

# Sepia PDL 828

## Multichannel Picosecond Diode Laser Driver

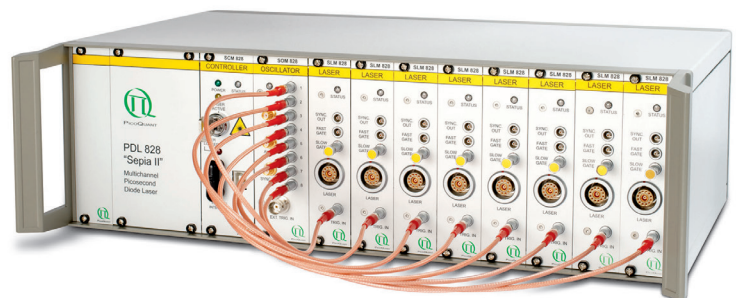
- Most flexible, modular system, for up to 8 laser heads
- Pulsed, burst and CW operation
- Ultimate flexibility in multichannel pulse patterns
- Easily controlled via USB
- Suited for LDH Series, LDH-FA Series, and PLS Series
- 5-year warranty



two channel version

### Applications

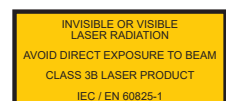
- Multi-color excitation for microscopy (PIE, ALEX, PIE-ALEX)
- STED excitation/depletion
- Diffusion measurements (DOT, DCS, TD-DCS)
- Multi-channel laser ranging / LIDAR
- Molecular imaging
- Quantum optics, single photon generation



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 Windows™ 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.



## Specifications

<b>Mainframe</b>	
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)
<b>Oscillator module</b>	
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 before next channel is activated, adjacent channels can be grouped; multiple 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 external 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)
<i>Synchronization output</i>	
Timing	synchronous to repetition frequency, timing position stepwise adjustable within the limits of the repetition frequency, stepsize equals base oscillator period
Masking	synchronization pulses can be inhibited (masked), mask size selectable 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)
<i>Auxiliary output</i>	
Timing	at start of complete trigger sequence
Amplitude	+500 mV into 50 Ohms
<i>External trigger input</i>	
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)
<i>Bursts</i>	
Burst length	up to 16.7 million pulses
<b>Laser driver module</b>	
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)
<b>Detail gating inputs</b>	
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
<b>Computer</b>	
Operating system	Windows™ 10
PC Interface	USB 2.0



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