

Sepia PDL 828

Multichannel Picosecond Diode Laser Driver

- Most flexible, modular system, for up to 8 laser heads
- Pulsed, burst and CW operation
- Ultimate flexibility in multichannel pulse patterns
- Easily controlled via USB
- Suited for LDH Series, LDH-FA Series, and PLS Series
- 5-year warranty



two channel version

Applications

- Multi-color excitation for microscopy (PIE, ALEX, PIE-ALEX)
- STED excitation/depletion
- Diffusion measurements (DOT, DCS, TD-DCS)
- Multi-channel laser ranging / LIDAR
- Molecular imaging
- Quantum optics, single photon generation



eight channel version

The Sepia PDL 828 is a fully computer controlled, multichannel diode laser driver connected to the PC via USB. The Sepia PDL 828 provides maximum flexibility for multiple wavelengths applications and drives any combination of up to 8 laser or LED heads in parallel or in a user defined sequence. Laser heads with wavelengths between 266 and 1990 nm (LDH-P/D/ FA Series) as well as pulsed LEDs from 245 to 600 nm (PLS Series) are available. The whole system can be configured and controlled through a dedicated WindowsTM control software. Last settings are saved inside the Sepia PDL 828 to allow stand-alone operation making it a powerful device for measurement automation. A DLL is also available and allows to access all functions of the Sepia PDL 828 from custom programs.

The system consists of a mainframe with power supply, an oscillator module and up to eight laser driver modules.



These tables are updated on a regular basis based on data of recently manufactured laser heads. Other specifications such as shorter pulse widths or higher powers than listed might be possible depening on the performance of diodes on stock. Please contact us for more information. All measurements shown may be subject to a 10 % callibration error. Each laser head undergoes an extensive burn-in test to ensure long-term stability and is shipped with a comprehensive set of test data. This test data is kept in our database, which already holds records of more than 18 years.

Specifications

| Mainframe | |
|---|---|
| Large, L | 1 slot for oscillator module, 8 slots for laser driver modules |
| Small, S | 1 slot for oscillator module, 2 slots for laser driver modules |
| Power supply | 115/230 VAC, 50/60 Hz, max. 350 Watts |
| Dimensions | large, L: 464 × 310 × 140 mm (w × d × h) |
| | small, S: 250 × 310 × 140 mm (w × d × h) |
| Oscillator module | |
| Outputs | 8 trigger (NIM), 1 synchronization (NIM), 1 auxiliary |
| Inputs | 1 external trigger, 1 auxiliary (TTL) |
| Operation mode | rotary, programmed sequence of one channel must be completed be- |
| | fore next channel is activated, adjacent channels can be grouped; multi- |
| | ple channels can be either combined or delayed (SOM 828-D only) |
| Oscillator type | crystal locked |
| Base frequencies | 80, 64, 50 MHz (selectable) |
| Repetition frequency | user-selectable, derived from the selected master frequency or an exter- |
| | nal trigger source by division through any integer factor between 1 and 65536 (SOM 828-D) |
| Low jitter | < 20 ps (FWHM), typ. 3-5 ps (FWHM) |
| Synchronization output | |
| Timing | synchronous to repetition frequency, timing position stepwise adjusta- |
| | ble within the limits of the repetition frequency, stepsize equals base |
| | oscillator period |
| Masking | synchronization pulses can be inhibited (masked), mask size selec- |
| | table in integer steps from 0 to 255, stepsize equals repetition period |
| Amplitude | +500 mV into 50 Ohms (SOM 828); +1.5 V into 50 Ohms (SOM 828-D) |
| Auxiliary output | |
| Timing | at start of complete trigger sequence |
| Amplitude | +500 mV into 50 Ohms |
| External trigger input | 1 |
| Amplitude | -5 to +5 V (maximum limits) |
| Trigger level | -1.2 to +1.2 V |
| Frequency range | up to 40 MHz |
| External synchronization | 6.25 to 85 MHz (SOM 828-D only) |
| Bursts | |
| Burst length | up to 16.7 million pulses |
| Laser driver module | |
| Operation mode | 1 synchronization (NIM), laser head connector |
| Repetition frequency of internal oscillator | 80, 40, 20, 10, 5 or 2.5 MHz (user-selectable) |

| Low jitter | < 20 ps (FWHM), typ. 3-5 ps (FWHM) |
|----------------------|---|
| Outputs | 1 synchronization (NIM), laser head connector |
| Inputs | 1 trigger (NIM), 2 gating (TTL) |
| Detail gating inputs | |
| Slow gate | transition time < 100 ms (pulsed and CW) |
| | internal impedance > 500 Ohms |
| | connector type: 4-pin LEMO socket – 00.304 series |
| | example of connector: FGG.00.304.CLA |
| Fast gate | transition time typ. 10 ns (pulsed only) |
| | internal impedance: 50 Ohms |
| | connector type: 1-pin LEMO Socket – 00.250 Series |
| | example of connector: FFA.00.250.NTA |
| Computer | |
| Operating system | Windows [™] 10 |
| PC Interface | USB 2.0 |



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