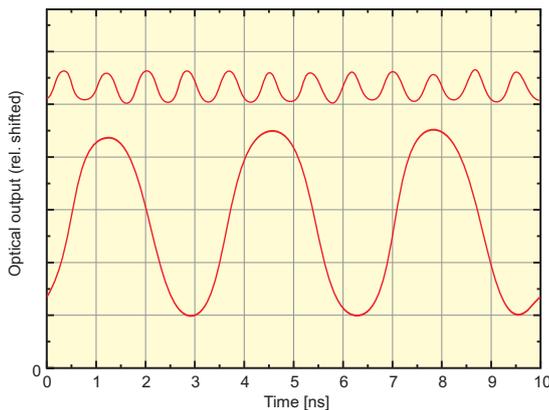


MDL 300



Modulated Diode Laser



- Linear modulation, any waveform
- Internal sine wave generator for 6 predefined frequencies
- Modulation frequencies up to 1.8 GHz (external source required)
- Adjustable modulation depth
- External Bias control / LF modulation
- Wavelengths from 375 to 1550 nm
- Power levels from 10 to 70 mW peak / 5 to 35 mW average



Applications

- Phase fluorometry
- Diffuse optical imaging
- Testing and analysis of optoelectronic components
- Fiber optic communications

Modulated Diode Laser

The MDL 300 modulated diode laser driver provides modulation frequencies up to 1.8 GHz and generates sinusoidal waveforms for 6 predefined frequencies. It is an ideal ultrafast excitation source for phase modulation fluorescence lifetime measurements in a compact set-up. The MDL 300 consists of a driver/controller and interchangeable laser heads for GHz applications. In addition, pulse mode is possible by overdriving the modulation level.

The MDL 300 features easy to use controls for modulation frequency and laser power level. Predefined modulation frequencies of 250, 100, 25, 5, 1 and 0.25 MHz are derived from the internal crystal oscillator. Alternatively, the laser intensity can be modulated by either an external RF or DC/LF signal. The maximum frequency is dependent on the laser wavelength (see table below). A Sync output allows the modulation signal to be monitored externally.

Laser heads with wavelengths from 375 to 1550 nm are available and wavelengths can be changed quickly by simply plugging in a different laser head. The laser heads can emit light pulses with peak powers up to 50 mW with nearly 100 % modulation. These laser heads come with collimator optics and can be fitted to single- or multimode optical fibers.

Specifications

Internal Oscillator	
Modulation frequencies	250, 100, 25, 5, 1 and 0.25 MHz
Waveform	sinusoidal
RF Modulation Input	
Amplitude	50 mV _{rms} typ., 2 V _{rms} max.
Impedance	50 Ohms (100 kHz to 2 GHz), 200 Ohms (static)
Frequency range	100 kHz up to 2 GHz
Connector	SMA female
DC/LF Modulation Input	
Amplitude	0 to +5 V _{rms} max.
Impedance	10 kOhms pull up
Frequency range	DC to 1 kHz
Connector	SMA female
Sync Output	
Amplitude	0.3 V _{rms} max.
Impedance	50 Ohms
Connector	SMA female
Power Supply	
Line voltage	220/240 or 110/120 VAC, 50/60 Hz
Power consumption	45 Watts max.
Dimensions	
Driver unit	237 × 310 × 97 mm (w × d × h)

Available Laser Heads

type	wavelength (±10 nm)	avg. power (mW)	f max at -3 dB (MHz)	f max at -10 dB (MHz)
LDH-M-C-375	375	5	900	1400
LDH-M-C-405	405	20*	900	1500
LDH-M-C-440	440	20	900	1400
LDH-M-C-470	470	7.5	1100	1500
LDH-M-C-485	485	4	800	1100
LDH-M-C-635	640	8	600	1200
LDH-M-C-650	660	7	600	1000
LDH-M-C-650B	660	20*	900	1300
LDH-M-C-670	670	8	800	1600
LDH-M-C-780	780	30	700	1200
LDH-M-C-805	808	30	700	1400
LDH-M-C-830 [‡]	830	15	700	1300
LDH-M-C-840	840	35	650	1100
LDH-M-C-850	850	7	800	1800
LDH-M-C-905	905	35	600	1000
LDH-M-C-930	930	30	800	1400
LDH-M-C-980	980	35	600	1200
LDH-M-C-1060	1060	35	800	1400
LDH-M-C-1310	1310	10	800	1400
LDH-M-C-1550	1550		on request	



Typical output power fluctuations 3 %

*Output power fluctuations 10 %

[‡] Transversal multimode structure, reduced coupling efficiency into singlemode fibers. All measurements may be subject to a 10 % calibration error.

All laser heads include peltier cooling and collimation optics. Optionally for most wavelengths single- and multimode optical fibers can be fitted through appropriate fiber couplers.

Other wavelengths are available upon request.

Further available are Fluorescence Lifetime Spectrometers; Time-resolved Fluorescence Microscopes; Upgrade kit for Laser Scanning Microscopes; Picosecond / Nanosecond Pulsed and Fast Switched Diode Lasers; PC Modules for TCSPC. Please call for detailed information and data sheets. OEM Modules of all products are available upon request. **Please check our website for updated information.**

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