LMV-Smart™

Vertical Laundry Contamination Monitor

The CGO-Smart is intended to check the contamination of large items at the controlled area boundary or in the laundry of nuclear plants.

FEATURES

- Reliability: proven plastic scintillator technology

- Ergonomics: automatic operation, efficient user interface

- High sensitivity and throughput: down to 800 Bq/ suits for 200 suits/h under typical background radiation characteristics in laundries

- Sensitivity: large detector surface and adaptive, automatic background compensation

- Intelligence: localization and classification of the gamma contamination

- Traceability: History log of measurements with analysis features

DESCRIPTION

The LMV-Smart is an automatic, vertical laundry gamma contamination monitor dedicated to the radiological screening of work-suits. It is designed to be integrated into existing, vertical laundry conveyors.

Besides increasing the throughput of the laundry facility, the LMV-Smart improves significantly both screening coverage and reliability.

The LMV Smart associates the proven technology of plastic scintillation detectors with fast, digital gamma spectrometry. Its large detector surface, an optimized shielding geometry together with gamma spectrum processing result in unmatched low detection limits despite the difficult and ever changing background radiation conditions of laundries.

The modern touch screen user-interface offers efficient equipment operation and provides with protected access to diagnose and maintenance functions.

LMV-SMART | VERTICAL LAUNDRY CONTAMINATION MONITOR

PHYSICAL CHARACTERISTICS

- 2 panels with 5 plastic scintillation detectors PVT 35x80x5 cm each; total 2.8 m², 140 L
- Spectral processing – 12 gamma spectra of 256 channels
- Automatic, individual detector gain stabilization
- Maximum count rate 10e5 cps/ detector
- Gamma energy range 50 keV to 3 MeV
- Activity calculation using reference nuclide vectors
- Horizontal and vertical detection uniformity: +/- 20%
- Energy classification by means of spectral analysis
- Hot-spot localization iand display

ELECTRICAL CHARACTERISTICS

- Power supply 230 V, 50 Hz
- Integrated UPS
- Interface with conveyor system
- USB and LAN connections

ENVIRONMENTAL CHARACTERISTICS

- Operation temperature range: +5 °C à +40 °C
- Storage temperature range : -25 °C à +60 °C
- EMC performance conforming to EC requirements (EN 61000-6-2, EN 55022, European Directive 2004/108 / EC

MECHANICAL CHARACTERISTICS

- Maximum dimensions (WxHxD) 110x220x80 cm Height < 220 cm including a conveyor passage of 2 m
- Masse: approx. 3200 kg with 25 mm shielding

Detection performance (Shielding 25 mm lead equivalent)

Release limit	Maximum Background count-rate		Recommended Background acquisition cycle
	Conveyor speed 11 cm/s	Conveyor speed 16 cm/s	
600 Bq	20 000 cps	12 000 cps	20 s
800 Bq	26 000 cps	18 000 cps	10 s
1200 Bq	45 000 cps	60 000 cps	10 s
2000 Bq	< 80 000 cps	< 80 000 cps	4 s

FUNCTIONAL CHARACTERISTICS

- Detection field height: > 180 cm, passage width 15 cm
- Industrial touch-screen PC
- Modular shielding using 10 mm steel plates
- RFID reader interface
- Programmable logic interface for conveyor control
- Daily, weekly, monthly measurement history and stats
- CSV table data export

Measurement cycle: Start, Measuring, Result

Contamination localization

Background acquisition and processing

Protected administrator mode

MIRION TECHNOLOGIES

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