

TO BE A WORLD-LEADING ANALYTICAL TESTING SOLUTIONS PROVIDER !

Spectroscopy   Chromatography   Mass Spectrometry



Rapid | Accurate | Non-destructive

The ISO 9001:2008 international quality certification system is adopted by our company



## A New Generation The Leader of Handheld XRF

EXPLORER 7000 Handheld Ore Analyzer

**United Kingdom:**  
**Optech Solutions Ltd.**  
Riverside Court, Beaufort Park, Chepstow NP16 5UH, UK  
Tel: +44 (0)1291 418148, Fax: +44 (0)1291 418143  
Website: [www.optechsolutions.co.uk](http://www.optechsolutions.co.uk)  
E-mail: [info@optechsolutions.co.uk](mailto:info@optechsolutions.co.uk)

Test data in this manual, if not noted, is our company's test data.  
All information in this manual is for reference only, which is subject to any change without notice.

Version number:TRVH 150331 B21

115 countries&regions are using Skyray Instrument up to now



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## EXPLORER 7000 Handheld Ore Analyser

### EXPLORER 7000

#### Handheld Ore Analyser

With 20 years experience of x-ray fluorescence spectrometer research and development, Skyray Instrument's new generation of handheld XRF ore analyser, the EXPLORER 7000, is revolutionising the analytical field. The EXPLORER 7000 incorporates the latest developments in multi-channel technology resulting in lower detection limits, better stability and wider application field. With these new developments it now has a performance comparable to a bench-top system. The EXPLORER 7000 offers reliable, accurate and effortless geological ore prospecting and monitoring.

#### » Application advantage of Geology and mineral resources

##### Personalised customisation work mode

- With selections of various Ore sample models and free to add unlimited number models, the work model can be freely customised by the customer

##### Accurate definition of mining boundaries

- The built-in GPS function receives signals from satellite and can record the altitude, latitude and longitude to determine the geographic location of the sampling point which is stored with the test data and automatically saved as a test report.
- Using the GPS location data, large areas can be rapidly screened to help accurately identify and visualise the lode mines and mining boundaries in order to improve production efficiency.
- Bluetooth connectivity enables onsite printing of reports and test data to quickly identify key mining areas.

##### Discover the mines' full value

- The HD camera function allows viewing of the test point on the PDA screen enabling easier and more accurate alignment of the detected vein or point thereby enabling a more accurate assessment of the grade of ore and value of a mine.
- During ore dressing, the quick and accurate analysis of ore, concentrate and tailings offered by the Explorer 7000, provides invaluable information for the determination of ore grade, mineral trade, processing and recycling.

##### Environmental monitoring

- To monitor and detect the heavy metals in the soil surrounding the mines or to evaluate repairs or remediation environments.



Personalized customization work mode  
The accurate definition of mining boundary



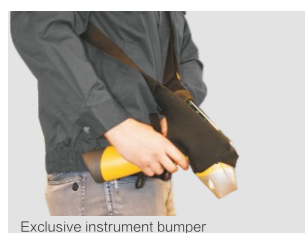
Discover the mines' full-value  
Environmental monitoring

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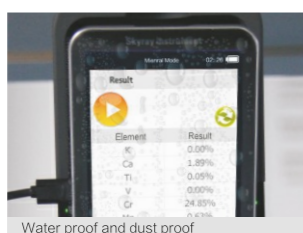
## EXPLORER 7000 Handheld Ore Analyser

### » Six advantages

#### Easier Operation



Exclusive instrument bumper



Water proof and dust proof



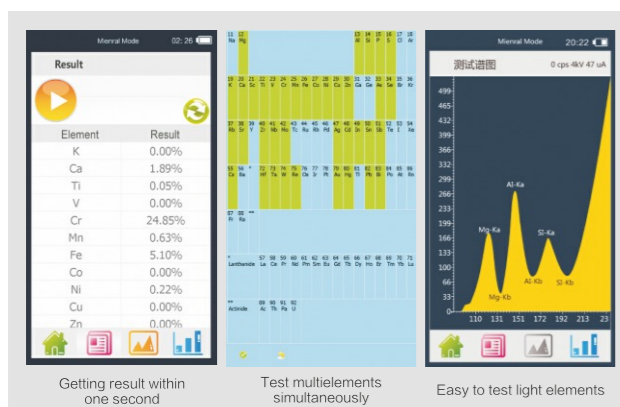
360° rotatable high-definition screen



Portable test bench

- Small, lightweight, more ergonomic design for more comfortable and balanced easier operation and a heavy duty instrument case for ensures safe transportation of the instrument.
- 5 inch high-definition screen with 360 degree rotation, clearly easily displays results in low visibility conditions.
- Waterproof and dust-proof design the for use in harsh environments.
- No need for sample preparation; the surface of samples can be tested directly. The instrument can be used in both handheld mode to quickly test a sample or be clipped into the desktop test-stand for more routine testing.

#### Better Performance



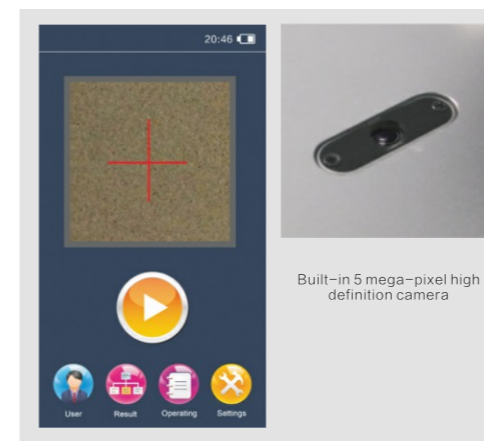
Getting result within one second Test multielements simultaneously Easy to test light elements

- Rapid nondestructive detection and measurement with quick point and click operation giving results within two seconds and a performance comparable to that of a desktop machine.
- Simultaneous detection of Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ga, Ge, Zr, Nb, Mo, Ru, Rh, Pd, Ag, In, Sn, Sb, Hf, Ta, W, Re, Pt, Au, Pb, Bi, Mg, Al, Si, P, S and further elements can be added to meet the customer's requirements.
- Detection of light elements without helium gas due to the new optical path configuration.

#### Long Battery Life

- Rechargeable 9000 mAh lithium battery with up to 12 hours work time on a single charge.
- Optional large 27,000 mAh lithium battery giving up to 3 days operating time. Equipped with power adapter/charger and 12V car charger to ensure the analyser can be powered no matter where you are.

#### Higher Configuration



Built-in 5 mega-pixel high definition camera

- The four core components, which include the Miniature X-ray tube, SDD or optional Fast-SDD detector (the World's best detector), digital signal processor and micro multi-channel intelligent analysis module enable an accuracy comparable to a desktop machine to be achieved.
- Skyray patented digital multi-channel technology ensures up to 500k cps (spectral counts per second).
- Automatic collimator and filter system make the Explorer able to meet wide ranging testing requirements and applications.
- A built-in 5M pixel high-definition camera clearly displays the test point on the sample position increasing accuracy in results.

#### Safer Protection



Green light while power on

Rubber radiation shields

Red light while working

Yellow light while breakdown

Safety linkage locking device

- Intelligent 3 colour early warning system lets the user know the status of the instrument: Green to indicate power on, flashing red to indicate testing and flashing yellow for fault indication.
- Triple safety protection:
  - a: Sample detection. X-ray tube shuts off if no sample is detected.
  - b: Thicker wall structure preventing radiation leakage and scatter.
  - c: Safety protection cover to prevent radiation scatter/back scatter.
- Security link locking device as a final safeguard if the software is unable to control switching off the instrument.

#### More intelligent software

- The Explorer 7000 ore analyser is equipped with a professional application software specifically designed for the ore industry featuring an intelligent intuitive software interface for easier and quicker operation.
- Software featuring two operator modes 'user' and 'expert':
  - User mode for quick one step day-to-day testing by inexperienced staff.
  - Expert mode for experienced users wanting more detailed analysis and advanced parameters.
- Improved algorithms include an internal intensity correction method to correct deviations caused by uneven samples with different geometries, densities and structures.



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### EXPLORER 7000 Handheld Ore Analyser

#### » Performance technical data

Analytical Method	Energy dispersive X ray fluorescence analytical Method
Elements Measuring Range	Atomic number from 12 to 92 [elements from magnesium(Mg) to uranium (U)] can be measured
Simultaneous detector elements	Simultaneous analysis 40 elements
Microcomputer system	Customized system; CPU: 1G ; system memory: 1G ; extended stored maximum support 32G ; standard 4G for mass storage data
The content range	ppm~99.99%
The detection time	1 ~ 60 seconds (a second report results)
A built-in system	GPS, WIFI, Bluetooth
Power Supply	Rechargeable lithium battery, standard is 9000mAh, sustainable work up to 12 hours; optional is 27000mAh superbattery with wide voltage 110V ~ 220V universal adapter for recharging power supply
Detection Objective	Solid, liquid, powder
Detector	SDD detector or Fast-SDD detector (optional)
Detector resolution	Minimum can reach 128eV
The excitation source	50KV/200uA- silver target end window integrated miniature X ray tube and high voltage power supply
Collimator and filter	Collimator diameters are 4.0mm and 2.0mm, 6 kinds of filters with automatic switching functions
Video system	5M pixel high resolution camera
Display screen	Brand new 5 inch transfective LCD touch screen, with resolution 1080x720
Detection limit	The minimum detection limits at 1 ~ 500 ppm
Safety	Multiple safety protection, no tests, no radiation, radiation levels at work are far below the international safety standards, and has no sample telemetry, automatic shut X light tube function. Standard radiation shields, thickened wall alloy test instrument
Specialty	Ore special edition analysis software, using intelligent one key test
Convenience of application	Key intelligent matching the best curve that no need to select curve
Data transmission	Digital multi-channel technology, SPI data transmission, quick analysis, the high count rate; waterproof mini USB, and can be connected with a desktop computer
Operating ambient humidity	≤90%
Operating environmental temperature	-20 ~+50
Instrument dimension	244mm( Length) x 90mm( Width) x 330mm( Height)
Instrument weight	1.7Kg
Intelligent warning Signal Indicator system	Green light means power on, red flashing means testing and yellow flashing indicates a fault
Accessories	Military grade sturdy lockable protective case; waterproof and shock absorption. Universal charger and car charger, 4G SD memory card and card reader Two lithium battery and charger, PDA accessories, radiation shield. Optional accessories: the large battery, desktop test-stand.

#### » Exclusive accessories



Heavy duty high-strength protective box, for good moisture-proof and shockproof protection.

Battery and desktop charger:  
Battery capacity of 27,000 mAh  
prolonging test time 3 times.



On-site printing via portable optional Bluetooth printer.

4-into-1 12V car charger  
and 12V power adapter  
for power in the field.



Optional Desktop test-stand.