

μ PAX-3

2-Watt Pulsed Xenon Light Source



μ PAX-3 Precision Aligned Xenon Light Source for UV/VIS/NIR Applications

The new μ PAX-3 from Excелitas Technologies® is a 2 Watt Pulsed Xenon Light Source, designed to combine an innovative new lamp design with state-of-the-art circuitry and components into a packaged light source which provides microsecond-duration pulses of broadband light with exceptional arc stability. The compact, integrated solution contains the flash lamp, trigger circuit, capacitor charging power supply, mounting flange, and precision arc alignment.

The μ PAX-3 offers a wide range of flash energy levels and 2 watts maximum power in a compact, pre-aligned module. It utilizes Excелitas' 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 excellent stability and small form factor make the μ PAX-3 an ideal choice for Analytical Instruments.

Features

- High radiant intensity
- Continuous spectrum UV-VIS-IR
- Stable output, 0.5% CV typical
- Long life expectation
- Precision aligned
- User adjustable output
- Compact integrated package

Applications

- UV/VIS Spectrophotometer
- Point-of-care Analytics
- Environmental Analytics
- Absorption Analysis
- Fluorescence Trigger
- Immunoassays
- Microplate Readers

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Electrical Input Specifications	
Parameter	Specification
Voltage	11.0 to 15.0 VDC
DC Current	≤0.5 Amp RMS @ 12VDC Input Voltage
Trigger	+5V, Pulse width 10uS -100uS. Optically isolated internal series resistor = 150Ω (20-50mA peak input)
V _{ref} (External Intensity Adjust)	0 to 4.7VDC Input = 400 to 600VDC Discharge Voltage
Input Connector	See Model Configuration

Electrical Output	
Parameter	Specification
Voltage	400-600 VDC (voltage/output adjustable by turning potentiometer or supplying Vref input)
Power (Joules/sec)	2 Watts max (power = Joules x flash rate)
Standard Discharge Capacitor	0.047, 0.094, 0.141 μF
Flash Rate (Hz)	$F_{max} = 2/E$, where $E=1/2CV^2$

Light Output	
Parameter	Specification
Spectral Range	See Lamp Type in configuration table below
Stability*	≤1% CV
Lifetime	≥1x10 ⁹ flashes expected lifetime

* CV or Coefficient of variation is defined as: $CV\% = (\text{Standard Deviation of 20 Flashes}) / (\text{Mean of 20 Flashes})$, average of 50 CV measurements (i.e. total of 1000 flashes. Operating conditions: 0.141 μF discharge capacitor. Maximum discharge voltage, 20 Hz flash rate, 335-345nm). As shipped performance.

Environmental	
Parameter	Specification
Operating Temperature	32 to 122°F (0 to 50°C), cooling may be required under some conditions - see user manual for details.
Storage Temperature	41 to 104°F (5 to 40°C)
Humidity	15-80% RH, non-condensing

Operating Conditions					
Model Number	Main Discharge Capacitor (μF)	Main Discharge Voltage (V)	Max. Average Input Energy per Flash (mJ)	Max. Repetition Rate (Hz)	Max. Average Power (W)
μPAX-3A2-C	0.047	400	3.76	532*	2
		600	8.46	236	2
μPAX-3A3-C	0.094	400	7.52	266	2
		600	16.92	118	2
μPAX-3A4-C	0.141	400	11.28	177	2
		600	25.38	79	2

* Operation at 400V discharge above 475Hz requires 15VDC input Voltage.

Model Number Configuration: μPAX-3AB-C	
Where:	
A = Window Material	1 - 225-2000+ nm (Borosilicate)* 2 - 190-2000+ nm (UV Glass)
B = Discharge Capacitor	2 - 0.047 μF
	3 - 0.094 μF
	4 - 0.141 μF
C = Input Type (e.g. Connector/Flying Leads)	0 – Connector: JST B6B-XH-A TBD – Planned future options for additional input configurations

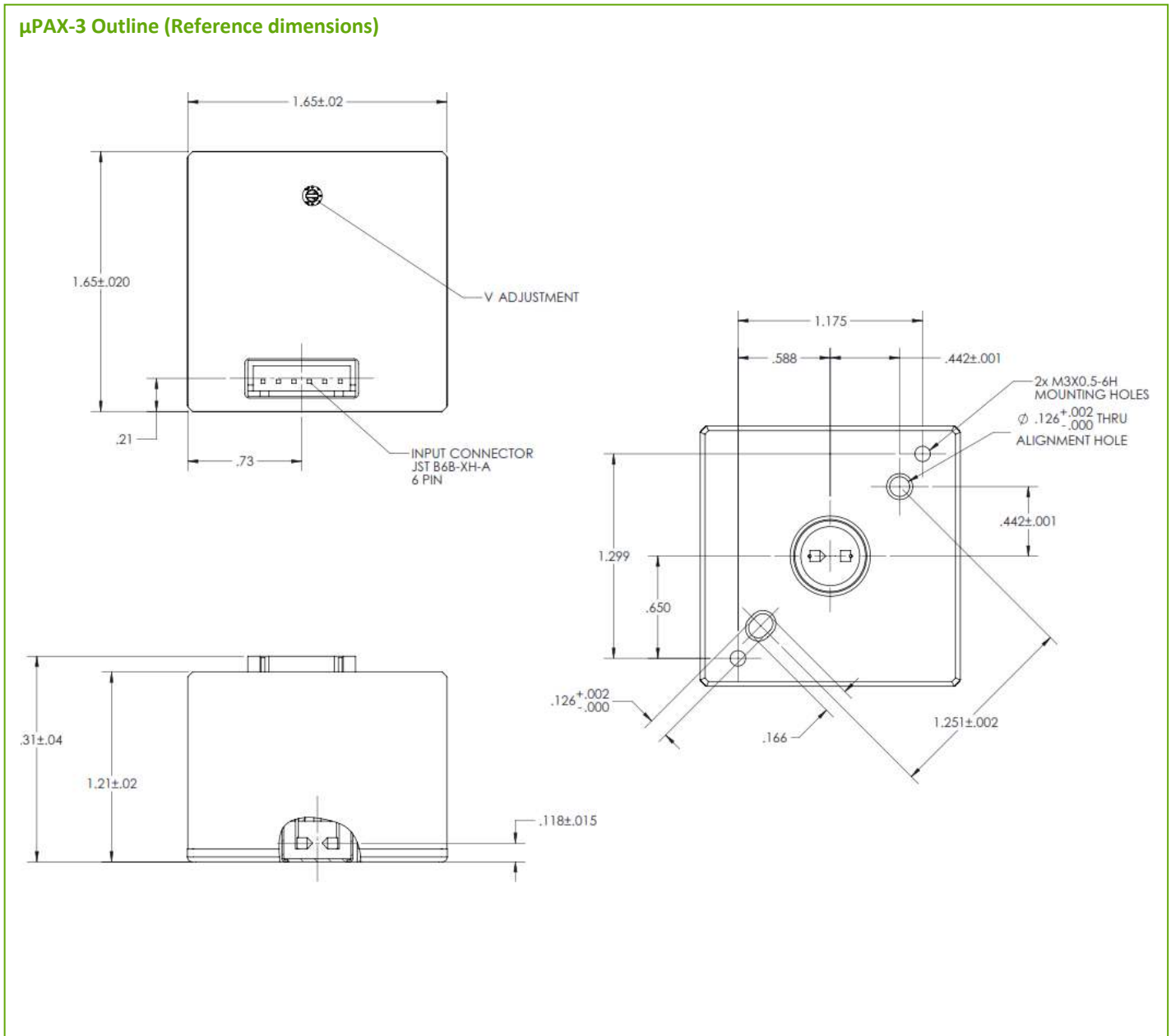
* Planned future option

Example: **μPAX-324-0** UV glass window and 0.141 μF capacitor with JST 6 pin connector

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Mechanical Dimensions



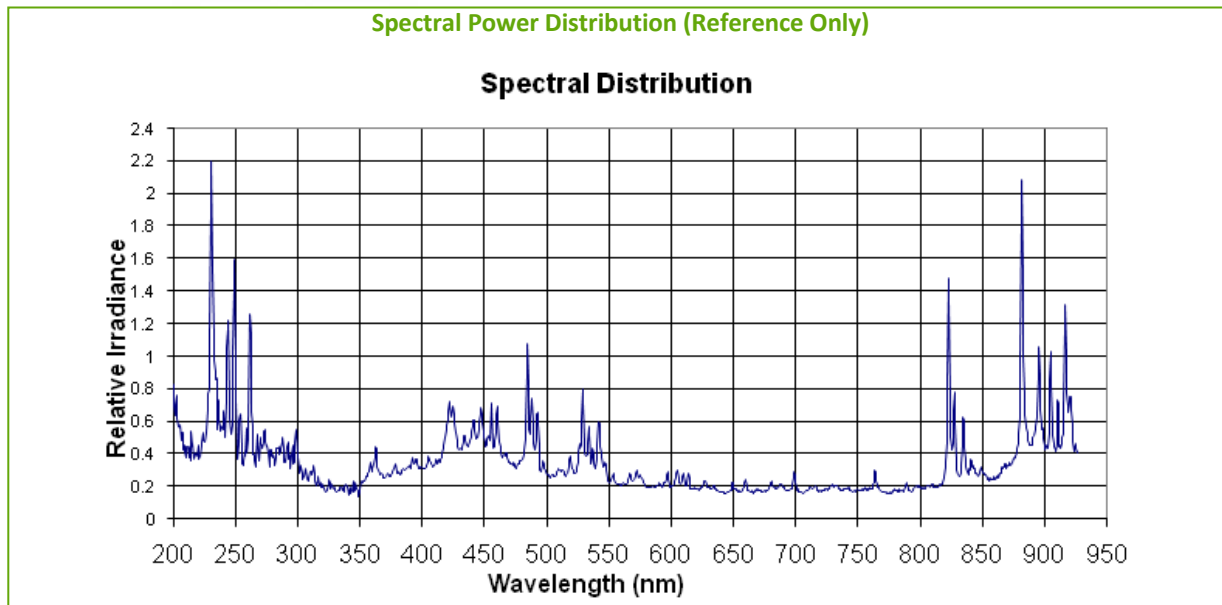
NOTE: All values are nominal; specifications subject to change without notice.

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Spectral Power Distribution (Reference Only)



About Excelitas Technologies

Excelitas Technologies® Corp. is a leading industrial technology manufacturer focused on delivering innovative, market-driven photonic solutions to meet the illumination, optical, optronic, sensing, detection and imaging needs of our OEM and end-user customers. Serving a vast array of applications across biomedical, scientific, semiconductor, industrial manufacturing, safety, security, consumer products, defense and aerospace sectors, Excelitas stands committed to enabling our customers' success in their many various end-markets. Our team consists of more than 7,500 professionals working across North America, Europe and Asia, to serve customers worldwide.



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