NUVIATECH INSTRUMENTS

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SPECIFICATION SHEET

NuGBALL

A NEW GENERATION OF SENSORS NETWORK FOR REMOTE DOSE RATE MEASUREMENT & GAMMA SPECTROMETRY

The NuGBall sensor is designed to cover a wide range of applications related to radiological investigations. Shock-proof and waterproof, this sensor can be dropped at a distance to preserve operator safety. Once deployed, NuGBalls act as a network of sensors, to determine an area's condition and its evolution. NuGBalls can be applied to dose rate measurement and gamma spectrometry acquisition.

Benefits

- Sensor adaptable to your measuring needs
- Adjustable dropping height
- Real-time iterative measurement
- Autonomous and robust system
- Long battery life
- Easy and quick deployment
- Remote sensor deployment
- Parameters adjustable at a distance
- Measurement display on a PC through NuISYSoft
- Display on smartphones, tablets or connected glasses

Key Figures

CZT-Si-CsI (Tl)

➥ *Modular Sensor*

IP68

➥ *Ingress protection*

10 m

➥ *Dropping height*

Ref : F_NVA_SPC_2019_015 // 375023-UK

Measure: Modular Sensor

	Gamma spectrometry		Dose rate		
	S-60	**S-500**	**DR-H**	**DR-M**	**DR-L**
Sensor	CZT (60 mm^3)	CZT (500 mm^3)	Si	Si	CsI (Tl)
Emitter	Gamma	Gamma	Gamma	Gamma	Gamma
Unit	Count / keV	Count / keV	$Gy.h^{-1}$	$Gy.h^{-1}$	$Gy.h^{-1}$
Measure range	≤ 10 $mGy.h^{-1}$	≤ 1 $mGy.h^{-1}$	1 $\mu Gy.h^{-1}$ to 10 $Gy.h^{-1}$	1 $\mu Gy.h^{-1}$ to 100 $mGy.h^{-1}$	10 $nGy.h^{-1}$ to 1 $mGy.h^{-1}$
Energy range	59 keV to 3 MeV	59 keV to 3 MeV	59 keV to 2 MeV	59 keV to 2 MeV	59 keV to 2 MeV
Channels	1024	1024	-	-	-
Energy resolution	<2.5% at 662 keV	<3% at 662 keV	-	-	-

Applications

- ***Remote deployment of a network of sensors, on-site, in classic to hostile areas***
- ***Post-incident investigation***
- ***Radioactive source searching***
- ***Loaded pipe investigation***
- ***Limited-access area monitoring***
- ***Temporary beacons in harsh environments***

Related Material

- Soft dropping shells
- Transport case
- NuISYSoft
- Dropping drone
- Connected vision (Optional)

Electrical Data

Battery ..... **Lithium Polymer**
Voltage ..... **3.7 V**
Battery power ..... **2 Ah**
Autonomy ..... **300 measures over approx. 6 months**
Monthly discharge ..... **~2%**
Charging system ..... **Qi inductive charger, 85–264 VAC @ 50/60 Hz**

Mechanical Data

Ingress protection **IP68**
Hard cover dimension ..... **Ø 75 mm (PEHD)**
Soft cover dimension ..... **Ø 95 mm (Polyethylene)**
Weight ..... **200 g**
Dropping height ..... **10 m (soft cover Ø 95 mm), 100 m (soft cover Ø 180 mm)**
Adjustable dropping height; please contact us

Communication

Name ..... **iCOM**
Long-range communication ..... **LoRa (868 MHz)**
Short-range communication ..... **Bluetooth, Wifi (820.11 b/g/n 2.4 GHz)**
Outdoor localisation ..... **GPS (+/- 3 m)**
Indoor localisation ..... **Pseudolites**
Security ..... **AES-256 / RSA-1024**

Environment

Operational temperature ..... **-20°C to +60°C**
Storage temperature ..... **-20°C to +60°C**
Charging temperature ..... **0°C to +45°C**

Norms

Compliant with CE standards and RED Directive (2014 /UE)