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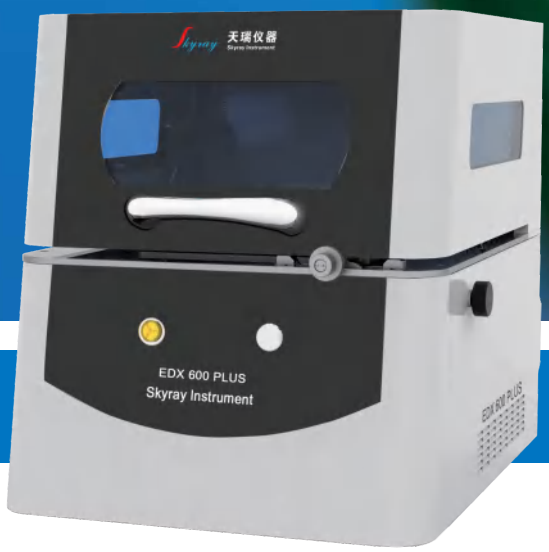


EDX 600 PLUS

X-ray Fluorescence Coat Thickness Tester
Ion Concentration Analyzer for Electroplating Solutions

So far, our products have been exported to 140 countries and regions

Skyray Instrument

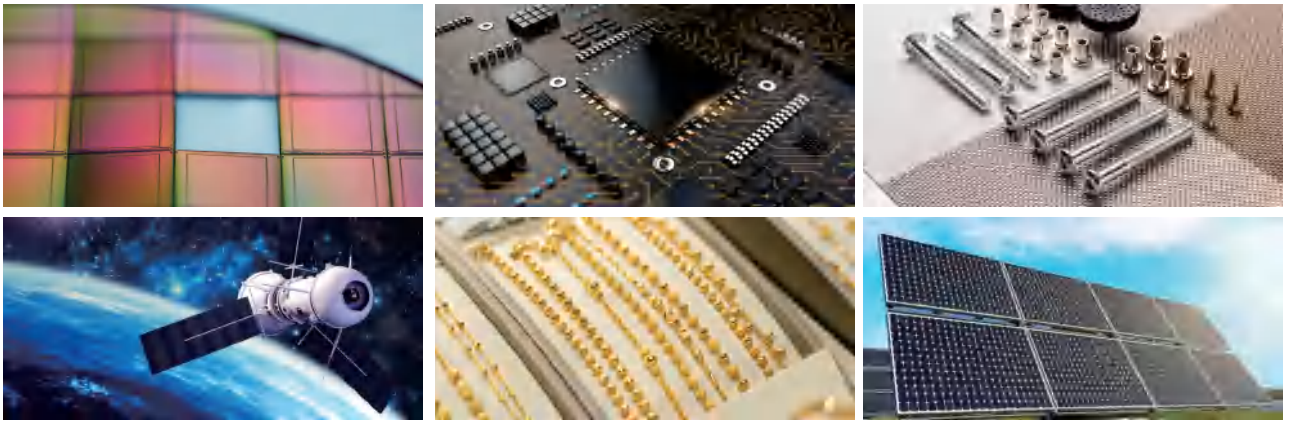
EDX 600 PLUS

EDX 600 PLUS is specially developed by Skyray Instrument Co., LTD for coat thickness measurement utilizing bottom illuminating technology derived from experience accumulated over the years. It features easy and fast measurement, none use of liquid nitrogen, and elimination of sample pretreatment. Known for its accurate thickness detection of various coatings and metal ion concentration for electroplating solutions in industrial electroplating, chemical plating and hot plating, it helps enterprises to accurately calculate cost and control product quality. The instrument is widely used in photovoltaic industry, hardware and sanitary ware, electronics, aerospace, magnetic materials, automobile industry, communication industry and so on.

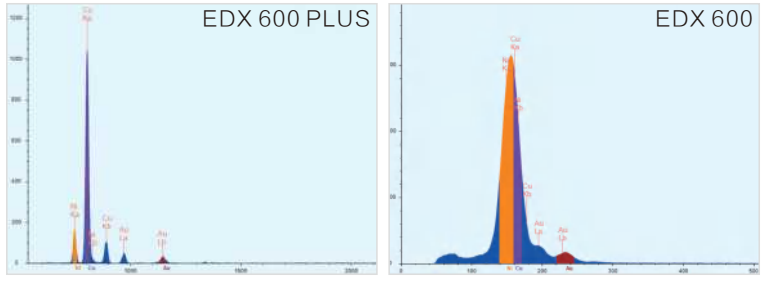
Application fields

Electroplating Hardware and sanitary ware Magnetic materials Aerospace New Energies

Electronics & Electrical Appliances Automobile making Precious metal plating



Hardware configuration



Spectra Comparison　　Comparison between Au-Ni-Cu spectra

High power and high voltage X-ray tube with micro focusing imported from abroad greatly ensures efficiency and stability of signal output.

Compared with the ordinary EDX 600, EDX 600 PLUS is built on a more advanced high-resolution FAST SDD detector, which has a resolution of up to 140EV, and have the ability to analyze signals of different elements accurately. It has an incomparable advantage in measurement of multiple coatings and complex alloy coating.

In terms of collimator, EDX600 PLUS is more advanced than the ordinary EDX600. It can be configured with smaller collimator such as 0.1*0.2mm, Φ0.15mm; Φ0.2 mm; Φ0.3 mm. The ultra-small light spot obtained with the ultra-small collimator makes measurement of even smaller samples easier.

With a dual-screen display configuration, the users can measure samples with one key directly without taking a look at the computer screen.

Design highlights

Innovative bottom-illuminating design coupled with one-button operation reduces greatly time to place samples.

The new light path design reduces scattering of light spot largely, thus enabling testing of smaller products easy.

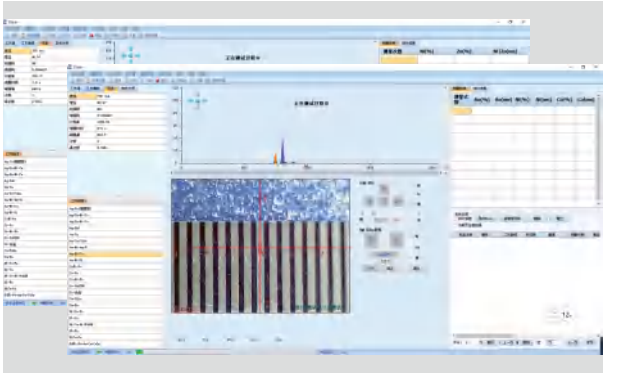
With high-resolution zooming camera, high-performance distance correction algorithm, the instrument can conduct precision test of irregular samples such as concaved surface, arched shape, threads, curved surface.

Software interface

User-friendly software interface to make operation easier.

Chinese remarks along with the spectra enable you learn operating without difficulty.

Real-time monitoring of hardware leads to more assured use of instrument.



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Technical Parameters Comparisons between EDX 600 PLUS and EDX 600

	EDX 600 PLUS	EDX 600
Range of Measurable Elements	13 Al~ 92 U can be measured	19 K ~ 92 U can be measured
Simultaneous detection of coatings and elements	Can simultaneously analyze more than 5 layers of coating, and measure 24 elements	Can simultaneously analyze more than 5 layers of coating
Detection limit	Metal coating analysis as thin as 0.005 PM	Metal coating analysis as thin as 0.01 PM
Range of Thickness	Coating thickness to be analyzed is generally within 50 PM (varies for different material)	
Standard deviation of thickness test	<5%	
Range of content	0.1%--99.9%	1%--99%
Accuracy of content	<0.5%	<1%
Content stability	Repeatability of multiple measurements is 0.5%	Repeatability of multiple measurements is 1%
Detection time	5-40s	
High voltage unit	Imported high power high voltage unit	
Detector and resolution	140 ± 5eV large window FAST SDD semiconductor Be-window detector	Large window proportional counter
X-ray device	100W high power micro focus W-target X-ray tube	
MCA	DPP digital multichannel analysis technology, channel number 4096	DMCA digital multichannel analysis technology, channel number 1096
Collimator (standard configuration)	0.2 mm; optional 0.1 * 0.2 mm; 0 to 0.15 mm; 00.3mm and other aperture size	0.05mm; optional 00.3mm
Minimum measurable diameter	00.1mm	00.38mm
Sample observation	Dual-screen display on instrument as well as on computer, industrial high sensitivity camera, image magnification 30 times, clear positioning of small samples	Industrial high sensitivity camera, image magnification 30 times, clear positioning of small samples
Movable sample platform	Manual high-precision movable platform	
Focusing	Manual ranging and focus	
Analysis method	compatible with FP method and EC method	
Safety	Platform protruding design, machine stops when cover is opened, multiple layers of heavy metal and lead glass to prevent radiation, safety of users is ensured	
Dimension	497 (W)x427 (D)x468 (H)mm	
Sample chamber size	415(W) X374 (D) x218(H)mm	
Range of movement of platform	50mm	
Temperature and Humidity of Operating Environment	0-30° C, humidity ≤70%	
Working Power	AC 220 ± 5V	

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Test Examples

Case 1: Test Values of ZnNi-Fe Ratio and Thickness of Iron Fastener

	Sample name	Ni|Zn 1 thickness(um)	Ni 1 content (%)	Zn 1 content (%)
1	ZnNi-Fe	3.797	11.2	88.8
2	ZnNi-Fe	3.801	10.9	89.1
3	ZnNi-Fe	3.809	11.3	88.7
4	ZnNi-Fe	3.827	11.7	88.3
5	ZnNi-Fe	3.809	11.3	88.7
6	ZnNi-Fe	3.771	11.2	88.8
7	ZnNi-Fe	3.758	11.4	88.6
8	ZnNi-Fe	3.745	11.1	88.9
9	ZnNi-Fe	3.751	11.1	88.9
10	ZnNi-Fe	3.735	11.2	88.8
Mean value		3.785	11.2	88.8
SD		0.034	0.2	0.2
RSD		0.898%	1.8%	0.2%
Max		3.828	11.7	89.1
Min		3.735	10.9	88.3
Max-min		0.093	0.8	0.8

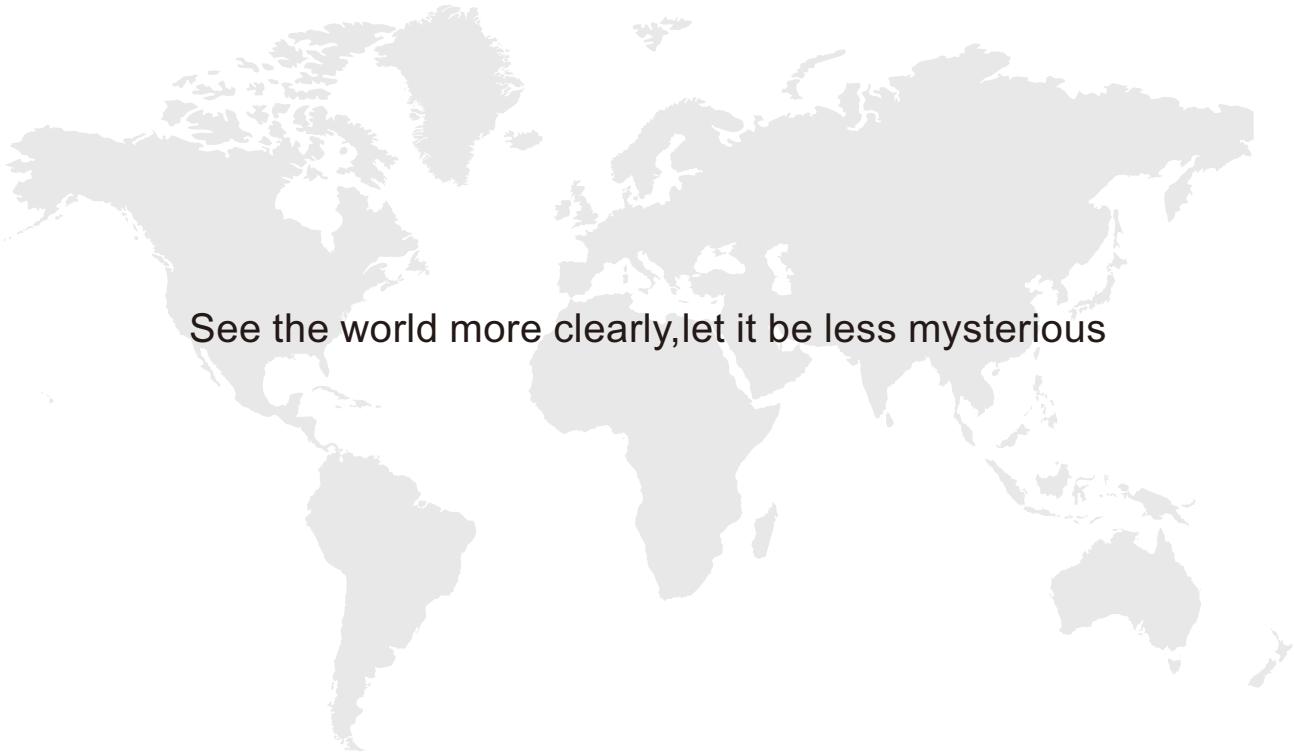
Case 2: PCB Gold Finger Test Value

	Sample name	Au 1 thickness (um)	Ni 2 thickness (um)
1	金手指1	0.859	10.120
2	金手指2	0.869	10.080
3	金手指3	0.871	10.251
4	金手指4	0.870	10.294
5	金手指5	0.867	9.979
6	金手指6	0.867	10.311
7	金手指7	0.882	10.374
8	金手指8	0.860	10.277
9	金手指9	0.869	10.141
10	金手指10	0.855	10.149
Mean value		0.867	10.197
SD		0.007	0.123
RSD		0.87%	1.20%
Max		0.882	10.374
Min		0.855	9.979
Max-min		0.027	0.395

Conclusion: EDX 600 PLUS can achieve excellent stability and precision in coating thickness analysis, especially for small samples. The instrument's test accuracy is comparable to that of ultra-high power electron microscope.

Stock code：300165

Skyray implements the ISO9001:2015 international quality certification system



See the world more clearly,let it be less mysterious

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Note: The test data in the catalog, except as otherwise indicated, shows only test data of Skyray. All information in the catalog is just for reference and is subject to change without notice.

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