

# 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  $\text{SiO}_2$  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:**  
70mm<sup>2</sup> 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



# SciAps

[sales@sciaaps.com](mailto:sales@sciaaps.com)

[SciAps.com](http://SciAps.com)

+1 339.927.9455

 [YouTube.com/SciAps](https://YouTube.com/SciAps)

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
<b>Y</b>	<b>3</b>
Zr	1
Nb	1
Mo	1
Ag	2
Cd	2
Sn	1
Sb	1
Cs	1
Ba	2
La	2
Ce	2
<b>Pr</b>	<b>4</b>
<b>Nd</b>	<b>4</b>
<b>Sm</b>	<b>2-4</b>
Eu	6-8
Gd	5-10
<b>Tb</b>	<b>10-15</b>
<b>Dy</b>	<b>15-19</b>
Ho	18-22
Er	23-28
Tm	30-40
<b>Yb</b>	<b>30-35</b>
Lu	50-60
Ta	10
W	10
Pb	5
Bi	10
Th	10
U	5