

LANScientific

SUZHOU LANScientific Co., Ltd.

The professional RoHS Solution Way in the Industry

Energy Dispersive X-ray Fluorescence Analyzer

ScopeX



The professional RoHS Solution Way in the Industry

LANScientific ScopeX is a X-ray fluorescence analyzer designed for the screening of hazardous elements under the RoHS / ELV regulations. It combines the world's leading halogen-free analytical techniques with the intelligent vacuum system for the best halogen-free test, X-ray excitation of light elements, in the detection of any halogen-containing hazardous substances in products, but also for all elements and ROHS analysis. With high precision, wide range of elements can be analyzed, simple and fast test and so on advantages, can get reliable and accurate results and compliance with international the latest standard.

- High analytical accuracy
- Wide range of analysis
- Simple and fast test
- Reliable and accurate result
- In line with international standards

Respond instructions of ScopeX

Respond to EU RoHS 2.0 directive - 2011/65 / EU

Response to halogen-free directives IEC61249-2-21

Respond to REACH directives

Respond to toy En71 instructions

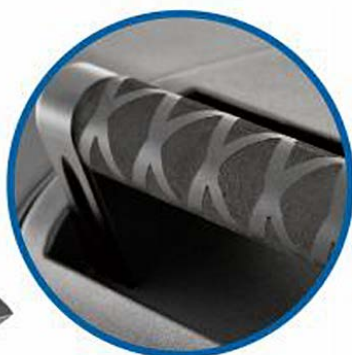
Respond to US CPSIA consumer product safety improvement Act

Responding to China-RoHS national voluntary certification

Compliance with IEC62321 standard



High quality sandblasting
oxidative paint process



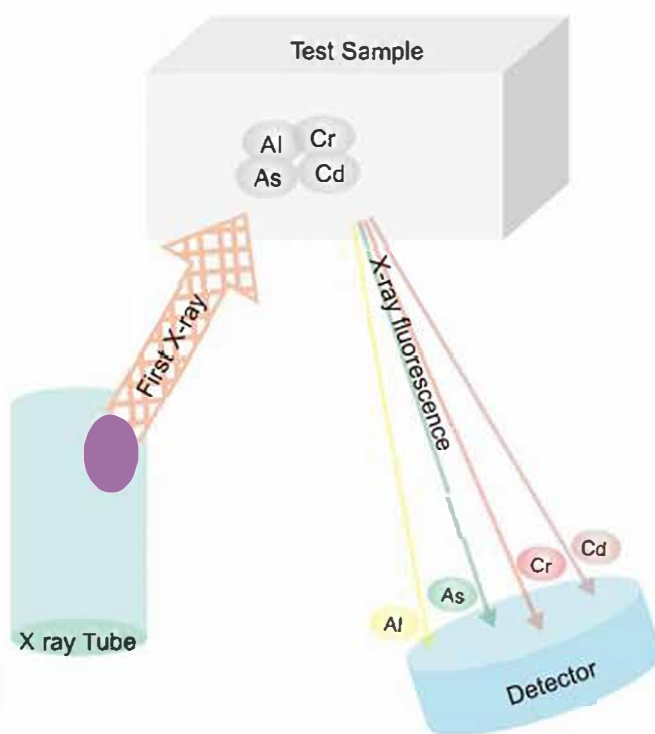
Comfortable non-slip
wear-resistant cover handle



Perfect fuselage safety protection

The principle of X-ray fluorescence analysis

Irradiate the sample with a certain wavelength of X-ray, and element in the excited state and yield photon excitation, forming a fluorescent X-ray. Different elements stimulate the different energy value which caused different X-ray fluorescence results. Through the detection of the wavelength of X-ray qualitative analysis do the quantitative analysis with the element-specific X-ray value.



Element and instruction correspondence

○: Standard configuration ⊙: Optional

Control Object	<div> <div>ELV</div> <div>RoHS</div> <div>Halogen</div> <div>CPSIA</div> <div>EN71 (Toy)</div> <div>Instruction correlation</div> </div>										
	Cl	Br	Hg	Cr	Pb	Cd	Sb	As	Ba	Se	Sb、 Sn、S
Elements											
ScopeX	○	○	○	○	○	○	⊙	⊙	⊙	⊙	⊙

High-performance hardware configuration

Excellent analytical performance

- High sensitivity

The high-power and high-efficiency X-ray tube combine with high-performance Si-Pin/SDD detector which brings very low detection limit and can be quickly and accurately detected for trace harmful substances. For one machine can do the sample compliance monitoring in High- high-efficiency and high-quality way.

- Hazardous substance screening

ScopeX provides analysis and screening functions of harmful metal elements restricted by environmental regulations such as RoHS/ELV, and is further equipped with halogen detection capability which halogen-free analysis can be easily accomplished. More detection element can be customized according to needs.

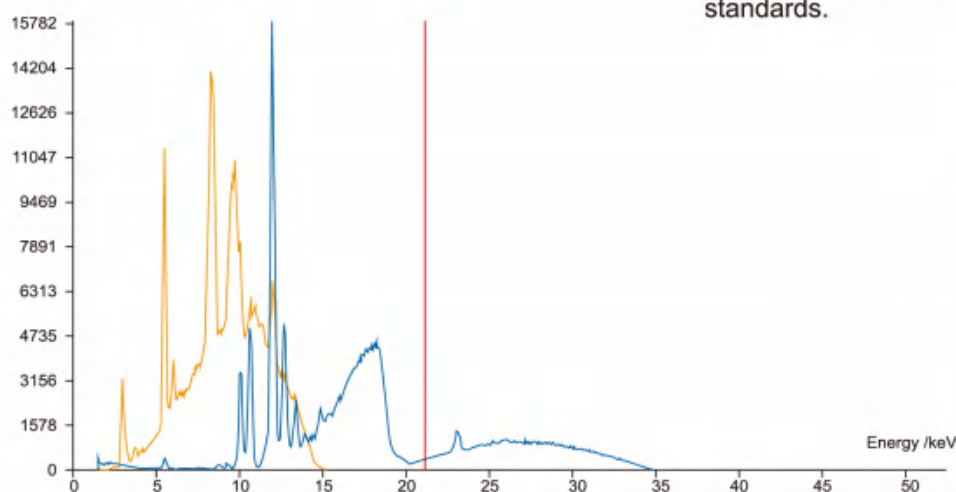
- Accurate and reliable

With the advanced XRF analysis software of LANScientific, such as the empirical coefficient method and the basic parameter method (FP method) are combined to ensure the accurate performance of the test result.

Empirical coefficient method: The instrument determines the influence coefficient based on the determination of the standard sample. The standard sample is required to be high standard and similar to the type of sample to be tested. The calibration model is simple.

Basic parameter method (FP method): The instrument determines the parameters by modeling and calculating various physical quantities based on the actual detected substances. The requirements for standard samples are not high, the calculation is more complicated, and it is suitable for the detection of substances lacking corresponding standards.

Test spectrum



PE standard sample

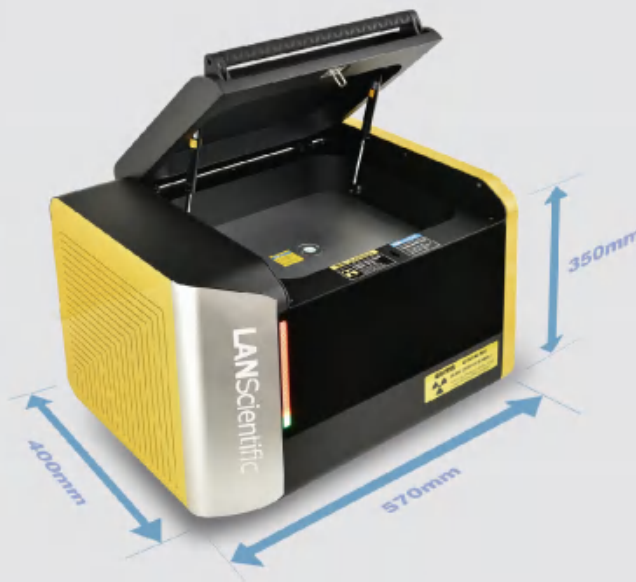
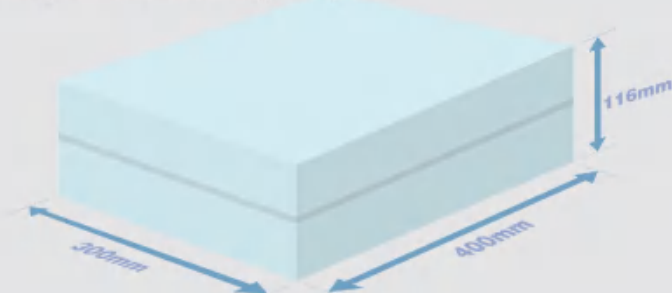
Result comparison

Element	Pb	Hg	Br	Cr	Cd
Measured value (Unit:ppm)	1201	1108	1091	1008	300
Standard value (Unit:ppm)	1199	1099	1076	999	297

Extensive versatility

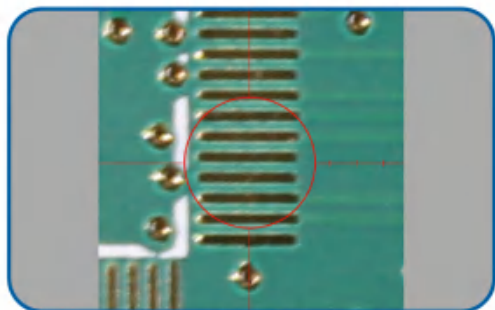
- Compact body, large sample bin

The overall design of the instrument is beautiful and generous with introduced international advanced industrial design and ergonomics concepts. We have the smaller body volume (570 * 400 * 350mm) and the larger sample room (400 * 300 * 116mm) compared with other similar products which can save space and bring better sample compatibility. Samples of different shapes (solid, liquid, gas, film, etc.) or different shapes (block, sheet, line, etc.) can be accurately analyzed.



- High definition CCD camera

The industrial-grade high-definition camera can confirm the test area status and improve the detection efficiency in real time without opening the cover. At the same time, the test sample pictures can be automatically taken for test report generation.



- No liquid nitrogen required

Advanced Peltier electric cooling, no liquid nitrogen required. Reduce equipment complexity which can save manpower and equipment maintenance costs.

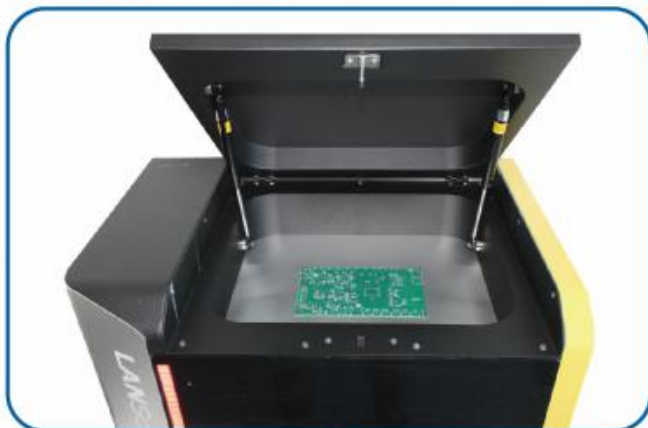


- Perfect security protection

Multiple safety protection devices: high-pressure safety lock (automatic interlock), software cover open, anti-leakage protection switch and all-metal enclosed chassis, to fundamentally ensure the safety of operators, to avoid radiation damage caused by accidental operation. Radiation safety is in line with national standard GB18871-2002 and GBZ115-2002.

Professional intelligence analysis software

One-button operation, peace of mind



Sample putted



Analysis start

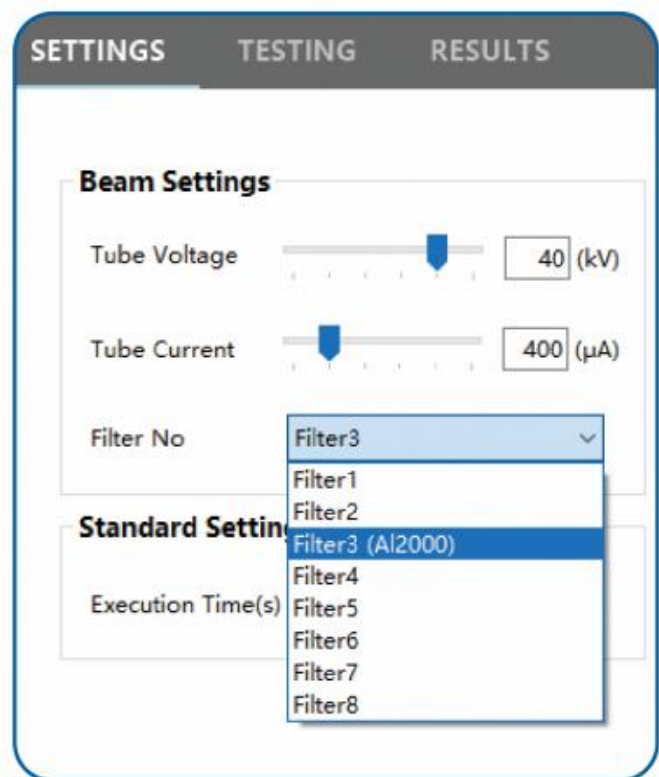
VIDEO RESULT SPECTRUM							
JUDGEMENT : UNCERTAIN							
No.	Elem Symbol	Elem Name	Intensity	Result	Unit	+/-	SPEC.
35	Br	Bromine	7,393.43	11,097.1	ppm	31.6	[300.00, 1000...
48	Cd	Cadmium	6.62	ND	ppm	12.5	[70.00, 130.00]
80	Hg	Mercury	0.00	ND	ppm	6	[200.00, 1300...
82	Pb	Lead	8.96	ND	ppm	0	[300.00, 1300...
17	Cl	Chlorine	0.00	ND	ppm	0	
24	Cr	Chromium	0.00	ND	ppm	0	[700.00, 1000...

Result showing

Automatic one-button operation: automatically sample test photos taken and saved, automatically pop-up of test reports, automatically filtered and saved of supplier information.

Extremely high degree of automation

Multiple collimators and filters automatically switch: Such as 5mm, 3mm, 2mm, 1mm, 0.5mm total five kinds of collimators. Both the collimator and the filter can be switched automatically by software. The detection accuracy and sensitivity can be improved through the combination of suitable collimators and filters (or no filters).



Filter

The test results are automatically determined: the software configuration has self-management and over-limit settings.

High degree of automation

- Concise and intuitive

The machine can depict and analyze the spectrum accurately, and have spectrum contrast function which can track the possible changes in material composition quickly to reduce risk.

New Delete Rename Elements Close				
Standard		Element	Min	Max
RoHS		Br	300	
		Cd	70	130
		Hg	700	1300
		Pb	700	1300
		Cr	700	

- Customize easily

Based on the built-in template, a variety of customization options are provided, which can change the threshold and the decision string according to the screening requirements to realize personalized screening of different materials and different elements.

New Delete Rename Elements Close				
Standard		Element	Min	Max
IEC62321 Metal		Cr	700	
IEC62321 Polymer		Br	300	
		Cd	70	130
		Pb	700	1300
		Hg	700	1300

- Easy to manage

With operator classification management authority, log in with different user name and password , test record report will add the tester's name automatically. Flexible report output format (Excel, PDF, etc.) to meet the various data management needs of users.

New Disable Reset PW Close				
UserCode	UserName	Role	Enabled	Remarks
user	user	Common ...	<input checked="" type="checkbox"/>	
Admin	Admin	Administr...	<input checked="" type="checkbox"/>	

- Automatic X-ray tube aging

After the X-ray tube is idle for a period, the internal vacuum will reduce. If it is used without aging, the X-ray tube will damage. Lanscientific is equipped with X-ray tube automatic aging function in the software to protect the equipment and minimize the energy required for maintenance.

SETTINGS

CALIBRATION

HV Set

Start HV

10 (kV)

End HV

40 (kV)

Cur Set

Start Cur

100 (μA)

End Cur

1000 (μA)

Step

Step Time

30 (s)

HV Step

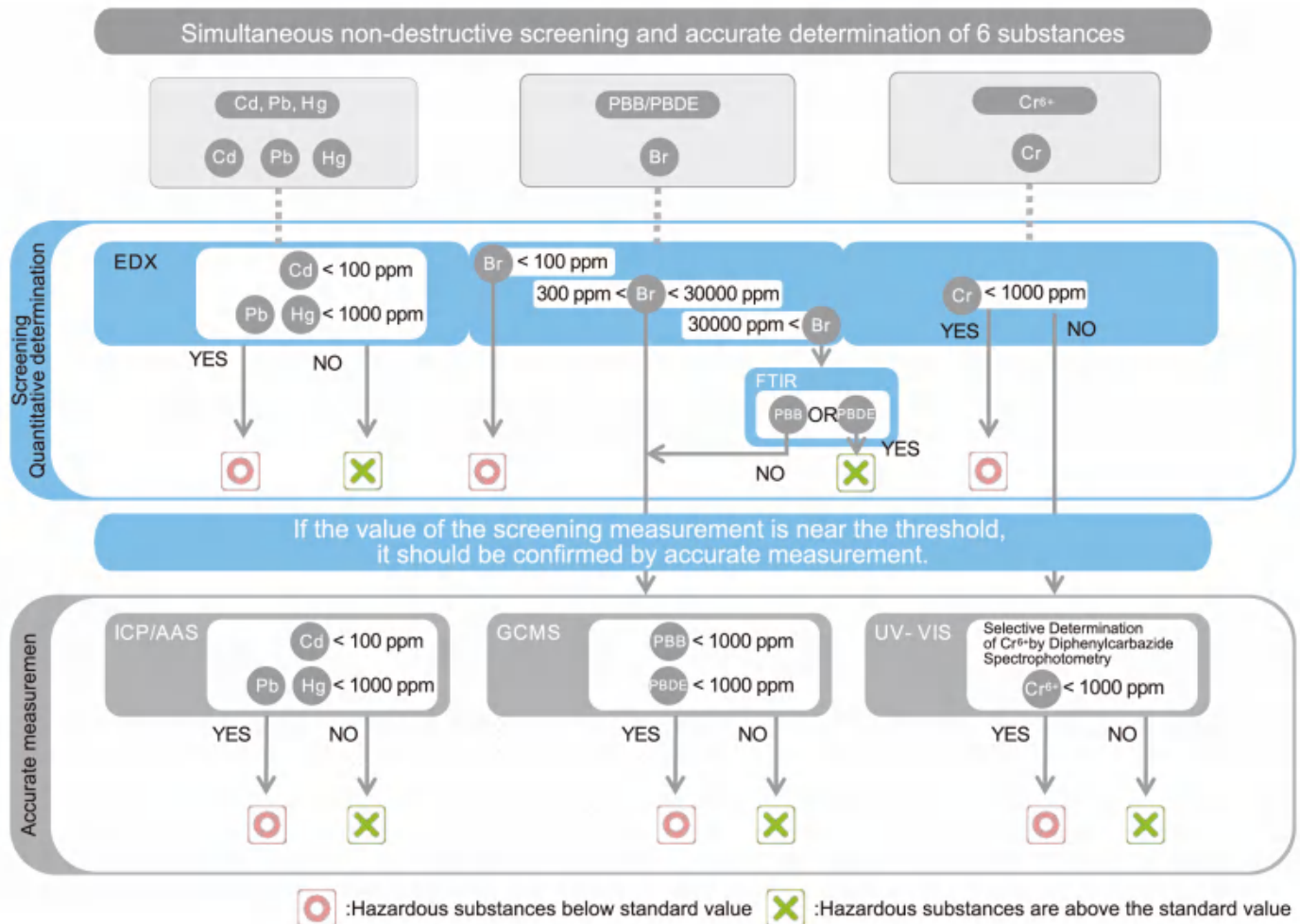
5 (kV)

Cur Step

100 (μA)

Professional intelligence analysis software

Recommended screening process



Note: This process is for reference only which is not the recommended procedure of the IEC.



Application Area

The rapid development of the high-tech industry has produced a large number of electronic products and other industrial products while facilitating people's lives. Once discarded, these products contain toxic and hazardous substances that may damage the environment and endanger human health. In response to such challenges, various environmental regulations have been introduced in different parts of the world to limit the use of hazardous substances in various products. Today, the environmental compliance testing of incoming materials and products is not only a responsibility of the company for the environment, but also an access permit for domestic and international trade. ScopeX provides the industry's professional hazardous substance detection solutions to help develop in different areas.

RoHS directive control product range:

Large appliances, small appliances, information technology and communication equipment, power tools, toys and other electrical and electronic equipment;

RoHS is the "Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment", which is used to regulate the materials and process standards of electrical and electronic products, making it more conducive to human health and environmental protection. It not only includes the machine product, but also the parts, raw materials and packaging parts used in the production of the machine, which is related to the entire production chain.



Large and small household appliances



Tools and Toys



Information communication equipment component



Electrical and electronic equipment

Application Area

Halogen-free directive control products:

With Cl, Br and other elements of the flame retardant as raw material products

Halogens such as Cl and Br are often present in flame retardants such as PBB, PBDE and so on. Such kind of flame retardants cannot be recycled and will release harmful substances during combustion and heating which will threaten the health of the human body, the environment and the next generation. Under the current technical conditions, halogen-containing flame retardants are difficult to be completely replaced due to their excellent performance, so it is more important to impose strict restrictions when use.

ELV directive screening analysis:

A variety of mechanical parts structure analysis and coating thickness, chemical synthesis of the outer membrane adhesion detection.

The environmental protection issues of automotive products are attracting more and more attention. How to reduce the damage of automotive products to the environment and how to control the emission of harmful substances in automotive products has become a hot spot in the worldwide automotive industry. Under the restrictions of the ELV Directive, cars are banned from toxic substances and environmentally damaging materials when designing and producing. Reduce and eventually stop using not recyclable materials and not environmentally materials and limit the use of hazardous substances such as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE).



Metal and plating



Petrochemical, refining and plastics



Automotive and mechanical parts



Mineral mining and geological and cement



Chemical industry



Agriculture and food

Technical parameters and specifications

The main specifications

Test principle	X-ray fluorescence analysis
Test methods	Energy dispersion type
Test sample	Solid, liquid, powder
Test range	11Na-92U
Equipment size	W570mm x D400mm x H350mm
Equipment weight	43kg
Sample cabin size	Maximum W400mm x D300mm x H116mm
Cover open	Automatic control

Detector

Type	BOOST Si-pin detector for ScopeX High sensitivity SDD detector for ScopeX PRO
Cooling method	Peltier cooler
Resolution	Optimal <125 eV

Sample cabin

Working environment	Atmosphere, vacuum (optional), helium (optional)
Camera	5 mega-pixel camera high-definition industrial camera

X-ray generator

X-ray tube	High-power side window X-ray tube
Target	W target (standard), Au, Ag, Rh target (optional)
Voltage	5-50KV
Current	0-1000uA
cooling method	Air-cooled
Collimator	5/3/2/1/0.5mm Automatic switching

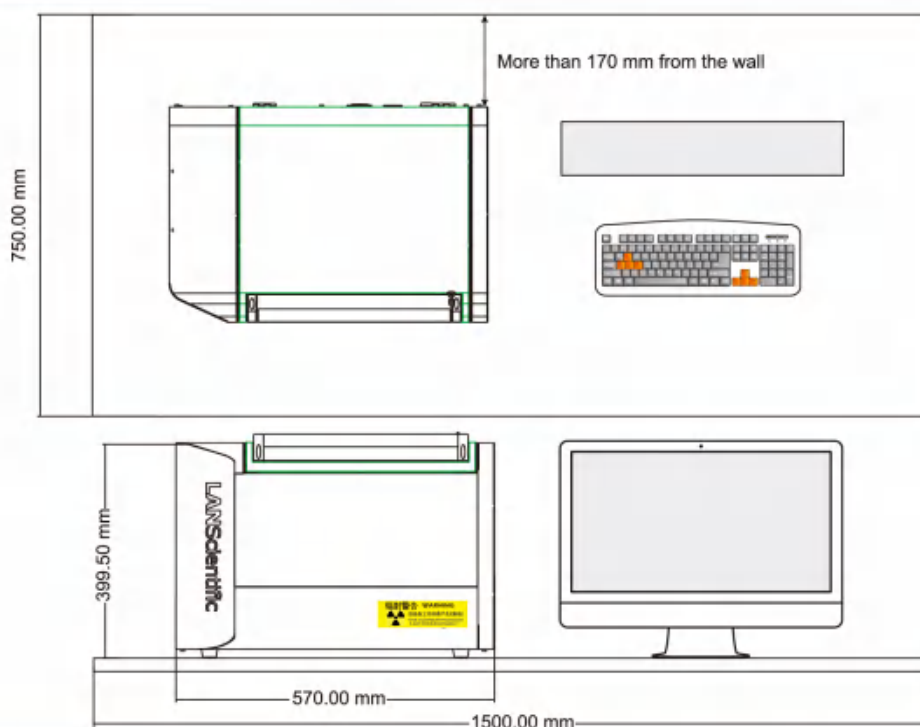
Computer Configuration

Host	Lenovo PC
Memory	DDR4 4G Memory
Hard disk capacity	1TB
OS	Windows 10

Environment settings

Temperature conditions	10℃ -30℃
Relative humidity	40-70% (Non-condensing)
power supply	AC 220V±5V 50Hz (slight different of different region)
rated power	100W

Setting example



* Any parameter changes will be notified separately.

ABOUT US

LANScientific Co., Ltd. is a provincial high-tech enterprise specializing in r&d, production and sales of high-end analytical instruments. It is a scientific and technological entity integrating product design, development, manufacturing, sales and service.

Company main product is applied to the analysis above Na to the fields of U element or compound ingredients, involved in industries including aerospace, petrochemical, environmental protection, metal materials, mineral exploration, such as the instrument consists of X-ray fluorescence analyzer (Xrf), on-line monitoring X-ray spectrometer, X-ray diffraction, Raman spectrometer, four series, It can be used in multiple scenarios.

SERVICES

LANScientific is committed to providing customers with the most optimized solutions. We aim to help customers improve testing efficiency by cooperating with customers to provide solutions tailored to meet their needs and provide fast, safe and reliable support.

In order to meet the needs of customers in the application of analysis technology, LANScientific has established a comprehensive customer support system to provide customers with analysis consulting, demonstration analysis, training, etc., and constantly develop new analysis technology, analysis methods, technical exchanges with users, quickly provide cost-effective, high-quality solutions.



FOR THE PACKET LAB

LANScientific products have been exported to the United States, Dubai, Russia, Brazil, India and other more than 30 countries and regions, agents all over the world. In the future, we will continue to expand business territory with better products and more intimate service, so that domestic instruments to the world!