APPLIED PHOTONICS
LASER SPECTROSCOPY SOLUTIONS

LIBSCAN 25+™

MATERIAL CHARACTERISATION SYSTEM

Fully Portable, Battery-Powered Modular LIBS System
Versatile, adaptable, upgradeable – for laboratory and field use

LIBSCAN 25+ is a portable LIBS instrument adopting the same modular design principles used in our LIBSCAN range of products. Suitable for laboratory or field applications, LIBSCAN 25+ operates from its integrated 12 VDC Li-Ion battery for up to approximately 4 hrs on a single charge, or continuously using a plug-in mains adaptor. The six-channel design of LIBSCAN 25+ allows for up to six compact spectrometers to be installed (185 – 900 nm), depending upon the requirements of the intended application. LIBSCAN 25+ can be supplied with an optional imaging camera for recording close-up video / still images of the sample. LIBSCAN 25+ is, by design, a Class 4 laser product although when used with one of our range of modular sample chambers the product meets Class 1 laser safety standards.

Features

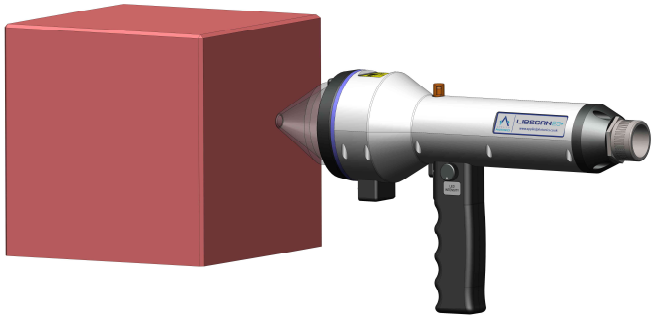
- Hand-held LIBSCAN 25+ head with integral laser and high-efficiency plasma light collection optics array
- Safety device which combines a laser beam shutter with a trigger guard and high-intensity warning light
- Laser: 40 - 50 mJ, 1064 nm, pulse length 4 - 6 ns, max. repetition rate approx. 1.0 Hz
- Optional fully integrated imaging camera kit for close-up colour images of the sample surface
- 1.7 m long flexible umbilical between LIBSCAN 25+ head and instrument console
- Instrument console contains up to six spectrometers, laser power supply, and control electronics.
- Modular and versatile design, suitable for laboratory and field applications
- Adjustable focus laser beam expander capable of producing a minimum spot size of approx. 50 microns
- High efficiency plasma light collection optics (1 DUV channel, 2 UV-VIS channels and 3 VIS-NIR channels)
- May be operated with sample chamber (to Class I laser safety standards) or without (Class 4 “open beam” configuration)
- Gas purge feature (for connection to external inert gas supply – argon, nitrogen)
- Designed to meet international standards on laser safety (Class 4 without sample chamber, Class 1 with sample chamber)
- LIBSoft™ data acquisition and control software with free upgrades for 2 years
- Requires a separate laptop or other suitable computer (contact us for minimum specification information)

General Specifications

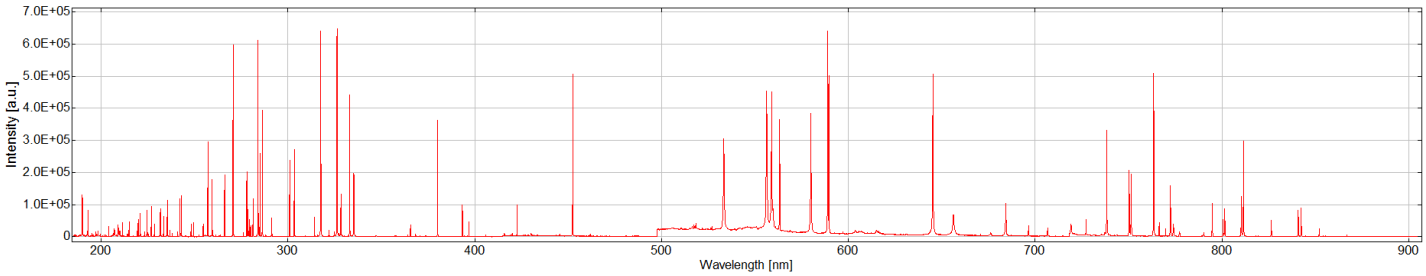
Technology:	Laser-Induced Breakdown Spectroscopy
Laser source:	Q-switched Nd:YAG operating at 1064 nm
Laser pulse energy:	Nominally 40 - 50 mJ
Laser pulse duration:	Nominally 4 - 6 nanoseconds
Laser PRF:	Approx. 1.0 Hz max.
Optical spectrograph:	Up to 6 spectrometer modules may be installed – typical spectrometer set is as follows: Spectrometer module 1: 185 nm – 256 nm, DUV detector coating, FWHM = approx. 0.06 nm Spectrometer module 2: 255 nm – 315 nm, DUV detector coating, FWHM = approx. 0.06 nm Spectrometer module 3: 314 nm – 416 nm, DUV detector coating, FWHM = approx. 0.06 nm Spectrometer module 4: 414 nm – 498 nm, FWHM = approx. 0.08 nm Spectrometer module 5: 496 nm – 718 nm, FWHM = approx. 0.18 nm Spectrometer module 6: 716 nm – 904 nm, FWHM = approx. 0.18 nm
Approx. dimensions:	LIBSCAN 25+ head: 340 L x 100 decreasing to 62 dia body, 140 L handle (mm), weight: 2 kg Instrument console: 500 L x 320 W x 160 H mm, weight: 12 kg
Umbilical:	Approx. 1.7 m between LIBSCAN 25+ head and instrument console
Sample interface:	Via use of modular sample chamber or via use of LIBSCAN head alone (ie. “open beam” path to sample)
Optional sample chambers:	See our website for details of range of modular sample chambers
System software:	Data acquisition, processing and recording via user-friendly LIBSoft™ software
Data connectivity:	USB 2.0 port located on instrument console
Power requirements:	Integrated 8Ah 12V Li-Ion battery, mains plug-in adaptor
Product classification:	Class 1 laser product when used with one of our range of modular sample chambers and instructions given in User’s Manual are adhered to. Class 4 when used without a modular sample chamber

Example configurations

Compatible with our range of modular sample chambers



May be used to analyse large objects using Class 4 mode



Example spectrum of high-purity tin with argon purge gas (10-shot accumulation, 1.27 µs delay)

Specifications subject to change without notice

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