

## LAM-564

# LIQUID ACTIVITY MONITOR



## KEY FEATURES

- Measurement of volumetric activity of gamma-emitting radionuclides in process liquids at nuclear facilities.
- Off-line monitor: samples are continuously taken from a process pipeline and routed through the monitor's measurement chamber.
- Built-in LED check source for automatic spectrum stabilisation and functional testing.
- Optional additional detector for background compensation.
- Optional safety-classified function, Category C according to IEC 61226.

## DESCRIPTION

The monitor is designed to measure the volumetric activity of gamma-emitting radionuclides in process liquids at nuclear facilities under normal operating conditions. It allows measurement and display of total gamma activity and/or the activity of individual radionuclides.

The LAM-564 monitor consists of:

- **LAD-64** detector assembly, comprising:
  - GD-52 gamma detector with a NaI(Tl) crystal,
  - LED check and stabilisation source,
  - stainless steel flow-through measurement chamber,
  - lead shielding.
- **RPU-06** radiation processing unit, equipped with a DIM-15 digital multichannel analyser configurable to 1K, 2K, 4K, or 8K channels.

A version of the LAD-64 detector assembly with an additional detector for real-time background compensation is also available.

By default, the DIM-15 analyser determines the total volumetric gamma activity with respect to a selected reference radionuclide.

Optional spectrometric functionality enables identification and quantification of up to sixteen gamma-emitting radionuclides.

The RPU-06 locally displays measurement results and operating states; stores measured spectra, values and other monitor parameters; and visually and audibly indicates when preset alarm levels are exceeded.

The delivery package includes the RadSpec software for configuration and calibration of the device's spectrometric parameters.

If local data display is not required, the RPU-06 can optionally be replaced by the RPU-04 unit, which does not feature an integrated display.



RPU-04

Remote indication of measurement results can be provided by:

- RDU-12 Remote Display Unit
- ASU-50 Alarm Signal Unit

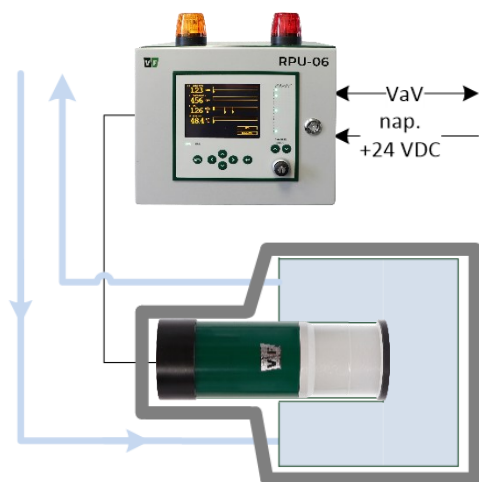
The monitor can communicate with one or two independent host systems via:

- RS-485 serial interface (ModBUS RTU)
- Ethernet 10 Mbit/s (ModBUS TCP)
- optional analogue inputs/outputs (4-20 mA)
- optional digital (relay) inputs/outputs

The monitor can transmit data simultaneously to both non-safety-classified and safety-classified host systems.

## SPECIFICATION

Detector	NaI(Tl) Ø2,5" × 2,5"	
Shielding	lead, 6 cm thickness	
Measuring chamber	stainless steel, 5.7 L volume	
Measuring range	3.7E3 to 1E9 Bq/m <sup>3</sup>	
Reference radionuclide	Cs-137 (total gamma activity) up to 16 gamma radionuclides for spectrometric measurement	
Check source	LED	
Measured medium temperature	5 to 40 °C	
Measured medium pressure	max. 1.6 MPa	
Recommended sample flow rate	2 to 5 L/min	
Weight		
LAD-64 with shielding	approx. 400 kg	
RPU-06	approx. 13 kg	
Dimensions		
· LAD-64 (w × h × d)	920 × 453 × 370 mm	
· RPU-06 (w × h × d)	330 × 360 × 366 mm	
Ingress protection		
LAD-64	IP 65	
RPU-06	IP 44	
Power supply	+24 V DC/ max. 2 A	
Communication interfaces	Ethernet 10 Mbit/s (Modbus TCP) RS-485 (Modbus RTU)	



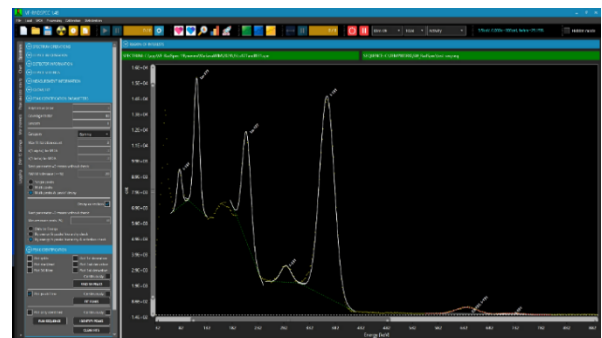
LAM-564 measuring geometry

## OPTIONAL ACCESSORIES

RDU-12	Radiation Display Unit
ASU-50	Alarm Signal Unit
CIM-05	RPU module: isolator between safety-classified and non-safety-classified systems
ICIM-01	RPU module: eight relay outputs and two current loop outputs (4–20 mA)
ICIM-02	RPU module: eight digital inputs and eight digital outputs
ICIM-03	RPU module: four current loop outputs (4–20 mA)
ICIM-04	RPU module: four current loop inputs (4–20 mA)

## RELATED PRODUCTS

LAM-502	Liquid gamma activity monitor for use under normal, emergency, and post-emergency conditions; medium range, ATL type
LAM-504	Liquid gamma activity monitor for use under normal operating conditions; standard range; ATL type
N16M-504	N-16 activity monitor for primary circuit leakage monitoring; ATL type
LAM-544	Liquid gamma activity monitor for use under normal operating conditions; standard range; in-line type
LAM-561	Gamma activity monitor for high-temperature liquids for use under normal operating conditions; medium and high range; off-line type with shielded measurement chamber
LAM-562	Spectrometric liquid gamma activity monitor for use under normal operating conditions; standard range; off-line type



RadSpec spectroscopy software