



Handheld XRF ROHS Analyzer (TrueX 600)

◆ Performance Features

- Small, light and easy to carry.
- High-speed processing chip, advanced algorithm and high-responsive software, resulting in even faster analysis.
- High-performance X-ray Tube, Ultra-high Resolution Detector combined with Digital Multi-channel Processing Technology, yielding super-high detection resolution.
- Indicator lights flash on both sides for safety purposes during measurement, i.e., the built-in double beam technology will automatically sense whether there is a sample at the measurement window.
- Industrial resistive touch screen, superior to capacitor screen in back-light and clearer against sunlight in the field. At the same time, people don't need to take off gloves when they are operating machine in some particular environment.
- TrueX utilizes anti-slip, abrasion resistance and streamlined design, which is light and easy to carry. It also integrates the new high speed digital multi-channel technology, the new library grade base identification system and the super-FP algorithm. These features allow it to measure elements faster, with higher accuracy and greater repeatability.
- Intelligent battery management exerts a real-time monitoring of the residual capacity of battery and backup battery through MSBUS bus.
- Automatic switch to standby mode when not used and recovery after the machine is picked up, which saves power and extends working time; moreover, TrueX has a gravity sensing system which shuts down instrument automatically when it accidentally falls down, another safety consideration; TrueX will also give out alarm when ambient temperature or humidity exceeds the scope of application.
- TrueX adjusts air pressure factor automatically based on altitude it has detected. This function increases excitation effect of light elements by 40% and that of rare earth elements by 30%.
- TrueX is supportive to battery hot plug, hence battery can be replaced without powering off the machine.
- On TrueX, users can customize the reports by adding their company logos, addresses, test results, spectrum and others (such as product description, origin of products and batch number).
- TrueX is built with double beam technology which can automatically sense whether there is a sample at the measurement window. This is also a safety and protection feature. The brightness of the display of TrueX is automatically regulated according to environment brightness.
- TrueX can be configured and maintained in a remote way via Internet.
- TrueX can build a three dimensional element content distribution graph allowing for a fast estimate of mineral reserves or the extent of geological disaster with the built-in GPS for latitude and longitude reading combined with a 3rd party GIS analysis software.
- TrueX's new algorithm optimizes the spectral resolution, so lower detection limits can be achieved, which are comparable with even large-scale lab instruments.
- TrueX Ultra-short optical™ path design can significantly improve light element excitation effects, without the fall/fill condition.
- TrueX has a built-in environmental sensing system covering conditions such as temperature, dust humidity and others.

◆ Technology performance

- Realize site fast, non-damage and exact analysis really, and show element content by ppm or percentage directly.
- Small volume, fast and high precision.
- The analysis samples can be solid and liquid objects like ores, rocks, slags, fragments, soil, slurry etc.
- It can do intelligent test for uneven or small samples, also very small samples can be measured and recognized.
- You just need to make it touch the object surface, then you can determine ore grade, element types and content in site.
- It can keep high performance working even under direct big sunshine and high temperature, which benefits from the low power consumption and timely discharge of great heat in the design.
- Endure server working condition: sealed with wear and scratch resistant full metal shell, then it can work normally in the rainy and dusty mineral environment.
- Considering workers' long usage of equipment, then the design insures the safety as most important thing, the key parts are sealed in full metal to achieve the global lowest radiation standard.
- Electromagnetic jams are shield, so it can work even close to mobile phone or dural wireless communication devices.
- The fastest analysis speed in the world, only 2s can identify mineral element.

◆ Elements to be Analyzed and Test Modes

| Analysis mode | Analysis elements |
|---------------|--|
| TrueX 600 | Standard configuration mode analysis range, such as special elements, can be added Pb, Hg, Cd, Cr, Br and As |

◆ Analysis of ROHS

1. RoHS detection and analysis
2. Detecting hazardous substances in Electric and electronics industries, electroplating industries, various materials, plastics, wood, glass and others
3. Detection for electroplating industries

◆ Instrument specification

- The ARM architecture Cortex-A8 1 GHZ
- System Processor: The Android 4.2 operating system/80MHZ ADC digital pulse processor/4096 MCA channel , 32GB memory
- Display: Industrial resistive touch screen with screen size of 4.3"
- Data storage: Built-in 32gb memory, 300,000 spectral data and spectrum can be stored
- Operating Temperature: -20°C~+50°C
- Operating Humidity: ≤90%Limit of
- Library of extensible and customizable alloys
- Ability to make measurements on pipes, flat surfaces, surface integrals and welds
- Method of analysis: the x-ray energy dispersive method for analysis of fluorescence

- Simultaneously detect elements: simultaneously detect dozens of elements
- Processor and RAM:
CPU: 1GB
RAM: 1GB• The standard configuration: 32G
- Range content: ppm ~ 99.99%
- 15 seconds reading time
- GPS, WIFI: integrated into the system
- Battery: lithium battery, which can be loaded with a maximum capacity of our 6800Ah can operate continuously for 8 hours; Equipped with high voltage (110V-220V) adapter, can work under current alternative
- Sensor resolution: solid, liquid, powder
- Sensor resolution: low resolution can be 139eV
- Excitation source: 40KV / 100mA-Ag window miniature tube anode X of light and high voltage source
- Collimator and filter: sights of 4.0 or 2.0 of diameter, automatic switch of 8 filter. 12 kinds of groups, plus mode consisting of world, can satisfy different types of tests of samples
- Display: touchscreen TFT - LCD, resolution of 640 * 480.
- Protection against water, dust and shock
- Test window: 12mm.
- Charging system gas: Helium charging system of ordinary pressure.
- Security: standalone password manager mode.
- Data transmission: digital multi-channel technology, the transmission of data SPI, a quick scan, count rate, waterproof miniature USB, which can be connected to the desktop computer.

◆ Technical parameters and specifications

| | |
|---------------------|--|
| Weight | 1.6Kg (with battery) . |
| Dimensions | 254 x 79 x 280 mm (L x W x H) . |
| Excitation source | 50KV/200μA maximum pipe pressure pipe flow can be adjusted freely, Agtarget (standard),Au,W,Rh target(optional). |
| Detector | BOOST Si-PIN detector |
| Range of detection | All elements between Mg and U. |
| Display system | Industrial resistive touch screen with screen size of 4.3". Proprietary operating system software and sound waves. Multiple languages including English and Chinese.And it automatically adjusts display brightness according to the environment brightness. |
| Data processing | 32GB memory USB, bluetooth, WIFI, or liked to the Internet; instrument can be configured and repaired remotely. Data can be exported via EXCEL or PDF. Users can customize the reports by adding their company logos, addresses, test results, spectrum and others (such as product description, origin and batch number). |
| Heat dissipation | Equipped with a dedicated T-shaped radiator to dissipate the heat; no need to wait for cooling of detector time again. |
| Safety | Built-in double beam technology can automatically sense whether there is a sample at the measurement window. This is also a safety and protection feature. Waterproof, dust-proof and shockproof suitcase Drawell Safety Band ; |
| Power supply system | Intelligent battery management through MSBUS bus, real-time monitoring of the residual capacity of battery and backup battery. The battery complies with air transport regulations of dangerous goods. A single battery can last 8 hours. |

◆ XRF-TrueX radiation safety

Radiation Safety Guarantee

- Low power (4W) X-ray tube, mini collimator reduce radiation quantity effectively;
- X-ray tube radiation protection shield avoids X-ray escape;
- The structure producing radiation is all in equipment interior, you don't need to align or calibrate X ray, then ensure not detect any measurable radiation in equipment operation process;
- X ray indicator light alarms user the radiation produciton;
- Independent safe circuit and DoubleBeam interlock tool can protect user safety effectively;
- Conform to dosage limit requirement in <Radiation protection standards for X-ray diffraction and fluorescence analysis equipment> (GBZ115-2002);
- Conform to valid annual dosage limit requirement for workers and public in<Ionizing Radiation Protection and Safety of Radiation Sources basic standards> (GB18871-2002);

Monitoring results:

| Point No. | Point Discription | Testing Results (μSv/h) | | | | | | Device State |
|-----------|---|-------------------------|------|------|------|------|---------|--------------|
| | | | | | | 5 | Average | |
| 1 | 5cm above the surface of the device | 0.10 | 0.11 | 0.12 | 0.10 | 0.09 | 0.10 | Turn On |
| | | | | | | 0.12 | 0.11 | Turn On |
| 3 | 5cm the surface right of the device | 0.10 | 0.12 | 0.10 | 0.11 | 0.13 | 0.11 | Turn On |
| | 5cm below the surface of the device (holding place) | 0.12 | 0.10 | 0.10 | 0.11 | 0.12 | 0.11 | Turn On |
| 5 | 5cm back the surface of the device | 0.09 | 0.08 | 0.10 | 0.12 | 0.08 | 0.09 | Turn On |
| 6 | Operation place | 0.10 | 0.09 | 0.11 | 0.08 | 0.09 | 0.09 | Turn On |
| 7 | Public Distance Zone | 0.09 | 0.05 | 0.07 | 0.08 | 0.06 | 0.07 | Turn Off |

Note: the testing result doesn't deduct radiation background value.

◆ After service

1. Quality warranty:

Drawell commits that TrueX handheld spectrometer is fabricated with fine grade materials and top notch workmanship. It is brand new, never used, and in full compliance with the quality provision of this Contract. TrueX warranty is 12 months starting from the date of final acceptance of the goods/commissioning of machine.

2. Technical training:

Operating Manual of TrueX Handheld Spectrometers
Maintenance Manual of TrueX Handheld Spectrometers

3. After-sale service

Over the years, Drawell has sold XRF instruments to many global users. In order to provide better technical support and service, it shall be committed to.

1. services including

- a) Drawell shall provide after-sales service to all products it has sold worldwide.
- b) Drawell shall provide a one-year warranty for the spectrometer it has sold worldwide.
- c) Drawell shall provide one-year warranty for X-ray Tube (X-ray tube) and Detector (Detector).
- d) Drawell shall provide one-year renewal warranty for the replaced components in case there is any replacement of them during repair of machine.

2. The following physical damage is not covered by warranty.

- a) instrument is impacted by great force that the internal impact sensor changes from white to red;
- b) Detector is broken
- c) PDA is broken;
- d) Instrument body is broken;
- e) Loss of accessories
- f) Loss of components
- g) Water coming into instrument

3. In case the instrument is not able to operate, the customer can call after-sales service for help; we offer 3 types of repairs:

- a) Internet repair: if the customers are in foreign countries or remote areas, we can offer them first the INTERNET repair service.
- b) Phone repair: customers called over the phone to explain explicitly the problem and our technical staff will instruct them to solve the problem.
- c) On-site repair: in case the phone repair fails, our technical personnel will go to the site to repair the instrument within 72 hours after the problem is reported;

4. Out-of-warranty service: upon expiry of the warranty period, all customers are still entitled to out-of-warranty service during the working life of the instrument.

5. Privilege in out-of-warranty service: customers shall have the privilege to get a preferential prices on the components when they maintain their instrument during the out-of-warranty period as long as they maintained it beforehand.

