Radiation Detection & Protection Equipment Catalogue

Shuoboda Instruments (Hunan) Co., ltd

CONTENTS

Thermoluminescent Dosimeter (TLD)

Manual TLD (Thermoluminescent Dosimeter) reader

1. DA-2000B TLD (Thermoluminescent Dosimeter) reader for dosimeter cards and single chips

Product introduction

DA-2000B thermoluminescence dose reader can measure the thermoluminescence detector after X, γ, β, neutron and other rays irradiation, give the reading value and dose value, with automatic calibration, deduction Functions such as background, heating parameter setting and printing. The thermoluminescent dose reader can be connected to a computer, and data management and printing can be performed through the application software of the thermoluminescent dose reader. It is suitable for environmental background measurement to radiotherapy dose, radiation flaw detection exposure dose control, nuclear accident dose measurement and monitoring, etc.

Instrument features

- 7-inch touch screen, full Chinese color display, easy for users to operate, operate and maintain;
- The high voltage part has three modes: automatic, locked, fixed;
- The heating plate can be replaced, which is convenient for the measurement of thermoluminescence detectors of different shapes and specifications;
- The database supports a variety of query functions such as unit name, personal name, gender, dose box barcode, date of measurement, tested personnel, untested personnel, etc.;
- Power-on automatic drying function, suitable for instruments with humid environment and low frequency of use;
- An attenuation filter can be placed to expand the dose measurement range.
- With PC software, printer interface, barcode scanner interface; stand-alone storage of 1000 pieces of measurement data.
- Support scanning code input, table export, personal database filing

Technical parameters

Light measurement system

Dose test range	LiF: Mg, Ti: 10-5Gy ~ 1Gy LiF: Mg, Cu, P: 10-7Gy ~ 10Gy LiF: Mg, Ti-M: 0～100Gy
Measuring items Heating	X, γ, β, neutron
System stability	≤0.2%
Measurement and reading time	40s (customizable)
Coefficient of variation of sensitivity repeatability	≤0.1%±0.05%/℃
Drawer light leakage	≤0.1% of internal light source
Background value	≤300
High voltage	0～1500V
Power supply	AC 220 V±10%, 50Hz
Heating system	
Heating temp. range	room temperature to 400°C
Temperature repeatability	≤1%
Heating temperature deviation	≤±2℃
Heating time	0～500s
Heating time repeatability	≤0.1%
Heating rate	1～40℃ • s-1
Use conditions	
Working environment	Indoor
Working temperature	10～40℃

2. DA-2000D Thermoluminescence Dosimeter Reader

Product introduction

DA-2000D type thermoluminescence dose reader can measure the thermoluminescence detector (hereinafter referred to as the detector) after being irradiated by X, γ, β, neutron and other rays, and give the readout value and dose value. , with functions such as automatic calibration, background subtraction, heating parameter setting and printing. The thermoluminescent dose reader can be connected to a computer, and data management and printing can be performed through the

application software of the thermoluminescent dose reader. Conforms to the national standard of the People's Republic of China GB 10264-88 "Thermoluminescence dosimetry system for personal and environmental monitoring". DA-2000D thermoluminescent dose reader adopts 7-inch color touch screen, which has clear display and easy operation.

Features

- 7-inch touch screen, full Chinese color display, built-in printer, easy for users to operate, operate and maintain;
- The high voltage part has three modes: automatic, locked, fixed;
- The heating plate can be replaced, which is convenient for the measurement of thermoluminescence detectors of different shapes and specifications;
- The database supports a variety of query functions such as unit name, personal name, gender, dose box barcode, date of measurement, tested personnel, untested personnel, etc.;
- Power-on automatic drying function, suitable for instruments with humid environment and low frequency of use;
- An attenuation filter can be placed to expand the dose measurement range.
- With PC software, barcode scanner interface; stand-alone storage of 1000 pieces of measurement data.
- Support scanning code entry, form export, and personal database filing.

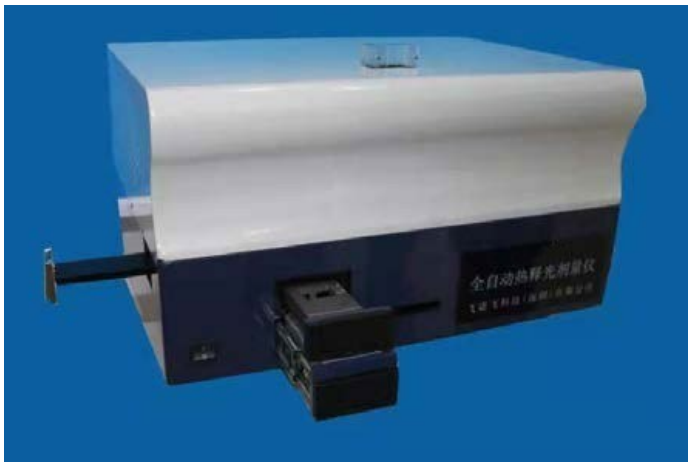
Technical parameters

Light measurement system	
Dose test range	LiF: Mg, Ti: 10-5Gy ~ 1Gy LiF: Mg, Cu, P: 10-7Gy ~ 10Gy LiF: Mg, Ti-M: 0～100Gy
Measuring items Heating	X, gamma, beta, neutron
System stability	≤0.2%
Measurement and reading time	40s (can be customized)
Coefficient of variation of sensitivity repeatability	≤0.1%±0.05%/℃
Drawer light leakage	≤0.1% of internal light source
Background value	≤300
High voltage	0～1500V
Power supply	AC 220V±10%, 50Hz
Heating system	
Heating temp. range	Room temperature～400℃
Temperature repeatability	≤1%
Heating temperature deviation	≤±2℃
Heating time	0～500s
Heating time repeatability	≤0.1%
Heating rate	1～40℃ • s-1
Use conditions	
Working environment	Indoor

Working temperature	10～40℃

Automatic TLD (Thermoluminescent dosimetry) reader

1. DA-2000 Automatic Thermoluminescence Measurement System



Product introduction

DA-2000 is a thermoluminescent dosimeter readout instrument with multiple functions, high accuracy, fast reading speed and low cost. It forms a workstation with a computer running related software, and can automatically read a thermoluminescent dose card or a single thermal The light-emitting element adopts electric heating and photon counting method to obtain data, automatically recognizes the identification code of the thermoluminescent dose card, and the measurement process of preheating, measurement, and annealing is completely program-controlled. Automatic thermoluminescent element background subtraction, photomultiplier tube self-cooling and machine self-inspection further ensure the stable and reliable operation of the instrument. It is equipped with a transmission device, controlled by three stepping motors, and monitored by photoelectric sensors to ensure the reliability and accuracy of the mechanical transmission device.

Technical parameters

Item	Specification
Loading capacity	The dose card can be read continuously without stopping the machine, and the three-piece dose card can be read, 70 three-piece dose cards (with loader)
Readout speed	Three pieces of thermoluminescence card 20/h
Thermoluminescent element type	Round φ4.5mm*0.8mm/φ4.5mm*1mm
Dynamic range	7 orders of magnitude (up to 9 orders of magnitude with filters) automatically subtract background
Signal measurement	Photon counting
Temperature stability	±1℃
Linear	<1%
System stability	Measuring system stability: ≤0.2% Coefficient of variation of sensitivity repeatability: ≤0.1%±0.05%/℃
Reference light	High stability temperature-controlled reference light, stability <0.5%
Heating method	electric heating

Temperature range	Room temperature～400℃
Heating time	20s
Management software	Win software, single report, quarterly report, monitoring unit information storage, monitored personnel information storage and other functions
Data transmission	RS232
Size	500*370*320mm
Weight	29kg
Storage temperature	-10～50℃
Working temperature	10～40℃
Power supply	AC 220V±10%, 50Hz

2. RE2000 Thermoluminescent Dosimetry System

Product introduction

RE2000 TL dosimetry system consists of fully automatic/automatic TL readout instrument, operation and dose management software, TL dosimeter, irradiator (optional), etc. Constantly upgraded and easy to maintain. The system has a precise mechanical structure and reliable electronic components, ensuring its excellent performance from low dose to high dose measurement range. The system is widely used in personal dose (systemic dose Hp(10) and extremity dose Hp(0.07), Hp(3)) monitoring, environmental dose (H*(10)) monitoring, clinical dose measurement and other fields.

Features

- Suitable for personal dose and environmental dose, clinical dose measurement and other applications;
- Single loads of up to 800 detector elements or 200 dose cards for fully automatic versions;
- Fast reading speed, capable of reading 132 single-element or 82 dual-element dose cards per hour;
- The built-in self-test program of the instrument, the photomultiplier tube can be self-cooled, and the operation stability is high;
- Nitrogen heating element is used, the airflow is stable, the element is heated evenly, and the measurement repeatability is good;

• Photon counting method, excellent signal-to-noise ratio;
• Complete calibration process (component sensitivity calibration, instrument response calibration, value traceability);
• Flexible definition of measurement parameters and result output files.

Technical parameters

• Maximum single load: 800 detection elements or 200 dose cards(automatic version), 80 detection elements or 20 dose cards (automatic version)
• Reading speed: 132 single-element or 82 dual-element dose cards per hour
• Detecting element specifications: disc diameter 4.5 mm, square 3.2×3.2×0.9 mm, etc.
• Dynamic range: 7 orders of magnitude (extendable to 9 orders of magnitude with filters)
• Signal measurement method: photon counting method, maximum count rate 100MHz
• Linear deviation: ≤1%
• Stability dose: ≤1μSv (standard deviation)
• Reference light source: high stability temperature-controlled LED light source
• Dark current: photon counting method is used, the influence of dark current can be ignored, and the background count rate change is less than 1μSv (137Cs dose equivalent)
• Heating method: high-purity nitrogen heating, typical flow rate of about 5L/min, heating temperature ≤ 400° C,
• Environmental conditions: operating temperature: 0~+40℃; storage temperature: -10~+50℃; relative humidity ≤90%.
• Data interface: RS232 or LAN
• Power supply: 100~250VDC, 50~60Hz

Thermoluminescence Personal Dosimeter

1. Thermoluminescence Personal Dosimeter

DA-TLD-400

DA-TLD-469

DA-TLD-600

DA-TLD-700

DA-TLD-710

DA-TLD-1600

DA-TLD-1700

Product introduction

Thermoluminescent personal dosimeters, also called dose cards and dose pens, have the advantages of good energy response, high sensitivity, little environmental impact, easy to use, and can measure X, γ, β, n and other rays.

Widely used:

- Nuclear industry, nuclear power plant radiation protection, including personal, environmental and accident dose monitoring, etc.;
- Radiation biology (study of biological effects caused by ionizing radiation, accurate estimation of doses to organs, etc.);
- Radiation medicine (monitoring of patient exposure dose in radiation diagnosis and treatment, study of human exposure dose distribution);
- Geology (research on stratigraphic structure, geological age, uranium mine survey, natural heat background investigation, groundwater and oil exploration, etc.);
- Fields such as archaeology (dating pottery, etc.), cumulative dose measurement of x-rays, gamma rays and neutrons for protection of the environment and people

Wearing method

Dosimeter worn on left chest when in use

Specifications

Each dosimeter box can hold 1-13 pieces of thermoluminescent dose detection elements at the same time; five colors of pink, yellow, green, blue and purple are available.

Thermoluminescence detector

1. GR-200A Thermoluminescent Detector

Product introduction

GR-200 series lithium fluoride thermoluminescence detectors are passive solid integral detectors. It is characterized by small size (high spatial resolution), effective atomic number close to air and human tissue, free from electromagnetic radiation interference, wide measurement range, low measurable lower limit, good reproducibility, and high dose rate pulse measurement characteristics of the radiation field. They can be applied to personal monitoring of ionizing radiation, environmental monitoring, and measurement of specific radiation fields (including the differential measurement of n and γ mixed fields). It can also be used in radiology, radiation biology, reactor engineering, archaeology and other disciplines.

Technical parameters

Item	Specification
Detection object	X, γ-ray; Material: LiF: Mg, Cu, P or LiF: Mg, Ti optional
Detection object	Neutron rays; Material: 6LiF: Mg, Cu, P or 6LiF: Mg, Ti optional
Shape	Disc (also square, powder, square rod optional)
Specifications	φ4.5×0.80mm (other specifications can be customized)
Energy response	(photons from 30KeV to 3MeV): <20%
Relative sensitivity	62 times (TLD-100)
Linear range	100nGy～12Gy
Detection threshold	0.1μGy
Dispersion	≤± 5%, 3%, 1% (optional)
Response to neutrons	Response to absorbed dose due to heavy particles is LET dependent,

	which favors the difference of gamma components in n, gamma mixed fields
Stability	There is no obvious decline after one month of storage at room temperature, and about 3% decline after one month of storage at 50°C
Illumination effect	There is no obvious response to indoor scattered sunlight, incandescent light, and fluorescent lamp; there is a response to direct sunlight (ultraviolet light)
Working environment	T＜50%; RH＜90%

Specification

Thermoluminescence detector				
No.	Model	Type	Specification	Unit
1	GR-200A	LiF(Mg,Cu,P)	Φ 4.5×0.80mm (1%)	piece
2	GR-200A	LiF(Mg,Cu,P)	Φ 4.5×0.80mm (2%)	piece
3	GR-200A	LiF(Mg,Cu,P)	Φ 4.5×0.80mm (3%)	piece
4	GR-200A	LiF(Mg,Cu,P)	Φ 4.5×0.80mm (5%)	piece
5	GR-200A	LiF(Mg,Cu,P)	Φ 3.6×0.40mm (2%)	piece
6	GR-200A	LiF(Mg,Cu,P)	Φ 3.6×0.60mm (2%)	piece
7	GR-200A	LiF(Mg,Cu,P)	Φ 3.6×0.80mm (2%)	piece
8	GR-200	LiF(Mg,Cu,P)	4.0×4.0×0.89mm	piece
9	GR-200	LiF(Mg,Cu,P)	3.2×3.2×0.89mm	piece
10	GR-200	LiF(Mg,Cu,P)	3.0×3.0×0.89mm	piece
11	GR207A	7LiF(Mg,Cu,P)	Φ 4.5×0.80mm	piece
12	GR207	7LiF(Mg,Cu,P)	4.0×4.0×0.80mm	piece
13	GR207	7LiF(Mg,Cu,P)	3.2×3.2×0.20mm	piece
14	GR207	7LiF(Mg,Cu,P)	3.2×3.2×0.40mm	piece
15	GR207	7LiF(Mg,Cu,P)	3.2×3.2×0.60mm	piece
16	GR207	7LiF(Mg,Cu,P)	3.2×3.2×0.80mm	piece
17	GR206A	6LiF(Mg,Cu,P)	Φ 4.5×0.80mm	piece
18	GR-200F	LiF(Mg,Cu,P)	Film 4.0×4.0mm	piece
19	GR-200F	7LiF(Mg,Cu,P)	Film 5.0×5.0mm	piece
20	GR-200F	LiF(Mg,Cu,P)	Film ф4.5×0.20mm	piece
21	GR-200R	LiF(Mg,Cu,P)	0.1×0.1×0.6mm	ea
22	GR-200R	LiF(Mg,Cu,P)	1.0×1.0×1.0mm	ea
23	GR-200R	7LiF(Mg,Cu,P)	1.0×1.0×6.0mm	ea
24	GR-100M	LiF(Mg,Ti)	5.0×5.0×0.80mm	piece
25	GR-100M	LiF(Mg,Ti)	4.0×4.0×0.80mm	piece
26	GR-100	LiF(Mg,Ti)	Φ 4.5×0.80mm	piece
27	GR-100M	LiF(Mg,Ti)	Φ 4.5×0.80mm	piece

28	chemically pure powder	80~200 mesh	g
29	Analytical Pure Powder	80~200 mesh	g
30	lead room	100*100*100mm	set

Portable instrument

Surface Contamination Monitor

1. LB124 SCINT a, β Surface Contamination Monitor

Product introduction

The LB124 SCINT portable surface contamination detector has a detection area of 170cm2, and its perfect geometric reflector ensures that the response of the instrument is perfectly balanced in the entire sensitive range. Simultaneous measurement of a, β and γ surface contamination on floors, walls, tables, objects, clothing, skin, etc.

Technical Parameters

- Display: Monochrome LCD 192×64 pixels, electroluminescent lighting
- Detector: ZnS:Ag scintillator detector
- Light detection: PMT
- Measurement mode: a, β simultaneous, separate measurement of count rate and CPS mode
- Detector size: 118mm×145mm
- Sensitive field: 170cm2
- Entrance window: metal-treated plastic, 6μm (0.4mg/cm2)
- Protection grid transmittance: 80%
- Size: 240mm×140mm×110mm
- Maximum operating time (without lighting):

3.5 Ah Ni-MH (rechargeable battery) > 25 h 7.8 Ah alkaline battery > 50 h

2. CoMo 170 Portable α, β Surface Contamination Meter

Product introduction

CoMo170 Portable Surface Contamination Detector is a large-area plastic scintillator surface contamination measuring instrument, which does not require gas flow or inflation, which reduces operating and maintenance costs; simultaneously measures α, β, and γ radiation, automatically detects α radiation, and can also choose to measure α Or β/γ contamination; background subtraction function, the background measurement time is adjustable; data download and software processing can be performed through the RS232 interface.

Technical Parameters

- Detector: plastic scintillator with ZnS layer, probe area 170cm2
- Unit: C/s, Bq or Bq/cm2
- Threshold: α, β thresholds can be programmed in c/s, Bq or Bq/cm2 units
- Efficiency (2π): Cs-137, 35%; Am-241, 22%; U-238, 26%
- Memory: 750 data, and has printing function (with time record)
- Display: Large-size LCD display with backlight, 128×64 pixels
- Size: 280×125×135mm3 (with handle)
- Temperature: －10℃～＋40℃
- Power supply: two 3V batteries or NiMH rechargeable batteries
- Time: 30-35 hours
- Weight: 750g

3. DA-12B α, β Surface Contamination Meter

Product introduction

DA-12A type α, β surface contamination meter is mainly used for radiation protection monitoring of α, β and X, γ rays; it is often used for monitoring surfaces such as workplaces, laboratories, hospitals, isotope production plants, walls, hands, clothes, etc. α , β radioactive contamination; in addition, the gamma radiation field can also be monitored.

Technical parameters

Item	Specification
Energy response	50Kev～5Mev, response variation is less than ±20%
Detectable types	alpha, beta, x and gamma rays
Measuring range	Dose rate: 0.05 μ Sv/h～2500 μ Sv/h;
CPS	0.15～9999.0; Cumulative dose: 0-999mSv.
Display	48×84 dot matrix liquid crystal display
Power supply	Polymer lithium battery
Inherent error	≤±15% (137Cs,1mSv/h)
Overload resistance	>3.5mSv/h
Weight	about 129g (without battery)
size	150×78×31(mm)

4. DA-15B Portable Surface Contamination Monitor

Product introduction

DA-15B Portable α, β Surface Contamination monitor is designed for nuclear medicine, molecular biology laboratory, nuclear material transportation and other aspects that have αβ surface contamination and X, γ radiation according to the requirements of ionizing radiation protection. Sensitivity intelligent portable instrument. It has the functions of surface contamination monitor and X, γ dose rate meter. It can be used to measure surface contamination caused by αβ and Xγ radiation dose rate. For α and β\γ measurement, the display can be switched, and the measurement is operated by the handle button, and the measurement unit cps\cpm\Bq/cm2 can be converted.

Technical parameters

Item	Specification
Measuring range	α: 0~8000cps; β: 0~8000cps; X, γ: 0~1000μGy/h; α: 0~600 Bq/cm2, β: 0~4000Bq/cm2
Energy response	25KeV～3MeV
Intrinsic Error	Typical 10%; Angular Response: (137Cs) not to exceed 15%.
Humidity range	40% ~ 95%RH (no precipitation of moisture);
Measuring unit	Bq/cm2, CPM/CPS, uSv/h, μGy/h
Detection efficiency	(for 90Sr+90Y(β)) 54%,
Surface sensitivity	(to 90Sr+90Y(β)) 500 CPM/Bq.cm-2;
Detector	End window GM tube, effective diameter 44.5mm, mica window density 1.5-2.0mg/cm2;
Sensitivity	(137Cs) 342cpm/uSv.h-1; background reading: 60cpm
Power supply	7.4V rechargeable lithium battery, real-time detection of battery voltage
Correction	Serial port data correction K value factor function
Size	Counter: 7.4*11.8*2.5cm (without bracket); Detector: 7.5*28.0*2.8cm
Shell	The shell of the host and the external detector is made of aluminum alloy and

	the overall structure is strong and durable
Weight	850g

5. DA-60B α, β Surface Contamination Meter

Product introduction

DA-60B type α, β Surface Contamination Meter adopts scintillation detection method. It is used to detect the degree of a or β radioactive contamination on surfaces such as work surfaces, floors, walls, hands, clothes, shoes, etc. in radioactive workplaces and laboratories.

Features

- Can measure a, β γ separately, optional a nuclide identification
- Counter blocking alarm prompt and protection function
- Built-in large-capacity lithium battery, real-time display of battery capacity
- Dose rate alarm threshold setting, over-threshold alarm
- Flashing lights and audible pulse frequency to indicate radiation intensity
- Sound, vibration, light alarm real-time clock function
- Ultra-low power consumption design, real-time indication of battery power
- The detector adopts ZnS(Ag) detector with high sensitivity and fast response
- Backlight function for easy use at night and in low-light environments
- Large-size dot-matrix liquid crystal display, the measurement results are displayed clearly and intuitively Buttons, easy and convenient to operate
- Various alarm thresholds in line with national standards are available, and can also be defined by yourself
- 4GB large-capacity storage can store 100,000 sets of data for viewing at any time, data printing, and communication with the host computer (with analysis software)
- The connection cable between the host and the probe can be extended to 1.5 kilometers, and wireless docking is also possible
- The host has a built-in GM detector to monitor the surrounding environment of the operator in real time

Technical parameters

Item	Specification

Detector	Double scintillation detector ZnS(Ag) coating, plastic scintillator crystal; the host is an inert detector
Host gamma dose rate	0.01--30000μSv/h (expandable to 10sv/h)
Detector area	62cm2
Nuclide library (optional)	20 built-in nuclide libraries, which can be used to measure the activity of nuclides, and can be customized
Counting range	1～1000000
Detection efficiency	α ≥50%, β ≥50%
Sensitivity	a surface activity response>7s-1Bq-1cm2; β surface activity response>7s-1Bq-1cm2
Measurement background	α ≤0.1CPS, β ≤25CPS counts per minute
Measuring time	1, 10, 20, 60, 120 seconds optional
Display unit	CPM, CPS, Bq/cm2, mSv, μGy/h, mGy/h
Relative basic error	≤±10%
Environmental characteristics	Relative humidity range: -10℃～+45℃; relative humidity range: ≤90% (40℃).
Power supply	lithium battery; machine current ≤ 150mA
Shell	Engineered ABS, Magnesium Aluminum Alloy
Waterproof	The waterproof effect of the whole machine is IP65
Instrument weight	about 1400g

6. DA-175 α, β Surface Contamination Meter

Product introduction

DA-175 α, β Surface Contamination Meter adopts dual detector design, which is used to monitor the α, β contamination level and γ radiation level of radioactive substances on the surface of personnel/items. It has the characteristics of accurate measurement, high sensitivity and convenient use, and can be used to inspect radioactive contamination in the environment. It can send out sound and light alarm according to the predetermined alarm threshold to warn the on-site staff and ensure the safety of personnel. It can be used for surface contamination detection of work surfaces, floors, walls, clothing, human skin, etc. in radioactive workplaces or laboratories.

Features

• The host has a built-in gamma detector, which can be used as a gamma dose alarm;
• Based on pulse shape discrimination, α and β particles can be distinguished and measured in real time;
• It adopts a 4-inch color touch LCD display and a full Chinese operation interface, which is easy to use and easy to operate.
• You can freely choose to deduct or not deduct the background, and the background measurement time is optional; the nuclide library can be edited freely.
• Data can be aggregated and stored for viewing by relevant personnel at any time.
• It has a real-time clock function, which can display the year, month and day in real time, and the operation of the clock will not be affected by power failure.

Technical parameters

Item	Specification
Detector	ZnS coated plastic scintillator detector
Detection area	175.5cm2 Diameter: 150mm;
Detectable types	α, β, γ
Display units	cps, cpm, Bq or Bq/cm2
Display	4-inch color touch LCD display
Background count	α ≤0.1cps, β ≤5cps
Measuring range	α: 0~5000cps, β: 0~50000cps
Detection efficiency	90Sr-90Y≥35%, 241Am (α)≥30%; (2π).
Operating environment	temperature -20° C ~ +45° C, relative humidity (at 40° C) ≤ 95%.
Alarm threshold	continuously adjustable within the measuring range
Data transfer	USB interface for exporting measurement data
Data storage	100,000 sets of data storage, with power-off protection function
Power supply	8.4V 10000mA rechargeable lithium battery
Shell	aluminum alloy structure, the overall structure is strong and durable;
Weight	about 3Kg
size	main unit 145×179×54mm (without handle), detector φ157×297mm (without handle).

Environmental Radon Thorium Monitor

1. RAD7 Radon Detector

Product introduction

F American Durridge company RAD7 type radon detector α energy spectrum radon detector is a portable detector with the shortest response and recovery time on the market, sniffer type and continuous operation. The operation is simple, according to the prompts of the microcomputer, the measured radon and thoron concentrations are displayed by the spectrum curve, and the data can be output by an infrared printer. The humidity of the sampled air is reduced by the drying device to improve the accuracy of the test results. Beeps can be set for radon and thoron counts to be aware of high contamination areas. A variety of accessories are available to measure radon in air, radon in soil and radon in water. The RAD-7 radon meter measures the US EPA action level concentration of 4pCi/L in just 1 hour.

Features

- Equipped with corresponding accessories can measure radon in air, soil and water at the same time
- The measured radon and thorium can be displayed in the form of spectrum curves
- Electronic tester with the fastest response and recovery time on the market
- Simple operation, follow the prompts of the microcomputer
- Lightweight at only 11 lbs
- Meets US EPA operating standards of 4pCi/L for 1 hour
- Can display and print radon level values that are continuously updated from start to test
- The test results can be displayed on the computer, printed and exported, and the data can be downloaded
- Spectrum curves demonstrate the accuracy of the instrument's field operation

Technical Parameters

- Measurement Modes: Continuous radon monitoring, long or short time radon level screening, and suction tube (nozzle) search for radon and thoron influxes.
- Measurement object: continuous monitoring: 0.4cpm/pCi/L suction: 0.2cpm/pCi/L;
- Measuring range: 0.1-20000pCi/L (3.7Bq/m3-740000Bq/m3)
- Storage capacity: 1000 previously measured radon concentrations and related data. It can be read on the LCD screen, printed, or downloaded to a PC, and the data simultaneously displays the high value, low value, average value and standard deviation of the radon concentration;

- Working principle: use electrostatic method to guide alpha emitter, and then do energy spectrum analysis;
- Built-in air pump: the standard value of the flow rate is 1 L/min (measured at the air inlet), and the air inlet and outlet ports are provided on the pump;
- LCD Display: Two lines of 16 characters (numbers) for easy reading.
- Audible alarm: Indicates the location and concentration of radon and thoron, which can be turned on or off.
- Power supply: AC/battery powered, the battery is 5AH 6V. When connected to AC power, it will automatically charge.
- Printer: HP HP82240A
- RS232 interface: for connecting computer or MODEM
- Operating environment: Temperature: 3°C-40°C Humidity: 0-100% (non-condensing)
- Weight and size: 5Kg; 24×19×27cm
- Shell Material: High Density Polyethylene
- Optional accessories: accessories for measuring radon in water and accessories for measuring radon in soil
- Basic configuration: RAD-7 main unit, power cord, shoulder strap and key, printer, 3 rolls of printing paper, printer adapter, 6 air inlet filters, 1 dust filter, 3 vinyl tubes, large drying tube , small drying tube, desiccant, built-in rechargeable battery, PC data software and computer connection line, Chinese and English manual.

2. DA-Ra01 real-time radon monitor for air, soil, water

Product introduction

DA-Ra01 real-time radon monitor is a radon testing device that do real-time and micro pump automatic continuous sampling of radon gas in air, soil and water. It uses a micro pump combined with static electricity to collect radon decay radon progeny RaA As the measurement object, it meets the sampling and measurement method requirements of GB/T 14582-1993, and quantitatively measures the radon concentration in soil or air. It has high sensitivity, easy operation, overcomes the inconvenience of manual sampling and external interference factors, and measures and gives results in real time. The measurement time can be set within 1-120 minutes according to the level of radon. It is the most automated instrument for soil radon detection in China. It meets the requirements of soil radon measurement in GB50325 "Code for Indoor Environmental Contamination Control of Civil Construction Engineering" and is widely used in civilian use. Construction engineering, radioactive ore prospecting emanation measurement and water radon concentration determination for hydration ore prospecting can also be used for radon level investigation and radon prevention and radon reduction research in departments such as searching for groundwater sources, earthquake forecasting, environmental protection engineering, scientific research and teaching. It meets the verification

requirements of JJG825-2013 "Radon Meter".

Features

• Built-in measuring chamber with a volume of 0.8L
• The pump suction electrostatic measurement method is adopted, and the sampling flow rate is controlled at about 1L/min by a micro vacuum pump system;
• Desiccant is used at the sampling point to eliminate the influence of humidity on the measurement;
• The detector adopts highly sensitive a-particle semiconductor devices, which can convert a-particle rays into electronic signals, collect and amplify electricity through static electricity.
The amplitude of the electronic signal is measured by means of a circuit, thereby identifying the energy of the incident alpha particle;
• The instrument can accurately measure Po-218 particles produced by indoor radon decay, with good energy resolution and high detection efficiency.

Technical parameters

Item	Specification
Detector	Semiconductor detector, insensitive to gamma
Display	Dot matrix liquid crystal
Measuring range	0～1000000Bq/m3
Uncertainty	<15% (when radon concentration >200Bq/m3)
Sensitivity	50cpm/(Bq/m3)
Micro pump flow rate	1L/min
Working mode sampling period	Continuous measurement mode: 26 minutes; Accurate mode: 5-99 minutes optional, fast can be set to 15 minutes.
Data interface	RS232 serial port, real-time data line, USB port to save data, the device can store 1000 pieces of data.
Working Environment	Temperature: -20～45℃; Relative Humidity: ≤95%
Dimensions	385mm×370mm×235mm
Weight	6.0kg
Power supply	Built-in 7.4V 10000mA lithium battery.

3. DA-Ra02 Alpha Spectrum Radon Detector

Product introduction

DA-Ra02 a Spectrum Radon Detector is a radon testing device that do real-time and micro pump

automatic continuous sampling of radon gas in air, soil and water. It uses a micro-pump combined with static electricity to collect radon decay. As the measurement object, daughter RaA meets the sampling and measurement method requirements of GB/T 14582-1993, and quantitatively measures the radon concentration in soil or air.

It has high sensitivity, easy operation, overcomes the inconvenience of manual sampling and external interference factors, and measures and gives results in real time. The measurement time can be set within 1-120 minutes according to the level of radon. It is the most automated instrument for soil radon detection in China. It meets the requirements of GB50325-2020 "Code for Indoor Environmental Contamination Control of Civil Construction Engineering" and soil radon measurement; /CECS 569-2019 "Standard for Radon Detection Method in Building Indoor Air".

It is widely used in civil construction engineering, radioactive ore prospecting emanation measurement and water radon concentration determination in hydration prospecting. It can also be used for radon level investigation and radon prevention and radon reduction in departments such as finding groundwater sources, earthquake forecasting, environmental protection engineering, scientific research and teaching, etc. and other research work. It meets the verification requirements of JJG825-2013 "Radon Meter".

Features

- Built-in measuring chamber with a volume of 0.8L
- It adopts the design of pump suction electrostatic collection energy spectrum analysis method, and at the same time uses the micro vacuum pump system to control the sampling flow to keep it at about 1L/min;
- Alpha energy spectrum has good resolution and high sensitivity, and the spectrum can be displayed in real time
- Desiccant is used at the sampling point to eliminate the influence of humidity on the measurement;
- The detector uses alpha particle semiconductor devices with high sensitivity, which can convert alpha particle rays into electronic signals, and measure the amplitude of electronic signals through electrostatic collection and amplification circuits, thereby identifying the energy of incident alpha particles;
- The instrument can accurately measure Po-218 particles produced by indoor radon decay, with good energy resolution and high detection efficiency.

Technical parameters

Item	Specification
Measurement object	Rn-222 (Radon), Rn-220 (Thorium)
Detector	Semiconductor detector
Display	4-inch color touch LCD display
Measuring range	0～1000000Bq/m3
Uncertainty	<15% (when radon concentration >200Bq/m3)
Sensitivity	50cpm/(Bq/m3)
Micro pump flow rate	1L/min
Sampling period	Continuous measurement mode: 30 minutes; custom measurement mode: 1-99 minutes optional.
Data interface	The USB port saves data, and the device can store 50,000 pieces of data. (Optional RS232 communication interface)

Working Environment	Temperature: -20～45℃; Relative Humidity: ≤95%
Size	420mm×340mm×230mm
Weight	6.9kg
Power supply	Built-in 8.4V 10000mA lithium battery.

4. DA-Rn01 Radon and daughter continuous monitor

Product introduction

DA-Rn01 Radon and Progeny Continuous Monitor is a portable real-time continuous instrument for testing radon concentration/radon (thorium) progeny and total ∂ potential concentration.

It can be used in underground engineering, underground mines, tourist caves, nuclear facilities, associated uranium ore series, geological exploration, radiation hazard assessment caused by earthquakes, and measurement of radon in indoor environments, health supervision and radioactive detection and evaluation. source, radon treatment, radiation safety assessment, etc.

The instrument can give results immediately, is easy to operate and portable, and is suitable for large-scale radon and daughter level investigations. Key performance indicators

Technical parameters

Item	Specification
Detector	Semiconductor detector.
Instrument background	≤ 3cpm; measurement count (sensitivity): 30~40cpm (ordinary environment).
Detection efficiency	40% (2π) to 239Pu;
Counting capacity	99999999;
Measuring range	Radon/radon progeny concentration 2×106Bq/m3, ∂potential concentration: 10-8-10-2J/m3.
The measurement time	adjustable from 1 to 100 minutes;
Micro sampling pump	1L/min (built-in).
Ambient temperature	-10～45℃;
Relative humidity	≤95%;
Power supply	Built-in 8.4V 10000mA lithium battery;
Size	385mm×370mm×235mm
Weight	about 4Kg.

5. Radon Monitor

Product introduction

Overhoff radon monitors measure radon-222 and radon-220 over a wide range of concentrations. The detector is an ionization chamber, and the host can save 40,000 monitoring point data. It can be monitored for a long time, so that it can record changes in radon concentration caused by environmental influences in air pressure and rainfall changes.

Main Specifications

- Detection object: radon-222 and radon-220
- Detector: pulsed ionization chamber
- Measuring range: 0.1-2000pCi/L
- Sensitivity: 0.45CPM/pCi/L
- Tolerance: 10%
- Weight: 3.6kg

Electronic Personal Dosimeter

1. DA-100 X-ray, gamma-ray Personal Radiation Dosimeter

Product introduction

DA-100 X-ray, gamma-ray Personal Radiation Dosimeter is a small and highly sensitive personal radiation dose alarm device. The instrument uses GM counting tube as the detector, which has a fast response speed and adopts powerful single-chip microcomputer technology, which has strong anti-interference ability. It is mainly used to monitor X-rays and γ-rays. Within the measurement range, the alarm threshold can be set. When the alarm threshold is reached, an alarm will be issued to remind the staff to pay attention to safety.

Technical parameters

Item	Specification
Detector	Energy compensated GM counter tube
Sensitivity	>1.5CPS/uSv/h (relative to 137Cs)
Measuring range	Dose equivalent rate: 0.01 μ Sv/h ～ 1mSv/h; Cumulative dose equivalent: 0.00 μ Sv～999.9Sv
Energy response	48keV～3.0MeV
Relative error	<10% (at 1mSv/h)
Power Consumption	2 AAA dry batteries
Temperature range	-10℃～+50℃≤±10%
Humidity	0～95%RH（+35℃）≤±10%
Dimensions	70*40*95 (mm) (length*width*height)
Weight	100g (including battery)

2. DA-100A Personal Dosimeter

Product introduction

DA-100A personal dose alarm instrument is mainly used for radiation protection monitoring of X, γ and hard β rays. The instrument can display the dose rate and personal cumulative dose in real time; it is suitable for nuclear power plants, industrial X, γ nondestructive testing, radiation medicine, γ in areas such as radiation and monitoring of the surrounding environment of nuclear facilities, alarm instructions are given in a timely manner to ensure the safety of staff. The instrument adopts single-chip microcomputer technology, which has a wide measurement range, good energy response characteristics and low power consumption.

Technical parameters

Item	Specification
Detector	Metal GM counter tube
Energy response	50Kev～5Mev, response variation is less than ±20%
Detectable types	X, gamma and hard beta
Measuring range	Dose rate: 0.000 μ Sv/h～200mSv/h CPS: 0.00～9999.0 Cumulative dose: 0 μ Sv-999mSv

Display	48×84 dot matrix liquid crystal display
Power supply	Polymer lithium battery
Battery life	can be used for 180 days (50mSv/year, normal working hours)
Error	≤±10%; 1 μ Sv/h～500 μ Sv/h.
Anti-overload ability	>250mSv/h
Weight	about 129g (without battery)
Size	150×78×31(mm).

3. DA-100B Personal Alarm Dosimeter

Product introduction

DA-100B Personal Alarm Dosimeter is mainly used for radiation protection monitoring of a, β, x and γ rays. The instrument can display the dose rate and personal cumulative dose in real time; it is suitable for nuclear power plants, industrial X, γ non-destructive testing, radiation In fields such as medical care, gamma irradiation, and monitoring of the surrounding environment of nuclear facilities, alarm instructions are given in time to ensure the safety of staff. For civilian use, it is suitable for radioactive safety detection of family environment, food, stone, etc. The instrument has a wide measurement range and good energy response characteristics.

Features

- 3.5-inch color touch LCD display,
- The operation interface in Chinese is easy to use and easy to operate.
- With LED indicator light, the flashing frequency can reflect the intensity of the radiation;
- Automatic switching of dose rate units (μSv/h, mSv/h);
- The detector is a mica end window GM tube detector.
- Automatically save the accumulated dose, which will not be lost when the power is off;
- Alarm thresholds for dose rate and cumulative dose can be set;
- Can detect the humidity and temperature of the surrounding environment;
- 4000 sets of alarm storage data;
- Display results: μSv/h, mSv/h; cumulative dose: μSv, mSv; display between dose rate and CPS can be switched freely.

Technical parameters

Item	Specification

Detector	Mica end window GM tube detector
Energy response	50Kev～5Mev, response variation is less than ±20%
Detectable types	a, β, x and γ rays
Measuring range	Dose rate: 0.01 μSv/h～4000 μSv/h; CPS: 0.15～9999.0; Cumulative dose: 0-999mSv.
Display	3.5-inch color touch LCD display
Sensitivity	1μSv/h>5CPS.
Error	1 μSv/h～500 μSv/h, ≤±10%
Inherent error	≤±15% (137Cs,1mSv/h)
Alarm method	sound, light, vibration
Temperature	-40°C-80°C;
Humidity	0%-99.9%.
Power supply	Rechargeable lithium battery, real-time detection of battery voltage, and the battery icon flashes to remind when the voltage is low
Weight	About 150g (without battery)
Size	120*70*33(mm)

4. DMC 3000 Electronic Personal Dosimeter

Product introduction

DMC 3000 electronic personal dosimeter is suitable for the cumulative dose monitoring of radiation workers and the real-time measurement of the surrounding dose equivalent rate. with excellent photon energy response characteristics, optional β or neutron remote monitoring module, with sound alarm (up to 85 decibels or more), vibration alarm and dual super bright LED alarm functions. The appearance design is sturdy and durable, and it can last more than 2500 hours with only one AAA battery. It also has rich communication protocols and is compatible with Mirion related products.

Technical parameters

- Energy range: 15keV~7MeV
- Response characteristics: better than ±20% (16keV~7MeV)
- Dose range: 1μSv~10Sv
- Dose rate range: 10μSv/h~10Sv/h

- Dose rate linearity: <20% (up to 10Sv/h)
- Hp(10) measurement accuracy: ≤±5% (137Cs), ≤±10% (241Am),
- Top LEDs (3): Red (alarm), green (gamma count), blue (neutron or Hp(0.07))
- Batteries: Standard AAA, 1.5V Alkaline
- Battery Life: Approx. 9 months (8 hours/day, 5 days/week without excessive alarms)
- Working conditions: -10℃~50℃, RH＜90%
- Storage temperature: -20℃~70℃
- Electromagnetic field environment: pulse electric field 30kHz~5GHz, magnetic field 30Hz~100kHz
- Protection class: IP67
- Size: 87mm×60mm×21mm
- Weight: <88g

5. DMC 3000 Electronic Personal Dosimeter Neutron Module

Product introduction

DMC3000 can measure Hp(10) in the n-γ mixed field after installing the neutron module, which is suitable for radiation workers such as emergency responders exposed to neutron rays. Dosimetry, alarms are displayed via LEDs and a high-contrast backlit LCD screen. The neutron module does not require additional power supply, and it can work continuously for more than 2000 hours, and the data is stored in the module.

6. DMC 3000 Electronic Personal Dosimeter Beta Module

Product introduction

DMC3000 can measure Hp(0.07) in a wide energy range after installing the β module, which is suitable for medical personnel, emergency response personnel and other radiation workers who are exposed to β rays. Dosimetry, alarms are displayed via LEDs and a high-contrast backlit LCD screen. The β module does not require additional power supply, and it can work continuously for more than 1800

hours, and the data is stored in the module.

Multifunctional radiometer

1. DA-15A Multifunctional Radiation Meter

Product introduction

The DA-15A multifunctional radiometer is designed for nuclear medicine, molecular biology laboratories, nuclear material transportation and other aspects where there are a, β surface contamination and X, γ radiation according to the requirements of ionizing radiation protection. It is a high-sensitivity Intelligent portable instrument. It combines the functions of a surface contamination monitor and an X, γ dose rate meter. It can be used to measure both the surface contamination caused by aβ and the Xγ radiation dose rate. For a and β\γ measurement, the display can be switched, and the measurement is operated by the handle button, and the measurement unit is cps\cpm\Bq/cm2 can be converted.

Main application

- Radiation rooms, radiographs, etc. in hospitals;
- Nuclear power plants, radioactive laboratories and other units, isotope production plants;
- Health protection and epidemic prevention stations at all levels; environmental monitoring departments at all levels.
- Check the radioactivity of building materials such as stone;
- Potential radiation detection of home decoration;
- Check for radioactivity in china tableware, glasses, jewelry, etc.;
- Check for radioactivity in building materials such as stone.

Technical parameters

Item	Specification
Measuring range	a: 0~8000cps; β: 0~8000cps; a: 0~600 Bq/cm2, β: 0~4000Bq/cm2 X, γ: 0~1000μGy/h
Temperature Operation	-10° C～+50° C; Storage -20° C～+60° C;

Energy response	25KeV ~ 3MeV, the change limit is 15%;
Intrinsic error	no more than 10%; angular response: (137Cs) no more than 15%.
Humidity range	40% ~ 95%RH (no precipitation of moisture);
Measuring unit	Bq/cm2, CPM/CPS, uSv/h, μGy/h
Detection efficiency	(for 90Sr+90Y(β)) 54%,
Surface sensitivity	(to 90Sr+90Y(β)) 500 CPM/Bq.cm-2;
Detector	End window GM tube, effective diameter 44.5mm, mica window density 1.5-2.0mg/cm2;
Sensitivity	(137Cs) 342cpm/uSv.h-1;
Background reading	60cpm
Power supply	7.4V rechargeable lithium battery, real-time detection of battery voltage, and the battery icon flashes to remind when the voltage is low;
Correction	Serial port data correction K value factor function
Shell	The shell of the host and the external detector is made of aluminum alloy, and the overall structure is strong and durable
Dimensions	Counter: Width 7.4cm Length 11.8cm Height 2.5cm (without bracket) Detector: Width 7.5cm Length 28.0cm (with handle) Height 2.8cm
Weight	850g

2. RDS-31 Multifunctional Radiation Meter

Product introduction

RDS-31 is a portable battery-powered handheld radiation measuring instrument, using energy-compensated G-M tube as the main detector, with sound and light alarm and built-in vibrator, high-contrast backlight screen can be adjusted independently, in the sun Still clearly visible. External probes GMP-25/11-3/15-3/12-series and ABP-150 can be connected to the RDS-31 through cables or additional adapters to expand the instrument's functionality, when using external probes, the dose can be measured simultaneously Rate.

Technical parameters

- Detector: energy compensated G-M tube
- Detection radiation: Photon: 48keV~3MeV; a, β external probe
- Dose rate range: 0.01μSv/h~0.1Sv/h

- Dose range: 0.01μSv~10Sv
- Calibration accuracy: ±5%, Cs-137
- Dose rate linearity: ±15% (0.05μSv/h~0.1Sv/h)
- Energy sound, angle sound: 71%＜RE, A＜160%, ±60°
- Displayable units: Sv(/h), R(/h),
- When external probe is connected: Gy(/h), cps, cpm, dpm, Bq;
- Communication method: RF radio frequency communication and USB communication with adapter
- Batteries: 2AA batteries (Alkaline or NiMH)
- Endurance: new alkaline batteries: >4 months (background conditions);
- Environmental conditions: -25° C~60° C, RH＜85%
- Size: 100mm×67mm×33mm
- Weight: 175g (without battery), 220g (with battery).

3. Radiagem2000 Multifunctional Radiation Meter

Product introduction

Radiagem2000 adopts energy-compensated G-M tube, and immediately enters the measurement interface of ambient dose equivalent rate H*(10) after starting. Easy to operate, with a large-screen LCD, with semi-logarithmic coordinates, display the average value of the count, and can alarm with sound and light. Canberra smart probe (CSP probe) can be connected externally.

Technical parameters

- Detector: energy compensated G-M tube
- Energy range: 40keV~1.5MeV (IEC60846)
- Dose rate range: 0.01μSv/h~0.1Sv/h, >3μSv/h automatically adjusts the display ratio
- Sensitivity: 0.83cps/(μSv/h)
- Accuracy: ±15%
- Protection class: IP67
- Size: 150mm×85mm×45mm; Weight: <300g (including battery).

4. Colibri Multifunction Radiation Meter

Product introduction

Colibri is a radiation measuring instrument with strong compatibility. The built-in detector is an energy-compensated G-M tube. According to different application purposes, two versions with different performances, VLD version and TTC version, are developed, which are respectively suitable for lower and higher High dose rate range. During the measurement, Colibri displays the dose rate results in a semi-log histogram and numerically, and can also display the cumulative dose. All Canberra smart probes (CSP probes) can be connected externally, and up to 8 external probes (1 via cable connection, 7 via Bluetooth connection) can be connected externally and acquire data at the same time.

Technical parameters

- Detector: energy compensated G-M tube
- Energy range: 59keV~1.5MeV
- Dose rate range: 10nSv/h~1mSv/h(VLD version); 0.05μSv/h~10Sv/h(TTC version)
- Sensitivity: 0.7cps/(μSv/h)(VLD version); 0.75cps/(μSv/h)(TTC version)
- Linear range: 100nSv/h~1mSv/h(VLD version); 3μSv/h~10Sv/h(TTC version)
- Photon energy response: -22%~+12% (VLD version), -18%~+23% (TTC version)
- Angle sound: better than ±20%, ±60°
- Background count: <0.11cps (<0.1μGy/h)
- Battery: 100-240V, 47-63Hz
- Battery life: about 2 hours of charging, about 25 hours of battery life
- Environmental conditions: -20°C~+50°C (TTC version), -10°C~+40°C (VLD version), 10%~95% (RH).

5. ADM300 Military Multifunction Radiation Meter

Product introduction

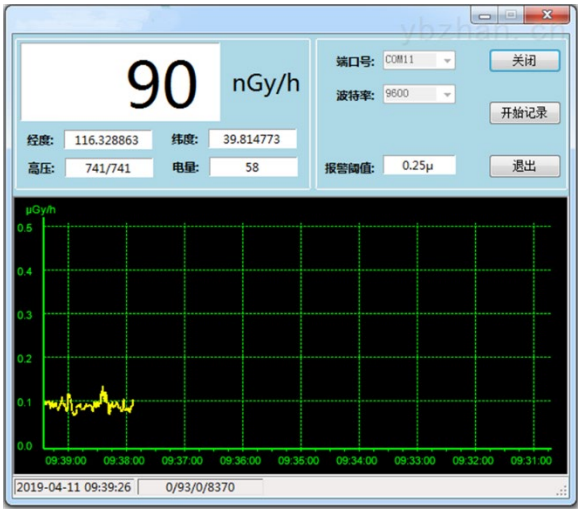
ADM300 military multifunctional radiation measuring instrument is suitable for military, nuclear facilities, nuclear emergency, customs, anti-terrorism, radiation protection and other fields. ADM300 adopts "Time-to-count" patented technology to realize wide range and high precision gamma ray measurement. The host has built-in dual G-M tubes to measure β and γ rays, and a series of smart probes can also be connected externally to realize multifunctional measurement of α, β, γ, neutrons, and X-rays.

Technical parameters

- Detector: Dual G-M tubes (low range - gamma and beta, high range - gamma)
- Response time: 2~5 seconds
- Dose rate range: 0.01μSv/h~50mSv/h(β); 0.01μSv/h~100Sv/h(γ)
- Power: two 9V batteries
- Dose range: 0.01μSv~100Sv
- Environmental conditions: -30°C~50°C, <95%
- Accuracy: ±15%(~100Sv/h); ±15%(~10Sv)
- Size: 21.6cm×11.1cm×4.8cm; Weight: 1.36kg

Radiation survey meter

1. DA-50C Portable γ-(X) Radiation Dose Rate Meter



Product introduction

DA-50C Portable γ-(X) Radiation Dose Rate Meter is composed of organic scintillator, photomultiplier tube, signal processing circuit and microcomputer. Applicable to environmental protection departments, disease control centers, geological mines, medical and health, nuclear power plants, public safety and nuclear emergency, homeland security, customs and entry-exit inspection and quarantine, civil aviation, railways, highways and shipping, nuclear decommissioning and decontamination and other departments; It is suitable for routine monitoring and emergency monitoring of X/γ radiation dose rate in the fields of industrial hygiene and environmental protection. The instrument meets the lower limit and range requirements of JJG521-2006 "χ-γ Radiation Air Kerma (Absorbed Dose) Rate Meter for Environmental Monitoring"; the instrument adopts a single detector with high sensitivity and large range characteristics, which can be used as Environmental level χ, γ dose rate meter can also be used as protection level x, γ radiation meter.

Features

- Miniature touch screen computer provides data display and recording functions.
- Simultaneously display dose rate, cumulative dose, change curve, detection type, power display, longitude and latitude, high voltage, time;
- GPS chip positioning is fast and accurate.
- Dynamic display of dose rate and change curve;
- Sealed probe design makes the instrument suitable for harsh environments.
- Continuous measurement, positioning, timing and recording during driving.
- Data storage can reach more than 10 million pieces.
- It can show driving route and dose rate change curve (with PC software).

Technical parameters

Item	Specification
Detector	3*2.25 inches plastic scintillator
Measuring	range 10nGy/h-2mGy/h
Response time	5ms
Energy response	60keV-3.0MeV (deviation <30%)
Radiometric update rate	Regular: 1 time/s (average over 1s); Fast: 200 times/s (instantaneous value per sample)
X Exposure Pulse	The fast X exposure pulse can be monitored, and the peak dose rate, pulse width and peak area dose are given.
Radiation measurement division value	< 0.5% of the displayed value.
Relative inherent error	<±15%.
Radiation measurement temperature drift	<±0.2%/℃.
Geographic positioning error	depends on GPS, usually the GPS positioning error is less than 15m.
Display	3.5 inch industrial grade LCD color touch screen.
Communication	RS232, optional Bluetooth, WIFI.
Working temperature	-10-45℃;

High voltage	600-900V adjustable, (non-professionals do not debug).
Relative humidity	<95% (no condensation and frost)
Power	Li-ion
Weight	about 1800 grams (host)

2. AccuRad Radiation Surveyor

Product introduction

The AccuRad Radiation Surveyor is a compact and durable personal radiation detector designed for law enforcement, fire rescue and other emergency responders looking for nuclear or radioactive materials. It also has dose measurement and alarm functions. AccuRad PRD uses an innovative variable background suppression algorithm (VBS), which can operate in different background environments and alarm when the background is subtracted to be a real threat or dangerous situation.

Technical parameters

- Detector: CsI(TI) scintillator detector (with temperature compensated SiPM); silicon diodes for cumulative dose and high dose rate
- Energy range: 25keV~3MeV
- Maximum dose rate: 10Sv/h, accuracy ±20%
- Communication method: Bluetooth, NFC can be paired with mobile phones, USB C
- Alarm mode: vibration, LED, sound (85 decibels at 30cm)
- Alarm: alarm within 2 seconds when the dose rate is 0.5μSv/h
- Mode of operation: dose rate, count rate, trend or radar search
- VBS technology: Validate real alarms against different backgrounds
- Interactive: email, SMS, SpirVIEW Mobile software, RadResponder, ANSI N 42.42 files
- Environmental conditions: -20°C~60°C, protection class IP67
- Power: 900 hours on two AA batteries
- Dimensions: 108mm×61mm×36mm; Weight: 200g.

3. DA-800B Environmental X-γ Radiation Dose Rate Meter

Product introduction

DA-800B intelligent x-γ radiation meter is a hand-held/portable environmental grade x and gamma radiation detector for monitoring x and gamma rays in radioactive workplaces
Measuring instrument, which uses highly sensitive scintillation crystals as detectors, with fast response.

Key performance indicators

- Detector: φ30×25mm, NaI scintillation crystal
- Sensitivity: ≥350CPS/ μSv/h (relative to 137Cs)
- Measuring range: dose rate: 0.10～200.00 μSv/h;

Cumulative dose: 0.00 μSv～9.99Sv;

- Response time: 1s
- Energy range: 38Kev～3Mev
- Relative inherent error: ±10%
- Measurement time: programmable from 5 to 120 seconds;
- Alarm threshold: the accumulated dose and dose rate threshold can be set arbitrarily
- Display unit: equivalent dose rate μSv/h, absorbed dose rate μGy/h; cumulative dose μSv; count rate CPS;
- Power consumption: 2 standard AA batteries; the power consumption of the whole machine is ≤ 200mW (excluding the power consumption of the display backlight);
- Weight and size: 1.30Kg (including battery), 420×180×88(mm).

4. DA-800D Portable X, Gamma Radiation Detector

Product introduction

DA-800D Portable X-Ray and Gamma Radiation Detector uses a compensated GM counter tube as a detector, which has the characteristics of high sensitivity and can accurately measure gamma-rays and X-rays. It uses a high-speed microprocessor and a 3.5-inch color touch liquid
The LCD display makes the operation easier. Widely used in medical treatment, disease control, environmental protection, metallurgy, petroleum, chemical industry, radioactive laboratory, industrial flaw detection, radiation processing, mining and other occasions that require radiation environment and radiation protection detection.

Features

- The high-speed embedded microprocessor is selected to ensure the real-time performance of monitoring data and status;
- The handle of the main unit is detachable to meet the needs of changing handles in different measurement environments;
- It adopts a 3.5-inch color touch LCD display and a full Chinese operation interface, which is easy to use and easy to operate.
- Automatically save the accumulated dose, will not be lost when power off, and can manually check the alarm record;
- Alarm thresholds for dose rate and cumulative dose can be set;
- 4000 sets of alarm storage data;
- Over-threshold sound alarm, small dead time, high dose rate;
- It has a real-time clock function, which can display the year, month and day in real time, and the operation of the clock will not be affected by power failure.

Technical parameters

Item	Specification
Detector	Metal GM counter tube
Energy response	50Kev～5Mev, response variation is less than ±20%
Detectable type	x, gamma and hard beta rays

Measuring range	Dose rate: 0.05 μSv/h～3mSv/h; (optional 0.1 μSv/h～50mSv/h) Cumulative dose: 0-9999mSv.
Display	3.5-inch color touch LCD display
Sensitivity	1μSv/h>5CPS.
Relative inherent error	≤±10% (137Cs, 200 μSv/h); typical value.
Response time	1S (after algorithm processing).
Operating environment	temperature -10℃～+50℃, relative humidity (at 40℃)≤95%.
Power supply	7.4V rechargeable lithium battery, real-time detection of battery voltage, and the battery icon flashes to remind when the voltage is low
Shell	aluminum alloy structure, the overall structure is strong and durable;
Weight	Approx. 300g (without battery),
Dimensions	80×120×40mm (without handle).

5. DA-800E Telescopic Rod Type X/γ Ray Radiation Survey Meter

Product introduction

DA-800E telescopic rod type X/γ Radiation Survey Meter consists of a probe head unit, a telescopic rod, a handle and a host, and can be used to measure gamma radiation in radioactive places or environmental gamma radiation. The instrument is equipped with a 1.9-meter-long telescopic rod, which can be used to measure the gamma-ray dose rate in special environments with strong radioactivity that are difficult to reach, inaccessible or inconvenient to approach. When measuring, the probe can

Complete communication with the host through wireless transmission, complete data processing, display, and alarm functions on the host. It can be applied to environmental protection departments, nuclear industry sites, and other workplaces where radioactive sources exist and need to be monitored, searched and measured.

Features

- Measuring object: X/γ, detectors (semiconductor, ionization chamber) can be selected according to requirements;
- Wireless communication with the host to complete real-time measurement, display and store measurement data;
- The large-size host HD LCD 3.5-inch touch screen displays the measurement time, measurement results, etc.;
- Alarm threshold, alarm time, etc. can be set on the host;

• The alarm threshold of dose rate and cumulative dose can be set arbitrarily;
• 4000 sets of alarm storage data;
• The effective distance between the host and the long-pole measuring instrument is 15 meters, providing effective protection for measuring personnel;
• With real-time clock function, it can display the year, month and day in real time, and the operation of the clock will not be affected by power failure;
• The main body of the instrument is made of aluminum alloy, which is strong and light, and the extension part uses interlocking devices, which are not easy to fall off and easy to operate.

Technical parameters

Item	Specification
Extension length	0.9 m ~ 1.9 m (can be customized)
Detector	High sensitive GM counter tube
Energy response	50Kev～5Mev, response variation is less than ±20%
Detectable type	X, γ
Measuring range	Dose rate: 0.1 uSv/h～10 mSv/h; Cumulative dose: 0-9999mSv.
Display	3.5-inch color touch LCD display
Relative inherent error	≤±10% (137Cs, 200 μ Sv/h);
Response time	1S (after algorithm processing).
Operating environment	temperature -10℃～+50℃, relative humidity (at 40℃)≤95%.
Power supply	7.4V rechargeable lithium battery, real-time detection of battery voltage, and the battery icon flashes to remind when the voltage is low
Communication	Wireless communication
Communication effective distance	15m
Shell	All aluminum alloy structure, the overall structure is strong and durable;
Weight	1.58KG (without batteries)
Size	Approx.Φ22mm (at the thinnest point when unfolded) Φ58mm (at the thickest point when unfolded) ×925mm.

6. DA-800F Environmental Gamma and X-ray Radiation Detector

Product introduction

DA-800F environmental gamma and X-ray radiation detector adopts dual detectors of plastic scintillator detector and GM tube composite detector, which has the characteristics of high sensitivity

and high range, and can accurately measure gamma rays and X rays. It uses a high-speed microprocessor and a 3.5-inch color touch LCD display to make the operation easier. Widely used in medical treatment, disease control, environmental protection, metallurgy, petroleum, chemical industry, radioactive laboratory, industrial flaw detection, radiation processing, mining and other X, gamma radiation monitoring and inspection. The instrument fully complies with the sensitivity measurement lower limit and range requirements of JJG521-2006 "χ-γ Radiation Air Kerma (Absorbed Dose) Rate Meter for Environmental Monitoring"; It can be used as an environmental grade X and gamma dose rate meter, and can also be used as a protection grade X and gamma radiation meter.

Features

- The high-speed embedded microprocessor is selected to ensure the real-time performance of monitoring data and status;
- Fast X-exposure pulses can be detected
- It adopts a 3.5-inch color touch LCD display and a full Chinese operation interface, which is easy to use and easy to operate.
- Automatically save the accumulated dose, will not be lost when power off, and can manually check the alarm record;
- The alarm threshold of dose rate and cumulative dose can be set arbitrarily;
- 4000 sets of alarm storage data;
- Over-threshold sound alarm, small dead time, high dose rate;
- It has a real-time clock function, which can display the year, month and day in real time, and the operation of the clock will not be affected by power failure.

Technical parameters

Item	Specification
Detector	3x3 inches plastic scintillator + metal GM tube
Energy response	20keV-7MeV (plastic scintillation detector), 60keV-3MeV (GM tube detector)
Detectable type	x, γ
Measuring range	Dose rate: 1nSv/h-100mSv/h; (optional 1nSv/h-5Sv/h)
Cumulative dose	0-9999mSv.
Display	3.5-inch color touch LCD display
Sensitivity	Sensitivity: >2000cps/(μSv/h) (scintillation detector), >2.0cps/(μSv/h) (GM tube) (137Cs)
Relative inherent error	≤±10% (137Cs, 100 μ Sv/h);
The response time	5ms.
Operating environment	temperature -25℃～+50℃, relative humidity (at 40℃)≤95%.
Power supply	7.4V rechargeable lithium battery, real-time detection of battery voltage, and the battery icon flashes to remind when the voltage is low
Shell	All aluminum alloy structure, the overall structure is strong and durable;
Weight	about 4Kg (without battery)
Dimensions	host 80×120×40mm, detector φ80×335mm (without bracket).

7. DA-800G Portable X-ray and Gamma Radiation Survey Meter

Product introduction

DA-800G X-ray and Gamma Radiation Survey Meter is a portable x and gamma radiation detection instrument used to monitor x and gamma rays in radioactive workplaces. It uses highly sensitive GM tubes as detectors with fast response. The x-γ radiation meter has a wide dose rate measurement range, and can accurately measure high-energy and low-energy x and γ-rays, and has good energy response characteristics. x-γ radiation meter is widely used in medical treatment, disease control, environmental protection, metallurgy, petroleum, chemical industry, radiation laboratory, commodity inspection, industrial flaw detection, radiation processing, mining and other occasions that require radiation environment and radiation protection testing.

Features

- The high-speed embedded microprocessor is selected to ensure the real-time performance of monitoring data and status;
- The handle of the main unit is detachable to meet the needs of changing handles in different measurement environments;
- It adopts a 3.5-inch color touch LCD display and a full Chinese operation interface, which is easy to use and easy to operate.
- Automatically save the accumulated dose, will not be lost when power off, and can manually check the alarm record;
- Alarm thresholds for dose rate and cumulative dose can be set;
- 4000 sets of alarm storage data;
- Over-threshold sound alarm, small dead time, high dose rate;
- It has a real-time clock function, which can display the year, month and day in real time, and the operation of the clock will not be affected by power failure.

Technical parameters

Item	Specification
Detector	Metal GM counter tube
Energy response	50Kev～5Mev, response variation is less than ±20%
Detectable type	x, gamma and hard beta rays
Measuring range	Dose rate: 0.05 μ Sv/h ～ 100mSv/h; (optional 0.1 μ Sv/h ～ 5Sv/h) Cumulative dose: 0-9999mSv.
Display	3.5-inch color touch LCD display
Sensitivity	1μSv/h>1.5CPS.

Relative inherent error	≤±10% (137Cs, 200 μ Sv/h);
Response time	1S (after algorithm processing).
Operating environment	temperature -10℃～+50℃, relative humidity (at 40℃)≤95%.
Power supply	7.4V rechargeable lithium battery, real-time detection of battery voltage, and the battery icon flashes to remind when the voltage is low
Shell	aluminum alloy structure, the overall structure is strong and durable;
Weight	1.30Kg (without batteries)
Dimensions	420×180×88(mm).

8. DA-800H Environmental X, γ Radiation Dose Rate Meter

Product introduction

DA-800H environmental grade X and γ radiation dose rate meter adopts plastic scintillator detector, which has the characteristics of high sensitivity and high range, and can accurately measure γ-rays and X-rays. It uses a high-speed microprocessor and a 3.5-inch color touch LCD display to make the operation easier. Widely used in medical treatment, disease control, environmental protection, metallurgy, petroleum, chemical industry, radioactive laboratory, industrial flaw detection, radiation processing, mining and other X, gamma radiation monitoring and inspection. The instrument fully complies with the sensitivity measurement lower limit and range requirements of JJG521-2006 "χ-γ Radiation Air Kerma (Absorbed Dose) Rate Meter for Environmental Monitoring"; It can be used as an environmental grade X and gamma dose rate meter, and can also be used as a protection grade X and gamma radiation meter.

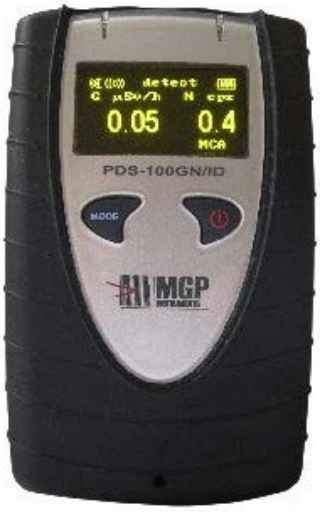
Features

- The high-speed embedded microprocessor is selected to ensure the real-time performance of monitoring data and status;
- Fast X-exposure pulses can be detected
- It adopts a 3.5-inch color touch LCD display and a full Chinese operation interface, which is easy to use and easy to operate.
- Automatically save the accumulated dose, will not be lost when power off, and can manually check the alarm record;
- The alarm threshold of dose rate and cumulative dose can be set arbitrarily;
- 4000 sets of alarm storage data;
- Over-threshold sound alarm, small dead time, high dose rate;
- It has a real-time clock function, which can display the year, month and day in real time, and the operation of the clock will not be affected by power failure.

Technical parameters

Item	Specification
Detector	2x3 inch plastic scintillator
Energy response	20keV-7MeV
Detectable type	x, γ
Measuring range	Dose rate: 10nSv/h-10mSv/h Cumulative dose: 0-9999mSv.
Display	3.5-inch color touch LCD display
Sensitivity	Sensitivity: >1300cps/(μSv/h)
Relative inherent error	≤±10% (137Cs, 100μSv/h);
The response time	30ms.
Operating environment	temperature -25℃～+50℃, relative humidity (at 40℃)≤95%.
Power supply	7.4V rechargeable lithium battery, real-time detection of battery voltage, and the battery icon flashes to remind when the voltage is low
Shell	All aluminum alloy structure, the overall structure is strong and durable;
Weight	about 1.6Kg (without battery);
Dimensions	host 80×120×40mm, detector φ58×328mm (without bracket).

9. PDS-100G/GN (ID) radiation survey instrument



PDSmass 能谱图屏幕

谱分析模式屏幕

Product introduction

PDS-100G/GN radiation survey instrument is used to detect γ and γ-neutron radiation respectively. This pocket-sized sensitive instrument is mainly used to detect, locate and quantify radioactive materials in a very short time, and is suitable for emergency response, law enforcement, customs inspection, nuclear facilities and other fields. PDS-100G/GN ID is an improved product, which adds the functions of energy spectrum acquisition and nuclide identification.

Technical parameters

- Detectors: CsI(Tl)(γ); LiI(Eu) (neutrons)
- Neutron alarm: 20000n/s at 10cm, <2 seconds
- Energy range: γ: >35keV; neutron 0.025eV~14MeV

- Power: 100 hours on two AA batteries (Alkaline, LiFeS2 or NiMH)
- Gamma dose rate: 0.01μSv/h~100μSv/h
- Environmental conditions: -20°C~50°C, <95%
- Count rate: 0~99999cps (γ), 0~999cps (neutron)
- Size: 123mm×74mm×43mm
- γ alarm: Add 0.5μSv/h to the background of 0.1μSv/h, and the alarm time is less than 1 second
- Weight: 300g.

Features

- Small size, strong, waterproof, anti-electromagnetic interference;
- High sensitivity and fast response time;
- Sound, light and vibration alarm;
- Independent gamma and neutron measurement channels;
- Embedded nuclide identification, automatic and manual operation modes; (ID: nuclide identification version);
- Detect, Search and Identify modes (version with nuclide identification only);
- Easy-to-read display interface (OLED);
- Radioactive source hazard alarm;
- Spectra, more than 1000 events (ID improved);
- Spectrum storage capacity: 100 512 channels or 50 1024 channels (ID: nuclide identification version);
- Wireless communication interface, bluetooth and infrared communication;
- Designed to meet/exceed ITRAP and ANSI standards.

Version

PDS-100G: Gamma version
PDS-100GN: Gamma and Neutron version PDS-100G ID: Gamma version (nuclide identification function)
PDS-100GN ID: gamma and neutron version (nuclide identification function)

探测模式屏幕

搜寻模式屏幕

10. UltraRadiac Radiation Surveyor

Product introduction

UltraRadiac is specially designed for the harsh environment faced by emergency personnel. It is small in size, light in weight, durable and waterproof, and has strong anti-interference ability, which can meet the radiation monitoring needs of firefighters and other emergency personnel. UltraRadiac has a large-area backlit LCD, which can display the dose rate and cumulative dose under any light, and can set the warning value and alarm value. The warning value is generally set slightly higher than the natural background level to warn the wearer of potential radiation hazards and alarm Values set higher radiation levels, indicating that the wearer is facing

Radiation hazard, take countermeasures immediately. In addition, UltraRadiac also has a unique "dwell time" function, which tells the wearer how long it can stay at the current dose rate, and will alarm when the dose reaches the limit.

Features

- A personal radiation monitor that is dustproof and waterproof to meet the needs of emergency response;
- Measure and display radiation dose rate and cumulative dose;
- Provide early warning and alarm levels, with sound, light and vibration alarms;
- Using "Time-to-out" patented technology, it has a wide dynamic range.

11. 452 Radiation Inspection Instrument

Product introduction

452 is a new type of powerful radiation inspection instrument, which can measure a, β, γ, X and other rays. It is mainly used for measuring the scattered rays of X-ray equipment and linear accelerators, inspecting radioactive sources, and measuring nuclear medicine surfaces. pollute.

The 452 adopts new design and technology, and its biggest feature is ease of use and wide application. The instrument's detection technology combines semiconductor and Geiger-Miller detectors. Equipped with two interchangeable covers (depending on the model) to measure air kerma, ambient dose equivalent and surface contamination counts, respectively. This design enables it to cover a large energy response range, while also ensuring high linearity, high sensitivity and short response time. Using the same device for different measurement situations reduces expense and administrative burden, improves efficiency and saves time.
The 452 is easy to operate and can measure within seconds of turning on the instrument.

452选型指南

452有三种子型号，分别对应测量空气比释动能，环境剂量当量和计数。

	452	452 Air Kerma	452 Ambient
R/Gy/rad	√	√	
Sv/rem	√		√
Cps/cpm	√		

12. AT1121/1123 Portable X, Gamma Ray Dose Rate Meter

Product introduction

AT1121 and AT1123 use high-sensitivity scintillator detectors, which have a wide energy range and dose range, can detect pulse and continuous X, γ-rays, and can also search for the position of radioactive sources, and can automatically record the maximum measurement in any mode value.

Technical Parameters

- Detector: 30 x 15 mm diameter plastic scintillator

- Energy range: 0.015~10 MeV
- Measuring range of dose equivalent: 50 nSv~10 Sv
- Short-term radiation dose rate: 5 μSv/h~10 Sv/h
- Continuous radiation dose rate: 50 nSv/h~10 Sv/h
- Pulse radiation: 0.1μSv/h~10Sv/h (AT1123)
- Response time: 10ns (pulse), 30ms (short time)
- Calibration error: ±5%
- Warm-up time: ≤2 minutes
- Temperature condition: -30℃~40℃(AT1121/1123)
- Humidity condition: <98%, IP54
- Power supply: built-in battery 6V
- Size: 233mm×85mm×67mm

13. FHT40 NBR high sensitivity environmental grade x, gamma dose rate meter

Product introduction

FHT40 NBR (FH40G+ FHZ672E-10) adopts a large-volume plastic scintillator detector and a unique calculation method, which can respond quickly to small increments of radiation levels, has an extremely low detection limit, and is suitable for environmental levels x, γ Dose rate measurement can detect hidden radioactive sources and confirm artificial radioactive sources at the same time. Red/green flashing through the NBR probe reacts extremely quickly when the ambient gamma dose rate is abnormal.

Technical Parameters

- Probe type: 90×90mm plastic scintillator
- Sensitivity: 2000s-1/μSv/h
- Energy range: 48keV~6MeV
- Host power supply: >250h (AA/LR6 battery); >500h (lithium battery).
- Dose range: 1nSv~100μSv
- Environmental conditions: -30℃~55℃, 10%＜RH＜90%
- Linearity: ≤±10%
- Protection class: IP67
- Lowest detection limit: 1nSv/h
- Host size: 195mm×73mm×42mm
- Artificial gamma nuclide detection limit: <20% of natural background dose rate
- Overall weight: <5kg

Ion chamber survey meter

1. Babyline 81 Ion chamber survey meter

Product introduction

Babyline 81 Ion chamber survey meter is used to measure the dose rate of incident and scattered photons (8keV~10MeV), as well as the absorbed dose produced by photons entering human tissue (0.007 g/cm2 or 0.3 g/cm2), and has Dose rate meter/dosimeter with linear response.

The system consists of a high gain current amplifier and processing electronics with a rechargeable or non-rechargeable battery inside the instrument handle. Several switches of the instrument are used to check the zeroing of the galvanometer and to select the measurement range (six dose rate ranges and five cumulative dose ranges). The large pointer allows the user to easily read the absorbed dose rate. The Babyline 81 has become the reference dose rate meter in nuclear facilities and laboratories worldwide.

Technical Parameters

- Detector: Air ionization chamber (515±10cm3)

- Dose rate range: 6, 1000, 100, 10μGy/h; 1000, 100, 10mGy/h
- Dose range: 5, 1000, 100, 10μGy/h; 100, 10mGy/h
- Responsive range: flat within 8keV~2MeV
- Angular response (within 130°cone angle): ±5%(60Co,1.25MeV); ±30%(241Am,60keV);±40%(71Ge,10keV)
- Accuracy: better than 10% (10μGy/h); better than 7% (100μGy/h~1000mGy/h) better than 10% (10μGy~100mGy)
- Sensitivity: 4.8×10-12A/mGy/h (background level＜1μGy/h)
- Response time: <20s (100,10μGy/h), higher dose rate <5s
- Power supply: 4 1.5V alkaline batteries (R14 typeC), battery life about 60h
- Environmental conditions: -10°C~50°C, IP64
- Size: 290mm×236mm×115mm
- Weight: 1.65kg

2. XH-3408 Portable χ, γ Ray Dosimeter

Product introduction

XH-3408 Portable χ and γ dosimeter has the characteristics of excellent energy response, light weight, low power consumption, wide measuring range and simple use. At a slightly higher radiation level (0.3μSv/h) than the natural background, the instrument still has good measurement repeatability, stability, and accuracy, and its performance indicators rank among the first-class in the world. It has the functions of measuring dose rate, dose, peak dose rate value, etc. It is especially suitable for X-ray medical machines, radioisotope applications and atomic energy industry departments to measure random and continuous radiation.

After calibration, it can also measure the absorbed dose of beta rays and detect high-energy alpha particles. It is an ideal testing instrument for nuclear power plants, nuclear medicine, radiation detection and radiation treatment facilities, health and disease control and other industries.

Instrument features

1. Strict manufacturing process and unique digital processing technology ensure that the instrument leakage is <0.01μSv/h, ensuring that the instrument's lower measurement limit reaches 0.1μSv/h and

the measurement range reaches six orders of magnitude.
2. Large-screen digital LCD display, intuitive, clear and accurate.
3. Automatic measurement of the full range, no manual range conversion required, simple and convenient to use.
4. The unique freezing mode peak measurement function can capture and display the maximum dose value since the power is turned on, especially
It is suitable for monitoring the dose field generated by equipment with short startup time such as medical X-ray machines.
5. Can store 100 groups of dose rate values and dose values.
6. The instrument has sound alarm and communication functions, and data can be downloaded through special software.

Main parameters

- Measuring range: dose rate range: 0.1 μSv/h～100mSv/h
- Dose range: 0.01 μSv～999mSv
- Peak dose rate: 0.1 μSv/h～100mSv/h
- Accuracy: ≤±10%
- Detection of radiation: continuous and pulsed X, gamma rays
- Energy response: 6Kev～15Kev ±30%

15Kev～100Kev ±10%
100Kev～10Mev ±10%

- Angular response: within 2π solid angle response variation ±10%
- Power supply: working voltage: DC12V-15V
- Working current: ≤3mA • Environmental response: Temperature: -20℃～+50℃
- Relative humidity: ≤ 95%+3 (40±2° C) • Preheating time: ≤2min
- Weight: about 1.6Kg (including battery)

3. 451P Pressurized hand-held Ion Chamber Survey Meter

Product introduction

The Model 451P Pressurized Ion Chamber Survey Meter is a hand-held, battery-operated instrument designed for use in harsh and normal environments.
The Model 451P Surveyor features a pressurized ionization chamber with increased sensitivity and improved energy response for measuring gamma and X-ray radiation. The Model 451P gauge incorporates microprocessor and liquid crystal display technology and features a comfortable-grip

handle with a large diameter padded grip designed to reduce fatigue during prolonged use.

Technical Parameters

- Detector: 300cc high pressure air ionization chamber
- Detection radiation: Beta > 1 MeV, Gamma & X > 25 KeV
- Measuring range: 0-50mSv/h
- Accuracy: 10% within 10% - 100% of full scale indication on any range
- Control buttons: ON/OFF and MODE two buttons
- Environmental requirements: temperature range from -20°C to +50°C,

Relative humidity from 0 to 100%, negligible geotropism

- Power: two 9V alkaline batteries, 200 hours of operation
- Display: LCD display of analog/digital signals with backlight
- Dimensions: 100mm × 200mm × 150mm
- Weight: 1.11kg

4. 451B ionization chamber inspection instrument

Product introduction

The 451B Ionization Chamber Surveyor is a battery-operated, handheld device that uses CMOS and LCD technology to measure alpha radiation above 4 MeV, beta radiation above 100 keV, and gamma and radiation above 7 keV. X-rays.

Technical Parameters

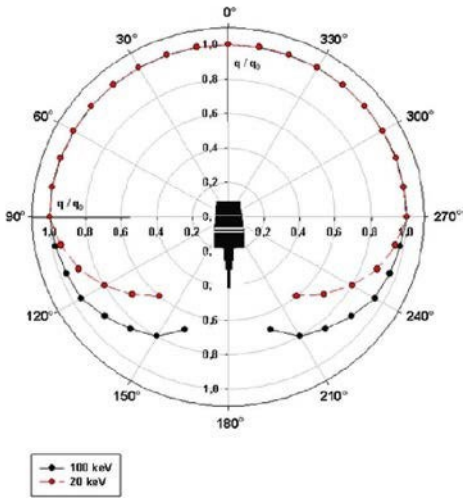
- Detection object: beta rays greater than 100 keV, gamma rays greater than 7 keV
- Working range: 0～500 mR/h or 0～5 mSv/h
- Ionization chamber: 349 cc volume air ionization chamber
- Ionization chamber walls: 246 mg/cm2 thick phenolic resin
- Ionization chamber window: 6.6 mg/cm2 Mylar film, protected by metal mesh,

46 cm2 detection area beta filter 440 mg/cm2

- Power Requirements: Two 9V alkaline batteries, 200 hours of operation
- Warm-up time: 1 minute
- Temperature range: -20°C to 70°C (-4°F to 158°F)
- Relative Humidity: 0% ~ 100%, @ 60℃

- Geotropism: less than 1%
- Dimensions: 10cm x 20cm x 15cm (4 in x 8 in x 6 in)(WxDxH)
- Weight: 1.11 kg (2.5 lb)

5. OD-02Hx Ion chamber radiation meter



Product introduction

- Measure x, gamma rays with energy from 1KeV to 15MeV (wear a shielding cap to above 15MeV) and beta rays from 60KeV-2MeV
- Can measure soft rays with energy as low as 6KeV
- Scalable to over 15MeV with acrylic plastic shield
- Wide dynamic range, 6 levels of dose rate measurement, 3 levels of cumulative dose
- Automatic zero return, automatic range change
- Advanced ionization chamber technology
- Excellent angular and energy response
- Measures cumulative dose from pulsed radiation fields
- Can compensate possible air pressure and temperature effects
- The detector can be separated from the host, the longest distance is 100m
- BNC connection to output data
- Easy-to-read LCD with backlight

Technical Parameters

- Detector: 600cm3 air equivalent ionization chamber
- Measured values: dose equivalent Hx; dose equivalent rate dHx / dt
- Dose rate range: 0～2000mSv/h, divided into 6 levels
- Cumulative dose range: up to 2mSv, divided into 3 levels
- Energy Range:

X, γ : 1keV～15MeV, can be expanded to 15MeV with acrylic resin shielding; β : 60KeV-2MeV.
- Shield cap: removable
- Intrinsic Error: ±10% (at 20 ranges); ±5% (at 200 and 2000 ranges).
- Linearity: ±5%
- Saturation Difference: - 5% @ 2000 mSv/h
- Alarm Threshold: 30%, 60% or 90% of final value adjustable
- Alarm: over-threshold alarm, low voltage alarm
- Interface: USB
- Data cable length: standard 0.7m, maximum 100m
- Power: 4 x LR batteries 6.2 volts max; optional 6 volt external power supply.
- Power consumption: Approx. 30 mA @ 6V
- Temperature and humidity: -10°C~45°C (operating)/-25°C~55°C (storage); 80%RH
- Usage time: about 100 hours
- Host size: 250mm×110mm×42mm
- Detector size: 112mm×260mm
- Weight: 1.5kg (including detector)

Portable Nuclear Identifier

1. DA-01A Portable Gamma Spectrometer

Product introduction

The DA-01A portable gamma spectrometer can be used for nuclide identification and contamination analysis at the site of security inspection, anti-terrorism, and nuclear accidents. At the same time, it can measure the radiation dose of gamma and neutrons (optional). Identify artificial and natural isotopes.

Features

- The instrument is designed in one piece.
- The instrument is fully digital, integrating detector, forming amplifier, multi-channel analyzer, power supply and touch screen, with low power consumption, automatic peak stabilization, simple operation and portability.
- According to customer needs, optional neutron detectors and energy compensating GM can be added

tube etc.
- Can be customized and developed on demand

Application range

• Nuclear power plants • Search for radioactive sources • Reprocessing of radioactive materials during decommissioning of nuclear facilities
• Nuclear regulation and radiation protection of "source-related" enterprises and institutions • Mineral resource exploration • Construction material monitoring

Technical parameters

Item	Specification
Detector	2 inches NaI(Tl)
M C A	≥1024 channel ADC, 16-bit channel count depth
Energy range	25keV-3MeV
Energy resolution	≤7.0% (for 137Cs, @662keV)
Dose rate range	10nSv/h～100 μ Sv/h
Overload characteristics	When the gamma radiation exceeds the dose rate range, the overload indication will be displayed, and there will be sound and light alarm indications
The maximum counting rate	100kcps, which is suitable for applications in places with high gamma intensity
Display	4.3-inch industrial touch screen, intuitive interface, easy operation
Spectrum analysis function	Energy spectrum smoothing, automatic peak finding, automatic nuclide identification
Single radionuclide can be identified	235U, 125I, 131I, 99mTc, 18F, 137Cs, 57Co, 60Co, 133Ba, 241Am, 152Eu, 238U, 232Th, 40K, 226Ra, 192Ir and other four types of nuclides (nuclear materials, medical isotopes, industrial isotopes, natural isotopes)
Mixed nuclides	Can identify mixed radionuclides
Data export	Data can be exported via USB, using client software for subsequent offline analysis, storage, editing and printing
Energy Spectrum Storage	128M memory, can store about 30,000 1024 energy spectrum images
Battery	Lithium battery, the continuous use time is not less than 8 hours
Working temperature	-0℃-40℃
Weight	about 3.2kg
Size	275×120×185mm

2. DA-01B Portable Gamma Spectrometer

Product introduction

The DA-01B portable gamma spectrometer can be used for nuclide identification and contamination analysis at the site of security inspection, anti-terrorism, and nuclear accidents. At the same time, it can measure the radiation dose of gamma and neutrons (optional). Identify artificial and natural isotopes.

Features

- The instrument is designed in one piece.
- Flexible selection of different detectors or built-in multiple detectors, such as simultaneous selection of gamma detectors and neutron detectors, simultaneous measurement of gamma energy spectrum, gamma dose, and neutron dose.
- The instrument is fully digital, integrating detector, forming amplifier, multi-channel analyzer, power supply and touch screen, with low power consumption, automatic peak stabilization, simple operation and portability.
- The standard configuration of the instrument is a one-inch lanthanum bromide detector (LaBr3) detector
- According to the needs of customers, neutron detectors can be added, or energy-compensating GM tubes can be selected to adapt to higher dose rate measurement.
- Can be customized and developed on demand

Technical parameters

Item	Specification
Detector	One inch lanthanum bromide (other sizes available);
M C A	≥1024-channel ADC (can be upgraded to 4096-channel), 4G channel counting depth
Energy range	30keV-3MeV
Energy resolution	≤3.0% (for 137Cs, @662keV);
Dose rate range	10nSv/h～1Sv/h (including GM tube option);
Overload characteristics	When the gamma radiation exceeds the dose rate range, the overload indicator will be displayed, and there will be sound and light alarm indicators;
Counting rate	≥100kcps; (can be upgraded to ≥500kcps, suitable for places with high γ intensity).

Display	4.3-inch industrial touch screen, intuitive interface, easy to operate.
Spectrum analysis function	Energy spectrum smoothing, automatic peak finding, automatic nuclide identification
Single radionuclide can be identified	235U, 125I, 131I, 99mTc, 18F, 137Cs, 57Co, 60Co, 133Ba, 241Am, 152Eu, 238U, 232Th, 40K, 226Ra, 192Ir and other four types of nuclides (nuclear materials, medical isotopes, industrial isotopes, natural isotopes);
Mixed radionuclides	Can identify mixed radionuclides
Data export	Data can be exported via USB, using client software for subsequent offline analysis, storage, editing, and printing
Storage function	The instrument can store no less than 2000 energy spectra for subsequent off-line analysis.
Battery	Lithium battery, the continuous use time is not less than 8 hours.
Working temperature	-20℃-50℃
Size	260mm*125mm*225mm
Weight	about 2.85kg
Options	The instrument can have two built-in energy compensation GM tubes to achieve a wide range of dose rate measurement range

3. GIHMM Handheld Gamma Spectrometer GSP

Product introduction

• GIHMM Handheld ã Spectrometer GSP is a versatile handheld device for in situ measurements for the detection and identification of radionuclides. This high spirit

Min's scintillation detectors are developed according to a modular concept to ensure maximum flexibility when used in different applications.

• The radionuclide identification device consists of a high sensitivity scintillation NaI(Tl) detector (GSP02), an 8,4 inch Windows 10 Enterprise tablet, a Geiger-Muller counter extension, GSPView user software

and Sodigam high precision analysis software (Includes suitcase).

• An innovative display board solution (mounting or removing the tablet in seconds) allows for one- or two-handed operation and more optional equipment, making it a universal detector unit. Communication between probe and tablet can be via cable and/or Bluetooth (up to a distance of 15 m), with an additional power supply unit or AA batteries for at least 8 hours of uninterrupted use (including tablet).

• The handle has a threaded hole for a quick release plate to use with any commercially available tripod or monopod (eg for a camera).

• The software operates in Live View mode, indicating the current dose rate value and spectral information within the measurement cycle as well as 5 ROIs (Regions of Interest), it provides a quick mode for CPS and "Environmental Dose Equivalent Rate" [H*10] , a fast mode for isotope identification, and an advanced mode for further high-precision analysis of energy spectra.

Technical Parameters

• Detector: 55x55mmNaI(Tl) or 38x38mmLaBr3(Ce) SGC
• Measuring range: 10 nSv/h - 50μSv/h
• Energy range: 33 keV - 2 MeV
• Energy resolution: < 7% or < 3.5%
• Multi-channel analysis: 1024 channels
• Weight: 3kg

4. RADEAGLE Handheld Radioisotope Identifier

c

Product introduction

• RADEAGLE combines large-area, high-sensitivity crystals with intelligent algorithms for fast, accurate, simultaneous detection and identification of four or more isotopes, typically within 30 seconds.

• RADEAGLE is ANSI 42.34 compliant and features an intuitive, clear, easy-to-use user interface and a variety of alerting functions.

• Supports a wide range of scintillation crystals, including NaI(Tl), CeBr3, and LaBr3(Ce), providing optimized instrument performance in a variety of applications.

• RADEAGLE incorporates our proven technology in detection and identification algorithms and advanced hardware, electrical self-learning and software systems, making it the first choice for handheld RIIDs.

5. RADEAGLET Lightweight Handheld Radioisotope Identification Device

Product introduction

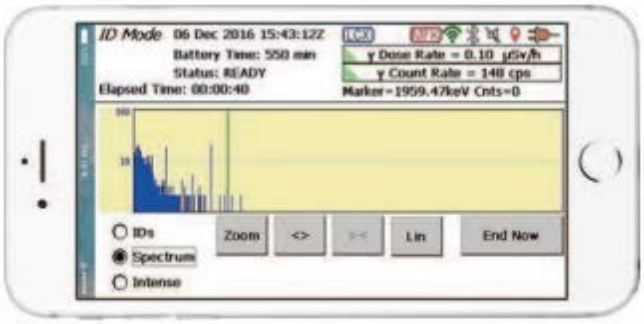
• RADEAGLET combines a 2-inch diameter and high-sensitivity crystal with a proven smart algorithm for fast, accurate, simultaneous detection and identification of up to six isotopes, typically within 30 seconds.
• RADEAGLET weighs only 900 grams, the lightest HH-RIID in the world!
• RADEAGLET exhibits excellent performance even in complex masking or camouflage scenarios.
• RADEAGLET is ANSI 42.34 compliant and has an intuitive, clear, easy-to-navigate user-friendly interface and various alarm functions.
• Utilizing our proven technology in detection and identification algorithms and advanced hardware, electrical and software systems, RADEAGLET is the handheld RIID of choice.

6. RADEAGLET-R Rugged, lightweight, handheld radionuclide identification device

Product introduction

• The rugged RADEAGLET-R leverages the successful design and performance of the RADEAGLE/RADEAGLET.
• This product is designed specifically for the harsh operating environments that military users, first responders, or border patrol personnel may encounter.
• The design of the instrument was based on the user's need for a working instrument capable of operating in extreme temperatures and withstanding a drop of greater than 2 meters to concrete.
• The RADEAGLET-R uses the same proven software, the same nuclide ID algorithm, the same digital electronics, and the same proven He-3 neutron detection technology as the RADEAGLE/RADEAGLET.

7. Detective X Electric Refrigeration Portable High Purity Germanium Gamma Spectrometer



Product introduction

How can the "gold standard" of nuclear threat detection and identification be improved? ORTEC's new Detective X high-purity germanium (HPGe) "RIID" achieves just that through a combination of improved identification methods, improved modes of operation, better interconnect capabilities, and longer battery life.

Detection and identification functions

• Larger HPGe crystal, three times more efficient than Micro-Detective-HX.
• Improved algorithms that increase the probability of detection.
• Nuclide library of over 175 radionuclides including new radiopharmaceuticals.
• Better long-distance detection and identification capabilities.

Operational improvement

• Rugged instrument designed for harsh environments (IP65 compliant).
• Significant weight reduction (approximately half of Detective-EX-100T).
• Doubles battery life and supports hot swapping.
• New Li6/ZnS Neutron Detector Module (NDM), 3He free.
• Larger display for easy reading in sunlight.

Quality improvement

• New Stirling cooler with greater cooling capacity and longer mean time between failures.

- Lighter and stronger with an extremely rigid polycarbonate shell.
- Enhanced connectivity options
- System includes built-in Ethernet connection (RJ45).
- Plug and play with USB connection to computer.
- USB stick can store > 100,000 spectra.
- Mobile phone interconnection and instrument control support iOS, Android and Windows platforms.
- WiFi and Bluetooth come standard with the Detective X.

Technical Parameters

- Nuclide identification: P-type high-purity germanium (HPGe) crystal, coaxial structure. Crystal nominal size 65 mm diameter x 50 mm long.
- Cryostats and Freezers: "Ultra High Vacuum" cryostats, and highly reliable low power Stirling coolers. The cryostat is designed so that the user can turn the Detective X off and back on at any time without having to wait for a full rewarm cycle (complete rewarming before cooling down). This feature greatly increases system availability during measurement campaigns.
- Display: 4.3-inch WQVGA (480 x 272 pixels) sunlight-readable, touch-sensitive, and operable with a finger or stylus.
- Data Processor: FREESCALE I.MX535, operating at 1 GHz.
- Maximum overall dimensions: (including handle and Ge detector end cap) 15.5"L x 6.25"W x 8.25"H (39.5 cm L x 16 cm W x 21 cm H).
- Weight: 15 lbs (γ only). 17 lbs (gamma/neutron).

8. Trans-SPEC-N Portable High Purity Germanium Gamma Spectrometer

Product introduction

Gamma Spectroscopy Measurements of High Purity Germanium with a Portable In Situ Isotope Spectroscopy System with a Neutron Detector.

The Trans-SPEC-N is an N-type HPGe gamma-ray spectrometer that is easy to operate and fits almost any need. It requires no liquid nitrogen and no long cables. It integrates almost all functions and is ready to use.

Technical Parameters

- No Liquid Nitrogen Requirement - Miniature, high-reliability, "run-forever" Stirling cycle refrigerator requires no liquid nitrogen; detector elements are housed in a high-reliability, low-loss, all-metal-sealed

cryostat.

• Resistant to neutron damage - N-type HPGe detector.

• Large energy range - 40 keV to 11 MeV energy range for higher energy prompt gamma in neutron interactions.

• High Sensitivity - Large volume (>50% relative efficiency) HPGe detector.

• High Stability - Digital electronics provide a solution for tricky analyzes under harsh conditions.

• Bright and clear - VGA resolution display with touch sensitive operator panel.

• All-in-one integrated design - rugged and compact, requires no interconnects - easy to install and use.

• Smart - nuclide identification and activity calculation for nine regions of interest (ROI).

• Reliable connectivity - USB 2.0 and wireless 802.11 communications, built-in GPS and Secure Digital Input/Output (SDIO) spectrum storage.

• Flexible - Can use a variety of power sources including internal battery, auxiliary external battery, car battery (any 12 V DC), and line power; switching is automatic.

9. IDM-200-P electric refrigeration modular high-purity germanium spectrometer

Product introduction

The modular design and excellent energy resolution of the HPGe detectors provide integrators with significant advantages. The IDM-200-P integrates this capability into a unique, reliable and convenient package design.

• Integrated solution IDM-200-P can be easily adapted to other screening techniques such as NII X X-ray, EDS and radiation portal monitors.

• The COTS IDM-200-P is a commercial off-the-shelf solution that reduces cost, is more flexible for many applications, and shortens the design-to-market cycle.

• Proximity to X-ray machines Field tests have demonstrated that the effect of scattered X-rays on the background of the IDM-200-P HPGe detector has little effect on its ability to identify radionuclides.

• Detector energy resolution Germanium detectors have the best resolution of any commercially available gamma-ray detector. High resolution is advantageous in applications that allow for increased sensitivity and more accurate identification of radionuclides at all energies.

Neutron Survey Meter

1. DA-800N Neutron Dose Survey Meter

Product introduction

DA-800N Neutron Dose Survey Meter measuring instrument adopts highly sensitive 3He tube as detector, which has high neutron measurement sensitivity, good gamma suppression performance, small size, light weight, intelligent and easy to operate Convenience and other advantages. The instrument is suitable for neutron radiation detection occasions such as environmental protection, chemical industry, petroleum, medical treatment, import and export commodity inspection, accelerator, neutron source and other security inspection, border control, customs inspection and so on.

Features

- neutron dose rate, cumulative neutron dose;
- With USB data interface.
- 4-inch color touch LCD display;
- Automatically save the accumulated dose, will not be lost when power off, and can manually check the alarm record;
- The alarm threshold of dose rate and cumulative dose can be set arbitrarily;
- 40000 sets of alarm storage data;
- Over-threshold sound alarm, small dead time, high dose rate;
- It has a real-time clock function, which can display the year, month and day in real time, and the operation of the clock will not be affected by power failure.

Technical parameters

Item	Specification
Detector	3He proportional counter tube (optional: metal GM tube)
Energy response	Neutron 0.025eV～16MeV (3He body detector), 60keV-3MeV (GM tube detector)
Detectable type	neutron; Gamma needs optional detector
Measuring range Dose rate	0.1uSv/h-100mSv/h Cumulative dose: 0-9999mSv.
Display	4-inch color touch LCD display

Sensitivity	Sensitivity: >1.5cps/(μSv/h) (3He detector); >2.0cps/(μSv/h) (GM tube) (137Cs).
Relative inherent error	≤±15%;
The response time	1s.
Operating environment	temperature -25℃～+50℃, relative humidity (at 40℃)≤95%.
Power supply	8.4V rechargeable lithium battery
Shell	material Body aluminum alloy structure; moderator material: polyethylene ball.
Weight	About 6Kg;
Dimensions	351×251×246 mm.

2. LB134N Neutron Dose Rate Meter

Product introduction

The system probe adopts the patented He-3 proportional counter tube. The counter tube is placed in the center of the moderator sphere with a diameter of 250mm. The geometric position of the counter tube is calculated according to the Monte Carlo simulation program (MCNP) and has obtained a patent. The instrument has a fairly high sensitivity of about 3 counts per nSv, making it ideal for measurements in very weak neutron radiation fields. It can be used as a portable dosimeter or as a fixed dose monitor. The monoenergetic neutron fluence response experiment was carried out at the Braunschweig Institute for Physics in Germany.

Technical Parameters

- System host: LB134
- Display: high-contrast liquid crystal dot matrix display, resolution 32 x 84 pixels; with backlight, 4-digit display of measurement results, automatic range expansion
- Operation: 1 switch key, 4 operation keys
- Probe connection: 8-pin terminal socket Fischer 04, spiral cable LB 75576 (standard)
- Temperature range: -15°C - +50°C
- Dimensions: 145 mm (H) x 170 mm (W) x 45 mm (D)
- Weight: about 0. 8kg (including battery)
- Power: 3 IEC-R14 or 3 rechargeable batteries Varta NiCd #5014
- Battery life: >150 hours with R14

LB6411 Neutron Detector

- Measured quantity: dose equivalent around neutrons H*(10)

- Measuring range: 30 nSv/h ~ 100 mSv/h
- Neutron energy range: thermal neutron ~ 20 MeV
- Calibration source: Cf-252 naked neutron source
- Flux response: 1.09 cm2
- Scale factor: 1.27μSv/h/cps
- Response function: fluence and energy response functions can be queried in the manual.
- Energy Dependency: ±30% from 50 keV to 10 MeV
- Gamma sensitivity: reading less than 40μSv/h (10mSv/h Cs-137)
- Temperature range: -10℃~ 50℃
- Moderator ball diameter: 250mm

Laboratory equipment

Automatic Sample Changer

1. ASC-950-DP Automatic Sample Changer

Overview

The ASC-950-DP is a gasless high-speed counter designed primarily for the health physics user counting smears and air filters. The ASC-950-DP is an updated design which incorporates the same dependable mechanical platform with improvements which include:

- A built-in color touch screen interface
- Ability to export data directly to a computer using the PIC Link option
- Ability to program routines and QC charts on a PC running the included DUO Express software, then transfer the routines to the instrument using a direct-connect PIC Link cable

Features

- Automatic Sample Changer
- 2 in. (5.1 cm) Standard Planchet Diameter
- Standard 50 Sample Capacity (Optional 100 Sample)
- Gross Alpha/Beta Counter
- Dual Phosphor Scintillator Detector

- Gasless
- Lightweight
- Touch Screen Interface
- Easy Window Replacement
- Radon Compensation for Air Filters
- Available Cosmic Guard Detector Option
- Optional Lead Shielding to Reduce Background Levels

2. WPC-1050 Automatic sample change counter

Overview

The WPC-1050 is a general purpose low-background counting system, which is widely used for both health physics and radiochemistry applications. The WPC-1050 is an improved design of the previous WPC-9550 that incorporates the same dependable mechanical platform with improvements which include:

- A built-in color touch screen interface
- Ability to export data directly to a computer using the PIC Link option
- Ability to program routines and QC charts on a PC running the included DUO Express software, then transfer the routines to the instrument using a direct-connect PIC Link cable
- Optional gas flow conservation mode available

Features

- Automatic Sample Changer
- 2 in. (5.1 cm) Standard Planchet Diameter
- Low Background Counter
- Standard 50 Sample Capacity (Optional 100 Sample)
- Cosmic Guard Detector
- 2.25 in. (5.7 cm) Pancake Gas Flow Detector
- Easy Window Replacement
- Counting Gas Loss Detection
- Radon Compensation for Air Filters
- Touch Screen Interface
- Gas Conservation

3. IPC-650/IPC-650-HP Automatic Sample Change Counter

- Automatic sample change counter
- 5.1 cm (2 in.) standard diameter
- Low background counter
- Windowless or windowed hemispherical flow counters
- Standard model, 50 sample capacity
- Cosmic Ray Coincidence Detector
- Touch screen operation
- Air leak monitoring
- Radon stripping of air filter samples
- IPC-650: IPC-650-GFL Auto-Sampling Windowless Low Background Counter
- IPC-650-HP: IPC-650-GFW Autosample Low Background Counter

4. WPC-1150-GFW Auto Sample Changer

The WPC-1150-GFW-3.5 and WPC-1150-GFW-5 low background automatics are gas-flow proportional counters equipped with either a 3.5 in. (8.9 cm) or 5.0 in. (12.7 cm) detector configuration. Each counter incorporates a built-in color touch screen interface and is targeted toward Health Physics and environmental applications. They are ideal for large diameter air filters used in high-volume air samplers.

Features:

- 3.5 in. (8.9 cm) or 5.0 in. (12.7 cm) diameter pancake flow detector
- Anti-cosmic ray coincidence detector
- Low background system
- Customer selectable pallet sizes
- 50 sample capacity
- Touch screen interface
- Gas path real-time monitoring

Performance

Typical background		
Model	WPC-1150-3.5	WPC-1150-5
Alpha	0.3 cpm	0.4 cpm (0.5 cpm guaranteed value)
Beta	1.5 cpm	4 cpm (5 cpm guaranteed value)
Typical efficiency		
230Th	27%	
90Sr/90Y	63%	
99Tc	41%	
63Ni	20%	
Crosstalk		
Alpha-Beta	<0.1%	
Beta-Alpha	<0.1%	

Technical Parameters

Item	Specification
Detector	WPC-1150-GFW-3.5: 3.5 in. (8.9 cm) diameter, pie-shaped gas flow detector WPC-1150-GFW-5: 5 in. (12.7 cm) direct, pie-shaped gas flow detector
Detector window	Aluminum film, 80 μg/cm2
Coincidence detector	1 Large volume gas flow detector
Working gas	P-10, 60 cc/min, 10 psi
Gas-PRO	P-10 Gas Monitoring System
Shield	4 in. (10 cm) lead shield

Total Alpha Beta Meter

1. LLB100 Series Low Background α β Counter, Low Background Counters

(PIPS detectors)

Product Description

LLB100 Low Background a (alpha), β (beta) Counter is a high performance PIPS silicon detector based a β radioactivity analyzer that does not require a working gas and is designed for the measurement of a and β radioactivity in various environmental media or process samples. The system is designed for automatic sample exchange of up to 50 samples simultaneously.

Functional features

- Built-in screen, can be operated directly, or connected to a PC
- Automatic and manual switching, adapted to specific scenarios
- Easy to use, user-friendly interface
- Equipped with independent detectors and a parallel gas circuit system, each circuit s completely independent of the other and does not affect each other
- Data acquisition and analysis in one control software, automatic processing, storage and generation of experimental reports

Application areas

Nuclear power safety

- Nuclear material inspection monitoring
- Nuclear fuel production and reprocessing
- Radioactivity measurement in nuclear power plants
- Nuclear emergency radioactive contamination monitoring

Test analysis

- Radioactivity measurement of building materials
- Radioactivity measurement of food

Environmental and health assessment

- Radon thorium aerosol measurement
- Food inspection
- Human health

Resource exploration

- Uranium, oil, gas
- Groundwater resources
- Nuclear industry geological survey system

Higher education institutions and hospitals

- Nuclear experimental sites
- Nuclear physics laboratory
- Medicine and health
- Agricultural sciences

Technical Parameters

LLB100 Series Low Background α β Counter	
PIPS detectors	Area 2000mm2, depth 300um
Lead shielding thickness	4 in.
Sample changer	Automatic sample changer with 50 sample capacity as standard
Background	a:0.05cpm(3.0MeV~9.6MeV); β:0.6cpm(125keV~2.2MeV)
Typical efficiency (4r efficiency	241Am:39%,90Sr:29%
Volume	620Hx500Wx760D mm
Weight	Approx.350kg
Operating temperature	10°C~+40°C
Operating humidity	95%(40°C)
Power supply	220VAC; Equipped with UPS power supply, continuous work for 30 minutes after power failure
Power	Peak power less than 80W (instrument host)
External interface	RJ45, USB, VGA
Display method	7-inch touch industrial display, the screen can be extended through the VGA interface

2. MPC-9604 a/β four-way counting and measuring system

Product introduction

- Manual, four-detector sample counter

- 4" thick low background lead shield
- 2 inch standard sample pan diameter
- Low background counter
- Radon daughter compensation for air filters
- GasPro fail-safe gas protection and gas loss monitoring
- Four 2.25-inch disc pierced flow proportional detectors
- Completely independent sample measurements without mutual interference
- Modular design, expandable up to 48 channels

Technical parameters

Item	Specification
Sample Size	2" Diameter (5.1cm)
Detector Uniformity	Over 95% active area
Capacity	4 samples
Instrument crosstalk	a vs β <0.1%; β vs a <0.1%
Deep	1/8, 1/4 or 5/16 inches
Data export	VISTA 2000 software
Interface	computer
Counting mode	a only or first a and then β or a/β at the same time
plateau	Plateau slope<1.5%/100V; plateau length>1000Vβ: plateau slope<2.5%/100V; plateau length>200V
Power	110-240 V AC, 50-60 Hz <2 A @ 110 V AC, <1.0 A @ 240 V AC
Gas flow and pressure	Typically set to 60cc/min with a critical flow orifice; typically the regulator outlet pressure is 10psi.
Window	aluminized, 80 μg/cm2
Operating temperature range	10°C-40°C (50°F to 104°F)
Humidity	20 - 90% non-condensing
Shielded	4" (10.16cm) low background lead shielded
Specifications Dimensions	16"H x 32"W x 22"D (47cmH x 95.3cmW x 55.9cmD)
Weight	1200 lbs (544 kg), Shipping 1400 lbs (635 kg)

3. MPC-1000-GF Manual Counter

Product introduction

The MPC-1000-GFW and MPC-100-GFL single-channel manual-change low-background counters are the most versatile high-performance low-background counters available. These counters offer new labs one of the most cost-effective means of providing low-background alpha/beta measurement capability. It can be upgraded when the sample volume increases and the multi-detector system or automatic counting system is required to increase the measurement capability. MPC-100-GFL counter with windowless gas detector provides low energy Beta ray detection, alpha particle detection high detection efficiency. Each counter can run programs and QC controls developed on the DUO Express software, which can be transferred to the instrument via a PIC connection cable.

- 2 in. (5.1 cm) standard diameter
- Windowless or bedded hemispherical airflow detectors
- Cosmic Ray Coincidence Detector
- Gas leak detection
- Low background counter
- touch screen
- Gas shielding

4. MPC-900-DP Manual Single Sample Counter

Product introduction

The MPC-900-DP is a convenient, general-purpose "benchtop" counter with dual scintillator detectors, requires no working gas, and is easy to carry. An optional anti-coincidence guard detector can reduce background levels. DUO Express software allows users to perform data management and quality analysis through easy programming. Multiple devices can be used together for the convenience of users. This type of counter is ideal for standard health physics applications such as swab sample measurements, or air filter measurements.

- Dual scintillator detector
- Touchscreen controls
- Lightweight and portable
- 5.1 cm (2 in.) diameter
- Radon compensation function for air filter paper
- Optional scintillator anti-coincidence detector
- Optional lead shield for reduced background levels
- Includes PIC Link cable and two 5/16 inch sample holders

5. MPC-900-GF Manual Single Sample Counter

Product introduction

The MPC-900-GFW and MPC-900-GFL are convenient and versatile counter systems with hemispherical gas flow proportional counters for easy portability. These sample counters are ideal for standard health physics applications such as measurements on swabs, air filters, etc. They can also be used in radiochemical applications when only alpha counts are of interest. MPC-900-GFL uses a windowless gas flow proportional counter, which provides extremely high detection efficiency for Alpha rays or low-energy Beta rays. Each counter system is capable of running programs and quality control programs created with DUO Express software, using a direct-connect PIC Link cable to transfer the generated programs directly to the device.

Windowed Detectors (GFW)

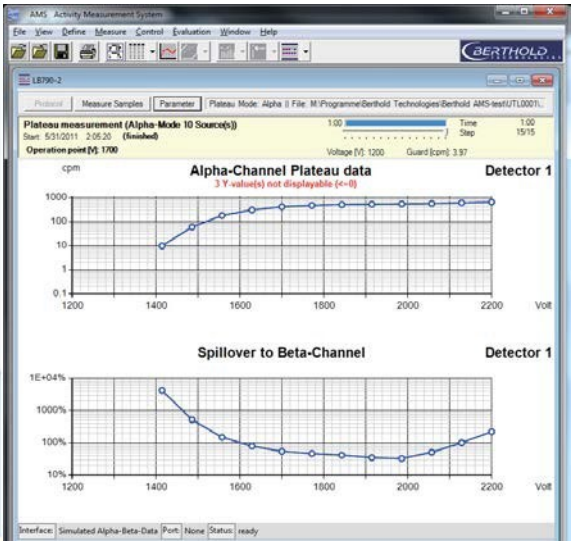
Typical efficiency				
Source	Top	1/8" Bottom	1/4" Bottom	5/16" Bottom
Pu-239	40%	32%	26%	24%
SrY-90	55%	48%	40%	37%
Tc-99	47%	37%	30%	27%
Background				
Conditions	Guaranteed value (CPM)		Typical value (CPM)	
	Alpha	Beta	Alpha	Beta
Without lead shield	<0.1	<55	0.05	40
With lead shield	<0.1	<45	0.05	30

Windowless Detector (GFL)

Typical efficiency				
Source	Top	1/8" Bottom	1/4" Bottom	5/16" Bottom
Pu-239	47%	47%	47%	47%
SrY-90	60%	60%	60%	60%

Tc-99	58%	58%	58%	58%
Background				
Conditions	Guaranteed value (CPM)		Typical value (CPM)	
	Alpha	Beta	Alpha	Beta
Without lead shield	<0.1	<55	0.05	40
With lead shield	<0.1	<45	0.05	30

6. LB790 6-way α -β Low-Level Counter



Product introduction

- Simultaneous/independent alpha and beta measurement
- 6 detectors, the diameter of the detector is 60mm, the largest sample plate can reach 60mm, a variety of specifications are optional
- Equipped with a large area anti-coincidence detector for cosmic ray suppression
- Parallel gas circuit connection
- 10cm thick standard lead brick protection in the 4π direction, to achieve the background value of the best performance
- Detector modular structure, each module has 2 detectors
- The preamplifier is integrated inside the detector to reduce noise interference
- New computer Windows system software AMS
- Very convenient installation and maintenance service

Technical Parameters

- External dimensions (with lead shield): 850x545x320mm (LWH)
- Weight (with lead shield): 1200 kg
- Dimensions of sample drawer and electronic part: 590x520x120mm (LWH)
- Weight: 37.5 kg
- Two-way detector module set: 262x92x30mm length, width and height
- Weight: 1.55 kg
- Detector Material: Copper

- Anti-coincidence detector material: Aluminum
- Power: 90-260 VAC 50/60 Hz,
- Electronics power supply: +/-15 V, LB5330
- Total current consumption: 250mA
- Signal amplifier power consumption: +15V =8 mA, -15V=6mA
- Connectors: 25-pin SUB-D for signal and power
- Operating Voltage (P-10 Gas Typical): 1450V
- Working gas: P-10 gas, ArCO2 (82/18) or ArCO2 (90/10)
- Detection window film: 1.5um (0.21mg/cm2)
- Measured Data (P-10 Gases):
- Background value: Alpha channel: 0.045 cpm, guaranteed value 0.1 cpm

β channel: 0.7cpm, guaranteed value 1cpm

- Efficiency value: a Efficiency: 42%

β efficiency: C-14: 25% Cl-36: 50%

- Operating temperature range: 0°C-50°C
- Relative humidity: 10%-80% non-condensing
- Degree of protection: IP 50

7. DA Series Air Flow type Alpha-Beta Low-Level Counter

Product introduction

DA series (1-8 channels) Low-Level α/β Counter is a precision instrument for measuring low-level α, β radioactive intensity. It can be used for the measurement of total α and total β radioactivity in water, soil, building materials, ores, aerosols, food, cetc. It is suitable for the measurement of low-level α/β radioactivity in radiation protection, environmental protection departments, medical, biological, agricultural, scientific research institutes and colleges and universities. The instrument is a series of products with 4 models and specifications: DA-101, DA-102, DA-104, DA-108. The instrument meets the verification requirements of JJG1100-2014 air flow proportional counter total α and total β measuring instrument.

Features

- Low background count, high particle detection efficiency;
- The thin-window gas-flow proportional counter tube is used as a detector, and the counter coincidence between the shielded counter tube and the measurement counter tube is used to reduce the interference of radioactivity in the surrounding environment on the measurement;

• The detection efficiency of 14C low-energy β-rays is ≥40%; it is better than similar detectors with semiconductors and scintillators as probes.
• The mass thickness of the gas flow proportional counter tube window is ~2μg/cm-2, the area of the measurement window is Ø60mm, and the sample area is Ø55mm.
• With PC application software, parameters such as high voltage and threshold can be set on the PC side. Simple operation interface, each channel can work and calculate independently; can directly obtain the radioactive specific activity Bq/L or Bq/Kg of the measured sample.

Technical parameters

Item	Specification
Detector	Thin window flow gas proportional counter tube (effective area 28cm2)
Background count	α ≤0.0017cm-2 • min-1 β ≤0.0354cm-2 • min-1
Detection efficiency	α source: 241Am≥78%; β source: 90Sr-90Y≥65% 14C≥40%
Repeatability	210Po α ≤ 1.5%; 90Sr-90Y ≤ 2.0%;
Cross channel ratio	α to β channel ≤ 1% (210Po source); β to α channel ≤ 0.1% (90Sr-90Y source)
Power supply	AC 220V 50Hz
Power consumption	≤250 VA
Ambient temperature	0-45°C
Relative humidity	≤90%

8. LB series plastic flash low background aβ measuring instrument

Product introduction

The LB series plastic flash aβ measuring instrument has (1-c6 channels) independent low background aβ main detectors, which can measure multiple samples at the same time, and give the measurement of the total a and total β activity concentration in each sample respectively. It has the characteristics of high sensitivity, low background, simple structure, convenient operation, stability and reliability.

LB series low background aβ measuring instrument can be used for the measurement of the total activity of aβ in the fields of radiation protection, environmental samples, drinking water, medicine and

health, agricultural science, nuclear power plants, reactors, isotope production, geological exploration and so on. It can also be used to measure the specific activity of total alpha and total beta activity in polluted water, air, food and soil in nuclear battlefields and nuclear explosion sites.

Technical parameters

- Main detector: The main detector of the instrument is composed of a 45mm diameter HND-DS2 low-background aβ scintillator and a CR105 low-noise photomultiplier tube.
- Scintillator area: 15.896cm2 (Φ45mm). Low background aβ scintillators have high detection efficiency for aβ particles and low background. The CR105 photomultiplier tube is provided with positive high voltage by the high voltage power supply of the instrument.
- Sample tray: made of 0.5mm stainless steel dish, 2mm deep and 45mm in diameter. Sample tray for solid sample measurements.
- When the 2π detection efficiency ratio of the instrument for 90Sr-90Y β source (active area Φ20mm) is ≥60%, the background is ≤0.10cm-2min-1;
- When the 2π efficiency ratio of the instrument to the 239Pu α source (active area Φ30mm) is ≥ 85%, the background ≤0.002cm-2min-1;
- a/β crossover performance: the count ratio of a into β channel <1% (for 239Pu), the count ratio of β into a channel <0.3% (for 90Sr-90Y);
- Long-term stability:

Repeatability: The instrument is continuously powered on for 24 hours, and the detection efficiency changes a<2%, β<2.5%;

Background stability: During the 24-hour measurement period, the background count change should be within the range of (Nb±3σ), where Nb is the average value of the background count, and σ is the standard error of the background count.

- Instrument sensitivity: α ≥5×10-5Bq; β ≥1×10-6Bq
- Dielectric insulation > 1500V;
- Insulation resistance ≥ 2MΩ;

Conditions of Use

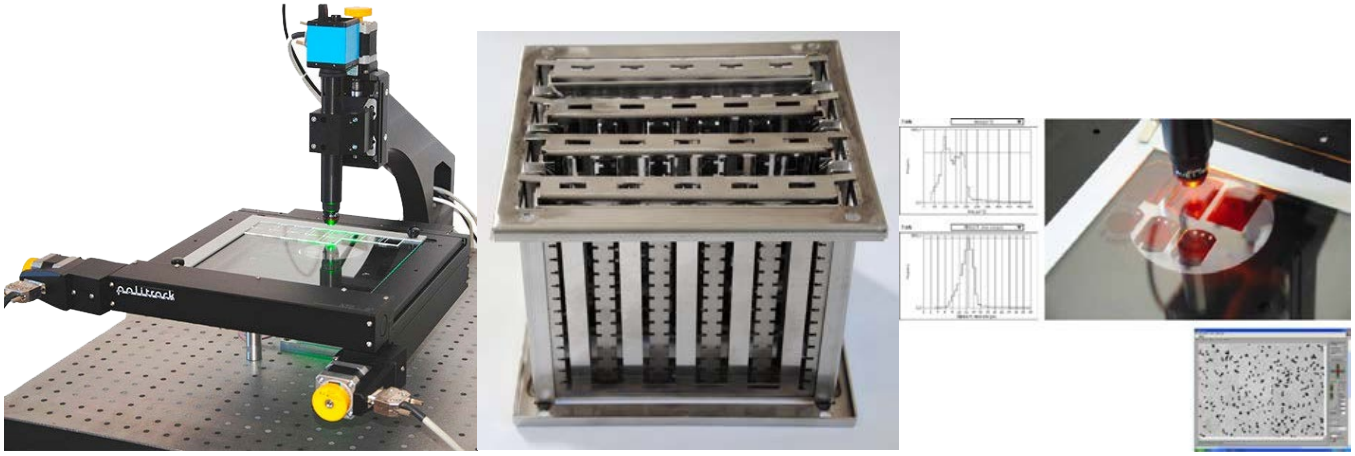
- Power supply voltage: AC 220V±10%; 50Hz;
- Ambient temperature: 0～350C±20C;
- Relative humidity: <85% (+300C).

Work method

- Can measure aβ at the same time, or measure a or β separately;
- The measurement process and measurement results can be displayed on the monitor, and the results can be printed;
- Measurement time, alpha threshold of the detector, beta low threshold (βL), beta high threshold (β H) and high pressure can be adjusted by computer according to requirements.

Solid Track Meter

1. POLITRACK Automatic Track Etching Analysis System



Product introduction

Politrack is a fully automated, high performance solid track analysis system for radon concentration and neutron dose measurements. The track analysis unit adopts high-performance optical devices and 3D motorized control system, which can quickly and accurately analyze batches of detectors. The track analysis unit allows users to analyze CR39 detectors of different sizes, 64 CR39 detectors of 25x25 mm3 and 360 CR39 detectors of 15x15x1.5 mm3 can be analyzed at one time, and detectors of other sizes can also be customized. Morphological analysis can identify background signals, tracks of different energies. It has functions such as automatic ID recognition, track overlap correction, CR-39 detector attenuation correction, etc.

Features

- Can read a variety of detectors including CR-39, LR115
- Automatic reading of dosimeter ID
- User-definable reading and scanning areas, automatic program adjustment
- Automatic correction of overlapping areas
- Automatic distinction between contamination and track points • Custom detector size

System composition

- CR-39 detector • Track analysis unit • Etching unit • Analysis software

Technical parameters

Track analysis unit:

- 2550x750x40 mm honeycomb anti-vibration pad
- Three-axis micro-stepping motor control board
- Microscope, 20x objective
- 200x200 mm scanning stand
- Z-axis precise linear displacement, repeatability ± 0.5 microns
- High resolution Nikon USB CCD camera, resolution 1280 x 960, 30 frames per second
- XY motorized scanning stage, 205x205mm, scanning speed: 90mm/s, resolution less than 1 micron
- Equipped with Led system for sample backlighting
- Software package: CR-39, LR115, CR-39 neutron/LET spectrometer, three options are available
- Weight: 47kg

Etching unit:

- Etching solution: sodium hydroxide solution
- Etching volume: 26L
- Etching temperature: 0-150℃, adjustable
- Temperature stability: ±0.1℃
- Equipped with a hydrometer, range 1100-1200, for solution density check
- Etched probes: 25x25x1.5 mm3 300 pcs; 15x15x1.5 mm3 360 pcs
- Other sizes can be customized
- Supporting software packages are CR-39 radon, LR115 film radon, CR-39 neutron/LET spectrometer optional. All calculation algorithms are described in detail. Users can apply and/or modify morphological parameters and display the results in real time through powerful graphical tools.

2. TASLimage Solid Track Etching Measurement System

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Product introduction

TASLimage is a high-performance automatic image measurement and analysis system developed based on nuclear track analysis technology. It is used to measure and analyze various plastic track detectors, such as TASTRAK (manufactured by TASL), CR39, and PN3. The microscope module of the system uses high-quality Nikon optics and an ultra-fast 3D motorized control system to ensure the system's high measurement efficiency, high precision and low background performance. The system is suitable for neutron measurement, radon concentration monitoring, fusion research, alpha particle autoradiography, uranium exploration, cosmic rays and radiation teaching.

Features

- Fully automatic focusing, automatic scanning of dot codes and etching tracks;
- Fully automatic reading of batch detectors;
- Quick reading, the reading time is 30~60 seconds (related to parameter setting);
- Automatic correction of detector response degradation to ensure that the detector can be used for 12 months of long-term monitoring;
- Highly sophisticated image analysis techniques to distinguish track from background features;
- Fully automatic background evaluation (for each detector);
- Scan data is automatically converted to neutron dose.

Technical Parameters

- Detector Type: PADC (Polypropylene Diethylene Glycol Carbonate)
- Compatible brands: TASTRAK, CR39, PN3, etc., no size limit
- TASTRAK Specifications:

Conventional: 0.5mm, 0.75mm, 1.0mm, 1.5mm, Customizable: 0.1~0.5mm, >1.5mm

- Background track: <20tracks/cm2
- Quantity of etching: 150 or 294, stainless steel etching rack
- Etching conditions (TASTRAK):

Radon: 98°C, about 1 hour; or 75°C, about 6 hours;
Neutron: 85°C, about 3 hours

- Identification track density: ⩾140tracks/mm2
- Detection limit:

Radon: 5Bq/m3 ~15MBq/m3
Neutron: lower limit <0.25mSv

- Linear:

Neutron: better than 5%, not narrower than 0.1mSv - 600 mSv; Radon: 3%-6% (200-5000 Bq/m3)

High-purity germanium gamma spectrometer

1. HPGe160 Series High Purity Germanium Gamma Energy Spectrometer

Product Description

HPGe160 Series High Purity Germanium Gamma Spectrometer consists of a high purity germanium detector, a digital spectrometer and multifunctional spectral analysis software. It is a high precision laboratory gamma radiation measurement device for the measurement of low level radioactivity in environmental samples (e.g. water, air, soil, etc.)

Functional features

- International level of energy resolution, 16k digital multi-channel signal processing system
- Integrated low background lead chamber design with composite shielding material inside

- Large measuring space in the lead chamber: effective height (end window to lower surface of lead cover) not less than 210mm
- Adjustable multi-channel lower threshold, with direct adjustment of the pulse lower threshold of the input multi-channel
- Data processing system with integrated data acquisition and analysis
- Direct measurement or task mode available, measurement by appointment, automatic multiple measurements
- ENSDF library of nearly 400 nuclides
- Optional liquid nitrogen recondensation refrigeration (liquid nitrogen with electrical cooling), 8kanaloque multi-channel signal processing system

Application areas

Nuclear power safety

- Measurements of radioactivity in nuclear power plants and the surrounding environment
- Nuclear emergency radioactive contamination monitoring
- Monitoring of radioactive material during decommissioning of nuclear reactors

Water quality monitoring

- Radioactive environmental pollution monitoring
- Hydrological water quality monitoring
- Environmental samples with complex spectra

Test analysis

- Radioactivity measurement of building materials
- Radioactivity measurement of food

Higher education institutions and hospitals

- Reactor, accelerator laboratory
- Nuclear test laboratory
- Radiation medicine

Technical Specification

HPGe160 Series High Purity Germanium Gamma Energy Spectrometer	
Detector type	Coaxial HPGe detector
(Relative) detection efficiency	10%~160%optiona
Peak shape parameters	FW0.1M/FWHM 2.0
Maximum measurable pulse rate	2100kHz
Energy range	40keV~10MeV 3KeV~10MeV optional
Integral background (50keV- 2MeV)	<2.0cps
Peak to Compton ratio	2 62:1(40%);> 68:1(60%);2 73:1(70%);
Energy resolution	s2.0keV(@6Co,1332keV)
Power supply method	AC 220V+10%,50Hz+10%
Power	50W

Communication methods	USB RJ45
Machine size	1410Hx700Wx700D(mm)
Weight	Approx.1300kg
Operating temperature	20°C+2°C
Operating humidity	5% to 80% (no condensing)

2. HPGe162 Series Anti-Compton Ant-Cosmic Ray Ultra-Low Level High Purity Germanium Gamma Spectrometer

Product Description

The HPGe162 Series Anti-Compton Anti-Cosmic Ray Ultra-Low Level High Purity Germanium Gamma Spectrometers, using a new self-developed anti-coincidence detector, it can achieve very low background levels and high-performance anti-Compton scattering levels, suitable for very low levels and strong radioactive environment of low energy end radionuclide activity measurement, while the best measurement mode can be selected for different measurement objects.

Functional features

- The use of dense, non-hygroscopic BGO crystals in the anticoincidence detector facilitates the

optimization of the peak to Compton ratio and the integral background performance of the instrument

- The use of proven coincidence/anticoincidence logic gates and the rational mechanical design of the instrument allow not only for a more stable performance but also for multiple measurements lant-Compton measurements. ant-cosmic ray measurements or anti-Compton anti-cosmic ray measurements) within one device.
- High resolution dual channel multi-channel analyzer for more visualization of pre and post non-conformation spectra
- Integrated low background lead chamber design with composite shielding material inside
- Data processing system with integrated data acquisition and analysis
- Provides an ENSDF database of nearly 400 nuclides
- Customizable in a variety of measurement modes: high efficiency measurement, Y-y, Y-B coincidence measurement
- Optional liquid nitrogen recondensation refrigeration unit (liquid nitrogen with electrical cooling), liquid nitrogen refrigeration

Application areas

Nuclear power safety

- Radioactivity measurement in nuclear power plants
- Nuclear emergency radioactive contamination monitoring
- Radioactive material monitoring

Test analysis

- Radioactivity measurement of building materials
- Radioactivity measurement of food

Water quality monitoring

- Radioactive environmental pollution monitoring
- Hydrological water quality monitoring
- Environmental samples with complex spectra

Higher education institutions and hospitals

- Reactor, accelerator laboratory
- Nuclear test laboratory
- Radiation medicine

Technical Specification

HPGe162 Series Anti-Compton Ant-Cosmic Ray Ultra-Low Level High Purity Germanium Gamma Spectrometer	
Detector type: main detector	Wide energy coaxial HPGe detector
Detector type: anticoincidence	Large volume BGO crystals, Nal crystals
Detector	optional
Peak to Compton ratio	Peak to Compton ratio
Compton suppression factor	>3.5
Energy range	3keV~10MeV
Integral background(50keV-	≤0.4cps

2MeV)	
Relative detection efficiency	≥40%
Energy resolution	≤2.0keV(@6Co,1332keV)
Power supply method	AC220V+10%,50Hz+10%
Communication methods	RJ45
Machine size	1675Hx1460Wx760D(mm)
Weight	Approx.1800kg
Operating temperature	20°C+2°C
Operating humidity	5% to 80%(no condensing

3. G331 Series Laboratory Sodium Iodide Gamma Energy Spectrometer

Product Description

G331 Laboratory Sodium Iodide Gamma Spectrometer consists of a sodium iodide detector, a multi-channel spectrometer, a low background lead chamber and a multifunctional spectrum analysis software. It is a laboratory gamma radiation measurement equipment, used for low level radioactivity measurement of gamma samples (e.g. water, air, soil, etc.) in the environment. The accompanying spectrometer system analyses and processes the energy spectrum.

Functional features

- Built-in automatic spectrum stabilization for non-radioactive sources, no radioactive source calibration required
- Integrated low background lead chamber design with composite shielding material inside
- Total dose rate and the contribution of different nuclides to the total dose rate can be calculated
- Direct measurement or task mode selectable, measurement by appointment, automatic multiple measurements
- Control software with integrated data acquisition and analysis for spectrum acquisition, analysis,

parameter setting, etc.

- Rea-time communication via standard network cable or serial port, providing a hardware interface for communication with the data collector

Application areas

Nuclear power safety

- Measurements of radioactivity in nuclear power plants and the surrounding environment
- Nuclear emergency radioactive contamination monitoring
- Monitoring of radioactive material during decommissioning of nuclear reactors

Water quality monitoring

- Radioactive environmental pollution monitoring
- Hydrological water quality monitoring
- Environmental samples with complex spectra

Test analysis

- Radioactivity measurement of building materials
- Radioactivity measurement of food

Higher education institutions and hospitals

- Reactor accelerator laboratory
- Nuclear test laboratory
- Radiation medicine

Technical Specification

G331 Series Laboratory Sodium Iodide Gamma Energy Spectrometer	
Detector type	3"x 3"Nal scintillator detector
Energy range	25keV to 3.5MeV
Multi-channelanalyzer	1024, 2048,4096 channels available
Energy resolution	≤7.5%
Background	5.0cps
Nuclide library	Industrial nuclides, medical nuclides, natural radionuclides, special nuclear materials, user-defined nuclides
Power supply method	AC 220V+10%,50Hz+10%
Communication methods	USB, RJ45
Machine size	1410Hx700Wx700D(mm)
Weight	Approx.1200kg
Operating temperature	20°C +2°C
Operating humidity	5% to 80%(no condensing)

4. G338 Series Multi-Channel Sodium Iodide Gamma Spectrometer

Product Description

G338 Multi-Channel Sodium Iodide Gamma Spectrometer consists of a well-type sodium iodide detector, an electronics system, a low background lead chamber and multifunctional spectral analysis software for rapid screening of samples following a radiological event or for rapid measurement of multiple samples in the laboratory. The system is set up with 8 detectors all positioned vertically, allowing up to 8 samples to be counted simultaneously in separate shielded 3NaI well-type radiation detectors to quickly identify radioactivity levels in radiation samples and provide critical information to emergency response agencies.

Functional features

- 8 fully independent well-type NaI(Tl) detectors
- Fast measurement, up to 800 samples in 24 hours
- Sample volume 10-50m selectable, automatic data entry by barcode scanning
- Integrated low background lead chamber design with composite shielding material inside
- Direct measurement or task mode selectable, measurement by appointment, automatic multiple measurements
- Control software that integrates data acquisition and analysis, allowing for spectrum acquisition, analysis, diagnosis, parameter setting, etc. while data can be transferred to a computer for further analysis
- Built-in nuclide library, containing nearly 400 nuclides
- Rea-time communication via standard network cable or seria port. providing a hardware interface for communication with the data collector

Application areas

Nuclear power safety

- Measurements of radioactivity in nuclear power plants and the surrounding environment
- Nuclear emergency radioactive contamination monitoring
- Monitoring of radioactive material during decommissioning of nuclear reactors

Water quality monitoring
- Radioactive environmental pollution monitoring
- Hydrological water quality monitoring
- Environmental samples with complex spectra

Test analysis
- Radioactivity measurement of building materials
- Radioactivity measurement of food

Higher education institutions and hospitals
- Reactor accelerator laboratory
- Nuclear test laboratory
- Radiation medicine

Technical Specification

G338 Series Multi-Channel Sodium Iodide Gamma Spectrometer	
Detector type	8 x 3" x 3" well type NaI scintillator detectors
Energy range	50keV~10MeV
Multi-channel analyzer	2048 Road
Energy resolution	<7.5%
Typical efficiency (4it efficiency)	241Am:39%.90Sr:29%
Lower detection limit	300s counting time with a minimum detection limit of 52Bq/L
Background	10.0cps
Nuclide library	industrial nuclides, medical nuclides, natural radionuclides, special nuclear materials, user-defined nuclides
Power supply method	AC 220V+10%, 50Hz+10%, optional UPS uninterruptible power supply
Communication methods	USB,RJ45
Machine size	734Hx724Wx707D(mm)
Weight	Approx.2000kg
Operating temperature	5 to 25°C
Operating humidity	20% to 95%(no condensing)

5. LN-C Condensing Liquid Nitrogen Chiller

Product Description

LN-C Condensing Liquid Nitrogen Chiller is a revolutionary breakthrough in the field of cryogenic cooling detectors, a hybrid cooling machine using conventional liquid nitrogen combined with electrical refrigeration. It uses a Stirling thermoacoustic electric refrigerator as the main working component to bring the cold end temperature down to liquid nitrogen temperature, thus condensing the gaseous nitrogen in the Dewar to liquid nitrogen and realising the recycling of liquid nitrogen.

Functional features

- A chiller with a working life of no less than 120,000 hours
- Continuous cooling of the detector for up to 12 months with power supply without no need of replenishment for liquid nitrogen
- 30 liter liquid nitrogen tank, guarantees the detector's cryogenic environment with full liquid nitrogen in the event of a power failure, ensures 10 days of continuous normal operation of the system.
- Stirling electric pulse tube cooling.
- Motor recycles evaporated nitrogen for compression back into liquid nitrogen.
- Software to monitor the working status of the chillers and to monitor the working status of the system in real time
- The interface is customized to match all types of high purity germanium gamma spectrometers.

Key benefits

Compared to liquid nitrogen refrigeration, recondensation refrigeration ensures reliable performance of liquid nitrogen refrigeration, avoids frequent refilling of liquid nitrogen, ensures long-term operation of the detector at low temperatures and saves on liquid nitrogen material and manpower costs. Compared to electric cooling, recondensation cooling uses liquid nitrogen as the medium, avoiding direct contact between the detector and the chiller and greatly reducing the impact of vibration on detector performance. At the same time, it solves the major drawback of losing the cooling capacity of the electric cooler in case of power failure ensuring that the low temperature environment of the

detector can stil be maintained in case of power failure, so that it can be quickly used when power is restored.

Application areas

- For use with high purity germanium detectors
- For use with other scientific instruments operating in the liquid nitrogen temperature zone

Technical Specification

LN-C Condensing Liquid Nitrogen Chiller	
Power consumption	Average power consumption 160W, system power≤ 300W
Noise level	Less than 60 dB at the distance of 1m
Machine size	Φ460x690H (mm, without detector, height adjustable)
Weight	Approx.55kg
Operating temperature	0°C to 40°C
Operating humidity	Relative humidity 5% to 80% (no condensing)
Daily maintenance	Replace or clean air filters as required

6. High Purity Germanium (HPGe) Radiation Detectors

Product introduction

• Semiconductor-based radiation detectors have been around for more than half a century, and ORTEC has played a pioneering role in that time. Initial products were based on lithium-drifted germanium Ge(Li) and lithium-drifted silicon Si(Li). Ge(Li) was later replaced by more advanced high-purity germanium (HPGe) detectors. ORTEC offers a comprehensive range of HPGe detector solutions covering a wide range of energies and applications.

• Germanium semiconductor radiation detectors require cryogenic cooling. To support various count geometries, ORTEC offers a variety of cooling options from standard LN2 systems to advanced electromechanical cryocoolers such as ICS™.

• ORTEC HPGe radiation detectors incorporating these technologies are used worldwide in a variety of applications including nuclear structure physics to prevent the trafficking of illicit nuclear material in the world's largest commercial port.

Detector series

			FWHM分辨率（以keV为单位）@ 指定能量		
探测器系列	典型计数几何位置	相对效率范围（%）	5.9 keV	122 keV	1332 keV
GEM P型同轴	点源 大面积源 Marinelli杯	10-150	不适用	0.80-1.30	1.75-2.30
Profile C P型同轴	点源 大面积源 Marinelli杯	20-175	0.73-1.23	0.85-1.30	1.80-2.30
Profile M P型同轴	点源 大面积源	20-175	不适用	0.88-1.30	1.80-2.20
Profile S P型半平面	点源 大面积源	7-65	0.35-0.50	0.65-0.70	1.80-1.90
Profile SP P型半平面	点源 大面积源	7-50	0.30-0.43	0.59-0.63	1.80-1.90
Profile F P型半平面	点源 大面积源	7-60	不适用	0.65-0.85	1.80-2.10
GMX N型同轴	点源 大面积源 Marinelli杯 中子本底	10-100	0.60-1.20	不适用	1.80-2.5
GLP P型平面	点源 小面积源 定时测量	不适用	0.17-0.39	0.48-0.60	不适用
GWL P型反向同轴（井）	小体积源 井内测量	90-450毫升 有效体积 (15%-100%相对效率)	不适用	1.20-1.40	2.10-2.30

7. High-purity germanium gamma spectrometer cooling system

Product introduction

• All HPGe radiation detectors require cooling to cryogenic temperatures for proper operation. This is usually done with a liquid refrigerant, most commonly liquid nitrogen (LN2), or with an electric cooler.

• ORTEC offers a complete line of cryogenic cooling solutions to meet the diverse requirements of customer applications. These solutions include static and cyclic LN2
operation, as well as various electric cryocoolers.

Electric cooling option

Integrated electrical cooling system for PopTop and Streamline type HPGe radiation detectors with the latest generation of refrigeration technology to provide
LN2 operation.

Liquid Nitrogen Based Options

Liquid nitrogen recondensation radiation detector cooling system,
Just refill with liquid nitrogen every other year.

Dewars and cryostats

Standards in various cryostat configurations and Dewar sizes
Nitrogen cooled to support most radiation detector applications.

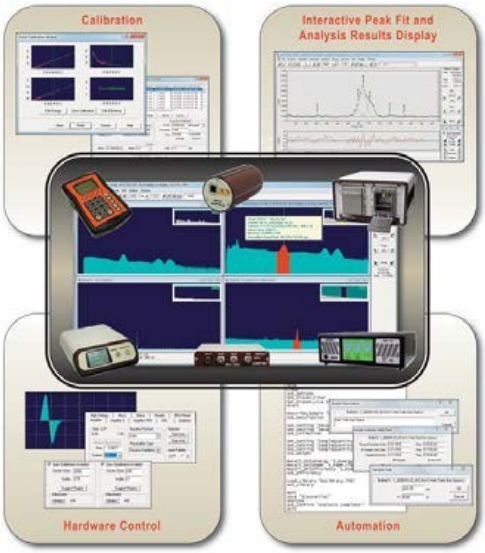
8. High-purity germanium gamma spectrometer multi-channel analyzer

Product introduction

• The Multichannel Analyzer (MCA) is a key instrument in many scientific measurements. MCA analyzes a stream of voltage pulses and categorizes them into a histogram or "spectrum" of pulse height versus number of events, usually related to energy or arrival time. Stored spectra can be displayed and analyzed at a later time.

• ORTEC has the widest range of MCA product types in the world and offers various solutions. These MCA types include:
• Basic analog MCA for routine applications:
• Independent USB connected MCA
• NIM Modular MCA
• Digital all-in-one PMT base MCA with bias supply and digital signal processor for scintillation radiation detectors
• Integrated digital workstation MCA for HPGe radiation detector systems
• Portable digital MCA for HPGe and scintillation radiation detectors

9. ORTEC application software



Product introduction

Application software is a key element of an advanced measurement system. ORTEC Software applies this software approach to a wide range of radiation detector hardware and data acquisition systems, providing a comprehensive nuclear measurement solution that provides integrated hardware control, analysis and display in a single, easy-to-use package.

应用	模型	描述
MCA仿真	A65-BW	MAESTRO多道分析仪仿真
	A65MP-BW	MAESTRO-PRO多道分析仪仿真
计数实验室和健康物理学	A66-BW	GammaVision伽马能谱分析软件
	A44-BW	GammaVision报告生产器
	GlobalValue-BWS	GammaVision的生产力套件
	LVIS-B32	用于GammaVision的LVIs计数实验室应用程序管理软件
	A36-BW	AlphaVision Alpha能谱测量软件
	ANGLE-BW	高级伽马能谱测量效率校准软件
	C53-B32	核素数据库的核素导航图表
	RENP-BW	全身计数器专用软件
	A49-B32	DataMaster谱文件格式转换器
废物分析	ISOPLUS-BW	同位素伽玛能谱测定废物测定分析软件
核保障	MGA-B32	MGA ++伽玛射线同位素丰度Act系元素分析
	FRAM-BW	钚和铀同位素分析
	HMS4-B32	滞留量测量软件
开发者支持	A11-BW	程序员工具包

GammaVision Gamma Spectroscopy Software

GammaVision is a full-featured gamma spectroscopy application for high and low resolution gamma spectrometer systems. It includes all basic and advanced features for accurate and consistent measurements, and its intuitive interface simplifies setup and operation. With included MCA control, advanced spectral analysis capabilities, automated routine operations, quality control, and reliability, GammaVision is ideal for large production laboratories, nuclear power plants, research and education, automated monitoring systems, and many other applications.

- Supports 64k channel spectrum
- Background correction table in analysis report
- ISO-11929 activity range based on total uncertainty in addition to count uncertainty
- Improved peak interference and background correction using directional (forced) peak fitting methods
- Simultaneous coincidence, anticoincidence and full spectrum acquisition combined in • single spectrum file when using a compatible MCA
- Read/write ORTEC ANSI N42.42 files (2006 and 2012 standards)

10. HPULBS High Performance Ultra Low Background Lead Shielding

Product introduction

• ORTEC's high performance, low background Ge radiation detector shields feature the highest quality workmanship and finest materials. They include features accumulated over the years in lead shielding design. Options that make shielding easier also ensure continued smooth operation.

• All ORTEC high performance, low background lead shields feature an 11" diameter x 16" deep chamber suitable for holding up to a 4 liter Marinelli beaker.

• Offers graded copper and tin layer linings for lead X-ray suppression. The bulk shielding material is reworked lead (4 inches thick). The support frame and shield jacket are made of mild steel. All exterior surfaces are constructed of durable textured polyurethane. All shields are factory adjusted and removable doors and covers are positioned with packing material to prevent opening during shipping. All guards require professional installation by a qualified Rigger capable of withstanding heavy duty installation. Once installed, the cover (and applicable door) requires only minimal adjustment to remove any packing material and ensure proper operation. Each guard comes with initial adjustment instructions, warnings and a wrench. Touch-up paint may be ordered separately with a Material Safety Data Sheet (MSDS) and may require special shipping.

Standard configuration

- Rigid support frame
- Hinge adjustment instructions
- Assembly wrench
- Elevate eye and lid restraint brackets
- Two heavy duty wooden pallets/crates suitable for overseas shipping

11. HPULBS High Performance Ultra Low Background Lead Shielding

Product introduction

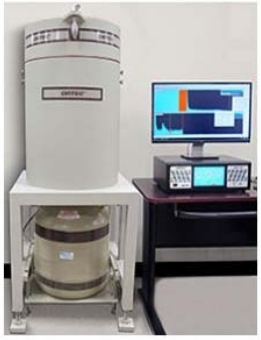
• ORTEC's High Performance, Ultra Low Background Ge Radiation Detector Housings feature the highest quality workmanship and materials. They include features based on years of experience in lead shielding design, providing superior performance and ease of use.

• All ORTEC high performance, ultra-low background lead shields feature a 1" thick inner layer of virgin lead for a total thickness of 4 or 6" lead material. Graded linings of copper and tin layers are provided for lead X-ray suppression. The support frame and shield jacket are made of mild steel. All exterior surfaces are constructed of durable textured polyurethane. All shields are factory adjusted and removable doors and covers are positioned with packing material to prevent opening during shipping. All guards require professional installation by a qualified Rigger capable of withstanding heavy duty installation. Once installed, the cover (and applicable door) requires only minimal adjustment to remove any packing material and ensure proper operation. Each guard comes with initial adjustment instructions, warnings and a wrench. Touch-ups can be made with the Material Safety Data Sheet (MSDS) to be ordered separately and special shipping may be required.

Standard configuration

- Rigid support frame
- Hinge adjustment instructions
- Assembly wrench
- Elevate eye and lid restraint brackets
- Two heavy duty wooden pallets/crates suitable for overseas shipping

12. Inverse Compton Spectrometer



纯数字化反康电子学

插件式反康系统电子学

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Product introduction

• In the fields of nuclear environment monitoring, radiobiology and nuclear medicine, the specific activity of measured samples in most cases is lower than 40Bq/kg, which is the same order of magnitude as the specific activity of trace natural radionuclides in the surrounding environment soil. In this case, it is necessary to reduce the background of the system, including the environmental background from cosmic rays and the background caused by the Compton effect. The low-background anti-Compton gamma spectrometer is based on solving this problem.

• Low-background high-purity germanium inverse-Compton gamma spectrometer mainly consists of the following parts: HPGe main detector, anti-coincidence shielding detector composed of NaI ring detector and NaI plug detector, lead shielding room, electronics Anti-coincidence circuit, multi-channel analyzer, spectrum analysis software. computers and printers etc.

• When high-energy radiation (such as primary cosmic rays) penetrates the main detector and the anti-coincidence shielding detector, and both detectors have signal output, the anti-coincidence electronics circuit behind will prevent these signals from being recorded by the spectrometer, thereby Play the role of suppressing or shielding the background signal. Similarly, when the gamma rays emitted by the sample to be measured are incident on the main detector, the photons that have the Compton effect will generate a non-all-energy peak signal, and at the same time, they will be scattered at the same time and enter the anti-coincidence shielding detector to generate a signal , the following anti-coincidence electronics circuit will prevent these signals from being recorded by the spectrometer, thereby suppressing the Compton effect and improving the peak-to-compton ratio.

Technical parameters

Item	Specification
Detector	Standard configuration is N-type HPGe (GMX) 60% relative efficiency detector
NaI Ring and Coincidence Detector	9” x9” NaI ring, 3.5” ID. 10.75” OD. 6” x2” NaI Pie Detector. Resolution: @662 keV ⩽7%.
Maximum sample size	3.5" diameter, 3" height (capacities up to 750 mL).
Electronics	DSPEC-502A Digital Dual MCA, 556H High Voltage Module
Shield	Thick low background lead chamber with Tn/Cu composite shielding design on the inner layer. Optional anti-cosmic ray components, (plastic scintillator detector)
Software	GammaVision Gamma Spectroscopy Software.

Peak Compi	1300:1 or better (with a standard GMX60 detector).
Background count rate	0.5 cps or less with box or cylindrical factory shields.

13. Mobile high-purity germanium measurement system

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Product introduction

• ISO-CART-85 is a new mobile measurement system for radioactive waste analysis by high-resolution gamma spectroscopy. By using a single ultra-large-area high-purity germanium (HPGe) detector and a modular collimation system, the ISO-CART-85 achieves reasonable count times at de-emission levels in many cases, suitable for field measurements.

• The HPGe detector is available as the ORTEC IDM-200-V, a revolutionary all-in-one gamma spectrometer that can be cooled to operating temperature without liquid nitrogen. Here a miniature Stirling cooler is used. A built-in battery provides power for the cooler and highly stable digital signal processing electronics for up to 3 hours, an external battery option or hot swapping of the battery allows for extended battery life.

• The new system ISO-CART-II for mobile measurement is the latest generation of ORTEC's ISO-CART, which has been further enhanced based on operating experience and is equipped with new options such as a practical shield for bottle-shaped containers option that enables the system to be used as a "field counting laboratory" to measure a large number of test samples on site. The latest version of the tried and tested ISOPLUS software is now compatible with the latest 64-bit Windows operating systems

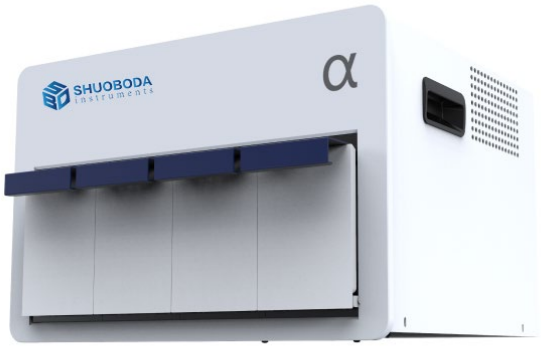
Complete in situ NDA gamma ray analysis solution for a wide variety of samples, including "degassed" decommissioning waste

- Measure all common geometries: pipes, cylinder floors, ceilings, walls, barrels, boxes and soils
- Easy-to-maneuver cart that can be pushed on any surface
- Wide choice of collimators and shields for different measurement situations
- Continuous height adjustment and variable angle adjustment
- ISOTOPIC software with results validated on thousands of real samples
- Factory pre-calibrated or can be calibrated with an inexpensive mixed isotope point source
- Flexible reporting: Measurements can be displayed in grams or activity (Bq or Ci)

Variants and accessories available	ISO-CART-II-LNZ Mobile Analysis System
	ISO-CART-II-Trans-SPEC/Detective Series Mobile Analysis System
	ISO-CART-II Mobile Analysis System Cart
	ISO-TURNTABLE Rotary Stage

Alpha spectrometer

1. PA Series α Spectrometer



Product Description

PA Aeries Alpha Spectrometer is a high-performance PIPS silicon detector based radioactivity analyzer for the qualitative and quantitative analysis of radioactive materials in various environmental media. It is available in two, four, eight, twelve and twenty-four channel formats with a choice of four effective detector areas: 300mm2, 450mm2, 600mm2 and1200mm2.

Functional features

- Integrated detection chamber, pre-release, main release and multi-channel using ion implantation silicon detectors (PIPS)
- Each channel has an independent signal amplification system, fully controlled by a computer programmer
- Detector to sample distance adjustable in steps: 10 to 65 mm, 15 steps in total
- Multi-channel analyzer: 1024, 2048, 4096, 8192 channels adjustable in steps
- Clean exhaust ports are provided to reduce the accumulation of moisture and contaminants in the measurement room
- In emergency applications, measurements can be taken without establishing a vacuum status
- Low noise vacuum pump with filter at the exhaust port to remove oil contamination
- Computer programmed precision control, real-time display of vacuum level, good stability
- Runs on Windows and has a simple Chinese user interface
- The interface can display multiple measurement windows at the same time, or a single

measurement window can be selected for enlarged display

Application areas

Nuclear power safety

- Nuclear material inspection monitoring
- Nuclear fuel production and reprocessing
- Radioactivity measurement in nuclear power plants
- Nuclear emergency radioactive contamination monitoring

Test analysis

- Radioactivity measurement of building materials
- Radioactivity measurement of food

Environmental and health assessment

- Radon thorium aerosol measurement
- Food inspection
- Human health

Resource exploration

- Uranium, oil, gas
- Groundwater resources
- Nuclear industry geological survey system

Higher education institutions and hospitals

- Nuclear experimental sites
- Nuclear physics laboratory
- Medicine and health
- Agricultural sciences

Technical specifications

PA SeriesaSpectrometer	
Maximum sample	diameter 2 inches
Vacuum level	≤2kPa, pressure level displayed at PC
Energy range	3~10MeV
Background count rate	≤1 cph(450mm2 detector, 3 to 10MeV)
Detection efficiency (450mm2)	≥25% (450mm2 detector, detector to source distance is the minimum allowed)
Energy resolution	Detection area of 300mm2: ≤17keV; detection area of 450mm2: ≤20kev. Detection area 600mm2: ≤25keV; Detection area 1200mm2: ≤35keV
Power supply method	AC 220V+10%,50Hz+10%
Power	80W
Communication methods	RJ45, USB
Machine size	355Hx500Wx540D(mm)
Weight	Approx.40kg
Operating temperature	5°Cto 35°C
Operating humidity	30% to 80% (25°C, no frosting)

2. Alpha spectrometer

Product introduction

Alpha spectroscopy identifies and quantifies radionuclides based on the alpha particles emitted during decay. Similar to gamma spectroscopy, spectroscopy consists of high-precision detectors and electronics, and is analyzed using special software. In many gamma spectrometry measurements, the complexity of these interferences is corrected by spectrum analysis software. Samples are usually measured after chemical separation to isolate the radionuclides of interest.

Alpha Aria

A single alpha spectrum channel in a 2 wide NIM chassis. A digital MCA is built in, so just connect the USB port and start counting. An easy-to-operate PUMP/HOLD/VENT (Pump/Hold/Vent) control is mounted on the front panel. Alpha Aria is easily added to existing NIM equipment.

Alpha Duo (dual channel)

Benchtop dual alpha spectrometer with two alpha spectrum channels. Each unit includes a vacuum measuring device 100% computer controlled, a variable detector bias supply (switchable positive or negative), a preamplifier, a test pulse generator with variable amplitude and a leakage current monitor. Alpha Duo has a dedicated independent MCA to optimize processing time.

Alpha Mega (Large)

Benchtop single alpha spectrometer with sample compartment for filters up to 4.18 inches (106 mm) in diameter. It is based on the Alpha Duo, but is able to take larger samples and use large diameter detectors, has all the same quality characteristics as the Alpha Duo, and is fully computer controlled. The Alpha Mega is available in a desktop version, but is also available as an option for the Alpha Ensemble (combo) enclosure.

Alpha Ensemble (Combined)

• Modular alpha spectroscopy system, configurable with up to 4 modules, ALPHA-DUO-M1 and/or ALPHA-MEGA-M1 expansion modules can be combined in any combination. Each alpha spectroscopy module includes a vacuum gauge, variable detector bias supply (switchable positive or negative), preamplifier, test pulse generator with variable amplitude, self-controlled RCAP and leakage current monitor.

• Each expansion module has a separate vacuum control in the Alpha Ensemble configuration. The Alpha Ensemble (combo) can be rack mounted or placed in the included benchtop enclosure. In the Alpha Ensemble (combo) configuration, the internal USB hub connects to the user's PC via a single cable. each exploration

Each measurement system has independent digital offset and conversion gain settings for maximum flexibility.

Liquid scintillation spectrometer

1. Quantulus GCT6220 Ultra Low Activity Liquid Scintillation Analyzer

Product introduction

A proven liquid scintillation counter with unparalleled performance in measuring extremely low concentrations of man-made, cosmic and other natural radionuclides. Its exceptionally low background means that ambient radiation does not affect sample count rates. Very long measurement times are allowed for very low activity samples. Measurements are usually only possible in special underground installations.

Technical parameters

- Energy range: 0~2000 keV
- Minimum measurement range, efficiency: 3H: 0~18.6 keV 60%
- 14C: 0~156 keV 95%
- Dimensions: Height: 47 cm Width: 103 cm Depth: 111.76 cm
- Weight: 238 kg
- Shipping weight: 318 kg
- Power supply: 100~240 VAC, 50/60 Hz
- Power consumption: < 800 VA
- Temperature range: 15~35 °C
- Humidity range: 30%~85%

2. Tri-carb 5110TR Low Activity Liquid Scintillation Analyzer/Counter

Product introduction

A computer-controlled desktop liquid scintillation analyzer for measuring trace amounts of a, β, and γ radioactivity.

Technical parameters

- Energy range: 0~2000 keV
- Minimum measurement range, efficiency: 3H: 0~18.6 keV 60%

14C: 0~156 keV 95%

- Dimensions: Height: 47 cm

Width: 103cm

Depth: 81.76 cm

Depth (with cooling): 112 cm

- Weight: 218 kg
- Shipping weight: 318 kg
- Power supply: 100~240 VAC, 50/60 Hz
- Power consumption: < 200 VA

< 800 VA (with thermostat)

- Temperature range: 15~35 °C
- Relative humidity: 30%~85%

3. LSC3000 Ultra Low Background Liquid Scintillation Spectrometer

Product introduction

- LSC3000 ultra-low background liquid scintillation spectrometer is a liquid scintillation analyzer independently developed for the determination of ultra-low-level a and β-emitter radioactivity. Its technical performance and index parameters rank among the international advanced ultra-low levels The ranks of liquid scintillation spectrometers have filled the domestic blank.
- LSC3000 ultra-low background liquid scintillation spectrometer is an essential equipment for low-level radioactivity measurement laboratories, mainly used for extremely low levels of 3H, 14C in environmental samples (such as water, air, soil, animals, plants, etc.) It can also be used for the measurement of other a nuclides and β nuclides, and is widely used in nuclear power plants, nuclear energy facilities, environmental protection, education, scientific research, hydrogeology, food science,

archaeological dating, and ocean expeditions.

Features

- Using TDCR quenching correction technology
- Using dual multi-channel analysis technology, providing a unique measurement and analysis program for a and β in water
- Direct measurement of high energy beta nuclide activity using Cherenkov radiation technique
- Absolute measurement technology combined with efficiency tracking technology for dual label separation
- Coexistence of relative and absolute measurements, eliminating the need for standard source calibration
- Ergonomic touch screen display, dual display operation
- Provides optional functions for logarithmic and linear spectra
- Program control to complete unattended measurement, multiple tasks can be set each time
- 70 kinds of nuclide databases, rich preset experimental application schemes, which can be expanded according to customer requirements

Technical parameters

- Analysis mode: counting mode and spectrum mode
- Measurement modes: continuous, repeat, timed, fixed precision
- Sample quantity: 30 • Sample feeding method: automatic conveyor belt
- Sample container: 20ml standard bottle
- Figure of Merit: (EV)2/B ＞ 50000 (measured in 20ml PFA bottle for 3H water sample)
- Multi-channel analyzer: 2 x 2048 or 4096
- Temperature control device: built-in system
- Energy range: a: 3 ~ 10MeV; β: 1 ~ 5000keV
- Background: background is less than 1cpm (20ml contains 40% water, 3H efficiency is greater than 28%)

Background less than 0.8cpm (5ml14C sample, 14C efficiency greater than 70%)

- Detection efficiency: 3H: ≥ 65%, 14C: ≥ 95%
- Lower detection limit: 1.0Bq/L (measured with 12ml scintillation fluid + 8ml tritium water sample for 1000min)
- 24h stability: counts change less than 0.2%/24h
- Energy resolution: 0.01keV/ch(3H)
- Extended capabilities: a, β separation technology
- Display mode: 12" color touch screen and 19" wide screen, dual screen simultaneous display
- Machine size: 1330H×930W×912D(mm) • Weight: ≤ 900kg
- Working humidity: 30% ~ 80% (25°C, no frost) • Working temperature: 5°C ~ 35°C

4. LSC3000B Low Level Liquid Scintillation Spectrometer (vehicle-mounted)

Product Description

LSC3000B Low Level Liquid Scintillation Spectrometer (vehicle-mounted) is a vehicle mounted low background radioactivity measurement equipment developed by SHUOBODA based on the technology of LSC3000 Ultra-Low Level Liquid Scintillation Spectrometer, which is suitable for use in vehicles and ships to meet the needs of rea-time measurement in the field.

Functional features

- Tri-omni spectrometer for rapid measurement of common nuclides, with optional BGO probe for y-ray detection
- Small in size and easy to move for vehicle mounted measurements
- Alpha and beta nuclear emergency wipe tests available, providing fast and accurate results for routine wipes
- Using 3+3 coincidence and anticoincidence detection techniques and TDCR quench correction technique
- Reserved storage space for a small number of sample bottles
- Relative and absolute measurements coexist and can be scaled without a standard source
- Logarithmic and linear spectrograms are available
- Direct measurement of energetic beta nuclide activity using the Cherenkov technique
- Database of 70 nuclides, pre-programmed for a wide range of experimental applications, expandable on request
- Programmable for unattended measurements, multiple tasks can be set at a time

Application areas

- Mobile laboratory
- Expedition, homeland security
- Radiation safety, environmental testing
- Nuclear emergency response

Technical specifications

LSC3000B Low Level Liquid Scintillation Spectrometer	
Measurement mode	Continuous, repetitive, timed, constant accuracy
Number of samples	1
Sample feeding method	Manual sample feeding
Sample containers	20ml standard bottle
Multi-channel analyser	2 x 2048 channels
Temperature control devices	System built-in
Energy range	a: 3 to 10 MeV; B: 0 to 5 MeV
Background	Background less than 2.0 cpm (20 ml containing 40% water, ^{3}H efficiency > 28%). ^{3}H (0~18.6keV) < 20 cpm;14C(0~156keV) <25 cpm
Detection efficiency	3H: ≥ 60%, 14C: ≥95%.
Lower detection limit	1.5Bq/L(12 ml scintillation solution + 8 ml tritium water sample measured for 1000min)
24h instability	Count change less than 0.2%/24h
Energy resolution	0.01keV/ch(^{3}H)
Power supply method	AC 220V+10%,50HZ+10%
Power	<200W
Communication methods	USB, RJ45
Display method	4.3" touchscreen and 14" laptop with simultaneous dual display
Machine size	907Hx545Wx798D(mm)
Weight	Approx.400kg
Operating temperature	5°C to 35°
Operation humidity	30% to 80%(25C, no frosting)

5. LSC2000 Low Level Liquid Scintillation Spectrometer

Product Description

The LSC2000 Low Level Liquid Scintillation Spectrometer is a new general-purpose low background radioactivity measurement device developed by SHUOBODA after the successful launch of the LSC2000 Ultra-Low Level Liquid Scintillation Spectrometer. It is mainly used for the measurement of low levels of 3H, 14C and the monitoring of radioactive effluents from nuclear power plants.

Functional features

- Using 3+3 coincidence and anti-coincidence detection techniques and TDCR quench correction technique
- Unique analysis procedure for alpha and beta measurements in water using dual multi-channel analysis technology
- Direct measurement of energetic beta nuclide activity using the Cherenkov technique
- Absolute measurement technique with efficient tracer technology for double marker separation
- Relative and absolute measurements coexist and can be scaled without a standard source
- Logarithmic and linear spectrograms are available
- Fully automatic sample exchange, multi-tasking continuous measurement, up to 260 standard 20ml sample bottles
- Powerful data processing functions for automatic or manual calculation of peak area, count rate and detection efficiency
- Database of 70 nuclides, pre-programmed for a wide range of experimental applications, expandable on request
- Programmable for unattended measurements, multiple tasks can be set at a time

Technical specifications

LSC2000 Low Level Liquid Scintillation Spectrometer	
Analysis mode	Energy spectrum model
Number of samples	260
Sample feeding method	Automatic conveyor belts

Sample containers	20ml standard bottle
Multi-channel analyzer	2x 2048 channels
Temperature control devices	System built-in
Energy range	a: 3 to 10 MeV; B: 0 to 5 MeV
Background	Background less than 2.0 cpm (20 ml containing 40% water, ^{3}H efficiency > 25%). ^{3}H (018.6 kev) < 20cpm; ^{14}C (0~156 keV)< 25cpm
Detection efficiency	^{3}H: ⩾65%;^{14}C: ⩾95%
Lower detection limit	1.5Bq/L (12 ml scintillation solution + 8 ml tritium water sample measured for 1000min)
24h instability	Count change less than 0.2%/24h
Energy resolution	0.01keV/ch (^{3}H)
Power supply method	AC 220V+10%,50Hz+10%
Power	Mainframe 200W, temperature control system 500W
Communication methods	USB, RJ45
Machine size	1245Hx900Wx1145D(mm)
Weight	Approx.600kg
Operating temperature	5°Cto 35C
Operating humidity	30% to 80% (25°C, no frosting)

6. LSC1000 Portable Multifunctional Liquid Scintillation Spectrometer

Product Description

LSC1000 Multifunctional Liquid Scintillation Spectrometer is a portable, multifunctional liquid scintillation

spectrometer for measuring the radioactivity of alpha and beta emitters, based on the technology of LSC3000 Ultra-Low Level Liquid Scintillation Spectrometer, filling a domestic gap. The device is small in size and light in weight, and can be used for vehicle or field detection, it's an ideal tool for rapid liquid scintillation measurement and analysis.

Functional features

- Tri-omni spectrometer for rapid measurement of common nuclides, with optional BGO probe for y-ray detection
- Small and easy to move, for outdoor and vehicle measurements
- Alpha and beta nuclear emergency wipe tests available, providing fast and accurate results for routine wipes
- Using 3+3 coincidence and anticoincidence detection techniques and TDCR quench correction technique
- Reserved storage space for a small number of sample bottles
- Relative and absolute measurements coexist and can be scaled without a standard source
- Direct measurement of energetic beta nuclide activity using the Cherenkov technique
- Programmable for unattended measurements, multiple tasks can be set at a time
- Database of 70 nuclides, pre-programmed for a wide range of experimental applications, expandable on request

Application areas

- Mobile laboratory
- Expedition, homel and security
- Radiation safety, environmental testing
- Nuclear emergency response

Technical specifications

LSC1000 Portable Multifunctional Liquid Scintillation Spectrometer	
Analysis mode	Energy spectrum model
Measurement mode	Continuous, repetitive, timed, constant accuracy
Number of samples	1
Sample feeding method	Manual sample feeding
Sample containers	20ml standard bottle
Multi-channel analyzer	2048 channels
Energy range	a: 3 to 10 MeV; B: 0 to 5 MeV
Background	B:<200 cpm(^{3}H) ;< 150 cpm(^{14}C)
Detection efficiency	^{3}H: ⩾55%;^{14}C: ⩾ 90%
Energy resolution	0.01keV/ch(3H)
Power supply method	DC 12V, rechargeable lithium battery
Power	<40W
Communication methods	AC 220V+10%,50Hz+10%
Display method	4.3" touchscreen and 14" laptop with simultaneous dual display
Machine size	311H x 457W x 403D(mm)

Weight	Approx.28kg
Operating temperature	5°C to 35°C
Operating humidity	30%to 80% (25°C, no frosting)

Positron Lifetime Time Spectroscopy System

1. Positron Lifetime Time Spectroscopy System

Product introduction

The existence of positrons was first proposed by Dirac and confirmed experimentally in the 1930s. Positrons are the antiparticles of electrons. A collision of a positron with an electron will cause both particles to annihilate and emit two characteristic 511-keV gamma rays. This phenomenon helps test predictions of quantum theory about the difference between electrons and positrons interacting with matter. Furthermore, positrons have proven to be useful tools for studying various structures and processes. The lifetime of the positron can be used to measure the local electron density at the annihilation point. Annihilation is easily detected with the aid of emitted gamma rays. The positron lifetime technique is one of the few methods that is sensitive to single-atom-scale voids.

Advantages

- Fully tested and integrated "turnkey" system...all you need is a positron source.
- A complete set of labeled cables and connectors.
- Two Model 905-21 Detector Assemblies.
- Documentation on testing procedures and results.

PLS-System includes

- 2 Type 905-21 Detector Assemblies.
- 2 Type 583B constant fraction discriminators.
- 2 Model 556 high voltage power supplies.
- 1 Type 414A QuickFit.
- 1 Model 567 Time-to-Amplitude Converter/Single Channel Analyzer.
- 1 Model 928-MCB Multichannel Analyzer with MAESTRO software.
- 1 DB463 delay box.
- 1 Model 4001A/4002D NIM chassis and power supply.

- 1 Type 113 preamplifier.
- 1 Model 575A Spectral Amplifier.
- 1 personal computer.
- 1 set of labeled cables and connectors.
- 1 Procedure and Factory Test Documentation.

The system has a guaranteed time resolution of 200 ps (typically measures less than 180 ps), using a Co-60 source for measurements in a narrow energy window.
(This system does not include sources.)

PALS: Reaching the nanoscale.

One of the most important structural issues in soft condensed matter is the presence of unoccupied or free volume between molecules due to irregular packing, density fluctuations, and topological constraints. Free volume is considered to be the fraction of volume capable of molecular recombination and is of great importance in determining the physical and mechanical properties of a system.

PALS is a well-established, unique and versatile technique that allows the direct measurement of these subnanometer-scale molecular free volumes. The PALS experiment injects a positron into the material under test and measures the length of time before it annihilates with one of the material's gamma-ray-producing electrons.

NaI spectrometer

1. RSA2500 Sodium Iodide (NaI) Gamma Spectrum Analyzer

Product introduction

The multi-channel of the gamma spectrometer adopts imported RSA2500R multi-channel, which has the patented technology of QCC secondary compression in the United States, which greatly improves the performance of the sodium iodide spectrometer. QCC technology can greatly optimize the resolution of the spectrometer. The dense peaks of the low-energy parts are expanded, and the sparse counts of the high-energy parts are compressed to form obvious peaks.

Instrument Key Indicators	
Detector	3 x 3 inches NaI
Energy range	20KeV——10MeV
Energy resolution	≤7.5% Cs137
tability (24h)	peak drift ≤ 1%

2. DA-4096 Low background multi-channel gamma spectrometer

Product introduction

It is composed of low-background NaI probe, program-controlled integrated multi-channel analyzer, computer, lead chamber and other equipment, and is mainly used for radioactive spectrum nuclide identification and activity measurement of gamma emitters. The hardware and software configuration of the system meets the requirements of the national standard GB6566-2010 "Limited Standards for Radionuclide in Building Materials" and GB/T 14582-93 "Standard Measurement Method for Radon in Ambient Air". It can be widely used for qualitative and quantitative analysis of radionuclides contained in materials such as granite, marble, cement, cinder, food, sediments and geological samples, and to measure the types of nuclides and their radioactivity or specific activity values; The activated carbon box method can be used to analyze the content of radioactive radon indoors or in the environment.

The main technical parameters

- Energy resolution: ≤7.5% (137Cs)
- Energy linearity: ≤±1% (50keV-3.0MeV)
- System stability: ≤±1% (8h)
- The maximum number of data storage channels: 4096 channels, the counting capacity of each channel is 224-1
- Data memory bank: 512, 1024, 2048 and 4096
- Attenuation factor of lead shielding room: ≥80 (50Kev-2.0Mev)

Typical value≤350cpm;

- When the radioactive specific activities of 226Ra, 232Th and 40K in the sample are greater than 37Bq/kg, the analysis error shall not exceed 20%.

Device Configuration

- computer, laser printer
- External portable digital program-controlled integrated multi-channel analyzer
- φ75×75mmNaI(Tl) low background gamma probe
- Standard lead chamber (lead equivalent thickness ≥ 10cm)
- General gamma spectrum simulation acquisition software package (including USB driver)
- Software package for analysis of natural radioactive content in building materials that meets national

standards
- A set of standard sources
- One set of test certificate

Rapid Measurement Gamma Spectrometer

1. FOODGUARD Food/Water Rapid Measurement Gamma Spectrometer

Product introduction

- The FoodGuard-1 Sodium Iodide Food Screening System is designed for rapid screening of radioisotope-contaminated solid and liquid foods.
- Facilitating "frontline" rapid response for food producers, traders, import and export agents, etc., FoodGuard-1 is an out-of-the-box solution designed to start up and test samples in minutes.
- The FoodGuard-1 food monitoring system can quickly and accurately screen food for radionuclides caused by nuclear power plant release events: eg 131I, 103Ru, 134Cs and 137Cs. Total cesium (sum of 134Cs and 137Cs activity) can also be reported.
- The system is battery powered, portable, and low power consumption, so it can be used in places where food is collected, imported, sold, or consumed. It is easy to carry and the optional trolley makes the system easy to use in places such as food markets for convenient inspection of food products.

Features

- Efficient counting and easy sample loading in a benchtop lead shield using a 3" x 3" NaI radiation detector.
- The digiBASE is connected via USB for easy assembly and contains all necessary electronics: small preamplifier and detector high voltage power supply, powerful digital signal processing and multichannel analyzer.
- Intuitive software display, high degree of automation and results storage or printing.
- Calculated results such as Maximum Permissible Concentration Percentage (MPC).
- Immediate feedback with an audible alarm to warn of sample activity exceeding a user-set MPC limit percentage.
- Light enough to be transported to the point of use, such as the entrance of a food market.
- Factory pre-calibrated for use directly with sample containers and check sources.

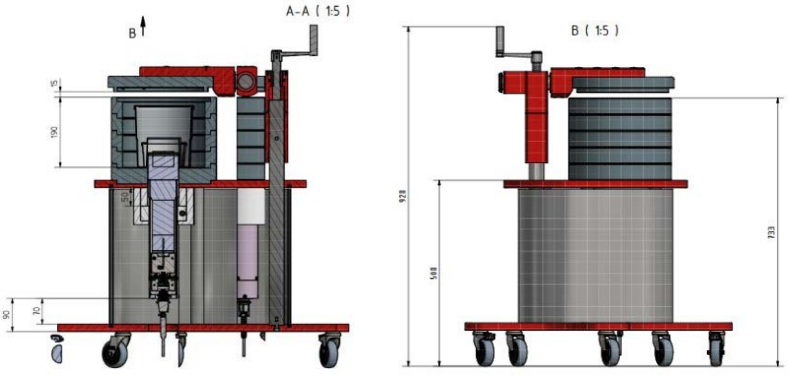
Lowest detectable limit (FOODGUARD-1)

Time(Min)	MDC (Bq/L)				
	131I	103Ru	137Cs	134Cs	40K
10	14.8	13.6	14.9	21.7	224.4
20	10.5	9.6	10.3	15.2	143.6
30	8.6	7.8	8.5	12.4	123.4
60	6.1	5.5	6.0	8.8	87.1
10	14.8	13.6	14.9	21.7	224.4

Advanced version FOODGUARD-2 (High Purity Germanium Detector) version Food Fast Water Meter available. The FoodGuard-2 Workstation is an out-of-the-box system that meets the needs of institutions that need to accurately quantify radionuclide content in food. By using a high-resolution high-purity germanium (HPGe) radiation detector, each gamma-ray-emitting radionuclide in the sample can be quantified as a specific activity in Bq/Kg or Bq/L. FoodGuard-2 is specifically designed for agricultural monitoring with an intuitive software interface for quick and clear results from test setup

137Cs Measuring MDC	time
0.75Bq/L	10min
0.35Bq/L	30min

2. COMO Food Contamination Meter



Product introduction

Large amounts of radioactivity enter the human body through food ingestion. Many international organizations such as the World Health Organization and the International Atomic Energy Agency have issued recommendations regarding maximum activity concentrations of several radionuclides in food. GIHMMCOMO Contamination Monitors are designed to quantify radioactivity and identify nuclides in food and other materials. It is based on the GIHMM spectral gamma detector GSP02, and thanks to the large sample injection volume and the use of a 35 mm lead shield, COMO offers significantly better measurement results than similar products at an attractive price.

Main application

- food, milk, juice
- Pet food • Ingredients, soil
- Finished products, parts

- Test samples
- Waste, wastewater, sewage sludge

Technical parameters

Model	GSP02 N55/232	GSP02 N76/232
crystal type	NaI(Tl)	NaI(Tl)
Detector size	55x55mm -> 2"	76x76mm -> 3"
Measuring range	10 nSv/h ÷ 50 µSv/h	10 nSv/h ÷ 50 µSv/h
Energy Range (Crystal)	33 keV ÷ 2 MeV	33 keV ÷ 3 MeV
Dose rate energy dependence	NaI(Tl)	NaI(Tl)
Energy resolution FWHM atCs137	±30%, ref. Cs-137	
multi-channel analysis	< 7%	
Temperature range	1024 channel	
Temperature dependent	-30°C ÷ +60°C	
Uncertain measurement	less than ±3keV	
Weight	H*10 ≤ 50 µSv/h: ±15%	

Nuclides	Window(KeV)	Netto Counts	Bq/L	LD(Bq/L)
I-131	364.50	174	51.33	14.16
Ru-103	497.00	113	33.34	9.44
Cs-134	604.70	87	25.67	9.15
Cs-137	661.70	96	28.32	8.26
Cs-134	795.80	156	46.02	7.97
K-40	1460.80	328	96.76	10.03

Neutron Dosimetry and Spectrum Measurements

1. DAS-100 Fast Neutron Spectrometer

Product introduction

Fast neutron general instrument with high efficiency and high resolution

Technical parameters

- Spectrum range: 0.1MeV-5.0MeV

- Resolution:

Thermal neutron: <20keV FWHM 1MeV: <30keV FWHM

- Detector size: φ6.4mm*57.4cm
- Effective length 15cm
- Anode bias: +3000V
- Gate Bias: 850V

2. ROSPEC Rotating Neutron Spectrometer

Product introduction

For the measurement of fission neutrons, used in the field of neutrons, usually within minutes or hours can produce very accurate energy spectrum and dosimetry data.

Technical parameters

- Detector shape: spherical
- Energy range: thermal neutron ~4.5 MeV
- Resolution: < 10% (at 1 MeV)
- Minimum/large field: background to 100 mrem/h
- Gamma rejection ratio: > 100:1
- Size: φ41 cm×60.5 cm
- Power supply: 110 V 50/60 HZ
- Battery Backup: Provides one hour of run time
- ADC: Successive approximation type, number of channels: 256
- Detector maximum count rate: 1000 counts per second

3. Long counter

Product introduction

The long counter is an essential tool in the quantification of neutron sources in virtually all neutron metrology laboratories due to its nearly constant counting efficiency over a wide range of neutron energies.

Technical parameters

- Detector Type: Boron Trifluoride Proportional Counter
- Energy range: neutron to 20 MeV
- Efficiency: 1.2×10-5 counts/neutron
- Maximum count rate: > 10000/sec
- Counter assembly: Weight: 46 kg

Size: 42cm×51cm×51cm

- Stand/cart:

Weight: 41kg

Dimensions: 76cm×61cm×76cm

- **Power Requirements: 110V 50/60 Hz (from 220V to 110V step-down transformer)**

4. BDS Bubble Neutron Detector

Product introduction

The BDS is a complete low-cost neutron spectrometer package packed with 36 bubble detectors that have been specially formulated for six different energy thresholds. Each spectral measurement can use 18 detectors (3 each providing a threshold of 10, 100, 600, 1000, 10000, 2500keV). The detector can be reused by repressurizing the pressure chamber.

Technical parameters

- Energy range: Six thresholds: 10, 100, 600, 1000, 2500, and 10000keV
- Dose range: ~50 mrem, ~535 μSv
- Sensitivity: 1~2 bub/mrem, 0.1~0.2 bub/μSv
- Optimum temperature: 20 °C
- Size: φ16 mm×80 mm • Weight: 20 g

BDS pressurized chamber

For recompressing (re-zeroing) the bubbles in the BDS, 18 BDS can be compressed in sequence within 30 minutes at a time.

Technical specifications

- Dimensions: φ14 cm×48 cm

(Inside: φ5.5 cm×19 cm)

- Weight: 6.8 kg
- Construction: Stainless Steel/Brass/Plastic
- Pressure chamber volume: 18 BDS
- Maximum pressure: 500 psig at 20 °C (full of water)

5. MIC-6 Portable β/γ/Neutron Spectrometer

Product introduction

The MIC-6 is a powerful portable spectroscopic measurement system for the identification and measurement of ionizing radiation detection The MIC-6 is a rugged system with multiple modes for a wide range of tasks including dosimetry, spectroscopy and Radiation Mapping. The system is BTI compatible and is an advanced suite of full-spectrum gamma neutron, X-ray and Beta detectors – a feature that makes the MIC-6 one of the most versatile portable spectroscopy systems available. Proven with previous generations Like our MIC radiation detection system, the MIC-6 is easy to use in the field and provides basic and advanced information so users can make the right decision on ring time, spectral data provides isotope identification, while real-time time dose rate mapping provides actionable information to guide search and emergency response missions

PHYSICAL SIZE

Analyzer:	27.9 x 22.9 x 4.8 cm (11.0 x 9.0 x 1.9 in) 2.9 kg (6.5 lb)
Tablet:	17.8 x 14.0 x 6.4 cm (7.0 x 5.5 x 2.5 in) 1.1 kg (2.5 lb)
Probe:	1.5 to 4.0 kg (3.3 to 8.8 lb) (Varies with probe type)

POWER

Type:	Built-in rechargeable NiMH battery or external 12-32 V power supply (selectable)
Runtime:	>16 hours, fully charged
Charger:	110 – 240 V, 50/60 Hz autosensing

TEMPERATURE

Operating:	-20 °C to +40 °C (-4 °F to +104 °F)
Storage:	-40 °C to +70 °C (-40 °F to +158 °F)

SPECTROSCOPIC PROBES*

Gamma:	NaI (various sizes) 50 keV to 8 MeV
X-ray:	NaI with Be window 5 keV to 200 keV
Beta:	Phoswich scintillator 100 keV to 3 MeV
Neutron:	Liquid scintillator and ^{3}He counter Thermal to 20 MeV

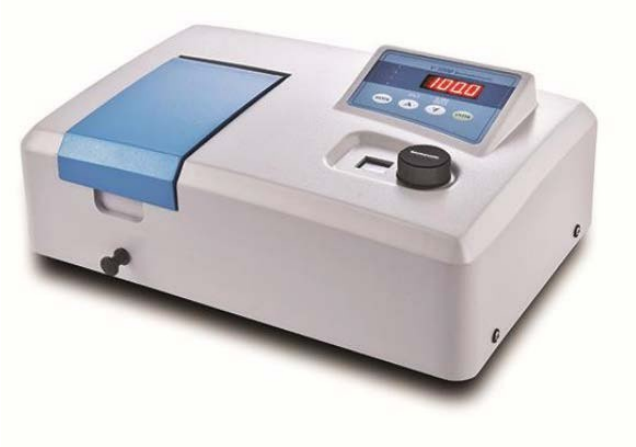
**Additional data sheets available for probes*

OPTIONS

RS232-based transceiver system for remote control and data acquisition

Spectrophotometer

1. V-5000 Visible Spectrophotometer



Product introduction

The instrument adopts microcomputer processing technology, which is easy to operate, and only four buttons can complete the test

- Automatic adjustment of control functions such as 100%T and 0%T and data processing functions of various methods
- T, A, C, F four test modes are optional, easy to switch
- The LED digital display can directly display parameters such as transmittance, absorbance and concentration, and the readings are intuitive and
- Advanced optical system, grating, and imported receiver make the test of the instrument more accurate
- Socket-type tungsten lamp design, no need for optical adjustment when changing the lamp

• Equipped with standard USB data output interface and parallel print output interface, convenient for online operation and printing data
• [Optional] Quantitative software can directly complete photometric analysis, quantitative testing and analysis data processing

Technical Parameters

• Wavelength range: 325-1000nm
• Spectral Bandwidth: 4nm
• Wave length: ±2nm
• Wavelength repeatability: ≤0.5nm
• Luminosity: ±0.5%T
• Photometric repeatability: ≤0.2%T
• Stray light: ≤0.2%T
• Stability: ±0.002A/h (at 500nm)
• Photometric range: 0-200%T, -0.3-3A, 0-9999C
• Data output: USB interface

2. V-5800 Visible Spectrophotometer

Technical Parameters

• Wavelength range: 320-1100nm
• Spectral bandwidth: 2nm
• Wavelength accuracy: ±0.5nm
• Wavelength repeatability: ≤0.2nm
• Photometric accuracy:
±0.2%T(0-100T)
±0.002Abs (0-0.5Abs)
±0.004Abs(0.5-1.0Abs)
• Photometric Repeatability:
≤0.1%T(0-100T)
0.001Abs (0-0.5Abs)
0.002Abs (0.5-1.0Abs)
• Stray light: ≤0.05%T@220nm,360nm
• Stability: ±0.001A/h (at 500nm)

Environmental Monitoring Equipment

Air sampling

1. HIQ Portable Aerosol and Carbon Sampler

Product introduction

The CF-lOOOBRL series is a portable, maintenance-free, speed-adjustable high-flow air sampler, suitable for continuous or interval sampling.

The CF-lOOOBRL air sampler series has three flow ranges to choose from. The standard CF-lOOIBRL calibrated flow range is 2-lOCFM C (approximately 56.6-283 liters per minute), and has a 11/2" internal thread straight pipe connection, which can be connected to all CF series brackets (not Includes CHPH-810). Standard CF-I 002 & CF-I 003BRL have a 4" diameter filter holder that can be adjusted up and down to attach various filter cartridges and CF series filter holders (including 8"xlO"). Units Models 1002 and 1003 have calibrated flow ranges of 8-28CFM (approximately 226.4-729.4 liters per minute) and 15-SOCFM C (approximately 424.5-1415 liters per minute).

Specifications

- Brushless motor, portable high flow air sampler;
- Portable, small 10 lbs;
- Two-phase centrifugal fan; • Manually adjustable flow rate;
- Sampling time display, resettable electronic timer;
- Instantaneous product display;
- Continuous or interval use; • Maintenance-free;
- Digital display of flow rate, total volume, min/max flow.
- Automatic power-off function for total sampling volume (optional)

2. Large capacity aerosol sampling device

Product introduction

The main function is to sample the air through the filter and measure the activity of the retained aerosol. The unit sends warning and alarm messages when activity exceeds predefined levels. An aerosol filter coupled to an air pump is capable of accumulating large quantities of airborne particles on small surfaces so that their radioactive content can be determined with good measurement efficiency.

Technical Parameters

- Nominal flow: 100m3/h
- Maximum aerosol binding capacity: 1100mg
- Aerosol filter retention efficiency: 0.3μm, 99.8%
- Atomic carbon filter retention efficiency: 99.9%
- Organic carbon filter retention efficiency: 90.0%
- Noise at 6m: 56dB
- Basic area: 1000mmx1000mm
- Altitude (without weather station): ~220 cm (~195cm)
- Detector: 2" NaI Detector
- Measuring range: 10^2~104Bq/m3
- Energy range: 30keV ~3MeV
- Energy resolution: <7% ,137Cs
- Multi-channel analyzer: 1024 channels

Tritium Carbon Sampling

1. OS1700 Tritium Sampler

Product introduction

The OS1700 uses a two-stage collection process to collect tritium from gaseous and vapor systems for accurate determination of tritium in both elemental and oxide forms. It is designed for unattended continuous operation so that the average concentration of tritium in air over a suitable sampling interval (typically one week) can easily be obtained. At the end of the sampling period, the operator can remove the sampler vials and place them in a liquid scintillation counter to measure the amount of tritium captured. Other than adding scintillation mix, no sample handling is required like a desiccant collector.

2. LB110 Tritium Counter

LB 110

Product introduction

Tritium (^3H) in air exists mostly as water vapor (H1H3O) or gaseous hydrogen (H1H3). Due to the short range of beta particles emitted by tritium (only a few millimeters in air), windowless counter tubes must be used, ie the air to be measured is added to the count gas. Therefore, for continuous measurements, the counter tube must be run in flow-through mode

Technical parameters

Technical data		
count gas	methane	P10
air count gas mixture	1:3	1:4
flow l/min	0,25 : 0,75l	0.2 : 0.8 l
Measuring air content in counting tubes	0,325l	0.26 l
efficiency	ca. 60%	that. 55%
Calibration factor ^{3}H (kBq/m3/cps)	5,1	7.0

3. Tritium Carbon Air Sampler

Product introduction

The TASC is a self-contained unit used to collect air samples from the chimney, fume hood, room air, external environment, or other areas.

- ^{3}H sensitivity: 10-9 Ci/ml (10-9 Ci/m3) for 7 day period at 100 ml/min
- Air flow: 100±3 ml/minute factory calibrated set point
- Flow meter: mass flow meter, 250 ml/minute full size
- Flow indicator: ml/min, digital display, 3½-digits, 0.1 to 199.9
- Air mover: continuous duty, diaphragm pump
- Elapsed Time Indicator: Multifunction timer module with maximum time setting from 0.1 to 999.9 hours
- Thermal oxidizer: tube furnace, adjustable range: 455° - 475°C
- Temperature indicator: °C, digital display, 3½-digits, 1 to 1999
- Unit cooling: continuous operation fan; 1 cubic meter per minute (30 CFM) free flow
- Sample collector: two manifolds, one for HT and one for HTO, made of silver brazed construction of stainless steel and brass, nickel plated. Three polyethylene vials per manifold, each 20ml volume, for a total of 6 vials b) Two polyethylene vials, each 60ml volume, for a total of 4 vials per manifold
- Sample medium: distilled water or propylene glycol
- Power connection: 10 feet, three-wire, grounded cable.
- Power requirements: 115VAC or 230VAC, 50-60 Hz, 200 watts
- Dimensions: 356mm (14") d X 483mm (19") w X 310mm (12.2") h
- Weight: 13.6 kgs (30 pounds)

Carbon 14 and Tritium in Air Sample Collection Systems
Model TASC-HTO-HT-C14, Standard Flow Version

- Tritium collection as above, plus a separate C 14 collection panel
- 14 C efficiency: 10-10 Ci/ml (10-10 Ci/m3) for 7 day sample at 100 ml/min
- Desiccant: Up to 4 desiccant cartridges with indicative desiccant
- Sample collector: 15ml polycarbonate tube
- Sample medium: Sodium hydroxide, granular, 20 – 30 mesh
- Ascarite is available from chemical suppliers
- Dimensions: 135mm (5.3") d X 483mm (19") w X 415mm (16.3") h
- Weight: 9.1 kgs (20 pounds)
- Connectors: 5 mm (3/16 in.) ID hose barb vinyl tubing

4. TS-212 Polymorphic Tritium Sampling Device

Product introduction

Tritiated water (HTO), tritiated hydrogen (HT) and tritiated methane (CH3T) in the air can be collected separately according to user requirements. The device can be applied to the investigation of environmental background, the monitoring of tritium concentration in the air, such as the process pipeline of nuclear facilities, the external environment of nuclear power plants, reactor workshops, and tritium waste treatment workplaces.

Features

- HT and CH3T catalytic oxidation modules ensure that HT and CH3T in the air are completely oxidized respectively;
- Unique cold trap design ensures smooth sampling gas path;
- The remote control and display management of the sampling process can be carried out through

data transmission means and software control.

Technical parameters

- Sampling flow: 1-10L/min;
- Working temperature of semiconductor cold trap: -20°C ±1°C;
- Working temperature of catalytic device: 400°C ±5°C;
- Cold trap water intake: >100 ml;
- Capture efficiency: ≥ 95% (HTO), ≥ 92% (HT, CH3T);
- Continuous sampling time: 0 to 18 hours, can be set arbitrarily;
- LCD display, on-site and remote operation modes. technical indicators
- Sampling flow: 0-5L/min, adjustable flow;
- Semiconductor cold trap working temperature: commonly used 0-30 ℃;
- Catalytic bed working temperature: 400°C;
- Tritium capture efficiency: ≥ 95%;
- Sampling time: user-defined setting;
- Realize remote/local control function, local use touch screen control to realize all operations and parameter settings;
- The system has an alarm function: real-time processing of uploaded information, if the equipment is abnormal, a continuous alarm signal will be sent in the central control room;
- The system also has a database management function, which can perform real-time query on the operation history data of a single device in a specified time period according to different query conditions, and can form a report.

5. TS-101 Atmospheric Tritium Sampler

Product introduction

TS101 Atmospheric Total Tritium Sampler is composed of air filter, air pump, mass gas flow meter, methane generating reactor, high temperature catalytic oxidation bed, semiconductor cold trap cooled by self-circulating water and automatic control system. The device can collect full tritium (HTO, HT and CH3T) or HTO, and has two modes of manual and automatic for users to choose.

Technical parameters

- Sampling flow: 0-5L/min, adjustable flow;
- Semiconductor cold trap working temperature: commonly used 0-30 ℃;
- Catalytic bed working temperature: 400°C;
- Tritium capture efficiency: ≥ 95%;
- Sampling time: user-defined setting;
- Realize the remote/local control function, the local use touch screen control to realize all operations and parameter settings;
- The system has an alarm function: real-time processing of uploaded information, if the equipment is abnormal, a continuous alarm signal will be sent in the central control room;
- The system also has a database management function, which can perform real-time query on the operation history data of a single device in a specified time period according to different query conditions, and can form a report.

6. Organic tritium carbon oxidation recovery device

Product introduction

The organic tritium carbon oxidation recovery device is used for the oxidative combustion and collection of organic tritium and carbon-14 in background tritium levels or environmental samples (such as plants, animal tissues, etc.) around nuclear facilities. The device has built-in oxidative combustion programs for different types of samples such as plants, meat, fish, milk, and soil. At the same time, the oxidative combustion heating curve of samples can be customized. It has a wide range of applications and is convenient and practical to operate. In addition, this device adopts two-stage cold traps at -60°C to collect water samples in series, and the recovery rate of organic tritium samples is high.

Technical parameters

- Combustion tube size: length 110cm x inner diameter 6cm;

- Catalyst and catalytic part temperature: precious metal catalyst, 450°C, catalytic efficiency >98%;
- Operation mode: liquid crystal display, man-machine dialogue, instant
- Built-in procedure for organic tritium recovery from routine samples (plants, meat, fish, milk, shellfish, etc.);
- Has an explosion-proof design;
- Gas flow combustion bed: ≦ 1L/minO2+1L/minN2;
- Catalytic bed: ≦ 1L/min O2;
- Catalytic temperature: 450°C; maximum heating temperature: 1000°C;
- Organic tritium recovery rate: plants: 95%; meat, fish, milk: 92%;
- Sample handling capacity: 20-40g;
- Working time: 6-12h.

7. Tritium electrolytic concentration device

Product introduction

The solid polymer (SPE) tritium electrolytic concentration device adopts solid polymer electrolyte technology with high electrolytic performance and high safety performance, which can be widely used in low-level tritium water such as environment, groundwater, and seawater in environmental protection, hydrology, and geological research. Such electrolytic concentration treatment. The samples are treated by electrolytic concentration, which can greatly improve the detection limit of the high-sensitivity low-background liquid scintillation spectrometer, making it close to 0.1Bq/L, so as to meet the measurement requirements of low-tritium water in the current environment.

Technical parameters

- Initial volume: ≥ 400mL;
- Working time: ≤65h (15 A, for ten-fold concentration factor);
- Gas end condensation temperature: ≤ 5° C;
- Water tank cooling temperature: ≤ 5° C;
- Remaining volume: ≤ 25 mL (volume concentration ratio 16 (excluding dead volume);

- Dead volume: 12mL;
- Tritium-hydrogen separation coefficient β: T/H>6.5;
- >65% recovery of tritiated water;
- Electrolyzer cooling temperature: ⩽ 5° C;
- Lower detection limit: ⩽ 0.1 Bq/L.

Tritium Monitor

1. Model 311 Rackmount Tritium Monitor

Product introduction

The Model 311 rack-mounted tritium monitor uses a single ionization chamber as the main measurement device, and the measurement volume is optional from 10ml to 2L. Depending on the selection, the detection range can cover the concentration range from 1uμCi/m3 to pure tritium. Commonly used in glove box monitoring, process gas monitoring and chromatographic measurements and similar fields.

Technical Parameters

- The special ionization chamber has passed the tritium leak detection test, and the leakage factor can reach 10-9, which is highly pressure-resistant and can avoid the leakage of high-purity tritium gas;
- Lead shielding can be installed to reduce Fua gamma background;
- Noise level and stability better than ±1μCi/m3;
- Accuracy up to ±5%;
- Different response times for different tritium concentrations. The response time is 3 seconds when the concentration is higher than 1000mCi/m3, and the response time is 5~10s when the concentration is 80~1000mCi/m3. Below 80mCi/m3 the response time is 20s.

2. Portable Tritium Monitor

Product introduction

A compact, highly sensitive tritium meter. With RS232 serial data output and user recalibration function.

Technical Parameters

- Measuring range: 1 ~ 19999 μCi/m3, basic sensitivity 2 μCi/m3
- Zero drift: less than ± 1 μCi/m3 after 30 seconds warm-up
- Noise value: ± 1 μCi/m3 (10 seconds electronic time constant)
- Gamma Compensation: Side-by-side ion chambers reduce errors caused by external gamma radiation
- Alpha Pulse Suppression: Electronically identifies and suppresses radon-generated noise spikes
- Response rate: 30 seconds to 90% of final value
- Working environment: 0 °C ~ 40 °C, relative humidity 0~95%, non-condensing
- Ionization chamber volume: 440 cm3, effective volume 400 cm3
- Dimensions and weight: 193*132*175mm, (without handle), weighing 2.3kg

3. Extremely Sensitive Portable Tritium Monitor

Product introduction

Extremely sensitive portable tritium monitor with precise low limit measurements and fast response

(electronic time constant 10 seconds) unmatched by any other portable tritium monitor.

Technical Parameters

- Measuring range: 0~19999 μCi/m3
- Display: digital LCD display, the minimum display unit is 1 μCi/m3
- Stability: Long-term 0.5 μCi/m3 at temperature range 0 °C~40 °C
- Ionization chamber: double chamber, one chamber for gamma compensation, 1400 cm3
- Dimensions: Front panel approximately 5" x 13", 12" high including handle

Regional radiation online monitoring

1. DA-800A Regional Radiation Detection Online Alarm Instrument

Product introduction

DA-800A online neutron and X/γ radiation alarm instrument is an online continuous measurement and alarm device for neutron and X/γ radiation. It uses a high-speed embedded microprocessor and a 7-inch IPS touch LCD display. It can monitor in real time and respond quickly; it also ensures the simplicity and humanization of operation. A reliable communication method is adopted between the host and the probe, which ensures that the host can display the specific dose rate of each probe in real time, and can indicate the current status of the probe (normal/offline/overload) in real time. In addition, radiation area monitoring software can be selected according to site requirements.

Features

- The high-speed embedded microprocessor is selected to ensure the real-time performance of monitoring data and status.
- It adopts a 7-inch 1024×600 IPS LCD display and a full Chinese operation interface, which is easy to use and easy to operate.
- Dose rate unit switchable (μGy/h, μSy/h).
- One host can mount multiple probes at the same time, the default is four probes (expandable to more than 30).
- With the function of automatically identifying the probe, it is convenient for the staff to replace the probe.
- The alarm threshold is continuously adjustable (factory default high threshold is 25uGy/h, low

threshold is 0.0Gy/h).

- The status of each probe can be displayed in real time: normal/alarm/overload/offline.
- The probe has multiple alarm modes, sound and light alarm (standard configuration); it can also be extended to an external alarm, relay switch alarm.
- Each probe has two alarm modes (upper limit alarm/lower limit alarm), which are flexibly applicable to various radiation safety alarm places.
- The host can automatically record the threshold alarm and store it automatically, and it will not be lost after power failure; the threshold alarm record can be queried manually.
- It has a real-time clock function, which can display the year, month and day in real time, and the operation of the clock will not be affected by power failure.
- Communication method: standard RS485 interface, transmission distance up to 800 meters.
- An optional built-in battery is used for on-board dose monitoring and occasions where the working power supply is unstable.
- Optional nuclear radiation online monitoring system management software, which can summarize the dose information of each location, display it in real time, make data graphs, review history, etc.
- Can be customized and developed according to requirements....

Application range

- Radioactive waste repository, industrial non-destructive testing
- Isotope application plant area, gamma irradiation
- X-ray diagnostics in hospitals, cobalt therapy, nuclear power plants....

Technical parameters

DA-PMT5 plastic scintillator detector	
Detector	3*2 inches plastic scintillator+PMT;
Measuring range	10nGy/h-1mGy/h; (optional 1nSv/h-5Sv/h)
Response time	50ms
Update rate	1 time/second (average value within 1s)
Measurement error	≤±15%
Energy response	30Kev～7Mev
Operating environment	temperature -10℃～+50℃, relative humidity (at 40℃) ≤98%
Dimensions	Host: 260×160×68mm (excluding base); Probe: φ60×320 mm.
DA-GM10 GM detector	
Detector	Metal GM tube detector (energy compensation).
Measuring range	0.01 μ Sv/h～2500 μ Sv/h. (higher range is optional)
Sensitivity	1μSv/h>5CPS.
Response time	1S (after algorithm processing).
Measurement error	≤±15%.
Energy response	48Kev～3Mev ≤±30%.
Power supply	220V
Operating environment	temperature -10℃～+50℃, relative humidity (at 40℃)≤98%.
Dimensions	Host: 260×160×68mm (excluding base); Probe: φ50×212 mm.
DA-6LiF neutron detector	
Detector	6LiF scintillation neutron detector

Measuring range	0.1μSv/h~100mSv/h
Energy response	0.025ev~14Mev
Count Life	Limitless
Sensitivity	0.7CPS/μSv/h
Measurement error	≤±15%.
Operating environment	temperature -15℃～+60℃, relative humidity (at 40℃) ≤98%
Dimensions	Host: 260×160×68mm (excluding base); Probe: φ120mm×320mm
DA-3He Neutron Detector	
Detector	3He proportional counter
Measuring range	0.1μSv/h~100mSv/h
Energy response	0.025ev~16Mev
Sensitivity	About 1.4 CPS/μSv/h
Operating environment	temperature -20℃～+50℃, relative humidity (at 40℃) ≤98%
Measurement error	≤±15%.
Dimensions	Host: 260×160×68mm (excluding base); Ball probe: φ300mm×250x242mm; Cylindrical probe: φ200×250mm.

Environmental Gamma Spectrum Monitor

1. Environmental gamma spectrum measurement system

Product introduction

SARS marked the beginning of a new era in radiation monitoring. ENVINET, with its completely innovative product range, offers solutions for spectroscopic online monitoring of ambient gamma radiation in air and water, meeting for the first time all requirements for unrestricted automatic remote monitoring for continuous outdoor use under harsh operating conditions. SARA supports the following applications: ring monitoring systems around nuclear facilities, national monitoring networks, regional monitoring laboratories and systems monitoring ad hoc measurements, transportation monitoring, civil defense and disaster control, desalination plants and fresh water monitoring.

Features

• Rapid, automatic monitoring of extremely low levels of man-made radiation in air and water;
• In situ isotope identification; • Determination of characteristic nuclide dose rates;
• Designed for extreme environments; • Can safely store >3 years of data;
• Integrated WiFi for wireless services; • Supports LTE cellular networks;
• Continuous collection of gamma spectra; • Isotope-based alarm management;
• Detect gamma dose rate and specific activity; • The operating depth of the water detector can reach 500m;
• Optional high-dose spectrometer, up to 100mSv/h;
• Integrated LTE and GPS antenna; • Supports N42.42-2010.

Technical parameters

	Unit	SARA-80F	SARA-80s	SARA-80M
Feature		Wall or distribution box fixed installation	Base Mount Quick Deployment	Tripod Movement Monitoring
Applicable probe		SARA full range of probes		
Operating temperature	℃	-40℃-60℃		
Degree of protection		IP66	IP65	
Relative humidity	%	0~100		
Power consumption	W	1.8		
Voltage	V	110V/230V/AC	110V/230V/AC(Battery powered)	
Battery voltage	V	12		
Battery capacity	Ah	24	2*10	10
Usage time	Day	5	2.5	
Optional accessories		Install bar or distribution box	Quick release mounting base	Tripod

光谱伽马探测器

光谱固定监测站


移动光谱监测站

自主光谱监测站


光谱水伽探测器

2. Underwater gamma energy spectrum measurement system

Product introduction

SARA marks the beginning of a new era of radiation monitoring, ENVINET, with its completely innovative product series, provides solutions for spectroscopic online monitoring of ambient gamma radiation in water, meeting for the first time all unaffected conditions under the harsh operating conditions of continuous use in seawater or freshwater Limitations on automated remote monitoring requirements. SARA series underwater gamma energy spectrometer is an underwater environment gamma energy spectrum detection system with autonomous operation function, which is used to obtain and analyze gamma energy spectrum in water online. Calculate the total gamma activity and total gamma dose rate and activity of each isotope.

Features

- Rugged (IP68 / IP69K, maximum water depth 500m);
- Optional GM tube and high dose rate detector to extend the measurement range;
- Isotope alarm management;
- Detector overload protection;
- Built-in Wi-Fi for wireless transmission.

Technical parameters

	Unit	SARA-WO3	SARA-W21	SARA-W22	SARA-W21
Spectrum detector					
Material		NaI (Tl)	CeBr3	CeBr3	CeBr3
Size	inch	3.0*3.0	1.5*1.5	2.0*2.0	3.0*3.0
upper dose rate	uSv/h	100	100	100	80
Activity range	Bq/h	0.55-160000	0.8-200000	0.6-2000000	0.5-160000
Energy resolution	FWHW	6.6%（<7.8%）	4%（<4.5%）	4%（<4.5%）	4%（<4.5%）
Total efficiency	Cpm/（uSv/h）	270000	56000	113000	280000
Photoelectric peak efficiency	Cpm/（uSv/h）	70600	10300	29400	71800
Instrument local	nSv/h	<5	<5	<5	<5

keV	30-3000

Environmental ionization chamber monitor

1. NC-HPIC8000 Online Environmental High Pressure Ionization Chamber Monitor

Technical Parameters

- Detector: 8L high-pressure ionization chamber, filled with Ar gas
- Sensitivity: greater than 2.6×10-6A/Gy/h
- Detecting rays: X, gamma
- Measurement unit: μGy/h, μSv/h
- Measuring range: 10 nGy/h (nSv/h) ~ 100mGy/h (mSv/h)
- Energy response: 60KeV～7MeV
- Inherent error: less than 5%
- Angular response: greater than 0.95 within 4π

- Sampling time: 1s ~ 3600s can be set arbitrarily
- Storage capacity: 230,000 data points
- Alarm threshold: set arbitrarily within the entire measuring range,

And has a failure (failure) alarm

- Output interface: two RS485 two RS232, optional GPRS and Internet
- Working environment: -40℃～+60℃
- Power supply: AC220V, -20%～+20%), 47Hz～63Hz
- Back-up power supply: Lithium battery for 24 hours of instrument use

2. OS-Detection Online Monitoring System

Technical Parameters

- Dose rate range: 0-100 R/hr (0-1 Sv/hr);
- Energy range: 70kev-10Mev
- Detector type: spherical argon-filled high-pressure ionization chamber (filling pressure about 23.8 atmospheres)
- Zero drift: +/- 0.5μR/hr;
- Gain drift: ±3% < 35μR/hr, ±0.5% > 35μR/hr;
- Calibration accuracy: ±3.5%;
- Sampling rate: 5 seconds;
- Operating temperature: -40 ~ 55 °C (without battery);
- Relative humidity: 0-100%;
- Protection class: IP66;
- Communication interface: 3 USB, RS-232 serial port, RJ-45 network port;
- Memory: 1GB, store no less than 10 million data;
- Response time: <10 seconds;
- Certification: CE certification, WEEE certification, IEC certification, ETL certification, RoHS certification;
- Angle dependence: <5% (85% viewable area, looking up), <10% (15% viewable area, looking down);

Aerosol Monitor

1. LB9140 Mobile aβ Aerosol Continuous Monitor

Product introduction

LB9140 is used for continuous measurement of air aβ radioactive aerosol, the main components are:

• Sampling section: aerosol sampling

• Detector: real-time measurement of aβ radioactive aerosol level, a and β activities are measured separately

• Protective shell: Aluminum alloy protective shell used to protect the sampling part, the protection grade reaches IP68. The front panel features a plexiglass window for monitoring filter usage.

• Filter paper feeding speed can be adjusted in 4 levels: 5/10/12.5/15mm/h

• Suction pump: low noise, easy maintenance and long service life. At a standard flow rate of 3m3/h, the maximum noise level at a distance of 1 meter is 60 decibels. Optional flow meter.

Self-test and alarm

The monitor is equipped with a self-test program to monitor the operating status of the instrument in real time.

• Pump status monitoring: When the pump flow rate is lower than the set value or the pump stops running, a trigger signal is given to the electronic system, and a log of the error report is generated.

• Sampling part monitoring: The instrument can monitor the use of filter paper in real time. When the filter paper is only 5 meters long, a "Pre-paper end" message is generated; when the filter paper Generates "Paper fail" message when empty or filter breaks; both conditions trigger red LED on control panel

• Detector failure: When the counting rate is lower than the preset value, a failure signal will be triggered, and the indicator light will go out to prompt

• Pre-alarm: The user can define the pre-alarm value of a and β separately, which is used to prompt the abnormal increase of radiation, and the red indicator light will prompt

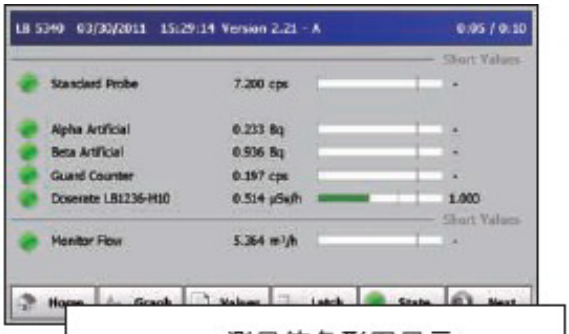
• Alarm: User can define alarm values for a and β respectively. The alarm supports pumping volume alarm, discharge rate alarm and activity alarm (Bq/m3; Bq/h;

Bq/day, week, month). Sound and light dual alarm mode

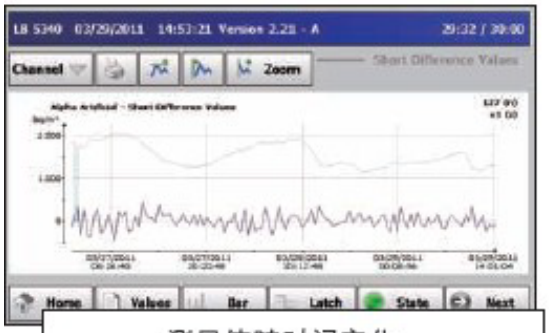
- Alarm light test: one-key test signal input and output

User Interface

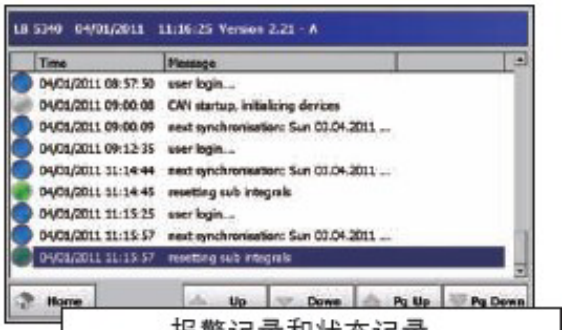
测量值显示界面



测量值条形图显示



测量值随时间变化



报警记录和状态记录

2. AMS02T Aerosol Monitoring (Tape Filtration) System

Product introduction

- AMS02T for the measurement of radioactive aerosols, especially man-made nuclides AMS02T is a

tape-type filter membrane sampling device of the AMS series Bitt technology.

• AMS02T is a stepping belt filter device. The stepping belt unit is characterized by ease of use, maintenance-free mechanics and high nuclear sensitivity. Device measures Alpha, Beta, Gamma Aerosol, Essential Iodine and Beta in one unit

inert gas.

• AMS02T has one or two or three radiation detectors. Alpha and Beta (Radon) measurements are made using a glass fiber filter using a single detector system, embedded PIPS detector.

• In a dual detector system we additionally built 'NaI(Tl)' scintillation detectors or LaBr3(Ce) scintillation detectors for aerosol gamma and basic iodine measurements. The third detector can measure beta noble gases with a plastic scintillation detector. The device has two filter belts. The upper part is a 60 mm wide fiberglass belt for collecting aerosols and the lower part is a 60 mm wide activated carbon impregnated (charcoal) filter belt for adsorption of inorganic iodine. The iodine filter band can be removed separately.

Technical Parameters

• Detector:

-PIPS detector 1700mm2; resolution ≈55keV (α Am-241).

-2''*2'' NaI(Tl); resolution <8% (Cs-137 662keV); background 4cps.

-1.5''*1.5''LaBr3(Ce); resolution <3% (Cs-137 662keV); background 40cps.

-20100mm2 Beta plastic flash (optional) 5500cm2; air chamber background 1.6cps

• Air pump: nominal flow rate 3.5m3/h; optional 8m3/h.

• Membrane: 60mm wide glass fiber filter band; 60mm wide iodine filter band

• Temperature: -10°C + 40°C

• Relative humidity: 0-90% non-condensing

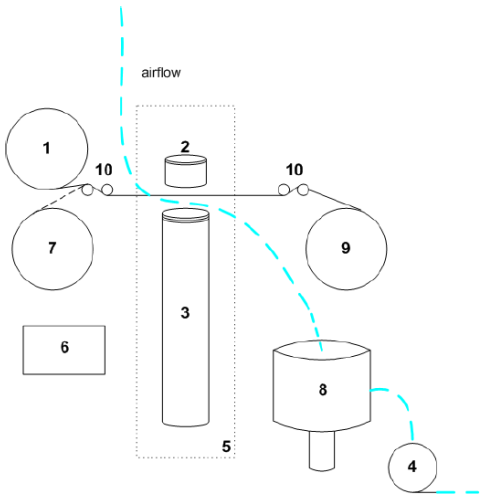
• Dimensions: 700mm x 700mm x 1950mm

• Weight: < 100 kg

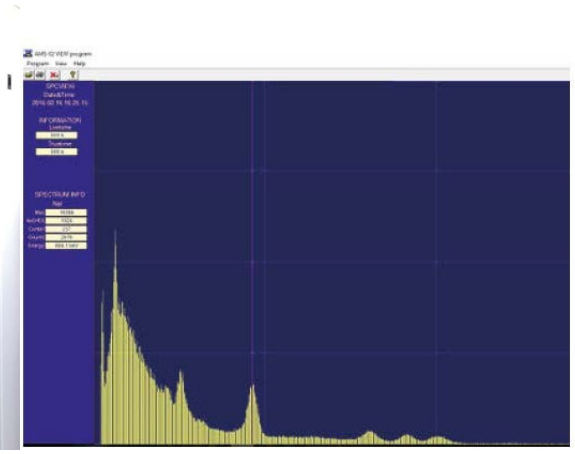
• Power supply: 230 V AC / 50 Hz / < 200 VA

Composition unit (right picture)

1. Aerosol filter belt
2. PIPS detector
3.NaI(Tl) or LaBr3 detector
4. Air flow pump
5. Lead shielding
6. Control unit
7. Ribbon
8. Gas cell with plastic scintillator



3. AMS02 Online Aerosol Intelligent Monitoring System (Unattended)



Product introduction

Combination of a, β and γ measurements in the system, 4 detectors used in the aerosol system, 3 in-line measurement positions and a separate additional measurement position are possible with special filter material for iodine evaluation (at increasing concentrations In case of activation), to achieve efficient and reliable monitoring of artificial nuclides in the air.

- Multiple detectors are optional, high-purity germanium, lanthanum bromide, sodium iodide, plastic scintillation detector, RS04, GSP02
- The station integrates 5 detectors working together
- There are three kinds of filter devices, two kinds of filter membranes and a filter tank with lead shielding to filter and measure aerosol, inorganic iodine and organic iodine respectively.
- Online monitoring, all monitoring data and alarm information are sent in real time.
- Fully automatic aerosol monitoring, regular self-inspection to ensure reliable measurement data
- High intelligence and stability of the machine gun can be unattended around the clock, and its consumables can be used continuously for one year
- Optional weather system matching use
- Cooperating with SCADA server, multiple units can be networked and operated visually. The comprehensive radioactivity monitoring data of each important location can be seen at a glance, and the alarm information and operation status of each monitoring data can be grasped in real time.

Technical Parameters

- Dimensions: 730 x 920 x 1520 (2100) mm
- Weight: Approx. 415 kg
- Power supply: 230 V AC / 50 Hz / 950 VA
- Environment: Temperature -15°C ~ + 25°C
- Collection gas: temperature: -30°C ~ + 40°C
- Relative humidity: 0~99%

Main detector

- -2" x 2" Na(Tl) (2 pcs)

Resolution 8% (137Cs 662 keV)

- -PIPS 1700 mm2

Resolution 55 keV (a241Am) <30 keV (β)

- - Charge-cooled coaxial germanium detector (HPGe) - no LN2 required Resolution 2.0 keV FWHM at

1.33 MeV
Relative efficiency 33% at 1.33 MeV
• -RS04 dose rate detector
Measuring range: 10nSv/h～10Sv/h Temperature: -30° C～+70° C
Measurement uncertainty: [H*(10)] ≤ 1 Sv/h: ±10%
[H*(10)] > 1 Sv/h: ±15%

UAV airborne radiation and source seeking system

1. RS-2 UAV-borne Radiation Monitoring and Emergency Source Search System

Product introduction

The system consists of a six-rotor UAV, a BGO crystal radiation detector, a wireless data acquisition and transmission unit, a flight remote control, and an emergency monitoring and source-finding control platform (including software). Take off, collect space gamma dose rate and count rate, and then transmit the data to the emergency monitoring and source control platform on the ground through the wireless data acquisition and transmission unit. The system can set up the search area and plan the flight path through the emergency monitoring and source-seeking control platform. After the UAV is launched, it will measure the gamma dose rate in the specified area according to the planned path, and draw the concentration distribution map of the gamma dose rate in the area. Has the following advantages:

• Small platform, low requirements for take-off. The control platform is mature and reliable
• Combining with the automatic flight trajectory planning of the map, draw the concentration map, locate the source on the map, and support the free monitoring of the map layout. Real-time return monitoring data.

The main parameters

• Mounted detector: BGO crystal
• Detector size: 2 inches
• Dose rate range: 20nSv/h～100 μ Sv/h
• Effective detection distance: 0.8m (@ Cs-137 5μ Ci, typical value)
• Response time: 5s@1μSv/h

- Measurement error: <±10%
- Sensitivity: 1000cps/(μSv/h)
- Data acquisition transfer rate: 2s
- Data processing and display: monitoring data over time curve, radiation dose concentration map
- Sourcing function: give sourcing instructions when sourcing
- Map function: real-time map display of UAV position
- Maximum communication distance: 5km
- Maximum flight speed: 65km/h
- Maximum wind resistance: 8m/s
- Positioning accuracy: 1m
- Acquisition parameters: gamma dose rate, GPS latitude and longitude, altitude, image, time
- Data transmission: wireless, real-time transmission, communication distance 5km
- Hovering height: 20cm-120m

Radioactive Contamination Monitor

Hand and foot contamination monitor

1. LB 147 Personal Hands and Food Contamination Monitor

Product introduction

The LB147 can be used for simultaneous alpha and beta/gamma measurements, or individually. The unit of the measurement result can be displayed as Bq/cm2 or cps, and each probe has a scale factor for each nuclide and a crosstalk correction for each alpha nuclide. Each probe is continuously monitoring the surrounding environment, and a long-term stable background value is used for compensation of contamination measurement. The monitor also checks for fluctuations in the current background before measuring.

Features

- ZnS(Ag)-scintillator
- High efficiency detector
- Removable hand probe for clothing measurement
- Space saving design
- Simple operation, graphic display, touch panel
- USB, Ethernet, RS232, RS485 communication interface
- Service functions (plateau curves, scales, quality control)
- Advanced data storage of 1750 measurements
- Extended list of nuclides
- Reader answer for access control
- Two-level password protection

Technical Parameters

- Electronics: Compact and high-performance electronics microprocessor, program stored in flash memory for easy program updates, real-time clock, +5V power supply for 2 plus independent probes, standard pulse output, probe high voltage control signal
- Input/Output: 4 digital inputs, 6 high-voltage control ports, 2 communication serial ports, 1 for RS232 or RS485, 2 for RS 232 interface for card reader input and response, Ethernet interface, USB interface, 3 Relays are used to connect external warning lights or access gates.
- Main power supply: wide range input, 85-264VAC, 47-65Hz, power consumption: about 7W, fuse: 2A
- Hand probe: ZnS(Ag) covered tight and thin polyethylene terephthalate
- Entrance window size: 150mm x 230mm, sensitive area: 345 cm2, protective grid transmittance: 80%
- Typical efficiency: C-14: 20%, Cl-36: 49%, Sr-90/Y-90: 52%, Am-241: 33%, (ISO 7503-1)
- Foot Probe: ZnS(Ag) Covered Tight and Thin Polyethylene Terephthalate
- Entrance window size: 150mm x 370mm, sensitive area: 555 cm2, protective grid transmittance: 72%
- Typical efficiency: C-14: 21%, Cl-36: 54%, Sr-90/Y-90: 43%, Am-241: 19%, (ISO 7503-1)
- Environmental conditions:

Operating temperature: -5°C-40°C

Relative humidity: 0-90%, non-condensing

- Weight: 25kg
- Dimensional data:

Standard footprint (without alarm lights) 65cm X 125cm X 80cm (width, height, length)

Small Object Monitor

1. TOM-i Small Object Monitor

Product introduction

TOM-i is the smallest, lightest and newest member of MIRION's CheckPoint:Waste product family for contamination and release. Designed to Cs-137 clearance guidelines, the TOM-i without the modular lead shield weighs only 64kg for easy handling. TOM-i is equipped with the proven MIRION gamma fiber detector. The TOM-i is a reliable monitor for rapid release measurements of tools, hard hats and other small items.

Features

- The monitor is especially suitable for the needs of high pass rate;
- Double-door interlocking function (can be operated as a single door);
- Measuring chamber sized for hard hats and file folders;
- Optional built-in computer and touch screen;
- Portable surveillance monitors;
- Microprocessor control;
- 2 gamma fiber detectors.

Function

- TOM-i is easy to use. It can work in single-door or double-door mode to realize the release of items out of the control area. Both stand-alone and built-in computers feature simple and intuitive user guidance.
- Monitor status and alarms are clearly indicated by color changeable LED light bars on both sides of the entry and exit, bar graph and buzzer. If the monitor includes a built-in computer, the user can easily change any operating parameter. All these features ensure reliable and fast measurement and a high rate of object measurement.

MIRION app for TOM-i

An optional reading device with MIRION app (built-in PC, Android OS) not only provides the monitor's measurement database, but also enables editing of system parameters by authorized personnel. In addition, the measured value at that time will be displayed on the display.

Technical Parameters

- Dimensions: (outside/inside) 579 x 477 x 486 mm / 214 x 300 x 370 mm;
- Weight: (lead-free shielded) 64 kg;
- Dimensions: (external/interior) 499 x 477 x 486 mm / 100 x 300 x 370 mm;
- Weight: (lead-free shielded) 58 kg;
- Detectors: 2 gamma fiber optic detectors;
- Standard lead shield: 15 mm;
- Energy range: 30 keV - 3 MeV

Body counting system

1. G339 Fast Track Whole Body Gamma Contamination Monitor

Product Description

G3903 Fast Track Whole Body Gamma Contamination Monitor (Gate C3) is a device for use at the entrance/exit of the nuclear power plants or related nuclear facilities, and for rapid whole body gamma contamination monitoring of personnel The measurement process can be completed by staff walking through gate C3 at normal speed without stopping, meeting the requirements of peak commuter traffic.

Functional features

- Complementary and balanced layout of detectors, no blind spots in the measurement area
- Dual camera and dual placeholder design for bi-directional walk-through
- Dynamic updating of the background, with measured values displayed as net count rate or radioactivity
- The software automatically scales at regular intervals and saves the results
- The instrument can be remotely commissioned and monitored from a distance using a handheld device
- Can be connected to the computer of monitoring center and the security duty room to achieve remote monitoring functions

- All stainless-steel housing and IP65 overall waterproof design

Application areas

- Sanitary access exits of nuclear power plant control areas
- Sanitary access exits of nuclear medical and scientific research laboratories
- Sanitary access exits of nuclear energy facility plant control areas

Technical specifications

G339 Fast Track Whole Body Gamma Contamination Monitor			
Detector type	14 large area plastic scintillators (6 on the left, 6 on the right, 1 on the top, 1 on the bottom, total volume 88L)		
Effective detector area	17600cm2		
Pedestrian passing speed	5km/h		
Pedestrian passage rate	2000 person/hours		
Energy range	50keV ~3MeV		
Lead shielding thickness	25mm		
	Radioactive sources	Minimum detectable activity	Test conditions
Lead shielding thickness	6Co 137CS	800Bq 1.60kBq	Measurement time 10s, confidence level 99% radioactive source in the center of the monitor location
Lower limit of dynamic detection	60Co	3.00kBq	0.1uSv/h underneath this bottom, 99% confidence level normal walk-through of radioactive source over (5km/h)
Alarm methods	Audible and visual alerts for alarms, faults and background abnormalities		
Power supply method	AC 220V+10%,50Hz+10% (optional UPS for 3 hours continuous power supply)		
Communication methods	RJ45		
Display method	8"industrial LCD touch screen		
Housing material	304 stainless steel		
Machine size	External dimensions: 2300H x 800W x 800D(mm); internal dimensions: 2100H x 600W x 800D(mm)		
Weight	Approx.1200kg		
Protection class	IP65		
Working environment	Operating temperature: 0C to 40C; Operating humidity: <95% (no condensing)		

2. G390 Whole Body Gamma Contamination Monitor

Product Description

G390 Whole Body Gamma Contamination Monitor (gate C1) is a device developed and designed by SIM-MAX for the detection of whole body gamma contamination of personnel at the exit of a radioactive sanitary pathway in a nuclear power plant or related nuclear facility. The instrument uses a large area high performance plastic scintillator detector with an original blind spot free detector design method, which can monitor the whole body gamma radioactive contamination and indicate the location of contamination.

Functional features

- Detector with blind spot free design and large area high performance plastic scintillator detector
- Rapidly scans and detects radioactive contamination and accurately locates contaminated areas
- 6 pairs of infrared occupancy sensors for accurate detection of personnel access and occupancy
- Lead shielding on non-detecting surfaces to reduce the effects of external radiation
- Connectable to a monitoring center for remote monitoring, with continuously adjustable alarm thresholds
- Optional English and Chinese interface and beeps

Application areas

- Sanitary access exits of nuclear power plant control areas
- Sanitary access exits of nuclear medical and scientific research laboratories
- Sanitary access exits of nuclear energy facility plant control areas

Technical specifications

Physical properties	
Detector type	14 large area plastic scintillators (6 on the left, 6 on the right, 1 on the top,

	1 on the bottom, total volume 76L)
Effective detector area	15200cm2
Energy range	50keV ~3MeV
Lead shielding thickness	25mm
Working mode	Standing measurement (measuring time < 10 s), walk-through measurement
Lower detection limit	1600Ba (measured for 10s at 0.1uSv/h ambient backaround,99% confidence, source 2 Cs placed in the middle of the monitor)
Electrical characteristics	
Power supply method	AC 220V+10%,50Hz+10%
Power	100W
Communication methods	RJ45
Mechanical properties	
Display method	10.4" color LCD touchscreen
Machine size	External dimensions: 2350H x 865W x 850Dmm); internal dimensions: 2000H x 600W 700D(mm)
Weight	Approx.1200kg
Environmental characteristics	
Operating temperature	0°c to 40°C
Operating humidity	<95%

3. AB333 Whole Body Surface Alpha and Beta Contamination Monitor

Product Description

AB333 Whole Body Surface Alpha and Beta Contamination Monitor (gate C2) is installed at the sanitary access exit of the radioactive control area of a nuclear power plant or related nuclear facility to monitor the possible contamination of all parts of the body of staff leaving the control area When the

user-set alarm threshold is exceeded, the instrument will generate an audible and visual alarm and display the contamination location on the LCD screen, allowing for timely detection and prevention of contamination transfer. It can be widely used in the sanitary access exits of the nuclear plants, nuclear facilities, nuclear power plants.

Functional features

- High performance sheet plastic scintillator plus zinc sulfide detector
- Reasonable detector arrangement to meet whole body pollution monitoring requirements
- Liftable detector for head to accommodate different heights
- Two-step measurement mode
- Rapidly scans and detects radioactive contamination and accurately locates contaminated areas- Optional English and Chinese interface and beeps
- Continuously adjustable alarm thresholds
- Can be connected to a monitoring center for remote monitoring

Application areas

- Sanitary access exits of nuclear power plant control areas
- Sanitary access exits of nuclear medical and scientific research laboratories
- Sanitary access exits of nuclear energy facility plant control areas

Technical specifications

Physical properties	
Detector type	27 plastic scintillators in sheets, coated with ZnS(Ag)
Measurement range	Head, body, hands, legs, feet
Measuring height	160-200cm
Energy range	a: 3MeV~10 MeV; β :50 keV~3 MeV
Lower detection limit	Body: a: 0.02Bq/cm2; β :0.2Bq/cm2 Foot: a: 0.04Bq/cm2; β :0.4Bq/cm2
Detection efficiency	Body:241Am ≥25%;90Sr ≥25% ;Feet: 241Am≥ 15%;90Sr≥15%
Electrical characteristics	
Power supply method	AC 220V+10%,50Hz+10%
Power	200W
Communication methods	USB, RJ45
Mechanical properties	
Display method	12.1" color LCD touchscreen
Machine size	External dimensions: 2350H x 1000W 1200D(mm); internal dimensions: 2000H x 500W x 1160D(mm)
Weight	Approx500kg
Environmental characteristics	
Operating temperature	0°c to 40°C
Operating humidity	<95%

4. AB335 Hand and Foot Surface Contamination Monitor

Product Description

AB335 Hand and Foot Surface Contamination Monitor is primarily used for safety testing of personnel in radioactive plants such as nuclear power plants, nuclear processing plants and nuclear waste warehouses etc. The instrument focusing on the presence of radioactive contamination on the surfaces of key parts of personnel such as hands, feet and clothing. When alpha and beta rays are detected on the surface of key parts of the person's hands, feet and clothing exceeding the threshold, the instrument issues an alarm and indicates the degree of contamination of the hands, wrists, feet and clothing to ensure that the personnel leave without contamination.

Functional features

- Large color touchscreen LCD
- Audible and visual alarm, visual indication of contaminated areas
- Movable detector to detect clothing contamination
- Robust and durable, no routine maintenance required
- Hand detectors can be customized for installation

Application areas

- Sanitary access exits of nuclear power plant control areas
- Sanitary access exits of nuclear medical and scientific research laboratories
- Sanitary access exits of nuclear energy facility plant control areas

Technical specifications

Physical properties	
Detector type	6 plastic scintillators in sheets, coated with ZnS(Ag)
Measurement range	Palms, backs of hands, soles of feet, clothing
Effective detector area	2600cm2
Energy range	a: 3MeV~10 MeV; β :50 keV~3 MeV

Lower detection limit	Body: a: 0.02Bq/cm2; β :0.2Bq/cm2 Foot: a: 0.04Bq/cm2; β :0.4Bq/cm2
Detection efficiency	Body:241Am ⩾25%;90Sr ⩾25% ;Feet: 241Am⩾ 15%;90Sr⩾15%
Electrical characteristics	
Power supply method	AC 220V+10%,50Hz+10%
Communication methods	RJ45
Mechanical properties	
Display method	12.1" colour LCD touchscreen
Machine size	1240Hx890Wx750D(mm)
Weight	Approx.60kg
Environmental characteristics	
Operating temperature	0°c to 40°C
Operating humidity	<95%

5. HFC Hand and Foot Surface Contamination Monitor

Product Description

HFC Hand and Foot Surface Contamination Monitor (hereinafter referred to as the monitoring system) is mainly used to detect the safety of personnel in nuclear medicine departments radiopharmaceutical plants, irradiation centers and other radioactive plants, focusing on the detection of radioactive contamination on the surface of the key parts of the person's hands and feet. When alpha and beta rays are detected on the surface of a person's hands and feet, the instrument will sound an alarm and indicate the leve of contamination on the hands and feet to ensure that the person leaves without contamination

Functional features

- 4 thin plastic scintillator + ZnS(Ag) detectors, total area 1800 cm2
- Industrial control machine controlled, windows operating system

- 10.1" LCD touch screen, visual display of contaminated areas, voice prompts for measurement steps, audible and visual alarms
- IC card reader, personal identification
- Ergonomic and comfortable to use. hand detector with automatic sliding lid to avoid secondary contamination
- RJ45 network port,4G communication, WIFI communication
- Can be connected to a monitoring center for remote monitoring

Application areas

- Sanitary access exits of nuclear power plant control areas
- Sanitary access exits of nuclear medical and scientific research laboratories
- Sanitary access exits of nuclear energy facility plant control areas

Technical specifications

Radiation properties	
Probes	4 plastic scintillators + ZnS(Ag) detector
Detector size	Hands :20cm x 18cm Feet :34cm x 17cm
Detector area	Approx.1800cm2
Energy range	a: 3MeV~10 MeV; β :50 keV~3 MeV
Surface Emissivity Response	Hands : 241Am: ≥25%; 90Sr/ 90Y: ≥25%; Foot : 241Am: ≥ 15%, 90Sr/ 90Y: ≥ 15%
Lower detection limit	Hands:241Am ≥25%;90Sr ≥25% ;Feet: 241Am≥ 15%;90Sr≥15%
Structure features	
Size	1500Hx480Wx670D(mm)
Weight	Approx.55kg
Electrical characteristics	
Power supply	220V AC /50Hz
Show	10.1" colour LCD touchscreen
Communication interface	RJ45, 4G, WIFI support

6. G337 Tool and Small Object Gamma Contamination Monitor

Product Description

G337 Tool and Small Object Gamma Contamination Monitor is suitable for monitoring tools, laptops, calculators, etc. for radioactive contamination within the control area of nucleal power plants and other sites, preventing contaminated tools from escaping and preventing the secondary radioactive contamination outside the control area

The detection unit uses a large plastic scintillator of the same size, matched with a high performance photomultiplier tube to form a separate detection unit surrounded by a 25mm thick lead shield to reduce interference from the natura background, to achieve a fast response determine the level of radioactive contamination and accurately locate the contaminated area.

Functional features

- Automatic background measurement and update. direct LED display of measurement status
- Audible and visual alarms, voice prompts, continuously adjustable alarm thresholds
- Industrial computer control, color LCD touch screen with shortcut keys
- Measurement results are displayed in optional units
- Visualization of pollution distribution areas

Application areas

- Sanitary access exits of nuclear power plant control areas
- Sanitary access exits of nuclear medical and scientific research laboratories
- Sanitary access exits of nuclear energy facility plant control areas

Technical specifications

Physical properties	
Detector type	4 (or optionally 6) plastic scintillator detectors
Detector volume	24L

Energy range	50keV ~ 3MeV
Lead shielding thickness	25mm
Lower detection limit	120Bq (4 detectors, 10s measurement at 0.1uSv/h ambient background, 99% confidence, 137Cs source placed on middle part of the monitor)
Mechanical properties	
External dimensions	1100H x 500W x 650D(mm) (excluding monitor height)
Internal dimensions	350Hx300Wx500D(mm)
Weight	Approx.420kg
Environmental characteristics	
Operating temperature	0°c to 40°C
Operating humidity	<95%

7. Nuclear Power Plants Training Simulation System for Radiation Monitoring at Sanitary Entrances and Exits

Product Description

Nuclear Power Plants Training Simulation System for Radiation Monitoring at Sanitary Entrances and Exits is independently designed manufactured by SHUOBODA and as a set of detection training simulation system for staff of the entrance and exit of nuclear power plant or nuclear facilities site. The system is a comprehensive simulation from several aspects such as appearance, hardware and software functions to restore the real scene on site. Through the actual operation of the simulation equipment, the participants can strengthen their knowledge of the sanitary entrance and exit equipment of the control area understand the flow of entry and exit of the control area, and improve the radiation protection training effect.

Functional features

- Simulation of control area access flow.
- Simulation measurement process of gate C1, correction of occupancy errors and post-alarm handling.
- Simulation measurement process of gate C2, correction of occupancy errors and post-alarm handling.
- Simulation measurement process of the CPO and post-alarm handling.
- Simulating the use of the turn-on device of the personal dosimeter.
- Simulation measurement process of the EPD and post-alarm handling.
- Correctly judgement of the waiting posture of trainees for inspection and correct the wrong posture through voice prompts.
- Tablet remote alarm.
- Computers with tutorial video are equipped at the entrance of Gate C2.
- Exterior dimensions and alarm sound are identical to the rea machine.
- The software interface and measurement process are identical to the real machine on site.





Technical specifications

Model number	Product abbreviations	Display screens	Specification size
G390-S	Gate C1	12.1"	2190Hx940Wx603D(mm)
AB333-S	Gate C2	Main screen 12.1"secondary screen12.1"	2350Hx1000Wx1200D(mm)
G337-S	CPO	5.6	700Hx700Wx1000D(mm)
G316-R	Personal Dose Readout	Display screens	276Hx261Wx80D(mm)
B3S	Triangular roller gates		420Hx240Wx1000D(mm) Length of gate lever 500mm
G316-S	Personal dosimeter simulator		87Hx62Wx30D(mm)

8. WBC-200-DS8530 High Purity Germanium (HPGe) Seat

Product introduction

High resolution whole body counting seat with dual HPGe detectors and mechanical cooling system.

- Fast and accurate analysis using high-purity germanium detectors
- High resolution HPGe resolves NaI spectral interference
- Whole body counting solution without LN2
- Large area HPGe PROFILE series detectors
- Optional NaI thyroid detector

9. StandFAST II Standing Whole Body Counter

Product introduction

The StandFAST II is a stand-up whole-body counter system for rapid screening of persons that identifies and quantifies fission and activation product radionuclides in the body. It is a major innovation in rapid screening whole body counters.

- Hexagonal pass-through shield design optimizes placement in corners or open spaces and provides efficient throughput of measured objects.
- Computer-optimized shield design provides maximum internal space, improving detection limits while minimizing system weight.
- The Windows-based system software has a complete database of the measured object and can be easily connected to other computer systems as required.
- UUT prompting and interleaving enables maximum throughput during periods of high demand such as reactor outages.
- 150 Bq (4 nCi) 60Co LLD, individual scan.
- Quality assurance functions guarantee the validity of the results.
- Gain-stabilized, computer-controlled electronics.
- Segmented construction simplifies assembly in tight places.

Technical parameters

Shield	
Gross weight	3855 kg (8500 lbs)
Heaviest item	1043 kg (2300 lb)
Overall height	221 cm (87 inches)
Detector	
Two 4" x 4" x 16" NaI(Tl) detectors including ORTEC's latest NaI electronics.	
Control lights	
Highly visible control lights indicate "ready to count", "counting in progress" and "alarm conditions".	
Model	**Description**

STANDFASTII-PC	Standing full body counter. Contains shield, two 4x4x16 NaI detectors, electronics, computer and software
STANDFASTII-NOPC	Standing full body counter. Contains shield, two 4x4x16 NaI detectors, electronics and software

10.I131 Therapeutic Dynamic Radiation Monitoring System

Product introduction

131I treatment of thyroid disease has been widely used clinically, with remarkable curative effect, safety and convenience, and is the fastest-growing nuclide treatment item in my country. 131I is also widely used in my country in the diagnosis, treatment and curative effect evaluation of differentiated thyroid cancer, such as 131I diagnostic whole-body imaging, 131I whole-body imaging after treatment, 131I removal of residual thyroid tissue after thyroid cancer surgery and Treatment of recurrent and metastatic tissue.

Explore WB Scan whole body dynamic radiation monitoring system, through the whole body imaging of patients after 131I treatment, it is convenient and fast to obtain the distribution image of 131I in the body, so as to obtain the residual dose more accurately. For the radiation monitoring of patients after 131I treatment and the discharge Conditions provide basis and reference.

Functions and Features

- **Wide field of view dynamic nuclide imaging**

Explore WB Scan innovates through special mechanical design and unique detector design concept, and adopts dynamic scanning mode to perform whole-body 131I imaging on patients with thyroid cancer after taking a large dose of 131I. Compared with the traditional SPECT, in addition to a large change in the acquisition position, it is also significantly better than the traditional SPECT in terms of acquisition speed.

The image information obtained by the system facilitates the assessment of the residual 131I dose in the patient's body, and the fast scanning mode also provides the basis for dynamic monitoring of the residual 131I in the body.

- **Unique remote acquisition control**

The workstations of Explore WB Scan collection, image processing and quantitative analysis are located

in the doctor's operating room, and are connected to the host computer in the isolation ward through the network. Physicians do not need to contact patients when they are performing image acquisition, processing and quantitative analysis. During image acquisition, there is no need for the operating physician to go to the isolation ward for patient alignment. The patient only needs to stand at the front of the detector, and the operating physician can perform image acquisition remotely.
The unique remote acquisition control greatly improves the implementability of this technology.
During the image acquisition process, the patient does not touch any moving parts, which better guarantees the safety of the patient

- **Image processing and 131I activity determination**

The Explore WB Scan workstation can perform image reconstruction and processing on the collected information to provide a basis for subsequent activity measurement. Through the previous calibration, the system automatically completes the calculation and analysis of image signals, obtains the activity of 131I remaining in the whole body, and provides a basis for the evaluation of 131I remaining in the body of patients before discharge.

- **Research and upgrade**

1. Explore WB Scan is capable of rapid whole-body residual 131I scanning, providing the basis for dynamic analysis of whole-body residual 131I activity. Therefore, the distribution and radiation of 131I in the body can be dynamically understood.
2. Monitoring and dynamic analysis of radiation in specific organs after 131I intake
3. Detection and dynamic analysis of radiation after 131I ingestion in organs of interest
4. To provide the preliminary basis of scientific research for the guidance of 131I internal radiation therapy through radiation monitoring

11. WBC-BSCAN Whole Body Bed Scanning System

Product introduction

High resolution whole body scan counter for routine investigations.

For longer survey measurements, a scanning table can be used. WBC-BSCAN provides high-resolution spectra for WBC analysis using LN2-free cooling and ORTEC PROFILE series detectors. An easy-to-setup motor control module provides control of the scanning platform.

Model	Description
WBC-BSCAN	High-resolution HPGe scan bed with one detector, LN2-free cooling

12. WBC-LB High Purity Germanium (HPGe) Lung Counting System

Product introduction

- Large area HPGe detector for extended lung coverage
- Excellent low energy resolution also with LN2-free cooling
- Comfortable seat for long lung counts
- Component system fits most existing low-background measurement chambers

Technical parameters

Model	Description
WBC-LB-2	HPGe-based high-resolution lung count analysis system with two detectors
WBC-LB-4	HPGe-based high-resolution lung count analysis system with four detectors

13. WBC-T Thyroid Screening System

Product introduction

Simple benchtop system with a 2" x 2" NaI detector for the analysis of iodine in the thyroid.

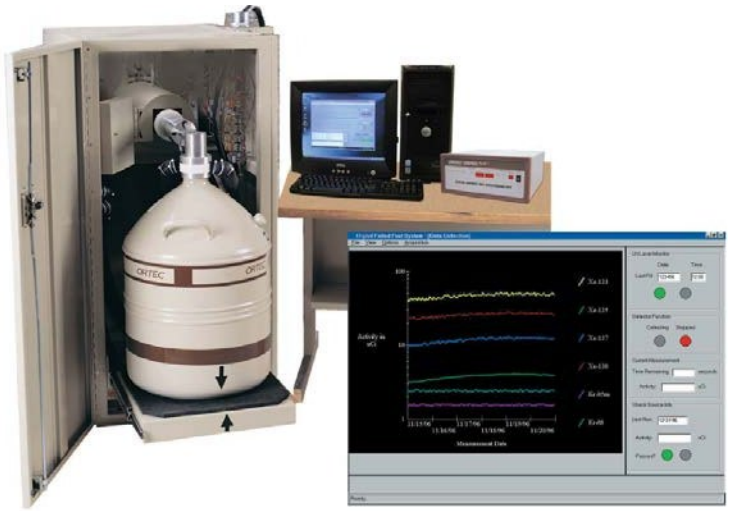
- Adjustable desktop shield
- Simple setup
- Available alone or as an option for seat counters

Technical parameters

Model	Description
WBC-T	NaI-based benchtop thyroid screening system with one detector

Online Fuel Breakage Monitor

1. OS5400 Sentinel Digital Fuel Breakage Detection Spectrometer



Product introduction

This extremely robust and reliable system monitors the concentration of fission and activation products in the reactor system to detect degradation of fuel boundary integrity based on the activity levels of key isotopes and their relative abundances. The FINESS system is a good example of such a system.

- Monitor the concentration of fission and activation products in the primary coolant to detect fuel element failures as they occur
- Unparalleled stability and reliability even under varying count rates and temperatures
- Provides a graphical display of concentration levels
- Monitor user-defined alarm levels
- Automate QA checks based on own performance
- Includes powerful, flexible networking options

Key Components

- The core of Sentinel is DSPEC, which uses DSP

(digital signal processing) technology for gamma ray spectrometers. Sentinel offers unrivaled stability under varying count rates or temperatures, making it ideal for automated monitoring applications. Sentinel can run on a single PC or a network of PCs under Windows® 2000/XP. Expensive custom software, custom enclosure design and on-site system integration will no longer be an issue.

- Sentinel acquires spectra, tracks activity levels in user-defined regions of interest, automates calibration checks, monitors alarm levels, stores data, and automates quality assurance procedures that check source data.

All activities can be performed locally or remotely from a PC with GammaVision software.

Structure

The detector cabinet contains the shield assembly, liquid nitrogen supply system, inspection source and a 25 mm diameter GLP planar germanium radiation detector that provides excellent energy resolution at low to medium energies. The selected forced feedback preamplifier is suitable for the expected high count rate. The detector has a robust ion-implantation front interface that eliminates X-ray spectral

interference inherent in less reliable metal interfaces. The detector is surrounded by a lead shield assembly with detector collimator. The shield assembly is hinged and the detector is mounted on a sliding drawer for easy removal from the shield and detector cabinet.

Option

The following options are available for your system: Mechanical (non-LN2) detector cooling
Strip chart recording of concentration data at local or remote locations Local and remote alarm output and display
Choice of PC: laptop, desktop, industrial grade or full console

2. OS5500 pipeline monitoring system

Product introduction

Ideal for monitoring gamma activity of water and other system fluids flowing continuously through pipes. Potential users include nuclear power plants, waste reprocessing facilities, and DOE mechanism.

Basic components

All Model OS5500 systems include a lead shield and a Model 905-4 (3" x 3") NaI detector. 2.5" thick lead-antimony alloy shield for high strength. Large NaI detectors provide high efficiency for low level counts and are easily calibrated with suitable radioactive sources. Once assembled, there will be a steel shell surrounding the shield to prevent it from shifting. It also provides a safe barrier for lead.

NIM-based systems

A NIM based system consists of a Model 276 Header, Model 672 Amplifier, Model 556 Bias Supply, Model 550A Single Channel Analyzer, Model 871 Counter/Timer, and Model 661 Rate Meter - all housed in a single NIM chassis/power supply (Type 4001A/4002D).
There are two options for the NIM system. They are:

- Model 449 Log/Lin Rate Meter
- Model 850 Quad SCA for simultaneous monitoring of up to 4 regions of interest (ROI)

Detection limit

ORTEC measured the detection limit of the system in the laboratory. These tests were done on systems with and without the check sources installed. A full PC control system was used to determine the MDA of 241Am and 137Cs peaks with checked sources and 241Am, 137Cs and 60Co without checked

sources.

Analog/Digital Input/Output Options

Any number of input/output options can be configured for the full PC control version. Typical configurations include:

- User configurable software installer
- PC I/O card
- Isolation module
- Termination wires for connecting devices
- Industrial, Rackmount PCs
- Electronic enclosures

Technical parameters

Model	Description
OS5500-NIM	Pipeline monitoring systems including NIM-based acquisition electronics
OS5500-PC	Full PC control using digiBASE and EMS-ISG software
OS5500-PC-SPEC	Add Spectral Acquisition Capabilities Using GammaVision Software
OPT-1	137Cs Examine sources and associated hardware

Medical and Nuclear Emergency

Optical Luminescent Dosimetry System

1. microSTARii Dosimetry System and Reader

Product introduction

- In radiation oncology, patient safety is at the center of public concern and regulatory scrutiny. Increasingly complex treatment protocols and evolving standards have further raised the bar for radiation safety, increasing the risks faced by healthcare facilities.
- As part of a patient quality assurance program, there are many reasons for independent verification of planned doses during or prior to first radiation treatment, including adherence to professional therapeutic practice guidelines, risk reduction, and improved safety and quality of care.

• Patient-specific dosimetry provides important information for early identification and correction of potential errors or omissions in delivering prescribed doses. The nanoDot medical dosimeter and microSTARii medical dosimetry system with LANDAUER's optical luminescence (OSL) technology offer a simple, flexible wireless alternative to diodes or field effect transistors (mosfets) for in vivo1 dosimetry, and also Can be used with QA phantoms to qualify machine output.

MicroSTARii medical dosimetry readout using nanoDots is simple and efficient

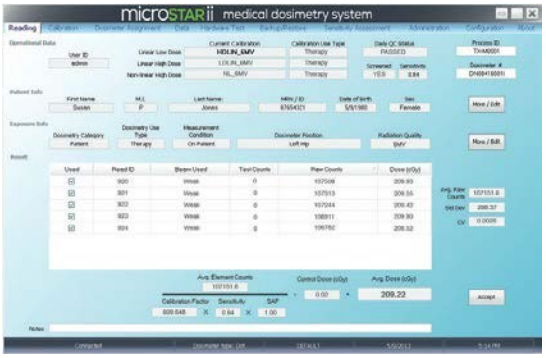
• Instant, independent verification of planned doses with nanoDot dosimeters
• Advanced Pulse OSL technology increases reading accuracy and reading times
• Fast and efficient individual dosimeter readings near the point of use
• Small and lightweight, easy to carry

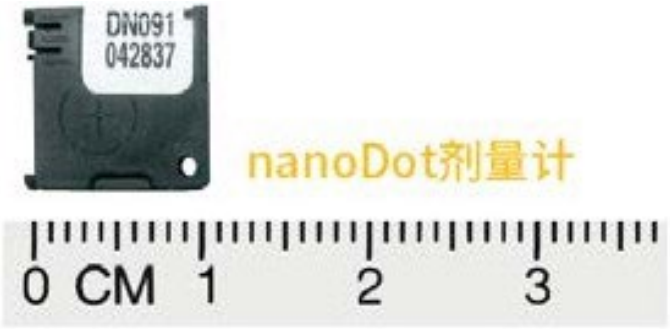
Tailor-made software for medical dosimetry applications that simplifies analysis, reporting, and reporting

• Built-in and automated quality control (QC) functions for efficient implementation of the LANDAUER microSTAR readout quality assurance program
• Patient-centric workflow with additional fields to support automatic rereading of patient and exposure information, improving accuracy and efficiency
• Built-in dose reporting simplifies the reimbursement process

nanoDOT dosimeter features and benefits

• nanoDot medical dosimeters have a wide operating energy range (5 keV to 20 MeV) and are ideal solutions for dosimetric verification in radiation oncology and other single-point dosimetry applications - linear dose response up to 3 Gy; software supports nonlinearity Calibration, up to 15 Gy
• Reanalysis function (non-destructive readout)
• Disposable dosimeters, no dosimeter preparation required
• Dosimeters are barcoded for complete chain of custody
• Has minimal angular or energy dependence in the megavolt energy range
• Accuracy within ±5.5% for photons and electrons from 5 MeV-20 MeV*
• Dosimeters can be placed anywhere on the body and are wireless and radiolucent
• For measuring dose at target point
• Can be used for on-site and off-site measurements
• Surface dosimetry without accumulation or depth measurement with accumulation





2. Lexsyg smart automatic thermoluminescence / optical luminescence

dose readout instrument

Product introduction

Lexsyg smart is one of the most advanced full-automatic thermoluminescence readout devices at the moment, and it can simultaneously load 40/50 detection elements of different specifications, such as: discs, squares, powders, rods, etc. The readout adopts ceramic heating components, and the heating temperature can reach 500°C (standard version) or 710°C (upgraded version). measurement requirements. A built-in beta source or X-ray unit (optional) greatly expands calibration capabilities and quality control procedures. Readouts can add hardware for optical luminescence (OSL) measurements.

Features

- Compact design, high cost performance;
- Maximum heating temperature is 500°C (standard version) or 710°C (upgrade version);
- With thermoluminescence and optical luminescence (optional) dose measurement capability;
- Compatible with various detector specifications: disc, square, powder, rod, etc.;
- Optional rotary disc filter (including 6 filters) to expand the application range;
- Optional built-in radioactive source or radiation device, rich calibration functions;
- Flexible definition of heating curve, real-time display of luminescence curve;
- Sensitivity calibration of a single detection element, automatically subtract background.

Technical parameters

Item	Specification
Heater	Ceramic heater with thermocouple
Heating rate	0.1K/s to 20K/s
maximum heating temperature	500°C (standard version) or 710°C (upgrade version)
Stability	8 hour operation better than ±1%
Accuracy	±1% S.D. (Large readout)
Linearity	up to 10Gy
Measuring range	7 orders of magnitude
Loading	40 or 50 detection elements

Detection element specification	Compatible with all kinds of solid components in flake or powder form, the maximum diameter is 8mm
Interface	LAN port to PC or network (IP device) RJ45 Ethernet port
Conversion filter (optional)	Up to 6 different filter positions and different filter combinations (limit 8mm)
Built-in radiation source or radiation device (optional)	90Sr sources with different activities (eg: 18.5MBq; 185MBq; 1.85GBq etc.), 50keV X-ray tube
OSL unit (optional)	Excitation LEDs of different wavelengths, e.g. blue (485nm), infrared (850nm)
Consumables	Dry air or nitrogen (for more accurate measurements)
Nitrogen consumption	Consumption of single measurement <300ml

3. IR-200 Multifunctional Irradiator

Product introduction

IR200 multi-functional irradiator is a compact multi-purpose irradiation system with a built-in 90Sr/90Y source with an activity of about 33MBq, which is suitable for irradiating various specifications of thermoluminescence/optical luminescence dose detection elements or dose cards. Adjust the irradiation dose by setting the number of sample disk rotations, the maximum number of rotations is 500 (standard) or 1000 (optional).

Features

- Small size, small footprint;
- Compatible with various detection elements and dose cards;
- Flexible setting of radiation dose.

Technical parameters

Item	Specification
radioactive source	90Sr/90Y
source activity	33MBq (0.9mCi)

capacity	50 round TLD elements or 6 aluminum TLD cards or 7 Rados series TLD slides, other types of detectors can be customized
dose/turn	About 0.3mGy equivalent gamma dose
Rotating speed	approx. 2 rev/min
Number of revolutions	500 (standard) or 1000 (optional)
repeatability	< 2%
External Surface Dose Rate	< 5μSv/h
Voltage	85 ~ 264V/47 ~ 440Hz
fuse	1A (delay)
size	220mm×195mm×350mm (W x H x D)
weight	Approx. 9.5 kg

Radiological diagnostic quality inspection system

1. IBA MagicMax Universal X-ray Evaluation Output System

Product introduction

• Suitable for evaluating various X-ray machines, including: CT machines, film machines, fluoroscopy machines, pulse fluoroscopy, portable X-ray machines, etc.
• One-time exposure measurement data including kVp, PPV, dose, dose rate, exposure time, HVL, total filtration.
• Free data storage and analysis software is provided randomly, and user reports can be customized.

Features

• With an external dual-channel detector interface, a second-channel dose detector can be attached at the same time.
• Data transmission application direct wired connection, high-speed data transmission technology. Can truly achieve 0.1ms detection technology.
• The dose and kVp waveform can be displayed in real time for easy analysis. The minimum resolution time of the wave form is 0.1 milliseconds.

Range and accuracy of conventional X-ray machines and fluoroscopy systems

• Kilovolt: 40-150kV / ±2%
• Dose: 50nGy-50Gy / ±5%
• Dose rate: 0.1μGy/s-120mGy/s / ±5% or ±0.02μGy/s
• Exposure time: 0.2ms-999.9s
• Fast half value layer: 1.3-10mmAl / ±10% or 0.2mm
• Total filtration: 1.5-30 mm Al / ±10% or ±0.3mm (60-120kV.HF/DC)

Breast machine range and accuracy

• Kilovolts: 20-49 kV / ±1.5% or 0.7 kV
• Dose: 50nGy-50Gy
• Dose rate: 0.4μGy/s-700mGy/s
• Exposure time: 0.2ms-999.9s
• Fast half-value layer: 0.2-1.2 mm Al depending on radiation quality / ±5%
• Total filtration: 1.5-30 mm Al / ±10% or ±0.3mm (60-120kV.HF/DC)

Range and accuracy of CT machine part

- Analysis software can automatically report CTDI value after measurement
- Exposure dose: 10nGy – 9999mGy
- Exposure rate: 100nGy/s – 120mGy/s
- Exposure time: 1 ms – 199999 s
- Effective measuring volume: 4.9cm3
- Overall effective length: 100 mm
- Leakage Rays: < +/-4x10 -15A
- Measuring range: 100 kV – 150 kV
- Scale factor (typ.): ND,K=70mGy*cm/nC(120kV/HWD4.05 mm Al)

2. RaySafe X2 X-ray quality assessment system

Product introduction

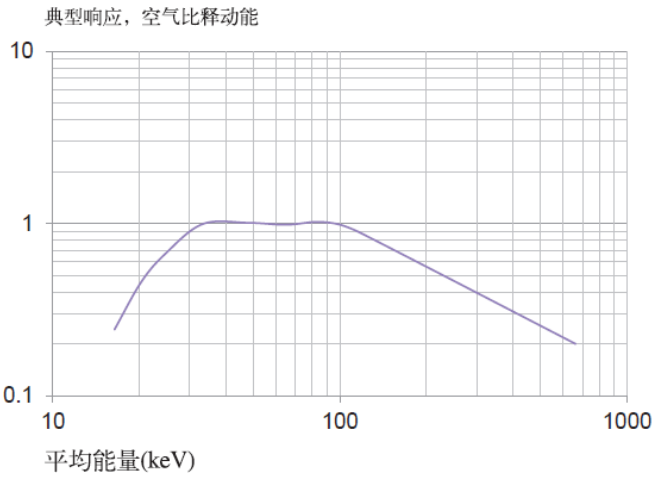
Raysafe X2 is an intelligent, multifunctional professional inspection tool for quality control of medical diagnostic X-rays, suitable for all medical diagnostic X-ray equipment, including those equipped with industrial frequency X-ray generators and high-end variable frequency X-ray high-voltage generators X-ray machine, filming machine, fluoroscopy machine, pulse fluoroscopy machine, dental machine, panoramic dental machine, dental CT machine, low-dose CR machine, DR machine, small portable X-ray machine, DSA (digital subtraction system), different targets Medical X-ray machines such as mammary gland machines, scanning mammary gland machines, and CT machines. Can detect kilovolt value, dose, dose rate, half-valence layer, exposure time, pulse number, dose/pulse, frame number, dose/frame, mA, mAs, and can also detect illuminance, dose, dose in AEC/ABC mode at the same time rate, machine room/tube leaking rays.

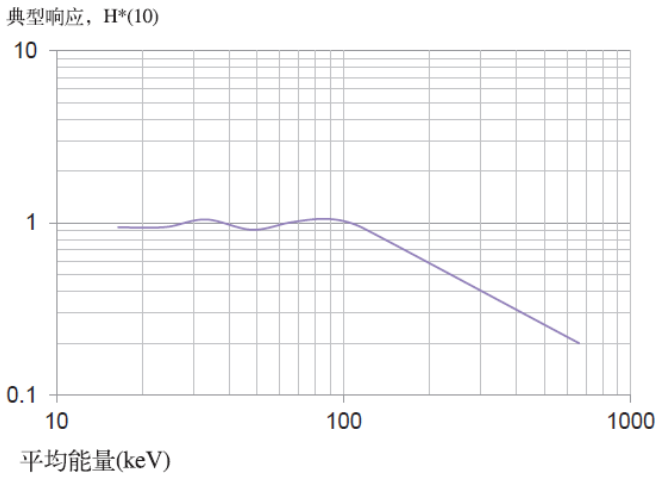
Features

- One host can be equipped with different probes to meet the needs of different customers, and the functions of the probes can be separated and integrated according to customer needs;
- Color touch screen tablet workstation with bluetooth telemetry function and special quality control software, Chinese operation interface;
- Software data processing and analysis views. Data can be exported to Microsoft Excel.

Detector type

- X-ray probe, breast probe
- CT probe, light probe





3. Accu-Gold + Multifunctional X-ray Quality Controller

Product introduction

- Accu-Gold + is a family of products from Radcal that supports its full range of advanced diagnostic capabilities.
- Accu-Gold+ supports Radcal's full range of ion chambers, solid state dose diodes and solid state multifunction detectors in a precise, compact stackable design.
- Comprehensive parameters, including dose, dose rate, waveform, exposure time, kV, HVL, filtration, mA, brightness, etc.
- Suitable for all radiography, fluoroscopy, mammography, CT and dental modalities.

Technical Parameters

- Display size: 5"
- Resolution: 800 x 480
- Screen lock: The display orientation is automatically flipped according to the screen
- Operating temperature: 15 °C - 35 °C

- Storage temperature: 0 °C - +60 °C
- Air pressure: 60-105 kPa
- Humidity: up to 80%RH or 20 g/m3
- Battery life: >5.5 hours
- Storage: 16 GB (> 100,000 exposures)
- Dimensions: 114mm x 92mm x 158mm
- Weight: 700g

AGMS-DM+ multi-function probe

- Energy range: 20kV-160kV, accuracy ±2% or ±0.7kV
- Half-value layer filtration: 0.16-13.5mmAl;
- Exposure time: 1ms-300s, accuracy ± 0.1% or 0.2 ms
- Dose range: 80 nGy – >100 Gy, accuracy ±5%;
- Dose rate range: 80 nGy/s – 200 mGy/s with ±5% accuracy

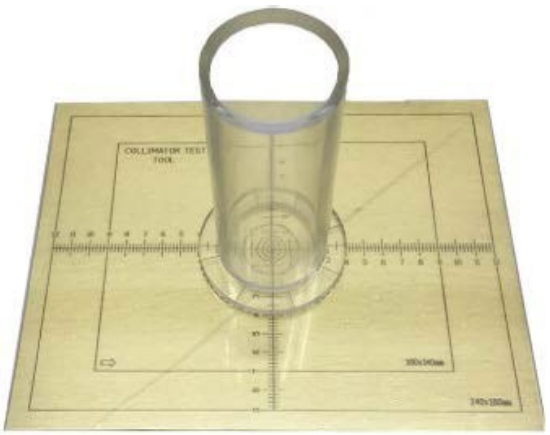
AGMS-M+ breast probe

- Energy range: 20kV-50kV, accuracy ±2% or ±0.7kV
- Optional target materials Mo/Mo, Mo/Rh, Rh/Rh, W/Ag, W/Rh, W/Al;
- Dose range: 80 nGy – >100 Gy, accuracy ±5%;
- Dose rate range: 80 nGy/s – 200 mGy/s with ±5% accuracy
- Half-value layer filtration: 0.16-1.96 mm Al with an accuracy of ±5% or ±0.05 mm Al
- Exposure time: 1ms-300s, accuracy ± 0.1% or 0.2 ms

10X6-3CT long rod ionization chamber

- Detector type: air ionization chamber;
- Dose rate range: 20nGy/s-350 mGy/s;
- Dose range: 200nGy-1kGy
- Sensitivity: about ±2%;
- Energy Response: ±5%, 3 - 20mm Al HVL

4. Light field/irradiation field consistency detection board and verticality detection cylinder



Product introduction

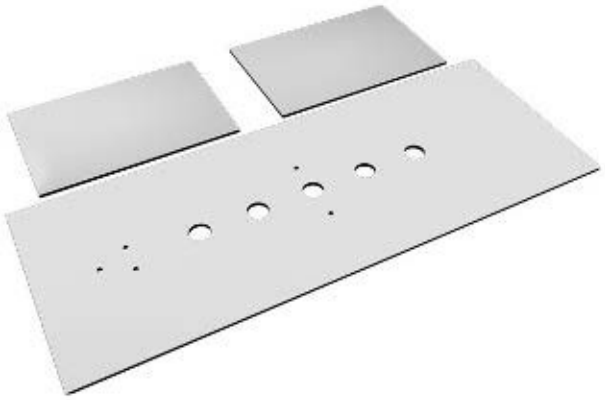
The light field irradiation field detection device includes a detection plate and a collimation tube. Used to verify that the light field is properly aligned with the X-ray field and to verify that the center of the beam is perpendicular to the plane of the image receptor. Misregistration at a focus-film distance (FFD)

of 100cm is easily discernible using the field-of-field conformance test tool/collimator, but it can also be detected at any focus-film distance.

Technical Parameters

• The height of the inspection barrel mark is designed to be 153mm;
• The matching collimation detection plate is designed with a small circle diameter of 8mm and a large circle diameter of 16mm.

5. Grid Center Alignment Test Board



Product introduction

Used to check the alignment of the convergence grid of X-ray equipment with the center of the useful wire bundle. The alignment of the radiographic grid to the center of the X-ray beam is judged by film exposure imaging with clear image quality. High-quality materials and special craftsmanship are used to ensure the efficiency of on-site work.

Technical Parameters

Consists of 3 lead plates with 5 large holes and 5 small holes.

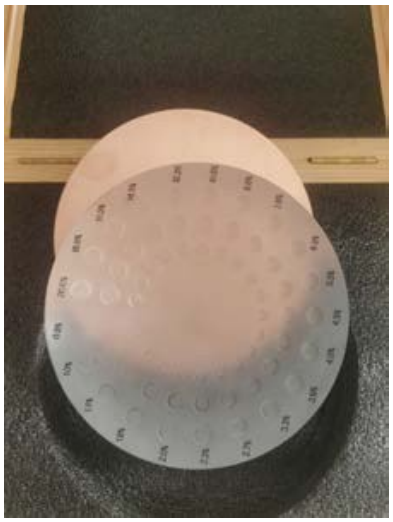
6. 19-hole low-contrast detail inspection phantom

Product introduction

• For low-contrast detail resolution detection in CR and DR imaging systems.

• 100mm in diameter, 20mm thick; 19 round holes with a diameter of 1cm evenly distributed on the aluminum plate.

7. IEC Low Contrast Phantom



Product introduction

• This phantom refers to the IEC phantom with 2% low-contrast details. The phantom is made of 40mm thick PMMA material and 1mm thick copper plate. The three sets of detail diameters are 7mm, 10mm, and 11mm. Each detail Each has 21 detail spaces, which can meet the low-contrast detection requirements of both perspective equipment and photographic equipment.

• The exposure conditions of fluoroscopy and photography refer to the requirements in "Quality Control and Testing Specifications for Medical X-ray Diagnostic Equipment" WS76-2020.

• The resulting contrast to a first approximation for a disk is as follows:

0.8%, 1.4%, 18%, 2.0%, 2.3%, 2.7%, 3.3%, 3.9%, 4.0%, 4.5%, 5.5%, 6.6%, 7.6%, 8.6%, 10%, 10.8%, 12.3% , 14.5%, 16.0%, 18.0%, 20.0%

8. Dental performance testing device

Product introduction

• The upper plate contains central ring grooves with diameters of 70mm, 66mm, 60mm, 55mm, 50mm for different sizes of conical collimation tubes and a 6mm thick aluminum absorber with a purity of 99.6%;

• The middle plate is a high-contrast resolution test phantom and a low-contrast resolution test

phantom. The high-contrast resolution test phantom includes 1.6lp/mm, 2.0lp/mm, 2.2lp/mm, 2.5 lp/mm, and 3.0 lp/mm, a total of 5 line pairs, arranged horizontally;

- 23.3. The 0.5mm aluminum plate of the low-contrast resolution test phantom, the diameter of the 6 small holes on the aluminum plate is 0.5mm, 1.0mm, 1.5mm, 2.0mm, 2.5mm, 3.0mm, and the purity of the aluminum plate is 99.6%;
- Clearance on base plate for dosimetry detectors and sensors;
- Includes 0.8mm thick copper plate and matching carrying case.

9. CT value water phantom

Product introduction

The CT value of water, the unit of CT value is HU is defined by the X-ray absorption system of water, and the range is between -1000~+1000. Made of tissue-equivalent material, it is filled with pure water when in use. It is used to measure the CT value of CT machine. When in use, the water phantom should be placed on the bracket so that it is perpendicular to the jet.

Specification

- Diameter: 200mm;
- Thickness: 120 mm;
- Wall thickness: 8 mm.

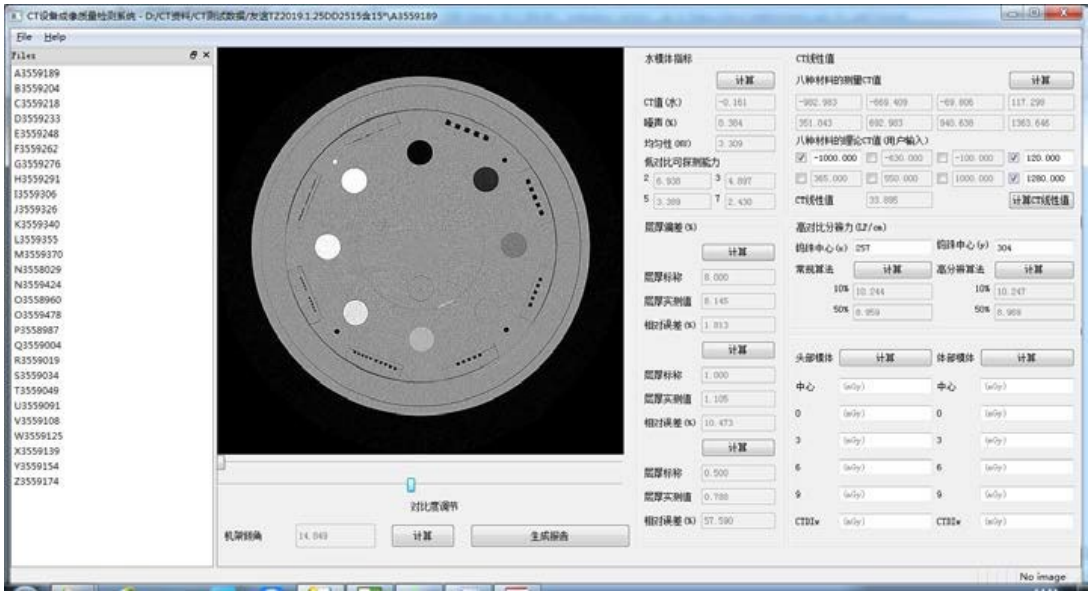
10. Aluminum plate, copper plate

Product introduction

- Aluminum foil: 0.1 mm, 0.5 mm, 1.0 mm, 2.0 mm
- Dimensions: 100mm x 100mm
- Aluminum purity: ≥99.5%

- Copper plate: 1.0 mm, 1.5mm, 2.0 mm
- Size: 18cmX18cm, 20cmX20cm

11. RGRMS-2016 CT imaging performance detection phantom



Product introduction

• RGRMS-2016 CT imaging performance testing phantom (hereinafter referred to as RGRMS phantom) is a new type of testing and evaluation equipment developed for medical CT image quality control management. performance. As a head phantom for stability and quality control monitoring in medical institutions, its shape is as close as possible to the size of the heads of Chinese adults, children and babies, and it is easy to operate and takes up less machine time.

• The RGRMS mold is composed of water mold + integrated mold two-stage performance bare mold, plus different outer diameters and material jackets, for users to choose into five different purpose molds: A, B, C, D, E:

A. Ø170mm performance bare model + Ø180mm, 5mm thick skull simulation layer + Ø186mm, 3mm thick skull tissue simulation layer. It can be used for acceptance, status and stability testing of testing service units, and is also suitable for medical institutions to conduct various testing and research;

B. Performance bare model with an outer diameter of Ø170mm + abdominal profiling water model set, used to test the imaging performance of the CT system for scanning the abdomen;

C. Performance bare model with an outer diameter of Ø155mm + skull simulation layer with an outer diameter of Ø160mm and a thickness of 2.5mm, suitable for quality control and research of head scanning imaging performance of children aged 1.5-7.0;

D. The bare mold with an outer diameter of Ø100-140mm is suitable for quality control and research of infant head scanning imaging performance.

E. The outer diameter is Ø200mm, the cross section of the water mold section is not less than Ø188mm, and the other parameter test modules are the same as the performance bare mold with an outer diameter of Ø170mm. Replacement for Catphan for acceptance, condition inspection and imaging performance studies.

12. Medical standard water phantom

Product introduction

• Comply with "WS76-2020 Quality Control and Testing Specifications for Medical Routine X-ray Diagnostic Equipment"
• The standard water phantom is used to detect the incident dose of the X-ray fluoroscopy machine.
• Product size: 30cm X 30cm X 20cm, with additional copper plate 1.5mm thick, 30cm X 30cm, with carrying case.

13. CT dose phantom

Product introduction

The CT Head Body Dose Phantom can be used with any computed tomography (CT) system designed for head and body imaging. The phantom can identify dose information for the head and body. This dose phantom allows the user to gather information for determining maximum, minimum and median values of normal tomographic facial thickness when performing dose profiling.

Features

• The CT head body dose phantom consists of two parts: a body phantom and a head phantom.
• Both phantoms are made of solid acrylic resin, adult head: 16cm in diameter x 15cm in length; adult body: 32cm in diameter x 15cm in length
• The body phantom and one head phantom each have 5 probe holes, 1 in the center of the phantom and 4 along the perimeter, 90° apart and 1cm from the edge. The inside diameter of the hole is 1.31cm. Each phantom comes with 5 acrylic stoppers to fit into all holes in the phantom. The metering phantom is equipped with a storage and carrying case for users to purchase.

Weight

• Body phantom: 14.5kg;
• Head phantom: 3.6kg
• Total weight: 18.1 kg.

Specification

- PMMA-15 head phantom, 16cm diameter, 5 drill holes and plugs
- PMMA-15 body phantom ring, 32cm diameter, 4 drill holes and plugs
- 1 ion chamber adapter
- The combined whole (head + body) consists of 9 drilled holes.
- Professional supply: CT head and body dose phantoms, dose head phantoms, dose phantoms, dose torso phantoms, organic water phantoms, various dose absorption water phantoms.

Medical Activity Meter

1. CRC-55tR Touch Screen Activity Meter

Product introduction

- The CRC®-55tR activity meter from Capintec provides speed, accuracy, precision and reliable performance in dosimetry.
- The CRC®-55tR's design includes a menu-driven color touch screen interface that is easy to learn and use. Durable ion chamber, high pressure chamber capable of measuring up to 6 times (250 GBq) with high accuracy, additional functions including USB/PC communication, printer function, plug and play chamber and extended remote function, CRC®-55tR can improve your department as a whole work efficiency.
- The innovative functional design of the CRC®-55tR includes a large easy-to-read display showing nuclide name, quantity count, activity, unit and calibration number.
- Enter data faster with a custom touchscreen interface, including 28 programmable keys. 80 nuclides can be selected by simply selecting the nuclide symbols on the touch screen interface. Other features include a reference source stored in memory that automatically decays to correct the time and date of the day. Automatic quality control tests and self-diagnostics built in with automatic zeroing and background subtraction make the CRC®-55tR easy to use.
- An optional printer allows the CRC®-55tR to print patient vial numbers and syringe identification labels.

Features

- Color touchscreen LCD, menu-driven, 8-inch color VGA touchscreen interface for ease of use
- Enhanced software to support dual ion chamber technology
- Versatile, fast data entry via user touchscreen interface, including 28 user-programmable keys
- Streamlined quality assurance with built-in auto-zero and background subtraction for automatic quality control testing and self-diagnostics

Technical Parameters

Ionization chamber

- Type: Thin wall deep well, high pressure
- Fill other: 5 atm ultra-pure argon measuring range
- Type: Auto Range
- Activity: 250 GBq (6 Ci), max.
- Resolution: 0.001 MBq (0.01 μCi), max.

Display screen

- Type: 8" VGA color touch screen
- Mode: direct read with Bq or Ci
- Bq/Ci: user selectable or fixed
- Displayed values: nuclide name (atomic symbol, mass number), calibration number

Electric meter

- Accuracy: better than ± 2%
- Linearity: within ± 2%
- Response time: Under 2 seconds, 4 to 16 seconds for very low activity samples
- Bias voltage: +500v

Standard source data

- System memory: Co-57, Co-60, Ba-133, Cs-137 standard source

Medical ionization chamber

1. DOSE 1 Reference Grade Dosimeters for Radiation Therapy

Product introduction

DOSE1 is a portable, single-channel, high-precision reference-grade electrometer. Its measurement indicators clearly exceed the standards specified by IEC 60731 and AAPM. It has extremely high accuracy and provides excellent performance in a wide dynamic range. resolution ability. The electrometer can measure absorbed dose using ionization chambers, semiconductor probes, and diamond probes. The stability of the ionization chamber response can be verified and cross-calibrated using a radioactive check source.

Features

•Large, high-contrast, large viewing angle (160°) electronic luminescent display, which can completely display all measured values, ionization chamber parameters and correction factors.

- Ergonomically designed operation interface, intuitive and easy-to-use soft keyboard, pop-up menu.
- Multiple measurement results can be displayed simultaneously: dose, dose rate, average dose rate, charge, current and dose per MU.
- In order to verify whether the working status of the equipment itself, connecting cables and ionization

chamber is normal, as a standard configuration, the equipment has electrical inspection source, leakage current and bias voltage test functions.

• Can store up to 40 different detectors and the same number of correction factors as 10 radiometric sources.

Technical Parameters

• Polarization voltage: ±500v, design interval is 1V
• Detector connector type
-Standard type: three-axis TNC (screw type) and three-axis BNC (bayonet type)
-Spare type (convertible type): M type, BNC/Banana and 3-axis TNC, 3-axis BNC
• Temperature range: 15~35°C
• Relative Humidity: 10~80%, Max: 20g/m3
• Host power input: 100~240V, 50/60Hz
• Computer interface: bi-directional RS-232, management and measurement software
• Dimensions: 259mm(L)x259mm(W)x165mm(H)
• Weight: 3.5 kg
• Measurement mode/range
- Charge (dose): 40pC~1.0C resolution 0.1pC
-Current (dose rate): 40pA~1000nA resolution 0.1pA
• Measuring physical quantities/units
-Electrical: Charge (C), Current (A) -Recombination amount: Gy, Sv, R, rad, remi
• Time units for rate: seconds, minutes, hours
• Interval time range: 1~9999 seconds
• Accuracy/Repeatability: ±0.2%
• Leakage current: <±10fA, typ. 1 fA
• Linearity: <±0.25% of full scale • Stability: < ±0.25% per year
• Display: Graphical LCD display with 160-degree viewing angle
• Zero drift: automatic, within 60 seconds
• Storage: All setup parameters and detector parameters are stored in EEPROM
• Background subtraction: on/off mode with memory

Decontamination equipment

1. SANIJET C.1218 decontamination equipment

Product introduction

SANIJET C. 1218 is constructed of stainless steel and can be transported by plane, truck and light

vehicles. Equipped with rollers, it can be easily transported manually on the ground. It can be used for shower water supply, vehicle decontamination, equipment decontamination, ground decontamination, and fire protection, etc.

Technical Parameters

- Maximum pressure: 120 bar;
- High pressure capacity: 18L/min;
- Cooling type: air cooling;
- Engine speed: 3000 rpm;
- Engine Fuel: Diesel

2. PRNDS/12 MIL Portable Nuclear and Radioactive Decontamination System

设备描述

- PRNDS/12 MIL 是一款便携式核放射性洗消装备，使用BX 40 核洗消剂可以完成飞机、直升机、车辆核洗消任务。

- PRNDS/12 MIL 装备是为班组工作人员/分队等级部队设计，它特别适合于飞机、车辆、装备表面的整体洗消。

- PRNDS/12 MIL 装备主要应用于突发核生化事故现场，可以提供快速、安全、有效的核洗消任务。

设备性能

装备装入12 L的 BX 40 洗消剂，能够对约120㎡（1400 ft ）的表面进行洗消。

可承接定制不同的需求

技术参数

装备外形尺寸	20 cm (7,8 in) x 20 cm (7,8 in) x h. 63 cm (24,8 in)
重量 (空罐)	3,10 kg (6,8 lb)
重量 (装备含附件)	9,8 kg (21,6 lb)

3. Containerized multi-purpose biochemical nuclear decontamination system

Product introduction

• Based on NATO troop equipment, KarcherFuturetech military technology, 70 years of technical experience, German quality, reliable performance.

• Containerized design for quick deployment. Compared with complete special vehicles, only the vehicle chassis for transportation is subject to vehicle purchase tax, and the container decontamination system as an independent product does not need to pay, which greatly saves purchase costs.

• The world's most professional integrated decontamination system, which can be combined with ten decontamination modules, professional decontamination agents and accessories to form a complete decontamination system, capable of complex, diverse, multi-level and multi-objective decontamination requirements.

Professional Detergent

All decontaminants can be used in extreme climates from -30 °C to +49 °C.

Chemical Detergent GDS 2000: non-aqueous detergent based on alkoxides.

• Does not need to be diluted with water for rapid and efficient detoxification of all known chemical warfare agents and structurally similar Toxic Industrial Chemicals (TICs).

• Strong reactivity, GDS2000 only needs 5 to 10 minutes of reaction time, and is effective even at low temperatures below 0°C.

• Biodegradable (88% in the OECD 28-day closed bottle test) and meets EU Water Hazard Class 1 requirements.

• Ease of preparation, greater reliability, and minimal reaction time compared to other water-based decontaminants.

Biodetergent BDS 2000: Concentrated decontaminant sanitizer consisting of two different ingredients for the removal of biological hazards from surfaces or interiors.

• The active ingredient is a special stabilized peracetic acid PAA, the only active fungicide effective against any microbial pathogen without resistance.

• Efficient sterilization, killing bacteria, viruses, spores and fungi, quick response, effective even at low temperatures below 0°C.

• Fully biodegradable and meets EU Water Hazard Class 1 requirements.

Radioactive Decontaminant RDS2000: Two-component agent for the removal of

radioactive particles from contaminating surfaces.

- These two components are a surfactant concentrate and a concentrated complexing agent, which react quickly and are effective even at low temperatures below 0°C.
- Non-hazardous residues guarantee ecological safety.
- This product was developed in cooperation with the German Academy of Defense Science.

Materials and Accessories

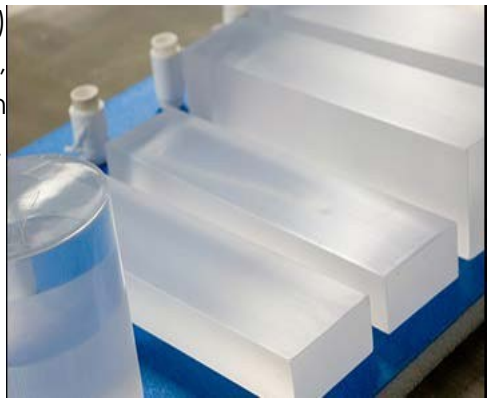
Crystal materials and detectors

1. Saint-Gobain scintillator crystals

Product introduction

Saint-Gobain Crystals offers an industry-leading variety of scintillation materials for radiation detection and nuclide identification. Offers a wide range of scintillation materials and radiation detectors and continues to develop new scintillators to meet current and future market needs. Offer the largest variety of scintillation materials assembled in a variety of specifications and specialized designs to meet your specific application. Products include NaI(Tl), BGO, LaBr3(Ce), CsI and other crystals.

NaI(Tl) crystal



NaI(T1) crystal scintillators have very high luminous (scintillation) efficiencies and are available in a variety of sizes and geometries, making them widely used scintillators. Under optimal conditions, an average of 1×104 photoelectrons are produced per MeV gamma ray.

Technical specifications

- Density: 3.67 g/cm3
- Maximum emission wavelength: 415 nm
- Maximum emission index: 1.85
- Typical dimensions:

Cylindrical: 1" diameter x 1" thick, 2" diameter x 2" thick
3" diameter x 3" thick, 5" diameter x 5" thick Rectangular: 2" x 4" x 16", 4" x 4" x 16"

LaBr3(Ce) crystal

LaBr3(Ce) is a transparent scintillator material with excellent energy resolution, fast emission and excellent linearity. It has higher light output and better energy resolution than NaI(T1). For energies close to 1 MeV, about 60% more luminescence than NaI(T1). technical specifications

- Density: 5.08 g/cm3
- Maximum emission wavelength: 380 nm
- Maximum Emissive Refractive Index: Approx. 1.9
- Typical dimensions:

Standard Integrated Design: 3" diameter x 3" long

Regular Sizes: 1"Diameter x 1", 1.5"Diameter x 1.5" 2"Diameter x 2", 3"Diameter x 3"
Achieved: .8" diameter x 9.7" length

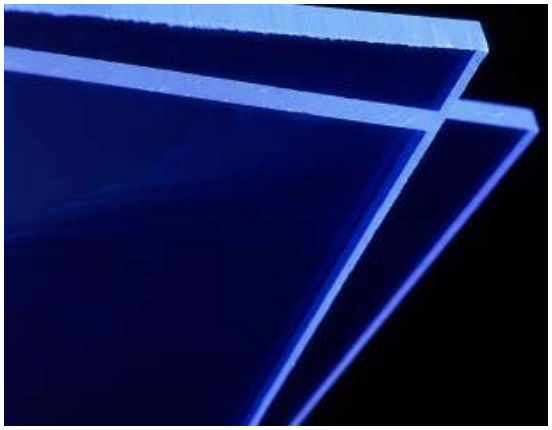
BGO bismuth germanate crystal

BGO is a high-Z, high-density scintillation material, and BGO is a very efficient absorber of gamma rays. Due to the high Z value of the material, the optical fraction of the gamma-ray absorption is high, so a very good peak-to-total ratio can be observed.

technical specifications

- Density: 5.08 g/cm3
- Maximum emission wavelength: 480 nm
- Lower cut-off wavelength: 320 nm
- Maximum emission index: 2.15
- Typical Sizes and Configurations: Available in Large Sizes and Variable Shapes
- Typical detector sizes: 1" to 5" diameter, up to 5" thick
- Other shapes: cube, hexagon

2. Plastic scintillator



Product introduction

The ease with which plastic scintillators can be shaped and fabricated makes them a very useful form of organic scintillator. Typical plastic scintillators have an emission maximum at 425nm. Plastic scintillators are characterized by relatively large light output (typically 25-30% of NaI(Tl)) and short decay times (~2ns), which make this material suitable for fast timing measurements. All plastic scintillators are sensitive to X-rays, gamma rays, fast neutrons and charged particles.

Technical specifications

- Size: These plastic scintillators are available in a variety of shapes and sizes.
- Rise time: 0.9 ns
- Decay time 2.1 ns
- Pulse width: approx. 2.54 ns
- Maximum emission wavelength: 425 nm
- Light attenuation length: 210 cm

• Astigmatism attenuation length: 380 cm

3. Plastic scintillator detector

Product introduction

• Plastic scintillator with stable performance, high luminous efficiency, short decay time and no deliquescence. Has been widely used in a variety of ray detectors.

• According to the different needs of customers, various standard probes of different specifications are matched with different types of radiation monitors. Formulate different types of light guides in plastic scintillator detectors.

• Large plastic scintillator (Φ600×Φ400×700mm) is used for anti-coincidence detector, plastic scintillator with optical fiber hole (optical fiber can be passed through), it is a leading innovative product in China.

Double scintillator is used for low background a β measurement, the main performance indicators are:

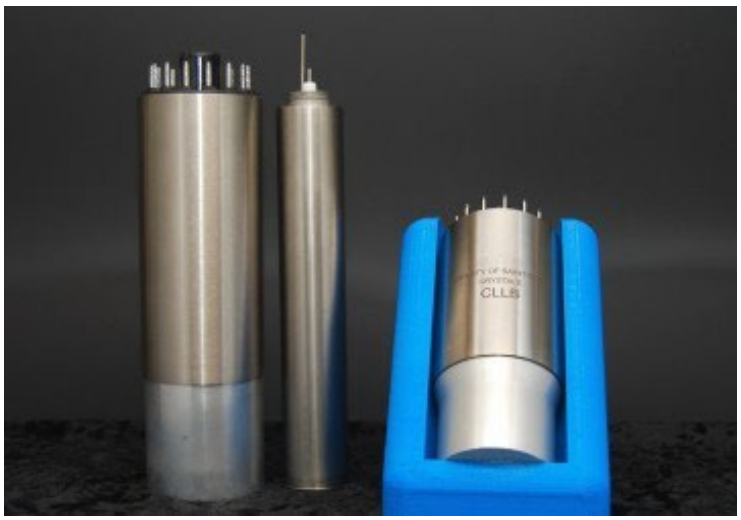
• Background average count rate per unit area
(Nb.min-1cm-2) α ≤0.005/ β ≤0.15;

• Efficiency ratio ηr: α ≥80%/ β ≥50%;

• long-term stability
Efficiency stability: a<5%/β<10%;
Background stability: a: Nb±3σ/β: Nb±3σ;

• aβ cross-interference: a to β<3%/β to a<0.5%.

4. CLLB Cs2LiLaBr6(Ce) Scintillator Detector



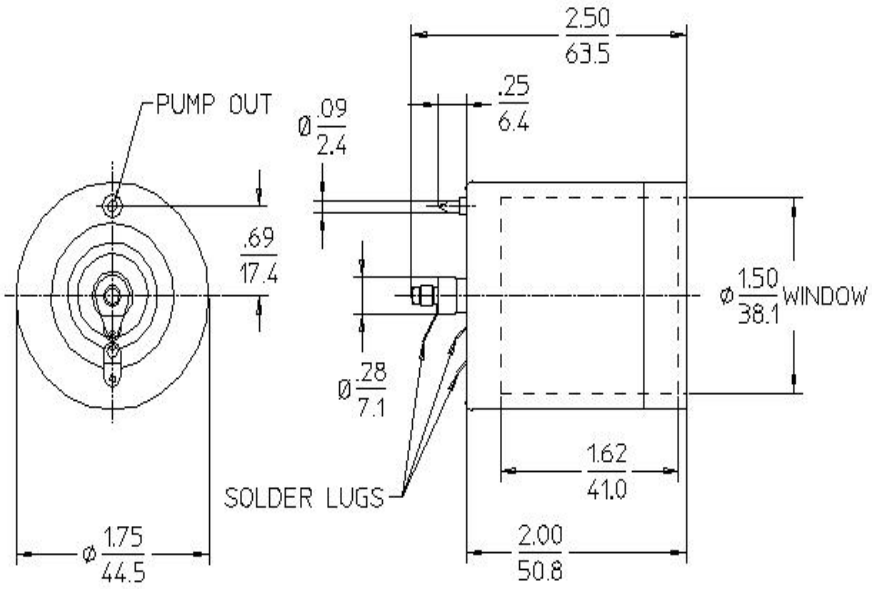
Product introduction

The CLLB is a gamma-neutron scintillation detector well suited for many different types of handheld instruments. Using pulse shape recognition electronics for neutron detection, customers can eliminate the need for additional electronics and He-3 detectors. With dual channel gamma/neutron detection, the energy resolution is close to 4%.

Technical specifications

- Energy resolution: 4% (Cs137)
- Crystal density: 4.2 g/cc
- Light output: 40000 ph/MeV
- Maximum emission wavelength: 420 nm
- Decay time: 180 ns (61%), 1080 ns (39%)
- SiPM Compliant: Yes

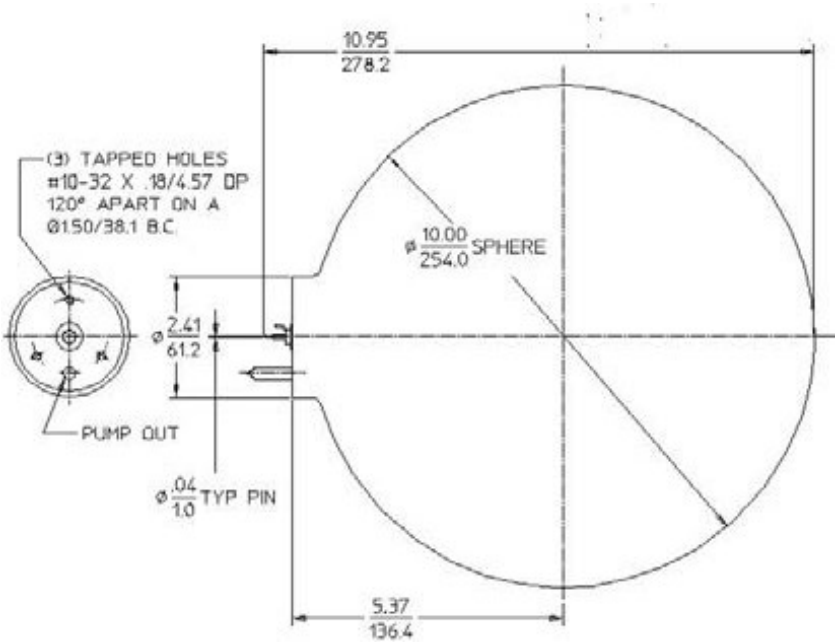
5. LND end window beta-gamma ionization chamber



Technical specifications

- Maximum diameter: 44.5 mm
- Maximum length: 63.5 mm
- Effective length: 41.0 mm
- Filling gas: Kr
- Fill pressure: 1520 torr
- Storage temperature range: -40 ~ 100 °C
- Minimum shelf life: 2 years
- Recommended operating voltage: 500 V
- Maximum working voltage: 800 V
- Operating temperature range: 25~85 °C
- Gamma Ray Sensitivity: 1.0E-10 a/R/hr (60Co)

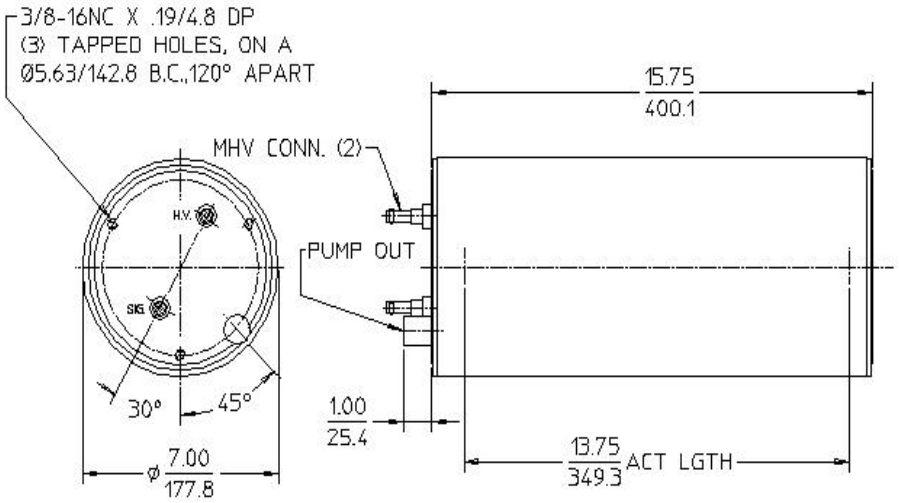
6. LND high pressure spherical gamma ionization chamber



Technical specifications

- Maximum diameter: 254.0 mm
- Maximum length: 285.75 mm
- Effective length: 247.79 mm
- Fill gas: Ar
- Fill pressure: 20460 torr
- Operating temperature range: -50~100 °C
- Effective volume: 8000 cm3
- Maximum working voltage: 1000 V
- Gamma Ray Sensitivity: 2.4E-8 a/R/hr (60Co)

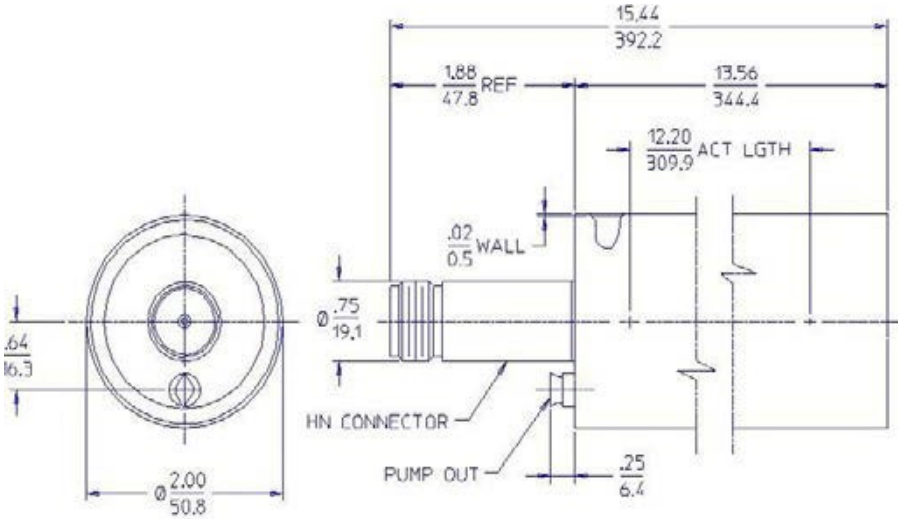
7. LND Neutron Sensitive Ionization Chamber



Technical specifications

- Maximum diameter: 177.8 mm
- Maximum length: 438.1 mm
- Effective length: 349.3 mm
- Fill gas: Hydrogen
- Fill pressure: 13680 torr
- Operating temperature range: -50 ~ 100 °C
- Effective volume: 8000 cm3
- Maximum working voltage: 2000 V
- Gamma Ray Sensitivity: 2.4E-8 a/R/hr (60Co)
- Neutron Sensitivity: 3.5E-14 amps/nv

8. LND Cylindrical 3He Neutron Detector

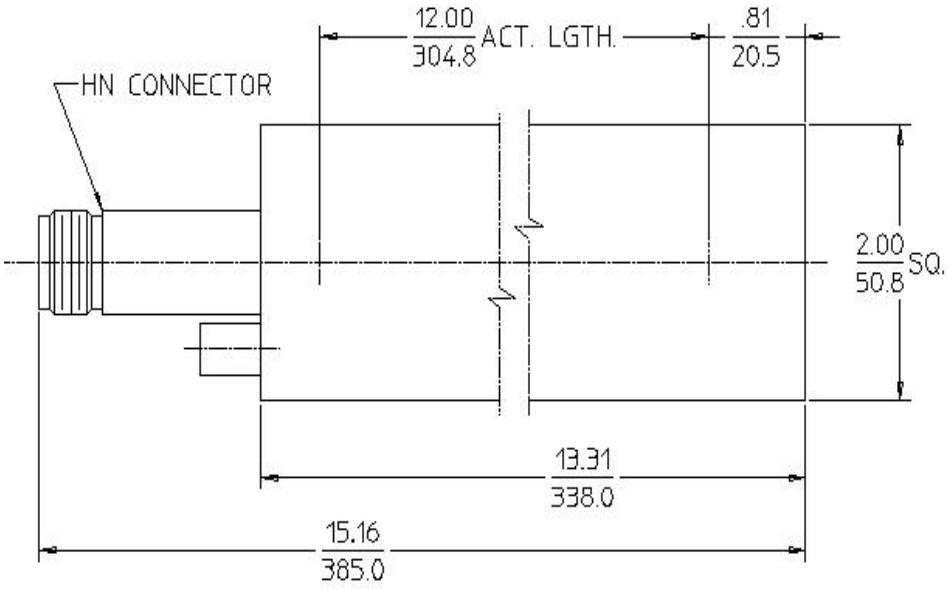


Technical specifications

- Effective diameter: 49.8 mm
- Effective length: 309.2 mm
- Fill pressure: 2063 torr

- Operating temperature range: -50~100 °C
- Effective volume: 602.9 cm3
- Working voltage range: 900~1200 V
- Maximum pitch: 2% / 100 V
- Maximum resolution: 8%
- Tube Capacitance: 4 pF
- Weight: 450 g
- Thermal neutron sensitivity: 108.0 cps / nv

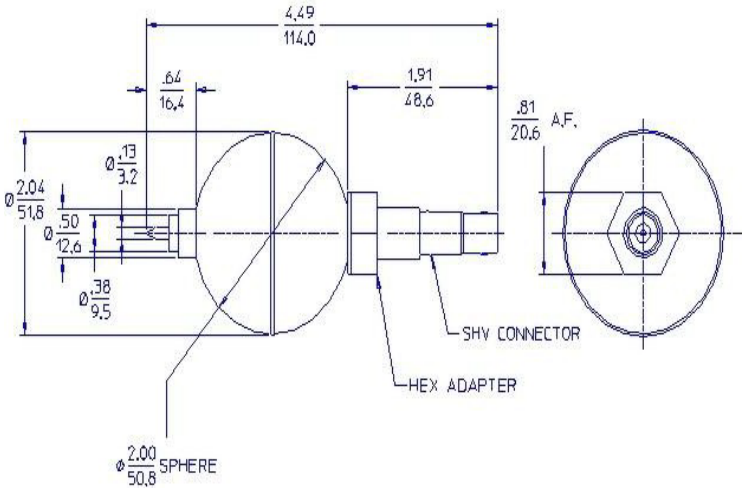
9. LND square 3He neutron detector



Technical specifications

- Effective width: 44.45 mm
- Effective length: 304.8 mm
- Fill pressure: 3040 torr
- Operating temperature range: -50 to 100 °C
- Effective volume: 602.33 cm3
- Working voltage range: 1150~1500 V
- Maximum pitch: 1% / 100 V
- Maximum resolution: 10%
- Tube Capacitance: 8 pF
- Weight: 567 g
- Thermal Neutron Sensitivity: 147.5 cps / nv

10. LND Spherical 3He Neutron Detector



Technical specifications

- Effective diameter: 49.78 mm
- Effective length: 50.8 mm
- Fill pressure: 7600 torr
- Operating temperature range: -50 ~100 °C
- Effective volume: 64.57 cm3
- Working voltage range: 1450~1700 V
- Maximum pitch: 1% / 100 V
- Maximum resolution: 20%
- Tube Capacitance: 10 pF
- Weight: 60 g
- Thermal neutron sensitivity: 76 cps / nv

11. 712 mica GM counter tube

Technical specifications

- Has a maximum length (in/mm): 1.94 / 49.2
- Maximum Diameter (in/mm): 0.59 / 15.1
- Effective Length: (in/mm) 1.5 / 38.1
- Cathode material: (internal/external) 446 stainless steel
- Effective Diameter: (in/mm) .36 / 9.1

- Operating temperature range: ℃ -40 to +75
- Material:
- Effective Diameter (in/mm): 0.36 / 9.1
- Areal density (MG /CM²): 1.5-2.0
- Recommended Operating Voltage (Volts): 500
- Minimum dead time: (microseconds) 90
- GAMMA Sensitivity CO60 (CPS/mR/HR): 18

12. Pancake GM Counter Tube

Technical specifications

- Effective diameter: 44.5 mm
- Effective length: 12.7 mm
- Maximum dead time: 20 μs
- Maximum plateau: 10%/100 V
- Gamma ray sensitivity: 65 cps/(mR/hr)
- Working voltage range: 850~1000 V
- Operating temperature range: -55 ~75 ℃
- Recommended anode resistance: 3.3 MΩ
- Tube Capacitance: 3 pF

13. J Series GM Counter Tubes

Technical specifications

GM counter tubes are used for dose monitoring, damage monitoring of nuclear fuel elements, oil well

logging, measurement of road and railway foundations and soil density, metering instruments, etc. J705 This tube is a thin-walled halogen counter tube. It is used to detect the intensity of gamma rays and can also be used to detect high energy beta rays.

型号	最大直径(mm)	有效直径(mm)	最大长度(mm)	有效长度(mm)	外管材料	最大起始电压(V)	最小坪区(V)	最小坪斜(%/100V)	推荐工作电压(V)	γ灵敏度(^{60}Co) cps/mR/h	γ灵敏度(^{60}Co) cps/μGy/h	死时间(μs)	本底cpm	工作温度范围(℃)	寿命(c)	探测对象
J613γ	9.5	3.5	66	30	玻璃	350	100	15	420	5	0.5	15	10	-40～+50	10^{10}	γ
J614γ	7.5	3.5	55	30	玻璃	350	100	15	420	5	0.5	15	10	-40～+50	10^{10}	γ
J401γ	13.5	10	91	50	玻璃	350	100	15	420	12	1.2	75	10	-40～+50	10^{10}	γ
J622γ	12	5	130	80	玻璃	350	100	15	420	12	1.2	20	10	-40～+50	10^{9}	γ
J403γ	23	18	263	190	玻璃	350	80	10	420	120	12	150	130	-40～+50	10^{9}	γ
J408γ	23	18	230	150	玻璃	350	80	10	420	100	10	150	110	-40～+50	10^{9}	γ
J306γ	19	16	200	150	玻璃	350	80	10	400	80	8	150	80	-40～+50	10^{9}	γ
J5101	40	18	180	110	玻璃	1200	200	5	1400	/	/	150		-20～+50	10^{8}	γ x
J707γ	6	5	18	6.5	金属	330	100	30	400	2.5	0.25	15		-40～+70	10^{10}	β γ
J705βγ	6	5	28	10	金属	400	100	15	500	5.5	0.55			-40～+70	10^{10}	β γ
J301βγ	5	2	45	10	金属	350	100	20	400	0.8	0.08			-40～+70	10^{10}	β γ
J302βγ	6	5	68	36	金属	350	100	15	400	11	1.1			-40～+70	10^{10}	β γ
J303βγ	4	1.2	35	3	金属	350	100	20	400	0.12	0.012			-40～+70	10^{10}	β γ
J304βγ	11	10	95	55	金属	350	100	15	400	37	3.7			-40～+70	10^{10}	β γ
J305βγ	11	10	112	70	金属	350	100	15	400	44	4.4			-40～+70	10^{10}	β γ
J306βγ	20	18	200	140	金属	350	100	10	400	52	5.2			-40～+70	10^{10}	β γ
J142αβ	37	16	65	50	金属	450	100	10	550	/	/			-40～+60	10^{10}	α β γ
J4401	23	23	168	120	金属	400	100	10	500	180	18	160	60	-40～+70	10^{10}	γ
J4402	23	23	218	170	金属	400	100	10	500	100	10	160	80	-40～+70	10^{10}	γ
J4403	23	23	268	220	金属	400	100	10	500	115	11.5	160	100	-40～+70	10^{10}	γ
J4405	20	20	168	120	金属	400	100	10	500	75	7.5			-40～+70	10^{10}	γ
J4406	20	20	218	170	金属	400	100	10	500	95	9.5			-40～+70	10^{10}	γ
J4407	20	20	268	220	金属	400	100	10	500	110	11			-40～+70	10^{10}	γ
J502	23	23	180	110	金属	1200	200	5	1400	/	/			-20～+50	10^{8}	γ x
J503	23	23	80	40	金属	420	100	8	500	/	/			-40～+70	10^{10}	α β γ x
J505	15	10	52		金属	420	150	10	500	18	1.8	90		-30～+70	10^{10}	α β γ

14. ORTEC Silicon Charged Particle Radiation Detectors

Technical specifications

ORTEC introduced the first silicon surface barrier detectors for charged particle spectroscopy in the early 1960s. Since then, ORTEC has continued to expand its product line and there are now more than ten different models to choose from. Whether your needs are standard alpha spectroscopy or more challenging research needs, ORTEC has the right detector solution for your application.

常规 Si 半导体探测器

	A 系列	B 系列	C 系列	D 系列	F 系列	R 系列
应用范围	高分辨率带电粒子谱仪	粒子识别，能损测量	角相关的背散射测量	重粒子时间飞行测量	重离子谱测量	空气中带电粒子测量
探测器类型	部分耗尽 Si	全耗尽 Si	环形全耗尽 Si	面形全耗尽 Si	部分耗尽 Si	表面防护型部分耗尽 Si
有效面积范围 mm^2	25-450	50-450	50-450	10-450	100-900	50-2000
有效厚度（um）	1000-2000	150-2000	100-1000	15-100	≥ 60	100-500
操作温度	25℃ to –30℃	25℃ to –30℃	25℃ to –30℃	10℃ to 25℃	25℃ to –30℃	25℃ to –30℃

高防护水平 Si 半导体探测器

	ULTRA+	ULTRA AS+	ULTRA CAM+
应用范围	高分辨率 alpha/beta 谱探测	超低本底高效率 alpha 谱探测	Alpha/Beta 空气气溶胶连续测量（恶劣测量环境）
关键特性	超薄入射前窗 高效率 高稳定性 长使用寿命 高可靠性	超薄入射前窗 高效率 高稳定性 长使用寿命 高可靠性	特殊设计的防护 低电压需求 高可靠性 高稳定性
有效面积范围 mm^2	25-3000	300-1200	300-2000
有效厚度（um）	100-500	100	100
操作温度	50℃ to –30℃	50℃ to –30℃	50℃ to –15℃
入射窗	500 Å Si	500 Å Si	N/A

15. Gold silicon surface barrier semiconductor detector

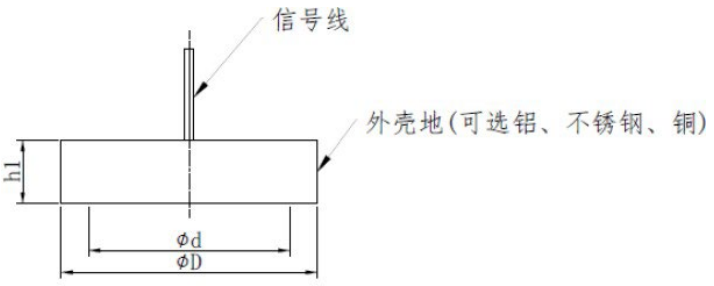


图 1 不带接插件产品尺寸及示意图

Product introduction

Our company produces partially depleted gold-silicon surface barrier semiconductor detectors. The A series has the characteristics of high energy resolution and thin window. It is suitable for occasions with high energy spectrum requirements, such as radon and thorium analyzers. A protective layer is coated in front of the window, which overcomes the shortcomings of being easily damaged and the window cannot be wiped. It is suitable for detectors that do not require high energy resolution and are used as radioactive intensity measurements.

Technical parameters

Model	Operating Voltage	Depletion region thickness μm	Compared with ORTEC U-016-300-100 detector (Am-241 area source), the energy resolution measured under vacuum is 1.2%	Compared with ORTECU-016-300-100 type detector (Am-241 area source) to measure the peak location 202 under vacuum
A-AS20	5~300VDC	greater than 1000	0.7~1.4%	204~206
A-AS26	5~300VDC	greater than 1000	0.7~1.4%	204~206
B-AS20	5~300VDC	greater than 1000	4.0~4.9%	189-191
B-AS26	5~300VDC	greater than 1000	4.2~4.9%	189-191

Electronics plug-in

1. Electronics plug-in

Related Products

- Benchtop smart scaler
- Benchtop 4096-channel pulse amplitude analyzer
- Standard NIM chassis
- Charge sensitive preamplifier
- Fast preamp??
- Amplifier and Timing Single Channel Analyzer
- main amplifier
- Universal main amplifier
- Dual summing inverting amplifier
- Time-to-Amplitude Converter
- Constant ratio timing discriminator
- Four-channel constant ratio screening
- Constant ratio timing to identify single channel
- Pulse generator plug-in (single channel)
- Pulse generator plug-in (dual channel)
- High voltage power plug
- NIM Low Voltage Power Modules
- Scaler plugin
- Universal Stapler
- 4096-channel pulse amplitude analyzer
- Single channel analyzer
- Timed single-channel analyzer
- Four-channel logic input unit

2. ORTEC Electronics Insert

Product introduction

Nuclear electronics instruments have always played an important role in ORTEC's products. Over the years, while continuously improving product performance, ORTEC has maintained the completeness and good continuity of its categories as much as possible, providing a wide range of choices for various nuclear physics experiments and research. ORTEC has a complete nuclear electronics add-on to meet the requirements of various users.

Related Products

- Various amplifiers and preamplifiers
- Counters, timers, rate meters
- Delays, gates and delay generators, logic blocks and linear gates
- Fast time discriminator, pulse generator
- Single channel pulse height analyzer, digital current synthesizer
- MCA/MCB, PCI Card
- CAMAC ADC, time-to-amplitude converter and memory

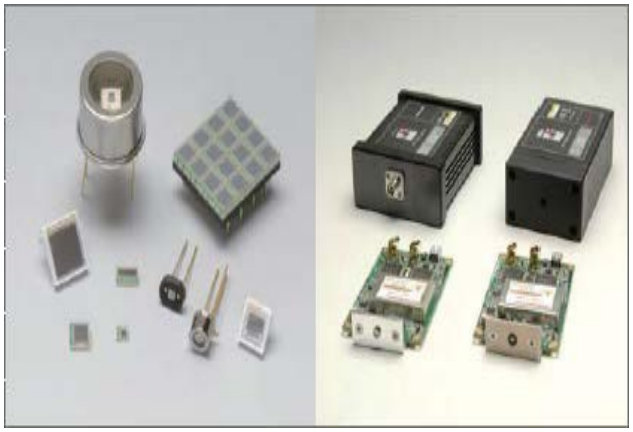
3. Photomultiplier tube

Hamamatsu offers various types of photomultiplier tubes. According to the actual needs of users, various types of window materials, photocathode materials, appropriate multiplier structures and photomultiplier tubes of various shapes and sizes can be selected for users to provide users with the best solution.

4. Silicon photodiode

The silicon photodiodes produced by Hamamatsu's unique semiconductor processing technology cover a wide wavelength range from near-infrared to ultraviolet to high-energy wavelength regions. They have the characteristics of fast response, high sensitivity, and low noise, and are widely used in medical and analytical fields, scientific measurement, optical communication, and general electronic products. From metal, ceramic, plastic package to surface mount, a variety of packages are fully equipped, and special design products can also be provided according to user requirements.

5. MPPC



MPPC is a photon counting product consisting of multiple APD pixels operating in Geiger mode. It has excellent photon counting capability and is suitable for various applications that require extremely weak light measurements, such as photon counting applications. MPPC can work at low voltage, and it is characterized by high gain, high photon detection efficiency, high response speed, excellent time resolution, and wide spectral response range, and its performance has met the requirements of higher-level photon Counting Requirements Hamamatsu has MPPC products with various pixel sizes and packages to choose from.

High Range Detector

1. DA-ION-H High Range X(γ) Detector

Product introduction

DA-ION-H high-range X(γ) detector adopts semiconductor sensor, the range span is 200μSv/h~100Sv/h, the product size is small, the current size is φ29mm×53mm, the mini design expands the application space, and meets the needs of many users. The DA-ION-H measurement data is processed inside the probe, the high and low ranges are automatically switched, the combination design of the sensor and the electronic circuit is adopted, the radiation-resistant material is packaged, and it can run continuously in a large-dose environment.

Main application

DA-ION-H high-range X(γ) detector is mainly used in nuclear power industry, and can also be used in pharmaceutical factories, laboratories, emergency rescue stations, metal processing plants, oil fields and oil supply pipeline equipment, environmental protection, police stations, etc. department.

Technical parameters

Item	Specification
Detector	Radiation-resistant semiconductor sensors
Measure the rays	X, gamma rays
Measuring range	200μSv/h-1Sv/h; 500μSv/h-10Sv/h; 800μSv/h-50Sv/h; 1000μSv/h-100Sv/h.
Energy response	60keV~2MeV (≤30%)
Relative error	±10%(Co-60)
Angular response	±20%(1.33MeV, Co-60)
Overload characteristic	10 times overload
Output port	RS485 or RS232 support protocol output
Operating temperature	-20℃～+60℃
Storage temperature	-30℃～+70℃
Working pressure	86kPa~106kPa
Humidity characteristics	≤95% R.H (non-condensing)
Power supply	5-12VDC
Size and weight	Φ29mm×53mm; 130g (without extension cable)

Cable length	customizable

Lead protective clothing

1. Lead protective clothing

正穿长袖单面铅衣
LEAD RUBBER JACKET

该防护服用来防护来自前面的射线，全身防护可配合采用其他的防护用品，例如：甲状腺围领、防护眼镜或者是防护帽。

This protection is taken to protect the radiation from the front, and the whole body protection can be combined with the protective equipment such as thyroid collar, protective glasses or protective cap.

lead equivalent 铅当量
: Front 前身
0.5mmpb/0.35mmpb/0.25mmpb
0.25mmpb : back 后身
(National uniform regulations 国家统一规定)

X-ray protective coat sizes **X射线防护服尺码归类**

注：以上数据仅为参考数据，也可根据客户指定款式制作。
Note: The above data is only reference data, and can also be made according to the customer's specified style.

尺码 size	长度 length	宽度 width	适用身高 suitable
S (900*600)	900	600	165CM左右人群
M (1000*600)	1000	600	175CM左右人群
L (1100*600)	1100	600	185CM左右人群

如有特殊要求请咨询客服 If you have special requirements, please contact customer service.

正穿半袖单面铅衣
LEAD APRON

该防护服用来防护来自前面的射线，全身防护可配合采用其他的防护用品，例如：甲状腺围领、防护眼镜或者是防护帽。

This protection is taken to protect the radiation from the front, and the whole body protection can be combined with the protective equipment such as thyroid collar, protective glasses or protective cap.

lead equivalent 铅当量
: Front 前身
0.5mmpb/0.35mmpb/0.25mmpb
0.25mmpb : back 后身
(National uniform regulations 国家统一规定)

X-ray protective coat sizes **X射线防护服尺码归类**

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S (900*600)	900	600	165CM左右人群
M (1000*600)	1000	600	175CM左右人群
L (1100*600)	1100	600	185CM左右人群

如有特殊要求请咨询客服 If you have special requirements, please contact customer service.

正穿单面铅背心
LEAD VEST APRON

该防护服用来防护来自前面的射线，全身防护可配合采用其他的防护用品，例如：甲状腺围领、防护眼镜或者是防护帽。

This protection is taken to protect the radiation from the front, and the whole body protection can be combined with the protective equipment such as thyroid collar, protective glasses or protective cap.

铅当量 lead equivalent
前身 Front:
0.5mmpb/0.35mmpb/0.25mmpb
后身 back : 0.25mmpb
(国家统一规定National uniform regulations)

X射线防护服尺码归类 X-ray protective coat sizes

注：以上数据仅为参考数据，也可根据客户指定款式制作。
Note: The above data is only reference data, and can also be made according to the customer's specified style.

尺码 size	长度 length	宽度 width	适用身高 suitable
S (900*600)	900	600	165CM左右人群
M (1000*600)	1000	600	175CM左右人群
L (1100*600)	1100	600	185CM左右人群

如有特殊要求请咨询客服 If you have special requirements, please contact customer service.

反穿半袖单面铅衣
LEAD APRON

该防护服用来防护来自前面的射线，全身防护可配合采用其他的防护用品，例如：甲状腺围领、防护眼镜或者是防护帽。

This protection is taken to protect the radiation from the front, and the whole body protection can be combined with the protective equipment such as thyroid collar, protective glasses or protective cap.

铅当量 lead equivalent
前身 Front:
0.5mmpb/0.35mmpb/0.25mmpb
后身 back : 0.25mmpb
(国家统一规定National uniform regulations)

X射线防护服尺码归类 X-ray protective coat sizes

注：以上数据仅为参考数据，也可根据客户指定款式制作。
Note: The above data is only reference data, and can also be made according to the customer's specified style.

尺码 size	长度 length	宽度 width	适用身高 suitable
S (900*600)	900	600	165CM左右人群
M (1000*600)	1000	600	175CM左右人群
L (1100*600)	1100	600	185CM左右人群

如有特殊要求请咨询客服 If you have special requirements, please contact customer service.

2. Lead Protective Clothing and Devices

防护裙
LEAD APRON

该防护服用来防护来自前面的射线，全身防护可配合采用其他的防护用品，例如：甲状腺围领、防护眼镜或者是防护帽。

This protection is taken to protect the radiation from the front, and the whole body protection can be combined with the protective equipment such as thyroid collar, protective glasses or protective cap.

lead equivalent 铅当量
: Front 前身
0.5mmpb/0.35mmpb/0.25mmpb
0.25mmpb : back 后身
(National uniform regulations 国家统一规定)

X-ray protective coat sizes **X射线防护服尺码归类**

注：以上数据仅为参考数据，也可根据客户指定款式制作。
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尺码 size	长度 length	宽度 width	适用身高 suitable
S (900*600)	900	600	165CM左右人群
M (1000*600)	1000	600	175CM左右人群
L (1100*600)	1100	600	185CM左右人群

如有特殊要求请咨询客服 If you have special requirements, please contact customer service.

无袖防护套裙
(可定做半袖、长袖)
LEAD APRON SET
Can be customized half sleeves, long sleeves

该防护服用来防护来自前面的射线，全身防护可配合采用其他的防护用品，例如：甲状腺围领、防护眼镜或者是防护帽。

This protection is taken to protect the radiation from the front, and the whole body protection can be combined with the protective equipment such as thyroid collar, protective glasses or protective cap.

铅当量 lead equivalent
前身 Front:
0.5mmpb/0.35mmpb/0.25mmpb
后身 back : 0.25mmpb
(国家统一规定National uniform regulations)

X射线防护服尺码归类 X-ray protective coat sizes

注：以上数据仅为参考数据，也可根据客户指定款式制作。
Note: The above data is only reference data, and can also be made according to the customer's specified style.

尺码 size	长度 length	宽度 width	适用身高 suitable
S (900*600)	900	600	165CM左右人群
M (1000*600)	1000	600	175CM左右人群
L (1100*600)	1100	600	185CM左右人群

如有特殊要求请咨询客服 If you have special requirements, please contact customer service.

三角防护
LEAD PROTECTIVE TRIANGLE

粒子防护坎肩
PARTICLE PROTECTIVE WAISTCOAT

粒子防护围领
PARTICLE LEAD PROTECTIVE THYROID COLLAR

吊带款乳腺防护
SLING BREAST PROTECTIVE

高领坎肩
LEAD HIGH -COLLAR WAISTCOAT

防护巾(方式) LEAD GONAD SHIELD

防护巾(三角式) LEAD GONAD SHIELD

乳腺防护 BREAST PROTECTIVE

防护四件套 LEAD PROTECTIVE FOUR PIECE SET

铅围领(异型围领) LEAD THYROID COLLAR(ALLOTYPE)

铅围领(一体异性) LEAD THYROID COLLAR

全包围式铅围领 LEAD THYROID COLLAR

产品介绍 /

儿童款高领坎肩 LEAD HIGH-COLLAR WAISTCOST

儿童款短款背心 LEAD VEST

儿童款防护裙 LEAD SHORT APRON

/产品介绍

儿童防护三件套 LEAD PROTECTIVE THREE PIECE SET FOR CHILDREN

儿童款正穿双面铅背心 LEAD VEST FOR CHILDREN

儿童款防护巾(三角式) LEAD GONAD SHIELD FOR CHILDREN (TRIANGLE)

儿童款铅护手 LEAD PROTECTIVE HANDS FOR CHILDREN

铅胶帽
LEAD CAP

露脸式防护帽
LEAD CAP

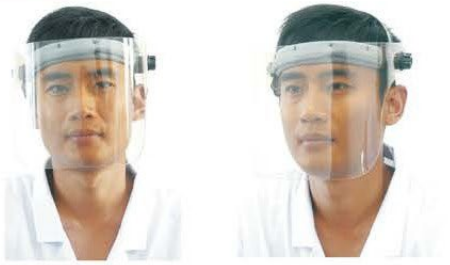
风雪帽
LEAD CAP

铅护手
LEAD PROTECTIVE HANDS

分指手套
LEAD GLOVES

露指手套
LEAD GLOVES (MITTEN)

防护面罩（A款）
PROTECTIVE MASK



铅衣架 A款
LEAD APRON RACK A

铅衣架 B款
LEAD APRON RACK B

铅衣架 C款
LEAD APRON RACK C

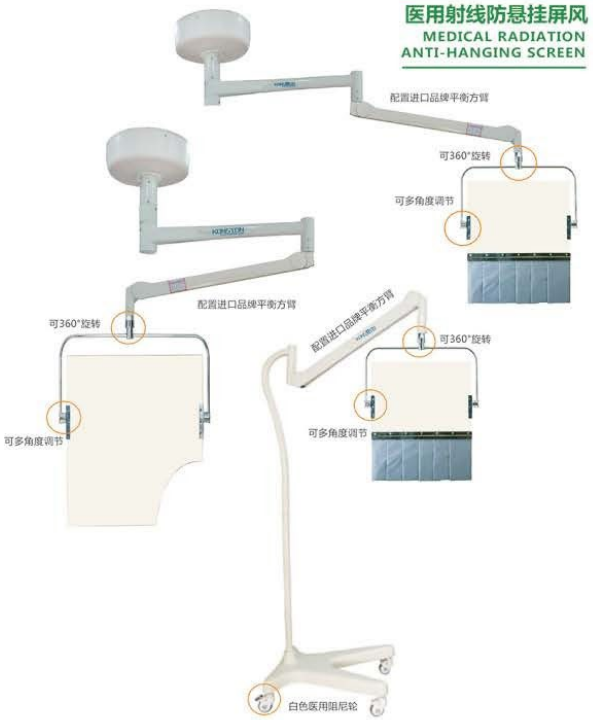
铅衣架 D款
LEAD APRON RACK D

铅衣架 E款
LEAD APRON RACK E

铅衣架 F款
LEAD APRON RACK F

铅衣架 G款
LEAD APRON RACK G

医用射线防悬挂屏风
MEDICAL RADIATION
ANTI-HANGING SCREEN



防护眼镜（侧防）
LEAD PROTECTIVE GLASSES

防护眼镜（封镜）
LEAD PROTECTIVE GLASSES

防护眼镜（通用）
LEAD PROTECTIVE GLASSES

防护眼镜（运动型）
LEAD PROTECTIVE GLASSES

儿童款防护眼镜
LEAD PROTECTIVE GLASSES

（1800*900）
单联喷塑防护屏
LEAD PROTECTIVE SCREEN

（1800*1600）
三联喷塑防护屏
LEAD PROTECTIVE SCREEN

单联升降防护屏
LEAD PROTECTIVE SCREEN

（1800*900）
单联不锈钢防护屏
STAINLESS STEEL LEAD PROTECTIVE SCREEN

（1800*1600）
三联不锈钢防护屏
STAINLESS STEEL LEAD PROTECTIVE SCREEN

单 联 防 护 屏
LEAD PROTECTIVE SCREEN

X射线防护帘
X-RAY PROTECTIVE LEAD CURTAIN

X射线防护帘（全挂钩式）
X-RAY PROTECTIVE LEAD CURTAIN

铅板、铅胶皮系列
LEAD SHEET RUBBER SERIES



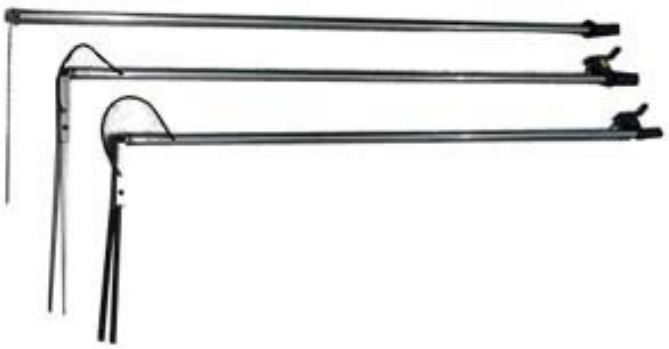
放射性废物存储桶、存储罐
RADIOACTIVE WASTE STORAGE BUCKETS AND TANKS






Operating tools

1. DACGJ-1 Radioactive source long handle operation tool



Product introduction

The long-handle clamp is an essential tool to assist in the transfer and capping of radioactive sources, as well as the transfer and placement of lead plugs, and is used for clamping radioactive sources during the operation of radioactive sources with greater activity.

Specification

- Specification model: DACGJ-1
- Radioactive source long handle clamp consists of handle, handle rod, clamp and fingers
- The length of the handle is about 1000-1400 mm to ensure that the distance between the operator and the radioactive source is >1200 mm
- Angle between gripper head and shank adjustable within 90°
- The gripper head is open in the natural state, and it can be closed by pressing the handle to realize the gripping of the packaging container or radioactive source
- Each pair of gripper fingers is composed of two pieces of equal-length curved stainless steel strips with a thickness not less than 3 mm, connected to the gripper head by two bolts

2. DACGJ-1 Radioactive source long handle operation tool

Specification

- Specification model: DACGJ-2
- Material: Aviation grade stainless steel and aluminum

- Types of rays: Can withstand a, β, γ rays, no change after radiation
- Maximum opening: 120mm
- Dimensions: Length 1050mm
- Application: operation and movement of radioactive materials and chemical and biological hazardous substances

3. DACGJ-3 Radioactive Forceps

Specification

- Specification model: DACGJ-3
- Material: Aviation grade stainless steel
- Types of rays: Can withstand a, β, γ rays, no change after radiation
- Working distance: 250mm
- Maximum opening: 40mm
- Application: operation and movement of radioactive materials and chemical and biological hazardous substances

Electromagnetic Radiation Monitor

Non-selective

1. SEM-600 Electromagnetic Radiation Analyzer

Product introduction

SEM-600 Electromagnetic Radiation Analyzer is a powerful ultra-wideband electromagnetic radiation analyzer for power frequency electromagnetic field monitoring and radio frequency electromagnetic field monitoring. It can accurately and quickly measure various complex electromagnetic environments. The measuring probes cover the frequency range from low frequency to millimeter wave. Equipped with different types of probes, it can measure electric field strength, magnetic field strength (magnetic induction) and power density. The host is equipped with a radio frequency electromagnetic field probe, which is a non-frequency selective broadband electromagnetic radiation monitor, which monitors radio frequency electromagnetic radiation such as mobile communication base stations, radio and television, and radar. The main engine is equipped with a power frequency electromagnetic field probe, which can monitor the power frequency electromagnetic field of AC power transmission and transformation projects, power facilities, and the electromagnetic environment of vehicles and rail transit. SEM-600 is equipped with a portable radio frequency electromagnetic field calibrator, which can quickly and conveniently calibrate the instrument on site to ensure the accuracy and reliability of the instrument measurement results.

Features

• Low-frequency RF integrated ultra-wideband host
• 1Hz～100kHz electromagnetic field exposure safety assessment according to GB8702-2014 standard limits and methods
• According to GB8702-2014 standard frequency band division 1Hz ~ 100kHz Electromagnetic field measurement
• High-sensitivity RF electric field probe with a measurement lower limit of 0.2V/m, a non-frequency-selective broadband electromagnetic radiation analyzer that meets the HJ972-2018 standard
• Synchronous monitoring of power frequency electric field and magnetic field measurement values,

fast measurement without manual switching

• Built-in synchronous monitoring of ambient temperature and relative humidity to facilitate data analysis and traceability

• RMS detection, all monitoring data are RMS

Technical Parameters

• Display units: V/m, kV/m, μW/cm2, W/m2, mW/cm2, mA/m, A/m, nT, μT, mT; automatically switch units according to monitoring results: V/m and kV /m, μT and mT

• Result type (three-dimensional omnidirectional): real-time value, maximum value, minimum value, average value (root mean square average, arithmetic average), maximum average value

• Three-dimensional components (X-Y-Z): real-time X value, real-time Y value, real-time Z value, total field strength value

• Frequency range: 1Hz~300GHz, depends on the frequency range of the selected probe

• Display range: 0.001V/m～200.0kV/m, 0.1nT～20.00mT, 0.001 μ W/cm2～100.0mW/cm2, 0.01mA/m～100.00A/m

• Time averaging: optional averaging time 1s~24h, interval 1s

• Statistical field strength: E5, E50, E80, E95

• Sampling interval: 200ms

• Spatial averaging type: discrete or continuous

• Spatial averaging: support multi-location spatial averaging, spatial averaging of up to 80 locations, store data and total values for each point

• Physical storage: 1G flash memory

• Storage capacity: data greater than 1 million, documents greater than 100,000

2. OS-4P frequency selective electromagnetic radiation monitor

Product introduction

• OS-4P Frequency-selective Electromagnetic Radiation Monitor is an innovative platform-based cross-generation product. Based on frequency-selective measurement, it can be connected to a

comprehensive field strength measurement probe. It has more advanced measurement performance and functions, and is more reliable. At the same time, the instrument has faster measurement speed, smaller weight and size, which is more in line with the requirements of HJ1151-2020 "Methods for Monitoring Electromagnetic Radiation Environment of 5G Mobile Communication Base Stations" and provides better user experience.

• OS-4P Frequency Selective Electromagnetic Radiation Monitor fully integrates the "5G Mobile Communication Base Station Electromagnetic Radiation Environmental Monitoring Method" HJ1151-2020 and the current national electromagnetic environment monitoring standards, based on the CMA quality control elements, the development of the whole process of intelligent monitoring and data Management software greatly simplifies the measurement process and improves user monitoring efficiency.

• The OS-4P frequency-selective electromagnetic radiation monitor is equipped with a 3.5GHz on-site RF calibrator STT-CAL-RF2, which is dedicated to on-site calibration of electromagnetic fields in the 5G frequency band, making the quality of on-site measurement data more reliable and guaranteed.

Main features

• Innovative high-precision small-size frequency-selective probe for more precise spatial positioning;

• 1Hz-6GHz low frequency electromagnetic field, medium and short wave electromagnetic field, radio frequency electromagnetic field multi-probe combined frequency selection measuring instrument;

• It can be connected to a variety of comprehensive field strength measurement probes from 1Hz to 60GHz;

• Supporting portable 3.5GHz RF electromagnetic field calibrator;

• Small and light, easy to use on-site measurement;

• Appearance structure design such as 8-inch color LCD professional touch screen and shortcut keys for outdoor portable measurement applications;

• 1Hz-6GHz electromagnetic field exposure safety assessment according to GB8702-2014 standard limits and methods;

• Accurately meet the technical requirements of "Methods for Environmental Monitoring of Electromagnetic Radiation of 5G Mobile Communication Base Stations";

• Built-in frequency selection measurement of 5G, 4G, 3G, 2G base stations of various mobile communication operators and radio and television, supports integration of any frequency band, and supports custom editing of frequency selection measurement list;

• "Full process design" detection management scheme, full process intelligent management system (optional), seamlessly connected to the radiation environment monitoring management platform, supporting wireless uploading of monitoring data spectrum graphs and reports to the radiation environment monitoring management platform;

• Built-in GPS positioning for easy monitoring process management;

• Convenient software operation interface, one-key measurement, one-key save, automatic optimization of measurement settings;

• Data modes such as real-time value, average value, maximum value, measured value versus time curve, frequency-selective field strength, and spectrum curve;

• Faster measurement speed, 30MHz-6GHz full-band omnidirectional measurement ≤ 450ms(@RBW=300kHz);

• Passed the measurement calibration of China Institute of Metrology, Taier Laboratory, and South China Institute of Metrology, and passed the EMC radio frequency electromagnetic field radiation immunity test.

Application

- 5G mobile communication base station electromagnetic radiation environment monitoring
- Electromagnetic radiation environment monitoring of 5G, 4G, 3G, 2G co-located mobile communication base stations;
- Radio frequency electromagnetic field monitoring of radar, navigation station, satellite earth station, digital microwave receiving station, etc.

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