



Niton XL3t XRF Analyzer



Description: The Niton XL3t 950 GOLDD+ handheld analyzer is a portable elemental analysis tool that will detect elements with an atomic number 12 or above and will present a spreadsheet with the measured elements in either parts per million or as a percentage of the material being tested.

The XRF analyzer uses an on-board X-Ray tube to eject electrons from energy shells surrounding an atom's nucleus. A sensor records energy emitted as outer electrons drop into lower energy states to fill the vacancies in the shell. Information gathered by the sensor is then analyzed and presented as the amount of that element in the tested material's surface layer. Materials may be tested in-situ or collected and measured in a portable stand.

Uses: This instrument analyses earth materials to help guide appropriate reclamation actions. The unit has been used for waste-rock uranium determinations, analysis of coal refuse for potentially toxic-forming material, and reconnaissance for rare earth elements associated with systems that passively treat acid mine drainage. The unit is capable of laboratory-quality measurements, but it is mostly used as a screening tool.

Maintenance: The handheld XRF analyzer is designed for field use, but it requires careful handling due to its sensitive components. The operator must have radiation safety training. Additionally, states may require some form of licensing or registration to use the instrument within their state. Licensing and registration can be expensive.

Check-out & Contact Information: Due to the high cost of the device, only authorized and trained personnel may operate this item. The XRF is available for loan subject to the availability of MCR staff to accompany the equipment and train the prospective user. It may be more effective for the interested party to collect samples and ship that material to the OSMRE-MCR office in Alton, Illinois, where the analysis would be done. Contact Brian Hicks at 202-513-0383 or at bhicks@osmre.gov for more information.