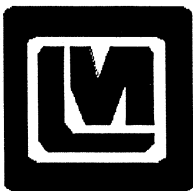


**LUDLUM MODEL 43-44  
AIR PROPORTIONAL PROBE**

**Revised January 1990**



**LUDLUM MEASUREMENTS, INC.  
501 OAK ST., P.O. BOX 810  
SWEETWATER, TX 79556  
915/235-5494 FAX: 915/235-4672**

## **STATEMENT OF WARRANTY**

Ludlum Measurements, Inc. warrants the products covered in this manual to be free of defects due to workmanship, material, and design for a period of twelve months from the date of delivery. The calibration of a product is warranted to be within its specified accuracy limits at the time of shipment. In the event of instrument failure, notify Ludlum Measurements to determine if repair, recalibration, or replacement is required.

This warranty excludes the replacement of photomultiplier tubes, G-M and proportional tubes, and scintillation crystals which are broken due to excessive physical abuse or used for purposes other than intended.

There are no warranties, express or implied, including without limitation any implied warranty of merchantability or fitness, which extend beyond the description of the face there of. If the product does not perform as warranted herein, purchaser's sole remedy shall be repair or replacement, at the option of Ludlum Measurements. In no event will Ludlum Measurements be liable for damages, lost revenue, lost wages, or any other incidental or consequential damages, arising from the purchase, use, or inability to use product.

## **RETURN OF GOODS TO MANUFACTURER**

If equipment needs to be returned to Ludlum Measurements, Inc. for repair or calibration, please send to the address below. All shipments should include documentation containing return shipping address, customer name, telephone number, description of service requested, and all other necessary information. Your cooperation will expedite the return of your equipment.

**LUDLUM MEASUREMENTS, INC.  
ATTN: REPAIR DEPARTMENT  
501 OAK STREET  
SWEETWATER, TX 79556**

**800-622-0828 325-235-5494  
FAX 325-235-4672**

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## 1. GENERAL

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The Ludlum Model 43-44 is an proportional probe used for the detection of alpha radiation. The probe requires an instrument with a 2 mV or less input sensitivity and a minimum of 2500 volt power supply, such as a Ludlum Model 12.

The probe will detect alpha energy of 3 meV or greater, with a 16-18% efficiency. ( $2\pi$ )

The detector chamber is environmentally sealed and vented to a drying agent to reduce moisture problems. The window is secured to the body of the probe by six screws. The window is covered by 0.4 mg/cm<sup>2</sup> metallized mylar and has an active area of 50 cm<sup>2</sup>. The

desiccant can be replaced by removing the two screws holding the desiccant holder and inserting the fresh dehydrator.

The operating voltage for the M43-44 is 2,050 volts at sea level, decreasing approximately 50 volts per 2,000 ft. altitude.

The handle is secured by four screws and is designed so it can be positioned two different ways for user convenience.

The unit is strung with four equally spaced 0.001 diameter platinum wires with tension of approximately 2 ounces. The wire is soldered to standoffs which place the wire midway between the window and the floor of the chamber.

## 2. SPECIFICATIONS:

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- Window: 0.4 mg/cm<sup>2</sup>
- Window Active Area: 50 cm<sup>2</sup>
- Efficiency for <sup>239</sup>Pu: 16% ( $2\pi$ )
- Size: 63.5cm (2.5") W x 10.2cm (4") H x 22.9cm (9") L
- Weight: 1 lb.
- Finish: Anodized
- Operating Voltage: Altitude Dependent
  - 2,050 volts at sea level
  - 2,000 volts at 2,000 feet
  - 1,925 volts at 5,000 feet
  - 1,875 volts at 7,000 feet

**PARTS LIST**

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<b>Ref. No.</b>	<b>Description</b>	<b>Part No.</b>
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Model 43-44 Air Proportional Probe

UNIT	Completely Assembled Model 43-44 Air Proportional Probe	47-1169
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Assembly View, Drawing 316 X 8

Part No.	Descrip.	Qty.	Price
2312-026	Window w/ Mylar	1 ea.	6.00
7312-001	Window w/o Mylar	1 ea.	3.50
7237-007	Probe Cover	1 ea.	3.50
7316-005	Handle	1 ea.	19.60
7316-011	Desiccant Holder	1 ea.	17.17
7316-004	Detector Body	1 ea.	76.40
7316-012	Desiccant Gasket	1 ea.	
7316-013	Connector Block	1 ea.	
9316-007	Name Plate	1 ea.	6.57
22-9631	Neoprene Sponge Cord	*	0.25/ft
22-9664	Desiccant Dehydrators	1 ea.	0.27
13-7752	Connector "C"	1 ea.	9.52
21-9327	Wire 0.001 Dia.	1000 ft. Roll	268.00
14-5432	10 Ga. Mylar	*	2.00/sq. ft.
08-6655	#4 Thumb Screws	2 ea.	0.18
17-8839	4-40 x 7/8 Soc. Cap Screws	2 ea.	0.25
18-8780	Standoff-1102-15-0519	12 ea.	0.72
18-8781	Feedthru-111-09-0519	1 ea.	0.83

Assembly View, Drawing 316 x 8

DESC: ASSEMBLY VIEW	
MODEL: 43-44	
PART #: 4316-014	
DWN: CKB	DATE: 12/29/89
DSGN:	DATE:

HANDLE  
7316-005

RECPT-UG568/U  
13-7752

CORD NEOPRENE SPONGE 22-9631  
NAME PLATE 9316-007  
DETECTOR BODY 7316-004  
STANDOFFS 1102-15-0519 18-8780

DESICCANT HOLDER 7316-011  
DESICCANT GASKET 7316-012

PROBE COVER 7237-007  
10 GA. MYLAR 14-5432

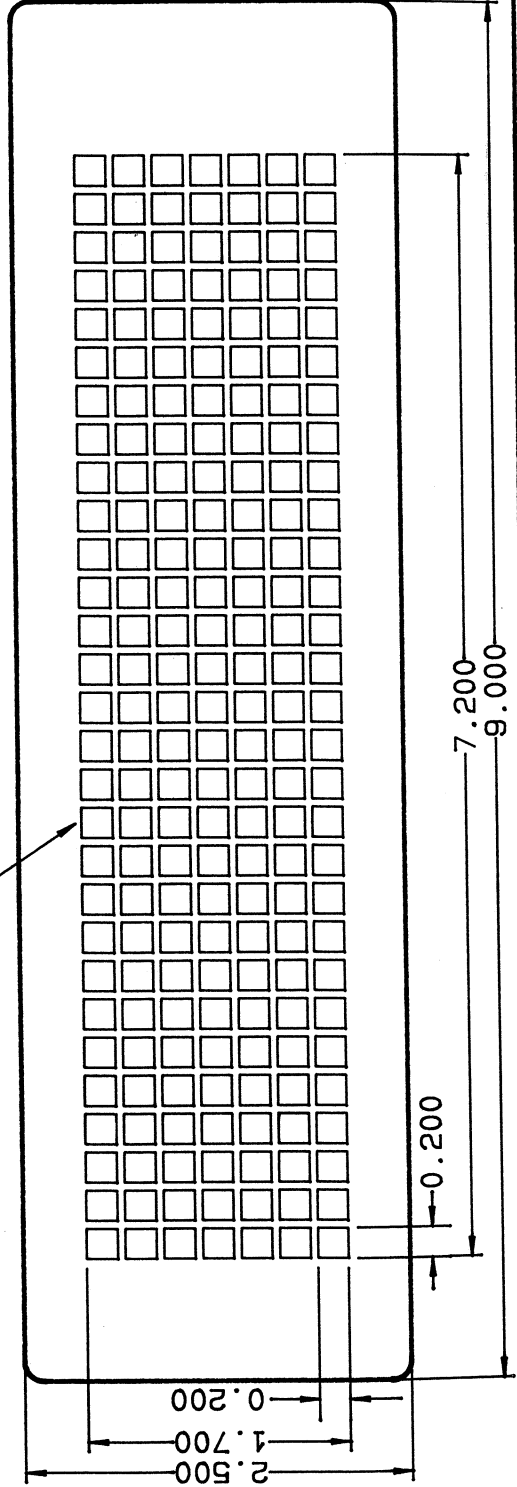
WINDOW PLATE 7312-001

CONNECTOR BLOCK W/O DS 7316-013

BARE-WIRE 0.001 479 PT. 21-9327

FEEDTHRU 1111-09-0519 18-8781

7 X 29 GRID



CHK NO.	DWN	CHK	APP
DWN DATE CHK 12/29/89	CHK	DATE	APP
TOL: SHOP STD <input type="checkbox"/>	OTHER <input type="checkbox"/>	SCALE: FULL <input type="checkbox"/>	OTHER <input type="checkbox"/>
TITLE MODEL 43-44 AIR PROP. PROBE			
LUOLUM MEASUREMENTS, INC. SERIES 318			SHEET 8
8210A, DALLAS, TEXAS 75228			