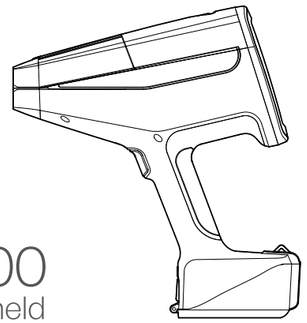
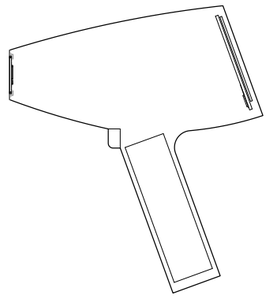
SciAps Z

Handheld LIBZ Configurations



Z500
Handheld

The Z500 is the most advanced handheld LIBZ unit available. It enables analysis for elements as light as H **(Z=1)** and as heavy as **U (Z=92)**, and provides the best possible limits of detection. It incorporates the highest power pulsed laser, the best resolution spectrometer (180-700nm), patent-pending **OPTi-Purge** Technology™ for carbon (C) analysis, and a large sized display.



Z100
Handheld

The Z100 is a smaller and lighter handheld LIBZ unit and is a great alternative for many HHXRF or portable Arc/Spark applications. It enables analysis for elements as light as **Be (Z=4)** and as heavy as **U (Z=92)**; however, it does not have argon purge and will not analyze carbon **(C)**. Provides excellent detection limits as it incorporates a high power pulsed laser, a mid range resolution spectrometer (200-550nm), and a medium sized display.

Applications, Service and Rentals

At SciAps, customer service is an extension of our commitment to provide you with exactly what you need, where, and when — you need it. Whether your question is about a new instrument, rentals, applications, or a service matter, our global sales network, application specialists and distributors who specialize in analytical instrumentation are ready to support you.

SciAps, Inc - a Boston based scientific instrumentation company specializing in portable analytical instruments. Our mission is to provide durable, field-tested, portable instruments to identify any compound, any mineral, any element — any place on the planet.

Manufacturing, service and customer support are operated from our fully ISO-certified facility located in Laramie, WY. If you would like more information or to contact us, call or send an email. We will reply shortly.

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ISO 9001 CERTIFIED QUALITY ASSURANCE

What You've Been Missing in Elemental Analysis

The World's First Handheld LIBS Analyzer
Featuring SciAps **LIBZ** Technology

SciAps

LIBZ TECHNOLOGY

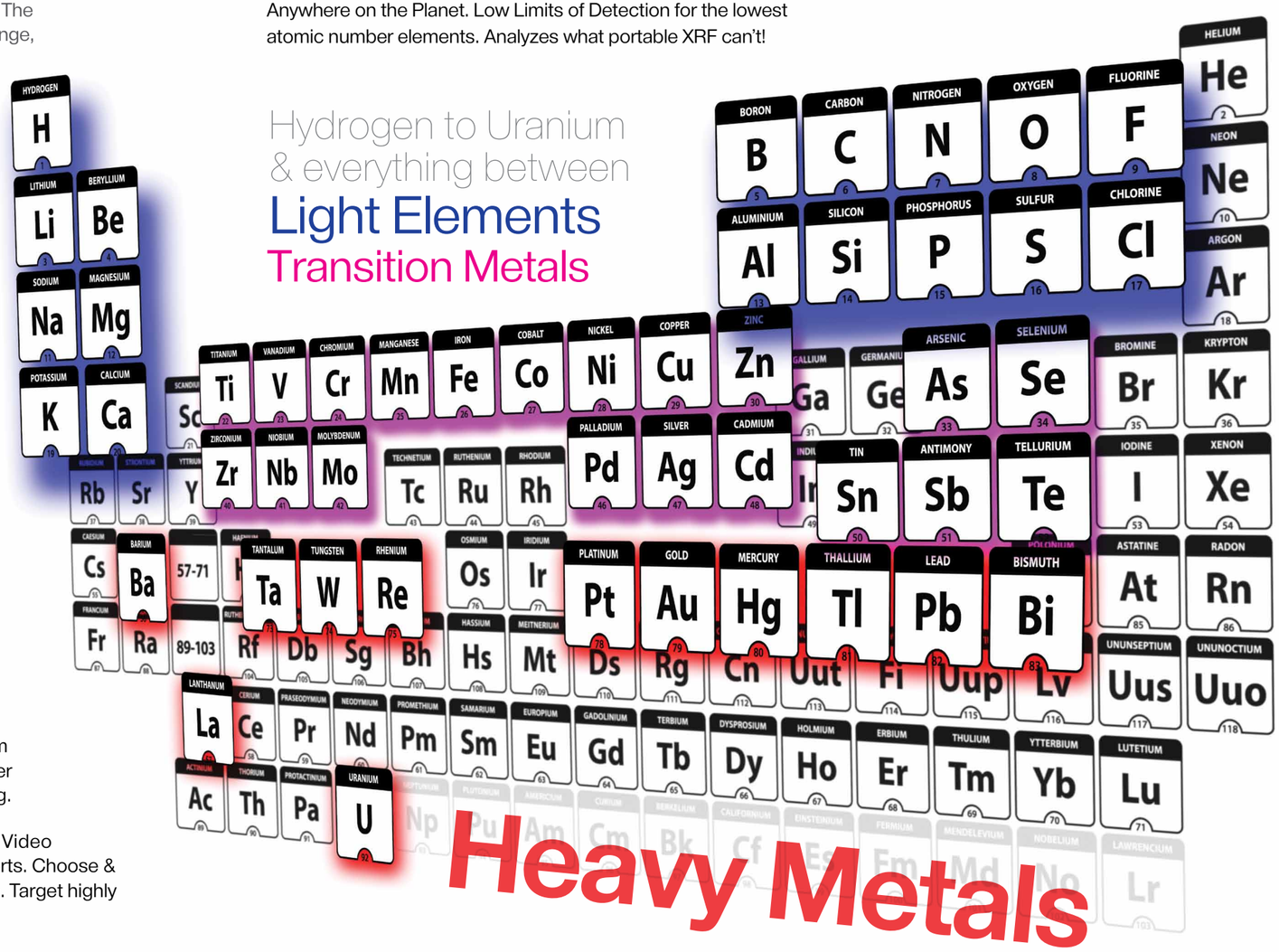
Handheld LIBS

HYDROGEN **H** 1 → URANIUM **U** 92

Analyze Elements from Hydrogen to Uranium and everything between. The Z features our proprietary, wide range, high resolution spectrometer.†

What You've Been Missing in Elemental Analysis

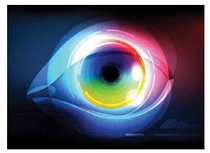
LIBZ Analyzes Where Other Technologies Can't - Any Element, Anywhere on the Planet. Low Limits of Detection for the lowest atomic number elements. Analyzes what portable XRF can't!



CARBON **C** 6

Hydrogen to Uranium
& everything between

OPTi-Purge™ Technology†
For elemental lines <200nm like Carbon and best LODs for all elements.



Eye-safe! Meets Class 1 Regulatory Status (i.e., Laser Pointer) Utilizes a 1532nm, 5mJ laser source in the eye-safe wavelength range.

FAST

1 Second Per Test

Settable, Automated Rastered Laser Beam in Two Dimensions. Beam of 50µm diameter combined with results summing/averaging.

CAMERA

Integrated High Resolution Camera and Video Photo-documentation of samples for reports. Choose & view test spots from rastered laser source. Target highly specific test locations spot-on.

Google

Google-Powered! Built on the Android Platform to Defy Obsolescence and Provide Easy, Intuitive Operation Wireless, Bluetooth and GPS enabled, and easy connectivity to any Android device - phone, tablet, etc.

TOUGH

Highly Ruggedized! Eliminates the Need for Easily Broken, Fragile Silicon Drift Detectors (SDD) in Handheld XRF!

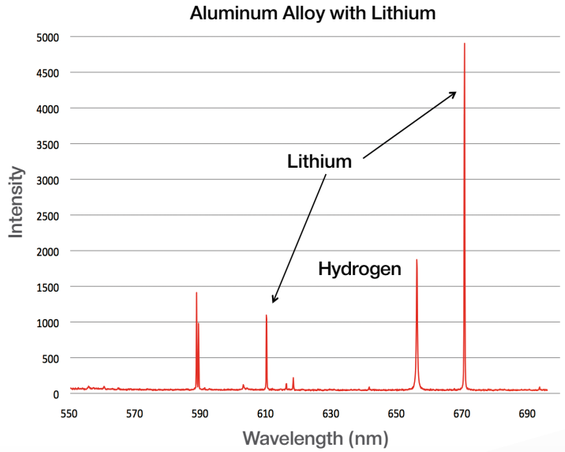
†: Patent Pending

LIBZ Has Limitless Applications

Alloy Chemistry & Grade Match, PMI • Rocks, Ores, Soils • Now analyze even the lowest atomic number elements in ore bodies and cores • Solids, Powders, Liquids • Analyze more sample types than spark OES • Scrap Sorting • No regulatory hassle of X-rays • Plastics & Coatings • University Research & Education • A great atomic spectroscopy teaching tool • Laboratories • Pre-screen samples in seconds prior to dilution for ICP, AAS • Regulatory Screening

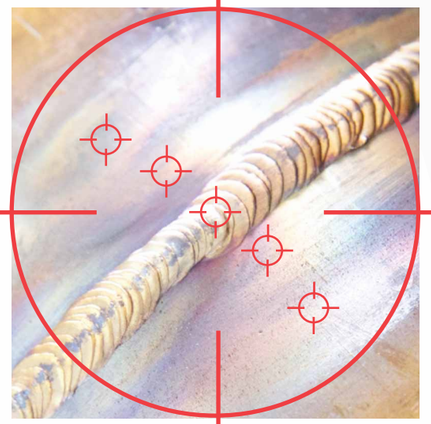
LIBZ Gets the Lowest Zs
& Lowest LODs Possible

OPTi-Purge™ is synchronized with our precise gating and pulsed laser to create an argon environment around the plasma. It uses micro-liters of argon to produce an effective purge during analysis. The result is vastly improved signal strengths, particularly in the deep UV **(<200 nm)** portion of the spectrum. Based on typical duty cycles, a single argon canister lasts for several days. When empty, operators can quickly remove and replace with a fresh canister. The canister size and pressures are low enough that they are easily shipped or carried anywhere, including commercial air travel.



LIBZ spectrum of 1% lithium in an aluminum alloy showing lithium emissions at 610.3 nm and 670.7 nm, and hydrogen emission at 656 nm. Hydrogen concentration is unknown.

Z can be equipped with patent pending **OPTiPurge™**.



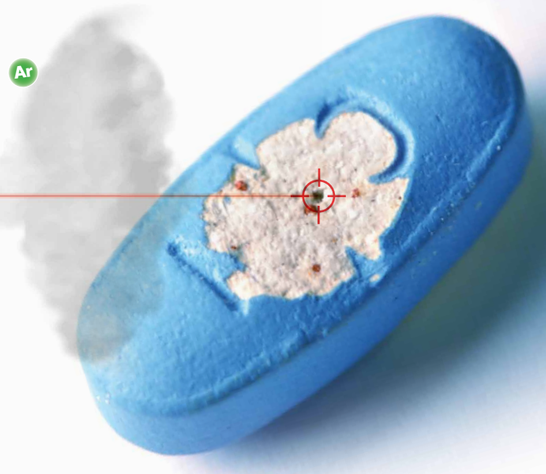
LIBZ TECHNOLOGY

Advanced, Agile Analysis for Averaged & Precise Locations

SciAps LIBZ technology has the ability to analyze both homogeneous and heterogeneous sample types. The Z is designed to raster the laser in two dimensions, based on a factor set or user-defined pattern. For geochemical samples, the Z automatically tests multiple locations on a sample, and averages the results. Advanced algorithms built into the SW automatically determine if enough test locations are completed to account for sample and particle size effects.† To analyze a particular location in a sample, the user can locate the target with the on-board imager and analyze only that location. The settable, automated rastered laser beam (50µm diameter) in two dimensions combined with results summing/averaging provides the ability to average multiple test points on heterogeneous samples such as soils and ores or particulates and to analyze welds in multiple locations.

Pinpoint Laser Accuracy

Z can target and analyze particulate or non homogeneous samples with pinpoint laser accuracy. The Z software allows precise locating of the laser on the sample to measure only the sample area desired for analysis.



Multiple Tests Across a Weld

LIBZ laser power can be used to take multiple tests across a weld to examine chemistry changes around the heat affected zone. The 50 µm laser spot allows for multiple tests, even along the smallest of welds. Individual chemistries can be saved or averaged and, images of each test point can be saved. It isn't possible to analyze such precise regions with HHXRF or Spark OES.

Handheld LIBZ High Resolution Camera

The SciAps Z combines its high resolution camera and video capability with powerful Android features that enable photos or videos of test locations or samples to be taken and stored with results. This ability augments the power of LIBS analysis. The laser is automatically focused to < 50 µm beam size, without requiring any external, intensity-killing collimation commonly found with XRF. The Z's camera can be used to precisely strike many types of samples. Welds can be analyzed in multiple locations when examining weld chemistry changes across the weld. The Z's camera can hone in on particular regions for non-homogenous samples. Images are automatically saved with results for photo documentation. An Android platform enables sharing of the data and high resolution images when collaborating with colleagues or reporting results.

Google Android Powered LIBZ

the Ultimate in Compatibility and Connectivity

The Android platform delivers a world of data sharing, App compatibility, and connectivity to other devices - unprecedented in portable analyzers. Test results can be instantly synched with mobile devices and sent globally. Data can be seamlessly uploaded to other devices for analysis or warehousing. The Z-500 features a large 5" color touchscreen display for easy results viewing and an intuitive icon-driven user interface. Chemistry, test results, pictures and video are all easily viewed. One tap to the pinch-zoom display lets you look at spectra or specific regions. The Z is Apps-driven like your Smartphone or Tablet. Purchase the analyzer with pre-installed Apps like Alloy, Geochem, or Academic Apps or download them later. All installed Apps are easily visible from the Home screen on the analyzer. In general any App that you run on your Smartphone or Tablet can also be operated on the analyzer. For the Alloy App, the operator also sees the alloy grade ID and can compare the specifications to the actual measured chemistry. The Alloy App provides full editing capability for the grade library, and supports creation of customized libraries or those for Mil-Spec, ASME or other conventions. For the Geochem App users can create, store, and utilize specific calibration methods for a multitude of ore bodies and soils.

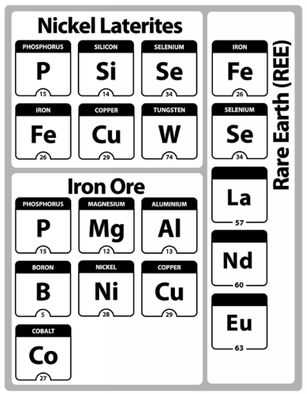
Data can be shared using Android built-in standards. It provides wireless, Bluetooth, GPS, pinch/zoom touchscreen color display and more. Other loaded apps can run concurrently.

Alloy App Methods

For the Alloy App, the operator also sees the alloy grade ID and can compare the specifications to the actual measured chemistry. The Alloy App provides full editing capability for the grade library, and supports creation of customized libraries or those for Mil-Spec, ASME or other conventions.

GeoChem App Methods

For the Geochem App, simply select the calibration of choice and begin testing for instant geochemistry, for virtually every element in the Periodic Table.



Fast, Easy Share Results & Report Generation

Z and the Android SHARE feature

Tap • Create • Print • Email

Tap the icon and the analyzer shows any connectable device via Bluetooth or wireless. Pick a device to immediately share data. For example, you can instantly create and print a sample test report in PDF format on a wireless printer or send the result to your Smartphone or other wireless device to email it anywhere. You may also download a range of results and spectra - a day or week of testing data or a specific range of test results. Results may be shared with your phone, tablet or PC for off-line analysis during travel.

Icon Driven Display for Operation & Analysis

Software

Software contains all the functions and features necessary to take full advantage of the power of LIBZ including those listed below:

- Start-Up
- Standardize
- Application
- Calibration
- Library
- Beam Focus
- Camera
- Analyze
- View Results
- View Spectra
- Transfer Data
- Passwords