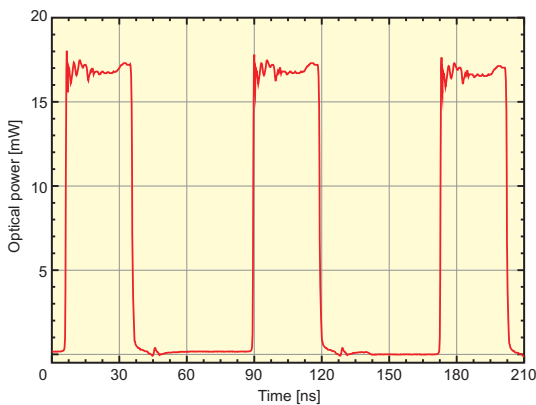


FSL 500



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 | |
| <i>Internal triggered</i> | |
| 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 |
| <i>External triggered, Slope Mode</i> | |
| 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 |
| <i>External triggered, Level Mode</i> | |
| 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 | 640 | 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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