

Model LS055S3W8 Laser Shutter Specifications

This model is designed for use as a high power safety and process shutter suitable for average power up to 200 W and damage thresholds to 1 J/cm². YAG, Ti:Sapphire, and CO₂ lasers are typically configured with this shutter. This model is inherently fast switching at an electrically efficient level, with large aperture, and should be considered a top choice for continuous processing or pulse gating from trains up to 10 Hz.

Compatible system controllers include user circuits, CX3000B, CX1100, CX2450B.

Options are available using a suffix code system. Many options cannot be installed after manufacture, so choose carefully. Default mirror is over-coated aluminum, good for UV through 3 microns. Choose the -IR suffix for 700 nm through 3 microns. Choose the -C2 suffix for CO₂ use exclusively. Sensor options include -K2 for logic TTL position sensors, or -K2M for mechanical micro-switches. For X-Ray use and options, contact our staff. Choose -P suffix for high energy, low rep rate (<50 Hz) Q-switched lasers.

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 include care to manage thermal loads from optical dumping. Above 50 W, it is recommended to mount shutter base to a chiller plate (see Accessories). Overheating will damage shutter.

Restricted use for this model include wavelength range of optics, denoted by suffix, and adherence to damage threshold specs. The substrate behind the mirror surface is robust, but will have finite life if damage threshold specs are exceeded for extremely long periods.

Recommended Controller to Achieve Specs	=	User Circuits, Our Controllers
Aperture Diameter	=	12.0 mm
Typical Beam Diameter used for Specs	=	9.0 mm
Maximum Shutter Repetition Rate	=	5 Hz
CW and Quasi-CW Optical Power Handling	=	100 W Unpolarized, 200 W Polarized Some Wavelength Restrictions
Typical Damage Threshold, Aligned Polarization	=	J/cm ²
Delay to Begin Opening after Command Open	=	10 ms
Opening Time Switching Speed	=	20 ms
Delay to Begin Closing after Command Close	=	10 ms
Closing Time Switching Speed	=	20 ms using CX3000B
Minimum FWHM Exposure Capability	=	40 ms using CX3000B
Thermal Power Dissipation Holding Open	=	5 W
Thermal Power Dissipation, Repetitive Cycling	=	15 W @ 5 Hz
Nominal Magnetic Winding Impedance	=	20 Ohms
Cable/Wire Type and Length	=	10 Ft Cable, PVC Jacket
Mounting Surface for Thermal Sinking	=	Base Plate Only
Position Sensors	=	Options, K2 or K2M
Weight	=	1 lb.
Size (see mechanical drawing)	=	2.40 x 3.50 x 3.50 Inches