Applications

- MALDI-TOF mass spectroscopy
- LIF spectroscopy
- Time-resolved spectroscopy
- LIBS
- Laser ablation
- Microstructuring
- Dissecting cells under the microscope
- Laser acoustics
- Detector calibration
- Pump source for dye lasers
- Amplification of ultra-short laser pulses
- Technological applications
  such as laser induced bonding,
  hardening and cleaning

Accessories

- Fibre couplings and fibres
- Energy measuring device PEM 100
- Trigger converter TWE
- Trigger module TM 100-24
- Interlock relay

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LTB
LASERTECHNIK BERLIN

Lasers for industrial demands in the ns-range

Interaction of light and matter –
induced and analyzed with lasers
and measuring systems of LTB

	MNL 100 Mini-Nitrogen-Laser	MNL 200 Midi-Nitrogen-Laser	MNL 800 Maxi-Nitrogen-Laser
Wavelength	337.1 nm	337.1 nm	337.1 nm
Spectral bandwidth	0.1 nm	0.1 nm	0.1 nm
Pulse energy	up to130 µJ	up to 120 µJ	400 µJ
Max. repetition rate	60 Hz	50 Hz	10 Hz
Pulse halfwidth – FWHM, typ.	3 ns	0.8 ns / 1.3 ns	1 ns
Energy stability 2σ / <E>	4 %	5 %	10 %
Time Jitter	± 2.5 ns	± 2.5 (± 0.5) ns	not specified
Beam dimensions (v x h)	up to 4 x 2,5 mm	1 x 2 mm	2.4 x 2.5 mm
Beam divergence (v x h)	up to 0.5 x 0.3 mrad	4 x 5 mrad	5 x 7 mrad
Warranty	60 million pulses	50 million pulses	10 million pulses
(whichever comes first)	2 years	1 year	1 year
Dimensions	321 x 95 x 95 mm	450 x 250 x 170 mm	540 x 340 x 170 mm
Weight	3.5 kg	21 kg	25 kg

MNL 100
Our Marathon laser - for highest demands on efficiency and reliability

The ideal OEM UV-light source for applications in the field of industrial detection methods and scientific research

- Long operational life through a sealed discharge cartridge in metal-ceramic technology
- High precision through a directly switching solid state power switch
- Warranty 60 million laser pulses
- Patented and certified CE,ETL-INTERTEK (UL,CSA,VDE,Semco) ROHS, FDA

The integrated laser controller makes a large number of presettings possible as well as the easy adaptation to different applications.

The laser functions and parameters can be adjusted and controlled via the interface to the PC.

Options:
Energy monitor, beam attenuator unit, fibre coupling and fibres, dye lasers / SHG

OEM-Laser, for time-resolved fluorescence measurements

- Pulse halfwidth ≥ 0.8 ns
- Flow or semi-sealed operation
- High reliability
- Low maintenance and service costs

PC, Gas cylinder and pressure reducer are required for operation.

The lasers are equipped with an internal controller and an optical interface.
The DLL 16/32 allows the easy integration into the user software.

The MNL 200 lasers meet industrial standards such as CE, UL, CSA, VDE, FDA.

Options:
Modifications of the pulse duration, Minimisation of the time jitter, Energy monitoring and adjustment,
fibre coupling and fibres,
dye lasers / SHG

Powerful laser, due to its high peak power particularly suited for non-linear measurements

- Pulse halfwidth of ≤ 1 ns
- Flow or semi-sealed operation
- Low maintenance and service costs

PC, Gas cylinder and pressure reducer are required for operation.

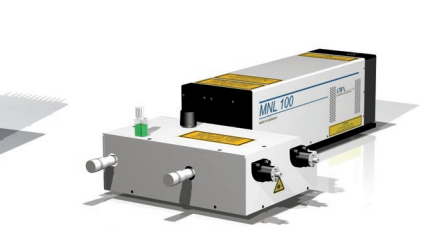
The lasers are equipped with an internal controller and an optical interface.
The DLL 16/32 allows the easy integration into the user software.

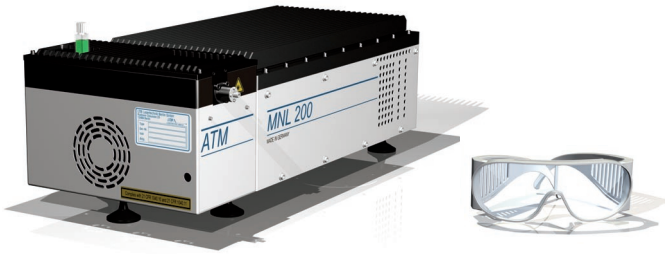
The MNL 800 is switched by a spark gap switch. It is recommend for an annual pulse demand of < 10 million pulses.

The laser can be used in time-critical applications, if it is equipped with an optical trigger.

The MNL 800 lasers meet industrial standards such as CE, UL, CSA, VDE, FDA.

Options:
Energy monitor, fibre coupling and fibres, dye lasers / SHG





Dye Laser UDL / Frequency Doubler SHG

Automated tunable modules for the UV-VIS-NIR tuning

400-950/205-400 nm	400-950/225-400 nm	Wavelength
up to 0.1 nm	2 - 8 nm	Spectral bandwidth
up to 30 % conversion efficiency	up to 30 % conversion efficiency	Pulse energy
50 Hz	50 Hz	Max. repetition rate
depending on the pump laser	depending on the pump laser	Pulse halfwidth – FWHM, typ.
depending on the pump laser	depending on the pump laser	Energy stability 2σ / <E>
depending on the pump laser	depending on the pump laser	Time Jitter
Ø 1.5 mm	Ø 1.5 mm	Beam dimensions (v x h)
1 x 2 mrad	1 x 2 mrad	Beam divergence (v x h)
depending on the pump laser 1 year	depending on the pump laser 1 year	Warranty (whichever comes first)
145 x 100 x 100 mm 200 x 200 x 100 mm mit SHG	115 x 250 x 170 mm	Dimensions
1 kg	1,5 kg	Weight

Pulsed miniature dye lasers/SHG for the manual UV-VIS-NIR tuning

MNL nitrogen lasers, but also excimer or Nd:YAG lasers (with pulse energies up to 30 mJ) are well suited as pump lasers.

Due to their modular design and their small size, they can optimally be adapted to the specific measuring process.

The different wavelengths are either adjusted by a simple replacement of the dye cells (UDL 100) or by means of a micrometer screw (UDL 200 / 300).

The SHG's are modules for the frequency doubling of UDL dye laser radiation.

The manually tunable UDL and SHG modules are the low-cost alternative to LTB's automated tuning modules ATM.

Pulsed dye lasers/SHG for the automated UV-VIS-NIR tuning

MNL nitrogen lasers, but also excimer or Nd:YAG lasers (with pulse energies up to 30 mJ) are well suited as pump lasers.

Combined with a nitrogen laser of the model series MNL 200 or 800 as pump source, the ATM provides an automated laser system delivering subnanosecond pulses in the UV-VIS-NIR range.

Both units, the nitrogen laser MNL and the ATM, are controlled from a PC via a comfortable Windows software.

The compact system has only one beam output and can be equipped with a fibre coupling.

The ATM has an energy monitor for monitoring the output energy.

The DLL 16/32 interface allows the integration into the user software.

LTB Lasertechnik Berlin GmbH

established in 1990, is an innovative developer and manufacturer of short-pulse lasers in the whole optical spectral range, different spectrometers and laser-based measuring technique, marketing its products world-wide.

We provide you:

*** Laser sources for the industrial analytics and medical diagnostics**

*** Highest-resolution spectrometers for the development and production of lasers, esp. diode lasers and laser diodes, and for the laser lithography**

*** Laser-based measuring technique for the spectroscopic material analysis, process analytics and medical diagnostics (LIF and LIPS)**

We deliver complete solutions