

# Model NDT Kit

## Radiographic Non-Destructive Testing Kit



Ludlum Measurements, Inc.



Model NDT Kit Components  
Part Number: 48-4173



Assembled Kit

### Introduction

Non-destructive testing (NDT) uses ionizing radiation such as gamma and short X-rays to examine materials for utility, defects, and integrity of construction. Though the practice saves time and money it may create a hazard for the radiographers who use strong gamma sources, often with limited supervision in remote or isolated sites, while working late hours. Ludlum has created a kit of instruments designed to monitor, detect, and alert radiographers to potentially harmful levels of exposure. Instruments provide readings for both short-term readings and accumulated dose, and give both audible and visual alerts when measured levels go above preset levels of radiation.

### Pocket Survey Exposure Ratemeter Model 2401-EC2A

A compact, self-contained, ruggedly-constructed analog radiation survey instrument for quickly measuring ionizing radiation. This wearable unit alerts the user with both a red ALARM LED light and a loud warning tone when levels above the radiation setpoint are detected.

- DETECTOR:** energy compensated Geiger-Mueller tube
- RANGE:** 0–200  $\mu\text{Sv/h}$  (0–2 R/hr)
- SENSITIVITY:** typically 120 cpm/mR/hr ( $^{137}\text{Cs}$  gamma)
- ENERGY RESPONSE:** reading within 20% of true value
- RESPONSE:** typically 11 seconds from 10–90% of final reading
- METER DIAL:** 0–20 mR/hr (others available); BAT OK
- AUDIO:** click-per-event, turn off by moving selector to QUIET
- POWER:** 9-volt battery; typical life of 250 hours
- PHYSICAL:** drawn and cast aluminum with membrane panel; 4.6 x 8.4 x 13.5 cm (1.8 x 3.3 x 5.3 in.); weight: 0.4 kg (0.9 lb)
- ALARM:** may set from 0 to full-scale meter deflection, detected radiation above alarm setpoint triggers a red Alarm LED and steady audible tone whether set to NORMAL or QUIET mode.
- PART NUMBER:** 48-2995

### (2) Direct-Reading Dosimeters (0–200 mR) Model AT-138

This kit includes two direct-reading precision pencil dosimeters to measure accumulated doses of gamma and X-ray radiation exposure up to 200 mR. Features of this model include a hardened sapphire end window, sturdy pocket clip, small size, and rugged housing.

- RANGE:** 0–200 mR
- ENERGY RESPONSE:** 16 keV to 2 MeV
- RADIATION DETECTED:** gamma and X-ray (6 keV to 6 MeV)
- DETECTOR:** fiber electrometer mounted in an electrically conducting plastic ion chamber
- DETECTOR HOUSING:** very low permeability plastic, hermetically sealed
- ACCURACY:** within 10% of true exposure
- DOSE RATE RESPONSE:** independent for gamma and X-ray
- ELECTRICAL LEAKAGE:** less than 1.0% of full scale for 24 hours at 50 °C (122 °F)
- ENVIRONMENT:** -20 to 50 °C (-4 to 122 °F);  $\leq 90\%$  RH
- PHYSICAL:** 1.5 x 12.4 cm (0.6 x 4.5 in.) (Dia x L); 25 g (1.0 oz)
- PART NUMBER:** 51-2936

### Dosimeter Charger Model AT-909

This device removes all residual charges, including static, from dosimeters. The LED reading light improves reading accuracy and reduces gravitational effect on fiber movement.

- CONSTRUCTION:** case is ABS plastic
- CONTROLS:** one-turn potentiometer and spring-loaded push rod
- POWER:** (2) 1.5 V "AA" batteries
- TEMPERATURE RANGE:** -18 to 49 °C (0 to 120 °F)
- PHYSICAL:** 89 x 102 x 102 mm (3.5 x 4 x 4 in.); 302 g (10.6 oz)
- PART NUMBER:** 51-2938

### Transport & Storage Case

Rugged "satchel" type cases, dust & waterproof, resistant to impact and chemical damage, and dense foam padding.

- PHYSICAL:** 40.6 X 33 X 17.5 cm (16 x 13 x 6.9 in.); 1.6 kg (3.5 lb)
- PART NUMBER:** 2311062