

Complete LIBS Measurement System for UV, Visible, and IR Wavelengths

Laser Induced Breakdown Spectroscopy

Soluciones y Tecnologías de Control Embebido S.A.P.I. de C.V.



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Equipment Models

LIBS-LAS0070S-VIS (350 - 700 nm)
LIBS-LAS0070S-IR (500 - 1000 nm)
LIBS-LAS0070S-EXT (200 - 1000 nm)

Small Size System
300 mm x 300 mm x 412 mm

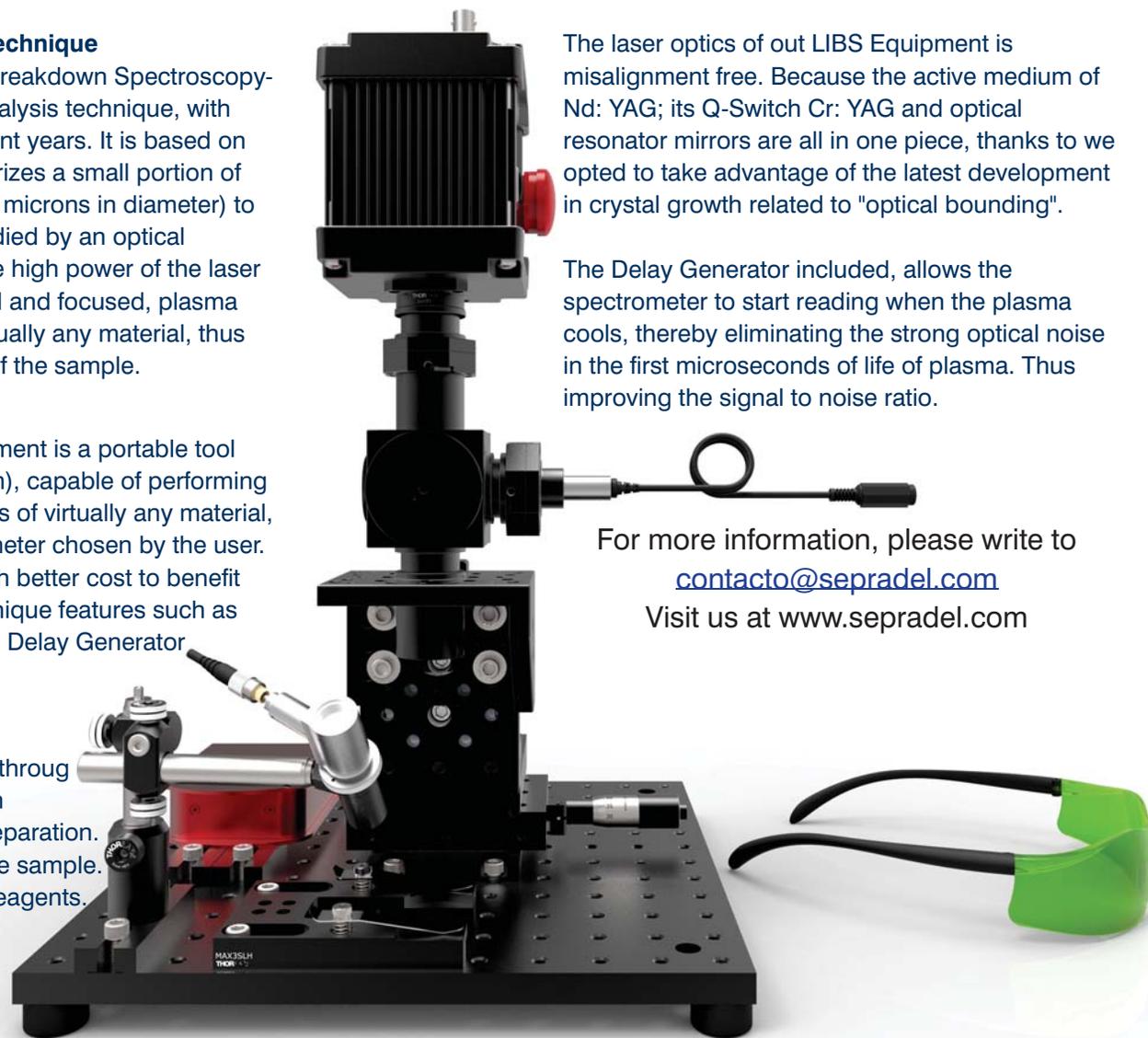
Introduction to the LIBS technique

The LIBS, -Laser Induced Breakdown Spectroscopy- is a Compositional microanalysis technique, with strong development in recent years. It is based on the use of a laser that vaporizes a small portion of material (leaving a crater of microns in diameter) to form a plasma which is studied by an optical spectrometer. Thanks to the high power of the laser pulse used, highly localized and focused, plasma may be generated from virtually any material, thus revealing the constituents of the sample.

Our LIBS Measuring Equipment is a portable tool (300mm x 300mm x 412mm), capable of performing compositional microanalysis of virtually any material, depending on the spectrometer chosen by the user. It is the LIBS instrument with better cost to benefit ratio in the market, for its unique features such as the solid state laser and the Delay Generator included.

Advantages

- ✓ Study Point Selectable through XYZ positioning System
- ✓ No need for sample preparation.
- ✓ Minimally invasive to the sample.
- ✓ No need for chemical reagents.
- ✓ Portable.
- ✓ High resolution.
- ✓ Result in real time.



The laser optics of our LIBS Equipment is misalignment free. Because the active medium of Nd: YAG; its Q-Switch Cr: YAG and optical resonator mirrors are all in one piece, thanks to we opted to take advantage of the latest development in crystal growth related to "optical bounding".

The Delay Generator included, allows the spectrometer to start reading when the plasma cools, thereby eliminating the strong optical noise in the first microseconds of life of plasma. Thus improving the signal to noise ratio.

For more information, please write to contacto@sepradel.com
Visit us at www.sepradel.com

Technical Characteristics

OPTICAL SPECTROMETER

- ☑ Light input by optical fiber
- ☑ Spectral range chosen by user: VIS, IR or Extended
- ☑ Spectral Resolution 0.5 nm. 0.6 nm or 2 nm, Depending on the chosen spectral range, VIS, IR or Extended, respectively.
- ☑ External Trigger
- ☑ Acquisition Software and National Instruments libraries, supplied by Thorlabs

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LASER

- ☑ Solid Stated Laser Nd:YAG.
- ☑ Pulse energy up to 60 mJ
- ☑ Monopulse 5ns FWHM
- ☑ Wavelength 1064 nm
- ☑ A laser shot per 50s
- ☑ Delay Generator included

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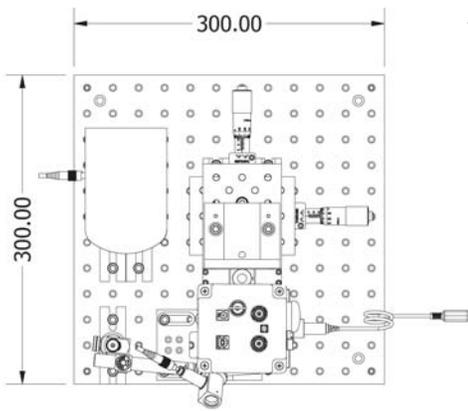
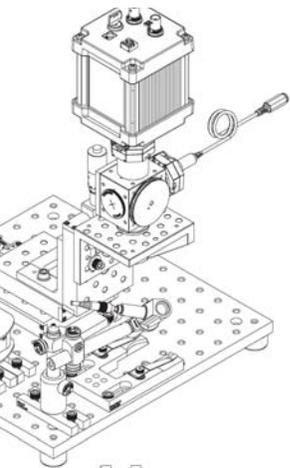
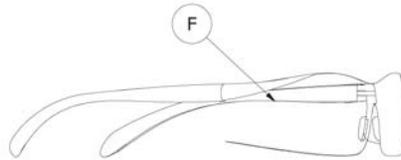
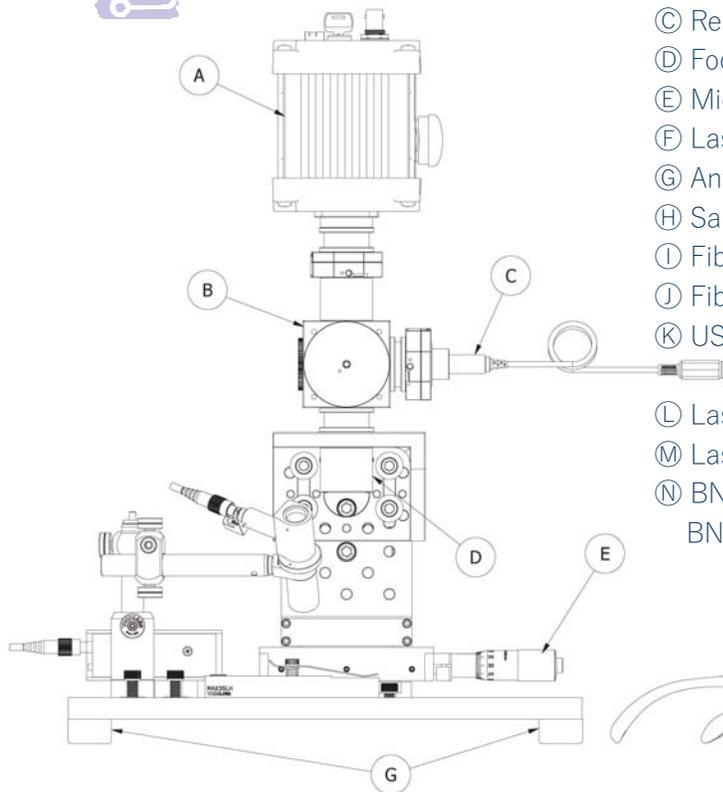
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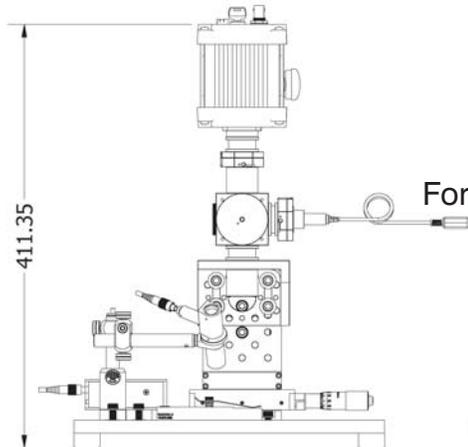
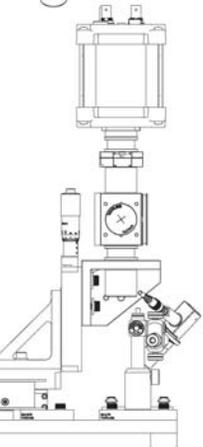
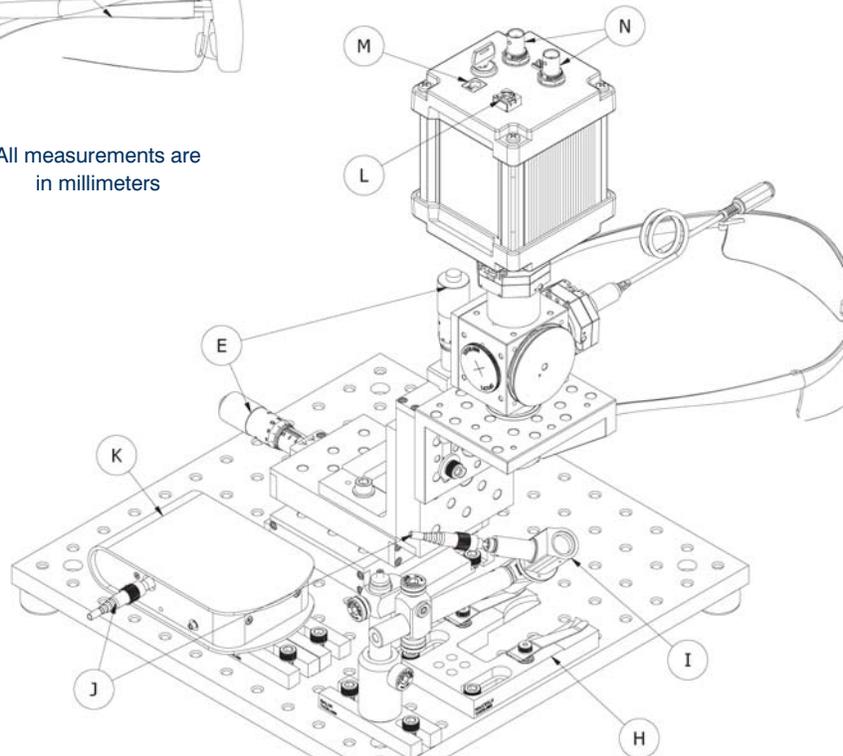
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- Ⓐ Pulse Nd:YAG Laser
- Ⓑ Beam Splitter
- Ⓒ Red pointer Laser
- Ⓓ Focus Lens Mount
- Ⓔ Micrometer adjustment screw for XYZ
- Ⓕ Laser Protective Eyewear
- Ⓖ Anti-vibration rubber feet
- Ⓗ Sample holder
- Ⓘ Fiber Optic Pickup Probe
- Ⓢ Fiber Optic Connectors (Fiber Optic not shown)
- Ⓚ USB Optical spectrometer
- Ⓛ Laser USB port for setting Laser and Delay power
- Ⓜ Laser Power Input
- Ⓝ BNC input for external laser triggering by TTL signal and BNC Programmable Delay Output



All measurements are in millimeters



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