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PAX- 6™

6-Watt Precision-Aligned Pulsed Xenon Light Source

PRODUCT NOTE

PAX Family of Precision-Aligned Xenon Light Sources



Overview

The PAX-6™ by Excelitas is a 6 Watt Precision-Aligned Pulsed Xenon Light Source which is 50% more compact than existing flash lamp systems. The compact, integrated solution contains the flash lamp, trigger circuit, and power supply in an EMI-suppressant enclosure.

The PAX-6 was designed specifically in response to OEMs' needs for precision alignment and features a pre-aligned arc position precisely located relative to a datum feature on the mounting surface of the case. Available in two arc orientations, the PAX-6's pre-aligned arc position allows for "plug and play" field replacement, eliminating alignment time and reducing OEMs' costs and machine down time.

The PAX-6 offers a wide range of flash energy levels and 6 Watts average power in a compact, pre-aligned module. It utilizes Excelitas' high stability short arc Xenon flash lamps. Known for their stability and long life characteristics, these Xenon lamps generate light over a continuous spectrum from ultraviolet to infrared.

The PAX family of compact, precision-aligned Xenon light,sources are the ideal choice for clinical diagnostic, invitro diagnostics, life sciences, drug discovery, proteomics, and analytical instrumentation applications.

Features and Benefits

- Precision alignment—arc position precisely located (+/- 0.05 mm, .002 inches) relative to a datum feature on the mounting surface
- Ease of installation and convenient "plug and play" field replacement
- 50% more compact than existing flash lamp systems
- Long life: > 2.0 x 10^9 flashes
- Spectral range from 120 to 2000+ nm
- Available in two arc orientations
- 6 Watts average power
- Integrated package—flash lamp, trigger circuit and power supply, all in a compact, EMI suppressant enclosure
- Flexible mounting
- Highest flash rate over full power range
- CE marked and RoHS compliant

Applications

- Absorption analysis
- Immunoassay modules
- Fluorimetry
- Spectroradiometry
- Liquid and gas chromatography
- Colorimetry
- UV/VIS/NIR applications

EXCELITAS TECHNOLOGIES

Input Specifications	
Parameter	**Specification**
Voltage	11-28 VDC
DC Current	1 Amp avg.
Inrush Current	4 Amps peak
Trigger [1]	+5 V, 20-50 mA peak input, 10-100 µs pulse width, leading edge trigger
Vref (Vo/Vref = 127)	3.15 - 4.73 VDC
Internal/External Intensity Adjust	Switch selectable
Input Connector	9-pin D-sub

NOTE 1: Optically Isolated: Internal series resistor = 150 Ω

Part Number Configuration PAX-6AB-C*	
A= Arc Orientation	0 - vertical 1- horizontal
B = Lamp Type	1 - 1.5 mm arc length, 225 nm cutoff 2 - 1.5 mm arc length, 190 nm cutoff 3 - 1.5 mm arc length, 120 nm cutoff 4 - 3.0 mm arc length, 225 nm cutoff 5 - 3.0 mm arc length, 190 nm cutoff 6 - 3.0 mm arc length, 120 nm cutoff
C = Discharge Capacitor	1 - 0.047 µF 2 - 0.10 µF 3 - 0.22 µF 4 - 0.27 µF

*** Part Number Example:**
PAX-603-1 = vertical arc,
1.5 mm arc length with
120 nm cutoff and 0.047 µF capacitor

Electrical Output	
Parameter	**Specification**
Main Discharge Voltage	400-600 VDC +/- 2%
Power	6 Watts
Standard Discharge Capacitors	0.047, 0.10, 0.22, 0.27 µF
Flash Rate (Hz)	Fmax = 6/E where E = $1/2CV^2$

Light Output	
Parameter	**Specification**
Spectral Range	120-2000 + nm
Stability [2]	< 1% CV
Life time	> 2 x 10^9 Flashes

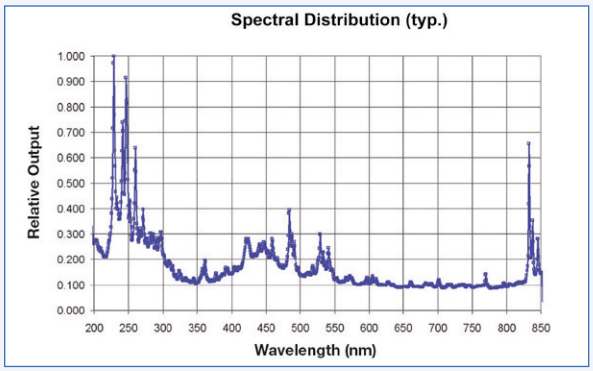
NOTE 2:
Operating conditions:
0.22 µF discharge capacitor. 600 VDC discharge voltage.
10 Hz flash rate.

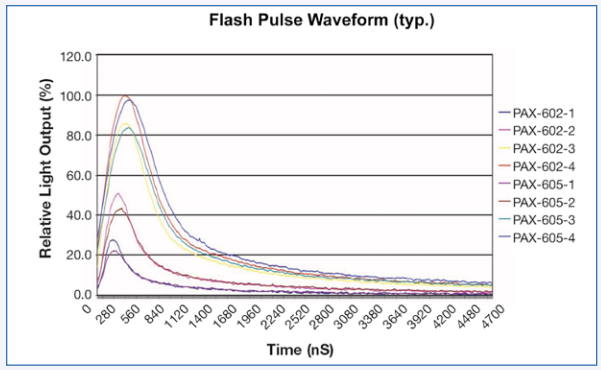
Environmental	
Parameter	**Specification**
Operating temperature	0 to 40 °C
Storage temperature	-40 to 90 °C
Humidity	95% RH, non-condensing
Safety Compliance	CE Marked

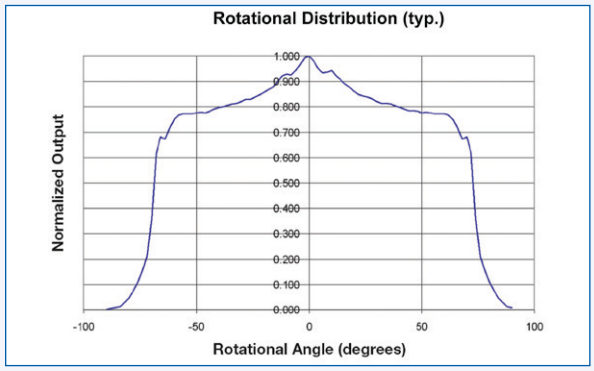
Operating Conditions

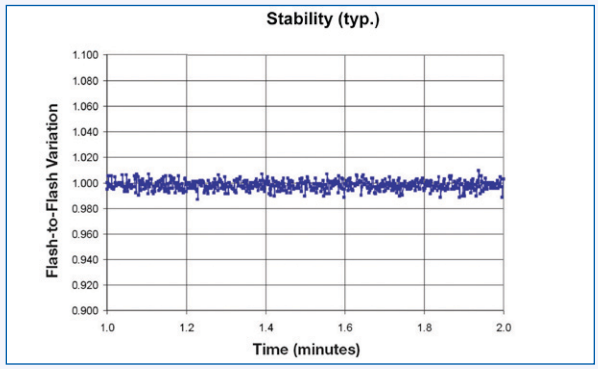
Part Number	Main Discharge Capacitor (µF)	Main Discharge Voltage (V)	Maximum Input Energy per Flash (mJ)	Maximum Repetition Rate (Hz)	Maximum Average Power (W)
PAX-6AB-1	0.47	400	3.8	1579	6
		500	5.9	1016	
		600	8.5	705	
PAX-6AB-2	0.1	400	8	750	6
		500	12.5	480	
		600	18	333	
PAX-6AB-3	0.22	400	17.5	341	6
		500	27.5	218	
		600	39.6	151	
PAX-6AB-4	0.27	400	21.6	278	6
		500	33.7	178	
		600	48.6	123	

Characteristics



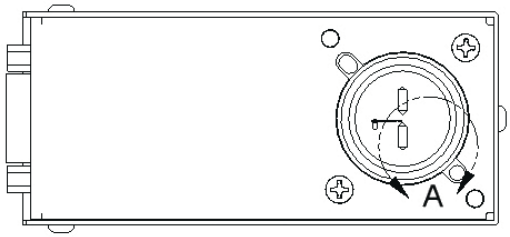




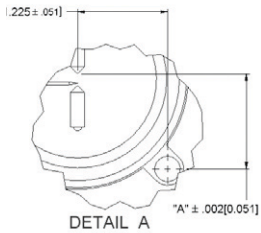


PAX-6 Precision Arc Alignment and Mounting

Arc size	A in [mm]	B in [mm]
1.50 mm	.472 [11.989]	.412 [10.465]
3.00 mm	.501 [12.725]	.383 [9.728]



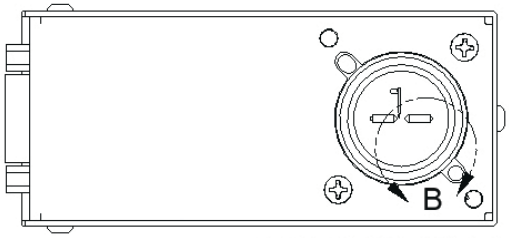
ARC POSITION 0
"PAX-60B-C"



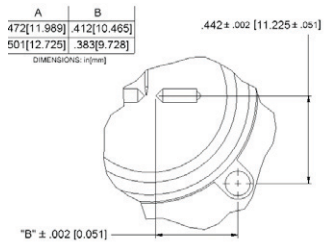
DETAIL A

Notes:

1. Precision mounting requires dowel pins (dia = .1250"/.1252").
2. Mounting kits available as an accessory.
3. Alignment provided from pin center to theoretical intersection of electrode tip as shown.

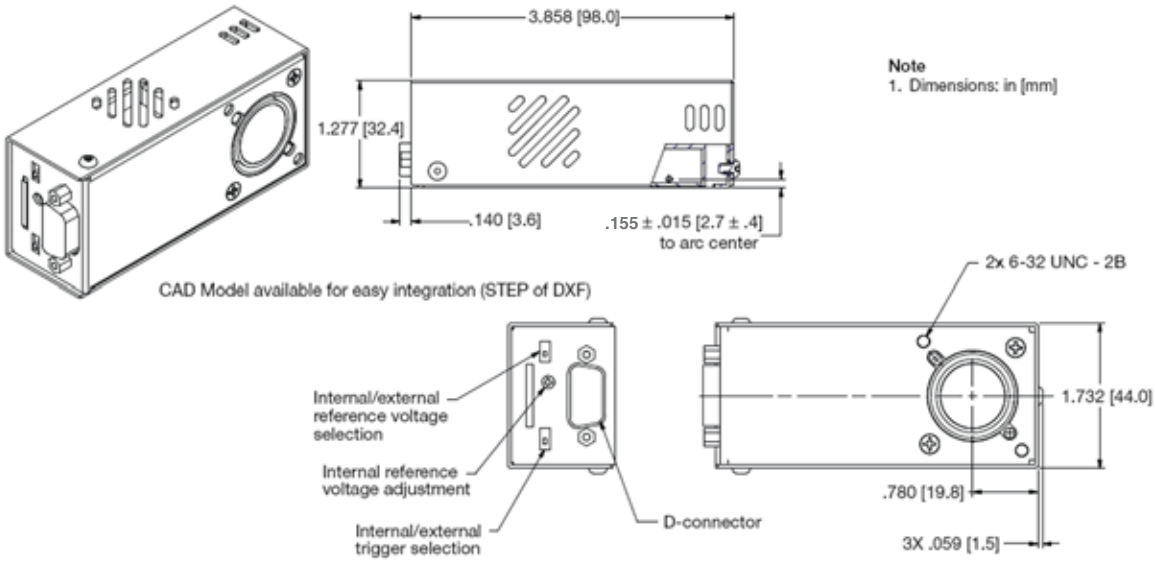


ARC POSITION 1
"PAX-61B-C"

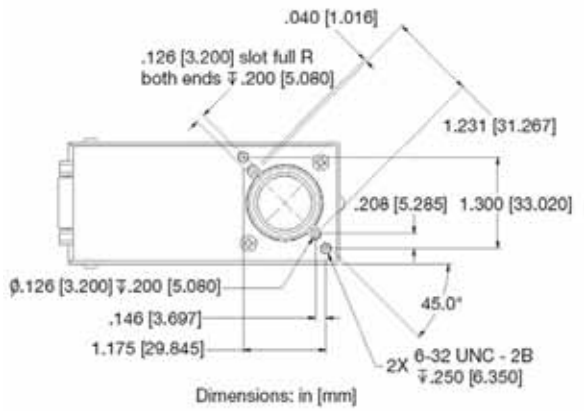


DETAIL B

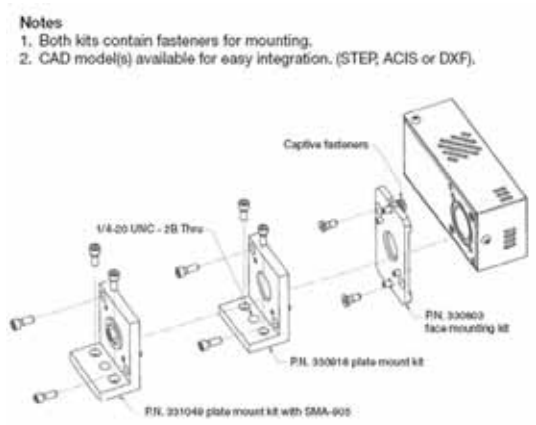
Mechanical Outline



Mechanical Dimensions



Mechanical Mounting Kits (optional)



Ordering Information

Excelitas has designed an easy to use Evaluation Kit for testing the PAX-6 in your application.

To request additional information, receive a quote, or place an order for the PAX-6, please contact your Customer Support team or visit our website at **www.excelitas.com** .

All values are nominal; specifications are subject to change without notice.

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