

CHAPTERS

Coherent Sources

Incoherent Sources

Quantum Electronics

Drivers/Mounts

Accessories

SECTIONS

Laser Glasses

Laser Safety Signs

Safety and Blackout

Beam Blocks

Alignment Tools

ESD Protection

# Beam Shutter



Post Assembly  
Not Included

The SH05 Beam Shutter utilizes a rotary, electromechanical actuator to provide sub-millisecond shutter operation. In general operation, the shutter remains in a closed position and then opens with a pulse control signal. As long as the control voltage to the shutter remains high, the shutter will stay open; however, if the voltage drops, the shutter will close, providing inherent fail-safe operation. An optical sensor detects the shutter blade position in the housing to confirm the state of the shutter position, making it ideal in applications where a laser safety lockout is required. The rate at which the device is opened can be controlled, but the shutter is not meant for precise timing purposes.

The input aperture of the SH05 is threaded with Thorlabs' SM05 (Ø0.535"-40) thread to interface with all of our SM05 lens tubes (see page 128). The SH05 is imperial and metric compatible and comes with a 10' (3 m) cable to connect the shutter directly to our SC10 or TSC001 controller.

Our SC10 and TSC001 controllers for the SH05 include an "interlock mode" incorporated into the control logic of the controller. The SH05 can also be used with a third-party controller.

## SH05 Beam Shutter Features

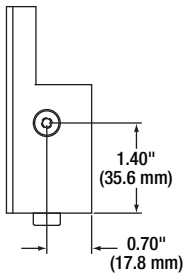
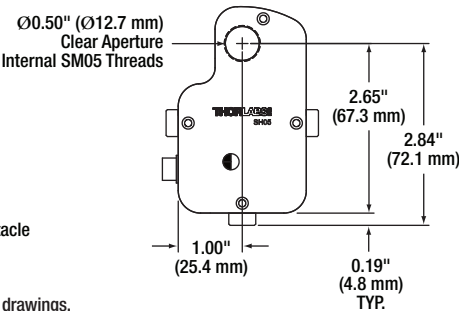
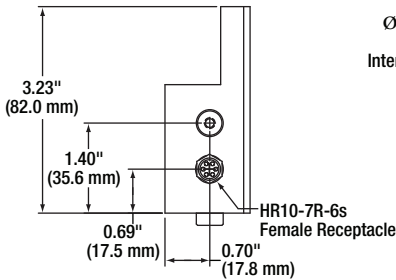
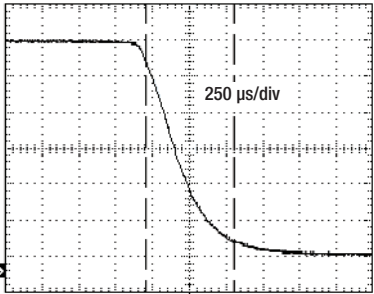
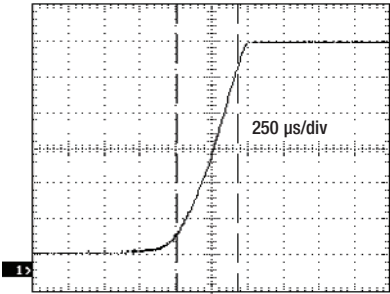
- Closed Resting State
- Fast Response
- SM05-Threaded (0.535"-40) Aperture
- Ideal for Laser Safety Applications
- Passive Closure Mechanism
- Compatible with the SC10 and TSC001 Controllers (See Next Page)

ITEM #	SH05
Shutter Activation Time to Open	<1 ms (Typical 20 V Pulse)
Shutter Activation Time to Close	<1.5 ms (Spring Activated)
Actuation Pulse	8 V to 50 V (Time Dependent)
Holding Voltage	8 V to 12 V
Aperture	Ø1/2" (Ø12.7 mm)
Initial State	Normally Closed
Maximum Pulse Rate	10 Hz Steady, 25 Hz Burst
Duty Cycle	Optimum @ 10 Hz = 40%



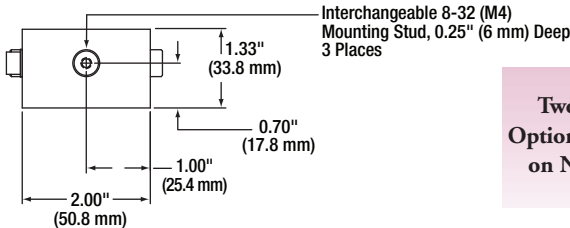
Included Plug & Play Cable is  
Compatible with our SC10 &  
TSC001 Shutter Controllers

## Shutter Rise and Fall Times Using SC10



Please refer to our website for complete models and drawings.

Beam Shutter Specifications (When Not Using Thorlabs' Controller)	
ITEM #	SH05
Solenoid Coil Resistance	28 Ω
MAX SOLENOID POWER (20 °C)	
Steady State	4 W @ Continuous
50% Duty Cycle	8 W @ 100 s
25% Duty Cycle	16 W @ 36 s
5% Duty Cycle	80 W @ 2.5 s
Maximum Applied Solenoid Voltage	<12 VDC



Two Driver  
Options Featured  
on Next Page

ITEM #	\$	£	€	RMB	DESCRIPTION
SH05	\$ 438.00	£ 315.36	€ 381.06	¥ 3,490.86	Ø1/2" Aperture Beam Shutter