

Motorized Slit Diaphragm

The MSD12C DATASHEET, February 2026



Motorized Slit Diaphragm MSD12C



The MSD12C is a precision motorized slit diaphragm controlled via PC through an intuitive graphical user interface (GUI). Its unique design features independently adjustable X and Y stainless steel blades that form a center-oriented slit aperture while maintaining alignment with the optical axis and the internal SM1-threaded aperture. The diaphragm aperture remains precisely centered relative to the external circular diaphragm across the full adjustment range from 0 to 12 mm. Independent blade movement enables continuous aperture and magnification control without compromising optical centricity. The slit blades are manufactured from stainless steel, making the device suitable for both imaging applications and high-power laser beam operation. The MSD12C provides a motion

resolution of 10 μm and transitions from fully closed to maximum aperture in approximately 3 seconds. The motorized slit diaphragm is designed for compatibility with both stand-alone operation and standard 60 mm cage systems, including systems such as those from Thorlabs.

Slit Diaphragm Specifications

Specification	Value
Movement resolution	10 μm
Built-in Controller	No
Controller supplied	GSMC
Repeatability	$\sim 10 \mu\text{m}$
Mechanical Backlash	$< 50 \mu\text{m}$
Encoder Type	None
Closing Time (Max to Min)	$\sim 10 \text{ sec}$
Guide Type	Plain bearing
Motor Steps Per Revolution	20
Limit or Home Sensing	Optical switch
Axes of Motion	2
Mounting Interface	M3 threaded holes
Optics (objective) Mounting Interface	M25 x 0.5
Vacuum Compatible	No
RoHS Compliant	Yes
CE Compliant	Yes
Power supply	12 VDC 1.5 A
Communication interface	USB

Geola Digital, UAB
Naugarduko 41, LT-03227,
Vilnius, Lithuania, EU

Phone: +370 521 32737
Email: info@geola.com
www.geola.com

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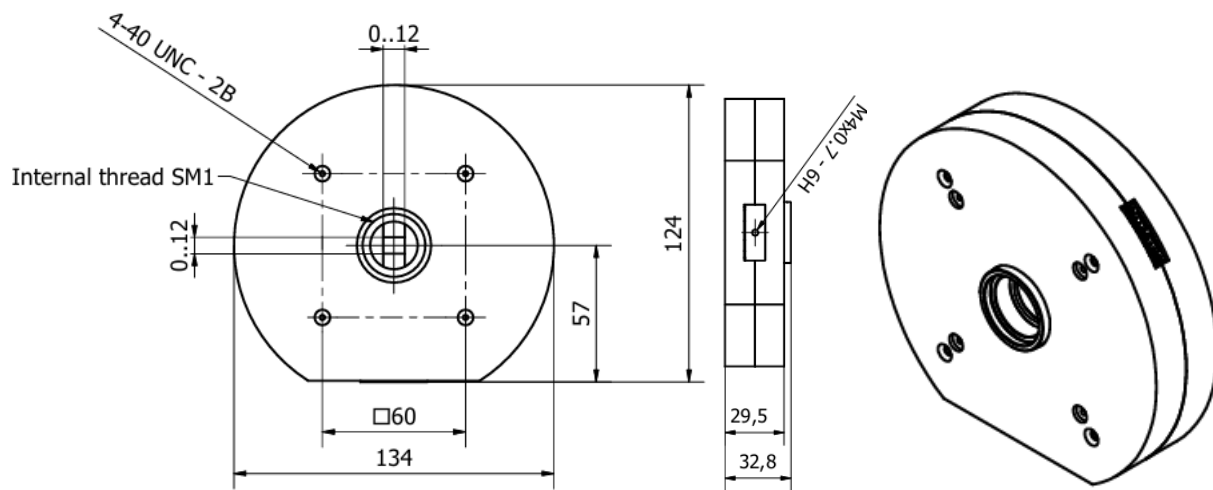


Motorized Slit Diaphragm Features

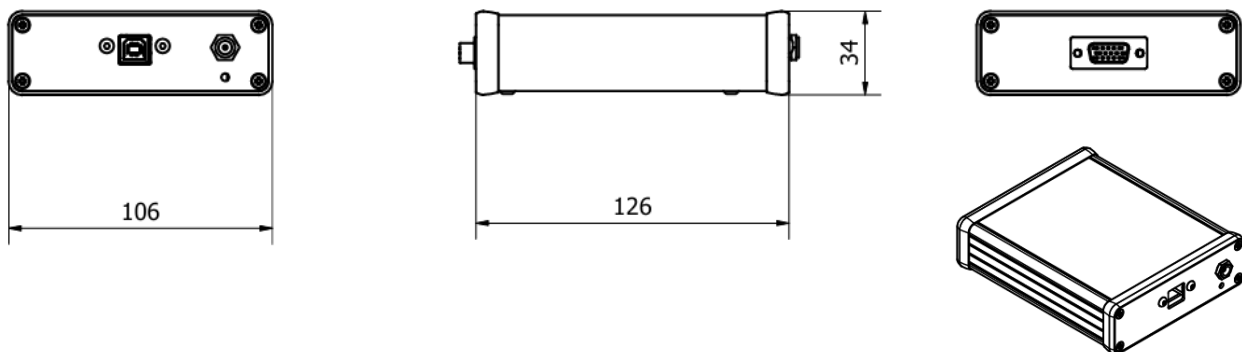
- X & Y **independent** adjustable slits
- Square or rectangle – always **centered**
- **Compatible** with standard **60mm optical cage system**
- Motorized adjustment ranges from **0 to 12 mm**
- Aperture adjustment **precision ~10 μm** within full adjustment range (repeatability)
- Housing contains **SM1-threaded** hole for mounting external optics
- **USB** connection interface for easy PC control
- A customized aperture size can be designed **on request**.

Dimensions

The updated MSD12C housing has one M4 threaded hole for mounting to general lab post or desired setup.



The GSMC Controller for MSD12C diaphragm



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