

General Specifications

Technology:	Laser-Induced Breakdown Spectroscopy
Laser source:	Q-switched Nd:YAG operating at 1064 nm (Class IV laser device)
Laser pulse energy:	Up to 50 mJ (LIBSCAN 50) or 100 mJ (LIBSCAN 100) – user adjustable
Laser pulse duration:	5 – 7 nanoseconds
Laser PRF:	Up to 20 Hz (user adjustable)
Optical spectrograph:	Up to eight spectrometer modules may be installed. Spectrometer module 1: 182 nm – 254 nm, DUV detector coating, FWHM = approx. 0.05 nm Spectrometer module 2: 252 nm – 312 nm, DUV detector coating, FWHM = approx. 0.04 nm Spectrometer module 3: 311 nm – 413 nm, DUV detector coating, FWHM = approx. 0.04 nm Spectrometer module 4: 412 nm – 497 nm, FWHM = approx. 0.03 nm Spectrometer module 5: 496 nm – 618 nm, FWHM = approx. 0.09 nm Spectrometer module 6: 617 nm – 716 nm, FWHM = approx. 0.07 nm Spectrometer module 7: 715 nm – 903 nm, FWHM = approx. 0.15 nm Spectrometer module 8: 902 nm – 1057 nm, FWHM = approx. 0.11 nm
Size:	LIBSCAN head: 350 x 160 x 120 mm, weight: ~4 kg Spectrometer console (6-channel): 375 x 335 x 165 mm, weight: ~8 kg Spectrometer console (8-channel): 375 x 355 x 165 mm, weight: ~9 kg Laser power supply: 435 x 360 x 133 mm, weight ~14.5 kg Optional transit case: 650 x 540 x 280 mm, weight ~10 kg
Umbilical:	Approx. 1.8 m between LIBSCAN head and spectrometer console
Sample interface:	Via use of modular sample chamber or via use of LIBSCAN head alone (ie. "open beam" path to sample)
Sample chambers:	Type SC-1: Compact modular sample chamber (110 mm x 120 mm x 200 mm approx. dimensions), manual single axis translation stage (20 mm travel), Type SC-2C: Compact modular sample chamber (110 mm x 120 mm x 250 mm approx. dimensions), Manual 2-axis translation stage (20 mm travel) Type SC-2M: Mid-size modular sample chamber (170 mm x 170 mm x 270 mm approx. dimensions), manual 2-axis translation stage (20 mm travel) Type SC-2L: Large modular sample chamber (260 mm x 260 mm x 320 mm approx. dimensions), manual 3-axis translation stage (50 mm travel), internal LED light, fume extraction port.
System software:	Data acquisition, processing and recording via user-friendly LIBSoft™ software
Power requirements:	ICE 450: 100 – 240 VAC, 50-60 Hz, 850 VA Spectrometer console: 12 VDC (2.5A) via plug-in power supply
Product classification:	Class I laser product when used with modular sample chambers and instructions given in User's Manual are adhered to. Class IV when used without modular sample chamber