

- High sensitivity:  
100 Bq  $^{60}\text{Co}$
- Suitable for control of large items (up to 6 meters long or 60 x 60cm packages)
- Dynamic scan (speed: 0.5 cm/s)
- Fully automatic
- Background update at user's request.



## CORAMAT

### Radiation monitor for large objects

**CORAMAT is made up of 3 large plastic scintillators and is used for the radiation monitoring of large objects, such as scaffolding tubes.**

When the device is activated, it detects gamma background.

Items are loaded manually on the infeed conveyor.

The user activates the control cycle by pressing the "Measure" key and the conveyor starts automatically. The blue LED on the light column lights up to indicate the machine status.

The loading height and width are controlled by infrared cells. If the load is in excess, the beam of the infrared cell is cut off and the conveyor is switched off.

When the conveyor runs at a constant speed of 0.5 cm/s, the control cycle will continue until the conveyor belt has moved 7 meters or the object being monitored has reached the end of the conveyor.

Once the measurement is done, the blue light on the column turns off.

Unloading is done manually and as soon as the output conveyor is unloaded, the bench is ready for a new control.

CORAMAT's automated management ensures a permanent, reliable and highly sensitive control of 0.5 cm/s.

Each detector is individually managed by an electronic processor which uses an algorithm developed by Saphymo for optimal detection in a volume of 60 x 60 x 100 cm<sup>3</sup>.

## Physical characteristics

---

- Measurement is done by 3 DSP010 (25L) plastic scintillation detectors
- Detection of contaminated objects and radioactive sources > **100 Bq <sup>60</sup>Co** under the following measuring conditions:
  - Background: 70 nGy/h
  - False alarm rate: < 0.15%
  - Detection probability: > 97.5%
  - Measuring time: 200 s

## Environmental characteristics

---

- Operating temperature: 0°C to + 50°C

## Mechanical characteristics

---

- Size: 12 m x 1.2 m x 1.7 m (L x W x H)
- Self-propelled belt conveyors
  - Length: 12 m (2 x 6m conveyors)
  - Structure: welded painted steel
  - Weight: 300 kg
  - 1 infrared cell (located at the end of the belt conveyor) to detect the objects when they are leaving the measuring tunnel
  - 3 infrared cells linked to the emergency stop of the device and used as an input template to ensure that no metal part exceeds the top or side of the structure.
- Measuring part
  - Structure: welded painted steel
  - Shielding: 5 cm thick lead
  - Weight: 4.5 tons

## Electrical characteristics

---

- Power: 380V three-phase 50 Hz
  - provides power supply for the self-propelled belt conveyor,
  - includes all terminals for connection to power supply, engine controls, emergency stop controls and electrical protections,
  - 380V isolating switch, light indicators for ON button and emergency stop switch.
- Programmable logic controller: 230V single-phase 50 Hz
  - includes a PLC Telemecanique TSX Micro type, supply and connection boards,
  - manages counting of pulses from plastic scintillation detectors, all inputs and outputs and delivers 24 VDC power required for the various equipments.

## Interfaces

---

- Interface box including:
  - 4 colour visual alarm
  - 1 audible alarm (buzzer)
  - 1 push button for background measurement
  - 1 start push button
  - 1 alarm acknowledgment key
  - 1 OFF cycle key switch
- Emergency stop mounted on the control box
- Default relays
- RS 232 for parameter settings



## Options

---

- SCADA software (PC version)
- Other conveyor lengths on request