**LOUISIANA**

**DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT**

**SPECIFICATIONS**

**BENCHTOP WAVELENGTH DISPERSIVE X-RAY FLUORESCENCE SPECTROMETER**

**DESCRIPTION:**

This specification covers the requirements for an x-ray fluorescence spectrometer for the analysis of cementitious materials and aggregates.

**REQUIREMENTS:**

The X-ray fluorescence spectrometer system must include the following:

* A Wavelength Dispersive X-Ray Fluorescence (WD-XRF) spectrometer with an X-ray tube operating at a minimum of 200-Watt X-ray power.
* Spectrometer must include a 3-position crystal changer with the following or equivalent crystals for elemental analysis from Fluorine to Uranium in the periodic table.
  + LiF200
  + PET
  + Multilayer crystal
* All additional hardware components, as required, to fully operate the system, which may include, but not limited to, a computer, monitor, keyboard, uninterruptable power supply, chiller, etc.

**FUNCTIONALITY:**

The system must:

* Test cement, cementitious material substitutes, and aggregates.
* Allow loading of a minimum of 12 samples for unattended measurement.
* Allow samples to be added or removed while analysis is in progress.
* Accommodate samples with a minimum diameter of 31 mm prepared with a pellet press or fused bead system.
* Meet ASTM C114 testing requirements for accuracy and precision.

**SOFTWARE:**

The software provided must have the capability of qualitative, quantitative, and semi-quantitative “standard-less” analyses based on Fundamental Parameters.

**TRAINING:**

Vendor must provide two (2) days of on-site training, including an on-site demonstration of the operation and features of the system using a Louisiana DOTD-provided sample for three (3) DOTD employees.

**ELECTRICAL:**

100-120V, 50/60 Hz, 15-20A or 230V, 50Hz, 33A outlet.

**APPROVED BRANDS/MODELS or equal:**

* Rigaku Supermini200
* Bruker S6 Jaguar
* PANalytical Zetium WDXRF