Uniblitz® XRS25H

25mm Uni-Stable X-ray Shutter

Overview

The Uniblitz XRS25H has been designed specifically for x-ray switching applications. The innovative platinum-iridium (PtIr) blade design allows beam extinction of 90% up to 30 keV x-ray energy (based upon the tenth value extinction of PtIr). The XRS25H is well suited for applications such as x-ray crystallography, medical x-ray imaging, etc.

Key Features

- 25mm aperture
- Capable of blocking x-ray energy (30 KeV)
- Dual-actuator design, configured for the VCM-D1 Shutter Driver
- **RoHS Compliant**
- Transfer time on opening: 12.0 milliseconds
- Total opening time: 19.0 milliseconds

Specifications

Primary Actuator Electrical Specifications [1]	
Coil resistance	24 OHMS
Voltage to Open	+70 VDC
Hold Voltage (Nominal) [2]	+7 VDC / +5 VDC [3] (continuous)

Secondary Actuator Electrical Specifications [1]	
Coil resistance	24 OHMS
Voltage to Open	+70 VDC
Hold Voltage (Nominal) [2]	+7 VDC / +5 VDC [3] (continuous)

Mechanical Specifications	
Weight Unhoused	130.0 g
Weight Housed	370.0 g
Operating Temp.	0 - 80 °C
Max. Opening Bounce	15%
Max. Closing Bounce	5%
Max. Freq. of Operation [4]	2 Hz / 10 Hz
Number of Shutter Blades	2

[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.
[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.

VINCENT ASSOCIATES

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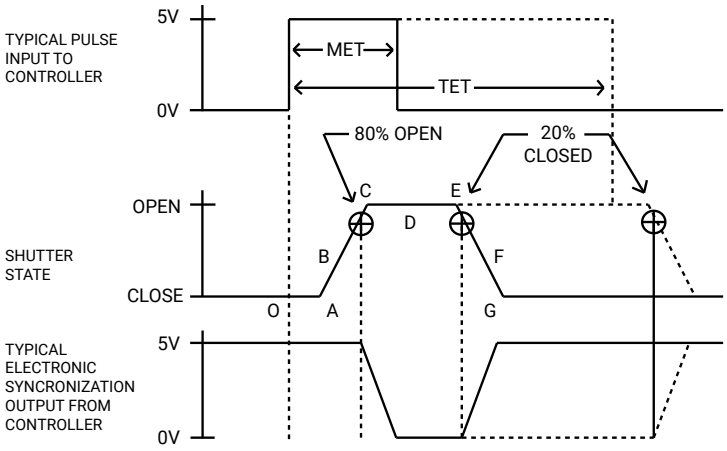
Updated 4/24 | Document Version 6.5

Shutter Timing Data



MET [1] and TET [2] for XRS25H

- Minimum Exposure Time (MET): 25.0 msec. [3]
- Typical Exposure Time (TET): 35.0 msec. [3]

XRS25H [4] (w/ VCM-D1 and "PtIr" blades) [5]		Min. Exp. Time (msec.)		Typ. Exp. Time (msec.)	
Graph	**Description**	**Typical**	**Max**	**Typical**	**Max**
O - A	Delay time on opening after opening drive is applied	7.0	8.0	7.0	8.0
A - C	Transfer time on opening	12.0	14.0	12.0	14.0
O - C	Total opening time	19.0	22.0	19.0	22.0
B - F	Minimum equivalent exposure time	23.5	27.5	37.3	41.3
C - E	Minimum dwell time (based on exposure pulse)	9.0	10.0	19.5	20.5
D - E	Delay time on closing after closing drive is applied	3.0	7.0	3.5	7.5
E - G	Transfer time on closing	17.0	21.0	23.5	27.5
A - G	Total window time	38.0	45.0	55.0	62.0

[1] The minimum timing required to allow the shutter to fully open and then fully close.

[2] The exposure time provided to the driver where, as you increase the exposure pulse in one msec increments, the shutter output (or the A-G time) will change in one msec increments.

[3] Due to non-linearity caused by damp and blade adjustment, exposure pulse selection between 25msec and 35msec may have some indeterminate typical and max values.

[4] Individual timing segments may vary.

[5] 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.

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Product Options

XRS25H ❷❸❹❺❻ - ❼ - ❽

Ex: XRS25HS2P0-EC-21

❶ Shutter Series:

XRS25H

❷ Driver Compatibility:

S: Use with VCM-D1

E: Use with VED24, V880, or D880C

❸ Housing:

1: Un-Housed

2: #2 Housing

❹ Blades:

P: 0.01" thick PtIr (10% iridium, 90% platinum)

❺ Electronic Sync:

0: Omitted

1: Included

❻ Connector:

L: 18" Flying Leads

Leave blank for 5-pin Switchcraft connector

❼ Encapsulated Coil:

EC: Included

Leave blank if not required

❽ Mount: [1]

21: Zeiss Axiovert **105:** C-Mount (Male)

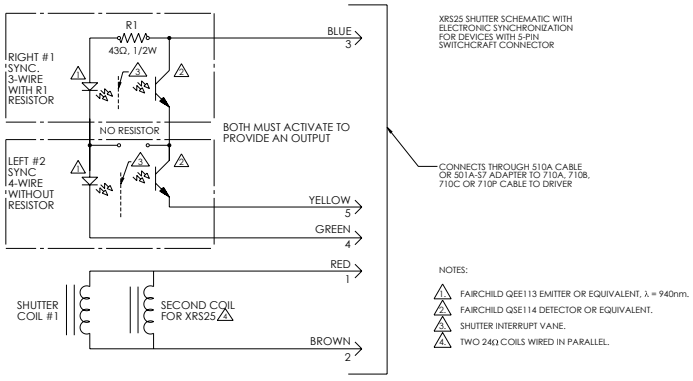
24: Olympus BX/IX **106:** C-Mount (Female)

27: Nikon *Leave blank if not required*

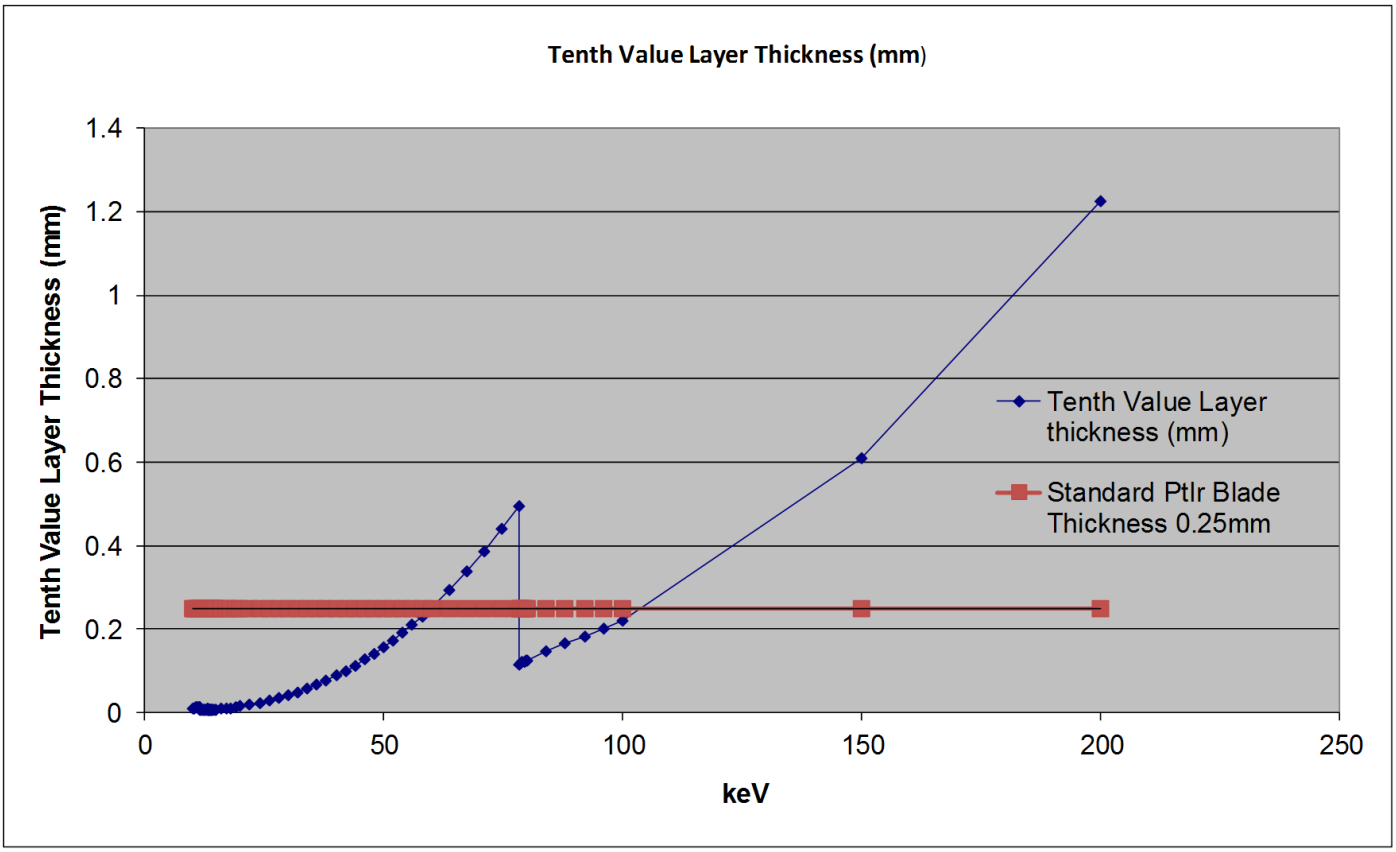
[1] *Mounts are only compatible if #2 housing is optioned as well.*

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 (one sync. system for each actuator – the sync circuits are interconnected to insure both blades transfer to provide an output, a wire "AND" configuration) . The vane is attached to each shutter blade so as to block the light path between the emitter and detector in the closed position. When both actuators are activated and each shutter blade transfers to the 80% open position, the vane is removed from each of the infrared light paths, allowing each emitter to switch the detectors to the active state. **There will be no connection to the designated connector pins when electronic sync. is omitted.**



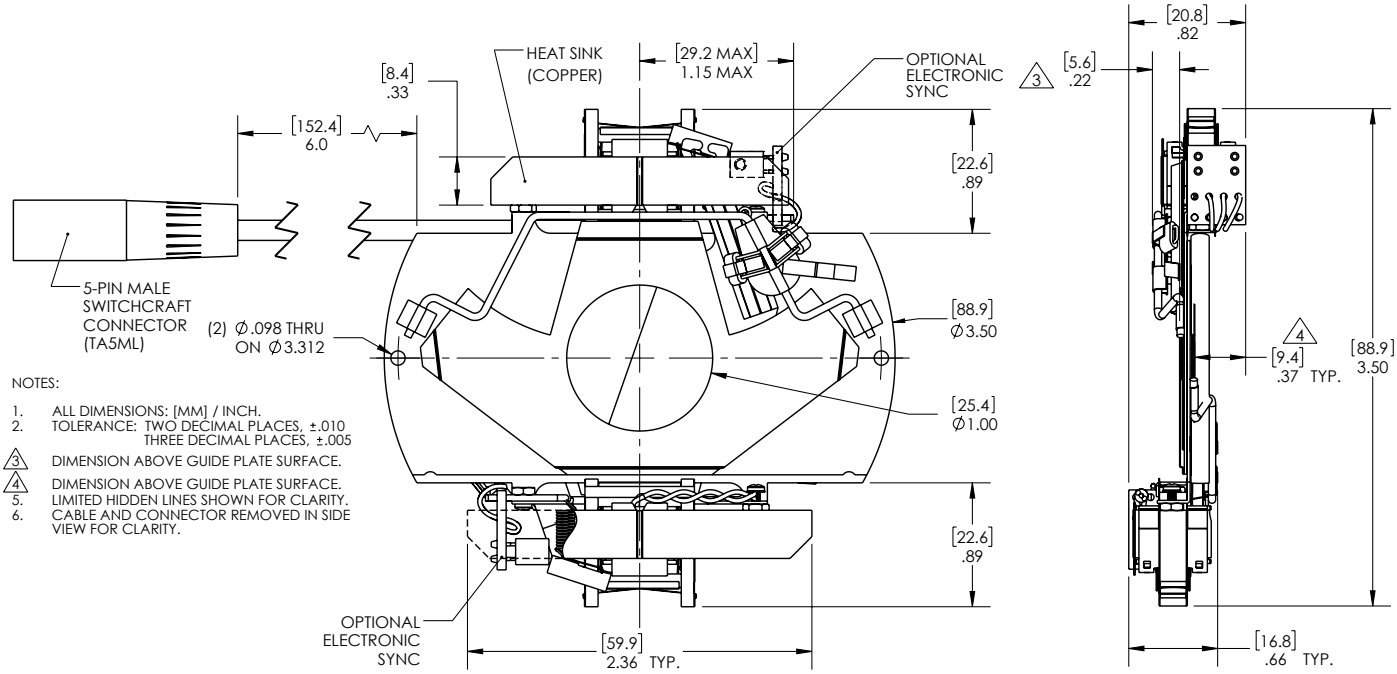
Shuttering X-rays with Platinum-Iridium Alloy



All Uniblitz XRS Series shutters come standard with platinum-iridium (PtIr) blades (“P” blades), allowing for a beam extinction of 90% at up to 30 keV x-ray energy.

Uniblitz® XRS25H Technical Drawings

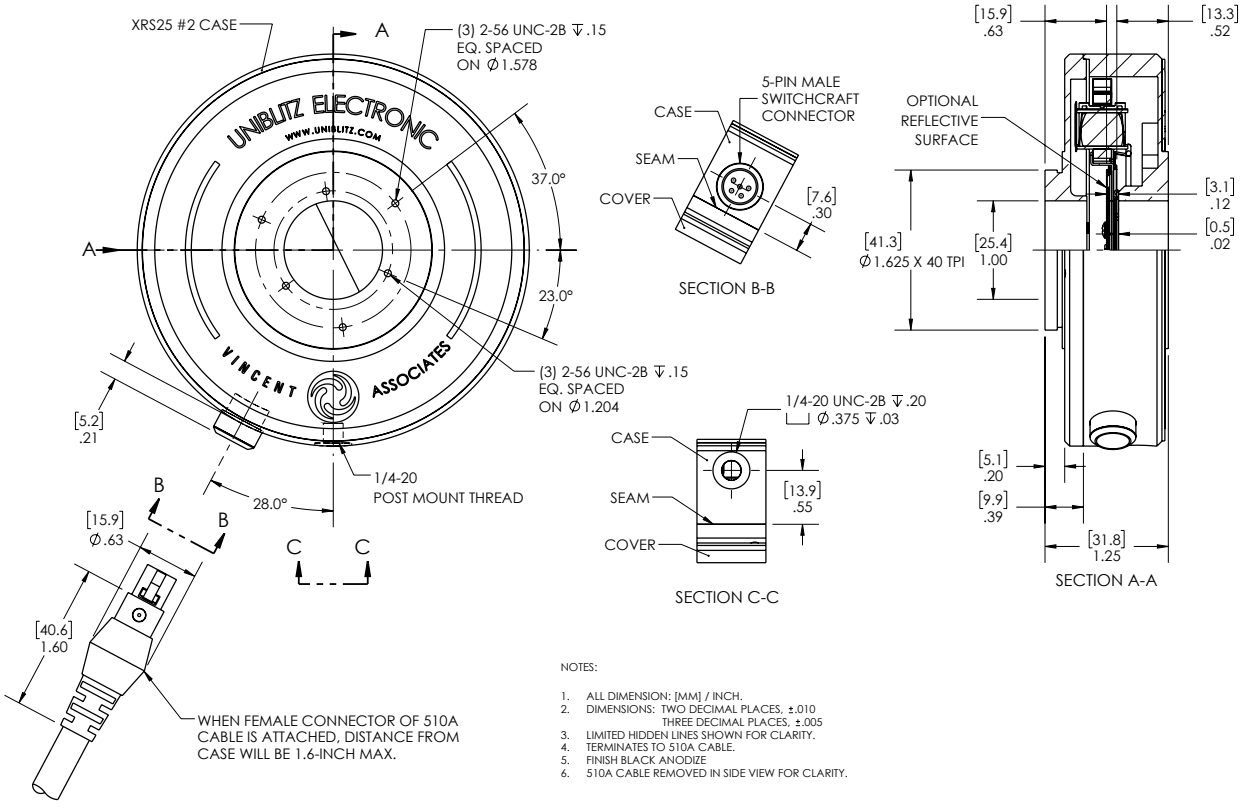
Un-Housed / Shutter Layout



NOTES:

1. ALL DIMENSIONS: [MM] / INCH.
2. TOLERANCE: TWO DECIMAL PLACES, ±.010
   THREE DECIMAL PLACES, ±.005
3. DIMENSION ABOVE GUIDE PLATE SURFACE.
4. DIMENSION ABOVE GUIDE PLATE SURFACE.
5. LIMITED HIDDEN LINES SHOWN FOR CLARITY.
6. CABLE AND CONNECTOR REMOVED IN SIDE VIEW FOR CLARITY.

Connector Layout

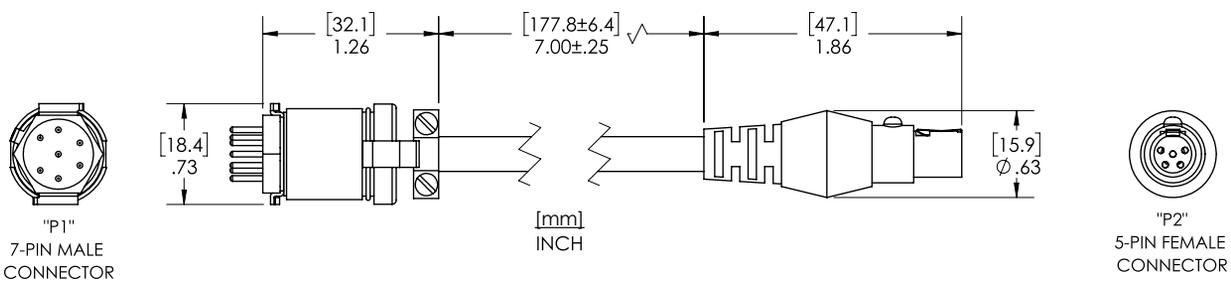


NOTES:

1. ALL DIMENSION: [MM] / INCH.
2. DIMENSIONS: TWO DECIMAL PLACES, ±.010
   THREE DECIMAL PLACES, ±.005
3. LIMITED HIDDEN LINES SHOWN FOR CLARITY.
4. TERMINATES TO 510A CABLE.
5. FINISH BLACK ANODIZE
6. 510A CABLE REMOVED IN SIDE VIEW FOR CLARITY.

Uniblitz® XRS25H Technical Drawings

501A-S7 Adapter Cable[1] (Not included)



[1] 501A-S7 Shutter Adapter Cable is required for use with VMM-D3, VMM-D4, D880C and any VCM-D1 purchased prior to November 2022.