

Laser Mechanical Shutter

Up to 300W, 30ms response speed, 3Hz repetition



DATASHEET

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The NMLS Series Laser Mechanical Shutter functions as a laser safety interlock for laser processing systems, employing a precision torque motor to position a high-power dielectric mirror at approximately 45° to the laser beam path. In the default (unpowered) state, the mirror redirects the laser beam into an integrated beam dump heat sink for safe energy dissipation. When activated, the shutter opens to allow the laser beam to pass through. The unit features a standard 5 mm aperture compatible with most beam sizes and supports various dielectric mirror coatings optimized for wavelengths including 450 nm, 550 nm, 1060 nm, 1550 nm, and 2000 nm (CO₂). The standard configuration is an OEM package with an electrical control connector, while an optional version includes a built-in driver with BNC TTL input and a 24 V power supply for plug-and-play operation. The NMLS incorporates position sensors for both open and closed states and generates an alarm signal if the position detection fails. For long-term operation, the shutter must be mounted on a heat sink to effectively dissipate absorbed laser energy.

Features

- Compact Package
- High Power up to 300W
- Driver Included Package
- Fast Response 40ms

Applications

- Laser Safety Interlock
- Laser Pulse Gating
- Thin Zones

Specifications

Parameter	Min	Typical	Max	Unit
Operating Wavelength	450	1060	20000	nm
Optical Power	10	50	300	W
On/Off Time*		30	40	ms
Delay from Electrical Trigger*		10		ms
Laser Damage Threshold		15	0.8	J/cm ²
Open Voltage*		24		V
Hold Open Voltage*		7		V
Actuator Copper Coil Resistance		8		ohms
Actuator Inductance		25		mH
Weight		1		lb
Operating Temperature Range	0		+75	°C
Storage Temperature	-40		+85	°C

Notes:

*.Mounting Orientation will affect amount of power used to open. Not designed for upside-down mounting.

Note: For a polarized input light version, the isolation is optimized to block the light reflection of the same polarization. Although lights of other polarizations may also be blocked, the extinction may be poor. PM isolators can be specially made to block backward propagating lights of all polarizations. PM isolators can also be made with a light polarizing function.

Warning: This is an OEM module designed for system integration. Do not touch the PCB by hand. The electrical static can kill the chips even without a power plug-in. Unpleasant electrical shock may also be felt. For laboratory use, please buy a Turnkey system.

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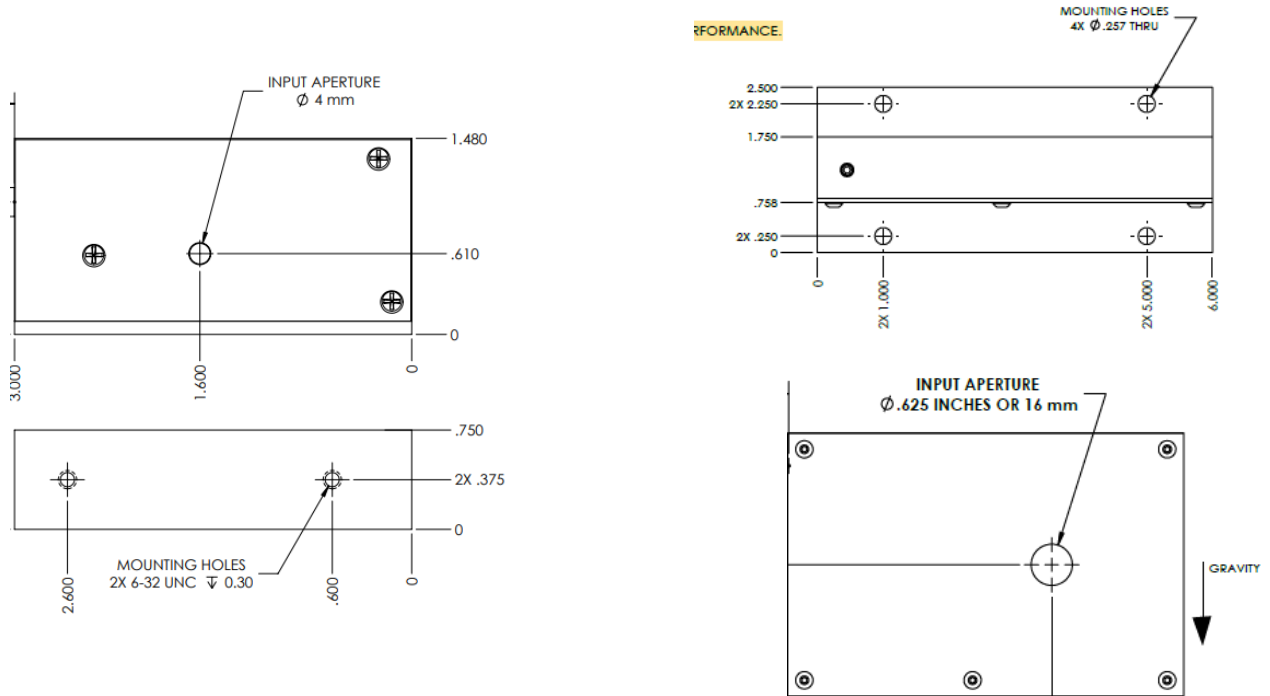
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Mechanical Dimensions (mm) 50W and 300W



Electrical Pin Definition

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information

Prefix	Laser Power	Wavelength	Aperture	Driver	Configuration
NMLS-	20W = 02 100W = 10 300W = 30 Special = 00	1060nm = 1 532nm = 5 450nm = 4 1550nm = C 2000nm = 2	5mm = 05 10mm = 10 15mm = 15	None = 1 Yes = 2	Standard = 1 Special = 0