



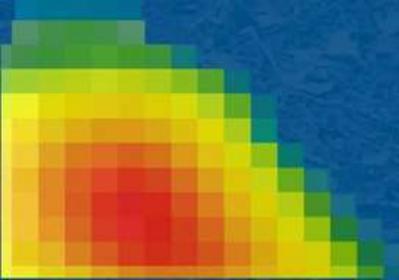
innovative physics

# Hot Spot Locator Products

For rapid visualisation  
of radioactive sources



**Nuclear Emergency Homeland Security Customs Medical**





innovative physics

# Faster and More Accurate Location of Radiation Hotspots

Already proven in surveys and decontamination activities in Japan, China, and Europe, Innovative Physics' (IPL) Hot Spot Locator (HSL) Gamma Imaging technology provides much more rapid and accurate visualisation of radiation contamination.

## Applications

The HSL products are extremely versatile, and can be used for a number of different applications, including:-

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Radiation decontamination and clean up activities

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Ground remediation assessments

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Radioactive waste and transportation management

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Radiation training and education

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Nuclear power plant decommissioning

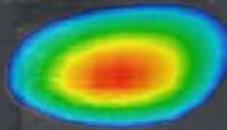
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Emergency response situations

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Environmental monitoring and assessments

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## Background

The first product to deploy IPL's Imaging Mask design was the Hot Spot Locator500 (HSL500™), which was developed following the Fukushima Dai'ichi Incident to assist with clean-up operations. Now deployed by decontamination, emergency response, and nuclear management teams across the world, the technology has proven to be quick and accurate in comparison with conventional gamma imaging techniques.

The detection speed and ability to locate hot spots of very low radioactivity levels is due to its enhanced sensitivity, while the class leading accuracy of visualising the location of the hot spot is delivered by advanced image processing techniques developed by Innovative Physics.

IPL has received excellent feedback on the performance of the HSL500™ and its SmartSpot™ application software as being an intuitive and easy to learn solution.

# Hot Spot Locator

## HSL-Lite™ and HSL-Lite Plus™

Following end-user feedback and extensive field work conducted by IPL globally; IPL responded with two new products HSL-Lite™ and HSL-Lite Plus™ which were launched early 2016.

Utilising IPL's new Dynamic Imaging Mask (DIM) design, these products maintain the superior speed and sensitivity of the HSL500™, but at less than half the weight of their predecessor.

Furthermore, the DIM system improves the quality of the gamma image by reducing the background interference not emitted from the gamma source located in the field of view.

IPL strive to ensure the equipment is:-

**Quick  
Clear  
Accurate  
Easy to Use**



Photo courtesy of SCK-CEN



## Easy Set up and Operation

Just one Start/Stop button controls the capture operation of the HSL-Lite™ products. The SmartSpot™ software runs on a standard Windows PC or tablet, supplied as part of the kit for out-of-the box readiness.

Image data can be easily viewed, analysed, replayed and archived with the SmartSpot™ software. The inbuilt GPS receiver records the location of each video capture automatically, thus enabling end-users to easily monitor radiation levels of an exact location over time.

The HSL-Lite™ kits include a standard tripod with an inbuilt pan and tilt head for easy manoeuvring. Bespoke mounts and remotely operated solutions are available to address specific applications and requirements.

The supplied batteries will provide up to 12 hours of use from a full charge.

## TrueDose2D™

TrueDose2D™ enables the user to measure the dose rate of the identified hot spot(s), by simply pointing a laser range finder at the target point. The distance measurement is then used to calculate the indicative dose rate of the hot spot in  $\mu\text{Sv/hr}$ , at 1 metre, as shown in the images below.



**Making Radiation Visible**

# Hot Spot Locator HSL-Lite Plus™

## Specification for Model HSL-Lite Plus™

<b>Gamma Field of View</b>	45 degrees (60 degrees diagonally)
<b>Angular Resolution</b>	<= 8 degrees
<b>Gamma Sensitivity</b>	300 kBq <sup>137</sup> Cs @ 2m (5 nSv/hr) 14 kBq <sup>137</sup> Cs @ 1m (1nSv/hr) *
<b>Energy Range</b>	60 keV—1.5 MeV
<b>Dimensions (H x W x L)</b>	261 x 204 x 353 mm
<b>Weight</b>	~ 10kg
<b>Battery Life</b>	> 12 hours
<b>Power Source</b>	Lithium battery pack
<b>Operating Temperature</b>	-10°C to +50°C
<b>Communication</b>	Wired connection 2.4Ghz wireless capabilities for remote operations
<b>IP Rating</b>	Designed to IP67 (when connected)
<b>Kit Contents</b>	The HSL Lite Plus™ standard kit includes; HSL Lite Plus™ camera Ruggedized wheeled flight case Tripod and integrated pan & tilt head Toughpad and standard SmartSpot™ software with charging cables** Power cables USB cables for wired connection 2x Battery packs Security dongle with key
<b>Operational Advantages</b>	Designed for optimum performance in >10µSv/hr background environments due to added shielding. Portable instrument; deployable by 1 person. Automatic calibration process means unit needs calibration only once every two years Multiple hot spots of radiation are accurately displayed Data can be viewed, replayed and analysed with SmartSpot™ Software.

\*Achieved under laboratory conditions. \*\*SmartSpot™ upgrades with TrueDose2D enabled are available

These specifications are correct at the time of printing, however are subject to engineering change to improve functionality, reliability and design.

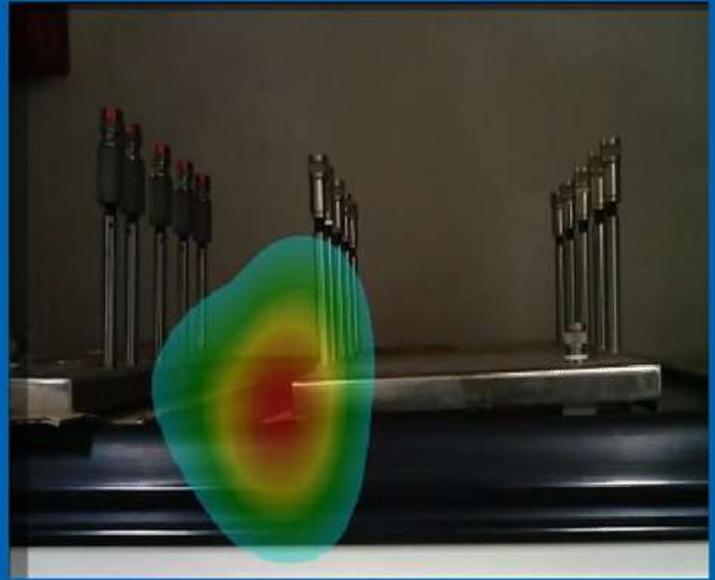
# Hot Spot Locator HSL– Lite™

## Specification for Model HSL-Lite™

<b>Gamma Field of View</b>	45 degrees (60 degrees diagonally)
<b>Angular Resolution</b>	<= 8 degrees
<b>Gamma Sensitivity</b>	300 kBq <sup>137</sup> Cs @ 2m (5 nSv/hr) 14 kBq <sup>137</sup> Cs @ 1m (1nSv/hr) *
<b>Energy Range</b>	60 keV—1.5 MeV
<b>Dimensions (H x W x L)</b>	261 x 204 x 276 mm
<b>Weight</b>	~ 6.5kg
<b>Battery Life</b>	> 12 hours
<b>Power Source</b>	Lithium battery pack
<b>Operating Temperature</b>	-10°C to +50°C
<b>Communication</b>	Wired connection 2.4Ghz wireless capabilities for remote operations
<b>IP Rating</b>	Designed to IP67 (when connected)
<b>Kit Contents</b>	The HSL Lite™ standard kit includes; HSL Lite™ camera Ruggedized wheeled flight case Tripod and integrated pan & tilt head Toughpad and standard SmartSpot™ software with charging cables** Power cables USB cables for wired connection 2x Battery packs Security dongle with key
<b>Operational Advantages</b>	Designed for optimum performance in <10µSv/hr background environments Extremely Portable, lightweight instrument deployable by 1 person. Multiple hot spots of radiation are accurately displayed Automatic calibration process means unit needs calibration only once every two years Data can be viewed, replayed and analysed with SmartSpot™ Software.

\*Achieved under laboratory conditions. \*\*SmartSpot™ upgrades with TrueDose2D enabled are available

These specifications are correct at the time of printing, however are subject to engineering change to improve functionality, reliability and design.



## Find out more

For a demonstration or further information about our services and

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MAKING RADIATION VISIBLE