EDX2800 Datasheet

General Information:

Product Name: Energy Dispersive X-ray Fluorescence Spectrometer

Brand Name: Skyray Instrument

Model Number: EDX2800

Applications:

Whether you are a manufacturer, supplier or end user of electronic equipment, you have been affected by the regulations regarding Restriction of Hazardous Substances (RoHS), which will impact your business in Europe. In addition, China, Korea and other geographies have approved regulations which will affect any electronic equipment sold in those territories. EDXRF analysis is the most comprehensive and user friendly solution to screening industrial products for RoHS compliance and toy safety.

SKYRAY EDX2800 is a high-end configuration XRF spectrometer specially designed for hazardous elements detection, such as RoHS compliance screening, toy safety, consumer goods safety, heavy metals detection of petroleum, etc.

RoHS Compliance Screening	Product range directly affected by RoHS directive including: 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 Specific materials containing hazardous elements under RoHS directive: **Pb**: Solder, Paint, Glass material, Ceramic materials, Steel, Aluminium, Copper , Plastics, Batteries **Cd**: Plastics, Solder, Ceramics, Contacts, Batteries, Semiconductors **Hg**: Batteries, Contacts, Fluorescent lamps **Cr VI+**: Passivation layers, Anti-corrosive coatings, Chrome coatings, Plasticizers **Br** (in PBB & PBDE): Plastics/polymers (Fire retardant)
Toy Safety Screening	Detection of Pb, Hg, Cd, Cr, As, Se, Ba, Sb in toys and plastics affected by EN71-Part 3 Standard (European harmonised Toy Safety Standard).
Consumer Product Safety Improvement Act (CPSIA)	Affecting children product manufacturers, distributors, resellers, etc. Product lines affected include childrens apparels, costume jewelries, toys.
Heavy Metals in Crude Oil & Petroleum products	1. Pb, Ni & V in Crude Oil Pb is the main polluter element for environments. Ni & V can poison catalysts used in the refining process. 2. Pb, Mn in Gasoline Pb & Mn are is anti-knock additive used at low PPM concentrations.

Specifications:

Method of measurement	Energy dispersive fluorescence X-ray analysis	
Analyzable element range	$_{16}$S (sulfur) ~ $_{92}$U (uranium)	
Concentration range	Dynamic from ppm-level to nearly 100%	
Simultaneous detectability	Maximum 24 elements at one time	
Acceptable sample type	Solid, powder, liquid, paste	
Size of sample chamber	605(W) x 100(H) x 395(D) mm	
Testing time	60sec ~ 300sec	
Precision (repeatability)	0.05%	
Environmental requirements	Temperature	15℃ ~ 30℃
	Relative humidity	35% ~ 70% (no condensation)
	Others	Free of particles, corrosive gases, perceptible vibration
Power requirements	110/220VAC 50Hz/60Hz (optional AC purified regulatory power supply)	
Dimensions of main body	630(W) x 310(H) x 420(D) mm	
Net Weight	Appr. 77 kg	

Main Features:

1. **Large-volume sample chamber** supports most different sized samples
2. User-friendly application software provides **all the critical information on one screen**
   Display element spectrum, in-process results of elemental content, camera image, measurement time, etc
3. Inbuilt **high-resolution camera** sample viewing system provides easy sample alignment with image on computer screen.
4. 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.
5. Adoption of new generation X-ray tube with **excellent shielding of X-ray radiation.**
6. **Advanced thermoelectric cooling Si-PIN detector** of high energy resolution
   Realize excellent distinguishing ability for neighboring elements of the periodic table and high test repeatability.
7. Inbuilt **signal-to-noise enhancer** realizes 25 times improvement of effective signal processing

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	Target material	Rhodium (Rh), Tungsten (W)
	Stability	0.2% over 4 hours
	Optional Oxford™ X-ray tube applicable to halogen-free (chlorine) analysis.	
Primary filters	Automatic selection from among 5 types of filters.	
Collimators	Automatic switch different diameters of collimator	
Detector	Type	Thermoelectric cooling Si-PIN semiconductor detector
	Energy Resolution	160±5eV (Mn K-alpha)
Signal-to-noise enhancer	25 times enhancement of effective signal processing	
Amplifying circuit	One preset and one main amplifier circuits in the detector	
Multi-channel analyzer (MCA)	Resolution	2048ch.
	Gain	10eV/ch. and 20eV/ch.
Sample chamber	3 million pixels CCD camera for sample observation	
	Movable sample platform for plating thickness testing.	
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