

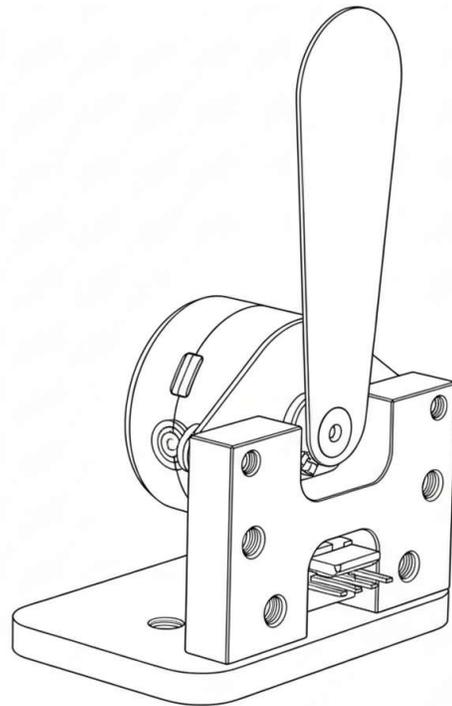
## SH-65 Low Vibration Shutter

The SH-65 low-cost, small size shutter/chopper is an ultra-low vibration device that does not create shock or vibrations. It is useful when working on an optical table and is suitable in systems where a vibration free environment is needed. The shutter/chopper is easy to operate and is valuable when integrated into an OEM product.

The device consists of a 0.010" thick aluminum black anodized blade mounted on a motor with a limited rotation angle to fit a 0.65" (16mm) aperture. The blade is also available in a bright nickel finish. Other thicknesses and finishing types are available. The total swing of the blade from one end position to the other end position is 30 degrees. Transition from one position to the other takes 10 mSec total. Transition is smooth; no clicking noise, no hard stops, and with minimal shock or vibration. The shutter can also be used as a low frequency optical chopper at frequencies from DC to 25Hz

### FEATURES AND ADVANTAGES

- Ultra low-vibration shutter
- Aperture size: 0.65" (16mm) dia., boxed version aperture size: 0.56" (14mm) dia.
- No clicking or knocking noise (no hard stop)
- Does not create shock and vibration
- 10 mSec response time
- Can be used as a low frequency chopper
- DC to 25 Hz frequency response
- Can be stopped in the OPEN or CLOSE position
- Long life: 100 million cycles min.
- Jitter free operation
- Dark blade, bright optional
- Low cost
- Simple to operate
- Easy to integrate into OEM products



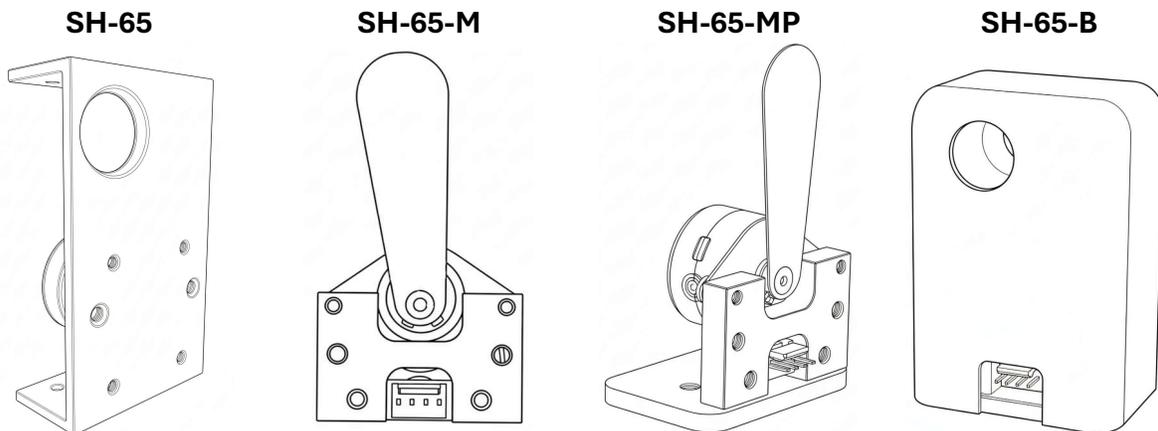
# SH-65 Low Vibration Shutter

## SPECIFICATIONS

<b>Aperture size</b>	0.65 inch (16 mm) dia.
<b>Frequency range</b>	DC to 25 Hz
<b>Response time</b>	10 mSec, open to close position or vice-versa
<b>Shutter weight</b>	60 grams, configuration dependent
<b>Blade thickness</b>	0.01 inch standard, configurable
<b>Cable length</b>	12 inch (30 cm) length (standard)
<b>Connector</b>	Molex 4-pin header PN 22-27-2041 or equivalent
<b>Operating temperature</b>	0 to 65 °C

## OPTIONS

<b>-M (Mount)</b>	Shutter comes with a mounting plate and allows horizontal and vertical mounting.
<b>-MP (Mounting Plate)</b>	Shutter includes a mounting plate for horizontal and vertical mounting directly to an optical table.
<b>-B (Box)</b>	Shutter is boxed in an aluminum box with a 0.56" (14mm) through hole.
<b>-BARE</b>	Shutter blade is bare aluminum.
<b>-BRIGHT</b>	Shutter blade is bright nickel-plated aluminum.



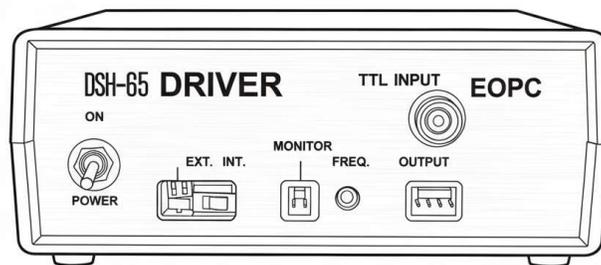
# SH-65 Low Vibration Shutter

## CONTROL SIGNALS

The SH-65 shutter uses a 2-phase stepper motor coupled to a 4-pin male Molex connector (PN 22-27-2041 or equivalent) for signal transmission. Pins 1 and 2 are connected to the first 120Ω coil, and pins 3 and 4 are connected to the second 120Ω coil.

## DRIVER

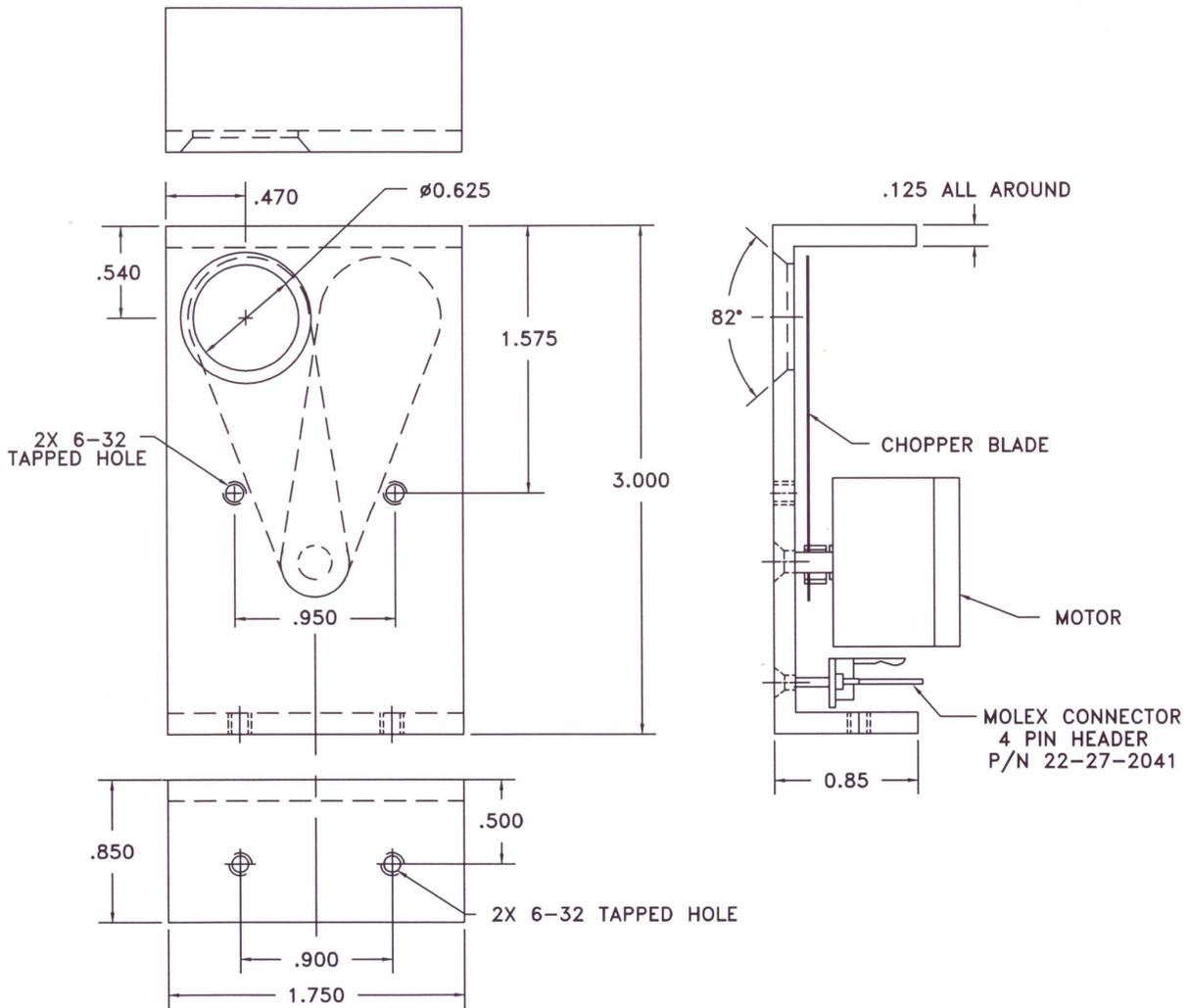
EOPC manufactures a DSH-65 driver specifically designed to control the SH-65 shutter. The driver is calibrated during manufacturing to minimize shutter vibration. The driver is easily operated using the internal or external mode switch.



# SH-65 Low Vibration Shutter

## DRAWINGS

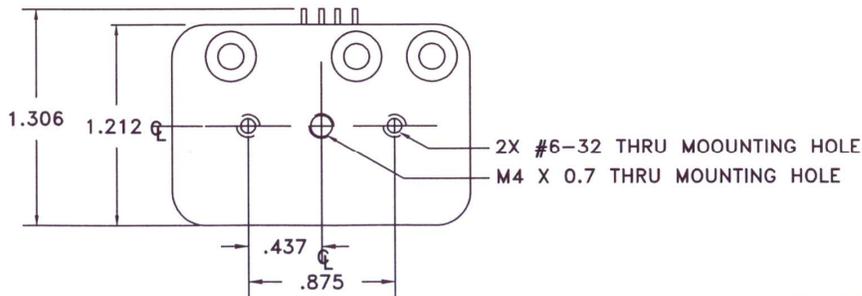
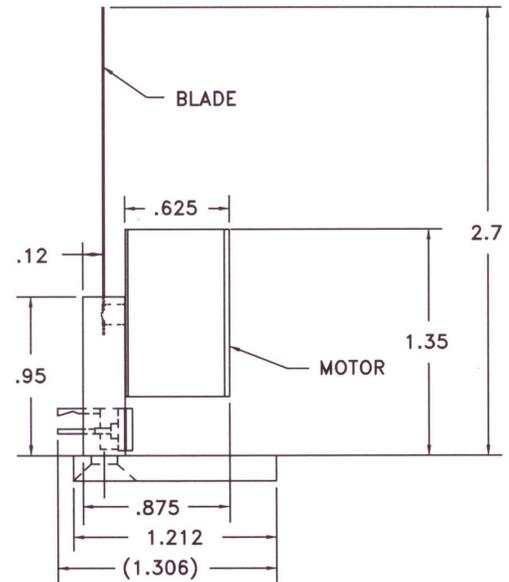
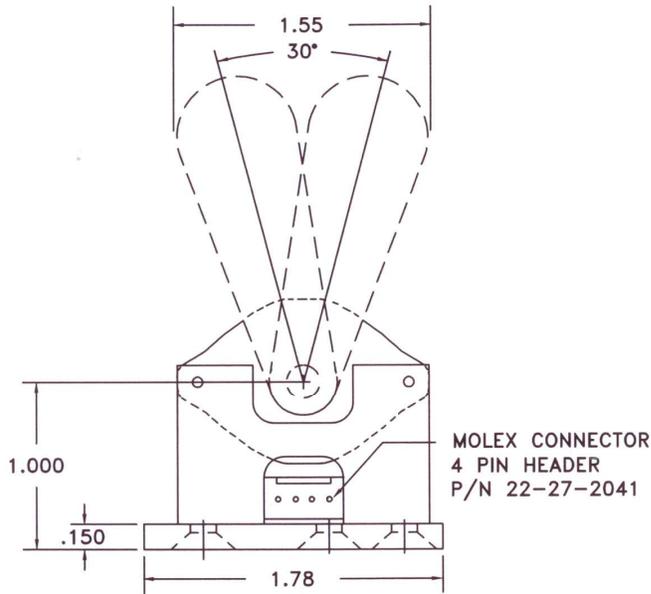
### SH-65





# SH-65 Low Vibration Shutter

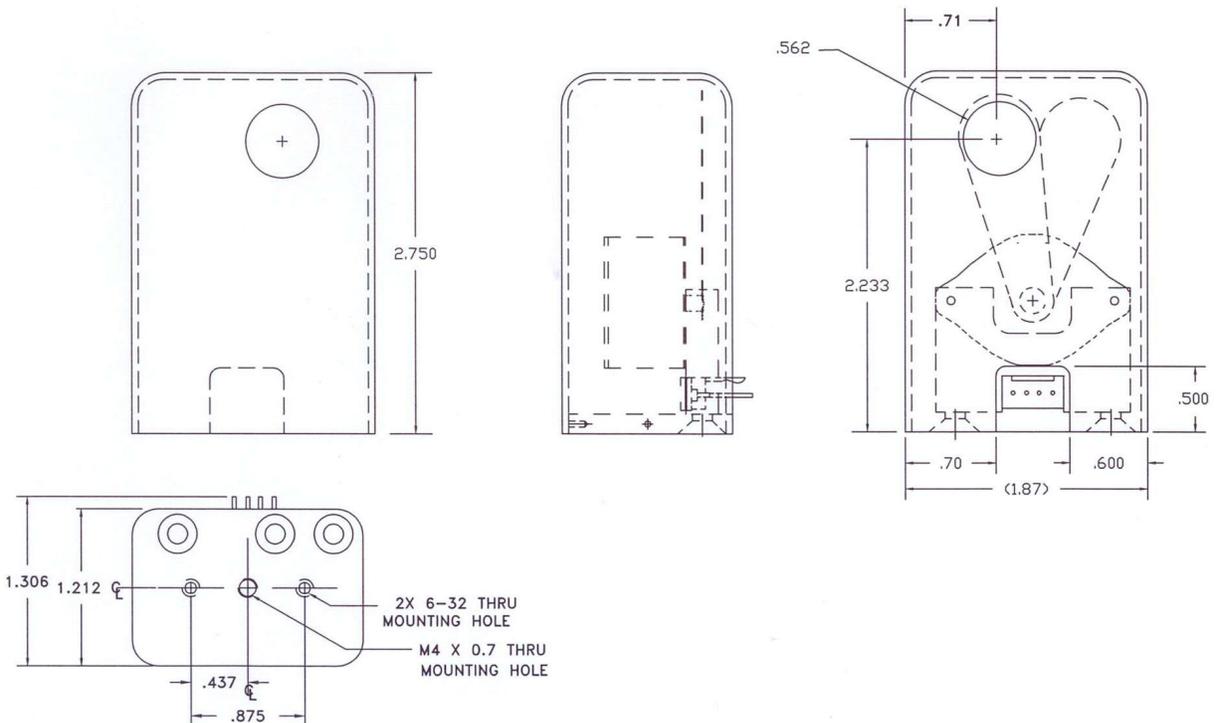
SH-65-MP



DIMENSIONS ARE IN INCHES

# SH-65 Low Vibration Shutter

## SH-65-B



## ORDERING INFORMATION

TYPE [SH-65]; MOUNTING OPTIONS [-M, -MP, -B]; BLADE OPTION [-BARE, -BRIGHT]

Example 1: PART NO. SH-65-M-BRIGHT with DSH-65-110-BNC. This part number specifies the model SH-65 shutter, with mounting plate bright blade options, and with a cased driver 5.3" x 5.3" x 2" operating from a line voltage of 110 VAC with a BNC connector for TTL input frequency.

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# SH-65 Low Vibration Shutter

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