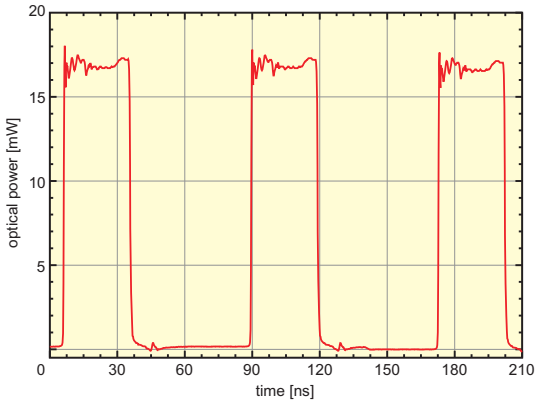
FSL 500

PicoQuant

Fast Switched Diode Laser



- Pulse widths adjustable between 3 and 100 ns
- Ultra short rise / fall time down to 0.3 ns / 0.8 ns
- Wavelengths from 375 to 1550 nm
- Repetition rate from single shot to 12 MHz
- User-defined signal patterns via external triggering
- Completely switched off between pulses

Applications

- Time response characterization of optoelectronic devices
- Semiconductor device testing
- Printing industry (Computer-to-Plate technology CTP)
- Optical data storage
- Direct photo lithography

Fast Switched Diode Laser

The FSL 500 consists of a common control unit and interchangeable laser heads. The control unit contains the power supply, an internal pulse rate generator and a driver stage that allows to control the duration of the laser pulse regardless of the selected amplitude. The driver stage can be operated in three basic modes: internal, slope and level triggered. In both, internal and slope triggered mode, the pulse width is controlled by the front panel settings. In the internal mode, the driver operates at a base frequency of 12 MHz, which is manually dividable by 2 and 4, and provides an adjustable laser-on duration up to 100 ns. In the slope triggered mode, the laser pulse is fired by the falling edge of an external electrical input signal. In the level trigger mode, the optical output follows an arbitrary signal pattern of a trigger input, provided that there is an off-time larger than 20 ns between two pulses.
It is possible to select a lower laser pulse amplitude reduced to 30 % of the maximum power. Laser heads are available with wavelengths from 375 nm up to 1550 nm. Since the laser diode is the critical element, the rise time, fall time and overshoot are wavelength dependent. The laser heads come with collimator optics and peltier cooling and can be fitted to single- or multimode optical fibers.

Specifications

Internal Oscillator
Type . . . . . crystal locked
Master frequency . . . . . 12 MHz standard, other frequencies available upon request

External Trigger Input
Amplitude . . . . . -5 to +5 V (max. limits)
Trigger level (adjustable) . . . . . -1 to +1 V
Impedance . . . . . 50 Ohms
Connector type . . . . . BNC (female)

Synchronization Output
Amplitude . . . . . < -800 mV into 50 Ohms (NIM)
Pulse width . . . . . 6 ns
Impedance . . . . . 50 Ohms
Connector . . . . . SMA (female)

Timing
Internal triggered
Pulse width . . . . . 3 ns to 100 ns
Frequency range . . . . . 3, 6, 12 MHz (user-selectable)
Delay (approx.) . . . . . 50 ±10 ns (from sync output to optical output)
Jitter . . . . . < 0.2 ns
External triggered, Slope Mode
Pulse width . . . . . 3 ns to 100 ns
Frequency range . . . . . 10 Hz to 12 MHz
Delay (approx.) . . . . . 50 ±10 ns (from trigger input to optical output)
Jitter . . . . . < 0.2 ns
External triggered, Level Mode
Pulse width . . . . . 3 ns to CW
Frequency range . . . . . DC to 12 MHz
Delay (approx.) . . . . . 65 ±10 ns (from trigger input to optical output)
Jitter . . . . . < 0.2 ns

Remote Interlock
Voltage . . . . . < 7 VDC
Loop resistance . . . . . 10 Ohms max.

Power Supply
Line voltage . . . . . 110/120 or 220/240 VAC, 50/60 Hz
Power consumption . . . . . 45 Watts max.

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

Available Laser Heads

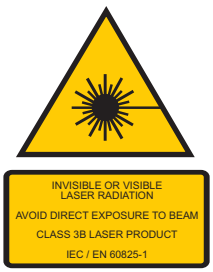
type	wave-length (±10 nm)	max. power mW	rise / fall time ns
LDH-S-C-375	375	12	<0.5 / <1.0
LDH-S-C-405	405	16	<0.5 / <1.0
LDH-S-C-470	470	10	<0.5 / <1.5
LDH-S-C-485	485	10	<0.5 / <1.5
LDH-S-C-635	635	12	<0.5 / <1.0
LDH-S-C-660	660	20	<1.0 / <1.0
LDH-S-C-780	780	20	<0.5 / <1.0
LDH-S-C-805	805	30	<1.0 / <1.5
LDH-S-C-840	840	20	<1.0 / <1.5
LDH-S-C-930	930	20	<1.8 / <1.6
LDH-S-C-980	980	40	<0.5 / <1.5
LDH-S-C-1060	1060	35	<0.5 / <1.5
LDH-S-C-1310	1310	8	<0.5 / <1.5
LDH-S-C-1550	1550	upon request	

All measurements may be subject to a 10 % calibration error. Overshoot typically between 50 % and 100 % of the maximum power.

All laser heads include peltier cooling and collimation optics. Optionally for most wavelengths single- and multimode optical fibers can be fitted through appropriate fiber couplers.

Other wavelengths are available upon request.

Further available are Fluorescence Lifetime Spectrometers; Time-resolved Fluorescence Microscopes; Upgrade kit for Laser Scanning Microscopes; Picosecond / Nanosecond Pulsed and 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.**



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