FX-4400

High-Output Xenon Flashlamps

Excelitas' FX-4400 pulsed Xenon flashlamp with internal parabolic reflector for high-output power applications.

The FX-4400 flashlamp from Excelitas Technologies is a compact, high-output, long life pulsed Xenon flashlamp that offers exceptional arc stability, microsecond pulse durations, and a high-intensity continuous line spectrum from the deep UV to the near IR.

The lamp utilizes an integral parabolic reflector to provide a collimated output beam and is capable of operation at up to 60 Watts average power. This design measures approximately the same size as our traditional pulsed Xenon lamps, yet provides significantly higher light output intensity. This allows customers the option of either taking advantage of the greatly increased light output or operation the FX-4400 at a reduced input energy for increased lamp life and stability.

Lamp life exceeds 1 billion flashes, when operation at an input energy of up to 1.0 Joules per flash. The maximum flash rate is 1000 Hz.

Several window coatings are available to provide customer with transmission output ranging from 160-2000+ nm.

Excelitas Technologies will work closely with OEMs to customize the light source and related electronics to meet the most demanding applications.

Key Features

- High radiant intensity
- Continuous spectrum UV-VIS-IR
- Long life
- Collimated Output
- Microsecond flash duration
- High repetition flashrate – up to 1000 Hz

Applications

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

EXCELITAS TECHNOLOGIES

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Type	Arc Length (mm)	Spectral Distribution (nm)	Window Material	Energy per Flash[1] (joules)	Average Power (watts)[2]	Voltage (Vdc)	Flash Rate[3] (Hz)	Life[4] (flashes)	Stability[5]	Power Supply	LitePac Type
FX-4400	1.5	250-2000+	Coated Sapphire	1.0 Max	60	400-1000	1000	>1x10^9	<3% CV	PS-4400	FYD-4400
FX-4401	1.5	190-2000+	Coated Sapphire	1.0 Max	60	400-1000	1000	>1x10^9	<3% CV	PS-4400	FYD-4400
FX-4402	1.5	160-2000+	Un-Coated Sapphire	1.0 Max	60	400-1000	1000	>1x10^9	<3% CV	PS-4400	FYD-4400

[1] Input Energy or E = 1/2CV^2, where E = Discharge Energy (Joules), C = Discharge Capacitor Value, and V = Discharge Voltage.

[2] Maximum Average Power or P_{AVE} = EF, where E = Discharge Energy and F = Rate of flashes per second. NOTE: Additional cooling required when operation above 40Watts

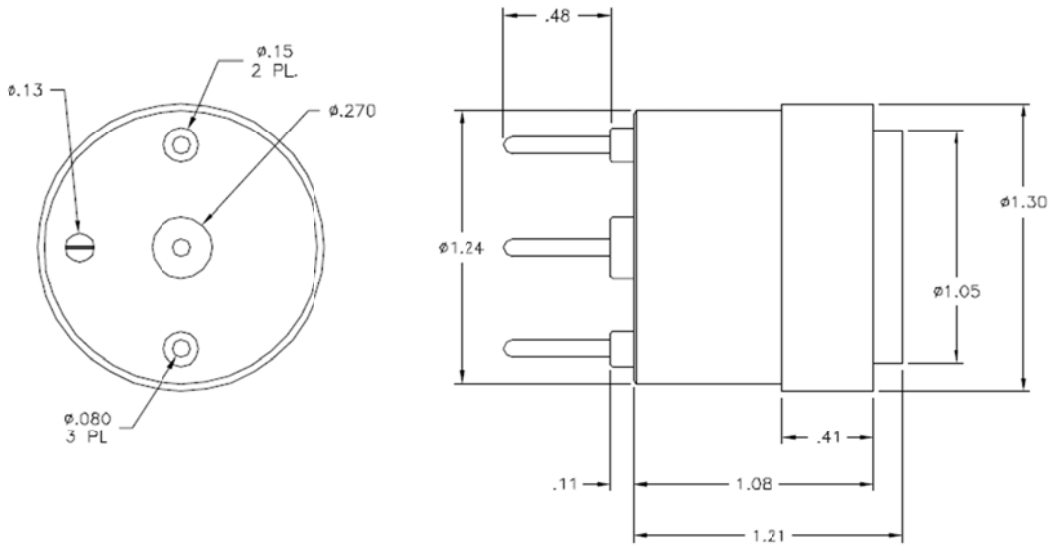
[3] Flash rate must be set so as not to exceed 60-Watts Average Power.

[4] Life is primarily a function of input energy per flash (E=1/2CV^2) but is also influenced by average power and peak current. See curves on following page for typical lamp performance.

[5] Typical for most operating conditions. Lamp output stability is dependent on a number of variable including input energy, flash rate, optics design, trigger module and power supply

Mechanical Dimensions

FX-4400



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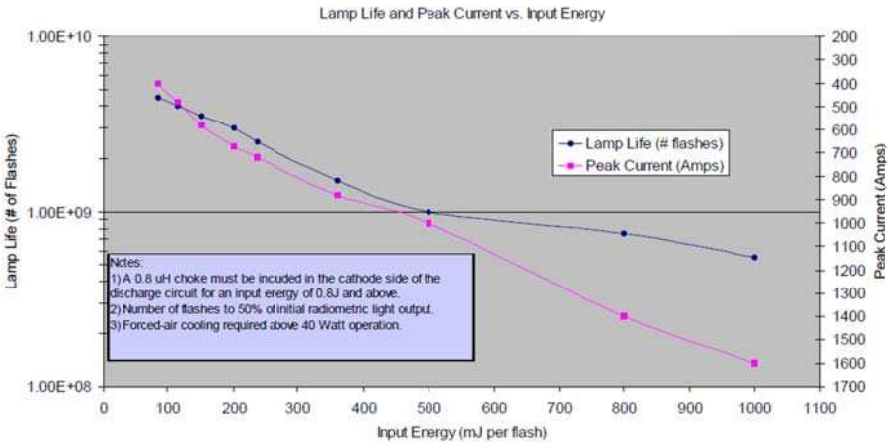
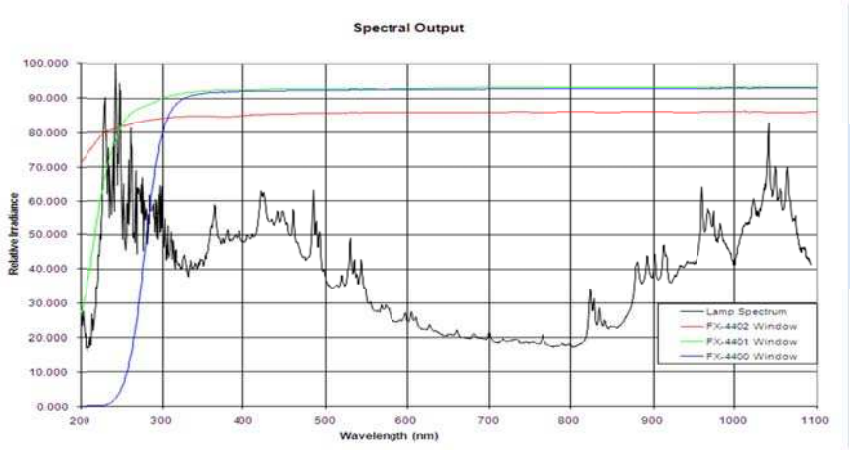
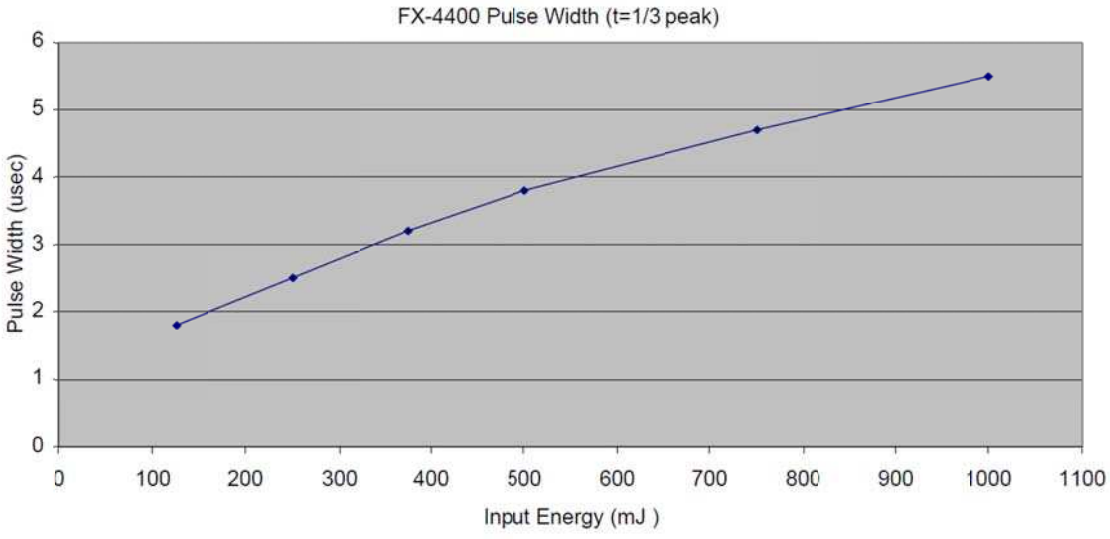
Lamp Life



Spectral Output



Pulse Width



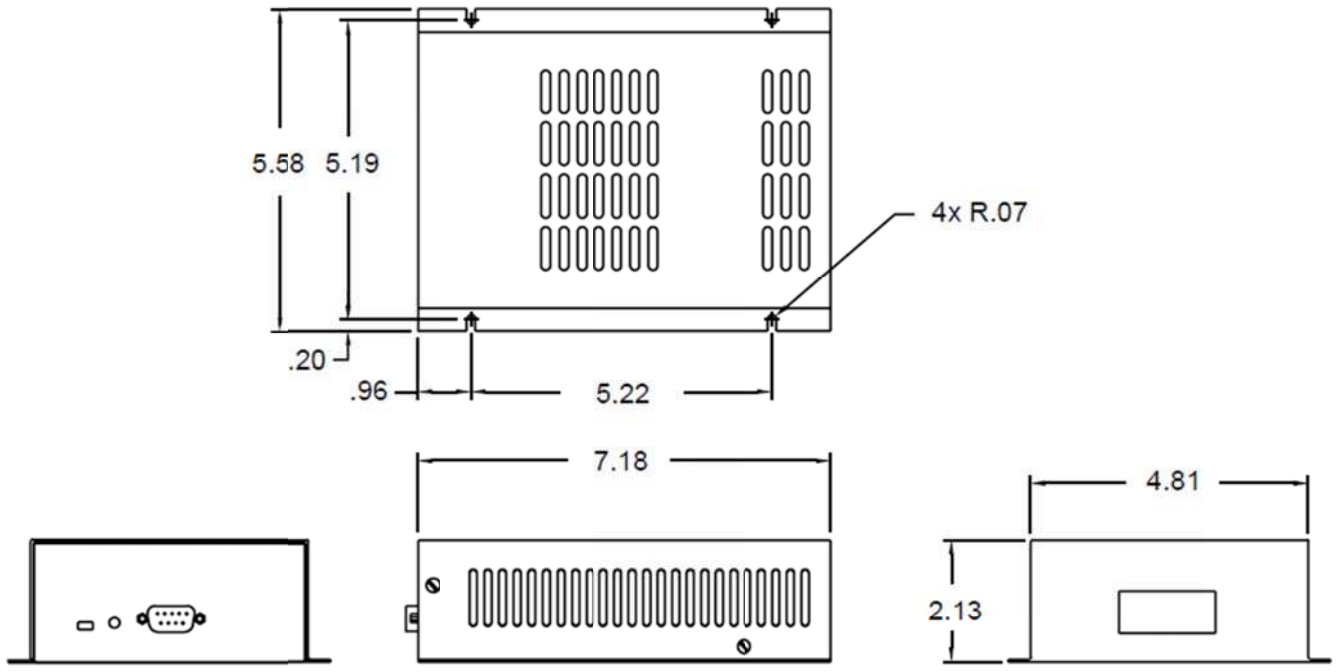
PS-4400 Power Supply

PS-4400 Inputs	
Voltage	24 VDC ±10%
Current	3A average at 24VDC, 6A peak at 24VDC 150W 24VDC External Power Supply recommended
Opto Isolated Trigger	+5V, 20-50mA peak input, 10-100µs pulse width, leading edge trigger. Optically isolated internal series resistor = 150Ω.
Trigger current	20 to 40mA peak
Vref (Vo/Vref = 226)	1.77 – 4.42 VDC

PS-4400 Outputs	
Discharge	
Average power	60W maximum
Voltage	400 – 1000VDC ±2%
Internal discharge capacitor	0.10, 0.22, 0.33, 0.47, 0.94, or 1.88 µF
Charge rate (minimum)	60J/sec (24V input 1000V output)
Trigger	
Trigger capacitor	0.22µF
Trigger capacitor voltage	175 ±15VDC
Maximum flash rate	60/E where energy per flash, E = ½ capacitance x voltage² (E=½ CV²). Do not exceed 1KHz

Mechanical Specifications		Environmental Specifications	
Weight	24 oz (680g)	Operating Temperature	32 to 104ºF (0 to 40ºC)
Input Connector	9 Pin D-sub	Storage Temperature	-40ºF to +194ºF (-40ºC to +90ºC)
Output Connector	Screw clamp terminal strip		
Enclosure	Metal		

PS-4400 Outline Drawing



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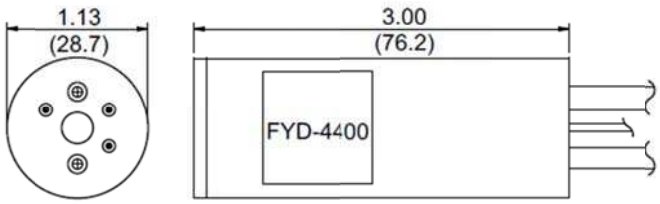
FYD-4400 Trigger Module

FYD-4400 Outline and Input



Trigger input:	0.22µf @ 175±15%
Discharge energy:	1.0 Joules Max.
Average power:	60 Watts (1)
Lead length:	12 inches (30.5)

1) Additional cooling required when operated above 40 watts.

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

About Excelitas Technologies

Excelitas Technologies is a global technology leader focused on delivering innovative, customized solutions to meet the lighting, detection and other high-performance technology needs of OEM customers.

From medical lighting to analytical instrumentation, clinical diagnostics, industrial, safety and security, and aerospace and defense applications, Excelitas Technologies is committed to enabling our customers' success in their specialty end-markets. Excelitas Technologies has approximately 3,000 employees in North America, Europe and Asia, serving customers across the world.

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