

FIRST RESPONDERS RADIATION DETECTION EMERGENCY KIT

Model # TBM-6SPE

FEATURES:

- FIVE SEPARATE DETECTORS
- DETECTS ALPHA, BETA, GAMMA, X-RAYS, & NEUTRONS
- EASY SWITCH TO CHANGE FROM INTERNAL TO EXTERNAL PROBES
- LIGHTWEIGHT - FITS INTO A BRIEFCASE

DESCRIPTION: The **TBM-6SPE** features an internally mounted 2 inch Beta pancake GM detector (T-1190) with window looking downward from bottom of case and four external probes for detection of Alpha (PAS-8), low energy Gamma (PGS-3T), all Neutrons (PNS-20T), plus the Gamma Search Probe (PGS-3L). A sliding shield protects pancake detector when not in use. This system is half the weight of other systems.

SPECIFICATIONS:

Meter:	Rugged, recessed 2-1/2" meter.
Range Switch Positions:	Off; Battery Test; X1; X10; X100; X1,000.
Detector Switch (Toggle):	Internal (pancake), External (4 Additional Probes).
Time Constant Switch:	Fast, Slow (approx. 2 & 11 sec.).
Ranges:	4 linear for each detector: 0-500; 5,000; 50,000; 500,000 cpm for external and 0-0.15; 1.5; 15; 150 mR/hr. for internal detector. Optional: Addition scales and overlays available: Sieverts, etc.
Internal Detector:	T-1190 2" O.D. Beta Pancake Geiger for internal.
Internal Detector Efficiency:	BETA Pancake C ¹⁴ 40% Exclusive of any geometry factor. P ³² 98% Exclusive of any geometry factor.



Figure 1: TBM-6SPE



TECHNICAL ASSOCIATES

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\$Revision: 1.2\$

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SPECIFICATIONS (Continued):

External Detectors:	PAS-8	PGS-3T	PGS-3L	PNS-20T
Detects:	Alpha	Low Energy Gamma.	Gamma Search Probe.	Fast & Slow Neutrons.
¹ Efficiency:	Alphas above 5MeV 20-40% 2 π .		1,000,000 cpm/mR/hr	20 cpm per thermal neutron/cm ² /sec
¹²⁵ I	–	87%		–
⁵⁷ Co	–	78%		–
^{99m} Tc	–	75%		–
¹³⁷ Cs	–	30%		–

External Detector Description:

PAS-8: Alpha Scintillation Probe with 1-3/4" diameter x 0.8 mg/cm² window. For use whenever a high efficiency, low background Alpha detector is indicated.

PGS-3T: Low Energy Gamma Scintillation Probe, 1" diameter x 1mm NaI(Tl) crystal protected by a 5 mil. aluminum window, sees X-rays and Gammas > 10KeV and Betas > 100KeV.

PGS-3L: Gamma Scintillation Search Probe utilizing a highly gamma sensitive crystal (NaI(Tl)). 2" diameter x 2" long hermetically sealed crystal optically coupled to photomultiplier tube. Gamma sensitivity is 100 times greater than GM tubes Will also detect X-rays > 25KeV. Sensitivity of the PGS-3L is in the order of 1,000,000 cpm per mR/hr.

PNS-20T: Fast & Slow Neutron Scintillation Probe. The n-p reaction is used to measure energy deposited by Fast Neutrons. Thermal Neutrons are detected by means of the Boron n-Alpha reaction. Probe delivers approximately 20 cpm per neutron/cm²/second and requires a 900 volt supply. The probe is 8" long x 1.5" in diameter. It is completely insensitive to Gammas in fields below 10 R/hr.

Calibration: Single master Cal Pot for each detector, plus individual Cal Pot for each scale. Pots adjust from outside case.

Power: 9V Transistor battery (Eveready E1220 or equivalent). Battery life - 100 hrs. normal operation.

Dimensions of Meter: 3" Wide x 5-1/4" Long x 2-1/4" Deep.
(7.6 cm x 13.3 cm x 6cm).

Total Weight: 15 lbs.

Shipping Weight: 30 lbs.

¹Excluding Geometry.

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