

PowerHouse X

Limits of Detection (LOD)

Key to Critical and Strategic Mineral Success

Limits of Detection (LOD) refer to the lowest concentrations of an element that an analyzer can reliably detect. In mining, accurate LODs are crucial for identifying trace elements in ores and deposits, enabling efficient exploration, extraction, and processing of valuable minerals. Several factors influence LOD accuracy:

- **Interference-Free Matrix:** LODs are based on detection within a clean, interference-free SiO₂ matrix.
- **Analysis Time:** Longer test times, such as 120 seconds per beam (with a 6-minute total analysis time), improve detection precision.
- **Calibration Mode:** Specialized calibrations, like the Geochem App, optimize LODs for specific mining applications.

CRITICAL AND STRATEGIC MINERAL ANALYSIS IN MINUTES, NOT WEEKS, ON-SITE, AT LOW PPM LIMITS OF DETECTION

PowerHouse X

The latest innovation from SciAps is a portable benchtop XRF that delivers the first ever portable XRF with an 80kV X-ray tube. It's the world's only portable XRF to efficiently excite the K-shell emission lines for both light and heavy REEs, making it the superior choice for measuring rare earth elements.

Key Specifications

Excitation Source:

10W X-ray Tube, max 80kV,
200uA, W anode

Detector:

70mm² Silicon Drift Detector
(SDD) for high-resolution
analysis

Analytical Range:

49 elements in Geochem
mode, additional elements
on request

Power:

2 rechargeable Li-ion
batteries, AC power,
hot-swap capability

Weight:

24.4 lbs (11.1 kg) for
portability

Display:

7-inch color capacitive
touchscreen for intuitive
operation



Element	Published LOD (ppm)
Al	< 0.5%
P	< 500
S	< 100
K	< 20
Ca	< 10
Ti	< 100
V	30
Cr	25
Mn	10
Fe	10
Co	5
Ni	10
Cu	5
Zn	2
As	2
Se	1
Rb	1
Sr	1
Y	3
Zr	1
Nb	1
Mo	1
Ag	2
Cd	2
Sn	1
Sb	1
Cs	1
Ba	2
La	2
Ce	2
Pr	4
Nd	4
Sm	2-4
Eu	6-8
Gd	5-10
Tb	10-15
Dy	15-19
Ho	18-22
Er	23-28
Tm	30-40
Yb	30-35
Lu	50-60
Ta	10
W	10
Pb	5
Bi	10
Th	10
U	5

SciAps

sales@sciaps.com

SciAps.com

+1 339.927.9455



YouTube.com/SciAps