

EDX 3600B Datasheet

General Information:

Product Name: Energy Dispersive X-ray Fluorescence Spectrometer
 Brand Name: Skyray Instrument
 Model Number: EDX3600B



Applications:

X-ray fluorescence (XRF) is a powerful analytical instrumental method used in a wide variety of industries to determine the elemental composition in various materials as stated in the following table. The XRF analyzers are extensively accepted by means of **accurate, rapid, non-destructive** testing features.

EDX3600B is a high-end configuration energy dispersive XRF spectrometer (EDXRF) with large sample chamber supports most different sized samples. The system comes with **vacuum pump for light elements detection**, and **helium injection system for liquids analysis**. The equipment is a multifunctional quick analyzer applicable to various applications as below table.

The system comes with **easy-to-operate software package** developed to be straight forward that every user needs. The software highlights all the information a user may require on one screen incl. elemental spectrum, measurement time, sample image and real-time test results, critical instrument data and more. Besides, this system provides **color camera system for the easiest sample alignment and viewing**. In only 10 seconds, operator can know the main elements contained in samples, and soon after complete element content data will come out.

Mineral (Ore) Analysis	<ol style="list-style-type: none"> 1. Minerals (Mg, Al, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Se, Zr, Nb, Mo, Pd, Ag, Cd, Sn, Sb, In, Ba, Hf, Ta, Pt, Au, Pb, Bi, etc.) 2. Slags, Feeds, Concentrates, and Tailings 3. Phosphate rock and fertilizer (P, S, Ca, Fe) 4. Kaolin and other Clays (Mg, Al, Si, Ca, Ti, Fe) 5. Gypsum (Ca, S), Dolomite(Ca, Mg), Limestone (Ca)
Metal Identification	<ol style="list-style-type: none"> 1. Alloy Analysis: <ol style="list-style-type: none"> a. Iron alloys (e.g. stainless, high-temperature, tool steels) b. nonferrous metal (Al, Ti, Cr, Ni, Cu, Zn, Cd, Zr, Sn, Mo, Pb, etc.) 2. Precious Metal Materials (Au, Ag, Pt, Pd, Ru, Rh, W, Os, Ir, etc.) 3. Silicon metal 4. Metal foil thickness
RoHS Compliance Screening	<p>Detection of concentrations for Pb, Cd, Hg, total Cr and total Br for most products directly affected by RoHS directive including:</p> <p>Consumer equipment, household appliances, IT and telecommunications equipment, lighting equipment, electrical and electronic tools, toys, leisure and sports equipment, medical devices, monitoring and control instruments, automatic dispensers, etc.</p>
Pharmaceutical Applications (solution, pellet, chip, powder)	<ol style="list-style-type: none"> 1. Iodine, selenium, copper, cobalt in sterilization products 2. Hazardous metal analysis in pharmaceuticals

Specifications:

Analyzable element range	$_{11}\text{Na}$ (sodium) ~ $_{92}\text{U}$ (uranium)	
Analyzable element content	Dynamic from ppm-level to nearly 100 percent	
Simultaneous analytical ability	Maximum 24 elements at a time	
Acceptable sample form	Solid, powder, pellet, liquid	
Test time	60sec ~ 200sec (extra 50sec if vacuumizing needed)	
Sample chamber	Atmosphere	Air, vacuum or helium
	Inside dimension	320mm(diam) x 180mm (height)
Environmental requirements	Temperature	15°C ~ 30°C
	Relative humidity	35% ~ 70% (no condensation)
	Others	Free of particles, corrosive gases, perceptible vibration
Power requirements	AC 220V/110V \pm 5V, 50HZ (optional AC purified regulatory power supply)	
Dimensions of spectrometer	650(W) x 466(H) x 608(D) mm	
Net weight	Spectrometer	Approx. 105 KG
	Vacuum pump	Approx. 25 KG

Main Features:

1. **Large-volume sample chamber** able to accept most different sized samples.
2. Inbuilt **high-resolution camera** sample viewing system provides easy sample alignment.
3. Newest version of application software provides **all the critical information on one screen**
Display element spectrum, in-process results of elemental content, camera image, measurement time, etc
4. **Vacuuming system** for sample chamber enhances detection sensitivity of **light elements** (Na, Mg, Al, Si, etc)
5. High stability **Spellman™ high voltage supply** with maximum 50KV voltage
Ensure longtime working stability; adjustable voltage can excite specific elements of interest in best status.
6. High excitation efficiency **Oxford™ 50W X-ray tube**
Provides high-efficiency X-ray source, high power performs low detection limits for certain covered elements.
7. High cost-performance thermoelectric cooling **Si-PIN detector** as standard configurations for general test requirements, and optional advanced **Silicon Drift Detector (SDD)** of excellent energy resolution for better test accuracy and precision.
8. Inbuilt **signal-to-noise enhancer** realizes 25 times improvement of effective signal processing

Main Configurations

High voltage supply	Manufacturer	Spellman High Voltage Electronics Corporation (USA)
	Maximum Voltage	50KV
	Stability	0.001% per 8 hours (temperature: 20°C ±0.2°C)
X-ray tube	Manufacturer	Oxford Instruments Plc (USA)
	Tube voltage	4KV ~ 50KV
	Tube current	50µA ~ 1000µA
	Stability	0.2% over 4 hours
Primary filters	Automatic selection from among 5 types of filters.	
Collimators	Switching style	Automatic
	Pore diameter range	φ0.2, φ0.5, φ1.0, φ2.0, φ3.0, φ4.0, φ6.0, φ8.0 (mm)
Detection system (alternative)	Type	Thermoelectric cooling Silicon PIN detector (Si-PIN)
		Thermoelectric cooling silicon drift detector (SDD)
	Energy Resolution	Si-PIN detector: 150±5eV (Mn K-alpha)
		SDD detector: 140±5eV (Mn K-alpha)
Signal-to-noise enhancer	Realize 25 times enhancement of effective signal processing	
Multi-channel analyzer	A time-resolved multi-channel analyzer produces accumulating digital spectrum.	
High resolution camera	Inbuilt 3 million pixels CCD camera for sample observation	
Evacuation system	Oil vacuum pump	3 liters Dewar capacity
	Pressure monitor	With pressure sensor
Software	Qualitative analysis	Measurement and analysis of measured data
	Quantitative analysis	Calibration curve method, matrix correction
	Utility	1. Automatic correction for intensity and energy 2. Monitoring of operating condition of the instrument 3. Function of tabulating the results of analysis