



# SaphyGATE GN



## Radiation Portal Monitor for Gamma-Neutron detection & discrimination

- Patented  $^3\text{He}$ -free Neutron detector developed with the French Alternative Energies & Atomic Energy Commission (CEA)
- Automatic compensation of the Gamma background' shielding effect
- Compliant with IEC 62244 & ANSI N42.35 international standards
- Available in 3 versions: vehicles, pedestrians & baggage control

# SAPHYGATE GN PORTAL MONITOR

Special Nuclear Material detection system for vehicles, pedestrians, baggage & loads control



Developed in partnership with the French Alternative Energies & Atomic Energy Commission (CEA), SaphyGATE GN is a **new generation portal monitor** capable of detecting **Gamma-Neutron** radioactive sources **without using  $^3\text{He}$  gas**.

Compliant with international safety standards, its technology is based on **large volume plastic scintillators** coupled with **photomultipliers** to ensure high performances while providing an effective **Gamma-Neutron detection & discrimination**.

Robust & versatile, the SaphyGATE GN is ideally suited to avoid illicit movements of radioactive sources in customs, harbors, airports or any other critical infrastructure, while making a non-invasive inspection of people, loads & luggage. With its Neutron detection capability, it can also **detect Special Nuclear Material (SNM)** that may enter in the production process of dirty bombs or Radiological Dispersion Devices (RDD).

## VEHICLES & LOADS



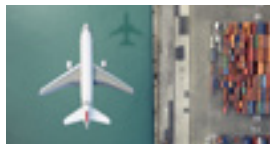
## PEDESTRIANS



## BAGGAGE



## Applications



Homeland Security



Nuclear access control



Border control

## Access control

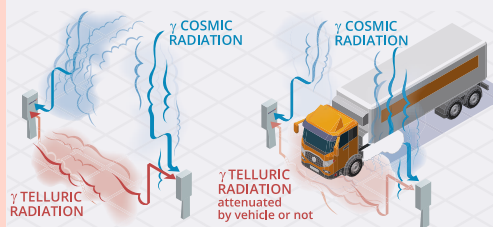
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### RCP

Radiological Control of Pedestrians

## Gamma background compensation



For its SaphyGATE line of products (G & GN), Bertin Instruments has developed an innovative algorithm, especially designed to compensate the Gamma background attenuation caused by vehicle shielding. This feature allows to perform a better radiation detection by reducing significantly the false alarm rate compared to other classic systems, even in case of low activity sources.



## Technical features

### SYSTEM COMPOSITION

- 1 to 4 Gamma/Neutron detectors
- 1 electrical box
- 1 central unit
- 1 presence detection kit

### DETECTOR COMPOSITION

- 1 protection cabinet (IP65)
- 8 PVT scintillators coupled to high speed photomultipliers

### DETECTOR DIMENSIONS

H: 1,900 x W: 660 x D: 430 mm.

### DETECTOR WEIGHT

Approx. 160 kg.

### GAMMA DETECTION

**Energy range:** from 50 keV. to 7 MeV.

**Gamma sensitivity:**

≥ 15 c/s / kBq. for  $^{137}\text{Cs}$  at 1 meter

### NEUTRON DETECTION 252CF

**Detection limit:** 12,000 n/s

**Neutron sensitivity:**

8.7 c/s for a 20,000 n/s  $^{252}\text{Cf}$  bare source at 2.5 meters from the detection

### CENTRAL UNIT

PC based HMI

### STANDARDS

Compliant with international standards including IEC 62244 & ANSI N42.35

With the expertise of **SAPHYMO**