

QA SOURCES



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Partner 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.

Product offering

<p>Beta/Gamma disk sources</p>  <p>Cs-137 1$\frac{1}{2}$ 30.08 years Radioactive Material 1 μCi 29 SEP 23 Spectrum Techniques U.S. NRC & State License Exempt Quantity</p>	<p>Alpha disk sources</p>  <p>Po-210 138 38 days Radioactive Material 0.1 μCi 29 SEP 23 Spectrum Techniques U.S. NRC & State License Exempt Quantity</p>	<p>Needle Sources - Spectrum Techniques</p> 	<p>Tube Sources - Spectrum Techniques</p> 
<p>RSS3 Source Set - Spectrum Techniques</p> 	<p>RSS-8 Source Set - Spectrum Techniques</p> 	<p>RSS-5 Source Set - Spectrum Techniques</p> 	<p>Laminated Sources - Spectrum Techniques</p> 
<p>Disc Sources - Spectrum Techniques</p> 			



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.

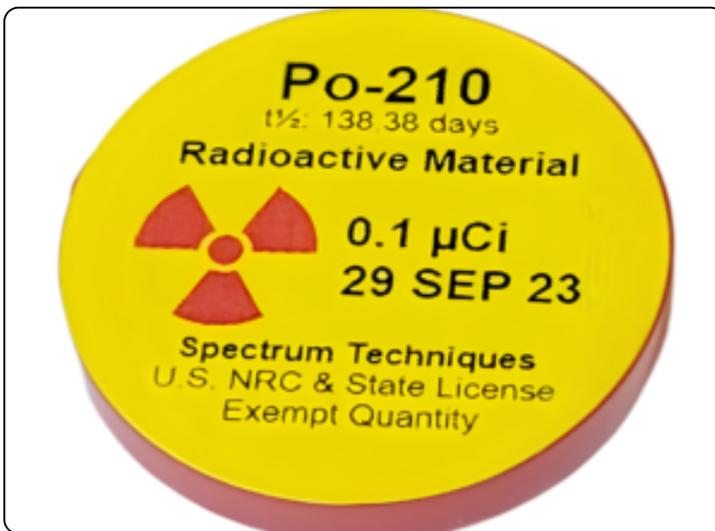
CALIBRATION OPTIONS

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 $\pm 20\%$.

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Nuclear Medicine > QA sources

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.



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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.

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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.

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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.

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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.

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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.

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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.

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Partner **Ludlum Medical Physics (LMP)**



Ludlum Medical Physics (LMP), a division of Ludlum Measurements, Inc., specializes in radiation safety and medical imaging quality assurance (QA) solutions. Their comprehensive product line supports healthcare professionals in maintaining high standards of patient safety and diagnostic accuracy across various medical disciplines.

Product offering

Simulated ^{60}Co Source



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Nuclear Medicine > QA sources

Simulated ^{60}Co Source

Calibrated 0.1 Bq/g (10 Bq) simulated ^{60}Co radiation source for use with Model 2100 Sample Counter.

