Handheld Chemical Poison Detector

SOLAFACT 800

Product Introduction

SOLAFACT 800 Handheld Chemical Toxic Agent Detector is a detection instrument independently designed and manufactured by the company for rapid detection of trace chemical toxins and radioactive substances (optional). The instrument adopts the world's advanced time-of-flight ion mobility spectrometry technology, array multi-sensing fusion technology and scintillator detection technology, which can detect trace chemical agents, industrial toxic and harmful gases and radioactive pollution online, quickly and accurately. Widely used in military anti-terrorism, emergency security, environmental monitoring, nuclear power inspection and other fields, the comprehensive performance of the instrument has reached the advanced level of similar products in the world.

Features

Compact and lightweight, easy to operate

High sensitivity, the typical value of sarin can reach 0.1mg/m3

High resolution, can distinguish chemical agents and industrial toxic and harmful gases

Fast response, it only takes 2~15s to detect

Possess anti-interference ability, able to resist typical interference such as gunpowder smoke, grass smoke, engine exhaust gas, etc.

The standard substance library can be upgraded, and the detection types can be expanded

Optional nuclear radiation detection module can be installed according to requirements

Technical Indicators

Parameter name	Performance parameters
length x width x height	≤ 215mm×102mm×66mm
weight	≤ 1.5kg
powered by	18650 Lithium battery X 2 section
Gas detection sensitivity and response time (except below freezing point)	It can detect sarin, soman, viex, mustard gas, lewis gas, phosgene, hydrocyanic acid, cyanide chloride, ammonia, chlorine, hydrogen sulfide, sulfur dioxide, etc., in which sarin 0.1mg / m^3, response time ≤ 5s ; ammonia 10mg / m^3, response time ≤ 10s.
Nuclear radiation monitoring capability	detection range：0.01μSv/h~10mSv/h detection accuracy：±10% energy of nucleus response：±10% Detection source：35KeV~1.5MeV
Working temperature	-20℃~50℃
Storage temperature	-40℃~70℃
Warm-up time	≤ 20min
Stream time	≥ 6h(0℃~40℃) ≥ 4h(-20℃~0℃)
Anti-interference	There is no false alarm in the environment of nitrate smoke, plant smoke and engine exhaust gas.

Application Area

It is mainly used in military anti-terrorism, emergency security, environmental monitoring, industrial production, petrochemical, customs, fire protection, sanitation and other fields.
    The uses are as follows：

- Environmental monitoring, and real-time monitoring of environmental pollutants

- Emergency Response to Leakage of Highly Toxic and Dangerous Materials

- Industrial odor, toxic gas detection and real-time monitoring

- Security checks in public places and places where people gather

- Monitoring of chemical production sites, leak or defect inspection of chemical containers

- Security protection of ports and railways, security patrols of customs and borders, etc.

- Field detection of chemical warfare agents in military anti-terrorism

Portable Toxic and Harmful Substance Detector

SOLAFACT 810

Product Introduction

SOLAFACT 810 portable toxic and harmful substances detector integrates international advanced ion mobility spectrum technology, Raman spectroscopy technology and array electrochemical sensing technology, combined with intelligent recognition algorithm, which can quickly and accurately identify toxic and harmful substances in complex environment and provide early warning information.The instrument can simultaneously detect chemical warfare agents (CWAs), industrial toxic and harmful gases (TICs), highly toxic chemicals and flammable and explosive dangerous goods in all forms of solid, liquid and gas.It is currently the first product at home and abroad that can detect all forms of toxic substances.

Features

Wide detection range

+ It can detect solid, liquid and gas three-phase chemical warfare agents, industrial toxic and harmful gases, highly toxic chemicals and flammable and explosive dangerous goods

high sensitivity

+ The detection sensitivity of solid-liquid phase can reach 1% (DMMP in water), and the detection sensitivity of gas phase can reach ppb~ppm level

Low false alarm rate

+ The instrument integrates a variety of sensing technologies, combined with intelligent identification algorithms, greatly reducing the false alarm rate of the instrument

It is convenient for users to develop secondary

+ The instrument adopts a variety of sensing technologies and modular design, and users can carry out secondary development of the instrument according to the application scenario

Fast detection response

+ Most solid and liquid substances respond within 5 s and most gaseous substances within 10 s

Portable and lightweight, easy to use

+ The instrument is small in size, light in weight, easy to carry, simple to maintain, and adopts friendly human-computer interaction design for operation and display.

Technical Indicators

content	Technical specifications
Detection principle	Ion Mobility Spectroscopy + Raman Spectroscopy + Intelligent Identification Algorithm
Types of measurable substances	Sarin, Taben, Soman, Vieques, mustard gas, hydrogen chloride, hydrogen cyanide, hydrogen sulfide, hydrogen fluoride, carbon monoxide, sulfur dioxide, carbon dioxide, nitrogen dioxide, chlorobenzene, ammonia, ammonia, phosgene, ethylene oxide, acrylonitrile, TNT, ethanol, acetone, etc.
Lower limit of detection	5 ppb-10 ppm (different substances, different detection limits)
Warm-up time	≤ 20 min
Response time	3s-60s
Working temperature	-20 ℃ to +40 ℃ .
Storage temperature	-40 ℃ to +55 ℃
Protection level	IP65, can be upgraded to IP67
Communication mode	RS485
Operating time	Normal temperature ≥ 5h, low temperature ≥ 3h
Dimension	365 mm×142 mm×160 mm
Weight	≤ 3.5 kg

Application Area

It can be widely used in national defense, safety supervision, public security, customs, anti-terrorism, environmental supervision, emergency response, fire protection, scientific research and other fields.

Portable Drug / Explosives Detector

SOLAFACT 850

Product Introduction

SOLAFACT 850 portable drug and explosive detector is a portable instrument for trace analysis and detection of contraband such as drugs and explosives. It adopts the international mainstream ion mobility spectrum (IMS) detection technology, adopts non-radiative glow discharge ion source, has no radioactive source, and does not need the approval of environmental protection department. It can quickly and accurately detect and identify trace substances such as drugs or explosives. It can be widely used in airports, subways, railway stations, customs, border defense, ports, important conference venues and other fields of security inspection. It can also be used as a physical evidence inspection tool for public security, armed police, courts and other national law enforcement agencies.。

Features

Intrinsically safe

+ The instrument does not contain a radioactive source, adopts a non-radioactive corona discharge ion source, and is intrinsically safe without the approval of the environmental protection department.

There are many types of libraries

+ More than 20 types of drug and explosive databases are preset, and database expansion is supported

Large display screen, easy to operate

Efficient detection

+ Can be fixed/carried High mobility, can be used in a variety of occasions, fast start-up time, fast detection and analysis speed, the result can be obtained within 6 seconds, and the recovery time is fast

High sensitivity

+ At the same time realize the detection of drugs and explosives, explosives pg level, drugs ng level

USB and Ethernet interfaces for easy data reading

+USB, Ethernet interface, convenient for data reading

Technical Indicators

content	Technical specifications
Dimensions	380mm×170mm×175mm
Weight	3.75kg
Working voltage and method	DC15V or lithium battery powered
Rated power	25W
Communication Interface	Ethernet, USB
Operation method	touch screen operation
Sampling method	wipe or inhale
Sensitivity	Drugs ng level, explosives pg level
Types of drugs that can be detected	Ice, cocaine, heroin, ephedrine, K powder, opium, morphine, cannabis, dolantin, methadone, amphetamines, ecstasy, caffeine, ephedrine, codeine, etc., can be added to the drug bank by authorized users.
Detectable types of explosives	TNT, ammonium nitrate, RDX, Taian, Aoketuojin, C4, Tetrox, TATP, DNT, nitroglycerin, ammonium antimony, picric acid, nitroguanidine, etc., can be added to the explosive library by authorized users.
Start-up time	≤ 45s
Analysis time	≤ 8s
Overload recovery time	No more than 1min, with self-cleaning function
Display screen	5 inch LCD liquid crystal display
Indicator light	With charging indication, alarm indication, fault indication, etc.
Alarm methods	Sound, color, text display and other forms
Data storage	Built-in 16G storage space, can store no less than 10,000 detection records; support backup via USB
Operating software	Can be customized according to user needs
Operating environment humidity	≤ 93%
Preheat time	≤ 20 mins
Operating environment temperature	0~45℃
Storage temperature	-40~60℃
Degree of protection	IP52
Radiation safety	No radioactive source

Application Area

- Airports, subways, railway stations, ports, industrial parks, large-scale public activities and other civilian areas of security checks.

- The material evidence inspection tools of public security, courts and other national law enforcement agencies.

- Customs, border defense, armed police and other national government agencies and military departments test the protection configuration.

- Experimental research on poison and explosives in scientific research universities and research institutes.

NATIONAL SECURITY

Handheld Raman Spectrometer
SOLAFACT 510

Product Introduction

SOLAFACT 510 is a professional handheld Raman spectroscopic substance identification instrument that uses 785nm laser Raman spectroscopic scattering technology as a detection method. It is small in size, light in weight, and has powerful management and calculation functions. The equipment can perform conventional chemical warfare agents, Detection and identification of explosives, precursor chemicals, flammable and explosive dangerous goods, highly toxic substances, drugs, jewelry and jade, pharmaceutical APIs, and general chemicals. The operation is simple and the identification is fast and accurate.

Features

+Space optical path design, high luminous flux, high sensitivity, high quality spectrum

+The detection speed is fast, and the detection time of conventional substances is 2 to 3 seconds

+Modular battery design, easy to replace, long standby time, optional large capacity high performance battery module

+Perfect cloud support: support software update at any time, support database update at any time, support custom database upload, support test record upload to the cloud, support scanning QR code to view cloud report

+Powerful intelligent analysis algorithm, rapid identification of various mixture substances, accurate detection

Application Area

It can be widely used in anti-drug, customs, public security, security inspection, pharmaceuticals, industrial quality control, fire hazard inspection, mail/express inspection, food safety and other fields.

Technical Indicators

Parameter name	Performance parameters
Detection object	Detection of dangerous chemicals, drugs and precursor chemicals; explosives and precursor chemicals, etc.
Factory warehouse quantity	> 3000, Can be expanded according to user needs
Adaptive technology	Raman spectroscopic analysis technology, for the liquid, solid and powdery substances in the transparent package, the equipment can complete the detection without touching the sample, and give the specific name and spectrum of the measured substance and other information.
Operation method	One-handed operation, one key can complete a test; There are physical buttons for power on/off, detection and return.
Detection mode	Quick detection and deep detection two modes
Display	5" high-definition display, high-sensitivity capacitive touch screen, screen resolution not less than 1920×1080
Human-computer interaction	Multi-touch full Chinese operation interface
Spectral range	200 cm-1~3200 cm-1
Spectral resolution	≤ 8cm-1
Size	182 mm ×88 mm ×30mm
weight	490g with battery
Environmental adaptability	Working temperature: -20~+40℃; Storage temperature: -40~+50℃
Working distance	The equipment adopts a pull-type damping probe, and the working distance is continuously adjustable. It can conveniently and accurately detect bottled samples or bagged samples without accessories.
Power supply battery	Rechargeable polymer lithium battery, one for one use and one for backup, the working time of a single battery is > 4 hours. A large-capacity battery module can be installed directly, and the working time is ≥ 12 hours.
Battery replacement and charging	The battery can be quickly replaced without dismantling the machine or using tools; the battery can be charged independently offline; the adapter can be connected to the mains for charging, it can be charged by the car, and can be charged by a portable mobile power supply; the device can be charged with a power bank while in use
Data transmission	Support Wi-Fi, 3G/4G network data transmission.
3G/4G card slot	Support reserved card slots for installing and replacing 4G cards without dismantling the phone.
Device location	Support GPS or Beidou for geographic positioning, and send the device location, device status and usage to the cloud background for display.
Test result report generation	The device can independently generate a detection report, which includes: item spectral name, attribute, detection time, GPS or Beidou positioning information, QR code, photo, etc. The detection data is automatically saved, and the data storage is not less than 10,000 pieces.
SMS push	The device has a SMS push function switch. After it is turned on, the device can automatically send a short message to the bound mobile phone to inform the detection result. The content of the short message includes the detection result, category, matching degree, detection time and location and other information.
Data upload and report viewing function	It can automatically exchange data with the cloud background through the wireless network, upload or download relevant information and data; after generating the test report, upload it to the cloud background, and generate a QR code at the same time (the information of the QR code is consistent with the report); it can be scanned by mobile phone QR code, download and view the report; the report can be viewed in the remote background.
Self-built library and upload	The device supports users to build their own databases, which can be directly uploaded to the cloud server without a computer and shared with other devices of the same user.
Software upgrade	In the state of WiFi or 4G, the operating software can be manually or automatically upgraded without the help of other devices.
Database upgrade	Under WiFi or 4G, the database can be upgraded manually or automatically without the use of other devices.
Image forensics	The device has a built-in camera, which has the function of taking photos and collecting evidence, and can automatically store photos and add them to the report. The resolution of the camera is not less than 13 million pixels, and the original resolution photos can be exported.
Alarm function	When dangerous goods are found, the machine will give prompts in the form of vibration, alarm sound and screen animation.

Handheld Fluorescent Explosives Detector

SOLAFACT 520

Product Introduction

SOLAFACT 520 handheld fluorescent explosives detector adopts a new generation of fluorescent polymer sensing technology, which can detect military explosives, nitro, ammonium nitrate and peroxide explosives with high sensitivity. The product is small, lightweight and high in sensitivity. High, it can sample solids, liquids, and gases, and quickly identify explosives in the surrounding environment by detecting the fluorescence intensity of fluorescent polymers.

Features

- Modular design, compact internal structure, easy to disassemble and install.

- Simple operation, convenient cleaning, low maintenance cost.

- Based on fluorescent polymer sensing and detection technology, no radioactive source, safe and reliable.

- Small size, light weight, easy to operate with one hand.

- High detection sensitivity, fast response, low false alarm rate.

- Wide detection range, strong anti-toxicity, fast and convenient replacement of sensitive units.

Technical Indicators

Parameter name	Performance parameters
Working principle	Fluorescent polymer sensing technology (no radioactive source)
Detection function	TNT (trinitrotoluene), NG (nitroglycerin), DNT (dinitrotoluene), RDX (RDX), HMX (Octogen), NT (nitrobenzene), MNT (nitrotoluene) , PETN (Taian), BP (black powder), Tetryl (Tetryl), AN (ammonium nitrate), TATP (triperoxytriacetone), etc.
Sensitivity	pg
Starting time	≤ 2min
Analysis time	≤ 10s
Power supply	Lithium battery or power adapter for power supply, support charging while working, support hot swap
Data storage	> 2000 data records
Data output	RS232
Size	373 mm (length) x 108 mm (width) x 73 mm (height)
Weight	1.35 kg(battery included)
Working temperature	-20℃ ~+55℃

Application Field

It can be applied to security fields such as national security, public security protection, anti-terrorism protection, and major events.

Nuclide Identification Instrument

SOLAFACT 120

Product Introduction

The SOLAFACT 120 Nuclide Identifier is used to search and identify radioactive material and quickly respond to radiological threats such as illegal shipments and radioactive diffusion devices, law enforcement detection, and hazardous material detection. Radionuclides can be quickly and reliably identified and classified, including re-shielded or hidden threats. The instrument uses a large-volume detector combined with a passive spectrum stabilization algorithm, and is specially designed for the special environment after a nuclear accident. The rugged construction and simple user modes are suitable for field applications in harsh environments and can also be used for mobile measurements. The instrument can identify dozens of radionuclides, including medical nuclides, industrial nuclides, natural radionuclides and special nuclear materials, and can expand the nuclide library according to user needs. The instrument is suitable for use by first responders, border and customs inspectors, law enforcement personnel, critical infrastructure nuclear facilities, and on-site inspections of various nuclear accidents.

Features

- Good temperature adaptability, passive spectrum stabilization, no temperature drift

- Large crystal size and high sensitivity

- The overall structure is compact and easy to carry

- The nuclide library is powerful, and users can add nuclide types by themselves

- Fast response time, nuclide information within 30s

Technical Indicators

Parameter (pe ruai me te)name	Performance parameters
Detector	2″ *2″ LaBr3 detector, optional GM counter tube and neutron detector
Energy range	30keV~3MeV
Energy resolution	Not more than 4%(662keV)
Measuring range	0.01μSv/h~10mSv/h (Expandable type 1Sv/h)
Identify	Fast digital MCA2048 channel, throughput greater than 105cps
Response time	When the background environment is 0.5μSv/h, the nuclide information will be given within 30s.
Temperature range	-40° C~50° C minus
Degree of protection	IP54
Power supply	Lithium battery, built-in charger
Anti-electromagnetic interference, anti-shock, vibration and drop	
Size	350mm×130mm×125mm
Weight	About 3.5kg
Nuclide library	235U, 239Pu, 22Na, 57Co, 60Co, 133Ba, 137Cs, 241Am, 99mTc, 131I, 18F, 152Eu, 155Eu, 192Ir, 166mHo, 125I, 238U, 232Th, 40K, 226Ra nuclides can be expanded

Algorithm Processing

- Adopt passive spectrum stabilization and calibration technology to obtain energy spectrum continuously and stably without on-site calibration

- The background mutation suppression algorithm can continuously analyze the shape of the energy spectrum and eliminate the alarm caused by the background mutation

- Using natural radionuclide and medical radionuclide discrimination algorithm, up to four nuclides can be classified and identified at the same time

- Conforms to the standard JJF1687-2018 "Calibration Specifications for Handheld Radiation Monitors for Detecting and Identifying Radionuclides"

Application Field

It can be widely used in first responders, border and customs inspectors, law enforcement officers, critical infrastructure nuclear facilities, and site inspections of various nuclear accidents.

Open Fourier Transform Infrared Remote
Sensing Analyzer

SOLAFACT 5300

Product introduction

SOLAFACT 5300 open Fourier infrared remote sensing analyzer uses open Fourier infrared remote sensing analysis technology as the detection principle. The host and light source adopt through-beam mode. It is equipped with a high-resolution double-twist scanning interferometer and a high-precision designed optical machine. Components, high-precision control acquisition and stable and reliable hardware circuits, while using advanced correction algorithms to correct measurement data, can qualitatively, quantitatively, quickly and accurately detect and identify hundreds of toxic and harmful chemical gases or chemical warfare agents online in real time. and conduct quantitative analysis.

Features

Powerful detection capabilities

+ Using high-performance and long-life Stirling cooling type MCT detector, the detection sensitivity reaches ppb level
+ Equipped with sophisticated infrared light source, the monitoring path can reach more than 100m
+ High stability optical-mechanical hardware system to meet 24H/7Day real-time monitoring

Advanced Software Algorithms

+ Meets the requirements for detection and identification of hundreds of industrial compounds (TICs) and chemical warfare agents (CWAs)
+ Under complex environmental background, rapid response within 3s, qualitative and quantitative analysis of compounds within 30s
+ Optimized algorithms for instrument self-inspection, self-calibration, path interference diagnosis, water vapor compensation, etc.

Rich product features

+ Equipped with a multi-functional monitoring terminal to meet user needs such as daily environmental monitoring, threat identification, sound and light alarm, information storage and playback
+ Equipped with various communication interfaces such as network port, 5G, WiFi, etc., multiple devices can work together to meet various application scenarios
+ Product functions support customization to better serve users

extremely low maintenance costs

+ Exquisite structural design, simple installation and convenient operation
+ Using Fourier transform infrared spectroscopy detection technology, long-distance non-contact sampling + No consumables, no radioactive sources, no secondary pollution, and extremely low maintenance costs

Technical indicators

project	sub-item	Technical Parameters
Monitoring parameters	Monitoring type	Hundreds of chemical substances or agents (The factory library contains more than 40 types, which can be expanded according to user needs, up to 520 types)
	Sensitivity	0.1~10ppm
	resolution	$4cm^{-1}$ (conventional); $1cm^{-1}$ (Highest)
	Scan speed	32 frames / s.
	Monitoring distance	$\geq$ 100m
	Preheat time	$\leq$ 5min
	Response time	$\leq$ 3s
	recognition time	$\leq$ 30s
	operating hours	24H/7Day
	Power consumption	$\leq$ 100W/220V
Interface parameters	communication	Network port / 5G (optional)
	power supply	AC 220V
Physical parameters	the host	$\leq$ 560 mm×370 mm ×260 mm
		$\leq$ 25kg
	light source	$\leq$ 420 mm×250 mm×270 mm
		$\leq$ 10kg
	Electric control box	$\leq$ 400 mm×280 mm×200 mm
		$\leq$ 5kg
Environmental adaptability	Operating temperature	-10℃ ~50℃
	Storage temperature	-30℃ ~60℃

Application area

It can be widely used in public environmental monitoring fields such as customs, airports, shopping malls, and chemical industry parks

Passive Fourier Transform Infrared Remote Sensing Analyzer

SOLAFACT 5400

Product Introduction

SOLAFACT 5400 Passive Fourier Infrared Remote Sensing Analyzer is based on passive Fourier Infrared Remote Sensing analysis technology, which can conduct qualitative, quantitative, positioning and imaging analysis of toxic gases to be measured in the atmospheric environment from a long distance. The product uses the infrared spectral fingerprint feature information generated by the equivalent radiation brightness temperature difference between the gas to be measured and the remote measurement background to realize rapid and high-sensitivity qualitative identification and semi-quantitative concentration inversion analysis of various toxic and harmful gases; real-time presentation of toxic and harmful pollution The dynamic distribution and diffusion trend of gas in the scanning area, and sound and light warning for excessive gas. The instrument can achieve 360°, pitch ±60° rotation scanning, and the scanning monitoring radius reaches 5km.

Features

Powerful detection capabilities

+ Using high-performance and long-life Stirling cooled MCT detector, the detection sensitivity reaches ppb level
+ Equipped with precision optical scanning pan/tilt, horizontal 360° scanning, pitch ±60°, monitoring radius over 5km
+ With high-speed and stable optical-mechanical hardware system, it can realize fast scanning of 4cm-1/32 frames per second

Reliable environmental adaptability

+ Working temperature: -20℃ ~50℃
+ Storage temperature: -40℃ ~50℃

+ Explosion-proof level: Ex db IIBT4 Gb
+ Protection level: IP65

+ Anti-vibration adaptability: The instrument meets GJB150.16A-2009, meets the anti-vibration characteristics of vehicle-mounted, ship-mounted, and airborne general fasteners, and meets the requirements for performing measurements in vibration environments

Advanced Software Algorithms

+ Meets the requirements for detection and identification of hundreds of industrial compounds (TICs) and chemical warfare agents (CWAs)
+ It has multiple mixture detection capabilities and can detect and identify at least 6 mixtures of gas substances.
+ No external excitation light source is required, detection and identification can also be performed in complex dark environment backgrounds

+ Optimized algorithms for instrument self-inspection, self-calibration, path interference diagnosis, water vapor compensation, etc.

Rich product features

+ Equipped with a multi-functional monitoring terminal to meet user needs such as daily environmental monitoring, threat identification, sound and light alarm, information storage and playback, etc., and the functions support customization

+ Product functions support customization, the system can be loaded on mobile carriers such as vehicles, ships, helicopters, drones, etc., and perform tasks on the move

Extremely low maintenance costs

+ Exquisite structural design, simple installation and convenient operation

+ Using Fourier transform infrared spectroscopy detection technology, long-distance non-contact sampling
+ No consumables, no radioactive sources, no secondary pollution, and extremely low maintenance costs

Technical Indicators

content	technical specifications
Spectral range	600 cm^{-1}~1500cm^{-1}
Detection type	Hundreds of chemical substances or warfare agents (the factory library contains 46 types, which can be expanded according to user needs, up to 460 types)
Telemetry distance	≥ 5km
Resolution	4cm^{-1} (conventional)；1cm^{-1} (Highest)
Scanning speed	32 spectra/second (resolution 4cm-^{1})
Brightness temperature response time	less than 3 seconds
Detection sensitivity	Ammonia, 20ppm m (cloud thickness 1m, temperature difference 2°C)
Beam splitter	ZnSe beam splitter (domestic)
Detector	Stirling compressor refrigeration MCT detector (lifetime greater than 20000h)
Telescope magnification	3 times, full field of view (incident field of view): 10mrad
PTZ corner	Up and down direction -60°~+60°, horizontal direction 0~360°, uniform speed minimum 0.1°/s, maximum speed 60°/s, speed can be set
Visible camera	Band 0.4~0.9um, resolution 1920×1080, 8x zoom, 1× field of view 59.6°
Communication Interface	Network port / 5G (optional)
Power interface	AC 220V
Host size and weight	≤ 520mm×40mm×230mm
	≤ 28kg
Gimbal size and weight	≤ 300mm×260mm×320mm
	≤ 22kg

Application Field

Passive Fourier infrared remote sensing analyzer can be widely used in national defense, emergency response, anti-terrorism, environmental monitoring, fire protection, petroleum, chemical industry parks, emergency detection of sudden chemical accidents, large-scale event security, long-distance detection of gas leakage, long-distance air pollution Analysis, industrial production pollutant discharge monitoring and other fields.

Nuclear Inspection Drone

SOLAFACT 820

Product Introduction

SOLAFACT 820 is a nuclear detection UAV. The flight platform is DJI's industry-level Matrice M300 RTK UAV. SiPM's nuclear detection technology can detect trace chemical agents, industrial toxic and harmful gases and radioactive pollution online, quickly and accurately.The results of nuclear chemical reconnaissance and detection can be displayed in real time on the UAV control terminal through transparent transmission. The professional visual analysis software can be seamlessly connected with nuclear chemical reconnaissance and inspection drones to achieve second-level response and draw nuclear and chemical pollution in real time. The three-dimensional pollution concentration distribution in the area is clear at a glance, and the pollution source can be quickly identified.

Features

- Unmanned nuclear radiation and chemical hazard detection;

- Support Beidou, GPS, GLONASS and GALILEO positioning and navigation functions;

- Visualization, providing a high-definition 3D map of the surrounding environment

- Conduct safety assessments of dangerous areas in advance from a safe distance;

- Qualitative and quantitative detection of pollutants and mapping the distribution range of pollutants;

- Qualitative and quantitative detection of pollutants and mapping the distribution range of pollutants;

- The gimbal quickly surveys and draws the surrounding map from the air to assess the hazards of entering the site

- Comprehensive understanding of the regional scene, including visual and nuclear contamination;

- Quickly formulate protective measures, direction of travel and treatment methods for entering dangerous sites

- Significantly reduces reconnaissance time before taking action.

Technical Indicators

parameter name	Performance parameters
Image transmission distance	≥ 15km
flight radius	≥ 7.5km
longest flight time	55 mins
maximum flight altitude	7km
maximum flight speed	23 m/s
Avoidance	Intelligent six-way positioning
Operating temperature	-40℃ to 52℃
Nuclear detection indicators:	
examination range	0.01uSv/h~10mSv/h
Detection accuracy	±10%
energy response	±10%
Detection source type	35KeV-1.5MeV
Detector technology type	Scintillation crystal +SiPM
Chemical testing indicators:	
Sarin	$0.1mg/m^3$
Soman	$0.2mg/m^3$

parameter name	Performance parameters
Lewisite	$0.2mg/m^3$
Tabun	$0.2mg/m^3$
Viex	$0.2mg/m^3$
mustard gas	$1mg/m^3$
Hydrocyanic acid	$10mg/m^3$
Cyanogen chloride	$10mg/m^3$
Phosgene	$10mg/m^3$
Ammonia	$10mg/m^3$
Chlorine	$20mg/m^3$
sulfur dioxide	$10mg/m^3$
hydrogen sulfide	$10mg/m^3$
hydrogen chloride	$20mg/m^3$
nitrogen dioxide	$10mg/m^3$
carbon monoxide	$10mg/m^3$
hydrofluoric acid	$10mg/m^3$

Application Field

It can be widely used in chemical defense reconnaissance, hazardous chemical explosion site, industrial park inspection, nuclear power plant leak detection, environmental protection and other fields.

NBC Reconnaissance Robot
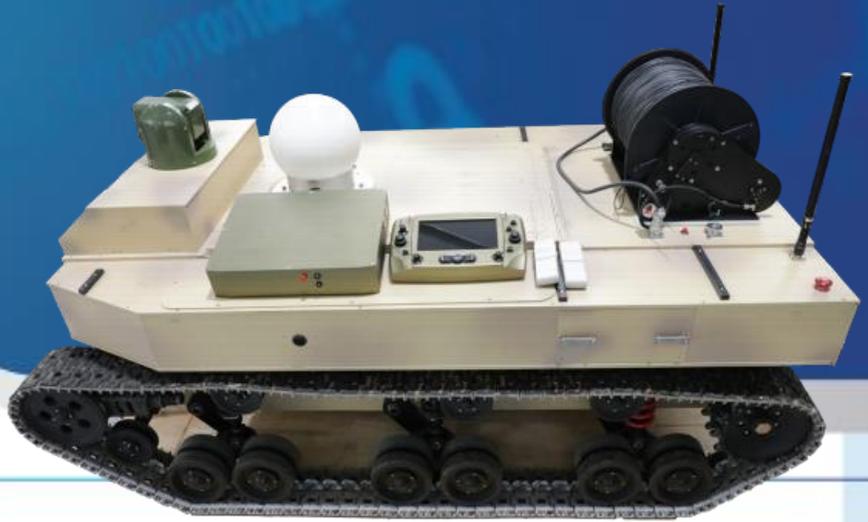
SOLAFACT 9200

Product Introduction

SOLAFACT 9200 nuclear, biological and chemical reconnaissance robot can be used for reconnaissance and rescue of nuclear, biological and chemical contaminated environments, sampling of nuclear, biological and chemical contaminated substances, and decontamination of nuclear, biological and chemical contaminated environments. The nuclear, biological and chemical reconnaissance robot consists of a robot body, gamma ray detector, nuclide identification device, neutron detector, chemical reconnaissance equipment, solid-liquid gas sampling equipment, vehicle-mounted sensors, contamination decontamination equipment, and a handheld remote control terminal. The nuclear, biological and chemical reconnaissance robot adopts a crawler chassis (qia C), which is flexible, has good body rigidity, and strong off-road performance; it can switch between wired and wireless control according to actual needs, and can be equipped with different mission systems according to needs to meet multi-scenario unmanned reconnaissance operations.

Features

- High mobility, suitable for multi-terrain and multi-scenario operations;
- The camera is resistant to radiation and can operate in a high radiation environment;
- Multiple types of nuclear radiation detection, capable(K PE BOU) of simultaneous detection of gamma rays, nuclides, and neutrons;

- Chemical detection is sensitive and high-resolution, and can detect a variety of chemical agents and common industrial toxic and harmful gases;

- Multi-position and multi-form material sampling can be realized

- It can be equipped with a large-capacityde contamination solution to complete the decontamination of large-area contaminated environments;

- Intuitive operation interface, easy operation;
- The equipment has a high degree of modularization and good maintainability;

Technical Indicators

Parameter name	Performance parameters
Length width Height	≤ 1850mm×1000mm×1000mm
Weight	≤ 340kg
Load	≥ 200kg
Robot Motion Performance	1、Maximum driving speed: ≥ 20km/h 2、Maximum climbing slope: ≥ 38° 3、Maximum wading depth: ≥ 300mm 4、The maximum obstacle height: ≥ 300mm 5、Maximum trench width: ≥ 650mm 6、Maximum inclination: ≥ 25°
Working parameters	1、Operating temperature：-40℃ ~ ＋50℃ 2、Storage temperature：-40℃ ~ ＋60℃ 3、relative humidity：95%RH(+30℃) 4、Maximum adaptability to altitude：≥ 4500m
Radiation resistance	≥ 1000Gy(100Gy/h，10h)
Wireless Transmission Distance	≥ 3km (common vision), wired transmission: ≥ 1.5km
Sampling Equipment	1、Gas:3 air bags with a volume of 1L. 2、Liquid: 3 bags of 200mL liquid. 3、Solid: 3 solid samplers for sampling 300g
Decontamination Parameters	Volume: 100L, area ≥ 50 square meters
Gamma Rays	Measuring range: 0.1uGy/h~10Gy/h
Nuclide	Measuring range: 0.01uSv/h~10mSv/h Response time: ≤ 30s
Nuclide Library	235U、239Pu、22Na、57Co、60Co、133Ba、137Cs、241Am、99mTc、131I、18F、152Eu、155Eu、192Ir、166mHo、125I、238U、232Th、40K、226Ra Nuclide types can be expanded
Neutron	Measuring range: 1uSv/h~1Sv/h(Am-Be) Sensitivity: 0.8cps/uSv/h(Am-Be)
Gas Detection	Able to detect sarin, Viex, mustard gas, Lewisite, hydrocyanic acid, cyanogen chloride, ammonia, and chlorine, of which sarin 0.1mg/m³, ammonia 10mg/m³, response time 2~15s

Application Field

It can be widely used in military battlefields, nuclear industry environments, urban anti-terrorism, petrochemical, fire protection, security and other places. The main uses are as follows

- Reconnaissance of chemically polluted environments in military battlefields;
- Mobile monitoring of chemical substances leakage in chemical production sites;
- Close inspection of high-radiation risk environments, monitoring of environmental radiation doses;
- Fire site environmental monitoring and fire detection;
- On-site locking of hazard sources during urban operations, anti-terrorism and emergency response
- Inspection of public places and places where people gather.

Area Gamma Detector

SOLAFACT 110

Product introduction

The SOLAFACT 110 area gamma detector is used for detecting transient radiation in the environment. Its fixed installation layout covers the entire area and can display the distribution of gamma radiation within the location. When the gamma dose rate exceeds the permissible levels, it issues an alarm signal through an on-site processing unit. This project utilizes TTC (Time to Count) technology for the first time, employing a single Geiger-Muller counter tube to measure a wide range of dose rates. The detector is highly radiation-resistant, ensuring its continued operation even after nuclear accidents, and it provides incident information. It is suitable for radiation reconnaissance in vehicles, robots, and drones, as well as radiation protection in places such as reactors, accelerator facilities, military nuclear facilities, and medical radiology.

Features

» Using Time-to-Count (TTC) technology provides high measurement accuracy with no dead time.

» The Geiger-Muller (GM) counting tubes operate intermittently, resulting in a long lifespan.

» The detector has a wide measurement range and high linearity.

» It exhibits high stability with an extremely low false alarm rate.

Technical Indicators

Parameter name	Performance parameters
Detector	GM counting tube
Energy range	50keV~3MeV
Dose rate range	0.1uGy/h~100 Gy/h
Energy response error	≤ ±30%
Response time	no more than 5s
Resistant to electromagnetic interference, shock, vibration and drops	
Size	≤ 110mm×350mm
Weight	≤ 3.5kg
Temperature range	-40° C~50° C
power supply	DC12V power supply
Protection level	IP65

Application Field

It can be widely used in robots, drones and protective vehicle platforms; nuclear power plants; nuclear power facilities; radiation medicine

Handheld Nuclear Radiation Detector

SOLAFACT 121

Product Introduction

SOLAFACT 121 handheld nuclear radiation detector is a new generation of pocket radiation measuring instrument, used to measure continuous or short-term X, γ-ray dose rate and cumulative dose, and can detect, search and quantify radioactive materials in a very short time. It can be used in nuclear accident emergency response, security anti-terrorism, nuclear medicine, radiation medicine, radiation monitoring, accelerator facilities, radiation accidents, entry-exit inspection and quarantine and other fields.

Features

» Using tissue equivalent detector

» Measures short-term or pulsed radiation

» Small size, high sensitivity, easy to carry

» Optical alarm indicates super-threshold dose. Compact overall structure.

» Recording of measurement data for post-incident analysis

»

Technical Indicators

parameter name	Performance parameters
Detector	scintillator detector
Energy range	15keV~10MeV
Ambient dose equivalent rate measurement range	0.1uSv/h~100mSv/h
Ambient dose equivalent measurement range	50nSv~1Sv
Energy response	15keV~60keV: ±35%
	60keV~3MeV: ±25%
	3MeV~10MeV: ±50%
Measurement error	≤±15%
Sensitivity	30cps/uSv/h (Cs-137)
Environmental parameters	-30℃~+50℃,Humidity less than 95%
Power supply	Built-in lithium battery, DC5V power supply
Maximum working hours	Continuous working for more than 12 hours
Weight	about 100g

Application Areas

It can be widely used in nuclear accident emergency response, safety and counter-terrorism, nuclear medicine, radiation medicine, radiation monitoring, accelerator facilities, radiation accidents, entry-exit inspection and quarantine and other fields.

Multi-component Air Quality Detector

SOLAFACT 5040

Product introduction

SOLAFACT 5040 multi-component air quality detector is a detection instrument that detects the concentration and components of CO, CO2, O2, CH4 and VOC gases (volatile organic compounds) in the air in real time and provides early warning. This instrument combines infrared spectrum absorption method, photoion technology, fluorescent oxygen and other advanced technologies, combined with precision optical design and stable and reliable circuit production. Compared with traditional electrochemical sensing methods, it has high detection accuracy and strong anti-interference. It has the characteristics of low zero point drift, long service life and easy maintenance. The instrument is simple to use. After connecting the power cord and turning it on and preheating for 30 minutes, real-time online detection of ambient air quality in a closed or semi-closed space can be achieved.

Features

Integrating a variety of advanced technologies; the instrument is developed using non-scattering infrared spectroscopic absorption method, photoionization technology, solid-state electrolyte analysis method and other advanced technologies, combined with precision optical design and stable and reliable circuits

Easy to use; after the instrument is turned on and warmed up for 30 minutes, it can stably measure the gas concentration in the environment, and the results are directly displayed on the LCD screen.

Various types of measurement gases and high scalability; it can measure CO, CO2, O2, CH4 and VOC concentrations, and has excellent scalability. Adding a small amount of circuits can expand the measurement of other gases

High measurement accuracy, high stability and high reliability; with temperature compensation and digital filtering, measurement error ≤ ±5%F.S, zero point drift ≤ ±2%/24h, repetition deviation ≤ ±1%

Long service life; it adopts runner-up grade components and implements strict standards related to military instrument production, quality inspection and testing. The continuous working time of the instrument is ≥ 5000 hours.

Zero point calibration is convenient; in natural air, press the zero point calibration button to calibrate 5 gases at the same time

It has audible and visual alarms; the instrument has concentration alarm and fault alarm functions, and the alarm threshold can be set by the host computer.

Rich communication interfaces; the instrument has CAN and RS485 communication interfaces, and has user-friendly host computer software, which can realize online monitoring and data storage, making it convenient for users to perform later data analysis and historical data query.

Technical Indicators

Parameter Name	Performance parameters
Test type	CO、CO_2、O_2、CH_4、VOC
Measuring range	CO: 0~150mg/m^3 CO_2: 0~5.0% O_2: 0~25% CH_4: 0~30%LEL (0~1.5%VOL) VOC: 0~100mg/m^3
Measurement Error	≤ ±5% F.S
Power	< 40W
Measure Response Time	T_{90} ≤ 60s
Operating Voltage	AC180V~AC240V, 50Hz±2Hz
Power on Warm-up Time	< 30min
Dimensions	397mm×278mm×136mm
Weight	4.8kg
Operating temperature	0℃ ~40℃,humidity: ≤ 95%
Storage temperature	-20℃ ~+50℃

Application Areas

Air quality detectors can be widely used in closed or semi-closed places such as national defense projects, civil air defense projects, caves, positions, submarines, warships, etc. where it is necessary to detect the concentration of CO, CO2, O2, CH4 and VOC gases (volatile organic compounds) in the air. The products have been used for a long time in the fields of national civil air defense projects and are now being promoted to civilian markets such as epidemic prevention monitoring, environmental monitoring, gas analysis, chemical industry and agriculture. The measurement calibration procedures of this instrument comply with national standards such as JJG635-1999. The main technical indicators meet the technical requirements of national secondary instruments and can obtain the calibration certificate of the national statutory metrology agency.

Passive Fourier Transform Infrared
Remote Sensing Analyzer

SOLAFACT 5500

Product Introduction

SOLAFACT 5500 Passive Fourier Infrared Remote Sensing analyzer is based on passive Fourier infrared remote sensing analysis technology, which can conduct qualitative, quantitative, positioning and imaging analysis of toxic gases to be measured in the atmospheric environment from a long distance. The product uses the infrared spectrum fingerprint characteristic information generated by the equivalent radiation brightness temperature difference between the gas to be measured and the remote sensing background to achieve rapid and highly sensitive qualitative identification and semi-quantitative concentration inversion analysis of a variety of toxic and harmful gases; it can present toxic and harmful pollution in real time The dynamic distribution and diffusion trend of gas in the scanning area, and sound and light warning for excessive gas. The instrument can realize 360°, pitch and 90° rotation scanning, and the scanning monitoring radius is greater than 3 km.

Features

Powerful detection capabilities

+Using high-performance and long-life Stirling-cooled MCT detector, the detection range reaches ppm-percentage
+ Equipped with a precision optical scanning pan/tilt, horizontal 360° scanning, pitch ±90°, monitoring radius greater than 3km
+Has a high-speed and stable optical-mechanical hardware system that can achieve $4cm^{-1}/16$ frames/second fast scanning

Reliable environmental adaptability

+Operating temperature: -20°C~55°C
+Storage temperature: -40°C~65°C
+Protection level: IP65
+Anti-vibration adaptability: The instrument meets GJB150.16A-2009, meets the anti-vibration characteristics of general fasteners mounted on vehicles, ships, and airborne, and can perform measurements in vibration environments

Extremely low maintenance costs

+ Exquisite structural design, simple installation and convenient operation

+ Using Fourier transform infrared spectroscopy detection technology, long-distance non-contact sampling
+ No consumables, no radioactive sources, no secondary pollution, and extremely low maintenance costs

Advanced Software Algorithms

+ Meets the requirements for detection and identification of hundreds of industrial compounds (TICs) and chemical warfare agents (CWAs)
+ It has multiple mixture detection capabilities and can detect and identify at least 6 mixtures of gas substances.
+ No external excitation light source is required, detection and identification can also be performed in complex dark environment backgrounds

+ Optimized algorithms for instrument self-inspection, self-calibration, path interference diagnosis, water vapor compensation, etc.

Rich product features

+ Equipped with a multi-functional monitoring terminal to meet user needs such as daily environmental monitoring, threat identification, sound and light alarm, information storage and playback, etc., and the functions support customization

+ Product functions support customization, the system can be loaded on mobile carriers such as vehicles, ships, helicopters, drones, etc., and perform tasks on the move

Content	Technical Specifications
Spectral range	600 cm^{-1}~1500cm^{-1}
Dimensions	396mm (length)x360mm (width)x382mm (height)
Host weight	<30kg, shock absorbing bracket <10kg
Spectral resolution	Regular 4cm^{-1}, maximum 1cm^{-1}
Detector	Using domestic MCT mercury cadmium telluride detector (lifetime >12000h)
Beam splitter	Domestic moisture-proof ZnSe beam splitter
Detection distance	>3km
Monitoring scope	Pan 360°, pitch ±90°
Calibrate blackbody	Adopting high-performance high and low temperature (ambient temperature -30°C~150°C) blackbody
Test type	More than 430 measurable substances
Instrument detection limit	50ppm·m (2 degrees temperature difference) @ ammonia or ethylene
Spectral acquisition rate	Normally 10 times/second
Telescope	Using military-grade 2x off-axis telescope
Working temperature	-20°C~55°C
Protection level	IP65
Mixture testing	Able to achieve real-time online early warning monitoring of more than 3 mixtures
Anti-vibration and impact characteristics	Meets the GJB 150A-2009 crawler vehicle vibration program	impact program	early warning monitoring during environmental operation, and also meets the heavy oil UAV anti-vibration test long-distance remote sensing test

Application Field

Passive Fourier infrared remote sensing analyzers can be widely used in national defense, emergency, anti-terrorism, environmental monitoring, fire protection, petroleum, chemical industry parks, emergency detection of sudden chemical accidents, large-scale event security, long-distance detection of gas leaks, and long-distance air pollution Analysis, industrial production pollutant emission monitoring and other fields.

Neutron Measurement Device

SOLAFACT 130

Product introduction

SOLAFACT 130 neutron measuring instrument is used to measure the dose equivalent around neutrons. The spherical design conforms to the recommendations of the International Commission on Radiation Protection (ICRP). It has good energy response and angular response. It can be used as a portable instrument or as a fixed instrument. meter. The moderator composed of carbon-doped polyethylene and cadmium-doped heavy metal is used together with the He-3 neutron counter tube to optimize the energy response of the detector, and the parameters of the moderator ball are calculated by MCNP simulation. The instrument is mainly used in reactors, nuclear fuel cycle in nuclear technology applications, spent fuel transportation and recovery, nuclear, biological and chemical protection systems and other fields.

Features

» Wide energy response range with energy compensation

» MCNP simulation combined with experiments to ensure energy linearity

» Excellent environmental adaptability and extremely low false alarm rate

» Portable design, superior to traditional neutron dose rate meter

Technical indicators

Parameter name	Performance parameters
Measurement quality	Neutron surrounding dose equivalent rate H*(10)，Sv/h
Energy range	Thermal neutrons -20MeV
Measuring range	1uSv/h-1Sv/h（Am-Be）
Sensitivity	0.8cps/uSv/h（Am-Be）
γ Sensitivity	< 5μSv/h（Cs-137,1Sv/h）
Angular response	≤ ±20%，All-round
Energy response error	≤ ±40%（Am-Be）
Background	≤ 0.1cps
Temperature range	-40° C-50° C
Protection level	IP54
Power supply	Lithium battery, built-in charger
Anti-electromagnetic interference, anti-shock and vibration	
Size	Diameter 230mm × Height 280mm
Weight	about 8kg

Application field

It can be widely used in reactors, nuclear fuel cycle in nuclear technology applications, spent fuel transportation and recycling, nuclear, biological and chemical protection systems and other fields.
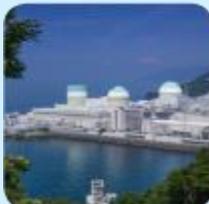
Nuclear integrated alarm

SOLAFACT 9000

Product briefing

SOLAFACT 9000 nuclear alarm is a nuclear radiation and chemical agent detection equipment designed and developed by the company for national security and environmental monitoring. It aims to deal with gamma radiation threats, chemical warfare agent threats and industrial toxic and harmful gases in the environment. The equipment can be used independently or mounted on reconnaissance vehicles, emergency vehicles, mobile laboratories, and can also be installed in stations, warehouses, chemical plants, nuclear power plants and other fixed places for long-term monitoring. The alarm is durable, waterproof and anti-vibration, with self-cleaning function, and can be used for a long time in harsh environments.

Product characteristic

» The detection is sensitive and has high resolution. It can detect 11 kinds of chemical poisons in 5 categories.

» Durable, waterproof and anti-vibration, suitable for harsh environment

» It has self-cleaning function, and can quickly restore the detection ability after the instrument is contaminated.

» Strong anti-interference ability, can resist interference from gunpowder smoke, grass smoke, engine exhaust gas, etc.

» Various communication methods, CAN/RS232/RS485 and other methods can be provided

» The standard substance library can be upgraded, and the detection types can be expanded

Technical indicators

parameter name	performance parameters
length x width x height	≤ 280mm×190mm×135mm
weight	≤ 5.5kg
power supply	24V DC or 220V AC
Gas detection sensitivity and response time (except below freezing point)	It can detect sarin, soman, Vieques, mustard gas, phosgene, hydrocyanic acid, ammonia, chlorine, hydrogen sulfide, sulfur dioxide, etc. Among them, sarin 0.1mg / m3, response time ≤ 5s ; ammonia 10mg / m3, response time ≤ 10s.
γ radiation monitoring capability	I.γ-ray dose rate : 0.1uGy / h ~ 10Gy / h, range can be automatically converted II.Cumulative dose : 0.1uGy ~ 10Gy, range can be automatically converted ; III.With γ dose rate and cumulative dose reporting function.
working temperature	-40 °C ~ + 55 °C (chemical monitoring alarm effective working temperature : -20 °C ~ + 50 °C)
storage temperature	-43℃ ~ +70℃
Anti-vibration standard	GJB150.18A-2009
Salt fog resistance standard	GJB150.11A-2009
plateau adaptability	Meet the conditions of 5000 meters high altitude use
anti-interference	It can produce no false alarm to the environmental smoke, engine exhaust gas and plant smoke.

Application field

It is suitable for installation on mobile platforms such as vehicles, boats, shelters, and civilian and police emergency vehicles, or can be used in field conditions with a power supply battery.

Portable chemical poison detector

SOLAFACT 560

Product introduction

The SOLAFACT 560 portable chemical agent detector is a trace substance detection instrument developed independently by the company. The instrument employs full-spectrum flame photometry as the detection principle and is equipped with high-precision optical components, allowing for rapid and accurate detection of over a hundred types of chemical warfare agents, toxic industrial substances, and flammable gases. The instrument is compact, lightweight, highly sensitive, and has a fast response time. It can detect solid, liquid, and gaseous substances and is not limited by databases, making it capable of detecting unknown and novel toxic agents. Its overall performance reaches an advanced level among similar international products.

Features

Wide detection range

+ It can detect solid, liquid and gas three-phase substances, covering about 140 chemicals including phosphorus, sulfur, arsenic, nitrogen, hydrogen and oxygen, and flammable gases.

High sensitivity

+ Ultra-high detection sensitivity, phosphorus, sulfur, and arsenic substances can be detected at ppb level.

Efficient detection

+ Rapid response, detection within 10 seconds
+ Quick zeroing, rapid recovery for the next detection after detecting high-concentration chemicals, no need for flushing or backwashing.
+ Capable of detecting mixtures.

Intrinsic safety

+ The instrument does not contain radioactive sources and does not require approval from the environmental protection department

Data storage function

+ Built-in data storage chip stores historical detection data, and the data supports user acquisition

Easy to carry and easy to use

+ Small size, light weight, easy to carry, one-button activation, no setup and calibration required, simple operation, easy to use

Technical indicators

Parameter name	Performance parameters
Detection principle	full-spectrum flame photometry
Host size	390mm×110mm×142mm
Host weight	2 kg (excluding hydrogen tank and battery)
Power supply	18650 lithium battery (4 cells)
Types and Forms of Detection	Phosphorus-based (G, V) toxins: Examples include Tabun, Sarin, Soman, VX, Cyclosarin, and others. Sulfur-based (HD, HL) toxins: Examples include Mustard gas (HD), Organic sulfur agents, Sulfur dioxide, Nitrogen sulfide, and Sulfur monochloride. Arsenic-based (L, SA) toxins: Examples include Lewisite (L), Arsenic, Diphenylchloroarsine, Arsenic trichloride, Ethyldichloroarsine, and Benzene arsenic dichloride. Nitrogen, Hydrogen, and Oxygen-based (HN, AC) toxins: Examples include Nitrogen mustard (HN), Hydrogen cyanide, Hydrochloric acid, Phosgene oxime, Acrylonitrile, and Triethanolamine. Flammable gases: This category may include various flammable gases, but "CH" typically represents the chemical formula for methane, a common flammable gas.
Detection of Substance Forms	solid, liquid, gas
Hydrogen Cylinder Usage Time	12 hours
Sensitivity	Phosphorus 2ppb; sulfur 70ppb; arsenic 150ppb; nitrogen, hydrogen and oxygen 3ppm
Continuous working time	20℃: 11 hours 50℃: 8 hours 0℃: 4 hours and 30 minutes -10℃: 2 hours and 45 minutes
Startup time	0℃ ~35℃: 2 minutes 35℃ ~50℃: 4 minutes -10℃ ~0℃: 15 minutes
Response time	2-10 seconds
Operating temperature	-10℃ ~50℃
Storage temperature	-39℃ ~71℃
Operating altitude	0 to 3000 meters
Communication method	RS485

Application areas

It can be widely used in national security, military investigation, anti-terrorism chemical attacks, chemical accident rescue, industrial production, environmental monitoring, fire protection and other fields.

Handheld Nuclear Radiation Detector

SOLAFACT 100

Product Introduction

SOLAFACT 100 handheld nuclear radiation detector is a new generation of pocket radiation measuring instrument, used to measure continuous or short-term X, γ-ray dose rate and cumulative dose, and can detect, search and quantify radioactive materials in a very short time. It can be used in nuclear accident emergency response, security anti-terrorism, nuclear medicine, radiation medicine, radiation monitoring, accelerator facilities, radiation accidents, entry-exit inspection and quarantine and other fields.

Features

» Using tissue equivalent detector - plastic scintillator doped with heavy metals

» Measures short-term or pulsed radiation

» Small size, high sensitivity, easy to carry

» Optical alarm indicates super-threshold dose. Compact overall structure.

» Recording of measurement data for post-incident analysis

Technical Indicators

parameter name	Performance parameters
Detector	Plastic scintillator detector
Energy range	15keV~10MeV
Ambient dose equivalent rate measurement range	0.1uSv/h~100mSv/h
Ambient dose equivalent measurement range	50nSv~1Sv
Energy response	15keV~60keV：±35%
	60keV~3MeV：±25%
	3MeV~10MeV：±50%
Measurement error	≤±15%
Sensitivity	30cps/uSv/h（Cs-137)
Environmental parameters	-30℃~+50℃,Humidity less than 95%
Power supply	Built-in lithium battery, DC5V power supply
Maximum working hours	Continuous working for more than 12 hours
Weight	about 100g

Application Areas

It can be widely used in nuclear accident emergency response, safety and counter-terrorism, nuclear medicine, radiation medicine, radiation monitoring, accelerator facilities, radiation accidents, entry-exit inspection and quarantine and other fields.

Desktop drug and explosives detector

SOLAFACT 860

Product introduction

SOLAFACT 860 desktop drug and explosives detector is a next-generation desktop detection system for trace analysis of drugs, explosives and other contraband. Using a built-in calibration system, there is no need to regularly replace detection devices and calibration, which greatly saves usage costs. There is no need to apply for any license to use radioactive sources. It can be widely used in security inspections in airports, subways, customs, border defense, important conferences, etc. It can also be used as a physical evidence inspection tool for national law enforcement agencies such as public security, armed police, and courts.

Features

» Intrinsically safe - the instrument does not contain radioactive sources and does not require any license to use radioactive sources.

» Efficient detection - fast start-up time, fast detection and analysis time, results can be produced in 5 seconds, and fast recovery

» time

Various types of libraries - Establishing strategic cooperation with relevant departments, rich standard samples of drugs and explosives, and the database can reach nearly 100 types

» High sensitivity - pg level for explosives, ng level for drugs

» Rich data interface - detection data can be exported directly through USB, and can be connected to mobile phones/tablets/PC through WIFI/Bluetooth/Ethernet ports. Using supporting application software, it can be used as a detection terminal to connect to the server, build a big data visualization platform, and achieve remote monitoring. Check the network, etc.

Technical indicators

content	Technical indicators
Dimensions	348×322×355mm
Weight	8.24kg
Working voltage and mode	15V or lithium battery powered
Rated power	120W
Communication Interface	Ethernet, USB, WIFI
Operation method	touch screen
Sampling method	wipe or inhale
Sensitivity	Drugs ng level, explosives pg level
Types of drugs that can be detected	Meth, cocaine, heroin, K powder, opium, morphine, marijuana, pethidine, methadone, amphetamines, ecstasy, caffeine, moxa, codeine, etc. can be added to the drug library by authorized users.
Detectable types of explosives	TNT, ammonium nitrate, RDX, Taian, Octogen, C4, Tetryl, TATP, DNT, nitroglycerin, ammonium antimony, picric acid, nitroguanidine, etc. can be added to the drug library by authorized users.
Start Time	≤ 30s
Analysis time	≤ 6s
Overload recovery time	≤ 1min，Has self-cleaning function
Preheat time	≤ 18min
Display	10.1-inch (1920×1200) LCD touch screen
Alarm mode	Sound, color, text display, etc.
Data storage	64G storage space, can store no less than 100,000 detection records; supports backup through network port, USB, etc.
Operating software	Chinese operating software, can be customized according to user needs
Working environment humidity	≤ 93%
Storage temperature	-40℃ ~60℃
Protection level	IP52
radiation safety	No radioactive source

Application areas

- Security inspection in civil fields such as airports, subways, train stations, ports, industrial parks, large public events, etc.

- Physical evidence inspection tools for public security, courts and other national law enforcement agencies

- Customs, border defense, armed police and other national government agencies and military departments detect and protect configurations

- Experimental research on poisons and explosives in scientific research universities and research institutes

Mobile Radioactive Aerosol Detector

SOLAFACT 140

Product introduction

The mobile radioactive aerosol detector is designed to monitor environmental contamination levels of radioactive aerosols, providing a basis for personnel protection. The detector is mainly composed of a sampling unit, a detector unit, a data communication unit, and a display unit. The detector unit employs ion-implanted silicon detectors, located within the sampling pipeline, just above the filter paper. The use of fluorine material micro-porous filter membranes reduces the radon progeny drag. The instrument performs automatic energy calibration, efficiency calibration, and spectrum analysis. It uses advanced energy spectrum fitting subtraction methods to eliminate radon progeny interference, providing net counts for the desired artificial alpha and beta nuclides. It calculates their concentration and detection limits. The detector can display radioactive volume concentration in user-defined units and emits audio-visual alarms when measurements exceed the threshold.

Technical indicators

Name	Technical Specifications
Weight	< 35kg
Measurement Range	α: 0.1-105Bq/m^3, β: 1-105Bq/m^3
Relative Error	Not exceeding±20%
Energy Range	0.1~10MeV
Background Count	Alpha Background: ≤10 cpm, Beta Background: ≤100 cpm
Energy Linearity	≤1%
Operating Temperature	-10℃~50℃
Interference Resistance	Equipped with radon interference resistance and radon discrimination capability: can meet measurement requirements even under conditions with radon concentration ≤2000 Bq/m^3
Aerosol Collection Efficiency	Collects aerosols with an aerodynamic equivalent diameter range of 0.1 to 100 μm, with an aerosol collection efficiency of ≥99%.
Channel Rate	Alpha to Beta Channel Crossover Rate: Not exceeding 15% Beta to Alpha Channel Crossover Rate: Not exceeding 15%
Response Time	≤1h (5Bq/m^3), ≤20min (100Bq/m^3)
Electromagnetic Compatibility	Complies with GJB151-97 regulations
Vibration and Shock Resistance	Meets the requirements of GJB4000-2000, GJB4.7-1983, GJB4.9-1983, and GJB1060.1-1991 regulations.

High-Sensitivity Rapid Gas Chromatograph Analyzer

SOLAFACT 2000

Product introduction

The SOLAFACT 2000 High-Sensitivity Rapid Gas Chromatograph Analyzer is designed for quantitative detection of ppb to ppm level gaseous (or vapor) chemicals. This instrument is based on fast gas chromatography analysis technology and utilizes highly sensitive surface acoustic wave sensors. It features high detection sensitivity, low measurement error, short detection times, good repeatability, and high reliability. Users can add databases to enable broad-spectrum measurements of various substances.

The instrument employs ultra-high sensitivity surface acoustic wave sensors, which react to the concentration characteristics of substances by causing frequency changes on the sensor crystal surface as the substance flows through. After each analysis, the instrument can be cleaned using high-temperature baking to ensure the accuracy of the next analysis. The instrument provides various portable accessories, making it an ideal choice for both laboratory and on-site testing environments.

Features

» Quantitative detection

» Simple operation.

» Extremely high detection sensitivity, down to 1 ppb

» Strong interference resistance, suitable for various application scenarios

» Ultra-fast chromatographic separation technology, capable of achieving chromatographic separation within 10 to 30 seconds.

Technical indicators

Name	Technical Parameters
Measurement Range	ppb-ppm (most compounds are in the ppb range)
Dynamic Range	105
Detection Limit	2.9ppb(nitrobenzene aqueous solution)
Response Time	1~60s
Accuracy	Better than 10%
Repeatability Error	Better than 5% RSD
Adsorption Tube	TENAX TA filler (can be selected based on the target substance)
Detector	0-150℃(temperature control)
Analytical Sample	gas, liquid, and soil samples
Main Unit Size	344*326*218mm
Probe Size	340*124*186mm

Technical Description

Surface acoustic wave (SAW) sensors can be used to measure the concentration or mass of volatile and semi-volatile organic compounds in gases. They are characterized by high precision, small size, low power consumption, and rapid response. When gas passes through the sensor, it deposits on the sensor's surface, causing a change in mass, which in turn leads to a change in the resonant frequency. After mixing frequencies, the output signal reflects the mass of deposited gas on the sensor and, indirectly, the current gas concentration.

Application areas

It can be widely applied in various fields such as chemical agents, narcotics, explosives, water quality, and food testing.

Research-grade Fourier Infrared Gas Analyzer

SOLAFACT 5055

Product introduction

The SOLAFACT 5055 is a high-precision gas analyzer developed by our company. It is based on the principle of Fourier infrared detection and is capable of real-time gas concentration monitoring in the field. It can rapidly, continuously, and automatically identify and quantify gas components. The product offers excellent sensitivity, with the ability to detect some gas substances at the ppb level. It is suitable for various application areas, including industrial applications, gas composition analysis, catalytic process research, gas impurity determination, scientific research, and biological gas analysis

Features

» Powerful Detection Capability

» High sensitivity with all gold-coated mirrors for excellent environmental durability.

» Instrument stability with the use of spatial stereoscopic angle mirrors for permanent collimation.

» High level of intelligence, capable of checking and generating reports on various instrument components.

» Advanced Software Algorithms

» Detection and recognition of hundreds of organic compound functional groups.

» Fast response for qualitative and quantitative analysis of compounds.

» Self-checking, self-calibration, and operational status monitoring of the instrument.

» Fully automatic compensation for gas temperature, pressure, water vapor, and CO_2.

Technical indicators

Serial Number	Item	Sub-project	Technical Parameters
1	Monitoring Parameters	Monitoring Type	Over a hundred organic functional groups, user-customizable library
2		Spectral Range	750-4500cm^{-1}
3		Spectral Resolution	1cm^{-1}, maximum of0.5cm^{-1}
4		Detection Accuracy	Better than2%F.S
5		Detection Range	ppb~percentage concentration
6		Gas Detection Limit	< 0.2ppm@CO
7		Power Consumption	< 100W
8	Interface Parameters	Communication	USB
9		Power Supply	220V/24V Adapter
10	Physical Parameters	Dimensions	623×350×276mm
11		Weight	27kg
12	Chamber Specifications	Type	White Cell
13		Gas Optical Path Length	5m
14		Chamber Volume	0.75L
15		Window	ZNSE/KBR
16		Temperature (Maximum)	200℃
17		Pressure (Maximum)	2bar
18	Environmental Adaptability	Protection Level	IP65
19		Operating Temperature	0~40℃
20		Storage Temperature	-10~50℃

Application field

The research-oriented Fourier Transform Infrared (FTIR) gas analyzer is feature-rich, easy to operate, and can be powered on and preheated within 2 minutes. It is capable of detecting and analyzing over a hundred different organic compound functional groups. This instrument also enables the identification and quantitative analysis of complex mixtures. It finds wide-ranging applications across various fields, including industrial applications, gas component analysis, catalytic process research, gas impurity determination, scientific research, and biological gas analysis, among others.

Lightweight Fourier-Transform Infrared (FTIR) detector

SOLAFACT 5060

Product introduction

The A lightweight Fourier-Transform Infrared (FTIR) detector primarily employs Fourier Infrared Spectroscopy technology, combined with a highly compact, corrosion-resistant, and reliable 3-meter miniature absorption cell. This enables rapid and accurate detection and alarming of various parts per million (ppm) levels of Chemical Warfare Agents (CWA) and industrial toxic and hazardous gases (TIC). The instrument features a space-saving, stable, and vibration-resistant Michelson interferometer structure independently developed by the company, offering a long service life. The internal optical and hardware modules are highly integrated, providing substantial technical advantages with a wide range of detection, low detection limits, lightweight design, and low energy consumption. It can be mounted on various mobile platforms, including small unmanned aircraft and robots, to facilitate rapid measurements and alarming during movement. This technology finds extensive applications in national security, public safety, emergency response, field reconnaissance, chemical industrial zones, and pollution source detection, among other fields.

Features

● lightweight Fourier-Transform Infrared (FTIR) detector features highly integrated internal optics, hardware, and other modules, offering significant technical advantages. It is the first of its kind in China.

● The instrument is highly integrated, powerful, and compact in size, making it suitable for a wide range of platforms and scenarios, including individual carry, drone-mounted, and unmanned robot-based detection.

● It can detect a wide variety of substances with high sensitivity, capable of monitoring and alarming for over forty different types of chemical warfare agents and toxic gases, each with concentrations exceeding 5 ppm. Additionally, it can be expanded to meet user requirements.

● The instrument operates with low power consumption, featuring a built-in 18560 lithium battery that can provide continuous power for over 4 hours at room temperature.

● The instrument offers high detection reliability, utilizing professional multi-component gas qualitative and quantitative algorithms, making it suitable for the detection and analysis of mixed gases in various complex environments.

Technical indicators

Name	Technical Parameters
Equipment Form	Gaseous
Types of Detection	1.Chemical Agents: Sarin, Soman, Lewisite, Mustard Gas, AC, and others.2.Industrial Toxic and Hazardous Gases: CO, CH_4, NH_3, SF_6, SO_2, N_2O, ETO, Acetylene, Vinyl Chloride, Ethanol, Methanol, Cyclohexane, Isopropanol, Acetaldehyde, Acetone, Benzyl Alcohol, Trichloroethylene, Styrene, and over 40 other hazardous chemicals.
Detection Limit	At concentrations greater than 2 ppm.
Detection Accuracy	< 5%F.S
Size and Weight	Dimensions (Length x Width x Height)：＜300mm*185mm*140mmWeight: ≤6.5 kg (including the battery)
Operating Temperature	-20℃~50℃
Operating Humidity	Humidity：0~65%RH
Response Time	$T_{90} < 45s$
Airflow Rate	≤1.5L/min
Power Interface	DC24V/5A，Battery-Powered and compatible with vehicle-mounted and unmanned aerial vehicle (UAV) power sources.
Communication Interface	Ethernet Communication

Application areas

This product is the first of its kind in China, offering a unique combination of features that bridge the gap between Ion Mobility Spectrometry and portable mass spectrometry. Currently, there are no directly comparable instruments available. It is suitable for a wide range of platforms and scenarios, including individual carry, drone-mounted, and unmanned robot-based detection in various fields and situations.

Independently Controllable

The lightweight Fourier-Transform Infrared (FTIR) detector is completely self-controlled and features domestically produced core components, including the FTIR interferometer, miniature absorption cell, and TE Infrared detector. Several patents related to FTIR detection technology have been published, and these patents have been granted.

Portable Biological Aerosol Monitor

SOLAFACT 6010

Product introduction

SOLAFACT 6010 is a portable biological aerosol monitor developed based on Ultraviolet Laser-Induced Fluorescence technology. Its primary function is to monitor and provide early warning for biological aerosol particles in the ambient air. The principle behind this technology is that when aerosol particles pass through a strong ultraviolet light beam, they get excited, resulting in the emission of biological fluorescence and diffraction scattering. By employing a high-stability gas sheath flow structure, a highly precise optical detection system, and a sensitive photodetector, it can convert and detect the photonic signals, allowing for the quantification of the aerosol particles being tested. Additionally, by using a particle size distribution algorithm, it can further distinguish between the biological and non-biological properties of the particles.

Features

» This monitor boasts high analysis sensitivity, utilizing a 405nm semiconductor laser to perform single-photon excitation and particle counting.

» It offers low false alarm rates, enabling the rapid discrimination of biological and non-biological attributes of particles in the ambient air.

» In addition, it has a compact size, is lightweight, and has an extended operational lifespan, making it easy to maintain.

» It features a fast response time, delivering results within 30 seconds, allowing for precise monitoring of the degree of biological contamination in the ambient air.

» Furthermore, it demonstrates strong interference resistance, effectively countering interference from sources such as plant smoke, engine exhaust, nitrogen dioxide, pollen, dust, and other particulate matter.

Technical indicators

Name	Technical Parameters
Particle Types and Particle Size Range	Capable of capturing bacteria, spores, viruses, and toxins in the size range of 0.5μm to 10μm
Particle Size Measurement Error	Not exceeding ±30%
Lower Limit of Detection for Biological Aerosol Monitoring	≤100ACPLA
Self-Cleaning Time	≤3min
Alarm Time	≤30s
Operating Temperature	-20℃~50℃
Storage Temperature	-40℃~60℃

Application areas

It finds extensive application in areas related to inspection and quarantine at ports, customs, airports, as well as in aseptic cleanrooms for quarantine purposes. It is also used in ensuring security for crucial departments, safeguarding major events, providing early warning for bioterrorism threats, and preemptively detecting biological agents.

Unmanned Nuclear Monitoring Alarm Device

SOLAFACT 9300

Product introduction

The SOLAFACT 9300 Unmanned Nuclear Monitoring Alarm Device is designed for real-time, unmanned nuclear monitoring in fixed areas. This alarm device integrates technologies such as chemical monitoring, gamma radiation monitoring, self-organizing networks, and Beidou communication. It can monitor nuclear radiation, chemical warfare agents, and industrial toxic and hazardous gases in fixed unmanned areas. The network system formed by multi-point deployment enables nuclear and chemical contamination trend analysis and timely information reporting. It provides a basis for the protection, evacuation, and response of personnel in the rear, and it can be widely used in defense, public safety, counter-terrorism emergencies, fire-fighting, environmental monitoring, and other fields.

Features

» Integration of multiple technologies, strong detection capabilities, and a wide range of applications.

» Flexible usage modes, with multiple combinations available.

» Automatic node networking, real-time terminal monitoring, automatic data processing, and reporting.

» Compact size, easy deployment, and user-friendly operation.

Technical indicators

Name	Technical Parameters
Network Function	Equipped with self-organizing network functionality, Beidou positioning, and short message capabilities..
Chemical Monitoring Substances	At least 6 types of chemical warfare agents and at least 8 types of industrial toxic and hazardous substances. Some substances have a response time of ≤10 seconds, and the range of detectable substances can be extended.
Gamma Radiation Monitoring Capability	Gamma dose rate: 1µGy/h to 10Gy/h, with automatic range conversion. Gamma cumulative dose: 1µGy to 10Gy, with automatic range conversion
Dimensions	Dimensions: ≤350mm*250mm/250mm (unexpanded state)
Weight	≤8.5kg
Operating Temperature	-40℃～+50℃
Operating Time	≥24h
Number of Self-Organizing Network Nodes	≥16
Self-Organizing Network Single-Hop Communication Range	≥3km

Application field

The SOLAFACT 9300 Unmanned Nuclear Monitoring Alarm Device can be widely used in various fields, including defense, public safety, counter-terrorism emergencies, firefighting, and environmental monitoring.

Laser-based H2S Gas Analyzer

SOLAFACT 5600

Product introduction

The SOLAFACT 5600 Laser-Based H2S Gas Analyzer is a trace gas analysis instrument developed by our company. The instrument employs Tunable Diode Laser Absorption Spectroscopy (TDLAS) as its detection principle. It utilizes wavelength modulation technology by tuning the output wavelength of a semiconductor laser via current and temperature control. This allows the instrument to scan the specific absorption wavelength of the target gas, demodulating the second harmonic signal intensity in the received signal to obtain the concentration of the target gas.

The product is equipped with a compact Herriott absorption cell, where the light beam makes multiple passes within the gas chamber to achieve highly precise trace gas detection. The instrument offers a long service life, requires no consumables replacement, and is virtually maintenance-free. This product series can detect various gases, including methane, ammonia, oxygen, carbon monoxide, carbon dioxide, and more, by changing the detection probe."

Features

Fast Response: Can provide results within 10 seconds.

High Precision: Capable of detecting gas concentrations at the ppm level.

Long Lifespan: Operational lifespan of 5-10 years, with no toxicity and minimal maintenance required.

High Reliability: Resistant to environmental factors such as rain, smoke, dust, and other gases, ensuring reliable operation.

Technical indicators

Detection Principle:	Tunable Diode Laser Absorption Spectroscopy (TDLAS)
Main Unit Size	187 mm X 579 mm X 122 mm
Main Unit Weight	9 kg
Power Supply	24 VDC
Detection Mode	Diffusion/Sampling
Detection Range	H_2S 0~100 ppm(Customizable for other gases)
Warm-up Time	10mins
Response Time	< 40s
Accuracy	±2%F.S.
Repeatability	1% F.S.
Operating Temperature	-10~50℃
Operating Humidity	Relative humidity 0-95%
Output Signal	Standard 4~20 mA
Display	4-digit high-brightness LED display, LED status indicator lights

Application area

Suitable for applications in petrochemical industry, air quality monitoring, industrial process monitoring, and process control analysis.