

SAIC and DoseRAE PD-3i-s Dosimeter Video Transcript

This step-by-step video instructs response personnel and emergency workers on the proper use of the PD-3i-s dosimeter.

The PD-3i-s is a direct reading dosimeter capable of detecting and measuring gamma and x-ray radiation.

The dosimeter displays DOSE, which is the total amount of gamma radiation accumulated over a period of time and DOSE RATE is the rate of radiation that you are being exposed to.

Its main purpose is to accurately measure the accumulated dose the wearer receives.

Let's begin by getting familiar with the dosimeter features and functions.

The On/Off switch turns the dosimeter on and off.

It also turns the LCD backlight on and off.

The mode switch has two operating modes.

The DOSE mode displays the accumulated dosage since the last reset.

The DOSE RATE mode displays the dose rate from background to 500 Roentgens per hour (R/h).

The liquid crystal display (LCD) located at the top of the dosimeter provides visual feedback.

The battery icon will flash on the display when the battery is low.

The rate icon flashes during dose rate and dose rate warning alarms.

The dose icon flashes during dose and dose warning alarms.

The radiation measurement is self-ranging displayed in three digits.

The units of measure are automatically provided in correct unit for the given measurement:

microroentgens (μR) to roentgens (R)
and from
microroentgens per hour ($\mu\text{R/h}$) to roentgens per hour (R/h)

Bright flashing LED alarms are located on both sides of the display.

The audio alarm located on the front has different alarm patterns depending which mode the dosimeter is in.

The battery compartment is located on the bottom of the dosimeter.

OPERATING INSTRUCTIONS

1. Inspect the dosimeter for damage. If damaged, **do not use**.
2. Check calibration date on calibration sticker. If out of date, **do not use**.
3. Use a coin or screwdriver to open the cover on the bottom of the unit. Turn the cover counterclockwise to loosen cover and then take the cover off.
4. Insert the battery into the compartment with the positive (+) end of battery facing into the unit. You should see the negative (-) end of the battery.
5. Replace the cover and turn it clockwise to secure the cover.
6. To initiate operation, press and hold the on/off button for one (1) second. The dosimeter will briefly display a software number and then will automatically begin operation in the dose mode. The display will be "0.00mR" when first turned on.
7. To change from dose mode to dose/rate mode, press the mode button once.
8. From the dose/rate mode, press the mode button again to cycle back to dose mode. Display will cycle through five screens then return to dose mode.
9. Press the on/off button to turn on the LCD backlight. The backlight will automatically turn off after six (6) seconds, even if the on/off button has not been pressed again.
10. To power off, press and hold the on/off button for 5 seconds. The LEDs will flash and the alarm will beep rapidly. When the display is blank the unit is off.

When the unit is turned off the dose is zeroed and cleared.

Remove the batteries whenever the dosimeter is stored. When an alarm threshold is exceeded, a visual indicator will flash and an audible alarm will sound.

EXPOSURE RATE LIMITS FOR EMERGENCY RESPONDERS

2mR/hr = Recommended Hot Zone line

10R/hr = Turn Back Exposure Rate all activities (except for life saving)

200R/hr = Turn Back Exposure Rate (even lifesaving)

WHOLE BODY DOSE LIMITS

Up to 5 rem = Normal Incident Activities.

5-10 rem = Activities to Protect High Value Property

10-25 rem = Life-Saving or Protection of Large Populations