impurity check
- quantitative determination of radio-contaminants coming from cyclotron target or radioisotope generators
- Analysis of environmental samples
- Determination of low level activities in food, water and waste samples

## Electrical and Mechanical

### Power required

DC (USB), 5V, 100mA

### Physical

Model	LGSQC2619-2"	LGSQC2619-3"
Dimensions (LxWxH)	230mm x 230mm x 368mm	240mm x 240mm x 450mm
Weight	44.90kg	65.76kg
Storage temperature	0°C to 50°C	
Operating temperature	10°C to 45°C.	

## Software

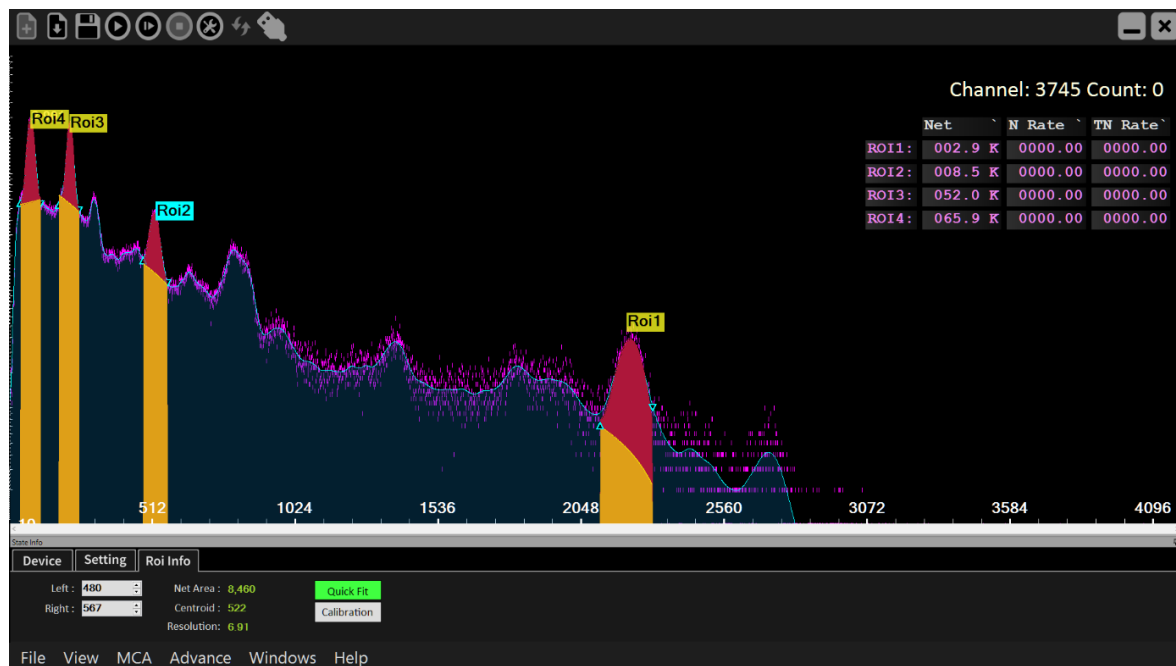
DMCA software containing fast access toolbar, menu bar, and different panels including new gamma histogram and gamma state info.

Fast access toolbar provide several functionalities usually used by user.

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

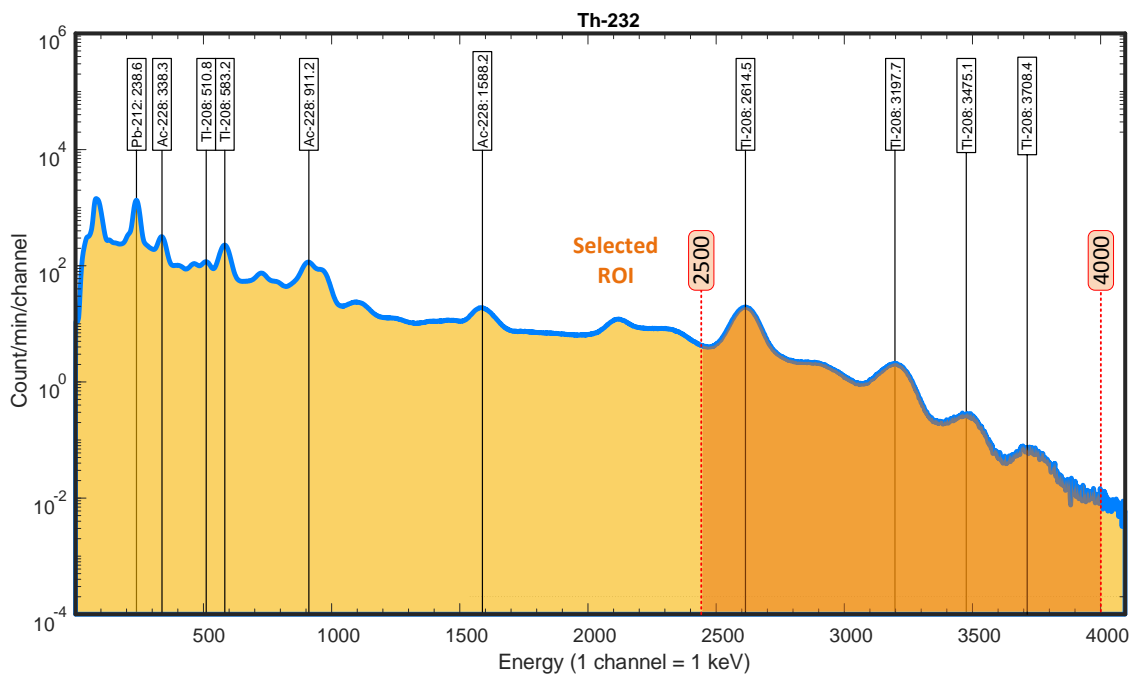
State info panel shows some information of detector parameters along with real time measurement results.

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

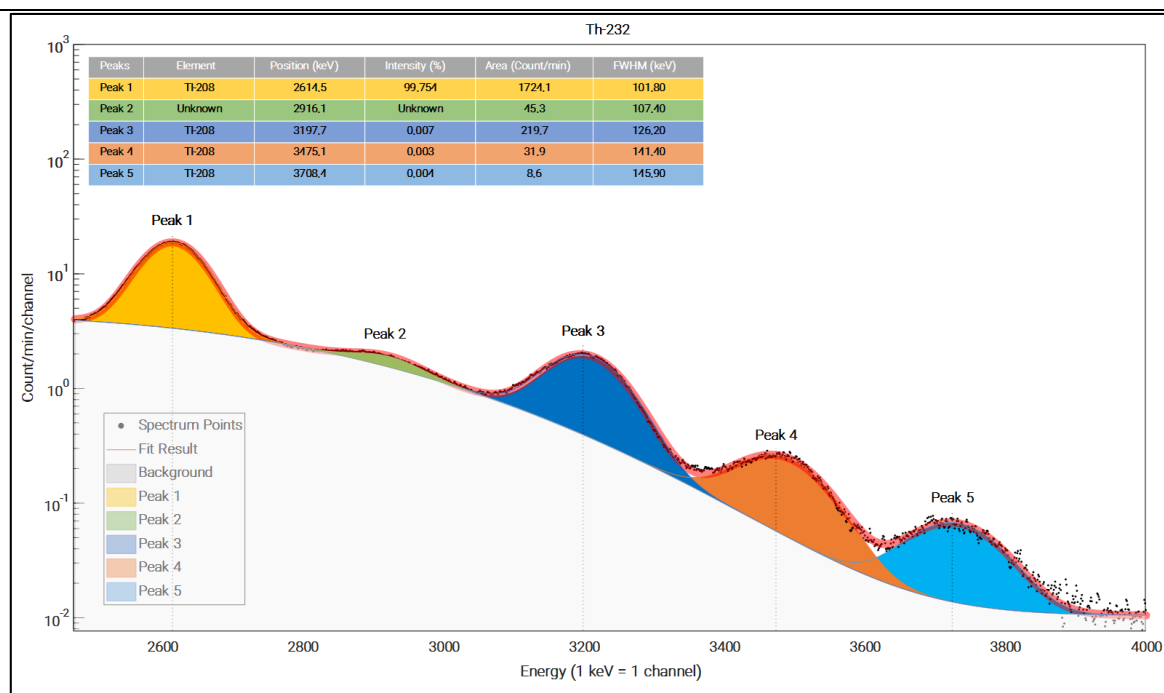


Experiment setup window

The software is equipped with user friendly and automatic procedures for peak detection and peak analysis. In the peak detection procedure, all peaks in the spectrum are detected and labeled by software automatically. The peak analysis procedure is responsible to precisely identify overlapping peaks, measure the extent of each individual peak, measure the peak area and send them for further analysis.






Automatic Peak Detection Procedure






Automatic Peak Analysis Procedure

## Ordering info




### LGSQC2619-2" Standard package includes

Part #	Image	Description
LGSQC2619-2" main		Includes the main body of device (Detection system, linear stage, integrated display)
ACCE2619002		LEMO Cable to USB for PC connection
ACCE2619003		CD User guide (1 Pack)

### LGSQC2619-3" Standard package includes

Part #	Image	Description
LGSQC2619-3" main		Includes the main body of device (Detection system, linear stage, integrated display)
ACCE2619002		LEMO Cable to USB for PC connection
ACCE2619003		CD User guide (1 Pack)

**Optional accessories and services**

Part #	Image	Description
ACCE2619004		installation
ACCE2619005		Training
ACCE2619006		Hard case with foam insert



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