

Model LS500 Laser Shutter Specifications

This model is designed for use as a high speed modulator, providing the shortest exposures for pulse gating, and the fastest repetition rates. It can extract a single pulse from 2 K Hz pulse trains when synchronized. It is also designed with grazing incidence reflection to handle high optical loads and damage thresholds. The standard mirror is aluminum for broadband use. Cross sectional path for X-ray use is 1.5 mm through Steel.

Compatible system controller choice is limited to the CX2250 only.

Options are available using a suffix code system. Many options cannot be installed after manufacture, so choose carefully. The -IR suffix installs a Gold Mirror at no charge.

See the "Mechanical Drawing" tab for dimensions. Also see the "Application Notes" tab on the home page menu for important operational issues including: thermal mounting, user-built circuits, polarization, lifetime, jitter, vacuum operation, and contamination. See the "Accessories" tab for useful system components.

Special Considerations for this model is Thermal Mounting. Of all models, the LS500 dissipates the most power in order to achieve fast open/close switching performance. Review requirements carefully as the LS200 will often achieve most LS500 performance parameters other than repetition rate, but at much lower power dissipation. Consider chiller plate accessory with loads over 50 W combined, electrical and optical.

Restricted use for this model includes careful damage threshold calculations. High mechanical integration makes optics repair costly.

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| Recommended Controller to Achieve Specs | CX2250 |
| Aperture Diameter | 2.3 mm |
| Typical Beam Diameter used for Specs | 1.2 mm |
| Maximum Shutter Repetition Rate | 500 Hz |
| CW and Quasi-CW Optical Power Handling | 50 W, aligned polarization |
| Typical Damage Threshold, Aligned Polarization | 1.2 J/cm ² |
| Delay to Begin Opening after Command Open | 800 microsec |
| Opening Time Switching Speed | 200 microsec |
| Delay to Begin Closing after Command Close | 800 microsec |
| Closing Time Switching Speed | 200 microsec |
| Minimum FWHM Exposure Capability | 800 microsec |
| Thermal Power Dissipation Holding Open | 40 W |
| Thermal Power Dissipation, Repetitive Cycling | 65 W @ 200 Hz |
| Nominal Magnetic Winding Impedance | 11 Ohms |
| Cable/Wire Type and Length | 10 Feet, PVC Jacket Cable |
| Mounting Surface for Thermal Sinking | Complete Base Plate Only |
| Position Sensors | Not Available |
| Weight | 16 Oz |
| Size (see mechanical drawing) | 2.0 x 2.8 x 1.3 Inches |