Digital spectrometer DS100L

MADE IN JAPAN

Spectroscopy with LaBr3(Ce) detector･High-voltage power supply･Preamplifier power supply

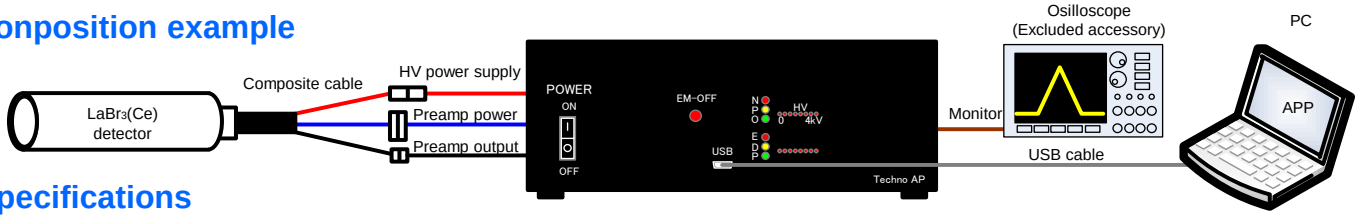
The high-voltage power supply, preamp power, and MCA (Multi Channel Analyzer) are required for measurement using the radiation detector. Additionally, DS100L has a latest $LaBr_3$(Ce) detector. DS100L is all-in-one digital spectrometer which has $LaBr_3$(Ce) detector, high-voltage power supply, preamp power, and MCA. Preamp signal of the detector is directly input to the DS100, and the digital signal processing is processed a high-speed ADC (100MHz ・ 14Bit) and highly-integrated FPGA. The measurement data will be transferred to the PC via USB connection.

External (Front)

External (Rear)

- **Detector** — **$LaBr_3$(Ce) scintillation detectors φ1.5 inch × 1.5 inch (with Photomultiplier Tube (PMT) and divider preamplifier)**
- **High-voltage power supply** — **Output voltage ±0～4000V**
- **Preamplifier power supply** — **±12V, ±24V (NIM-standard)**
- **Resolution** — **2.8% ~ 3.5 % @662keV**
- **Throughput** — **100kcps and over**
- **Multiple functions** — **Spectroscopy amp, Filter shape output DAC, Pulsar (test pulse) output DAC**
- **Interface** — **USB2.0 (Windows PC)**
- **Software** — **Included with application and instruction manual**

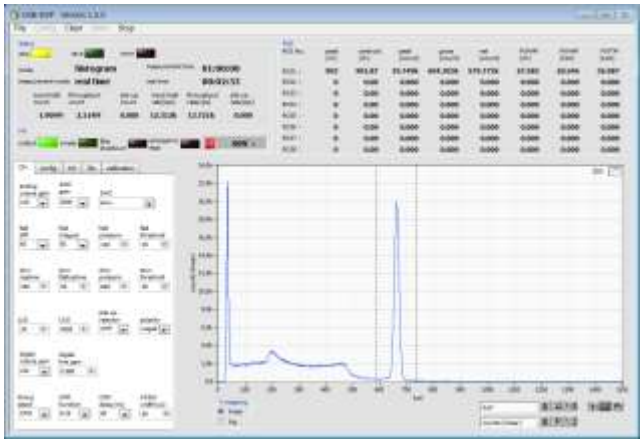
Conposition example



Specifications

Detector	$LaBr_3$(Ce) scintillation detector f 1.5 inch x 1.5 inch (with Photomultiplier Tube (PMT), and divider preamplifier)
Analog input	1CH, ±1V range, input impedance 1kΩ
Gain	Coarse Gain x1, x2, x5, x10, Fine Gain x0.33 ～ x1.0
Sampling	100MSPS, resolution 14Bit
ADC gain	8192, 4096, 2048, 1024, 512, 256ch
Digital processing	Trapezoidal Filter 0.1～16 ms, Baseline Restorer, Pileup Rejecter and other.
Unit panel, switch, button, connector	【Front】 Power switch, Emergency stop switch, H.V. monitor LED, Status monitor LED 【Rear】 AC100V power 3P connector, H.V. power supply SHV connector, D-sub 9 pin connector for Preamp power, BNC connector for bias shut down, BNC connector for filter output wave profile, BNC connector for preamp output, BNC connector for pulsar output
High-voltage power supply	0V to ±4000V (Max 1.0mA), ripple 0.004%Vp-p or less
Preamp power	±12V, ±24V (NIM-standard)
Interface	USB2.0 or USB3.0
External dimensions Weight	Detector: f 47 x 190 ・ 700g, Main unit: 240(W) x 75(H) x 210(D) ・ 2800g
PC requirement	Windows 7, Display: WXGA and over, USB 2.0
Environmental condition	Operating temperature 0 ~ 40 ℃, No dew condensation
Power supply	AC100V, 0.3A max
Accessory	Detector, Composite cable, Main unit, USB cable, Application, Instruction manual, AC power cable

Application



($LaBr_3$(Ce) detector and using Cs-137 radiation source, Peak spectra of γ-ray @ 662 keV and Ba-Kα ray @ 30 keV)

Control of high-voltage power supply, Maximum eight different ROI setting up, Displayed count rate

*Images is for illustration purpose.
*Please note that contents may change without prior notice.

TechnoAP

Design and fabrication of electronic circuit associated with measurement control and radiation measurement

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Updated on 2017/03/30