SaphyGATE G

Radiation Portal Monitor

KEY FEATURES

- Adapted to a wide range of industries: treatment centers (waste, recycling), steel works, NPPs, nuclear research centers, seaports & airports, hospitals…

- Automatic compensation of background noise shielding

- Ruggedized equipment, adapted to harsh environment

- Compliant with international standard (including IEC 62022)

SYSTEM DESCRIPTION

SaphyGATE G is an automatic radiological portal monitor of vehicle load.
This system has been especially designed for detection of very low artificial/natural radioactive sources in vehicle load. Its advanced algorithm also allows to track the background attenuation due to vehicle shields. Fully automatic, the system is adapted to harsh environment.

SaphyGATE G is based on multiple DSP-010-SG large surface plastic scintillation detectors (1000 x 500 x 500 mm, 25 liters), connected to a central processing unit.

The main components of the system are:

- DSP-010-SG high volume plastic scintillation gamma detectors with lead shields

- Central processing unit with coloured LCD touch 12" screen

- A software pack including: Windows Embedded, RPMVision HMI, remote assistance sw.
  Languages available : English - German – French – Italian (other languages on request)

- Presence sensors

STAGES OF CONTROL

1) The vehicle is going through the two infrared cells at 8 km/h ➔ control start
Stationary control also available.

2) The algorithm shows the optimal alarm thresholds due to backgrounds attenuation.

3) Once measurement finished, the system go back on background monitoring mode.

4) In case of alarm, RPMVision software shows the orphan source or contaminated materials' location by this symbol:

5) The « alarm classification » feature gives a presumption of the detected radionuclide (optional)

- Artificial – industrial alarm (Na-22, Cs-137, Co-60)

- Artificial – medical alarm (Tc-99m, Co-57, I-131)

SYSTEM MAIN POWER SUPPLY

The power supply can come directly from the main cabinet or from a schuko socket. For a better and safe installation, plan a main feeder protected by an UPS (minimum 1.000VA).

- Main Power Supply : single-phase feeder 120 VAC
- Frequency : 50/60Hz

PLASTIC SCINTILLATION DETECTOR DSP-010S /TECHNICAL CHARACTERISTICS

- Main Power Supply : 24 VDC, from the central unit
- Detector Type : Plastic scintillator detector PVT (Polyvinyltoluene)
- Scintillator dimensions : 1 000 x 500 x 50 mm (39" x 20" x 20")
- Volume : 25 liters (6,6 gal)
- Photomultiplier : Low noise photomultiplier
- Energy range : from 30 keV to 7 MeV
- Protection grade : IP65
- Weight : About 400kg (882 lb) with lead shields and stand
- Enclosure : Hermetic aluminum box, EMC shielded
- External dimensions : 1 250 x 650 x 178 mm (49" x 26" x 7")
- Working temperature : From -25°C to +50°C (–77° F to +122° F)
- Shielding : Detector shielded

CENTRAL UNIT / TECHNICAL CHARACTERISTICS

- Main Power Supply : single-phase feeder 100-240 VAC
- Frequency : 50/60Hz
- Consumption : 500W
- Protection grade : IP55
- Weight : About 10kg (22 lb)
- Housing : Wall mounted metallic box EMC shielded with external IPC module (including LCD display)
- External dimensions : Central unit: 300 x 200 x 120mm (12" x 8" x 5") – IPC: 300 x 250 x 70 mm
- Working temperature : From 0°C to +50°C (+32°F to +122°F)
- LCD display : TFT XGA 12" colored touch-screen