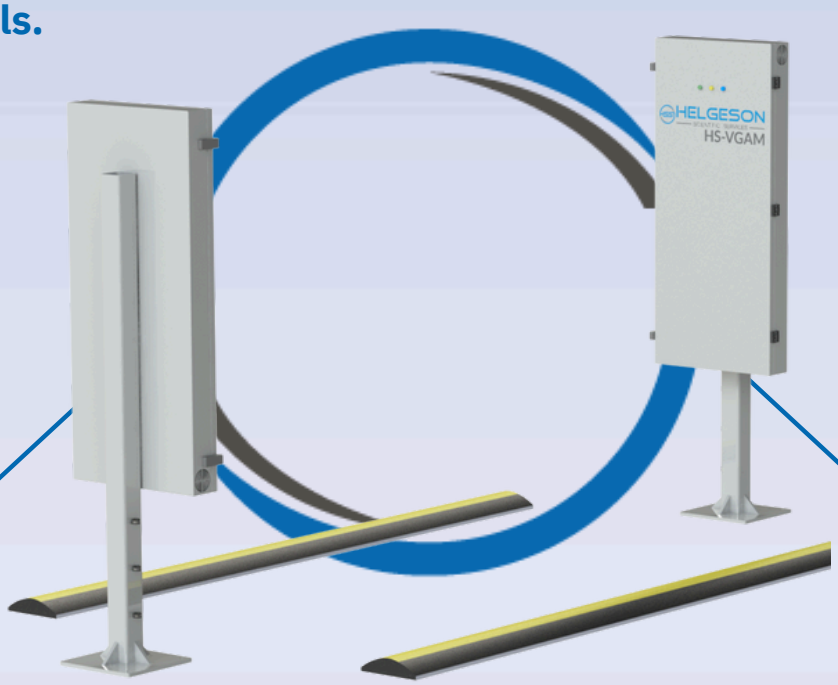
DETECTION

HS-VGAM

The HS-VGAM unit is an automated multitasking device, designed for the detection and measurement of gamma radiation on potentially exposed material, transported in vehicles. It is particularly suitable for the detection of radioactive sources in loads of raw materials, scrap and waste materials.



This system uses the most modern and powerful components, having a set of large- scale plastic scintillator detectors and their corresponding associated electronics for each detector, which allows the control and adjustment in an individual and personalized way.

They are designed to work at high speed, allowing the bidirectional measurement of large numbers of vehicles in a short time. The set is designed for operating in out-doors conditions.

While it is not being used, the equipment is continuously updating the background level information to compensate the reading values when an actual measurement is made.
It is worth highlighting the simplicity of installation, ease of operation and minimal maintenance, as it is practically automated and unattended operation equipment.

Detectors:

The type of detector that the HS-VGAM equipment incorporates are plastic scintillators, with a sensitive surface of 1000x500mm and a thickness of 50mm.

Each associated phototube has a BNC connector for the output and a SHV connector for the power supply.

The PMT is embedded inside the detector to minimize the required space for the detector assembly and to maximize the efficiency in the center of the detector.

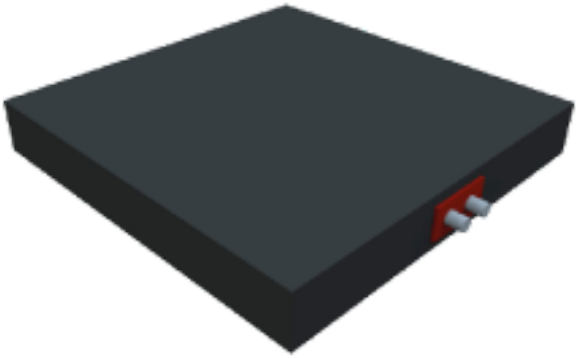
Characteristics:

Fast, low density and Z-value. High output power.

Applications:

Detection of particles. Gamma detection.

Each detector has its own HV source and electronics in order to separate the performance of each detector. This allows to disconnect a detector if malfunctioning is detected, keeping the rest of the equipment 100% functional.



Electronics and control (software):

The equipment has a 8“color LCD touch screen that shows, in real time, all the values of background, object, alarms, etc., warning the user of the presence of radioactive particles in case of contamination or variations significant in the activity rate of the background where they are located.

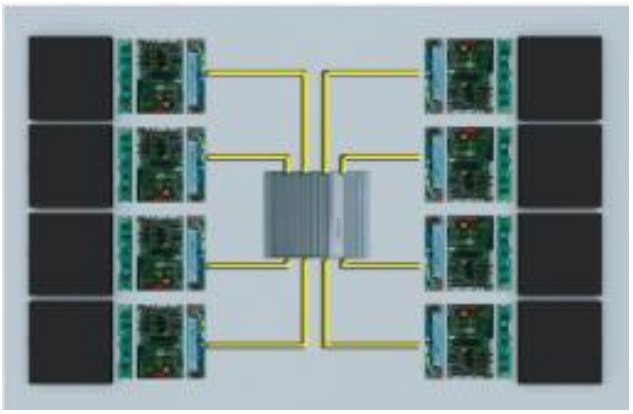
No peripheral connection is necessary

The management and control of HS-VGAM equipment is carried out through the HS-RAD application, a powerful intuitive, flexible and scalable tool thanks to its modular structure.

The system includes a PC with Windows 7/10 to install another applications if required by the End User.

The computer centralizes communications with the controller cards associated with each detector. These manage the high voltage modules and pre-amplifiers and are responsible for the data acquisition task.

All the electronic adjustments, corresponding to the acquisition (thresholds, gain, high voltage, etc.), are made through the presence of digital potentiometers controlled from the tools available in the software itself.



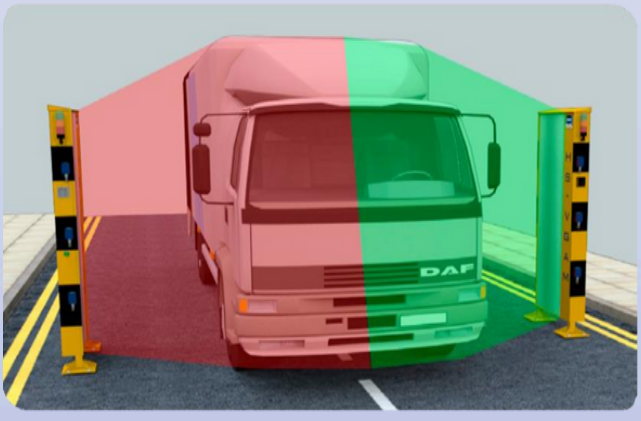
Area integration:

A zone can be defined from one or more detectors. As many zones as necessary can be created.

Each zone, which groups several detectors, will be considered as a single detector whose surface will be the sum of all the areas that integrate it.

The final result will also be taken as the activity integral of all the detectors.

The user can then define alarm thresholds independently for each established zone.



Calibrations:

The equipment can be calibrated to report activities. For this, a module is available to register patterns (calibration sources), which will be used in the calibration process.

Each zone is calibrated individually, and even different patterns can be used in each of them.

Features:

- 2 or 4 plastic scintillation detectors 100x50x5 cm each one (25 L).
- Total sensitive area per detector: 5000 cm2
- MDA per detector less than 0,4 Bq/cm² in contact.
- Efficiency per detector in contact> 30% (Co-60),> 15% (Cs-137), > 6% (Ba-133).
- 2 pillars, 1 or 2 detectors per pillar.
- Vertical or horizontal configuration.
- Up to 50 mm thick lead shield (optional).
- 1 touch screens TFT-Color8 “of information and control.
- Dynamic automatic calculation of measurement duration.
- Background correction algorithm
- Sensors for automatic detection of vehicles.
- Acoustic and visual alarms.
- Bidirectional operation.
- Record of events, backgrounds, measures, alarms, failures of operation, etc.
- Digital parameter adjustment. (without potentiometers or mechanical actuators).
- Integrated industrial PC (without maintenance) with Windows 7 /10 operating system.
- Includes calibration routines, verification and configuration (alarms, levels, gain, etc).
- It has two standard USB ports for data and historical dump in any support.
- Customizable software in all its functions and languages. Allows its remote operation (TCP / IP)
- External USB (memory stick, disk, etc.), as well as signal output for remote indicators of alarm.
- All software and documentation in English.
- UPS (Uninterruptible Power System) optional, ByPasstype, pure sine wave,1000va. (optional)
- Optimized design to facilitate maintenance.
- Fully adaptable according to each user’s needs.
- Entirely designed and manufactured in Spain (100% guarantee of spare parts and maintenance)
- Supply voltage: 230vac 50 Hz (can be adjusted depending on the end user requirements)

Alarms thresholds:

One of the most powerful tools that has the HS-RAD software is the configuration section of the alarm thresholds. This module allows you to create as many alarms (rules) as you wish, individually for each defined zone (group of detectors).

Access control:

The software includes access control routines to users, allowing to establish different levels of security to access certain sensitive options (calibrations, patterns, security options, electronic adjustments, templates, applicationclosure, etc.).

In addition, it has a user control that stores the actions they perform next to the date and time.

Barrier configuration:
Optionally, the system can be equipped with a barrier access control system.

File management:

All the data collected and reports generated by the application are accessible and exportable thanks to the file manager that it incorporates. It has automatic PDF document generator.

This tool allows you to copy all the data to an external device (USB drive) that connects to the USB port of the device.