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## FEATURES

- Two aperture sizes available  
 14mm diameter - Model VS14  
 25mm diameter - Model VS25
- Laser energy ratings up to 10W/mm<sup>2</sup> with “Z” or “ZM” shutter blade coating options
- Exposure repetition rates from DC - 40Hz
- Electronic synchronization available
- Cased and uncased versions available
- Can be equipped with the “R1” high temperature option
- Normally open option available on special order

The UNIBLITZ® VS14 and VS25 shutter series have been designed to give accurate, repeatable exposures for a wide variety of applications. They have been successfully field tested in microscopy, video imaging, PMT protection, and photographic applications worldwide.

Available with either 14mm or 25mm apertures, these shutters are offered in either cased or uncased configurations. The uncased shutter allows a high degree of flexibility when mounting the unit in OEM applications. The cased version of this series is very popular due to the protection the black anodized aluminum housing provides the precision shutter mechanism.

When used with laser or high energy non-coherent light sources, alternate reflective blade coatings and finishes are available. For information on typical laser damage thresholds see “OPTICAL” information in our “COMPARISON SPECIFICATION” sheet. For further information see our application note “LASER APPLICATION REFERENCE” sheet in the resource section of our web site, www.uniblitz.com.

To further enhance the adaptability of this series, we offer several customized mounts and mounting systems for popular microscopes and video imaging applications. For those applications where the shutter will be used to switch a mercury arc lamp, we strongly recommend the “R1” modification. This modification will allow the shutter to operate under the intense heat produced by mercury lamps. Additional information can be found in the specific data sheets entitled “MICROSCOPE, VIDEO, and UNIVERSAL MOUNTING SYSTEMS”.

## ELECTRICAL

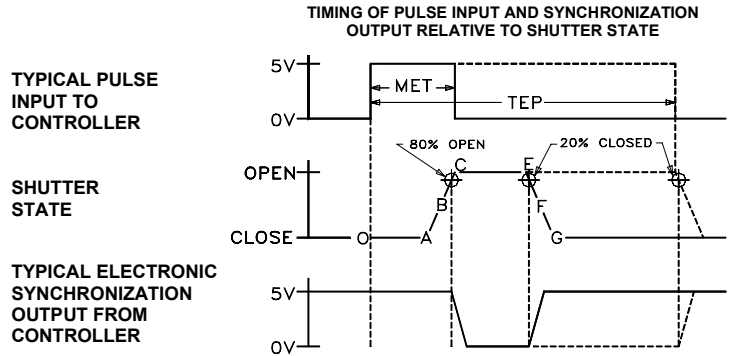
Coil Resistance	12 ohms
Pulse Voltage to Open	+65VDC
Hold Voltage <sup>1</sup>	+5VDC

## MECHANICAL

Wgt. Un-Cased	2.05 oz (.06 kg)
Wgt. Cased	10.22 oz (.29 kg)
Operating Temp.	0°C to +80°C
Max. Opening Bounce	15%
Max. Closing Bounce	5%
Max. Frequency of Operation (CONT/BURST) <sup>2</sup>	10 Hz / 40 Hz
Number of Blades	2

## TIMING

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



(Timing in msec.)  
 VS14 VS25

O-A Delay time on opening after current is applied	2.0	3.0
A-C Transfer time on opening	1.5	3.0
O-C Total opening time	3.5	6.0
B-F Min. equivalent exp. time	4.5	6.0
C-E Min. dwell time with min. input pulse	2.0	2.0
E-G Transfer time on closing	3.0	5.0
A-G Total window time	6.5	10.0

MET: Min. exposure time	4.0	6.0
TEP: Typical exposure pulse	>6.5	>8.0

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

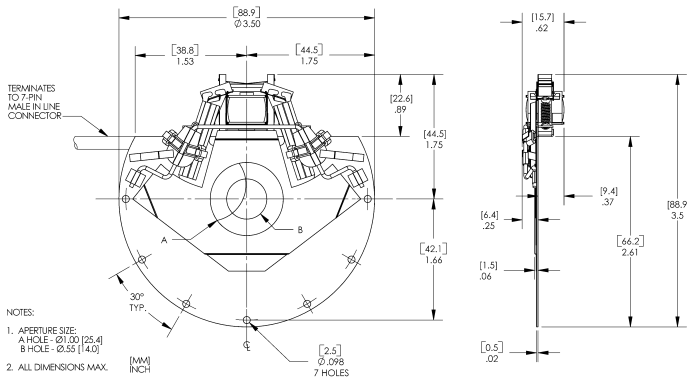
VS25S	2	T	0	R1	-100
APERTURE SIZE	HOUSING	BLADE FINISH	ELECTRONIC SYNCHRONIZATION	HIGH TEMPERATURE MODIFICATION	MOUNTING OPTIONS
VS14S - 14mm	1 - UNCASED	T - TEFLON COATED	0 - OMIT SYNC.	R1 - HIGH TEMP. MOD.	- 21 ZEISS AXIOVERT TYPE
VS25S - 25mm	2 - #2 CASE	S - POLISHED STAINLESS STEEL BLADES*	1 - ELECTRONIC SYNC.	(OMIT R1 DESIGNATION IF NOT REQUIRED)	- 22 OLD STYLE NIKON TYPE
		ZM - AlMgF2 COATED BeCu BLADES*			- 23 OLYMPUS TYPE
		Z - AISI0 COATED BeCu BLADES*			- 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
					- 126 F-MOUNT ADAPTER (MALE)

\*Input side only, Teflon® 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 hold in the open position.  
<sup>2</sup> CONTinuous frequency rating specified at shutter's minimum exposure pulse. BURST frequency rating specified for (4) four seconds maximum with (1) one minute minimum between bursts. Frequency measurements are taken in free air, 25°C ambient, actuator coil equipped with heat sink. For additional information on maximum sustained frequencies obtainable, please contact one of our technical representatives.

## UN-HOUSED STYLE

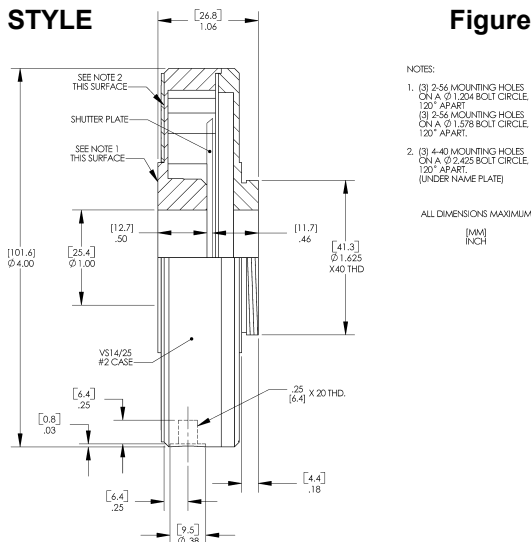
Figure 1



The VS14/25 uncased style is the basic configuration of this series and is best suited for OEM applications. Mounting can be accomplished through seven 2.5mm holes around the unit's outer perimeter. The unit terminates to a 7-pin male in-line connector through a six-inch cable assembly.

## HOUSED STYLE

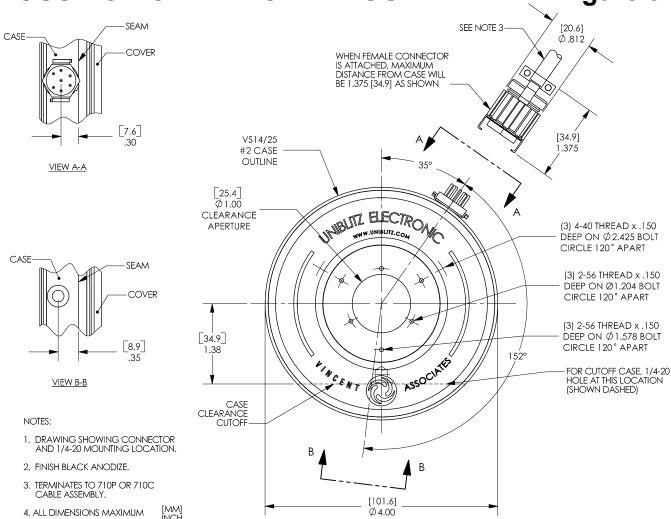
Figure 2



The VS14/25 #2 case style allows a number of mounting configurations. A 1/4-20 threaded hole is provided for post mounting. The 1.625in x 40TPI external thread, rear side, and the three 2-56 threaded holes, front side, (Figure 3) can be interfaced directly into your applications or fitted with variety of specific mounting options. See "MICROSCOPE, VIDEO and UNIVERSAL MOUNTING SYSTEMS" data sheets for additional information. The unit terminates with a 7-pin male connector.

## HOUSING/CONNECTOR LAYOUT

Figure 3



This drawing illustrates 7-pin connector and 1/4-20 threaded hole layout for the VS14/25 series #2 case style.