



# Laboratory EDXRF Spectrometers

## EX-6600 & X-7600 with Secondary Targets

Light Elements Starting  
from Carbon

Detector Resolution  
Down to 123eV

Detection Levels from  
ppb to 100%

Fast and  
Non-Destructive  
Analytical Method

Direct and Secondary  
Targets Modes

- Non-destructive elemental analysis C(6) - Fm(100) starting from ppb to 100% concentrations
- Silicon Drift Detector (SDD) facilitates extremely high count rate applications with excellent energy resolution, suitable for both high and low Z elements
- Optional SDD LE thin window for improved light elements analysis
- Patented WAG<sup>®</sup> (wide angle geometry) X-ray Optic Technology-when combined with up to 400W of Excitation Power-creates a powerful and fast elemental analyzer to fulfill all the requirements for any Research or Production laboratory
- Eight customizable filters and eight secondary targets facilitate fast and accurate determination of trace and minor elements
- Easy to operate thanks to the proprietary nEXt™ software package

# Laboratory Spectrometers

Xenometrix's laboratory Energy Dispersive X-ray Fluorescence (EDXRF) spectrometers offer the ultimate non-destructive solution in elemental analysis applications.

The Fast Silicon Drift Detector (SDD) simultaneously delivers lower electronic noise and a higher count rates, which is translated into higher energy resolution and faster results in comparison with Si-Pin and Si-Li detectors.

Eight secondary targets in the EX-6600 & X-7600 models, provide maximum sensitivity for fast and precise quantification even in complex matrices such as alloys, plastics and geological samples. Targets are fully customizable to achieve sub-ppm detection limits in a wide range of elements.

The versatile laboratory spectrometers can analyze liquids, solids, slurries, powders, pellets and air filters while the analytical chamber can accommodate sample of different shapes and sizes.

## Secondary Target

The EX-6600 & X-7600 have a unique patented geometry combining eight secondary targets, with eight customizable tube filters used in direct excitation mode, to allow optimal excitation of all elements that can be detected in EDXRF.

The WAG (Wide Angle Geometry) patented secondary target technique provides the best results for major, minor and trace element analysis.

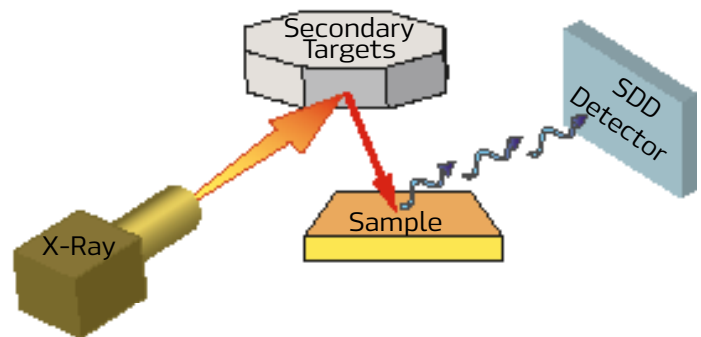
The X-ray tube excites the characteristic K lines of a secondary target (a pure metal) which are used to excite the sample "monochromatically". By using secondary targets, the detection limits for certain elements can be lowered significantly.

These lower detection limits make the EX-6600 & X-7600 suitable for a larger range of applications that had previously not been accessible to conventional ED-XRF instruments, and turn this instrument into the most versatile elemental analyzer available.

The integral design of the 10/20 positions autosampler permits minimal human intervention while allowing automatic and unattended operation.

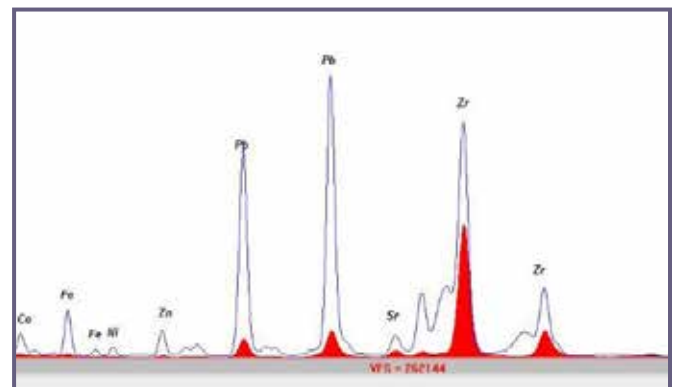
This fast, accurate, easy-to-use spectrometer is equipped with robust hardware and powerful analytical software to achieve low detection limits.

The multi-channel acquisition resolution provides superior peak-to-background ratio for improved detector response.



### Secondary target versus direct excitation mode (example):

The figure shows the much improved peak to background ratio, when using secondary target excitation (see blue contour spectrum) versus using direct excitation mode (see main red spectrum).



# System Specifications

System Specifications	EX-6600	X-7600
Measurement Capability		
Detectable Range	C(6)-Fm(100) / F(9)-Fm(100)	C(6)-Fm(100)
Detectable Concentration	sub - ppm and up to 100%	ppb and up to 100%
X-Ray Generation		
X-Ray Tube	Rh - anode standard (Mo, W, Ag, Cr, Pd optional)	
X-Ray Source	60kV, 300W	60kV, 400W
Excitation Type	Direct and secondary target excitation	
Stability	Precision 0.1% at ambient temperature	
X-Ray Detection		
Detector	Fast Silicon Drift Detector (SDD)	
Resolution (FWHM)	125eV ± 5eV	
Window Type	Be / optional thin window detector LE optimized	Ultra thin window LE optimized 2nd generation
General Features		
Autosampler	10/20 positions	
Work Environment	Air/ Vacuum/ Helium	
Tube Filters	Eight software selectable (customized)	
Secondary Targets	Eight software selectable: Si, Ti, Fe, Zn, Ge, Zr, Mo & Sn	
Power Supply	110-230VAC 50/60Hz	
Pulse Processing	Digital multi-channel analyzer (DPP)	
Optics	Patented WAG <sup>®</sup> (Wide Angle Geometry)	
System Dimensions (L x W x H, cm)	Unpacked: 85 x 85 x 105, Packed: 145 x 95 x 135	
System Weight	170kg (net), 220kg (gross)	
Chamber Dimensions	28cm diameter, H=6cm	
Computer	Integrated PC	
Software		
Operating Software	nExt™ analysis package, running under Microsoft Windows™ OS including basic fundamental parameters software	
Control	Automatic control of excitation, detection, sample handling and data processing	
Spectrum Processing	Automatic escape peak and background removal. Automatic peak deconvolution. Graphical statistics	
Quantitative Analysis Algorithms	Multi-element regression with inter-element corrections (six models available). Gross, net, fit and digital filter intensity methods	
Reporting	User-customizable data print out	
Options at Additional Cost	20 positions Carousel autosampler. Sample spinner. Professional Fundamental Parameters. Light Elements optimized detectors (EX-6600)	

# Key applications

- **Mining & Minerals:** cement, limestone, sand, clays, bauxite, phosphate rock, gypsum and others
- **Metallurgical:** research and quality control of the various metal industry processes of stainless steels, cast irons, metal sorting and others
- **Environmental:** wastewater, RoHS compliance, air pollution, soils & grounds, emission control and others
- **Petrochemical:** Sulfur and ULS in fuels, lube oils monitoring, additives, wear metals and others
- **Academic Research:** academic studies of material sciences, chemical engineering, electronics and others
- **Polymers:** plastics raw material analysis, PVC, additives, traces and others
- **Coating Thickness & Thin Films:** analysis of multilayer coatings, steel coating, impurities and others
- **Food, Cosmetics and Pharmaceutical:** additives control, raw materials, hazardous metals, packaging quality and others



## Xenemetrix

**Worldwide Distributions:**

North America, Latin America, Europe, Asia, Australia, Africa & Middle East

Xenemetrix is a leading designer, manufacturer and marketer of Energy-Dispersive X-Ray Fluorescence (EDXRF) systems. With more than 30 years experience, Xenemetrix continues to develop highly innovative technologies and solutions suitable for

today's ever-growing analytical challenges. Xenemetrix combines the latest technological developments with innovative engineering, to provide cost-effective solutions to a wide range of industries and applications.

