

# CS35 SHUTTER PRELIMINARY SPECIFICATIONS



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## FEATURES

- Small form factor, a 35 mm aperture fits into a 3.33 inch diameter housing!
- Five-bladed design in combination with a new miniature UNIBLITZ<sup>®</sup> actuator, and a state of the art patented damping system provide increased reliability over other designs of this type.
- Reflective blades available for laser and non-coherent light sources "S", "Z" and "ZM" Type.
- Can be driven with our existing VMM/VCM drive units. Special driver not required.
- Available housed or un-housed for OEM applications.
- #100 Mounting Ring available for universal mounting applications.
- Electronic Synchronization System option available.
- Design, accuracy, and reliability that you have come to know as with all other UNIBLITZ products!
- 5-pin female to 7-pin male adapter (501A-S7) included to interface with VCM/VMM controllers (see figure 4).
- Available with 25mm manually variable iris.
- Can be configured normally open.

The CS35 is the fifth release in the new UNIBLITZ<sup>®</sup> CS series. The small form factor allows a 35 mm aperture to be installed into applications not presently accessible with existing UNIBLITZ VS series shutters. As with the CS25, CS45, CS65 and CS90, the CS35 has been designed to provide accurate, repeatable exposures for a wide variety of applications. The small form factor allows a 35 mm aperture to be installed into a 3.33-inch diameter housing (a 30% reduction in overall size from the VS35 series). To increase the unit's flexibility, the shutter can be supplied in an un-housed version for OEM applications or in situations inaccessible to most shutters due to spatial limitations.

The UNIBLITZ<sup>®</sup> CS35 incorporates a new actuator system that can be driven with existing VMM drive units. As an option, the shutter may also be equipped with an electronic synchronization system, to increase the unit's flexibility. It is available in a housed or un-housed OEM version that is electronically programmed to fire specific exposures at precise time intervals. The new shutter's multi-bladed design, combined with its new UNIBLITZ actuator, provides increased reliability over other designs of this type.

When gating high intensity light sources, the CS35 can be equipped with reflective blades. This option protects the shutter blades from the light source's damaging effects by reflecting the energy away from the blade surface. Three standard reflective blade options are available. "S" (reflective stainless steel), "Z" (AlSiO) and "ZM" (AlMgF<sub>2</sub>).

To further enhance the flexibility of the CS35; an optional #100 mounting ring is available to allow the shutter to be easily mounted in many non-specific applications. Additional mounts available can be found in the specific data sheets entitled "MICROSCOPE, VIDEO and UNIVERSAL MOUNTING SYSTEMS" or on-line under "products", "Mounting Systems".

## ELECTRICAL

Coil Resistance	12 ohms
Pulse Voltage to Open	+70VDC
Hold Voltage <sup>1</sup>	+7VDC/+5VDC <sup>2</sup>

## MECHANICAL

Operating Temp.	0°C to +80°C
Max. Opening Bounce	15%
Max. Closing Bounce	5%
Number of Blades	5

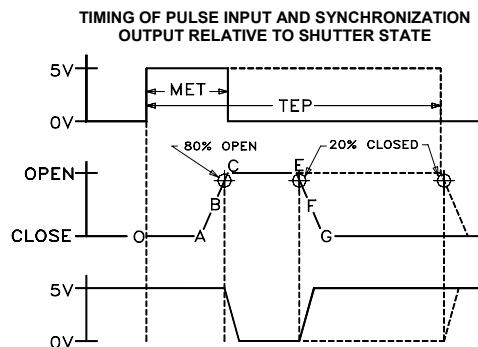
## TIMING

Typical timing values (msec.) using UNIBLITZ drive equipment and measured with UNIBLITZ shutters equipped with standard TEFLON<sup>®</sup> coated shutter blades.

### TYPICAL PULSE INPUT TO CONTROLLER

### SHUTTER STATE

### TYPICAL ELECTRONIC SYNCHRONIZATION OUTPUT FROM CONTROLLER



(Timing in msec.)

O-A Delay time on opening after current is applied	4.0
A-C Transfer time on opening	13.0
O-C Total opening time	17.0
B-F Min. equivalent exp. time	17.5
C-E Min. dwell time with min. input pulse	10.0
E-G Transfer time on closing	30.0
A-G Total window time	53.0

MET: Min. exposure time	20.0
TEP: Typical exposure pulse	>20.0

The question regarding enhancement of shutter speed with the application of user supplied lubricants has been repeatedly asked. It is our experience that lubricating the shutter blades will actually slow the shutter down and eventually render the shutter inoperable. UNDER NO CIRCUMSTANCES SHOULD ANY TYPE OF LUBRICANT BE APPLIED TO THE SHUTTER BLADE AREA.

## PRODUCT OPTIONS (AVAILABILITY APRIL 2005)

CS35S 3 T 0 -100				
APERTURE SIZE	HOUSING	BLADE FINISH	ELECTRONIC SYNCHRONIZATION	MOUNTING OPTIONS
CS35S - 35mm	1 - UNCASED 3 - #3 CASE	T - TEFLON COATED S - POLISHED STAINLESS STEEL BLADES* ZM - AlMgF <sub>2</sub> COATED BeCu BLADES* Z - AISIO COATED BeCu BLADES*	0 - OMIT SYNC. 1 - ELECTRONIC SYNC.	- 17 F-C VIDEO ADAPTER - 21 ZEISS AXIOVERT TYPE - 22 OLD STYLE NIKON TYPE - 23 OLYMPUS TYPE - 24 OLYMPUS TYPE - 26 LEICA TYPE - 27 NIKON TYPE - 28 OLYMPUS IX TYPE - 29 NIKON TYPE - 30 LEICA TRANSMITTED TYPE - 31 NIKON/CONFOCAL TYPE - 32 NIKON 80I TYPE - 100 MOUNTING RING - 105 C-MOUNT ADAPTER (MALE) - 106 C-MOUNT ADAPTER (FEMALE) - 110 T-MOUNT ADAPTER - 128 F-MOUNT ADAPTER (MALE)

\*Input side only, Teflon<sup>®</sup> coating is on opposite side. Intended to protect the shutter blade surface, light source must be input to the reflective side only.

<sup>1</sup>Voltage level required across actuator coil when being held in the open position.  
<sup>2</sup>Dual hold voltage level driver system included in UNIBLITZ<sup>®</sup> VMM/VCM shutter driver.

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## UN-HOUSED STYLE

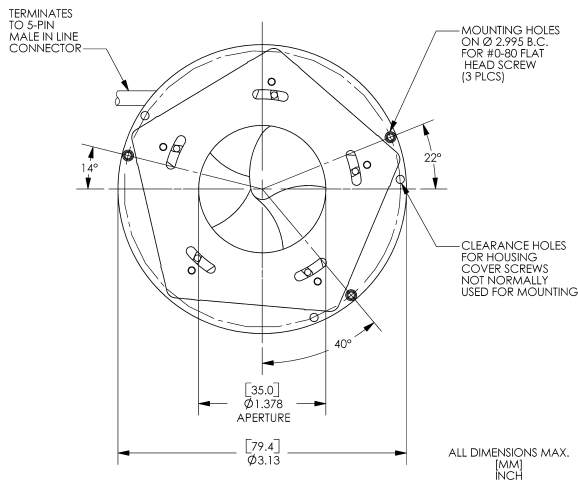


Figure 1

The CS35 un-housed style is the basic configuration of this device and is best suited for OEM applications. Mounting can be accomplished through three 0-80 (flat head screws required) clearance holes located around the unit's perimeter on a 2.995 inch diameter bolt circle. Unless otherwise specified, this standard unit is terminated to a 5-pin male connector through a 5-wire six-inch cable assembly.

## HOUSED STYLE

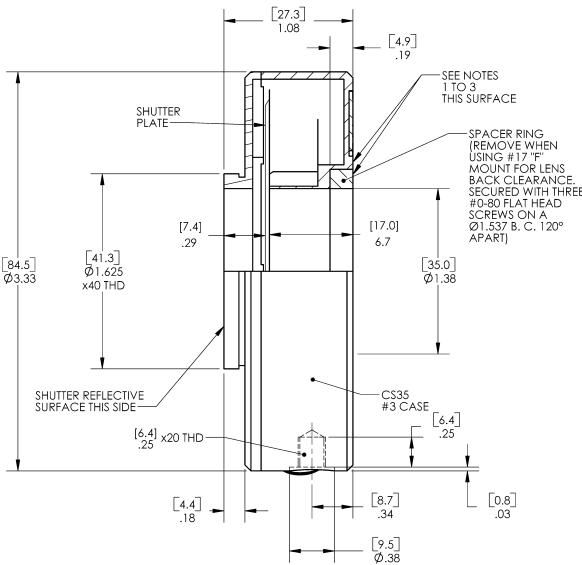


Figure 2

- NOTES:
- (4) #0-80 MOUNTING HOLES ON A  $\varnothing$  2.073 B.C. 90° APART. (UNDER NAME PLATE)
  - (3) #2-56 MOUNTING HOLES ON A  $\varnothing$  1.578 B.C. 120° APART. (THROUGH SPACER CLEARANCE HOLES)
  - (3) #4-40 MOUNTING HOLES ON A  $\varnothing$  2.425 B.C. 120° APART. (UNDER NAME PLATE)
  - ALL DIMENSIONS MAX. [MM] INCH

The CS35 #3 housing style allows a number of mounting configurations. A 1/4-20 threaded hole is provided for post mounting. The 1.625inch x 40TPI external thread located on the rear side, and the specific mounting holes located on the front side (see Figure #2 and Figure #3) can be interfaced directly into your application or fitted with a variety of user specific mounting options. For the CS35, the #100 Mounting Ring is a mounting option available that simplifies mounting the housed style onto a flat surface. Additional information regarding the #100 mounting ring can be found in the specific data sheet entitled "MICROSCOPE, VIDEO AND UNIVERSAL MOUNTING SYSTEMS" or online under "products", "Mounting Systems". A removable spacer ring is also included with this device. This ring allows mounting of all standard microscope mounts. In addition when adding the #17 "F" mount, this ring is removable allowing lens back clearance. This ring is secured into the housing with three 0-80 flat head screws. The unit terminates with a 5-pin male connector as illustrated.

## HOUSING/CONNECTOR LAYOUT

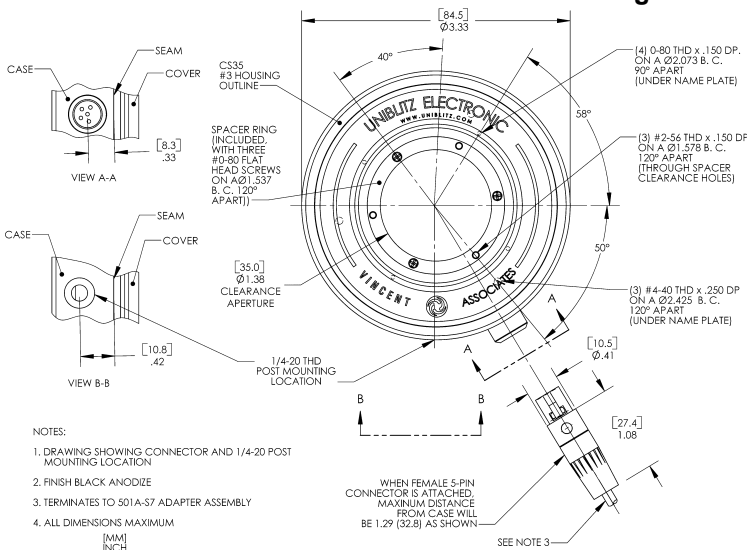


Figure 3

This drawing illustrates 5-pin connector and 1/4-20 threaded hole layout for the CS35 series #3 housed style.

## 501A-S7 ADAPTER ASSEMBLY LAYOUT

Figure 4 illustrates 501A-S7 adapter included with the CS35 to allow connection to VCM/VMM type controllers

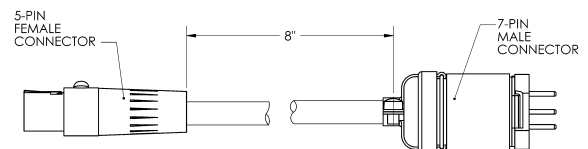


Figure 4