

Uniblitz[®] CS90

90mm Uni-Stable Optical Shutter

Overview

The Uniblitz CS90 has been designed to provide accurate, repeatable exposures for a wide variety of applications such as telescopy and aerospace. The slim form-factor provides a very large 90mm aperture that can be inserted into a 7.00 inch diameter housing. The CS90 is available in a housed or an un-housed configuration for OEM applications.

Uni-stable shutter devices, like the CS90, require power to hold the blades in the open state.

Key Features

- Large 90mm aperture
- Configured for the [VCM-D1 Shutter Driver](#)
- **RoHS Compliant**
- Transfer time on opening: 46.0 milliseconds
- Transfer time on closing: 66.0 milliseconds

¹ Actuators wired in parallel. Combined DCR is 12 Ω.

² Voltage level required across actuator coil when held in open position.

³ Dual hold voltage system included in VCM-D1 shutter driver.

Specifications

Primary Acuator Electrical Specifications ¹

Coil resistance	24 OHMS
Voltage to Open	+70 VDC
Hold Voltage (Nominal) ²	+7 VDC / +5 VDC ³

Secondary Acuator Electrical Specifications ¹

Coil resistance	24 OHMS
Voltage to Open	+70 VDC
Hold Voltage (Nominal) ²	+7 VDC / +5 VDC ³

Mechanical Specifications

Weight Unhoused	320.0 g
Weight Housed	680.0 g
Operating Temp.	0 - 80 °C
Max. Opening Bounce	15%
Max. Closing Bounce	5%
Max. Freq. of Operation ⁴	1 Hz / 3 Hz
Number of Shutter Blades	6

⁴ (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.

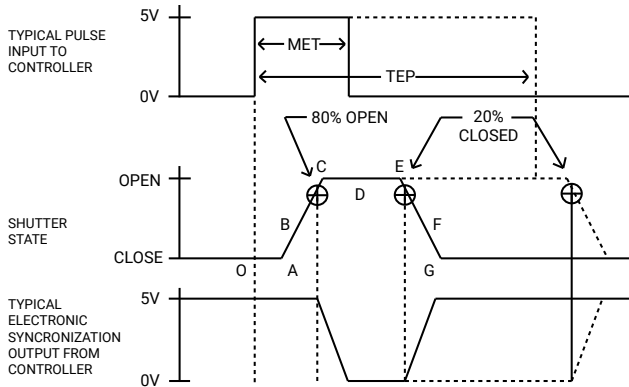


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Shutter Timing Data



¹ Under no circumstances should any type of lubricant be applied to the shutter blade area. Lubricating the shutter blades will likely slow the shutter down and may eventually render it inoperable.

CS90 (w/ VCM-D1 and "T" blades) ¹

Time (msec.)

Parameter	Time (msec.)
O - A	Delay time on opening after current applied 18.0
A - C	Transfer time on opening 48.0
O - C	Total opening time 66.0
C - E	Min. dwell time with min. input pulse 11.0
B - F	Min. equivalent exp. time 64.0
E - G	Transfer time on closing 57.0
A - G	Total window time 116.0
MET	Min. exposure time 70.0
TEP	Typical exposure pulse >100.0

Product Options

CS90 **2** **3** **4** **5** **6** - **7** - **8**

Ex: CS90HS3T0-EC-103

1 Shutter Series:

CS90H

2 Voltage:

S: Use with VCM-D1

E: Use with D880C or VED24

3 Housing:

1: Un-Housed

3: #3 Housing

4 Blades: ²

T: Low Energy (Teflon®)

5 Electronic Sync:

0: Omitted

1: Included

6 Connector:

L: 18" Flying Leads

Leave blank for 7-pin Wire Pro connector

7 Encapsulated Coil: ³

EC: Included

Leave blank if not required

8 Mount: ⁴

103: Mounting Ring

Leave blank if not required

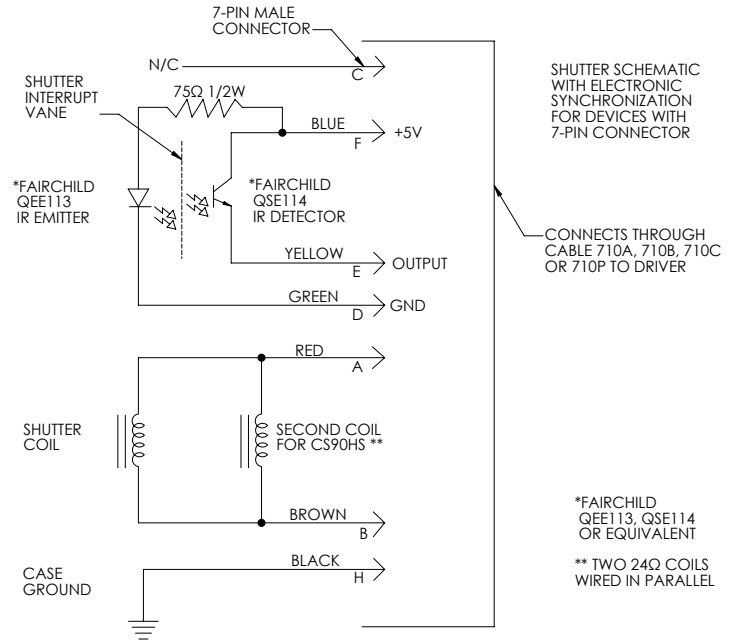
² Other blade coating options may be available by special order.

³ With this option, the CS90's two (2) coils will be encapsulated.

⁴ Mount is only compatible if #3 housing is optioned as well.

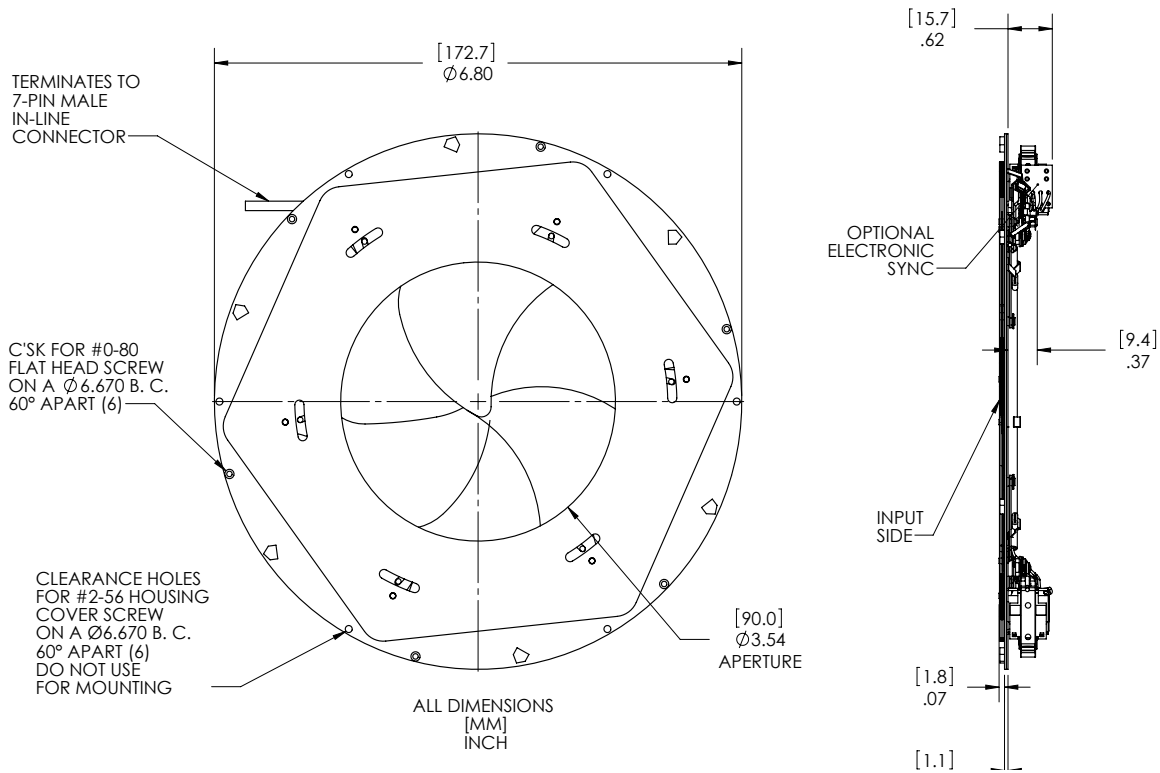
Electronic Sync.

The electronic synchronization system provides a feedback signal (through the driver utilized) after the shutter transfers to the open state. The system incorporates an infrared emitting diode, an infrared sensitive detecting transistor, and an interrupting vane. The vane is attached to the shutter so as to block the light path between the emitter and detector in the closed position. When the shutter transfers to the 80% open position, the vane is removed from the infrared light path, allowing the emitter to switch the detector to the active state. For the CS90, this system uses a similar activation flag attached to the mechanism, which triggers a reflective emitter/detector device. **No connection to the designated synchronization pins when no electronic sync. is selected.**

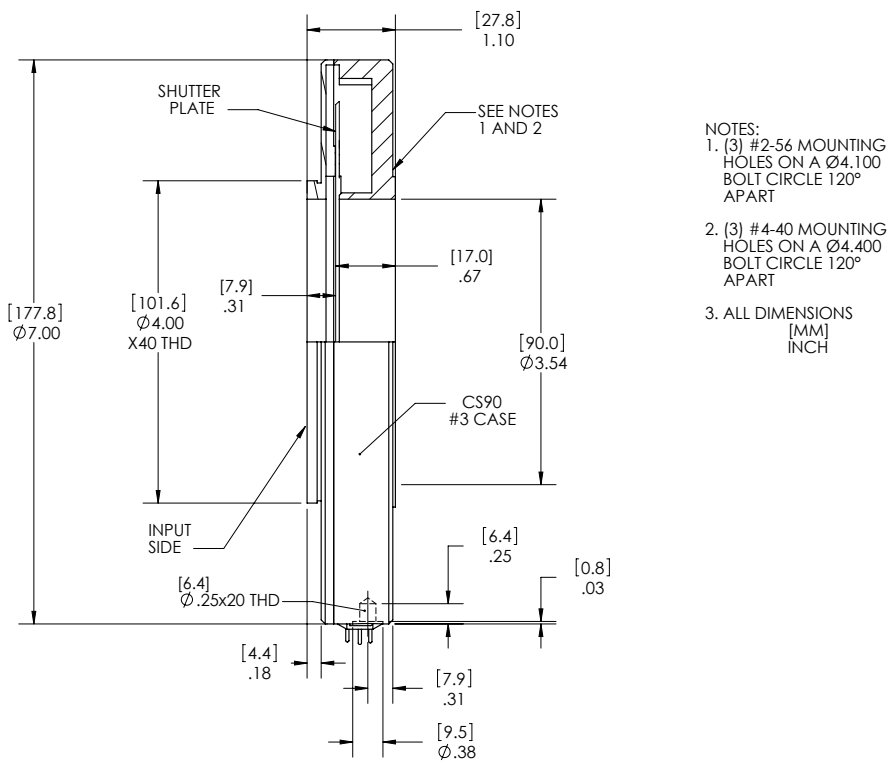


Uniblitz® CS90 Technical Drawings

Un-Housed



Housed



Uniblitz® CS90 Technical Drawings

Connector Layout

