

PORTABLE ALPHA SPEC

Model ~ BAM-STAM-3Z (Alpha, Beta, Gamma)

Model ~ BAM-STAM-3ZG (Alpha, Beta, Gamma & Gamma Spectrum)

FEATURES:

- TWO DETECTOR SYSTEM (**BAM-STAM-3Z**)
 - Alpha Solid State Detector
 - Gamma Scintillation Detector
- SEPARATE ISOTOPE MEASUREMENT
 - Pu-238, Pu-239, Am-241 & OTHER ACTINIDES, ALSO Po-210
- COUNTS: WIPES / SMEARS, AIR FILTERS and PLANCHETS
- PRECISION SAMPLE DRAWER
 - REPEATABLE GEOMETRY
- RADON REJECTION
- LAPTOP & SOFTWARE

STANDARD:

- MULTI-CHANNEL ALPHA ANALYZER (MCA) - (**BAM-STAM-3Z**)
- SINGLE-CHANNEL GAMMA ANALYZER (SCA) - (**BAM-STAM-3Z**)

OPTIONAL: THIRD GAMMA SPECTRUM

(DETECTOR FOR BAM-STAM-3ZG)

- MULTI-CHANNEL GAMMA ANALYZER (MCA) - (**BAM-STAM-3ZG**)



DESCRIPTION – STANDARD MODEL ~ BAM-STAM-3Z:

- Pulses from these 3 channels go to counters A, B, and C respectively in the software. The data analyzer and software are provided.
- Pulses from the Alpha Solid State detector go through an amplifier and Multi -Channel Analyzer (MCA) to select for pulse height. **For Alphas. Regions I & II.**
- Pulses from the PGS-3T Thin Crystal NaI(Tl) Gamma Scintillation detector go through an amplifier and Single Channel Analyzer (SCA) to select for pulse height. **For Gammas. Region III**
- Technical Associates uses TAquire software with user settable parameters.

PROCEDURE:

- **User** places sample onto the replaceable membrane (provided) in the sample holder.
- **User** slides sample holder between upper solid state Alpha Spec Detector and the lower thin window NaI(Tl) Scintillation Detector.
- Pulses from the Alpha Detector go to a charge sensitive amplifier and into a Multi -Channel Analyzer (MCA) with Regions I & II for low & high Alpha energy.
- Region III is detected by the Scintillation detector for Gamma emissions.



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Divisions of



US NUCLEAR CORP

PORTABLE ALPHA SPEC

Model ~ BAM-STAM-3Z (Alpha, Beta, Gamma)

Model ~ BAM-STAM-3ZG (Alpha, Beta, Gamma & Gamma Spectrum)

Typical Energy Ranges for Regions of Interest:

Region I: 5.00 to 5.30 MeV for Pu-239 Alpha.
Region II: 5.30 to 5.60 MeV for Pu-238 and Am-241 Alpha.
Region III: 40-80 KeV for Am-241 Gamma.

SPECIFICATIONS - STANDARD MODEL ~ BAM-STAM-3Z::

Alpha Detector: Solid State Alpha Detector – 50 mm diameter **Regions I & II**
Resolution: 30 KeV maximum
Range: 2.5 MeV to 11 MeV
Sample Holder: Precision Sample Drawer
Counting Efficiency: 20% of 2Pi
Gamma Membrane: 0.9 mg/cm² aluminized Mylar or .0005" stainless steel or per user requirement.
Gamma Detector: Model PGS-3T NaI(Tl) Scintillator **Region III**
Crystal Size: 25mm dia. x 1 mm thick NaI(Tl)
Electronics for Alpha: Bias Voltage, PreAmp, Multi-Channel Analyzer (MCA)
Electronics for Gamma: Bias Voltage, PreAmp, Single-Channel Analyzer (SCA)
Rejection: Radon & Thoron

NOTE: Higher energy Alpha spectrum is used to reject Radon & Thoron Progeny.
Lower portion of Alpha spectrum is used to see isotopes of interest.

WEIGHT & DIMENSIONS:

Instrument: W 14.5" x H 10" x D 20".
Weight: 10 lbs includes Computer, PreAmp, Detectors.

SPECIFICATIONS - OPTIONAL MODEL ~ BAM-STAM-3ZG:

Gamma Spectrum: BAM-STAM-3ZG

Gamma Spectrum Detector: PGS-3L 2" x 2" NaI(Tl) Scintillator
Multi-Channel Analyzer (MCA): 4,096 Channels
Electronics Gamma Spectrum: Bias Voltage, PreAmp
Energy Range: 14 KeV to 2,200 Kev



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