

Sepia PDL 810

Single Channel Picosecond Diode Laser Driver

- Single channel pulsed diode laser driver system
- Pulsed and CW operation
- Easily controlled via USB
- Quick set-up and easy storage of predefined set-ups
- Suited for LDH Series, LDH-FA Series, and PLS Series
- 5-year warranty



Applications

- Time-resolved fluorescence measurements
- Confocal microscopy (FLIM-, FRET-, FCS-imaging)
- Quantum optics, single photon generation
- Test and measurement of detectors and optical fibers
- Ranging and LiDAR
- Materials research
- Diffuse optical tomography (DOT) of biological tissue
- Stimulated emission depletion (STED) microscopy

The Sepia PDL 810 system is a single channel pulsed diode laser driver system that allows operating a connected laser head in either pulsed or Continuous wave (CW) mode. The driver may trigger the laser autonomously from its built-in crystal oscillator or, if a more complex triggering scheme is needed, can also be triggered by an external signal. Any output frequency from single shot (if triggered externally) to 80 MHz is supported.

A broad selection of light sources

The user can choose from a wide palette of pulsed light sources with wavelengths ranging from ultra-violet (266 nm) to infrared (1990 nm). With some wavelengths, the laser head can also be optimized for either maximum possible power or shortest pulse width. Currently, more than 50 laser head and pulsed LED (down to 255 nm) models are available - and the choice is continuously growing!

Take full control

The operating parameters of the Sepia PDL 810 laser driver (such as trigger source, repetition rate and pulse energy) are completely configured from a computer via USB, allowing for quick set-up and easy storage of predefined set-ups. Stand-alone operation is possible, if no changes to the parameter set-up is required.

Specifications

Operation mode	pulsed or Continuous wave (CW)
Base frequencies	80 MHz
Repetition frequencies	user selectable: 1, 1/2, 1/4, 1/8, 1/16, 1/32 of base frequency 80, 40, 20, 10, 5 or 2.5 MHz
Jitter	typ. 3-5 ps
External trigger input	
Amplitude	-2 to 0 V
Trigger level	NIM
Required pulse width	> 5 ns
Delay	trigger input to optical output: typ. 35 ± 5 ns ,
Frequency range	single shot to 80 MHz
Input impedance	50 Ohms (dynamic), 50 Ohms (static)
Connector	BNC socket (female)
Synchronization output	
Amplitude	< -800 mV into 50 Ohms (NIM)
Pulse width	6 ns
Delay	12 ns (from falling edge to laser output)
Input impedance (destination)	50 Ohms
Connector	SMA socket (female)
Gating inputs	
Fast gate	transition time typ. 10 ns (pulsed only) internal impedance 50 Ohms signal type: TTL (5 V) connector type: 1-pin LEMO socket – 00.250 series example of connector: FFA.00.250.NTA
Slow gate	transition time < 100 ms (pulsed and cw operation) internal impedance > 500 Ohms signal type: TTL (5 V) connector type: 4-pin LEMO socket – 00.304 series example of connector: FGG.00.304.CLA
Remote interlock	
Voltage	12-14 VDC
Loop resistance	10 Ohms maximum
Computer	
PC Interface	USB 2.0
Operating system	Windows™ 11



WARNING – VISIBLE OR INVISIBLE
LASER RADIATION
AVOID EXPOSURE TO BEAM
CLASS 3B LASER PRODUCT
IEC / EN 60825-1:2014

Power Supply	
Line voltage	220/240 or 110/120 VAC, 50/60 Hz
Power consumption	45 W max.
Dimensions	
Base unit	237 × 310 × 97 mm (w × d × h)
Operation Environment	
Temperature range	10 to 40°C

For all available types and wavelengths please visit our website.

Pulsed Light Sources

LDH-P/D/FA Series

Picosecond pulsed laser diode heads



Available wavelengths: 266 - 1990 nm, pulsed and CW operation, Peltier cooled, options: high power, narrow linewidth, short pulses, fiber coupling to single mode and multimode optical fibers

PLS Series

Sub-nanosecond pulsed LEDs



Available wavelengths: 355 - 600 nm, options: spectral bandpass filter



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