MIRION TECHNOLOGIES

WM3400™

Passive Neutron Slab Counter

Portable and accurate, the WM3400 Passive Neutron Slab Counter is designed to evaluate plutonium content in 200 L drums by detecting coincidence neutrons — ensuring safe nuclear material management while offering efficient measurement readings.

The WM3400 counter 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, ensuring safe, efficient nuclear material management. A JSR-15™ Neutron Analysis Shift Register is required for coincidence counting, but not included with the WM3400 counter.

System Setup and Operation

The WM3400 unit 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-15 analyzer, and the cart tabletop is available for a portable computer and printer (not included with WM3400 unit).

Six ^{3}He tubes are placed in the slab of high-density polyethylene. The tubes are arranged in a single row, wired together and connected to one Amplifier/Discriminator circuit board. The pre-amp is mounted inside a high voltage junction box.

FEATURES

- Designed for passive neutron go/nogo measurement of plutonium in 200 L (55 gal) drums
- Easily accessible, front-mounted drum positioner on polyethylene body allows for repeatable, accurate counter alignment
- Fast pre-amp electronics with greater performance
- Six ^{3}He detectors
- Transportable for easier equipment management and flexibility

System Display

An LED indicator on the outside of the junction box indicates the proper operation of the pre-amp channel. Electrical connections between the WM3400 counter and the JSR-15 analyzer include +5 V, HV, and a single “ORed” output signal.

SPECIFICATIONS

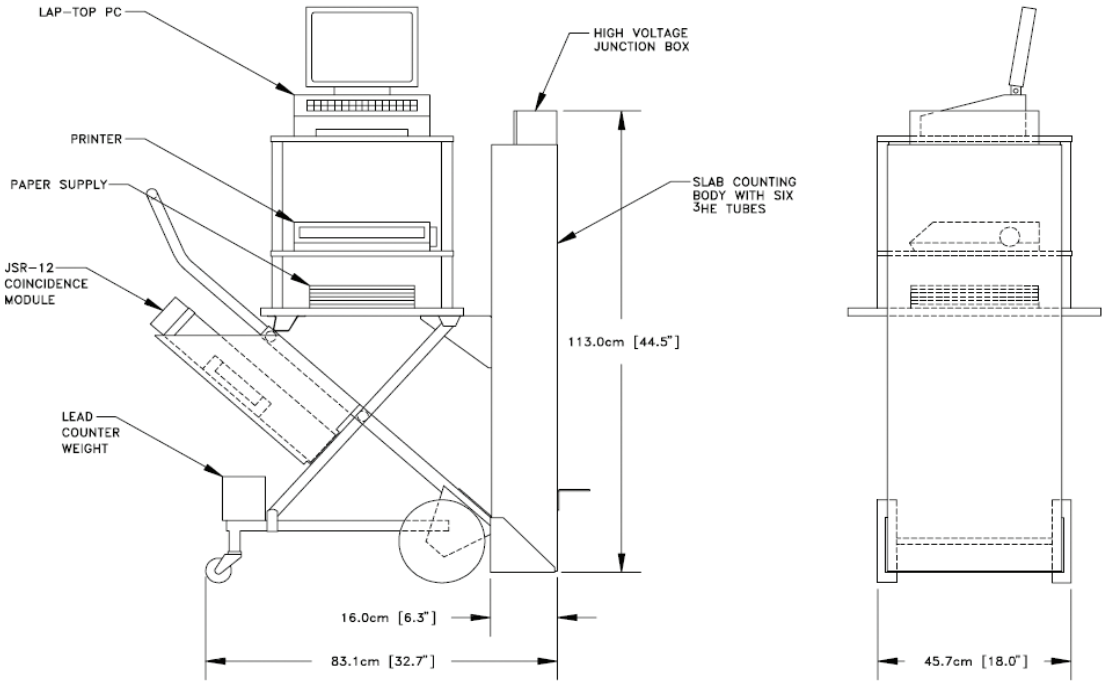
Performance:

- HV Setting: 1680 V
- Gate Setting: 64 µs
- Die-Away Time: 58 µs
- 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
- ^{3}He Tubes: Six
- ^{3}He Active Length: 91.4 x 2.5 cm (36 x 1 in) L x Dia
- Cladding: Aluminum

For additional details, see diagram below.



Model WM3400 Passive Neutron Slab Counter.

ISO 9001 SYSTEM CERTIFIED
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SPC-674-EN-A – 07/2025