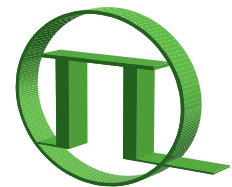


PDL 800-D new



PICOQUANT
Unternehmen für optoelektronische
Forschung und Entwicklung

<http://www.picoquant.com>

Picosecond Pulsed Diode Laser Driver

- Pulsed and cw operation
- Laser pulses as short as 50 ps (FWHM)
- Easy selectable repetition rates from 31.25 kHz to 80 MHz
- Laser pulse energy adjustable via driver unit
- Laser heads from 375 to 1550 nm, LED heads from 260 to 600 nm
- External trigger / Sync output



Applications

- Time-resolved fluorescence spectroscopy
- Single Molecule Spectroscopy (SMS)
- Test and measurement of detectors and optical fibers
- Diffuse Optical Tomography (DOT) of biological tissue
- Quantum cryptography
- Confocal microscopy
- Stimulated Emission Depletion (STED) microscopy
- Materials research

Picosecond Pulsed Diode Laser Driver

The PDL 800-D is a new stand-alone driver for the picosecond laser diode heads from 375 to 1550 nm (LDH-P / D Series) as well as for the sub-nanosecond LEDs from 260 to 600 nm (PLS Series). These laser heads can emit light pulses as short as 70 ps FWHM (50 ps on selection) at repetition rates from single shot up to 80 MHz with peak powers up to 1 Watt. The PDL 800-D features easy-to-use controls for repetition frequency and laser pulse energy. The laser driver module is fully compatible to all LDH-P laser heads and can in addition drive the latest generation of laser heads, which also allow cw operation (LDH-D-C). Wavelengths can be changed quickly by simply plugging in a different laser or LED head.

The internal oscillator has two selectable base frequencies, 80 MHz and 1 MHz. Each base frequency can be further reduced by division through 1, 2, 4, 8, 16 and 32. The highest repetition frequency that can be derived is therefore 80 MHz, the lowest repetition rate is 31.25 kHz.

The laser pulses can also be triggered by an external trigger input so that the PDL 800-D can be synchronized with other instruments over the full frequency range. A sync output allows the PDL 800-D to trigger other components such as TCSPC electronics. The gating inputs allow to disable the laser output on two time scales through an external TTL-signal.

For multiple wavelengths experiments the PDL 808 "Sepia" is recommended, for automated systems the computer controlled multi-channel PDL 828 "Sepia II" is the best choice.

Picosecond pulsed diode laser modules are also available in OEM quantities for system suppliers. These compact, cost-effective diode lasers with fixed parameters (repetition frequency, output power and wavelength) can easily be integrated into complex systems.

Specifications

Internal Oscillator

Type Crystal locked
 Operation mode Pulsed or continuous-wave
 Base frequencies 80 MHz, 1 MHz (selectable)
 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
 - 1000, 500, 250, 125, 62.5 or 31.25 kHz

External Trigger Input

Amplitude -5 to +5 V (maximum limits)
 Trigger level (adjustable) ... -1 to +1 V (negative slope)
 Pulse width >5 ns
 Frequency range 10 Hz to 80 MHz
 Delay 35 ± 5 ns (from trigger input
 to optical output), jitter <20 ps
 Impedance 50 Ohms (dynamic)
 >500 Ohms (static)
 Connector type BNC (female)

Synchronization Output

Amplitude < -800 mV into 50 Ohms (NIM)
 Pulse width 6 ns
 Delay 12 ns (from falling edge to
 laser output), jitter <20 ps
 Impedance 50 Ohms
 Connector type SMA (female)

Gating Inputs

Slow gate Transition time <1 ms (pulsed and cw)
 Fast gate Transition time typ. 10 ns (pulsed only)

Remote Interlock

Voltage <7 VDC
 Loop resistance 10 Ohms max.

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)

Temperature Range 10 - 40 °C

Further available are Modulated and Fast Switched Diode Lasers; PC Modules for TCSPC and Fluorescence Lifetime Spectrometer; Time-resolved Fluorescence Microscopes; Upgrade kit for Laser Scanning Microscopes. Please call for detailed information and data sheets. OEM Modules of all products are available upon request. **Please check our webpage for latest changes of specs.**

Pulsed Light Sources



LDH-P / D Series
 Picosecond Laser
 Diode Heads

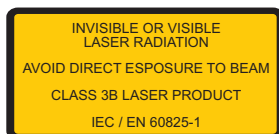
Available wavelengths: 375 - 470, 635 - 1550 nm
 Pulsed and cw operation

Options: peltier cooled, high power version, narrow spectral bandwidth, selected short pulses, fibre coupling to single-mode and multi-mode optical fibres



PLS Series
 Sub-nanosecond
 pulsed LEDs

Available wavelengths: 260 - 600 nm
 Optional: spectral bandpass filter



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