DRAWELL
Artist of Science

TrueX 960 Handheld Mineral Analyzer

Technology performance

1. Realize site fast, non-damage and exact analysis really, and show element content by ppm or percentage directly.
2. Small volume, fast and high precision.
3. The analysis samples can be solid and liquid objects like ores, rocks, slags, fragments, soil, slurry etc.
4. It can do intelligent test for uneven or small samples, also very small samples can be measured and recognized.
5. You just need to make it touch the object surface, then you can determine ore grade, element types and content in site.
6. 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.
7. 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.
8. 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.
9. Electromagnetic jams are shield, so it can work even close to mobile phone or dural wireless communication devices.
10. 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 960	**Standard configuration mode analysis range, such as special elements, can be added Mg, Al, Si, P, S, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, W, Pb, Bi, Zr, Nb, Mo, Ag, Cd, Sn, Sb, Au, Rb, Se, Hg, As, Sr, Y and LE**

Analysis of ore types

1. Iron ore (hematite, titanium, iron, etc.)
2. Copper (chalcopyrite, cuprite, malachite etc.)
3. Chromium (chromium spinel, chromite, chrombismite etc.)
4. Molybdenum (copper molybdenum, molybdenum,
   tungsten and molybdenum ore etc.)
5. Tungsten (tin tungsten scheelite, wolframite, etc.)
6. Tantalum ore (tantalite columbite, pyrochlore, etc.)
7. Lead-zinc ore (galena, sphalerite, cerussite etc.)
8. nickel laterite ore, copper nickel sulphide etc.
9. Gold in ore or alluvial gold detection
10. Other minerals detection

Usage

1. Exact grade evaluation for high grade and beneficiated ores, then provide value foundation for ore trade, processing and recycling.
2. The relict ore element analysis in slag and tails to rejudge the value.
3. Conduct QC in ore mining, boring, grinding, concentration and smelting, then confirm grade, make analysis to filter weld pool, storage pool and steel tank liquor.
4. Quick census for superlarge range mine area to determine zone mode, draw mine map and timely prospect effectively.
5. Site quickly trace mineralized abnormality, seek hotspot zone and delineate ore boarder effectively.
6. Accurate analysis for millhead, concentrated ore and slag to build high efficiency mining and gathering process.
7. Through site analysis, mine field and grade control on material delivery, ore concentrate and slags, you can confirm or track the procedure validity of refining or concentration.
8. By time analysis several samples on the spot, you can guide exploration plan then manage excavation and explosion effectively.
9. Determine the geological composition of soil, sediment or drilling sample locally to control prospecting cost.
10. Apply with GIS/GPS to make detailed decision then can save much time and labor cost.
11. Multi-elements site fast analysis can be used in procedures in census and sift, then track mineral content abnormity and expand survey range. It can decrease samples amount sending to lab then save transportation and analysis cost.
12. Judge ore vein trend and mineral boundary then manage and control mining to detect mineral grade at any time.
13. Analyze rock core and other drilling samples quickly, then establish mine 3D graph to analyze composition, which can enhance site decision efficiency largely.
14. Analyze and test mine surrounding environment, slags, dust and soil pollution, then evaluate mine mountain condition renovation effect.

Specifications

Operating Temperature	**-20°C~+50°C**
Operating Humidity	**≤90%Limit of**
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**
Range content	**ppm ~ 99.99%**
Sensor resolution	**Low resolution can be 139eV**
Test window	**12mm.**
Excitation source	**50KV/200μA maximum pipe pressure pipe flow can be adjusted freely,** **Agtarget (standard),Au,W,Rh target(optional).**
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**
Detector	**SDD detector.**
Range of detection	**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.**
Charging system gas	**Helium charging system of ordinary pressure.**
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).**
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.**

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.**
Weight	**1.6Kg（with battery）**
Dimensions	**254 x 79 x 280 mm（L x W x H）.**

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 indonizing Radiation Protection and Safety of Radiation Sources basic standards> (GB18871-2002);

Monitoring results:

Point No.	Point Discription	Testing Results (μSv/h)						Device State
		1	2	3	4	5	Average	
1	5cm above the surface of the device	0.10	0.11	0.12	0.10	0.09	0.10	Turn On
2	5cm the surface left of the device	0.10	0.12	0.10	0.11	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
4	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.