

# Uniblitz® DSS35B

35mm Bi-Stable Optical Shutter



## Overview

The Uniblitz DSS35B is a 35mm bi-stable optical shutter that withholds an extremely low-profile construction. The device contains no external protruding components, making it very slim and flexible for system integration. The inherent reliability of the DSS35B comes from the fact that it contains only two moving parts: the drive ring and the blades. It is guaranteed to operate for 5,000,000 operations.

Bi-stable shutter devices, like the DSS35B, require no power to hold the blades in either the open or closed state.

**Need Support?** Please [visit our website](#) or email us at [info@uniblitz.com](mailto:info@uniblitz.com).

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## Key Features

- 35mm aperture
- Bi-stable operation
- **5M1P** and **5M1SM** adapters included
- **RoHS Compliant**
- Transfer time on opening:  
**23.0 milliseconds**
- Total opening time:  
**42.0 milliseconds**
- Configured for the **VED24 Shutter Driver**

# Product Options

DSS35B 2 3 4

Ex: DSS35B1T1

**1** Shutter Series:

- **DSS35B**

**2** Housing:

- **1:** Un-housed

**3** Blade Coating: <sup>1</sup>

- **T:** Low Energy (Teflon®)
- **ZM:** High Energy (AlMgF2) <sup>2</sup>

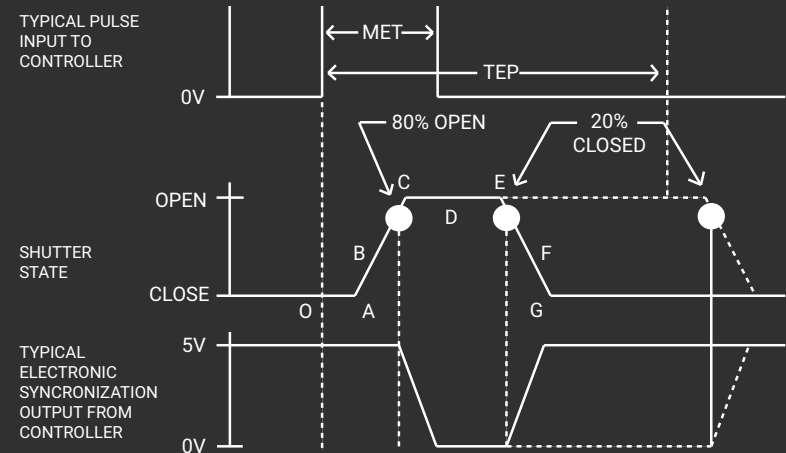
**4** Electronic Sync:

- **1:** Included

<sup>1</sup> Other blade coating options may be available by special order.

<sup>2</sup> Input side only; Teflon® coating is on opposite side to protect shutter blade surface. Light source must be input to the reflective side only.

# Shutter Timing



**DSS35B** (w/ Uniblitz driver and Teflon® coated blades) Time (msec.)

|       |   |       |
|-------|---|-------|
| O - A | Delay time on opening after current applied | 19.0  |
| A - C | Transfer time on opening                    | 23.0  |
| O - C | Total opening time                          | 42.0  |
| C - E | Min. dwell time with min. input pulse       | 23.5  |
| B - F | Min. equivalent exp. time                   | 45.0  |
| D - E | Delay time on closing after current applied | 18.0  |
| E - G | Transfer time on closing                    | 20.0  |
| A - G | Total window time                           | 66.0  |
| MET   | Min. exposure time                          | 45.0  |
| TEP   | Typical exposure pulse                      | >45.0 |

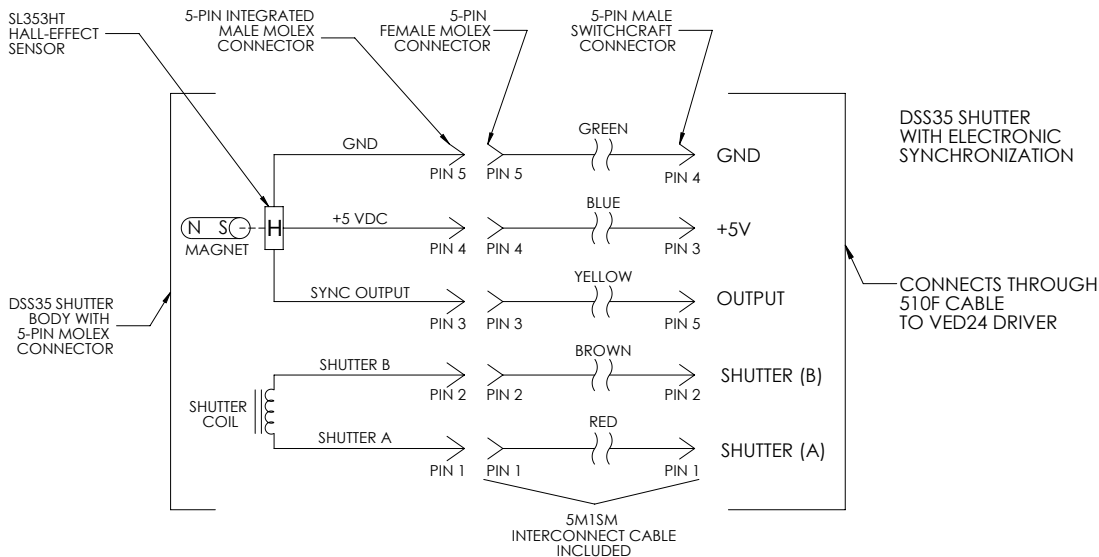
# Technical Specifications

| Coil Resistance | Voltage to Open        | Hold Voltage |
|-----------------|------------------------|--------------|
| 8 Ω             | +10.7 VDC <sup>1</sup> | N/A          |

<sup>1</sup> Peak voltage as provided by the **VED24 Driver**

<sup>2</sup> (Continuous/Burst) Continuous frequency rating specified at shutter's minimum exposure pulse. Burst frequency rating specified for four (4) seconds maximum with one (1) minute minimum between bursts.

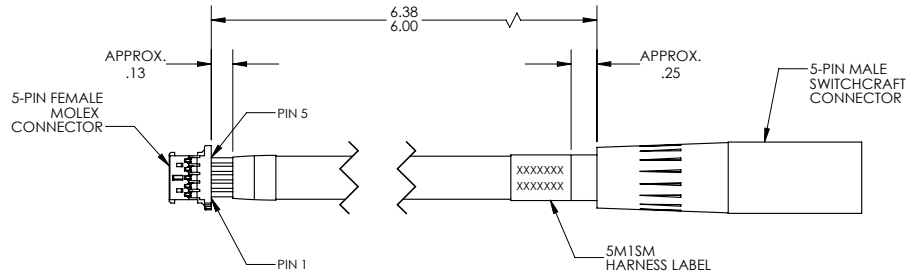
| Series | Weight            | Operating Temp. | Max. Opening Bounce | Max. Closing Bounce | Max. Freq. of Operation <sup>2</sup> | Number of Shutter Blades |
|--------|-------------------|-----------------|---------------------|---------------------|--------------------------------------|--------------------------|
| DSS35B | 1.92 oz (54.50 g) | -10 - +80 °C    | 15%                 | 5%                  | 1.5 Hz / 3 Hz                        | 5                        |



The synchronization system for DSS35B shutter devices incorporates a small magnet mounted to the driving mechanism and a Hall effect sensor. When the device achieves approximately 80% of full open, the magnet causes the Hall effect sensor to change state, producing a signal to indicate that the shutter has switched to the active state. Shown to the left is the DSS35B's shutter schematic which incorporates this electronic synchronization system.

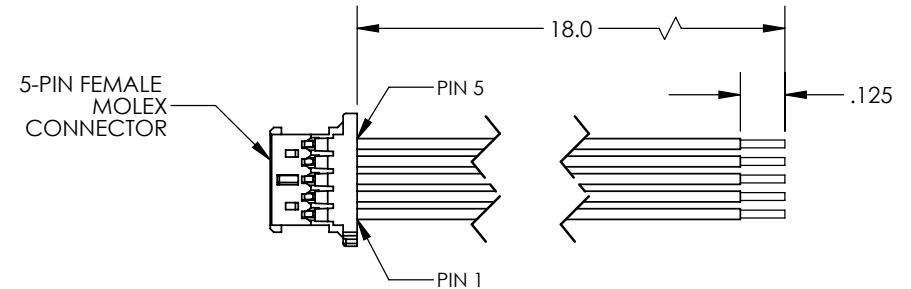
# Technical Specifications - Included Adapters

## 5M1SM



| Molex (F) Pin | Signal             | SwitchCraft (M) Pin |
|---------------|--------------------|---------------------|
| 1             | Shutter (+)        | 1                   |
| 2             | Shutter (-)        | 2                   |
| 3             | Sync Output (+)    | 5                   |
| 4             | +5 VDC Reg. (Sync) | 3                   |
| 5             | Ground             | 4                   |

## 5M1P



| Molex (F) Pin | Wire Color | Signal             |
|---------------|------------|--------------------|
| 1             | Red        | Shutter (+)        |
| 2             | Brown      | Shutter (-)        |
| 3             | Yellow     | Sync Output (+)    |
| 4             | Blue       | +5 VDC Reg. (Sync) |
| 5             | Green      | Ground             |

# Technical Drawings - DSS35B

