

Model 4525 Series Radiation Portal Monitors

Radiation Detection for a Safer World



Ludlum Measurements, Inc.

Features

- Large Size, High Sensitivity Industrial Duty Detectors
- Reliable Operation with Very Low False Positives
- Flexible Configurations Accommodate Up to Four Lanes, Each Arranged with 2 to 8 Detector Systems
- Bi-Directional Entry
- Real-time Central Data Logging, Reporting, and Alarm Notification
- Optional Camera Captures & Logs Vehicle Images
- User-Friendly Operation
- Superior Service and Support
- CE Certified



Introduction

General Description

The Ludlum 4525-Series of Radiation Portal Monitors (RPMs) represents state-of-the-art technology at detecting orphan radiation sources. Ludlum has sold thousands of these types of systems throughout the world to scrap yards, recycling companies, landfills, and foundries.

The 4525 series detectors are ruggedized, large plastic scintillation systems that can be optimally arranged to monitor moving vehicles entering into the system. Each detector system can be configured with two to eight large detectors. Real-time data acquisition and analysis is performed directly at each detector system and then reported to a central PC for logging, reporting, and alarm notification.

Up to four detector systems (lanes) can be networked together via Ethernet or wireless to the central PC where vehicles entering from either direction can be monitored in real time. Each detector system additionally includes a remote control/annunciator panel to support operator awareness, alarm acknowledgement, and if necessary, backup operation in the event the central PC is unavailable.

Data from all the system sensors are acquired and checked by powerful, field-tested, and time-proven algorithms designed to check each load vigorously in a multi-dimensional, multi-layered manner before declaring any load as clean. Any abnormality is immediately alarmed and annunciated both locally and remotely. An optional camera system can capture the image of the offending vehicle. The image is included in the logged data for permanent record keeping. Alarms can also be configured to automatically directly notify shift supervisors by e-mail if desired.

The system is designed for ease of use and can be customized to accommodate a wide variety of site and application specific criteria. Intuitive menus and controls combined with pre-defined automatic event handlers ensure each situation is handled properly and consistently.

Gate Monitoring Software Package

Ludlum's System Computer comes equipped with a gate monitoring software program accommodating up to four separate 4525 configured systems (lanes) via a 10Base-T Ethernet connection or 802.11g wireless system. This monitoring software automatically collects and archives data from all available lanes, displays alarms, and generates reports. When equipped with optional cameras, the system can both automatically capture images of each vehicle passing through the system or only those causing an alarm, and include it in the database. The gate monitoring software contains three major components:

SUPERVISOR: collects all data, saves it in databases, and contains all parameter settings. It manifests alarms and provides all control over the system.

ECHO: is used for remote monitoring and shows exactly what the Supervisor is doing, but does not allow any control functions. This program performs all alerting and reporting functions, and up to 10 ECHO stations can be configured per each supervisor computer. Each ECHO station can monitor an unlimited number of supervisor computers.

DATA VIEWER: queries the databases (background, alarms, and event log), filtering records based on date, alarm, and lane number. The Data Viewer can also re-print an alarm report, print summary reports for user-defined date and time ranges, and create new databases based on the current search queries.

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Available Detector Configurations

Ludlum offers several different Radiation Portal Monitor Systems, each equipped with a software program capable of handling up to four separate lanes. The 4525-Series model number suffix reflects the total cubic inches of scintillation material used by the combined system.

A Remote Annunciator Panel (Part No. L-4511-207) is included with each system.

Model	Number of Detectors	Part Number
4525-2400	4	48-3908
4525-3800	2	48-3863
4525-7000	2	48-3605
4525-7000-2	2	48-3973
4525-7600	4	48-3857
4525-10500	3	48-3606
4525-14000	4	48-3607
4525-14000-2	4	48-3974
4525-17500	5	48-3608
4525-21000	6	48-3609

Specifications

Detectors

- Detector Volume 57.4 liters (3500 in³) volume each
- EJ-200 plastic scintillator
- Dual photomultiplier tube (PMT) design, delivers over 30% more efficiency than single PMT designs
- Hi gain, low-noise PMTs
- Shock-mounted detectors to resist vibration-induced noise
- Thermally protected to avoid temperature shock, includes embedded temperature sensors to present operators the actual temperatures inside the detector enclosure
- 0.318 cm (0.125 in.) lead background reduction shielding on 5 sides
- NEMA 4X rated, stainless steel enclosure for environmental protection
- Low density, aluminum front door for enhanced low-energy measurement
- Size: 208 x 62 x 23 cm (82 x 24.5 x 9 in.) each (H x W x D)
- Weight: 295 kg (650 lb) each

SYSTEM COMPUTER SPECIFICATIONS

- USB Keyboard with Touchpad
- Inkjet Printer
- Monitor 43.2 cm (17 inch) Black
- Computer: Fanless Industrial
- UPS (Uninterruptable Power Supply)
- Intel® Atom Processor
- 2 GB RAM
- 80 GB Hard Drive Integrated SSD
- Microsoft Windows® 7 Professional OS
- Integrated Intel® Video
- Integrated Intel® PRO Network
- Integrated Realtek Sound
- Wall Mount Bracket
- Weight: 18.1 kg (40 lb)
- Dimensions: 97.3 x 55.9 x 47.5 cm (39.8 x 22 x 18.7 in.) (H x W x D)



Options available: camera, camera housing, strobe/horn, detector stands, CD-ROM (visit ludlums.com for more)

Model 4525 Series - Included Accessories



Part No.: 4511-207

LED Indicators for:

- power OK
- checking
- gamma alarm
- overspeed
- inst fail
- using battery power
- reset

Remote Display: with 30.5 m (100 ft) cable, audio annunciator upon alarm, and pushbutton to silence and reset alarm.

Model 4525 Series - Optional Accessories



**Strobe / Horn with
15 m (50 ft) cable**

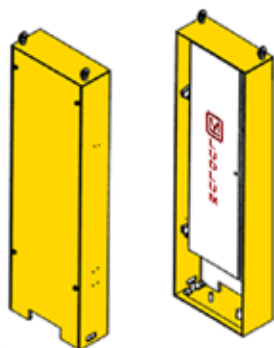
Part No.: 4384-880



Indoor/Outdoor Camera

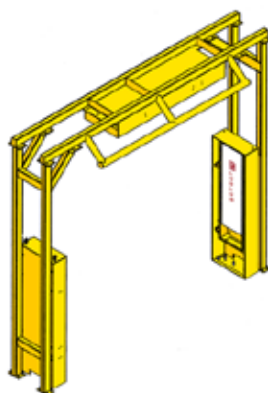
An all-in-one HD1089p color camera designed for indoor or outdoor use, with Day/Night sensitivity for low light or exterior locations. In addition, this camera has Direct-to-Storage (DTS) recording. Dual-codec functionality for simultaneous H.264 (MPEG 4, Part 10) and MJPEG video streaming, at 30 fps and is Ethernet-capable. May be mounted on wall, ceiling, or parapet.

Part No. 2312288



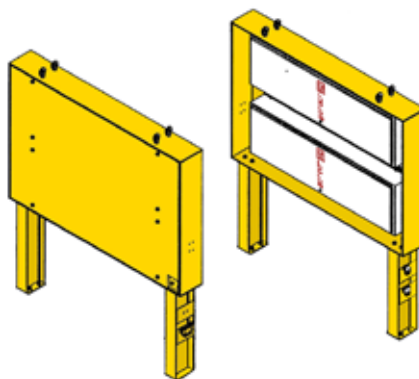
**Model 4525 Series
2 Detector Stand Set**

Part No.: 4384-850



**Model 4525 Series
3 Detector Stand Set**

Part No.: 4384-1003



**Model 4525 Series
4 Detector Stand Set**

Part No.: 4384-849

Detailed information for the Model 4525-Series detector stands can be found in the Drawings & Diagrams section of the Installation Manual.

