DATASHEET
Lighting Solutions

PRELIMINARY

LS-20
20-Watt Pulsed Xenon Light Source

LS-20 Pulsed Xenon Light Source for UV/Vis/NIR Applications

The LS-20 from Excelitas Technologies is a 20 Watt Pulsed Xenon Light Source which has been 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, and power supply in an EMI-suppressant enclosure.

The LS-20 offers a wide range of flash energy levels and 20 watts maximum 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.

Features

- High radiant intensity
- Continuous spectrum UV-VIS-IR
- High Stability <2% CV typical
- Long life expectation: 1.0 x 10^9 flashes
- Regulated trigger voltage
- Precision alignment
- Adjustable output
- Integrated package—flash lamp, trigger circuit and power supply, all in a compact, EMI suppressant enclosure
- CE marked and RoHS compliant

Applications

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

EXCELITAS® TECHNOLOGIES

LS-20

20-Watt Pulsed Xenon Light Source

LS-20

Electrical Input Specifications	
Parameter	**Specification**
Voltage	24 VDC ± 10%
DC Current	1.4 ADC, 4.0 A pk typical
Trigger	5 VDC, 10-100µsec pulse width, 25 ma min drive current
Reference Voltage, V_{ref}	1.9 - 4.76VDC (V_0/V_{ref} = 210)
Input Connector	9-PIN D-Sub

Electrical Output (to lamp)	
Parameter	**Specification**
Discharge Voltage (V_0)	400-1000VDC adjustable by reference voltage input
Discharge Capacitance (C)	0.1µF to 0.68µF available, See Configuration Table
Flash Rate (F)	Dependent on input trigger rate, up to $F_m = \frac{2}{t_r}$ Hz, where $E = \frac{CV_0^2}{2}$, or 1000Hz, whichever lower
Operating Power (P_a)	≤ 20 Watts ($P_a = F$)

Light Output	
Parameter	**Specification**
Spectral Range	Determined by Window Selection, See Configuration Table
Stability*	≤2% CV
Lifetime	≥1x10^9 flashes expected lifetime typical

* CV or Coefficient of variation is defined as: CV% = (Standard Deviation of 20 Flashes)/(Mean of 20 Flashes). Operating conditions: 0.47µF discharge capacitor. Maximum discharge voltage, 20 Hz flash rate, 335-345nm, average of 50 CV measurements (i.e. total of 1000 flashes). As shipped performance.

Environmental	
Parameter	**Specification**
Operating Temperature	32° to 104°F (0° to 40°C), cooling required under some conditions - see user manual for details.
Storage Temperature	-4° to 140°F (-20° to 60°C)
Humidity	5 to 85% RH, non-condensing
Safety Compliance	IEC 61010-1:2010 (production units)

LS-20

20-Watt Pulsed Xenon Light Source

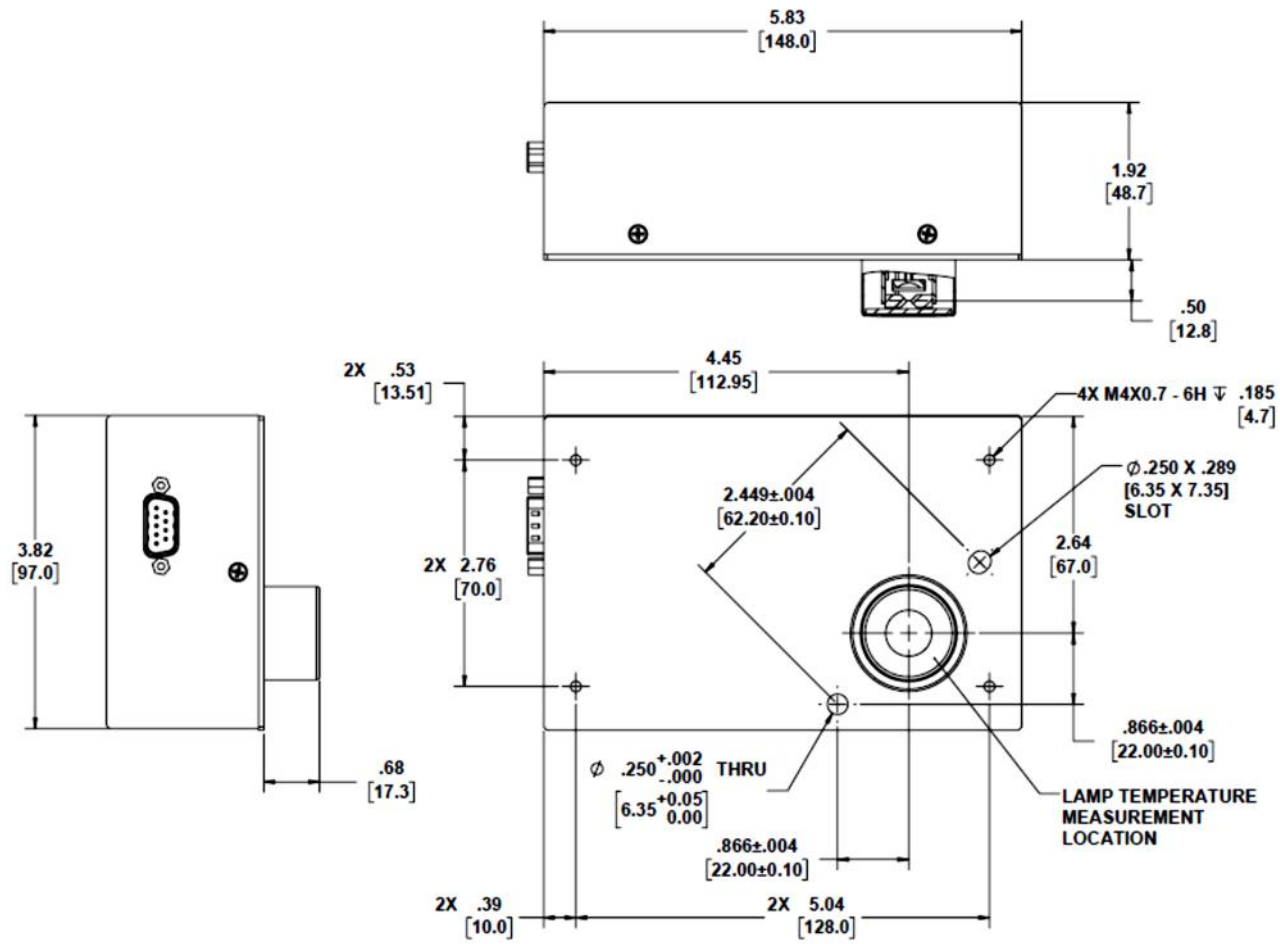
Configuration Table: LS-20AB-C	
Where:	
A = Window Material	**1** - 225-2000+ nm (Borosilicate)*
	2 - 190-2000+ nm (UV Glass)
	3 - 120-2000+ nm (MgF2)*
	4 - 160-2000+ nm (Sapphire)*
B = Discharge Capacitor	**1** - 0.10 µF*
	2 - 0.22 µF*
	3 - 0.33 µF*
	4 - 0.47 µF*
	5 - 0.68 µF
C = Options/Accessories	**0** – None

***** Contact Excelitas Applications Engineering

Example: **LS-2025-0** LS-20 with UV Glass Window and 0.68 µF Capacitor

Mechanical Dimensions

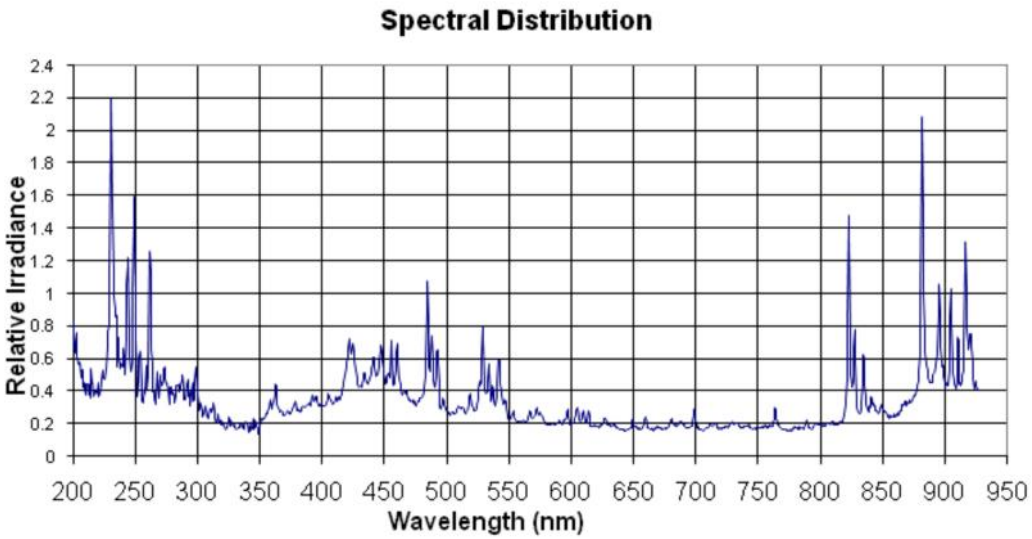
LS-20 Outline (Reference dimensions)



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

20-Watt Pulsed Xenon Light Source

Spectral Resolution (Reference Only)



About Excelitas Technologies

Excelitas Technologies® Corp. is a photonics technology leader focused on delivering innovative, high-performance, market-driven solutions to meet the lighting, optronics, detection and optical technology needs of our OEM customers.

Serving a vast array of applications across biomedical, scientific, safety, security, consumer products, semiconductor, industrial manufacturing, defense and aerospace sectors, Excelitas stands committed to enabling our customers' success in their end-markets. Our photonics team consists of 7,000 professionals working across North America, Europe and Asia, to serve customers worldwide.

For a complete listing of our global offices, visit http://www.excelitas.com/locations