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Find the *Excelitas / Perkin Elmer LS-1130-3* at our website: *Click HERE*

1100 Series
FlashPacs



Description

The 1100 Series FlashPacs have been designed to combine state-of-the-art circuitry and components into a packaged light source which provides microsecond-duration pulses of broadband light with exceptional arc stability. 1100 Series FlashPacs utilize the PS1110 and PS1120 variable output power supplies in conjunction with the appropriate LitePac® trigger Module to operate several types of flashlamps.

A fully shielded steel case and EMI suppression circuitry combine to diminish the radiated and conducted noise normally associated with high peak discharge currents.

FlashPacs can be ordered with a wide range of discharge capacitance values and several types of the 1100 Series flashlamps. These systems make ideal sources of pulsed light for ultraviolet-visible absorption spectroscopy, HPLC, blood analyzers, colorimetry, machine vision and ultraviolet applications.

Features

- Exceptional arc stability
- High radiant intensity
- Continuous spectrum UV-VIS-IR
- Long life
- High repetition flash rates
- Low heat radiation
- Microsecond flash durations
- Selection of flashlamp types
- Selection of discharge capacitor
- No warm up period
- High efficiency output in the blue
- Simple fiber optic coupling
- Small size

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Inputs

	LS 1102	LS 1130
Voltage (VDC)	11 – 28	15 – 28
DC Current (amps)	1.3 @ 12V	<1.4 @ 24V
Peak Current (amps)	3.5 @ 12V	3.5 @ 12V
Trigger	(1) TTL	(1) TTL
Vref (Vo:Vref = 100:1)	(2) 4.5 – 6.0	(2) 4 – 10
EMI Suppression	(3) YES	(4) YES

Discharge Parameters

	LS 1102	LS 1130
Voltage (DC) (Vo)	(2) 450 – 600	(2) 400 – 1000
Power (watts)	10 max	20 max
Line Regulation	1%	1%
Ripple	(5) 0.5%	(5) 0.5%
Recharge Delay (µsec)	200	200
Flash Rate (Hz)	(Capacitor-value dependent, see next page)	
Discharge Capacitance (µfd)	0.1 standard (see next page for other values available)	

Notes:
(1) Opto-isolated, + 5V TTL compatible, 20–50 ma peak input, 10–100 µsec pulse width, leading edge trigger, internal series resistor 150 Ohms.

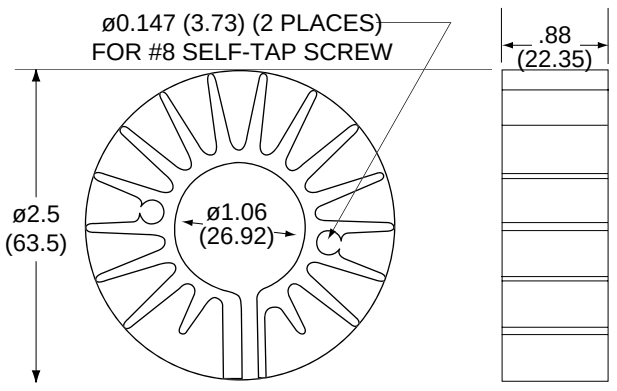
(2) Output voltage level is controlled by a reference voltage (Vref) which may be adjusted internally or applied externally. The internal/external mode is determined by the position of a jumper on the power supply PC board. When set to the internal mode, voltage is set via a potentiometer which is accessible from the rear panel of the unit on the LS 1102 and LS 1130.

(3) Inductor and filter capacitor for power input. All inputs through a shielded 9–PIN "D" connector.

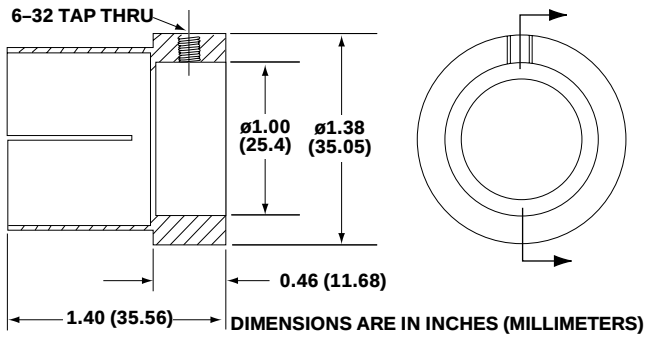
(4) Common-mode inductor and filter capacitor in power input. All inputs through a shielded 9-PIN "D" connector.

(5) Peak-to-peak maximum with 0.1 µfd discharge capacitor at maximum output.

LS-1130 Heat Sink (Part # MVS-15)



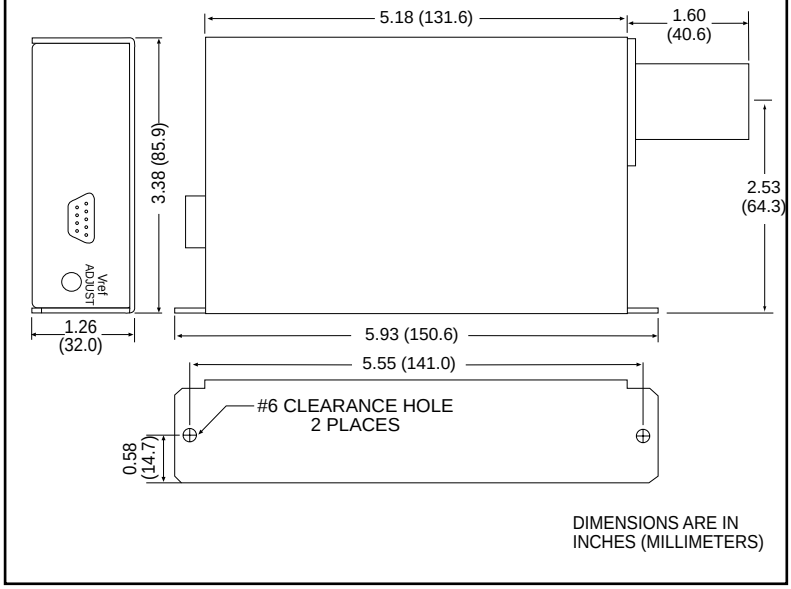
LS-1130 Optical Adapter (part # MVS-14-1)



LS-1102 Optical Connector



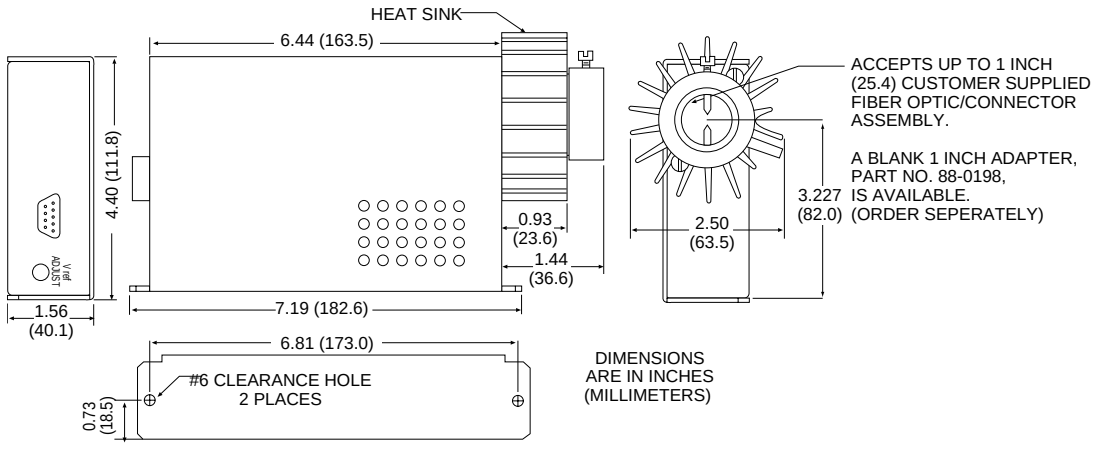
LS-1102



Discharge Capacitors Available

Model Number	Discharge Capacitor	Maximum Input Energy Per Flash	Maximum Flash Rate @ 600 VDC
LS 1102–1	0.1 µfd – standard	18 mJ	550 Hz
LS 1102–2	0.22 µfd	40 mJ	250 Hz
LS 1102–3	0.47 µfd	85 mJ	118 Hz
LS 1102–4	1.0 µfd	180 mJ	55 Hz
LS 1102–5	2.0 µfd	360 mJ	28 Hz

LS-1130



Discharge Capacitors Available

Model Number	Discharge Capacitor	Maximum Input Energy Per Flash	Maximum Flash Rate @ 1000 VDC
LS 1130-1	0.1 µfd – standard	50 mJ	400 Hz
LS 1130-2	0.22 µfd	110 mJ	180 Hz
LS 1130-3	0.47 µfd	235 mJ	85 Hz
LS 1130-4	1.0 µfd	500 mJ	40 Hz

Flashlamps Available for LS-1102 FlashPacs (order flashlamps separately)

Type	Arc Length (mm)	Spectral Distribution (nm)	Window Material	Stability (Intensity)	Stability (Spatial)	Jitter	Life
FX 1101	1.5 mm	225 – 1100+	Borosilicate	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1102	1.5 mm	190 – 1100+	UV	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1103	1.5 mm	120 – 1100+	VUV	1%	<0.1 mm	<200 ns	>1 x 10^9

Flashlamps Available for LS-1130 FlashPacs (order flashlamps separately)

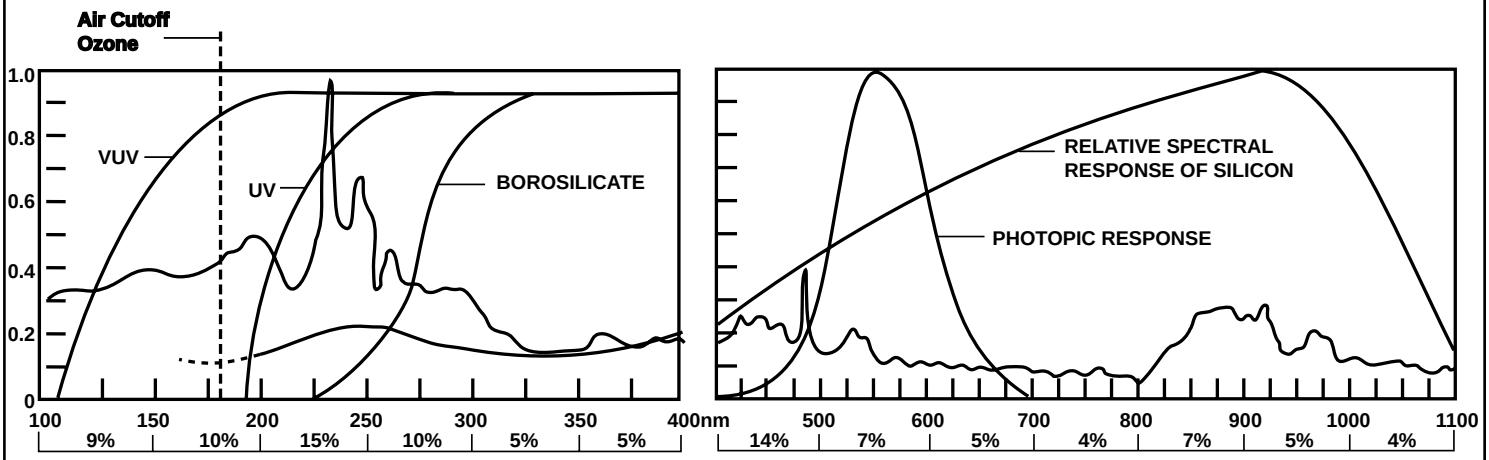
Type	Arc Length (mm)	Spectral Distribution (nm)	Window Material	Stability (Intensity)	Stability (Spatial)	Jitter	Life
FX 1150	1.5 mm	225 – 1100+	Borosilicate	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1151	1.5 mm	190 – 1100+	UV	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1152	1.5 mm	120 – 1100+	VUV	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1153	3.0 mm	225 – 1100+	Borosilicate	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1154	3.0 mm	190 – 1100+	UV	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1155	3.0 mm	120 – 1100+	VUV	1%	<0.1 mm	<200 ns	>1 x 10^9

High Output Reflector Flashlamps for LS-1130 FlashPacs (order flashlamps separately)

Type	Arc Length (mm)	Spectral Distribution (nm)	Window Material	Stability (Intensity)	Stability (Spatial)	Jitter	Life
FX 1160	1.5 mm	225 – 1100+	Borosilicate	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1161	1.5 mm	190 – 1100+	UV	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1162	1.5 mm	120 – 1100+	VUV	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1163	3.0 mm	225 – 1100+	Borosilicate	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1164	3.0 mm	190 – 1100+	UV	1%	<0.1 mm	<200 ns	>1 x 10^9
FX 1165	3.0 mm	120 – 1100+	VUV	1%	<0.1 mm	<200 ns	>1 x 10^9

Note: The data shown in the above charts is typical for the products listed. Refer to the PerkinElmer 1100 Series Flashlamp Data Sheet and Technical Brief for complete specifications.

Spectral Output Distribution of Xenon Flashlamps and Window Transmittance



WAVELENGTH IN NANOMETERS AND LIGHT OUTPUT DISTRIBUTION IN %

Outline Drawings or Specification Charts

E	=	$1/2\ CV^2$	where:	E	=	Discharge energy (joules)
				C	=	Capacitance (microfarads)
				V	=	Discharge voltage (kilovolts)
P_{AVG}	=	$E\ F$		P_{AVG}	=	Average power (watts)
				E	=	Discharge energy (joules)
				F	=	Flash rate (pulses per second)
I_{PK}	=	$V(C/L)^{1/2}$		I_{PK}	=	Peak discharge current (keep below 1000 amps)
				L	=	Circuit inductance (use 0.5µH for best approximation)
$t_{1/3}$	=	$\pi\ (LC)^{1/2}$		$t_{1/3}$	=	Pulse width at 1/3 peak.

Note: Peak currents should be kept below 1000 amps. Exceeding this limit could cause envelope fracture, excessive electrode wear and premature darkening.

Caution

Some glass flashlamps are under high internal pressure, and, if broken, could result in glass particles being blown into the face and hand areas. To prevent injury, wear suitable protective devices such as safety glasses and/or face mask and gloves.

Some types of pulsed lamps generate intense ultraviolet radiation which, if not properly shielded from personnel in the area, will cause burns to any exposed skin and especially to the eyes. Do not expose any skin area or the eyes to the direct or reflected radiation of an operating lamp. If you have to view an operating lamp, always use protective covering for exposed skin area and ultraviolet-attenuating goggles for the eyes.

For more information email us at opto@perkinelmer.com or visit our web site at www.perkinelmer.com/opto
Note: All specifications subject to change without notice.

USA:
PerkinElmer Optoelectronics
35 Congress Street
Salem, MA 01970
Toll Free: (800) 950-3441 (USA)
Phone: (978) 745-3200
Fax: (978) 745-0894

Europe:
PerkinElmer Optoelectronics
Wenzel-Jaksch-Str. 31, D-65199
Weisbaden, Germany
Phone: +49 (0) 611-492-437
Fax: +49 (0)611-492-159

Asia:
PerkinElmer Optoelectronics
47 Ayer Rajah Crescent #06-12
Singapore 139947
Phone: +65 775 2022
Fax: +65 775 1008

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