

# Model 30-7

## Lightweight Digital Neutron Detector



Ludlum Measurements, Inc.

### Features

- Smaller & Lighter 19.5 cm (7.7 in.) REM Ball
- Multi-Function, Rotatable Digital Display
- Adjustable Viewing Angle for Display Unit
- Moderated Neutron Detector
- Range: 0 –100 mSv/h (0–10,000 mrem/hr)
- Display Unit Detaches for Greater Versatility
- Low-Weight Unit Provides Same Readings as Standard REM-ball from Bare AmBe and Lower Energies
- Includes Adjustable Shoulder Strap



Part Number: 48-4192  
upper left: with included shoulder strap  
upper right: detail of digital display unit

### Specifications

**INDICATED USE:** neutron dose rate

**MEASUREMENT RANGE:** 0–100 mSv/h (0–10,000 mrem/hr)

**DETECTOR:**  $^3\text{He}$  proportional detector, 1.6 x 2.5 cm (0.6 x 1.0 in.) (D x L), surrounded by a 19.5 cm (7.7 in.) diameter polyethylene sphere with internal borated layer

**SENSITIVITY:** typically 10 cpm per  $\mu\text{Sv/h}$  (100 cpm per mrem/hr) (bare AmBe neutrons)

**LINEARITY:** reading within 10% of actual value

**ENERGY RESPONSE:** provides appropriate inverse RPG curve for neutrons from thermal through 7 MeV, provides response up to 12 MeV

**GAMMA REJECTION:** < 10 cpm through 0.1 Sv/h (10 R/hr) ( $^{137}\text{Cs}$  gamma)

**OPERATING VOLTAGE:** approximately 1200 Vdc

**THRESHOLD:** -2 mV

**WORKING ENVIRONMENT:** splashproof shields for outdoor use

**ALARMS:** count rate, exposure/dose, and scaler alarm setpoints adjustable over the display range

**OVERLOAD:** high count rate saturation protection prevents false display of lower count rates

**LOSS OF COUNT ALARM PROTECTION:** after preselected time interval (default 60 seconds) of no pulses from detector, audible and visual alarms will be activated

**LCD DISPLAY:** 3 digit LCD with large 13.4 mm (0.53 in.) digits, (k)cps, (k)cpm, (k)Bq, (k)dpm, ( $\mu$ )(m)R(/h), ( $\mu$ )(m)Sv(/h), ( $\mu$ )(m)rem(/h), low-battery indicator, MAX, ALARM, MUTE

**DISPLAY RANGE:** 0.0 cps to 99.9 kcps; 0.00 cpm to 999 kcpm; 0.00 Bq to 99.9 kBq; 0.00 dpm to 999 kdpm; 0.00  $\mu\text{R/hr}$  to 999 R/hr; 0.00 rem/hr to 999 rem/hr; 0.00  $\mu\text{Sv/h}$  to 999 Sv/h. Display range can be set to limit display to calibrated range

**BACKLIGHT:** built-in ambient light sensor automatically activates low-power LED backlight, unless internal dipswitch is set to continuous-On (will reduce battery life). Alarm light intensity varies based on ambient light levels.

#### USER CONTROLS:

- ON/OFF/ACK - press to turn ON, tap to acknowledge alarms and silence alarm tone, press to reset Sigma Audio alarm, turn "click" audio On/Off, turn Sigma Audio beep On/Off, hold for OFF
- MODE - alternates between NORMAL (count rate), MAX (captures peak rate), and COUNT (user-selectable preset count time from 0 to 10 minutes). Number of modes can be reduced in setup.
- UNITS - changes the units between count rate (cpm, cps), dose/exposure ( $\mu\text{Sv/h}$ , mR/rem/hr), or disintegration (dpm, Bq)

**RESPONSE TIME:** user-selectable from 1 to 60 seconds, or Auto-Response Rate FAST or SLOW

**AUDIO:** greater than 75 dB at 0.6 (2 ft), approximately 4 kHz

**POWER:** two alkaline or two rechargeable "AAA" batteries

**BATTERY LIFE:** approximately 100 hours of operation, 24-hour low battery warning

**CONSTRUCTION:** high-impact plastic with water-resistant rubber seals and separate battery compartment

**TEMPERATURE RANGE:** -20 to 50 °C (-5 to 122 °F), may be certified for operation from -40 to 65 °C (-40 to 150 °F)

**ENVIRONMENTAL RATING:** NEMA (National Electrical Manufacturers Association) rating of 3x or IP (Ingress Protection) rating of 52 with audio hole seal option (hole seal option will reduce maximum volume by approximately 10 dB)

**SIZE:** Display Unit 8.5 x 8.0 x 4.8 cm (3.4 x 3.1 x 1.9 in.) (H x W x L); Detector 19.5 cm (7.7 in.) REM ball with  $^3\text{He}$  detector (1.6 x 2.5 cm)

**WEIGHT:** Display Unit 174 g (0.38 lb); REM ball component 4.6 kg (10.2 lb)

**OPTIONS:** Transport and Storage Case (P/N 2311487)

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Note: specifications subject to change without notification. We are not responsible for errors or omissions.

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