Leading in Environmental Radiation Protection

MONA-EPR

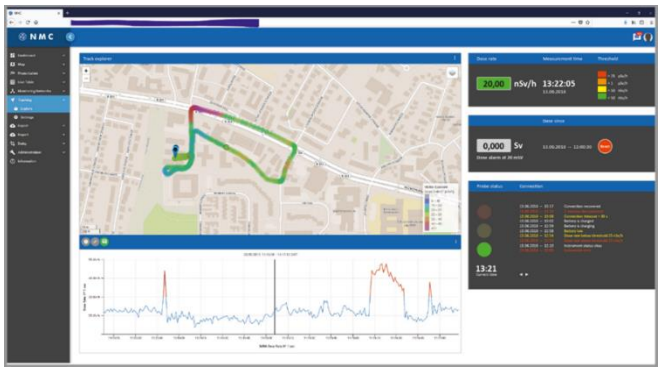
MONA-EPR is the customized, self-contained spectroscopic in-situ gamma detector for RN emergency preparedness and response. It is designed to measure and analyze online and continuously the gamma spectra under extreme environmental conditions. MONA-EPR is based on the well-established SARA for environmental monitoring and can detect even minor changes of the composition of the nuclear spectra in the environment. This significantly improves the recognition and identification of artificial isotopes. It is designed for vehicle operation as well as for backpack outdoor use, even in harsh environments. The NaI(Tl)-based scintillation detector provides the necessary energy resolution under a wide range of operation conditions. The integrated embedded Linux-PC enables online isotope identification and versatile data exchange through several interfaces. The standardized ANSI N42.42 protocol allows for manifold data exchange. Analysis results are presented on the local display. In addition, MONA-EPR transmits the measured data automatically to the monitoring center in real time. An integrated web server facilitates additional data access using a web browser. It measures the total and nuclide specific gamma dose rate in units of the ambient dose equivalent rate H*(10). The instrument comes optionally with a tablet PC or Notebook equipped with NMC, which can show the tracks on a map, exchange data and can perform offline spectrum re-analysis.

FEATURES

- Fast detection of very low artificial radiation
- Online spectrum analysis and isotope identification
- Local daylight readable display
- Four tracking modes: None, Real, Test, Maintenance
- Standardized data protocol ANSI N42.42-2012
- Operation under harsh environmental conditions
- Integrated GPS, integrated battery
- Rugged case, operation with gloves possible
- Easy and quick set up
- Detector verification supported automatically with optional test set
- **LTE cellular network** (4G/3G/2G)
- **GNSS (GPS, GLONASS)**
- **Integrated LTE and GPS antenna** (optionally external)

FUNCTIONS

- **Track plotting capability with optional tablet / notebook**
- **Easy to use Web-UI for field teams (fire-brigade, police)**
- **Nuclide specific and total dose rate evaluation**
- **Nuclide identification**
- **Extended dose rate range with additional GM detector**
- **Audiovisual Alarming capability**
- **Autonomous operation for 24-48 h** (depending on configuration and usage scenario)
- Freely configurable nuclide library
- Data access and parameter setting with web browser
- Characteristic limits of peak/nuclide analysis according ISO11929
- Integrated WiFi
- Nonvolatile memory
- **Real time monitoring in NMC monitoring center**



Number		SARA-M01-L4VD-TG	SARA-M03-L4VD-TG
Spectroscopic detector			
Material		NaI(Tl)	NaI(Tl)
Size	Inch	1.5x1.5	3.0x3.0
Dose rate range[1]	µSv/h	0.001...400	0.001…100
Accuracy	%	+/-10	+/-10
Energy resolution[1]	FWHM (guaranteed)	typ. 6.5 % (<7.8 %)	typ. 6.6 % (<7.8 %)
Energy range	keV	30...3000	
Total efficiency[1]	cpm / µSv/h	60000	250000
Photopeak efficiency[1]	cpm / µSv/h	9500	70000
Intrinsic background	nSv/h	<5	<5
MCA			
Number of channels		8192 (2048 used)	
ADC	Bit	14	
ADC Sampling Rate	MSPS	40	
Filtering		Digital	
Integrated Geiger Mueller tube (GM)			
Range	mSv/h	0.04...1000	
Accuracy	%	+/-15	
Sensitivity	cpm / µSv/h	7.15	
Intrinsic background	nSv/h	<270	
Energy range	keV	50…1250	
Optional additional integrated high dose rate spectrometer model SARA-500-H (patent DE 10 2016 117 356)			
Detector		$CeBr_3$	
Range	mSv/h	0.05...100	
Accuracy	%	+/-15%	
Energy resolution[1]	FWHM	Typ. 7%	
Energy range	keV	30 keV...3.0 MeV	
Total efficiency[1]	cpm / µSv/h	1650	
Photopeak efficiency[1]	cpm / µSv/h	125	
Environmental specification			
Operation temperature	°C °F	-40…+60 -40…+140	
LTE transmission	°C °F	-30…+60 -22…+140	
Protection class		IP65	
Humidity	%	0…95	
Electrical specification			
Power[2]	W	Approx. 4.2W	
Supply voltage	V	7…30	
EMC-proofed		EN55022:2006+A1:2007+A2:2010 Class B EN55024:1998+A1:2001+A2:2003	
Size and weight specification			
Dimensions	cm	55.1 x 42.9 x 21.59	
Weight	kg	Approx. 7.9	Approx. 9.3
Operator interface		Display, Control Panel, LEDs, Audio Alarm	
Communication interfaces		Ethernet 100 Mbit/s RS232 (Service) WiFi (for tracking with tablet) LTE (for direct connection with network center) (external antenna optionally)	
Protocols		HTTP, FTP, MODBUS, OpenVPN, SSH	

[1] Cs-137 [2]Depend on local condition and setup

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