LIBS
X-Trace

Do not limit your needs in the field of material analysis to the laboratory setups. With the X-Trace and Laser Induced Breakdown Spectroscopy (LIBS) technique you can take the lab to the sample to perform real remote and in-situ chemical analysis of the material. The computer controlled modular device is equipped with high-end instrumentation and is able to perform in-situ analysis at a distance over 20 m.

Mobile laboratory for in-situ spectrochemical analysis

Compact dimensions with the LIBS instrumentation at top-class level.

Modular design

Device composed of a few modules which can be reconfigured based on present requirements and also dismantled for easy transport.

User-friendly control

Wireless software control through a laptop or tablet with live view of the remote sample.

Remote analysis over 20 m

Possibility of remote analysis – difficult to reach objects or hazardous environments, direct visibility of the sample being the only requirement.

Modern technology

Motorized and automated focusing on the sample, high-performance pulse laser, wide range echelle spectrometer, fast and sensitive EMCCD detector, etc.

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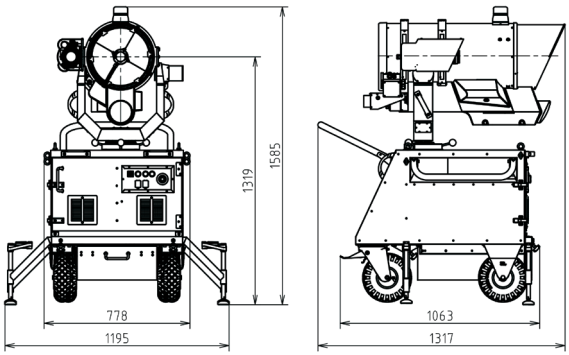

Transport Module

Track comprising of spectroscopy instrumentation and control electronics

Mobility	*4 x 260 mm inflatable wheels, 4 x anchor points, 4 x stabilization legs, 2 x foldable handles*
Housing and Construction	*Al profile frame covered by steel plates, bottom drawer* *Front door with acces to PC, Laser PSU and pulse generator* *Back door with acces to spectrometer* *Front control panel: emergency STOP, key on/off, computer on/off, instrumentation on/off, 2x USB*
Spectroscopy Instrumentation	***Laser**: Nd:YAG, 200 mJ @ 532 nm, 8 ns, 20 Hz* ***I.)*** ***Spectrometer**: Echelle, 200 - 1100 nm, resolving power up to 5000 λ/FWHM* ***II.)*** ***Detector**: EMCCD, 200 - 1100 nm, QE: 65% @ 530nm, 24% @ 200nm, 30 Hz* ***III.)***
Computers	*PC, CPU Intel i7, 16GB Ram, Win 10, broadcasting Wi-Fi network*
Control Electronics	*PSU and voltage transfomer box* *Compact pulse generator, accuracy 10 ns* *Aiming diode laser, 635 nm* *2x cooling fans*
Dimensions & Weight	*1070 x 780 x 840 mm, 122 kg*

Stand-Off Module

Detachable module for wireless remote analysis

Basic Parameters	*Distance of analysis: 6-20 m, Autofocus capability, Spot size: < 1,5 mm, Pulse energy: 200 mJ*
Laser Focusing	*Galilean telescope, 5x beam expander, BK7 lens, AR @ 532 nm* *Motorized refocusing in the range 6 m – infinity*
Signal Collecting	*Newtonian telescope, 12" primary and 2" secondary UV enhanced Al mirrors, MgF2 coating* *Motorized refocusing in the range 6 m - infinity* *Multimode High-OH silica Ø550 µm optical fiber, 190-1200 nm, SMA ends, armored*
Movement	*Motorized rotation +- 90 °, movement resolution: 0.1 arcmin* *Motorized elevation (-14 °) to (+33 °), movement resolution: 0.1 arcminh*
Sample View	*CMOS camera with motorized zoom objective and autofocus* *CREE LED spotlight for sample illumination*
Other Equipment	*Laser rangefinder* *Warning flashlight*
Dimensions & Weight	*1070 x 670 x 900 mm, 51 kg*

External Accessories

Tripod, Power generator Honda EU 20i , 1.8 kW

Overall Dimensions & Weight

1070 x 780 x 1580 mm, 175 kg

Power requirements

230 V, 1.4 kW

I.) *Optionally other Nd:YAG harmonic wavelength* ***II.)*** *Optionally Czerny-Turner*
III.) *Optionally ICCD* ***IV.)*** *Depended on optical fibre length*

AtomTrace®