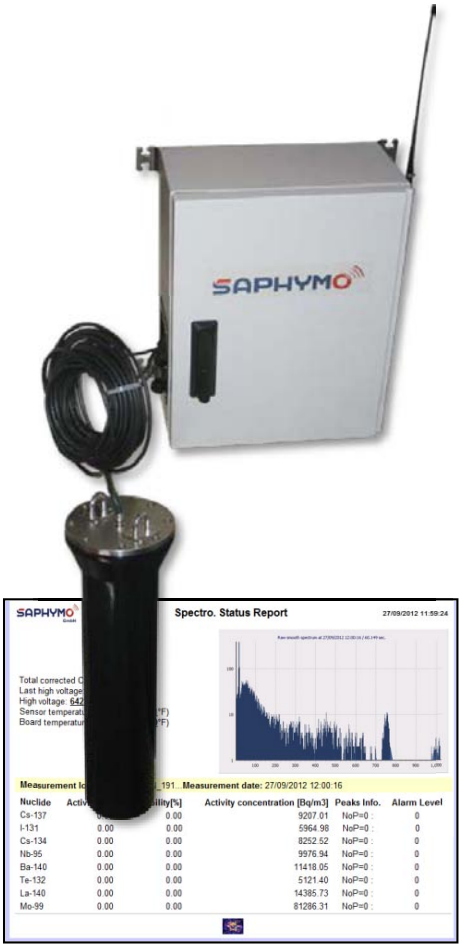
SpectroTRACER Aqua

Environmental Radiation Monitoring Systems



INTELLIGENT AUTONOMOUS γ-SPECTROMETRIC PROBE

- Online γ-spectrometry in water and other liquids
- High resolution and sensitivity with LaBr3(Ce) detector (optional NaI(Tl), CeBr3, others on request)
- Wide measurement range (Digital MCA up to 8k channel and 80 MHz sampling rate)
- Automatic peak stabilization over wide temperature range
- Compact and robust for mobile and stationary use (GPS option)
- Automatic nuclide identification
- Calculation of activity concentration (Bq/l) and dose rate H*(10)
- Low power, solar option
- Communication options: LAN, WIFI, GPRS/3G, SkyLINK/ShortLINK radio, satellite
- Typical applications: Environmental and process monitoring for routine as well as emergency scenarios

The intelligent SpectroTRACER probe is a continuous measurement system for detecting lowest gamma radiation, but also excellently suited for high gamma levels, e.g. in emergency cases.

SpectroTRACER has been designed for continuously monitoring gamma contamination in water and other liquids. The device performs a spectrometric analysis of the measurement and identifies the detected radionuclides.

The measurement of the probe is based on a LaBr3(Ce) or NaI(Tl) detector (others on request). The hermetically sealed probe housing can be immersed up to a depth of 100 m (more on request) and is connected by cable with the control and power supply box, kept in dry conditions, via RS485 serial interface.

Low power consumption allows stationary as well as mobile application (for example on a buoy). Autonomous operation is possible in combination with battery back-up up to 10 days or unlimited with additional solar power supply. The mobile setup is compact and quickly to install within a few minutes. Available wireless data transmission options are: WIFI, GPRS/3G, satellite, proprietary ShortLINK/SkyLINK radio. Possibility for different redundant configurations. The monitor calculates the activity concentration (Bq/l) for each identified nuclide and the dose rate H*(10) according to IEC60846.

SpectroTRACER is free of water pipe, pump, etc.. As a consequence, the probe is easy to install, and well suited for:

- Monitoring of liquid waste in nuclear power stations, hospitals, waste water treatment plants,
- Monitoring of water in front of waste from nuclear decay vessels, or from hospitals,
- Monitoring of activity levels in sea-, river-, and lake water.

OVERVIEW

PHYSICAL CHARACTERISTICS / PERFORMANCE

Crystal	$LaBr_3$(Ce) 1.5"x1.5"	$CeBr_3$ 1.5"x1.5"	NaI(Tl) 2"x2"	NaI(Tl) 3"x3"
Multichannel analyzer characteristics	up to 8192 channels (80 MHz sampling) up to 2 048 available			
Resolution for Cs-137	< 3 %	< 4.2 %	< 7 % or optional < 7.5 %	
Spectroscopic measurement range	1 nSv/h … 1 mSv/h	1 nSv/h … 0.5 mSv/h	1 nSv/h … 200 µSv/h	1 nSv/h … 100 µSv/h
Measured unit (Quantity)	Bq/l , H*(10)			
Energy range	30 keV … 2 MeV or 30 keV … 3 MeV (configurable)			
Storage capacity	2 GB storage (allows up to 1 year local storage in 10 min mode)			
Two measurement cycles:	2 min to 24 h, user configurable			
Mechanical characteristics	Probe housing: Aluminum teflonized housing for highly corrosive environments Probe (standard): length: 567 mm, diameter: 122 mm (flange diameter 177 mm), weight: ~5.5 kg … ~7.1 kg (depending on crystal) Probe (SLIM version): length: 334 mm, diameter: 77 mm (flange diameter 106 mm), weight: ~2.3 kg Control box: dimensions (L x W x H): 415 x 235 x 515 mm, weight: ~12.7 kg (~21.2 / ~27.9 kg incl. 40 Ah / 90 Ah battery backup option)			

ENVIRONMENTAL CHARACTERISTICS

- **Operating temperature**: -20 C … +50 C (optional -30 C … +60 C)
- **IP index**: Probe: hermetically sealed IP 68 / control box enclosure: IP 65
- **Relative humidity**: 100 %
- **Built-in sensors**: Temperature, humidity

ELECTRICAL CHARACTERISTICS

- **Power supply**: 230 V~ 50Hz or 10 V … 24 V, 2.5 W
- **Electromagnetic compatibility**: according to 2014/30/EU and IEC 61000
- **Backup battery**: 4 or 10 days / charger and solar panel (optional)

SLIM version

Standard

INTERFACES

- **Standard interface**: Ethernet/LAN with ANSI N42.42 data format. Built-in FTP server (push or pull mode). Data can be sent to two different destinations, allowing easy setup of redundant server systems. Built-in web interface. Built-in VPN secured transmission.
- **Data transmission options**:
  - GPRS/3G module
  - Combined GPRS/3G and SkyLINK/ShortLINK radio module (up to 100 km/60 mi, offers high availability even in catastrophe scenario when cellular network is down)
  - Satellite (e.g. Globalstar)
  - DSL modem
  - Others on request

OPTIONS

- GPS, Rain sensor, Seismic qualified version, Supports…
- Seawater resistant probe cable
- Weather station (barometric pressure, humidity, precipitation, temperature, wind speed and direction)
- Transport and storage case
- DataEXPERT monitoring software, WebVIEW access via web browser
- For air/soil application, ask for SpectroTRACER Air/Soil

Typical installation

LAURUS SYSTEMS

LAURUS Systems, Inc. - Ph: 410-465-5558 - Fax: 410-465-5257 - www.LaurusSystems.com