

SPECTRUM TECHNIQUES

Spectrum Techniques

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Spectrum Techniques



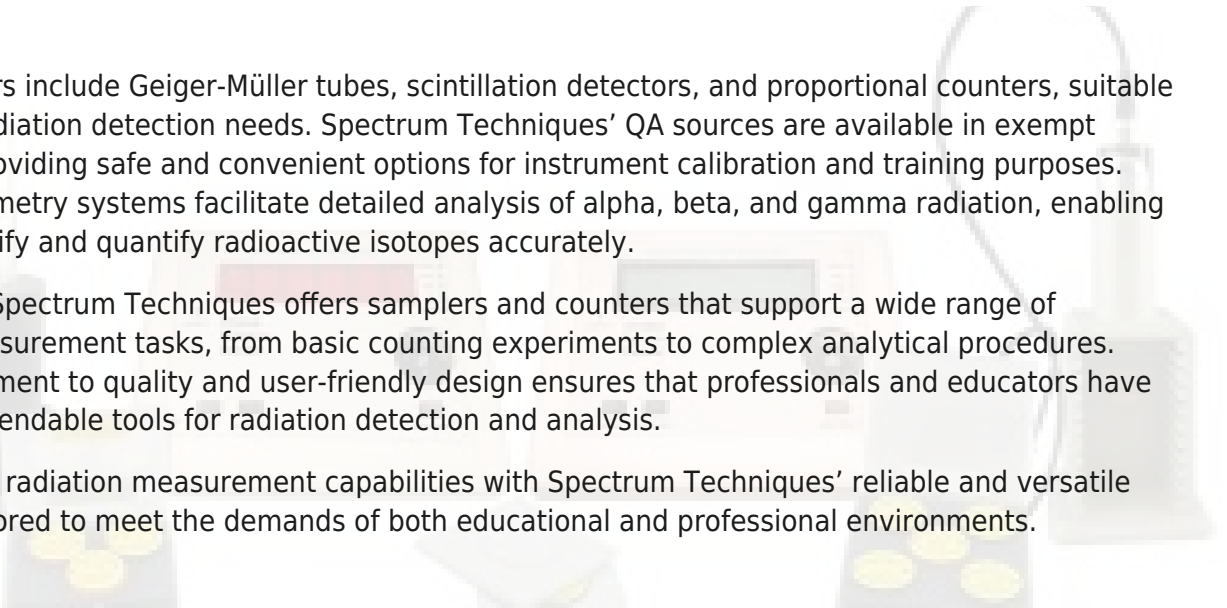
Spectrum Techniques

Spectrum Techniques is a U.S.-based provider of radiation detection and measurement solutions, offering a comprehensive range of detectors, quality assurance (QA) sources, alpha, beta, and gamma spectrometry systems, as well as samplers and counters. Their products are designed to support educational institutions, research laboratories, and industrial applications requiring precise and reliable radiation measurements.

Their detectors include Geiger-Müller tubes, scintillation detectors, and proportional counters, suitable for various radiation detection needs. Spectrum Techniques' QA sources are available in exempt quantities, providing safe and convenient options for instrument calibration and training purposes. Their spectrometry systems facilitate detailed analysis of alpha, beta, and gamma radiation, enabling users to identify and quantify radioactive isotopes accurately.

Additionally, Spectrum Techniques offers samplers and counters that support a wide range of radiation measurement tasks, from basic counting experiments to complex analytical procedures. Their commitment to quality and user-friendly design ensures that professionals and educators have access to dependable tools for radiation detection and analysis.

Enhance your radiation measurement capabilities with Spectrum Techniques' reliable and versatile solutions, tailored to meet the demands of both educational and professional environments.



DETECTORS & MISCELLANEOUS



Isotope Generator - Spectrum Techniques



This Cs-137/Ba-137m Isotope Generator is used to conduct experiment in schools and universities to demonstrate the properties of radioactive decay. Based on the original Union Carbide patented design, it offers exceptional performance combined with ease of use and safe operation.

Contact one of our product specialists.

If you prefer to continue your search for additional information, try this [link](#).



QA SOURCES



Beta/Gamma disk sources



Disk sources are designed for use as reference sources in laboratories, radiation protection, training and education, security, and up-and-coming technology.



APPLICATIONS

Disk sources are designed for use in various industries including, but not limited to:

- **Laboratories:** They are ideal for performing functional checks on gamma counters or spectrometers.
- **Radiation Protection:** Disk sources can be used for functional checks and periodic verifications of radiation protection probes and systems.
- **Training and Education:** Disk sources can be used to illustrate fundamental concepts in nuclear physics and radiation science. Students can observe and study radioactive decay, half-life, energy spectra, and interactions of radiation with matter.
- **Security:** Disk sources are also useful for functional checks and periodic verifications of portable devices used to identify radiological threats and for conducting emergency exercises.

AVAILABLE SIZES

Each disk source is constructed using Plexiglas and is available in two sizes:

- 0.125 x 1.0 inches (3.2 x 25.4 mm)
- 0.125 x 2.0 inches (3.2 x 50.8 mm)

The source material deposit will be the same for each size – 2-3 mm in diameter located in the center of the disk.

CALIBRATION OPTIONS

The maximum deviation of the delivered activity from the nominal values listed is $\pm 20\%$. For enhanced accuracy, you can opt for a secondary calibration, which is performed against a NIST Traceable source, available for an additional cost. This secondary calibration ensures a maximum deviation of only $\pm 5\%$ from the labeled activity. Please note that beta sources are not available for calibration.

Alpha disk sources



Alpha disk sources are designed for use as reference sources in laboratories, radiation protection, training and education, and security.



APPLICATIONS

Alpha disk sources are designed for use in various industries including, but not limited to:

- **Laboratories:** They are ideal for performing functional checks on gamma counters or spectrometers.
- **Radiation Protection:** Alpha disk sources can be used for functional checks and periodic verifications of radiation protection probes and systems.
- **Training and Education:** Alpha disk sources can be used to illustrate fundamental concepts in nuclear physics and radiation science. Students can observe and study radioactive decay, half-life, energy spectra, and interactions of radiation with matter.
- **Security:** Alpha disk sources are also useful for functional checks and periodic verifications of portable devices used to identify radiological threats and for conducting emergency exercises.

AVAILABLE SIZES

Each alpha disk source is manufactured by chemically plating radioactive material on to the surface of a silver disk that is mounted in the bottom of a Plexiglas® disk. The sources are unsealed and are available in two diameters:

- 0.125 x 1.0 inches (3.2 x 25.4 mm)
- 0.125 x 2.0 inches (3.2 x 50.8 mm)

The source material deposit will be the same for each size, 2-3 mm in diameter located on the silver disk located in the center of the disk.

CALIBRATION OPTIONS

Alpha disk sources are not available for calibration. The maximum deviation of the delivered activity from the nominal values listed is $\pm 20\%$.

Needle Sources - Spectrum Techniques



Needle sources are used to generate a point source of radiation inside cloud chambers for demonstrating alpha and beta radiation tracks. Three different types of isotopes are offered, a pure alpha emitter, a pure beta emitter and a combined alpha /beta emitter.

The sources are constructed by depositing a small, license exempt quantity of radioactive isotope onto the eye of a standard sewing needle which is mounted on a test tube stopper for insertion into the cloud chamber. The needle and stopper are placed into a test tube for protection during shipping and storage.

Contact one of our product specialists.



Tube Sources – Spectrum Techniques



We now offer a selection of exempt quantity gamma sources encapsulated in standard size test tubes or rods for use with well type radiation detectors. These sources are exempt sources and of nominal activity. The isotope is deposited as a point source in the bottom of the tube and is then sealed with epoxy.

Contact one of our product specialists.



RSS3 Source Set - Spectrum Techniques



The RSS-3 contains 1 each Po-210, Sr-90 and Co-60 emitting a range of alpha, beta and gamma radiation's. This set is ideal for demonstration and introductory nuclear labs covering basic characteristics of radiation. The Co-60 is 1.0 uCi and the Po-210 and Sr-90 are 0.1 uCi activity.

Contact one of our product specialists.



RSS-8 Source Set - Spectrum Techniques



Designed for gamma spectroscopy, the RSS-8 contains eight different gamma emitting isotopes covering the entire energy range from 32 to 1333 keV. Also included in the set is a mixed source of Cs-137 and Zn-65 which students may use to identify an “unknown” isotope. The set consists of Ba-133, Cd-109, Co-57, Co-60, Cs-137, Mn-54, Na-22 and Cs/Zn. Source activities are all 1 uCi, except the Cs/Zn source, which is 0.5 uCi Cs and 1 uCi Zn.

Contact one of our product specialists.



RSS-5 Source Set - Spectrum Techniques



Containing 1 each Cs-137, Co-60, Sr-90, Tl-204 and Po-210, the RSS-5 provides a wide of alpha, beta and gamma emissions making it a popular choice for nuclear science instruction. The set contains two beta emitters, two beta/gamma emitters and one alpha source for in-depth studies of radiation. The Cs-137 is 5 uCi, the Po-210 and Sr-90 are 0.1 uCi activity and the Co-60 and Tl-204 are both 1 uCi.

Contact one of our product specialists.



Laminated Sources - Spectrum Techniques



Plastic laminates provide a convenient alternative packaging being easy to handle and store. The standard laminates have a transmission window of 0.005" and produce minimum attenuation for photons and higher energy beta particles.

Two sizes are available, 3.75"x2.25", and a 1" diameter circular disc. Other sizes are available; just let us know and we will send you a quote. Low energy x-ray, beta and alpha sources can be produced with a 80 µgm/cm² aluminized Mylar window offering excellent transmission for Fe-55, C-14 and Po-210.

Contact one of our product specialists.

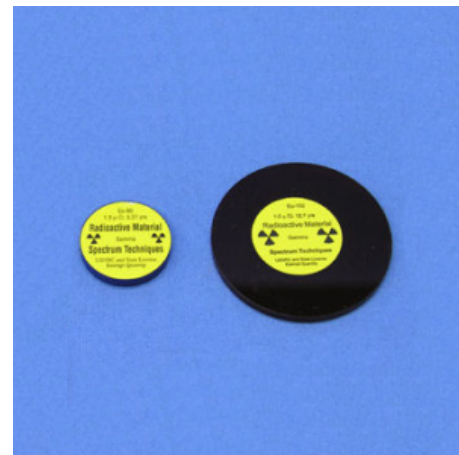
Disc Sources - Spectrum Techniques



Disc sources are available in 1" and 2" diameter plastic disc with the 1" being standard and other sizes on special order.

The Po-210 alpha source is of open window construction with the source material bonded to the surface of a silver foil mounted in the recess of the plastic disc. This design yields excellent emission of alpha particles without window losses.

Contact one of our product specialists.



DETECTORS



SP78W – Sodium Iodide Well Detector Assembly



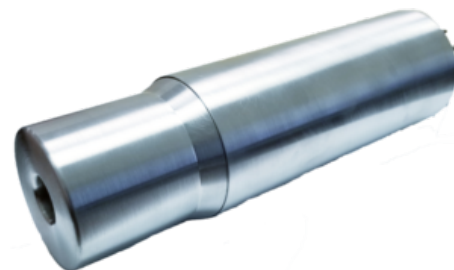
The SP78W, complete scintillation well detector assembly includes our SD78W, NaI(Tl) scintillation well detector, TS78-1 or 2 vertical stand, and lead shield.



SD78W - Sodium Iodide well detector



The SD78W, sodium iodide (NaI) well scintillator is primarily used for gamma ray assay and wipe test analysis. The SD78W is a positive high voltage detector employing a 1.75 in. x 2 in. (44.5 mm x 50.8 mm – diameter x thickness) NaI(Tl) cylindrical scintillation crystal with a 0.7 in. x 1.5 in (17.8 mm x 38.1 mm) well.

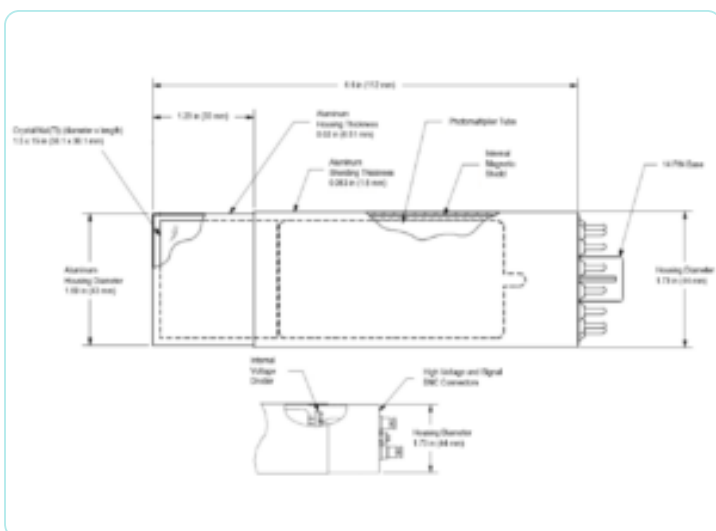


SDA38 - Sodium Iodide Detector



The SDA38 Sodium Iodide Scintillation Detector features a 1.5 x 1.5 inch NaI(Tl) crystal in an aluminum housing, including a photomultiplier tube, an internal magnetic shield, and high voltage and signal BNC connectors.

Cables not included.



GP35 - GM DETECTOR ASSEMBLY



The GP35, complete GM detector assembly includes our GM35, end-window, Geiger-Mueller detector, 3 ft BNC cable, 10 position sample stand, and sample tray.

The detector stand is manufactured from a rugged plastic and has 10 sample tray positions placed 1 cm apart for convenience.

The sample tray has a 1 inch diameter indentation which keeps the sample secure and centered directly under the GM detector. This is perfect for our holding our exempt quantity radioactive sources.



GM35 – GM Detector

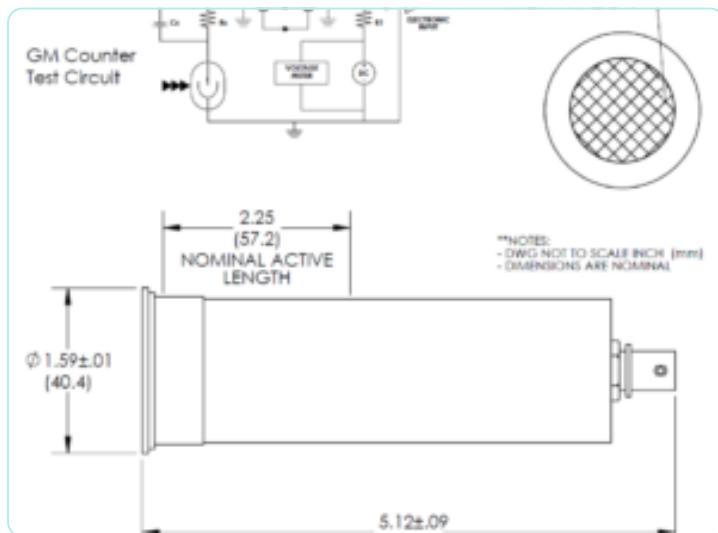


The GM35, end-window, Geiger-Mueller detector will detect alpha, beta, and gamma radiation.



The thin mica window is protected by a thin steel screen that can be removed. The GM35 detector operates at the manufacturer recommended 900 V.

Cable not included.



ALPHA, BETA & GAMMA SPECTROMETRY



UCS30 - Universal Computer Spectrometer



As the successor to our renowned UCS20, the UCS30 Universal Computer Spectrometer is engineered to provide superior flexibility and enhanced capabilities. We offer three models, each equipped with 1024, 2048, or 4096 channels of conversion gain, allowing you to tailor your choice to your specific needs and preferences.



SAMPLERS / COUNTERS



ST365 - Radiation counter



The ST365 is a versatile radiation counter designed to excel in routine sample counting tasks across a wide spectrum of applications, including education, training, advanced research, radiation safety, and emerging technologies.

