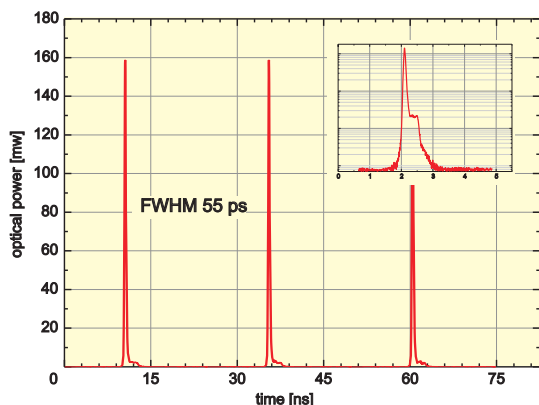


PDL 800-B



Picosecond Pulsed Diode Laser Driver



- Repetition rates from single shot to 40 MHz (optional 64 or 80 MHz)
- Laser pulse energy adjustable via driver unit
- Laser heads from 375 to 1990 nm, LED heads from 255 to 600 nm
- External trigger / sync output



Applications

- Time-resolved fluorescence spectroscopy
- Single molecule spectroscopy
- Test and measurement of detectors and optical fibers
- Diffuse Optical Tomography (DOT) of biological tissue
- Confocal microscopy (FLIM-, FRET-, FCS-imaging)
- Stimulated Emission Depletion (STED) microscopy
- Quantum optics, single photon generation
- Materials research

Picosecond Pulsed Diode Laser Driver

The PDL 800-B is a stand-alone driver for the picosecond pulsed laser diode heads from 375 to 1990 nm (LDH-P/FA Series) as well as for the sub-nanosecond pulsed LEDs from 255 to 600 nm (PLS Series). The 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 (depending on wavelength). The PDL 800-B features easy to use controls for repetition frequency and laser pulse energy. Wavelengths can be changed quickly by simply plugging in a different laser or LED head.

User selectable repetition frequencies of 40, 20, 10, 5 and 2.5 MHz are derived from the internal crystal controlled oscillator that generates a low jitter base frequency of 40 MHz (64 or 80 MHz are available for red diode laser heads upon request). Laser pulses can also be triggered by an external trigger input so that the PDL 800-B can be synchronized with other instruments over the full frequency range. A sync output allows the PDL 800-B to trigger other components such as TCSPC electronics. A gating option allows to disable the laser output through an external TTL-signal.

For multiple wavelengths experiments, the PDL 808 "Sepia" is recommended, for automated systems, the computer controlled multichannel PDL 828 "Sepia II" is the best choice. An alternative single channel driver with dual mode (pulsed and cw) capabilities and internal repetition rates from 32.5 kHz to 80 MHz is also available (PDL 800-D).

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 (up to 80 MHz max.)
Master frequency 40 MHz standard, other frequencies available upon request
Repetition frequencies 1, 1/2, 1/4, 1/8, 1/16 of base frequency
40, 20, 10, 5 or 2.5 MHz (standard)

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 < 40 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)

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.
DC supply output 12 V/100 mA or 5 V/250 mA (for external modules)
Connector 6-pin DIN

Dimensions

Driver unit 237 × 310 × 97 mm (w × d × h)

Temperature Range 10 - 40 °C

Further available are Fluorescence Lifetime Spectrometer; Time-resolved Fluorescence Microscopes; Upgrade kits for Laser Scanning Microscopes; Modulated 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.**

Pulsed Light Sources



LDH-P/FA Series
Picosecond pulsed laser diode heads

Available wavelengths: 375 - 510 nm, 530 nm, 595 nm and 635 - 1990 nm, options: peltier cooled, high power version, narrow spectral bandwidth, selected short pulses, fiber coupling to singlemode and multimode optical fibres



PLS Series
Sub-nanosecond pulsed LEDs

Available wavelengths: 255 - 600 nm, options: spectral bandpass filter

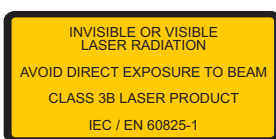


For all available types and wavelengths please go to:

<http://www.picoquant.com/products/ldh/ldhseries.htm>

<http://www.picoquant.com/products/pls/plsseries.htm>

http://www.picoquant.com/products/ldh_fa/ldh-fa.htm



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