

# FIRST RESPONDER'S RADIATION DETECTION EMERGENCY KIT

Model ~ TBM-6SPE

## FEATURES:

- DETECTS SURFACE CONTAMINATION: ALPHA, BETA, GAMMA, X-RAYS, POSITRONS, & NEUTRONS
- FIVE SEPARATE DETECTORS:
  - (1) INTERNAL 2" GM BETA
  - (4) EXTERNAL SCINTILLATION
- EASY SWITCH FROM INTERNAL TO EXTERNAL PROBES
- LIGHTWEIGHT - FITS INTO A BRIEFCASE
- FAVORED BY FIRST RESPONDERS
- IP67
- CE MARK



CE

**TBM-6SPE with  
TBM-6SP  
Electronics**

## DESCRIPTION:

The **TBM-6SPE** features an internally mounted 2 inch Beta pancake GM detector (T-1190) with window looking downward from bottom of case.

A sliding shield protects pancake detector when not in use.

### Four external probes:

- ✓ Alpha (PAS-8);
- ✓ Low energy Gamma (PGS-3T),
- ✓ All Neutrons (PNS-20T),
- ✓ Gamma Search Probe (PGS-3L).

This system is half the weight of other systems.

## SPECIFICATIONS:

<b>Meter:</b>	Rugged, recessed 2-1/2" meter.
<b>Range Switch Positions:</b>	Off; Battery Test; X1; X10; X100; X1,000
<b>Detector Switch (Toggle):</b>	Internal (pancake), External (4 Additional Probes).
<b>Time Constant Switch:</b>	Fast, Slow (approx. 2 & 11 sec).
<b>Ranges 4 linear for each detector:</b>	<b>External Detector:</b> 0-500; 5,000; 50,000; 500,000 cpm. <b>Internal Detector:</b> 0-0.15; 1.5; 15; 150 mR/hr.
<b>Engineering Units:</b>	<b>Internal &amp; External Detectors:</b> R/h, cpm, or User Settable other units
<b>Internal Detector:</b>	T-1190 2" O.D. Beta Pancake Geiger.
<b>Internal Detector:</b>	Gamma Sensitivity: 500 cps/mR/h
<b>Internal Detector:</b>	Lowest Beta Sensitivity: 70 KeV
<b>Internal Detector:</b>	X-Rays or Gamma Exposure / Dose Rate: 40KeV – 2 MeV



**TECHNICAL ASSOCIATES**  
**OVERHOFF TECHNOLOGY**

7051 Eton Ave., Canoga Park, CA 91303  
818-883-7043 (Phone) 818-883-6103 (Fax)

[tagold@nwc.net](mailto:tagold@nwc.net)

[WWW.TECH-ASSOCIATES.COM](http://WWW.TECH-ASSOCIATES.COM)

Divisions of  US NUCLEAR CORP

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SPECIFICATIONS (Continued):

## Sample of External Detectors:

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

### External Detector Description:

- PAS-8:** Alpha Scintillation Probe with 1-3/4" diameter x 0.8 mg/cm<sup>2</sup> window.
- For use wherever 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/cm<sup>2</sup>/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.

### Electronics:

**TBM-6SP Analog, Low Light, 3" Diameter**

**TBM-3D Digital**

**Read Out:** 2 Separate Scale Factors For Rate & Total  
8 Digit LCD Display  
2" Display Screen

**Power:** High Voltage 400v-1200v Dc  
0.1-99 Sec Time Constant for Ratemeter

Ideal for Long Count - Up to 24 Hours or More

Use Any GM Or Scintillation Alpha, Beta, Gamma, X-Ray, Positron Detector.

**OPTIONAL:** Alarm  
RS-232 Serial Output



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

**Power:** **TBM-6SP - Analog:** (1) 9V  
**TBM-3D - Digital:** (6) AA

**Battery Life:** 100 hrs. Normal Operation.

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

**Total Weight:** 10 lbs – Case, Electronics & Detectors.



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