

# Model 4404-16 Series Geo-Exploration Monitor



Ludlum Measurements, Inc.

## FEATURES

- Large NaI Scintillator Detector
- Multi-Single-Channel Analyzers
- Data Logging Program
- Google Earth™ Compatible Files



Model 4404-16-4



Model 4404-16

## INTRODUCTION

The Ludlum Model 4404-16 and 4404-16-4 Geo-Exploration Systems provide radiation surface measurements to help discern zones of interest in the underlying geology of a targeted area. These instruments serve as excellent oil exploration and ore prospecting tools. Their high sensitivity also facilitates large area surveys when looking for radioactive contamination.

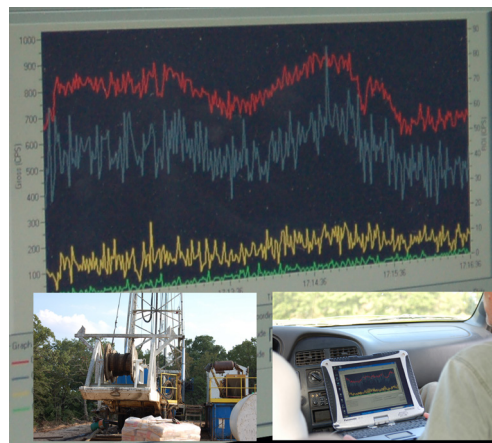
Each system is comprised of a large scintillation detector, multi-single-channel electronics, and a waterproof enclosure. The Model 4404-16 has a large 5.1 x 10.2 x 40.6 cm (2 x 4 x 16 in.) NaI detector, while the Model 4404-16-4 has a 7.6 x 7.6 cm (3 x 3 in.) NaI detector. The Model 4404-16-4 also has a wireless transceiver for cable-free data transfer, a rechargeable battery, and a compact carrying case that can easily fit into a moderately-sized backpack (not included).

A computer is required to read data from the instruments. Ludlum offers a ruggedized computer as an option, or the customer may provide their own computer. A GPS option is also available to help easily relocate points of interest. Contact Ludlum Measurements for more information about these options.

Each instrument includes the Geo-Explorer PC software. The software displays the radiation data just like a chart recorder and logs the radiation data along with its corresponding GPS coordinates into a comma delimited file. The accompanying "KML Generator" software program converts the data files into files suitable for viewing in Google Earth™ or any other 3D earth browser implementing the KML encoding.

## Each Model 4404-16 Series Geo-Explorer Includes:

- NaI Scintillation Detector Mounted in a Weatherproof Carrying Case, Detector Size:
  - Model 4404-16 (H x W x L): 5.1 x 10.2 x 40.6 cm (2 x 4 x 16 in.)
  - Model 4404-16-4 (Dia. x L): 7.6 x 7.6 cm (3 x 3 in.)
- Geo-Explorer PC Software
- KML Generator PC Software
- Serial Cable, 3.6 m (12 ft)
- Vehicle Power Cable, 4.5 m (15 ft)
- USB Flash Drive, 1 GB mini
- Check Source 0.25  $\mu\text{Ci}$  ( $^{137}\text{Cs}$ )



Data collection in the field

## Geo-Exploration Counter PC Software

### Features:

- Real-time strip chart view of up to four detector channels
- Stores data from all four detector channels every second in csv format
- Stores accompanying GPS coordinates every second
- User starts and stops data recording controls with user-defined file names for collected data
- Calibration wizard for simplified onsite calibration
- User defined energy widows to optimize viewing the isotopes of interest
- KML file generator for viewing data on Google Earth™ or any other 3D earth browser (geobrowser) that supports the KML (Keyhole Markup Language) encoding

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

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# Model 4404-16 Series Geo-Exploration Monitor



Ludlum Measurements, Inc.

## MODEL 4404-16 SPECIFICATIONS

Part Number 48-3730

**SCINTILLATOR:** 5.1 x 10.2 x 40.6 cm (2 x 4 x 16 in.) (H x W x L) sodium iodide (NaI) with 90 mm (3.5 in.) photomultiplier tube (PMT), surrounded in protective foam to prevent mechanical and thermal shock

**ENCLOSURE:** waterproof case with in-line wheels, two padded carrying handles, and six latches.

**SIZE (H x W x L):** 17.8 x 43.2 x 101.6 cm (7 x 17 x 40 in.)

**WEIGHT:** approximately 18.1 kg (40 lb)

## MODEL 4404-16-4 SPECIFICATIONS

Part Number 48-3848

**SCINTILLATOR:** 7.6 x 7.6 cm (3.0 x 3.0 in.) (Dia. x L) sodium iodide (NaI)

**ENCLOSURE:** waterproof, dust-tight, rugged case with padded handle and spring-loaded hinges

**WIRELESS TRANSCIEVER:** 10 m range (32.8 ft), transmits count rate signal once every second

**BATTERY CHARGING:** Supplied with a 50 or 60 Hz, 120 to 240 Vac wall adapter typically with 12 Vdc output

**SIZE (H x W x L):** 40.6 x 33 x 17.5 cm (16 x 13 x 6.9 in.)

**WEIGHT:** approximately 5.7 kg (12.5 lb)

## SHARED SPECIFICATIONS

**ELECTRONICS:** Model 4600 Series SCA. Four channels supplied, includes one gross channel plus three user-adjustable windows.

Windows are software adjustable from 1 - 330 mV.

**HIGH VOLTAGE:** adjustable from 0 to 2000 Vdc

**AMPLIFIER GAIN:** adjustable from  $\times 1$  to  $\times 10$

**AMPLIFIER RANGE:** 0 to 3.3 V

**POWER INPUT:** Typically powered by a cigarette-type power adapter and cable. A 12 Vdc output, AC wall adaptor is also supplied.

**POWER INPUT VOLTAGE RANGE:** 5.5 to 36 Vdc

**POWER CONSUMPTION:** 550 mW (100 mA at 5.5 Vdc)

## OPTIONS

### COMPUTER

Model 4404-16 & Model 4404-16-4 Toughbook Laptop (Part Number 2311792)

Lightweight laptop with detachable screen that can be used as a tablet

MIL-STD-810G and MIL-STD-461F certified

IP65 certified sealed all-weather fanless design

Magnesium alloy chassis encased with ABS and elastomer edges

Built-in dual purpose handle & kickstand

25.7 cm (10.1 in.) sunlight-viewable 800 nit multi-touch + digitizer display

Intel® Core™ i5 vPro (7th Gen) processor

128 GB solid state drive

Power: Lithium ion battery pack (11.4 V, 2600 mAh), battery operation approximately 8.5 hours, battery charging time 3 hours, AC adapter - 100-240 Vac 50/60Hz, auto sensing/switching worldwide power supply

Size (L x W x H): 27.2 x 23.4 x 3.3 cm (10.7 x 9.2 x 1.3 in.) Weight: 1.8 kg (3.9 lb)

### GPS

Model 4404-16 & Model 4404-16-4 GPS (Part Number 2312074)

This GPS is an ultra compact unit powered through the same USB 1.5 m (60 in.) cable used to transfer data, so there is no need for batteries, external power source, or a separate data cable.

Voltage range 2.7 to 5 V

LNA 28 dB gain typical

Low noise figure 1.5 dB

Temperature Range: -40 to 85 °C (-40 to 185 °F)

Size (Dia. x H): 5.3 x 1.9 cm (2.1 x 0.8 in.) Weight: 0.06 kg (2.2 oz)

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