

**LUDLUM MODEL 44-183 and 44-183-1  
SHIELDED GM DETECTOR**

**May 2023**

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SHIELDED GM DETECTOR**

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**LUDLUM MEASUREMENTS, INC**  
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# Model 44-183 & 44-183-1 Shielded GM Detector

## 1. GENERAL

The Model 44-183 is a lead shielded GM (Geiger-Mueller) detector capable of detecting gamma radiation. The Model 44-183-1 is the same as the Model 44-183, except that it uses a different GM tube with a different range (see specifications).

The lead shield attenuates the background and unwanted radiations, providing a collimated response.

Three nylon feet hold the unit off the surface to protect the window and holder from contamination. The nylon feet are secured by screws, which can be easily replaced if they become contaminated.

The GM detector is contained in a housing, which may be removed from the lead shield. Removing the three screws fastening the nylon feet to the lead base allows the detector to be removed from the shield.

The GM detector operates at 550 volts. The recommended instrument input sensitivity is approximately 30 mV or higher to keep the detector from double pulsing. The double pulse is caused by the size of the after pulse exceeding the instrument threshold.

The Model 44-183 or 44-183-1 will operate with any of the Ludlum instruments or equivalent instruments that provide 550 V and an input sensitivity of approximately 30 mV or higher.

## 2. SPECIFICATIONS

- DETECTOR RANGE WITH DTC:  
For Model 44-183: 10  $\mu\text{Sv/h}$  to 100  $\text{mSv/h}$  (1  $\text{mR/hr}$  to 10  $\text{R/hr}$ )  
For Model 44-183-1: 40  $\mu\text{Sv/h}$  to 400  $\text{mSv/h}$  (4  $\text{mR/hr}$  to 40  $\text{R/hr}$ )
- DETECTOR RANGE WITHOUT DTC:  
For Model 44-183: 10  $\mu\text{Sv/h}$  to 20  $\text{mSv/h}$  (1  $\text{mR/hr}$  to 2  $\text{R/hr}$ )  
For Model 44-183-1: 40  $\mu\text{Sv/h}$  to 60  $\text{mSv/h}$  (4  $\text{mR/hr}$  to 6  $\text{R/hr}$ )
- DETECTOR: GM, energy-compensated
- ENERGY RESPONSE: within 15% of true value
- SENSITIVITY ( $^{137}\text{Cs}$ ): 0.17  $\text{cps}/\mu\text{Sv/h}$  (100  $\text{cpm/mR/hr}$ )
- FRONT-TO-BACK SHIELD RATIO ( $^{137}\text{Cs}$ ): 10:1
- H.V. OPERATING RANGE: 550 Vdc
- OPERATING VOLTAGE: recommended 550 V
- INPUT SENSITIVITY: -30 mV  $\pm$ 10 mV
- DEAD TIME: typically 50 microseconds
- CONSTRUCTION: aluminum and lead with powder-coated finish

## **Model 44-183 & 44-183-1 Shielded GM Detector**

- CONNECTOR: series “C”
- TEMPERATURE RANGE: -20 to 50 °C (-4 to 122 °F)
- SIZE: 10.7 x 12.2 x 12.7 cm (4.2 x 4.8 x 5.0 in.) (H x W x L)
- WEIGHT: 3.3 kg (7.3 lb)

## Model 44-183 & 44-183-1 Shielded GM Detector

### 3. PARTS LIST

Qty.	Description	Part No.
UNIT	Completely Assembled Model 44-183 GM Detector	47-3758
1	GM TUBE (LND 71412)	01-5306
1	LABEL-SERIAL NUMBER BLANK	03-6008
1	LABEL-CONTAINS LEAD	03-6127
1	RES-3.3 MEG 1/4W 5% <sup>^</sup> CF 1/4	10-7044
1	RECPT-UG568/U PANEL C F	13-7752
3	SCREW-6-32 X 1/4 MTL CORE	17-8506
4	SCREW-4-40 X 3/8 BH*	17-8512
4	SCREW-6-32 X 3/8 FH*	17-8569
4	INSERT- E-Z-LOK 4-40	20-9031
7	INSERT- E-Z-LOK 6-32 329-006	20-9066
3	WIRE-#22AWG RED 2 65/40 SILICONE	21-8550
3	WIRE-#22 BLACK UL1430*	21-9413
1	SHRINK-GPF-135 3/32 CLR*	22-9540
1	MODEL 243 CONNECTOR PLATE	7002-046-02
1	MODEL 44-40 HANDLE	7283-003
1	MODEL 44-183 LEAD SHIELD	7283-035
1	MODEL 44-183 COVER PLATE	7283-036
UNIT	Completely Assembled Model 44-183-1 GM Detector	47-4123
1	GM TUBE (LND 71616)	01-5298

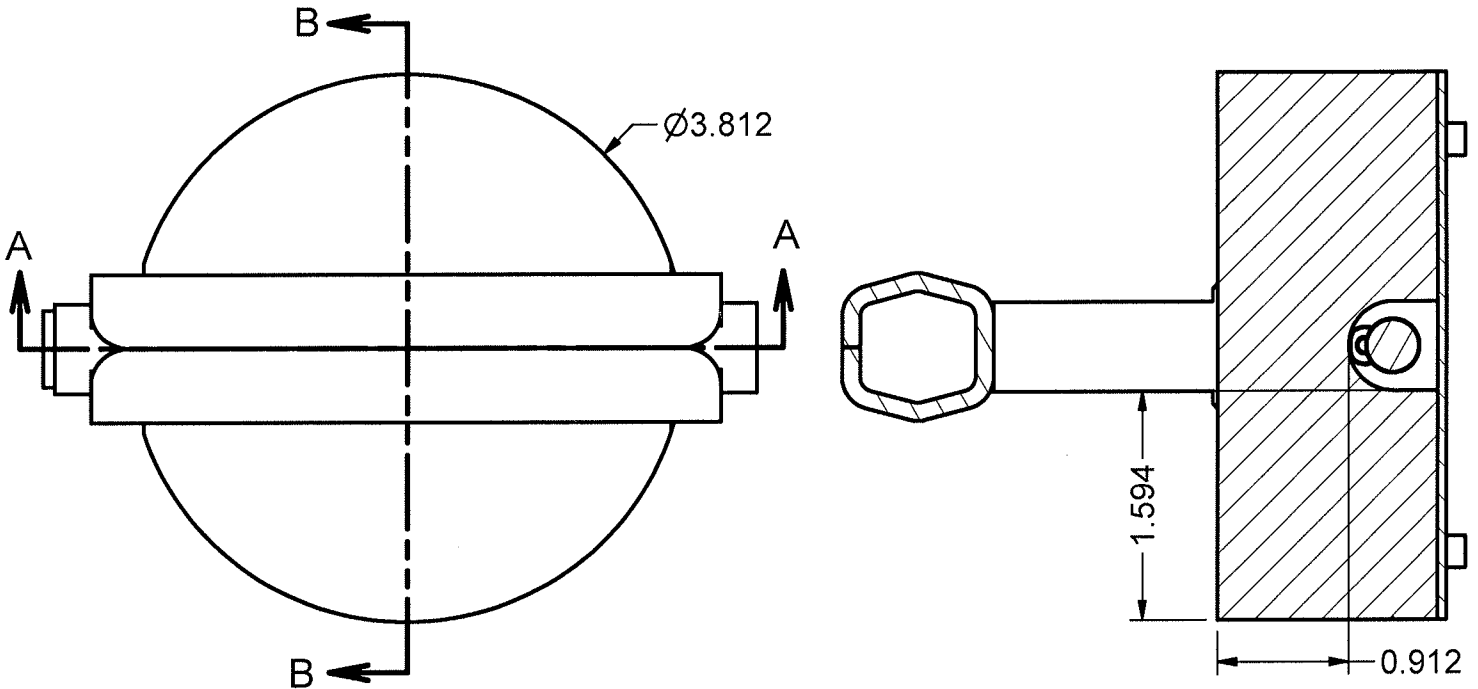
# Model 44-183 & 44-183-1 Shielded GM Detector

## DRAWINGS AND DIAGRAMS

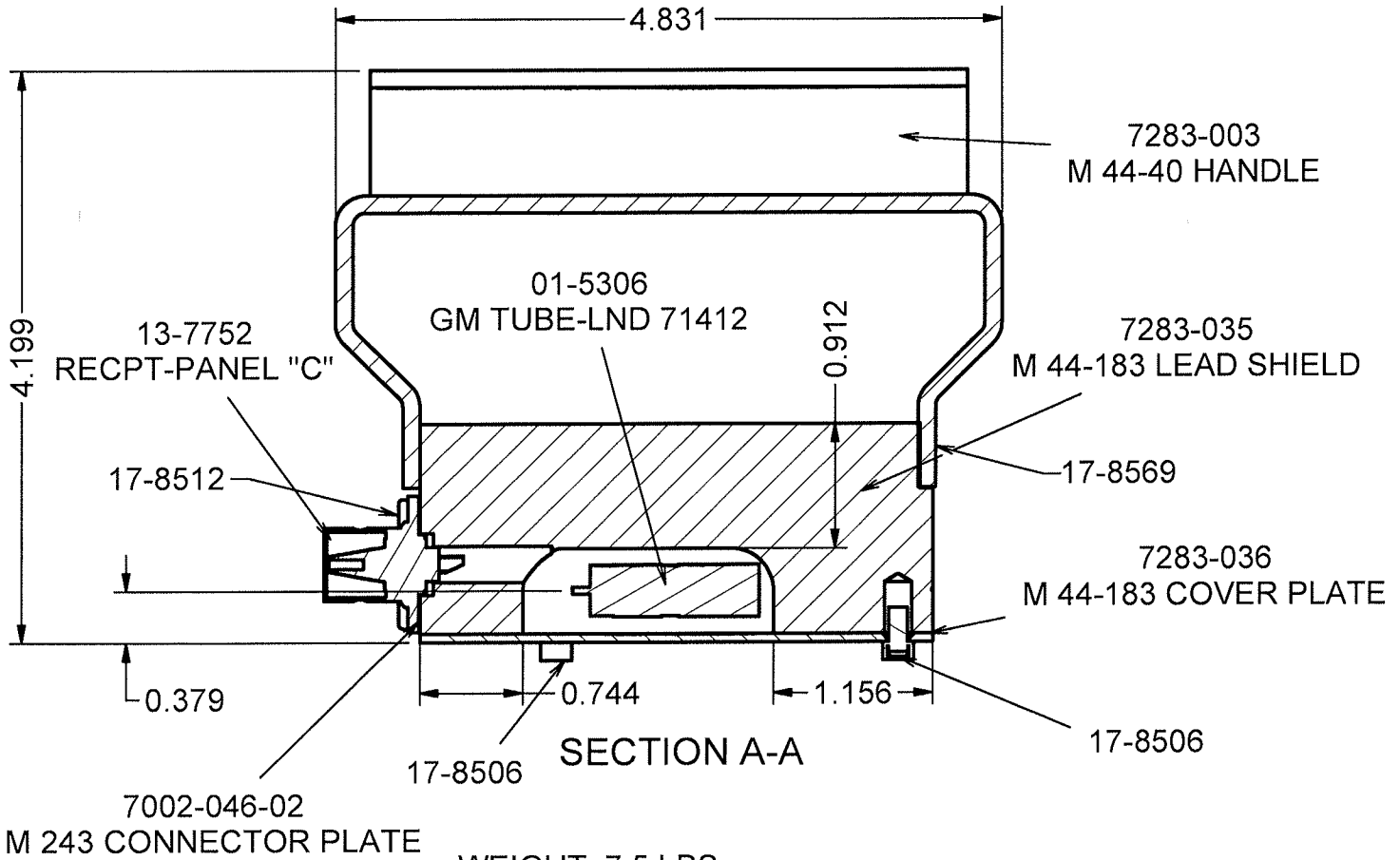
Model 44-183 Shielded GM Tube, Drawing 283 x 34



REVISION HISTORY			
RE	DESCRIPT	DATE	BY
1	VALID	12-29-09	RHS



SECTION B-B



SECTION A-A

WEIGHT: 7.5 LBS  
 SHIELDING MAT'L: LEAD  
 FRONT TO BACK  
 SHIELDING RATIO = 1:10

DWN	DATE	CHK	DATE	APP	DATE
JAC	8/17/16			Jew	6-17-16
DWG NUM: 4283-034				SCALE: 3/4	
TITLE M 44-183 SHIELDED GM TUBE					
LUDLUM MEASUREMENTS, INC. 501 OAK STREET SWEETWATER, TEXAS 79566			SERIES	SHEET	
			283	34	

VF