Datasheet

Uniblitz® LS3

3 mm Uni-Stable Laser Shutter



Overview

The Uniblitz® LS3 is a high-performance laser shutter, ideal for precision exposure control, laser switching and other applications that benefit from the precise, repeatable characteristics of the LS shutter series. These include low-level laser chopping, and pulse gating, selection and modulation to 200 Hz.

Uni-stable shutter devices, like the LS3, require power to hold the blades in the open state (though the device can be custom-configured for “normally open” operation).

Key features

- ✓ 3 mm aperture
- ✓ Laser energy rating: 5 W/mm^2 (with ZM blades)
- ✓ Configured for the VCM-D1 driver
- ✓ Transfer time: 0.5 ms opening, 0.6 ms closing
- ✓ RoHS compliant

Specifications

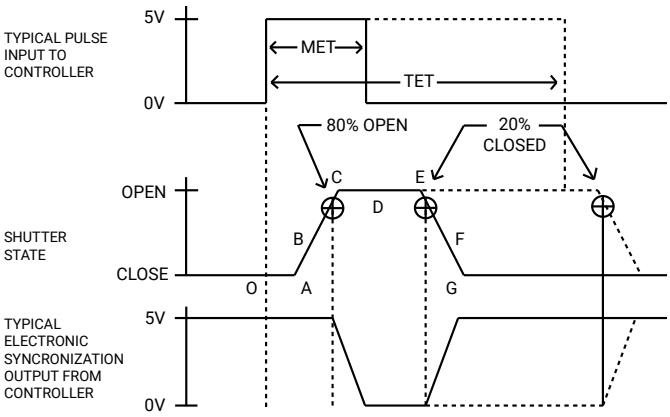
Electrical	
Coil resistance	48 Ω
Voltage to open	+65 VDC
Hold voltage (nominal)[1]	+5 VDC

Mechanical	
Weight, housed	210.0 g
Operating temperature	0–80 °C
Max. opening bounce	15%
Max. closing bounce	5%
Max. frequency[2]	50 Hz / 200 Hz
Number of shutter blades	2

1 Voltage across the actuator coil while holding the shutter open.
2 Continuous: at the shutter’s minimum exposure pulse. Burst: 4 s maximum, with at least 1 min between bursts.

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Shutter timing data[2]



1 Measured with the VCM-D1 and Teflon® blades.

2 Never lubricate the blade area. It slows the shutter and can make it inoperable.

Segment	Description	ms[1]
O–A	Delay time on opening after current is applied	1.0
A–C	Transfer time on opening	0.5
O–C	Total opening time	1.5
C–E	Min. dwell time with min. input pulse	0.8
B–F	Min. equivalent exposure time	1.5
E–G	Transfer time on closing	0.6
A–G	Total window time	1.9
MET	Minimum exposure time	2.0
TET	Typical exposure time	>2.3

Product options

LS3 2 3 4 5 6 – 7 – 8

Example: **LS3S2ZM0-EC-21**

2	**Driver compatibility**
S	Use with VCM-D1, VMM-D3/D4
E	Use with V880, VED24, or D880C
3	**Housing**
1	Un-housed
2	#2 housing
4	**Blades**[1]
T	Low energy (Teflon®)
ZM	High energy ($AlMgF_2$)[2]
Z	High energy (AlSiO)[2]
5	**Electronic sync**
0	Omitted
1	Included

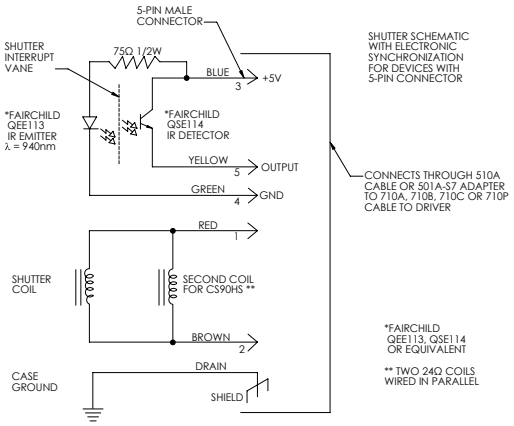
6	**Connector**
L	18 in (457 mm) flying leads
—	Leave blank for 7-pin Wire-Pro connector
7	**Encapsulated coil**
EC	Included
—	Leave blank if not required
8	**Mount**[3]
21	Zeiss Axiovert
24	Olympus BX/IX
27	Nikon
105	C-Mount (male)
106	C-Mount (female)
—	Leave blank if not required

1 Other blade coatings may be available by special order.
2 Input side only; the Teflon® coating on the opposite side protects the blade surface. Light must enter on the reflective side.
3 Mounts require the #2 housing.

Electronic sync

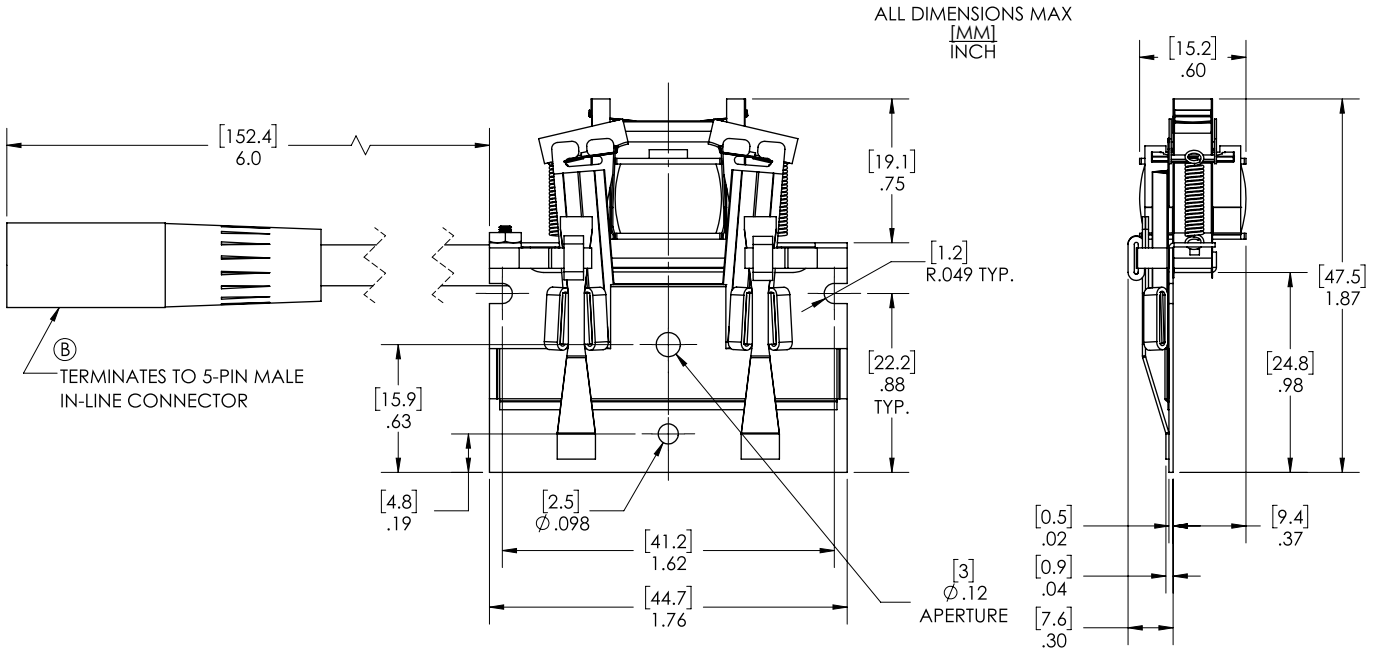
The electronic sync gives a feedback signal (through the driver) once the shutter moves to the open state. It uses an infrared emitting diode, an infrared-sensitive detecting transistor and an interrupting vane: the vane blocks the light path while the shutter is closed and clears it at about 80% open, switching the detector to the active state. On the LS3, a similar activation flag on the mechanism triggers a reflective emitter/detector device.

With the sync omitted, the sync pins are not connected.

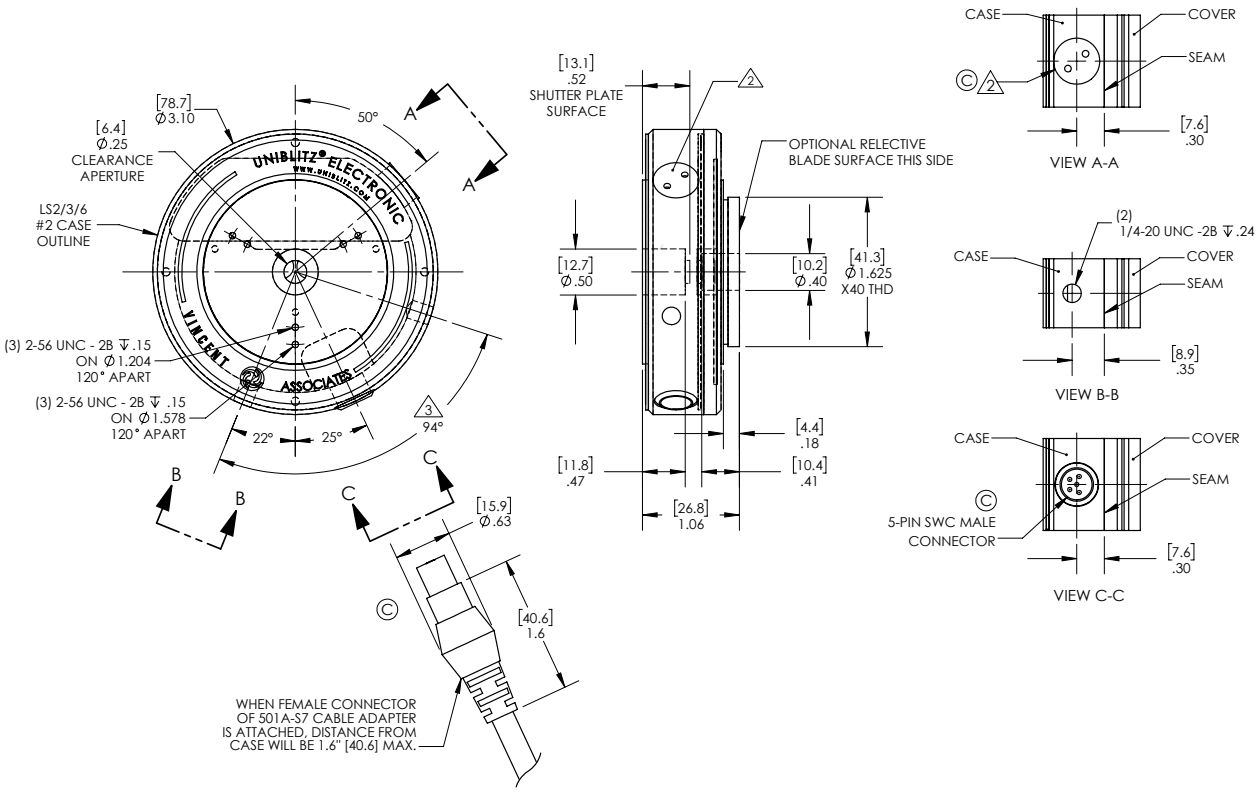


Technical drawings

LS3, un-housed



LS3, connector layout



The 501A-S7 adapter cable (not included) is required for the VMM-D3, VMM-D4, D880C and any VCM-D1 bought before November 2022.