Technical Specifications
Handheld X-Ray Fluorescence (XRF) Analyzer
DLA Product Test Center, Mechanical Product Test Center

Objective:

To obtain a Handheld X-Ray Fluorescence (XRF) Analyzer to continue and expand the Product Test Center's (PTC) testing capabilities for its customers. This portable instrument will enable the PTC to make determinations on composition of metal alloys and coatings, and for measuring thickness of coatings. The XRF Analyzer shall be provided as an off-the-shelf product without the need for additional post-installation research, development, and validation. The Analyzer shall have all hardware, accessories, and software for performing qualitive and quantitative elemental analysis across much of the periodic table.

The DLA Product Test Center Mechanical Lab has listed the requirements for the procurement of a Handheld X-Ray Fluorescence Analyzer. The following specifications are a list of minimum functions and features required by the DLA Product Test Center.

Minimum Specification Requirements:

1. **Handheld X-Ray Fluorescence Analyzer**

   A. **Size:** No larger than 12"(L) x 5"(W) x 12"(H)

   B. **Weight:** No more than 4.5 lbs, including battery weight

   C. **Detector:** High resolution large area silicone drift detector (SDD)

   D. **Excitation:**
      a. *X-ray tube:* Ag or Rh anode
      b. *X-ray generator:* 6-50kV, 0-200µA, 4-watt output
      c. Adjustable voltage/current

   E. **Filters:** Minimum of 4-position filter wheel

   F. **Collimators:**
      a. 3mm spot size

   G. Element range: Mg – U

   H. **Display**: touchscreen, color

I. **Memory:** Data storage capacity for a minimum of 100 readings, plus storage required for camera OS and image capture, plus storage required for XRF OS & software programs for all detection modes for full functionality

J. **Camera:** Integrated with data storage capacity for a minimum of 5 captured images (internal memory, or removable USB drive, or SD card), and data transfer capability (removable media, or WiFi, or Bluetooth, or USB cable, or USB-c cable)

K. **Software:** Integrated operating system with PC compatibility/interface, capable of data collection, analysis, data export, incorporating all program modes (or libraries) needed to achieve maximum functionality, to acquire measurements on the full spectrum of testing applications and Mg - U sample types.

1. **Element software application package(s):** incorporating built in standardization optimized for soil, geochemical, and thin film analysis. Elements to be included in the calibrations are -
   a. **General Metals:**
      Bi, Pb, Au, W, Ta, Re, Hf, Te, Sb, Sn, Cd, Ag, Pd, Ru, Mo, Nb, Zr, Y, Se, Zn, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, S, P, Si, Mg, Al
   b. **Precious Metals:**
      Pb, Au, Pt, Ir, W, Sn, In, Cd, Ag, Pd, Rh, Ru, Mo, Nb, Zr, Ge, Ga, Zn, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Al
   c. **Coatings:**
      Pb, Hg, Au, Pt, W, Sb, Sn, Cd, Ag, Pd, Rh, Ru, Mo, Nb, Zr, Y, Zn, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, S, P, Al, Si, Mg
   d. **Mining:**
      U, Th, Bi, Pb, Au, Hg, Re, W, Ta, Hf, Sb, Sn, Cd, Pd, Ag, Mo, Nb, Zr, Y, Sr, Rb, As, Se, Zn, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Ca, K, Ba, Cl, S, P, Si, Al, Mg
   e. **Electronic Alloys:**
      Bi, Pb, Hg, Au, Pt, W, Ta, Hf, Ba, Sb, Sn, Cd, In, Ag, Pd, Mo, Nb, Zr, Br, Se, As, Zn, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Al
   f. **Plastics:**
      Bi, Pb, Hg, Au, Ba, Sb, Sn, Cd, Sr, Br, Se, As, Zn, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Ca, Cl, Al

L. **Power accessories:** XRF battery charger, AC adapter (110v), and 2 each-rechargeable batteries

2. **Standard Onsite Setup, Calibration, and Training (1 day)**
   A. **Installation:** setup for operational condition; to include unpacking instrumentation and accessories, component connections, cables, power connections, controller firmware setup, etc., <u>if available</u>
      1. **OEM manual provided**

B. **Certification/verification/calibration:** provide instrument certification or verification of instrument performance upon installation. Provide NIST Traceable ANSI/ NCSL Z540.1 with data certificate, as applicable
C. **Training:** Provide one (1) day onsite training on basic operation, routine maintenance, and sample analysis for up to five (5) DLA employees
D. **Service:** Service shall be available **6:00 am - 7:00 pm Monday - Friday.**

3. **Warranty:** warranty period will cover parts, labor and travel, for two years

4. **Pricing:** to include shipping/delivery

5. **Notice of delivery:** contractor shall give notice to Darryl Bernard darryl.bernard@dla.mil 614-693-9078) when instrument is to be delivered.

6. **Delivered to/ Mark for:**
   Attn: Darryl Bernard
   DLA Product Test Center - Mechanical
   3990 E. Broad St.
   Columbus, OH 43213

7. **Period of performance:** 120 days from date of award to include delivery.

8. **Invoices:** all invoices must be submitted through Wide Area Workflow (WAWF), See DFARS Clause 252.232-7006 Wide Area Workflow Payment Instructions for detailed instructions on how to submit invoices

9. **DoDAAC:** SL0702