Multiplelabs
Turnkey Laboratories Solutions

Analytical®
Technologies Limited

3321
Spectrometer

EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

Introduction

Spectrometric Personal Radiation Detector (SPRD) is a compact instrument for rapid detection of radiation materials and sources with natural, medical, industrial radionuclide identification function.

Introduction

The radiation detector operation principle is based on constant count rate measurement of gamma radiation impulses by a scintillation detector, data analysis in order to detect gamma-radiation pollution, amplitude spectrum measurement with subsequent automatic processing to receive dose rate value and radionuclide composition data of the relevant gamma radiation source. These data are stored in the non-volatile memory of the detector.

Geiger-Muller counter tube with a filter is used to extend the dose rate measuring range. The filter facilitates smoothing of sensibility energy dependence.

SPRD has internal GPSmodule for geo-referencing and mapping of measurement data.

Applications

- Emergency situations on nuclear energy facilities
- Radiation monitoring during decontamination operations
- Suppression of unlawful traffic of radioactive sources
- Monitoring of premises and environment
- Radiation safety control during work with radioisotopes
- Radiation monitoring of nuclear industry, oil and gas complex, and other fields
- Radiopharmaceuticals production and Nuclear medicine
- Dosimetry survey of ground, radioactive mapping

Features

- Compact and highly-sensitive to gamma radiation
- Spectrum analysis and radionuclide identification can be done without PC
- Internal GPS-module for geo-referencing of measurement data
- USB and Bluetooth interfaces for connecting to PC
- At least 700 spectrum files can be stored in detector internal memory
- Low weight and small size
- Sound, light and vibration notification

Application software

«SpectEx»

Real time display of instrument data with further ability to process and save into PC, as well as management of instrument file system.

«GARM»

Process the results of instrument radiation survey like gamma radiation dose rate and count rates values, radioisotope composition identification results and radiation survey geographical coordinates.

Specification

Detectors	Scintillator NaI(Tl), Ø25x40 mm Integrated Geiger-Muller counter tube
Energy range	20 keV – 3 MeV
Radionuclide identification	Industrial Natural Medical
Individual order	Library of identified radionuclides can be corrected
Typical resolution at 662 keV (^{137}Cs)	8.5%
Detectable activity of ^{137}Cs source, located at the distance of 15 cm in a time not longer than 2 s	50 kBq
Measurement range of ambient radiation dose rate equivalent NaI(Tl) Geiger-Muller counter tube	0.03 µSv/h – 300 µSv/h 10 µSv/h – 100 mSv/h
Sensitivity to gamma radiation [NaI(Tl)] ^{241}Am ^{137}Cs ^{60}Co	4700 cps/µSv·h^{-1} 425 cps/µSv·h^{-1} 210 cps/µSv·h^{-1}
Response time [NaI(Tl)] for dose rate change from 0. 1 to 1 µSv/h	<2 s (accuracy error ≤±10%)
Intrinsic relative error of gamma radiation dose rate measurement	±20% max.
Energy dependence relative to 662 keV (^{137} Cs) NaI(Tl) detector Geiger-Muller counter tube	±20% (in 50 keV – 3 MeV energy range) -25% to +45% (in 60 keV – 3 MeV energy range)
Burn-up life	≥100 Sv
Number of ADC channels	1024
Continuous run time In standby mode * In active mode **	≥16 h ≥9 h
Protection class	IP54
Working temperature range	-20°C to +50°C
Relative air humidity with temperature ≤+35°C without condensation	≤95%
Overall dimensions	145x100x50 mm
Weight	0.7 kg

*When fully charged rechargeable batteries with capacity 2400mAh are used and display is off.

**When fully charged rechargeable batteries with capacity 2400mAh are used and display is continuously on.

Capabilities

Detection of radiation sources

Measurement of gamma radiation dose rate and count rate, radionuclide identification

Continuous measurement of gamma radiation dose rate and count rate

Spectrum processing, radionuclide identification

Library of Radionuclides

The library of radionuclides is divided into the following categories:

industrial: Am-241, Ba-133, Co-57, Co-60, Cs-134, Cs-137, Eu-152, Ir-192, Mn-54, Na-22, Se-75, Cd-109, Mo-99, Pu-238;

natural: K-40, Ra-226, Th-232;

medical: Cr-51, F-18, Ga-67, I-123, I-125, I-131, In-111, Tc-99m, Tl-201, Xe-133.

and others upon User request.

One can only view the library of radionuclides with the help of software “SpectEx” if the spectrometer is connected to a desktop PC.

Analytical® Technologies Limited

HPLC Servicing, Validation, Trainings and Preventive Maintenance :

HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

Trainings :We also take up preventive Maintenace to reduce downtime of HPLC's Trainings.

AMC's/CMC :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

Validations :Validations :We have protocols for carrying out periodic Validations as per GLP/GMP/USFDA norms.

Instruments :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.

About Analytical Technologies

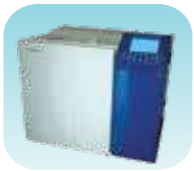
Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the global. Analytical Technologies Limited is an ISO:9001 Certified Company engaged in Designing, Manufaturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

Our Products & Technologies

UV/VIS Spectro 2080+ Double Beam

Infra FTIR

Optima Gas Chromatograph 3007



Optima Gas Chromatograph 2979 Plus

Flash Chromatograph

Atomic Absorption Spectrophotometer

Liquid Partical Counter

Optical Emission Spectrophotometer

DSC/TGA

Semi Auto Bio Chemistry Analyzer

HEMA 2062 Hematology Analyzer

Micro Plate Reader/Washer

URINOVA 2800 Urine Analyzer

Total Organic Carbon 3800

Fully Automated CLIA

NOVA-2100 Chemistry Analyzer

PCR/Gradient PCR/ RTPCR

TOC Analyzer

Laser Particle Size Analyzer

Ion Chromatograph

Water purification system

Regulatory compliances

Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:

1.Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personallities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at Info@analyticalfoundation.org

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXIFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

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