



WM3400

Passive Neutron Slab Counter



Nuclear



Healthcare



Homeland
Security
& Defense



Labs and
Education



Industrial and
Manufacturing



KEY FEATURES

- Designed for passive neutron go/no-go measurement of plutonium in 200 L (55 gal) drums
- Drum positioner on front of polyethylene body for repeatable positioning of counter
- Fast Amptek® electronics
- Six ^3He detectors
- Transportable

DESCRIPTION

The WM3400 measures the plutonium content in 200 L (55 gal) drums by detecting coincidence neutrons from the spontaneous fission of the even numbered isotopes of plutonium. The counter is designed to make a go/no-go measurement. A JSR-12 Neutron Coincidence Analyzer is required for coincidence counting, but not included with the WM3400.

The WM3400 is a slab of high-density polyethylene attached to a cart. A drum positioning fixture is attached to the front of the polyethylene slab. The drum is rolled up to the counter and the measurement is made. A shelf on the back of the cart can be used to hold the JSR-12, and the cart tabletop is available for a portable computer and printer (not included with WM3400).

Six ^3He tubes are placed in the slab of high-density polyethylene. The tubes are arranged in a single row, wired together and connected to one JAB-01 Amplifier/Discriminator circuit board. The JAB-01 is mounted inside a high voltage junction box. An LED indicator on the outside of the junction box indicates the proper operation of the JAB-01 channel. Electrical connections between the WM3400 and the JSR-12 include +5 V, HV, and a single "ORed" output signal.

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Model WM3400 Passive Neutron Slab Counter

SPECIFICATIONS

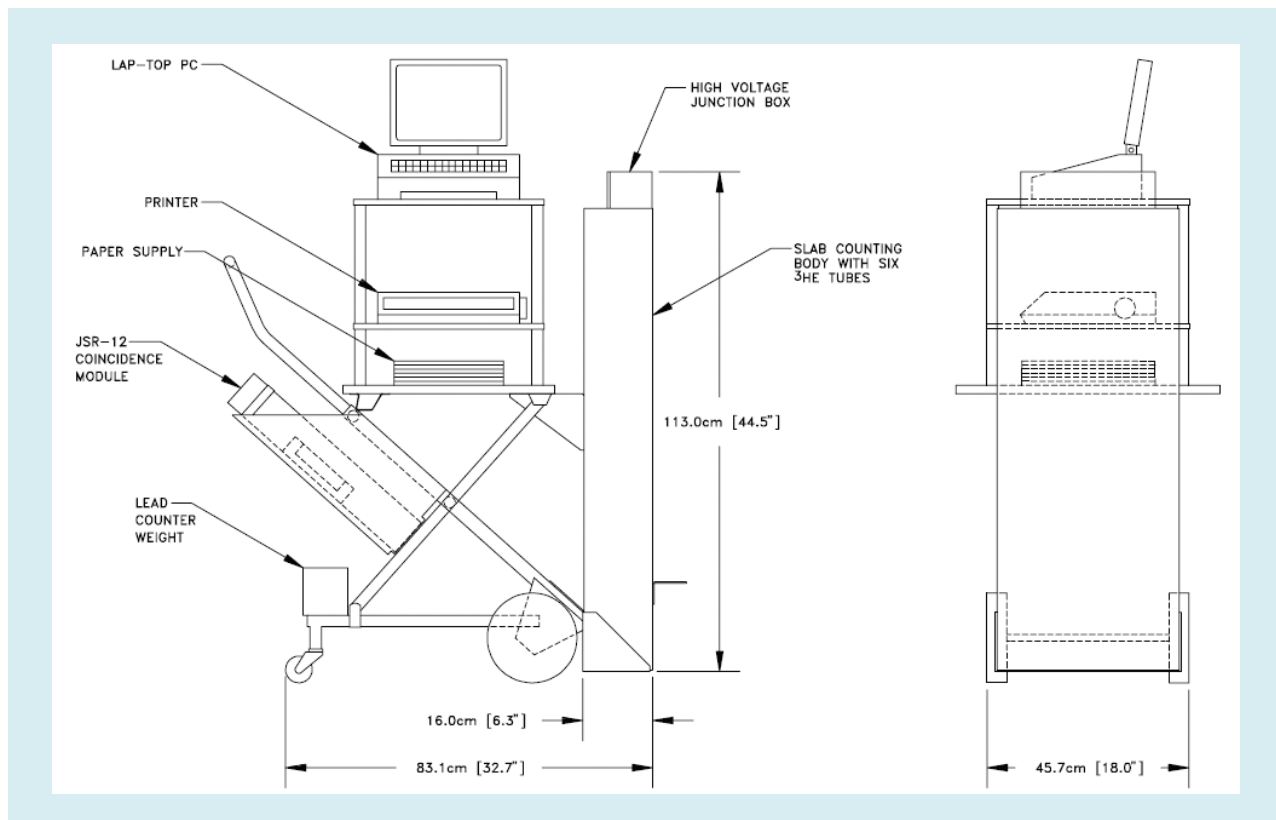
PERFORMANCE

- HV SETTING – 1680 V.
- GATE SETTING – 64 μ s.
- DIE-AWAY TIME – 58 μ s.
- DETECTOR EFFICIENCY – 1.8% for ^{252}Cf source positioned 30.5 cm (12 in.) from the front face of the counter at the centerline of the active length of the tubes.

PHYSICAL

- OVERALL SIZE – 113.0 x 45.7 x 83.1 cm (44.5 x 18 x 32.7 in.) H x W x D.
- ^3He TUBES – Six.
- ^3He ACTIVE LENGTH – 91.4 x 2.5 cm (36 x 1 in.) L x Dia.
- CLADDING – Aluminum.

For more details, see diagram below.



Model WM3400 Passive Neutron Slab Counter.



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