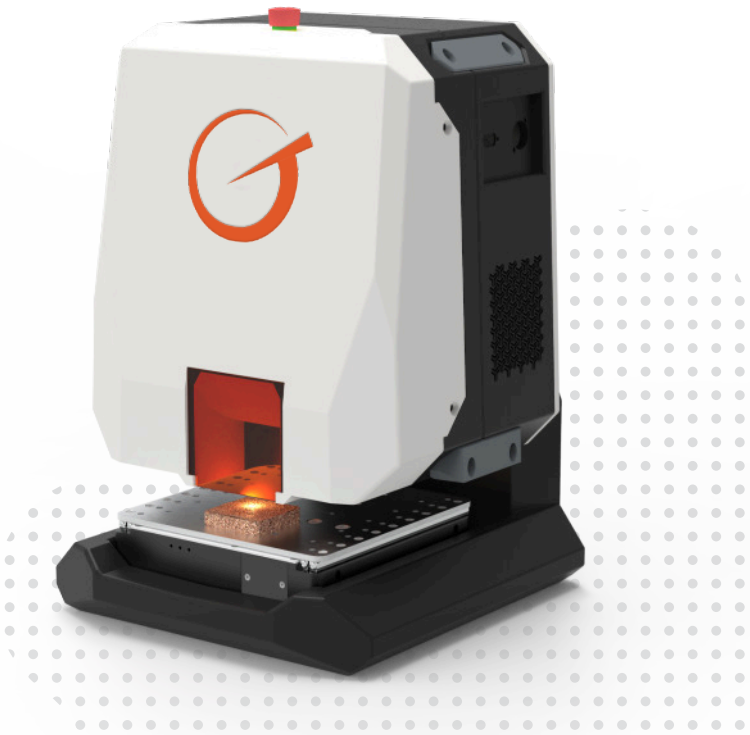
miniFly
LABORATORY

LIGHTIGO
LIGHT UP YOUR ANALYSIS



Elemental analysis in a fraction of second!

Discover the analytical power of Laser-Induced Breakdown Spectroscopy with our cutting-edge **miniFly Laboratory**.

miniFly Laboratory is a bench-top elemental analyser equipped with the **2-axes motorized stage** and **digital microscope**. Combining it with the powerful elemental identification capabilities, miniFly enables you to identify elements quickly and effortlessly across the periodic table, from the lightest to the heaviest, in any solid sample.

What are the capabilities?

- Crisp, high-resolution imaging of samples with automated image stitching
- Motorised sample movement with laser autofocus
- Multi-elemental analysis with **LOD** from **10 ppm**
- Detecting all chemical elements, including light elements, such as **H, Li, Be,** ...
- Various measurement modes: **Multi-spot** / **Line-Scan** / **Area-scan** / **Depth profiling**
- Up to **1 kHz** measurement repetition rate
- Live chemical / elemental imaging
- Automated identification of chemical elements
- Quantitative analysis and custom material database
- Small table-top footprint

Equipment

- miniFly core unit + Docking station
- Digital microscope with illumination
- 2-axis motorised stage + motorised z-focus
- Air-cooled DPSS pulsed laser
- Diode targeting laser
- Full UV-NIR range spectrometer
- Control software
- **Laser Class I** instrument
- Weight <10 kg, size < 400 × 600 × 250 mm^3

Ask for more details!

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Specification

miniFly Laboratory is a compact, bench-top model in the miniFly product line, designed to offer researchers a versatile tool for quick and precise elemental analysis of solid samples. While the standard equipment is optimised for this purpose, it also offers significant flexibility to accommodate a variety of research needs. Parameters, which can be changed upon request are highlighted by ✳, optional items by ○.

GROUP	PARAMETER	VALUE (for default *miniFly Lab* configuration)	
Digital microscope	Sample view camera	Color CMOS, global shutter, 1/1.2", 2.35 MPx	✳
	Sample stage	Motorized, travel range: 100×100 mm^2, Resolution: 10 µm, speed: 5 mm/s	
	Objective lens	Plan achromatic, magnification 5x Field of view: 2.2 mm	✳
	Overall magnification	200× (on 34" LCD screen)	✳
	Illumination	Co-linear + Dual side	
	Functions	Automated image stitching for large-scale overview, Auto-exposure, auto-white balance, autofocus, Interactive sample movement by mouse-clicking	
Elemental analyzer	Main unit	Near field, working distance: 10 mm	
	Laser	Pulsed Nd:YAG, wavelength: 1064 nm, pulse energy: 2 mJ, pulse length: 500 ps	✳
	Spectrometer	CMOS sensor, full spectral range: 190-930 nm, Resolution: 0.3 nm (UV/VIS) / 0.5 nm (NIR), CMOS sensor	✳
	Repetition rate	100 Hz	✳
	Spot size	Variable, from 50 µm	
	Limits of detection	From 10 ppm	✳
	Elements sensitivity	H1-U92, including the light elements: Li, Be, ...	
	Measurement modes	Multi-spot, line/area-scan (elemental imaging), depth profiling	
	SW features	Spectra browser, profile curves, interactive chemical imaging, statistical curves, automatic line identification (NIST + Lightigo line database), custom material database, quantitative analysis	
	Export format	Spectra, graphs, images and data files in H5, TXT/ASCI, JPG/PNG	
Auxiliary modules	Gas purge	Gas purging unit (requires external gas cylinder)	
	Gas extraction	Gas extraction unit with external air-filtering unit	○
	Targeting laser	Diode laser, wavelength: 635 nm	
	Ablation cell	Air-tight portable sample cell for samples < 2 cm height, Gas In / Out for connecting to ICP-OES/MS	○
Physical parameters	Size and Weight	10 kg, 400×600×250 mm^3	
Working conditions	Environment	Temperature range: 10-35°C, humidity: 35-80%	
Others	Laser safety	Laser Class I instrument (IEC/EN 60825-1, JIS C 6802), safety interlocks incorporated	

○ Optional equipment ✳ Other configurations available

miniFly product line

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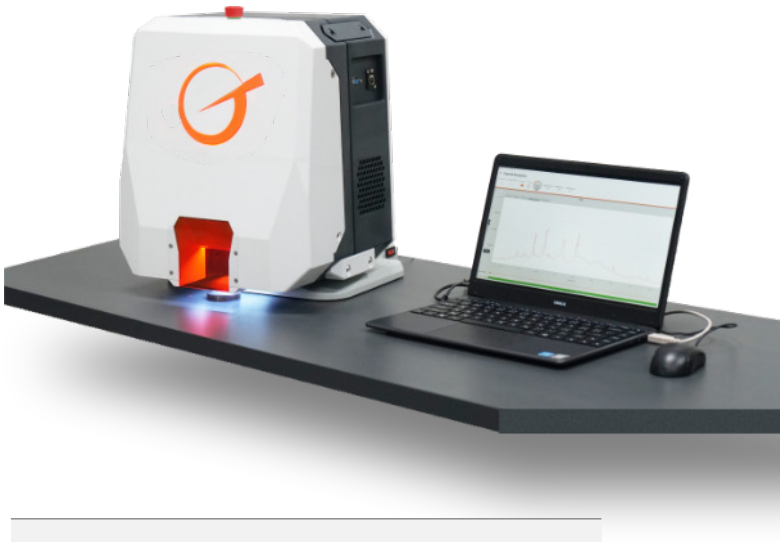
MiniFly is new, innovative analytical platform powered by Laser-Induced Breakdown Spectroscopy.

With its compact modular design and unparalleled flexibility and adaptability, miniFly can be easily configured to:

- efficiently support your **research** in the laboratory as a desktop analyser called miniFly Laboratory,
- optimise **industrial processes** by a remote analysis of samples on conveyor belt,
- provide solution in special **field applications**, where other analytical instruments fall short.



Different models

Every product in the miniFly product line includes:

- **miniFly Core**, which is the fundamental module capable of a basic spot analysis by itself
- **+ additional modules**, which provide all other functions and advanced capabilities. These are tailored for a specific application.

Additional modules
Rapid measurement For multi-kHz measurement rate
Mounting adaptors Standardized mount or benchtop dock station
Sample stage Motorized 2-axis or rotational sample carrousel
Microscope or **makro camera** Digital with Plan-Achr objectives, dual illumination
Mesurement type Area-scan, depth profiling, multi-spot, profile curves
Optical coupling modules Nearfield analysis / Remote analysis (up to 1 m)
Spectroscopic modules Full range spectrometer or element-specific sensors
Gas modules Gas purge and dust extraction
Communication modules Ethernet / Profinet / ModBus / RS485

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