

ORNL INSTRUMENT EVALUATION SUMMARY

Target fieldSPEC-N Digital Gamma Spectrometer

Description: The Target fieldSPEC-N Digital Gamma Spectrometer is a hand held instrument designed to detect gamma radiation and identify radioactive nuclide(s).

Ranges Tested: N/A

Report Date: April 24 – 28, 2003

General Comments:

1. Confidence intervals used to ascertain whether results are conclusive or inconclusive are determined using the 0.95 quantile of the student's t distribution (95% confidence interval).
2. This was a limited evaluation performed to evaluate the automatic temperature gain stabilization process based on manufacturer-provided information. It was performed as a follow up to a previous evaluation dated February 10, 2003.

RADIATION RESPONSE

Probe Surface Sensitivity: N/A

Energy Response: Not performed.

Response Linearity: Not performed.

ELECTRONIC and MECHANICAL REQUIREMENTS and TESTS

Line Noise: N/A

Power Line Variations: N/A

Conducted Radio Frequency: N/A

INTERFERING RESPONSES TEST RESULTS

Radio Frequency: Not performed.

Electric Fields: Not performed.

Magnetic Fields: Not performed.

Radio Frequency Emissions: Not performed.

Interfering Ionizing Radiations: Not performed.

ENVIRONMENTAL FACTORS

Temperature: The dose rate measurement as well as radionuclide identification was unaffected over the temperature test range of -20 to +50 °C. Low contrast made the display difficult to read at certain temperatures. Specific results are available in the test report.

Temperature Shock/Reduced Temperature Shock: The dose rate measurement was unaffected when exposed to rapid temperature changes from 22 to -20, -20 to 22, 22 to 50, and 50 to 22 (in °C) with each change performed within five minutes. The radionuclide identification process was affected during the temperature shock test. Specific results are available in the test report.

Humidity: Not performed.

Vibration: Not performed.