

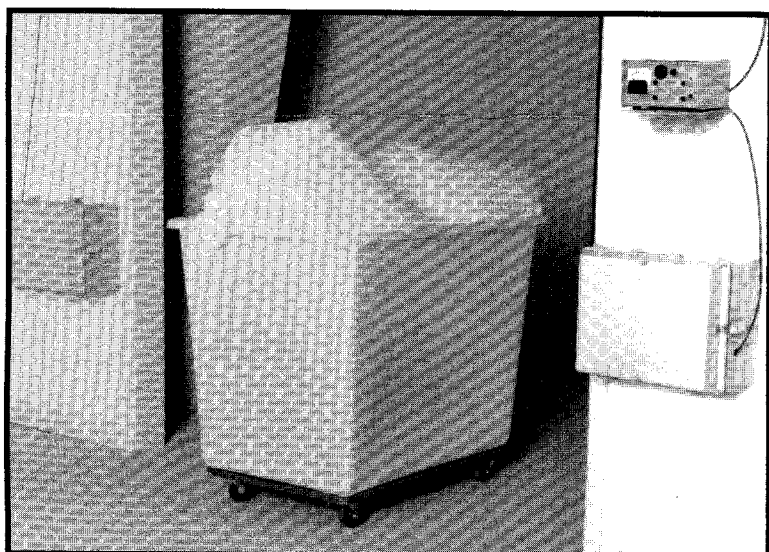
women used brush brooms and blankets. Men filled ditches with water — the 'hoppers filled the ditches. Men burned adjacent wildlands — the 'hoppers swirled like the smoke and covered new fields like ash. Priests and preachers condemned their flocks for harboring "the sins of Egypt" that brought the locusts. Many families left the dirty dishes on the table and headed west, or east, or anywhere. One wagon bore the sign "Hoppers et all but the wagon sheet". Hogs, chickens, and turkeys ate themselves sick and fish died in the streams because the water had turned to 'hopper soup. And still, the grasshoppers came. It seems that only the wind, the rain, and cold weather have a lasting effect on their population.

This year we hear that they may be coming again. It won't be as bad as it once was. After all, things are different now — aren't they???

Jeff Carroll, LEGENDARY TEXAS

Waste Monitor Systems for Hospitals and Sanitary Landfills

June 1994



Model 3530 Waste Monitor System

Model 3530 Waste Monitor

The Model 3530 Medical Waste Monitor is an analog ratemeter designed to detect low levels of radiation. The system consists of an analog ratemeter/counter and two lead-shielded 3" (dia.) by 1" (thick) sodium iodide (NaI) scintillation detectors with 25 foot cables.

The Model 3530 is powered by 120VAC, 50-60Hz and features a standard 120VAC duplex receptacle on the back panel for easy plug-in of alarm strobes or bells. An alarm lamp is located on the front panel and flashes to indicate an alarm. While in the alarm mode the system will emit a loud tone until the unit is reset. The 0-10 $\mu\text{R/hr}$ linear meterface is easy to read and allows for easy alarm setting.

The detector shielding is 0.75" thick lead which makes the system directional and reduces background radiation, therefore making the system more sensitive. The detectors can be purchased with or without weatherproof enclosures.

Price: \$ 3,295.00

Model 3530 Features:

- * Detects low activity Gammas, (low, medium and high)
- * Visual and audio alarm
- * Fixed geometry
- * More sensitive than most systems at less the cost
- * Ruggedized
- * Easy-to-use, hands-off operation
- * Receptacle for external strobes or bells

Will detect a 40 μCi Cs-137 at 10' from a detector and 10 μCi at 5' from a detector

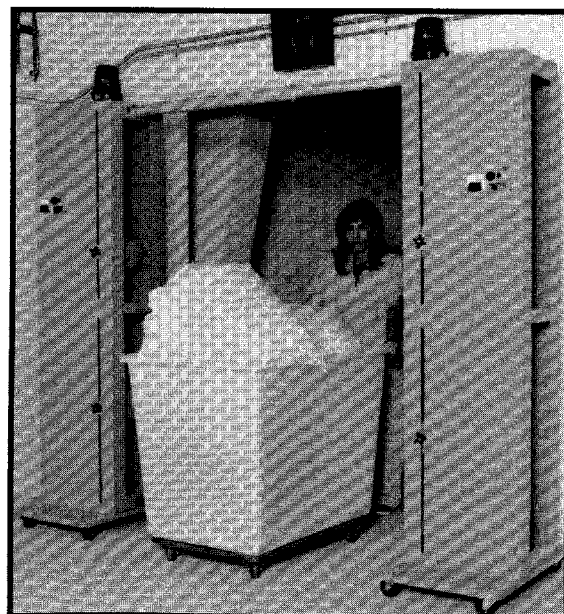
Model 3534 Waste Monitor System

The Model 3532 and 3534 Medical Waste Monitors are systems, with fixed portal geometry, that were designed to detect low levels of radiation. The Model 3534 consists of two analog ratemeters and four lead-shielded 3" (dia.) by 1" (thick) sodium iodide (NaI) scintillator detectors mounted in a portal frame. The Model 3532 has one ratemeter and two detectors. The height and angle of the detectors are adjustable. Width of the portal is adjustable. Detectors and cables are well protected inside the portal frame. System can be shipped fully assembled for easy installation.

Price: \$ 7,995.00

Model 3534 Features:

- * Width of opening is adjustable from 36" to 84" in 6" increments.
- * Angle of detectors is adjustable +/- 60° from horizontal.
- * Height of detectors is adjustable from 9" to 72".
- * Weight of entire system is approximately 200 lbs.
- * Flashing beacons on each side to indicate alarm.
- * Detects low activity from low, medium and high energy gammas



Model 3534 Waste Monitor

From The Trenches

with David Wyatt

MODEL 2929/43-10-1 REVISION

June 1994

Two revisions have been made to the Model 2929/43-10-1 Alpha/Beta-Gamma Scaler/Phoswich Scintillator. These revisions improve the overall efficiency of the counting system. The modifications will be made to all Model 2929's/43-10-1's returned to Ludlum Measurements, Inc. for repair/calibration and were effective for new instruments as of 8/18/94 — Model 2929's serial # 109556 and succeeding. Model 43-10-1's serial # PR 113231 and succeeding.

Model 2929 Amplifier/Discriminator Board Revision

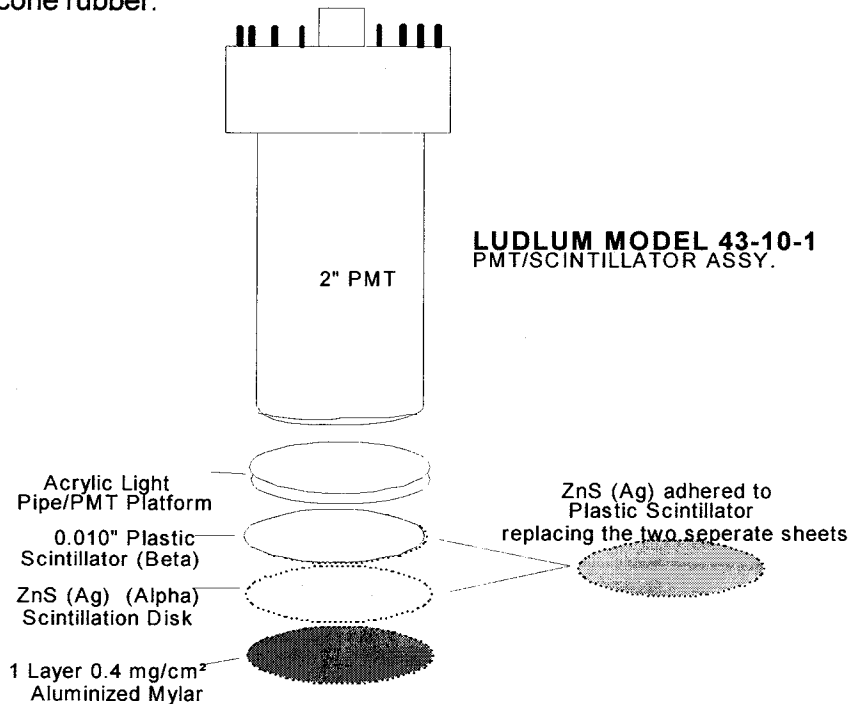
C21 on Amplifier/Discriminator Board # 5337-026 (refer to schematic and component layout drawings in the Instruction Manual) has been changed from a 0.01 F to a 0.047 F, 100 volt capacitor. This modification will improve (decrease) alpha source count cross-talk in the beta counting channel. This allows the detector to be operated at a higher operating voltage, therefore increasing the beta efficiency. The main restricting element in the count versus voltage plateau in the past was alpha count cross-talk in the beta channel (i.e. 10% alpha count in the beta channel) the restricting elements now will be beta background and/or beta count cross-talk in the alpha channel.

Model 43-10-1 Phoswich Scintillator Revision

The phoswich scintillator assembly has consisted of a 0.010" plastic scintillator for beta-gamma and a ZnS(Ag) disk for the alpha scintillator. These two scintillation disks have now been combined — the ZnS(Ag) is adhered to the plastic scintillator disk with a thin layer of white silicone rubber.

1. By removing the extra plastic disk in which the ZnS(Ag) was adhered to - less attenuation for low energy beta particles improving low energy beta efficiency.
2. Silicon rubber provides stable adhesive when cured and ZnS(Ag) is adhered securely alleviating "flaking" of the ZnS(Ag) powder during assembly and packaging of replacement disks.
3. Combining the two disks eliminates an extra component during assembly and repair.

LMI part # for the ZnS(Ag) / Plastic disk is 2142-118. The revision will be at no charge - add \$50.00 for Model 2929/43-10-1 calibration plus shipping — when the instrument is returned to LMI for modification.



BEFORE REVISION								
HV	Background		C-14		Tc-99		Pu-239	
			Size: 181,500 cpm		Size: 10,779 cpm		Size: 15,700 cpm	
	Alpha	Beta/Gamma	Alpha	Beta/Gamma	Alpha	Beta/Gamma	Alpha	Beta/Gamma
825	0	67	0	17,636	0	3050	12,285	310
850	1	64	0	23,145	1	3724	12,243	607
875	2	84	0	35,665	0	4590	12,143	4703

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June 1994

AFTER REVISION								
HV	Background		C-14		Tc-99		Pu-239	
			Size: 181,500 cpm		Size: 10,779 cpm		Size: 15,700 cpm	
	Alpha	Beta/Gamma	Alpha	Beta/Gamma	Alpha	Beta/Gamma	Alpha	Beta/Gamma
825	1	69	0	26,438	2	3598	12,095	373
850	0	62	0	34,224	0	4565	12,112	472
875	0	78	0	40,995	1	4910	12,132	629