



Non-Destructive Testing of Cement Piles using Matrix Portable Digital Gamma-Gamma Logger

The Mount Sopris **Matrix Portable Digital Logging System** can be used to collect quantitative (when calibrated) density information of the material surrounding cement pile access tubes. Plots, graphing density in lbs/ft³, can be generated in real-time, and spreadsheet programs for analysis easily import the data. A 4-foot diameter pile, 100 feet deep, with eight, 2+ ID access tubes can be logged in less than 3 hours in normal conditions. These quick, reliable surveys help Engineers make decisions in the field, saving time and money for the client.



MATRIX PORTABLE DIGITAL LOGGER

Probe Specifications

Power Requirements:

30 VDC @ 35mA

Tool Output:

Positive pulse, 1.25uS wide, adjustable if required.

Gamma Detector:

Nal (tl): 0.5" dia. x 1.5" long (12.7 mm dia. x 38.1mm long)

Source-Detector Spacing:

User-specified

Operating Temp. Range

14 to 120 °F (-10 to 50 °C)

Pressure rating:

3000 PSI (20685 kPa)

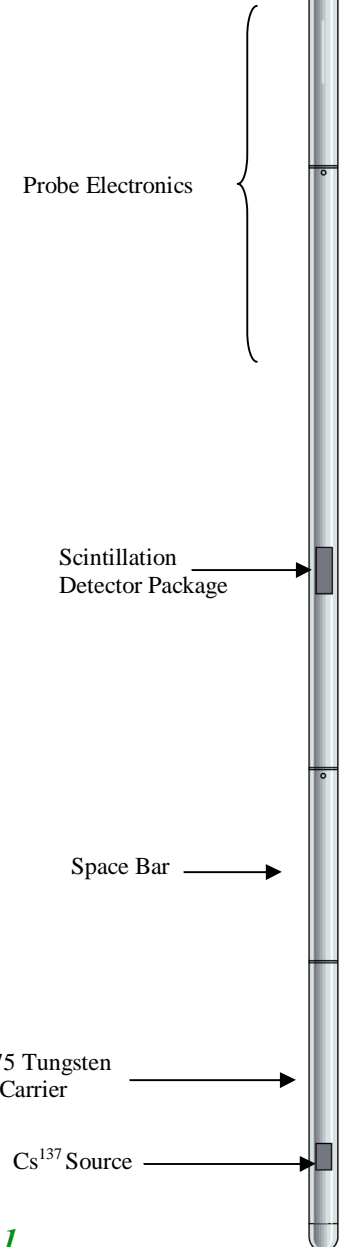
Dimensions:

Length: 56 inches (142 cm)

Diameter: 1.125 inches (28.6 mm)

Weight: 12 lbs (7.4 Kg)

A 100 mCurie Cs¹³⁷ radioactive source sends Compton-scattered γ -rays into media. These gamma rays are counted at a scintillation crystal package a defined distance from the source. Density is inversely proportional gamma count rate. Studies of the depth of investigation indicate that about 90% of the signal originates within a spherical volume whose major diameter is slightly larger than the source-detector spacing, and whose minor radius is about 1/3 the source-detector spacing.



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