

#### Revolutionizing On-site Analysis of Ores

Austin AI's DHP-1000 is a high performance down hole probe, based on Energy Dispersive X-ray Fluorescence (EDXRF) spectrometry for the determination of minor and major concentrations of elements in bore holes and other matrices. This instrument provides years of reliable, fast and accurate analysis. The system is ruggedly designed and engineered for routine usage by non-technical personnel in a field deployable environment.



DHP-1000 Carrying case

It is possible to lower the DHP system down a predrilled hole up to 100's of meters. An optional specially engineered stand allows the operator to perform benchtop-type XRF analysis while in the field.

The Down Hole Probe revolutionizes in-situ characterization, providing real-time cencentration information in the field - no waiting on lab results.



Wide range of elements covered. Light elements, such as Al & Si, are possible with the Helium purge option.



#### **DHP-1000** Applications

- Ore body/seam mapping
- In situ prospecting
- $\boldsymbol{\cdot}$  Grade control
- Tracer elements
- Blast hole profiling
- Coals S and Ash
- Lithology
- Mineral recovery tailing piles
- Site clean-up





### Performance Features

- Most elements of interest detected at <0.01% with a 30 second measurement time
- Two operation modes
  - High accuracy Stop & Measure Mode
  - Trend analysis Quick Scan Mode
- Helium Purge Option available for extended element range

## **Excitation System**

1 fixed position, side window, matched anode, miniaturized X-ray tube.

- $\cdot$  Internal 40 kV, 4 W matched high voltage power supply 1 kV & 1  $\mu A$  adjustable) with computer control.
- Optional 2 position beam filter

# Detection System

High resolution, 2 stage Peltier-cooled Si PIN-Diode detector:

- 10 mm2 area, ultra-thick high purity silicon achieves <270 eV resolution at 5.9 keV.
- State of the art charge reset preamplifier.
- Advanced DPP (digital pulse processor).



DHP-1000 positioned on optional analytical stand

## Safety Features

- X-ray on/off indicator light
- Safety interlocks to prevent accidental exposure

In our continuing effort to improve product performance, specifications are subject to change without notice.

# Specifications

# Data Acquisition & Processing

Proprietary software that includes:

- 2048 channel MCA (multi-channel analyzer) for spectral profiling.
- Operation software with routines for recalibration, periodic stabilization, and routine analysis.
- Software features include fundamental parameters & emperical calibration models, repeat analysis
- Output formatted for depth profile plotting
- Optional automatic reading of external depth indication



DHP-1000 Typical Spectra

## Form Factors

- Motor driven wall positioning device to ensure maximum sensitivity through controlled optical geometry.
- Cushioned window guard sized for different diameter holes.
- Air jet to prevent dust and dirt build up on window.



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