

# DETECTORS & DIVERSEN



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## Partner **Spectrum Techniques**

**Spectrum Techniques** Spectrum Techniques is een Amerikaanse leverancier van stralingsdetectie- en meetoplossingen en biedt een uitgebreide reeks detectoren, QA-bronnen (Quality Assurance), alfa-, bèta- en gammaspectrometriesystemen, evenals monsternemers en tellers. Hun producten zijn ontworpen ter ondersteuning van onderwijsinstellingen, onderzoekslaboratoria en industriële toepassingen die precieze en betrouwbare stralingsmetingen vereisen.

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### Product offering

#### Isotope Generator - Spectrum Techniques



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## Isotope Generator - Spectrum Techniques

This Cs-137/Ba-137m Isotope Generator is used to conduct experiment in schools and universities to demonstrate the properties of radioactive decay. Based on the original Union Carbide patented design, it offers exceptional performance combined with ease of use and safe operation.

Contact one of our product specialists.

If you prefer to continue your search for additional information, try this [link](#).





## Partner Ludlum Medical Physics (LMP)



Ludlum Medical Physics (LMP), een divisie van Ludlum Measurements, Inc, is gespecialiseerd in oplossingen voor stralingsveiligheid en kwaliteitsborging (QA) van medische beeldvorming. Hun uitgebreide productlijn ondersteunt professionals in de gezondheidszorg bij het handhaven van hoge normen voor patiëntveiligheid en diagnostische nauwkeurigheid in verschillende medische disciplines.

### Product offering

#### Probes (Ludlum)



#### Model 133-6 GM Detector - Ludlum



#### Model 133-4 GM Detector - Ludlum



#### Model 133-2 GM Detector - Ludlum



#### Model 44-3 NAL Low Energy Gamma Scintillator - Ludlum



#### Model 44-2 NAL Gamma Scintillator - Ludlum



#### Model 44-1 Beta Scintillator - Ludlum



#### Model 44-38 Energy Compensated GM Detector - Ludlum



#### Model 44-9 Ambient Dose Equivalent Filter - Ludlum

#### Model 44-9 Exposure Filter Kit - Ludlum



#### Model 44-9 Pancake GM Detector - Ludlum



#### Model 44-7 Alpha Beta Gamma Detector - Ludlum



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## **Probes (Ludlum)**

For any application Ludlum offers a wide range of probes. The probes can be used with all Ludlum models which require an external detector.



### **Ludlum models with external detector a.o.:**

- [Model 3000 Digital Survey Meter](#)
- [Model 3001 Multi-Detector Survey Meter](#)
- [Model 375 Area Monitor Controller](#)
- [Model 375/9 Digital Area Monitor](#)
- [Model 30 Digital Survey Meter](#)

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## **Model 133-6 GM Detector - Ludlum**

The Model 133-6 GM Detector (Ludlum) is a gamma survey detector (GM) that can be used with any scaler instrument, ratemeter or area monitor that delivers the appropriate amount of voltage (see datasheet below) with an input sensitivity of  $30 \pm 10\text{mV}$ .



### **Model 133-6 GM Detector features:**

- waterproof (optional)
- halogen quenched
- stainless steel tube
- range:  $40 \mu\text{Sv/h}$  to  $10 \text{Sv/h}$
- energy compensated GM

Read more about the Model 133-6 GM Detector on the [Ludlum Website](#)

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## Model 133-4 GM Detector - Ludlum

The Model 133-4 GM Detector (Ludlum) is a gamma survey detector (GM) that can be used with any scaler instrument, portable ratemeter or area monitor that delivers the appropriate amount of voltage (see datasheet below) with an input sensitivity of  $30 \pm 10\text{mV}$ .



### Model 133-4 GM Detector features:

- waterproof (optional)
- halogen quenched
- stainless steel tube
- range: 0.01 mSv/h to 100 mSv/h
- energy compensated GM

Read more about the Model 133-4 GM Detector on the [Ludlum Website](#)

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## **Model 133-2 GM Detector - Ludlum**

The Model 133-2 GM Detector (Ludlum) is a gamma survey detector (GM) that can be used with any scaler instrument, portable ratemeter or area monitor that delivers the appropriate amount of voltage (see datasheet below) with an input sensitivity of  $30 \pm 10\text{mV}$ .



### **Model 133-2 GM Detector features:**

- stainless steel tube
- energy compensated GM
- waterproof (optional)
- halogen quenched
- range:  $1 \mu\text{Sv/h}$ – $10 \text{mSv/h}$

Read more about the Model 133-2 GM Detector on the [Ludlum Website](#)

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## Model 44-3 NAL Low Energy Gamma Scintillator - Ludlum

The Model 44-3 NAL Low Energy Gamma Scintillator (Ludlum) is a detector for 125I and low energy gamma radiation survey.



### Model 44-3 NAL Low Energy Gamma Scintillator features:

- entry window: 18.4 mg/cm<sup>2</sup>
- weight: 0.5 kg
- sensitivity: 675 cpm/μR/hr (125I)
- window area: 5 cm<sup>2</sup> open and active
- efficiency (4π): 33.5%–125I (based on 129I efficiency of 18%)
- detector: scintillator, 2.5 cm diameter x 1 mm thick NaI(Tl) crystal
- photomultiplier tube: 3.8 cm diameter

Read more about the Model 44-3 NAL Low Energy Gamma Scintillator on the [Ludlum website](#)

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## Model 44-2 NAL Gamma Scintillator - Ludlum

The Model 44-2 NAL Gamma Scintillator (Ludlum) is a detector for low-level, wide-energy gamma radiation survey.



### Model 44-2 NAL Gamma Scintillator features:

- detector: scintillator, 2.5 x 2.5 cm (1 x 1 in.) (Dia x L) thick NaI
- efficiency: 125I for 7%; 57Co for 10%; 137Cs for 3%; 60Co for 3%
- sensitivity: 175 cpm/ $\mu$ R/hr (137Cs gamma)
- background: 1800 cpm
- photomultiplier tube: 2.86 cm (1.125 in.) diameter, magnetically shielded

Read more about the Model 44-2 NAL Gamma Scintillator on the [Ludlum website](#)

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## Model 44-1 Beta Scintillator - Ludlum

The Model 44-1 Beta Scintillator (Ludlum) is a detector for beta radiation survey.



### Model 44-1 Beta Scintillator features:

- window area: 9.7 cm<sup>2</sup> active and open
- efficiency (4π): 7% for 14C
- background (10 μR/hr): 100 cpm
- weight: 0.3 kg
- detector type: 4.3 x 0.03 cm (1.7 x 0.01 in.) (Dia x L) plastic scintillator

Read more about the Model 44-1 Beta Scintillator on the [Ludlum website](#)

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## Model 44-38 Energy Compensated GM Detector - Ludlum

The Model 44-38 Energy Compensated GM Detector (Ludlum) is a device for beta and gamma radiation survey.



### Model 44-38 Energy Compensated GM Detector features:

- weight: 0.5 kg
- detector: 30–45 mg/cm<sup>2</sup> stainless steel wall halogen quenched GM
- sensitivity: 1200 cpm per mR/hr (137Cs gamma) with window closed
- range:  $\pm 10\%$  up to 50 mR/hr without DTC and up to 500 mR/hr with DTC
- background: 25 cpm open, 20 cpm closed
- gamma energy response (window closed): within 20% of 137Cs (662 keV) from 60 keV to 1.3 MeV

Read more about the Model 44-38 Energy Compensated GM Detector on the [Ludlum website](#)

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## Model 44-9 Ambient Dose Equivalent Filter - Ludlum

The Model 44-9 Ambient Dose Equivalent Filter (Ludlum) is an expansion on the Model 44-9 Pancake GM Detector. It is an energy compensation filter that flattens the energy response to facilitate measuring Ambient Equivalent Dose.



### Model 44-9 Ambient Dose Equivalent Filter features:

- can be purchased separately or together with a Model 44-9 Pancake GM Detector
- flattens the response to within  $\pm 20\%$  referenced to  $^{137}\text{Cs}$  (662 keV) over an energy range of 20 keV to 1.2 MeV
- easy to mount and remove

### Dose Equivalent Filter Response (green line):

Read more about the Model 44-9 Ambient Dose Equivalent Filter on the [Ludlum website](#)

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## Model 44-9 Exposure Filter Kit - Ludlum

The Model 44-9 Exposure Filter Kit (Ludlum) is an expansion on the Model 44-9 Pancake GM Detector. It is an energy compensation filter that flattens the energy response to facilitate measuring exposure.



### Model 44-9 Exposure Filter Kit features:

- flattens the response to within  $\pm 20\%$  referenced to  $^{137}\text{Cs}$  (662 keV) over an energy range of 33 keV to 1.2 MeV
- easy to mount and remove
- filter can be purchased separately or together with a Model 44-9 Pancake GM Detector

### Exposure Filter Response (blue line):

Read more about the Model 44-9 Exposure Filter Kit on the [Ludlum website](#)

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## **Model 44-9 Pancake GM Detector - Ludlum**

The Model 44-9 Pancake GM Detector (Ludlum) is proven to be the most popular radiation detector used throughout the world. This detector is sensitive to alpha, beta and gamma radiation. The Model 44-9 Pancake GM Detector is enclosed within a rough metal cage but sized and shaped very convenient. It is ideal for checking contamination on people and objects.



### **Model 44-9 Pancake GM Detector features:**

- window area: 15.51 cm<sup>2</sup> (2.4 in<sup>2</sup>) active, 12.26 cm<sup>2</sup> (1.9 in<sup>2</sup>) open
- pancake-type, halogen-quenched GM detector
- efficiency (4π): 5% for 14C; 22% for 90Sr/90Y; 19% for 99Tc; 32% for 32P; 15% for 239Pu, ≤ 1% for 99mTc; 0.2% for 125I
- sensitivity (137Cs gamma): 3300 cpm/mR/hr
- weight: 0,5 kg

Read more about the Model 44-9 Pancake GM Detector on the [Ludlum website](#)

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## Model 44-7 Alpha Beta Gamma Detector - Ludlum

The Model 44-7 Alpha Beta Gamma Detector (Ludlum) is a device for alpha, beta and gamma survey (sample counting).



### Model 44-7 Alpha Beta Gamma Detector features:

- end window, halogen-quenched GM detector
- 6 cm<sup>2</sup> (0.93 in<sup>2</sup>) active; 5 cm<sup>2</sup> (0.78 in<sup>2</sup>) open window area
- 1.7 ± 0.3 mg/cm<sup>2</sup> mica window
- 2% for 14C; 10% for 90Sr/90Y; 7% for 99Tc; 7% for 239Pu; 0.1% for 125I efficiency (4π)
- 2100 cpm/mR/hr sensitivity (137Cs gamma)
- anodized aluminum housing
- 0.5 kg weight

Read more about the Model 44-7 Alpha Beta Gamma Detector on the [Ludlum website](#)

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## **Model 43-92 Alpha Scintillator - Ludlum**

The Model 43-92 Alpha Scintillator (Ludlum) is a device for alpha contamination survey.



### **Model 43-92 Alpha Scintillator features:**

- window area: active: 100 cm<sup>2</sup> (15.5 in<sup>2</sup>) open: 88 cm<sup>2</sup> (13.6 in<sup>2</sup>)
- weight: 0.5 kg
- window: 0.8 mg/cm<sup>2</sup> metalized polyester (1.2 mg/cm<sup>2</sup> recommended for outdoor use)
- scintillator: ZnS(Ag)
- efficiency (4π): typically 20% for <sup>239</sup>Pu
- removable protective screen
- background radiation: 3 cpm or less
- photomultiplier tube: 2.9 cm (1.13 in.) diameter

Read more about the Model 43-92 Alpha Scintillator on the [Ludlum website](#)

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## Model 43-65 Alpha Scintillator - Ludlum

The Model 43-65 Alpha Scintillator (Ludlum) is a detector designed for alpha radiation survey when used in combination with a general purpose survey meter, ratemeter or scaler instrument.



### Model 43-65 Alpha Scintillator features:

- 63 cm<sup>2</sup> active; 50 cm<sup>2</sup> open (window area)
- ZnS(Ag) scintillator
- 0.8 mg/cm<sup>2</sup> metalized polyester window
- 3.8 cm (1.5 in.) diameter photomultiplier tube
- efficiency (4π): 17% for <sup>239</sup>Pu; 17% for <sup>230</sup>Th

Read more about the Model 43-65 Alpha Scintillator on the [Ludlum website](#)



## Partner **Centronic Nuclear**



Centronic bestaat al meer dan 70 jaar en heeft meer dan veertig jaar ervaring in het ontwikkelen en fabriceren van halfgeleider en gas gevulde detectoren. Onder andere GM, Röntgen, He3/ BF3-neutronen en ionisatiekamers voor een breed toepassingsgebied in Electro-Optische- en Ioniserende stralingsdetectie.

### Product offering

**Alpha, Beta & Gamma  
Detectors - Centronic**



**Gamma Detectors -  
Centronic**



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## Alpha, Beta & Gamma Detectors - Centronic

The Alpha, Beta & Gamma Detectors (Centronic) are used for the detection of radiation at low dose rates. This range of mica-window tubes is used for monitoring all types of radiation in a wide variety of environments.



### Alpha, Beta & Gamma Detectors features:

- circuitry simple
- robust build
- available with compensating filter

Contact our product specialist or download the datasheet below.

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## Gamma Detectors - Centronic

The Gamma Detectors (Centronic) are used for the detection of radiation at low dose rates. These tubes are suitable for use in environmental monitoring, and for sweeping areas which may have traces of radioactive sources on them.



### Gamma Detectors features:

- robust construction
- simple circuitry
- available with compensating filter
- ambient dose compensated versions available

Contact our product specialist or download the datasheet below.



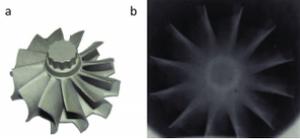
## Partner **Ashland**



Ashland is een wereldwijde leider in speciale materialen en biedt innovatieve oplossingen die de veiligheid, precisie en resultaten voor patiënten in verschillende medische disciplines verbeteren. Hun portfolio ondersteunt zorgverleners op het gebied van bestralingstherapie, diagnostische beeldvorming, wondverzorging en regeneratieve geneeskunde.

### Product offering

**Gafchromic XR-SP2  
Industrial  
Radiographic Film -  
Ashland**



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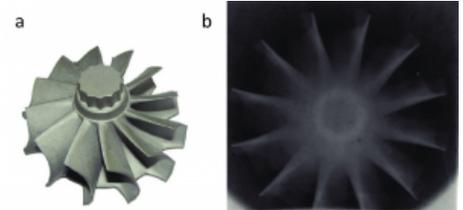


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## Gafchromic XR-SP2 Industrial Radiographic Film - Ashland

Ashland designed XR-SP2 Industrial Radiographic Film specially for the current demand for security and industrial x-ray imaging applications.

This film is particularly effective in field applications and remote environments, for example, security and non-destructive testing (NDT). This film is at your service when other imaging may not be available.



### FILM SENSITIVITY

The film's response depends on the output spectrum of the x-ray generator, or the type and strength of the isotopes. But it also depends on the thickness and composition of the object that you are imaging.

### XR-SP2 BENEFITS

- Stand-alone imaging tool
- No screens required
- No cassettes required
- Instantly self-developing
- Resolution >10 microns
- Water and scratch resistant
- Usable in daylight
- Can withstand temperatures from 4,5 °C to 60°C (40°F to 140°F)
- Stable in real world environment
- The shelf life is over a year

This film comes in boxes of 10 pc. and it's available in two sizes:

- 20,32 cm x 25,4 cm (8" x 10")
- 25,4 cm x 30,48 cm (10" x 12")

**For more information on Ashland radiology film...**

**Go here!**



## Partner **Polimaster**



Polimaster is een wereldwijde leverancier van oplossingen voor stralingsmonitoring en biedt geavanceerde dosimetrie- en detectietechnologieën op maat van de medische sector. Hun instrumenten helpen professionals in de gezondheidszorg bij het handhaven van veiligheid en naleving in omgevingen waar blootstelling aan straling een punt van zorg is.

### Product offering

**RadFlash® Electronic Personal Dosimeter**





## RadFlash® Electronic Personal Dosimeter



X-ray (continuous/pulsed) and gamma radiation real-time personal dosimeter with Bluetooth.



### Features:

- Independent alarm thresholds for both dose and dose rate
- Automatic calculation of the safe stay time in the Polismart® app
- Compatible with real-time dosimetry systems
- Miniature, lightweight design
- Intuitive single-control button
- Bluetooth integration
- Wireless charging

### Overview:

With RadFlash, the instant your radiation exposure increases, you know it. Continuous monitoring and custom alerts provide immediate, precise feedback, empowering you to react in-the-moment to changes in your exposure environment.

The dosimeter is capable of solving a wide range of personal dose monitoring tasks, including measurement of personal dose equivalent  $H_p(10)$  and personal dose equivalent rate  $\dot{H}_p(10)$  of X-ray (continuous and pulsed) and gamma radiation.

Only the best instant monitoring and alerts provide the safety professionals deserve. The RadFlash electronic personal dosimeter gives you immediate feedback, high precision, and unmatched flexibility. It's the perfect tool for minimizing risk and maximizing confidence.

### Applications & Uses:

- Medical personnel, including radiologists, surgeons, anesthesiologists, nurses, physician's assistants, technicians, and medical physicists
- Laboratory researchers and operators
- Customs and security officers
- All professionals who work under the risk of X-ray and gamma radiation exposure



## Partner **Overige**

### Product offering

#### HPGE and Si(Li) detector accessories



#### Model 43-5 Alpha Scintillator - Ludlum



## HPGE and Si(Li) detector accessories



Ortec HPGE and Si(Li) detector accessories extend the performance of your system. You can choose from several categories including:

- LN2 Accessories
- accessories for X-COOLER III
- shields
- other Accessories

Do you want to know more about the HPGE and Si(Li) detector accessories?

If you want to continue your search for additional information on this product try this [link](#).



## Model 43-5 Alpha Scintillator - Ludlum



The Model 43-5 Alpha Scintillator (Ludlum) is a detector developed for alpha radiation survey when used with a common purpose survey meter, ratemeter or scaler instrument. The detector housing is assembled of aluminum alloy with beige powder coat for easy maintenance and durability.



### Model 43-5 Alpha Scintillator features:

- efficiency ( $4\pi$ ): 13% for  $^{239}\text{Pu}$
- scintillator: ZnS(Ag)
- 0.8 mg/cm<sup>2</sup> metalized polyester window
- background: 3 cpm or less
- weight: 0.9 kg
- window area: 76 cm<sup>2</sup> (11.9 in<sup>2</sup>) active, 50 cm<sup>2</sup> (7.8 in<sup>2</sup>) open

Read more about the Model 43-5 Alpha Scintillator on the [Ludlum website](#)