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



1100 Series

High-Stability Short Arc Xenon Flashlamps



FX-1100 Series Flashlamps from Excelitas provide exceptional arc stability.

The 1100 Series Short Arc Xenon Flashlamps from Excelitas Technologies are unconfined arc flashlamps which produce microsecond duration pulses of broadband light of high radiant intensities. Capable of operating at high repetition rates, these small flashlamps generate light over a continuous spectrum from ultraviolet to infrared. Exceptional arc stability and life characteristics will make the 1100 Series Flashlamps indispensable in precision photometry, radiometry, and spectroradiometry. When coupled with the 1100 Series Trigger Modules and highly regulated-low ripple power supplies, the short arc flashlamps make ideal sources of pulsed light for clinical and invitro diagnostics, life sciences, drug discovery, proteomics, analytical instrumentation, and machine vision applications.

The 1100 Series offer a broad range of lamps that range in power from 10 Watt glass-bodied lamps to 20 Watt metal can lamps. The FX-1160 Series metal can lamp also uses an internal, hemi-spherical reflector to increase usable light output by more than 40% over non-reflector lamps. All these lamps, when mated with the appropriate trigger module and power supply, will provide lighting solutions for the most demanding applications.

Key Features

- Exceptional arc stability
- High radiant intensity
- Continuous spectrum UV-VIS-NIR
- Long life
- High repetition flash rates
- Low heat radiation
- Microsecond flash durations
- Various envelope features
- Now warm up period
- High efficiency in the UV and blue
- Simple fiber optic coupling
- Small size

Applications

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

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1100 Series

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)	Jitter (ns)	Stability[5]	Power Supply	LitePac Type
Glass-Body												
FX-1101	1.5	225-1100+	Borosilicate	0.15 max	10	350-1000	300	>1x10^9	<200	<1%CV	PS-1105	FYD-1101
FX-1102		190-1100+	UV Glass								PS-1110	FYD-1101B
FX-1103		120-1100+	MgF_2									
FX-1104	3.0	225-1100+	Borosilicate	0.15 max	10	350-1000	300	>1x10^9	<200	<1%CV	PS-1105	FYD-1101
FX-1105		190-1100+	UV Glass								PS-1110	FYD-1101B
FX-1106		120-1100+	MgF_2									
Metal Can												
FX-1150	1.5	225-1100+	Borosilicate	0.50 max	20	350-1000	300	>1x10^9	<200	<1%CV	PS-1120	FYD-1150
FX-1151		190-1100+	UV Glass									FYD-1150B
FX-1152		120-1100+	MgF_2									
FX-1153	3.0	225-1100+	Borosilicate	0.50 max	20	350-1000	300	>1x10^9	<200	<1%CV	PS-1120	FYD-1150
FX-1154		190-1100+	UV Glass									FYD-1150B
FX-1155		120-1100+	MgF_2									
Metal Can with Reflector[6]												
FX-1160	1.5	225-1100+	Borosilicate	0.50 max	20	350-1000	300	>1x10^9	<200	<1%CV	PS-1120	FYD-1150
FX-1161		190-1100+	UV Glass									FYD-1150B
FX-1162		120-1100+	MgF_2									
FX-1163	3.0	225-1100+	Borosilicate	0.50 max	20	350-1000	300	>1x10^9	<200	<1%CV	PS-1120	FYD-1150
FX-1164		190-1100+	UV Glass									FYD-1150B
FX-1165		120-1100+	MgF_2									

[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 10/20 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

[6] The hemispherical reflector internal to the FX-1160 should not be confused with competitive types employing paraboloids or ellipsoids in which all of the forward direct light is non-recoverable and becomes a serious source of optical scattering. Excelitas' FX-1160 has an electrode orientation which does not block the forward light emission and therefore does not cause a "black hole" in the output beam profile. The optical design of the FX-1160 is ideal for use with lenses and fiber bundles, and provides the additional advantage of reduced optical noise by preventing back-plane scattering caused by the pin base.

CAUTION! Care should be taken when inserting or removing lamps from their sockets. Excessive side force placed on the pins of the lamp could cause the seal around the pins to crack and the lamp to leak resulting in lamp failure.

CAUTION! *Glass Lamps* - Caution should be taken not to mount or attached any type of hardware to the body of lamp. This could cause the lamp to crack.

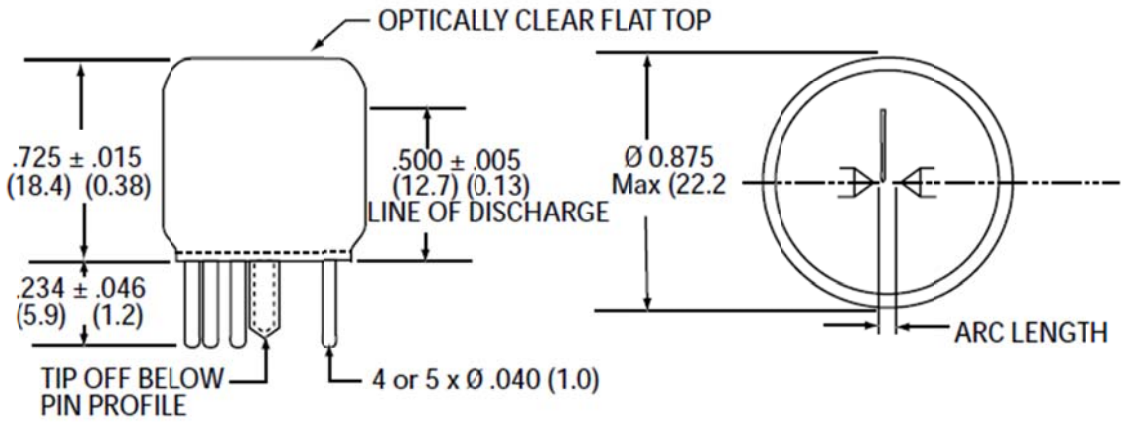
CAUTION! *Metal Can Lamps* - Caution needs to be taken not put excessive or uneven force on the body of the lamp. This can cause failures with the glass to metal seals. Please consult an application engineer for suggestions on lamp mounting.

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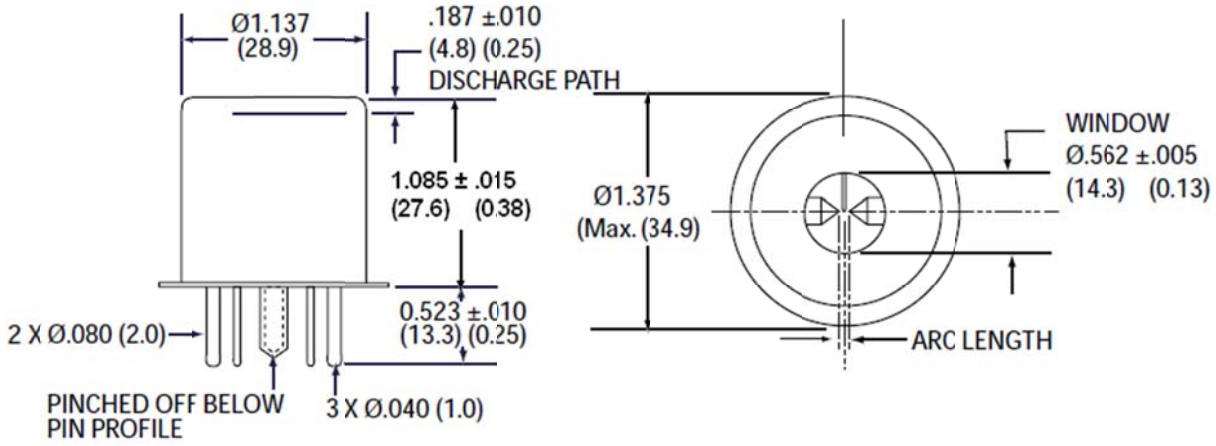
High-Stability Short Arc Xenon Flashlamps

Mechanical Dimensions

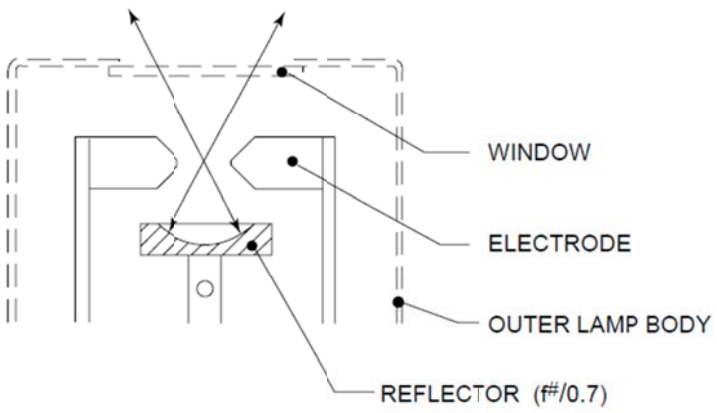
FX-1100 Outline



FX-1150 & FX-1160 Outline



FX-1160 Optical Profile

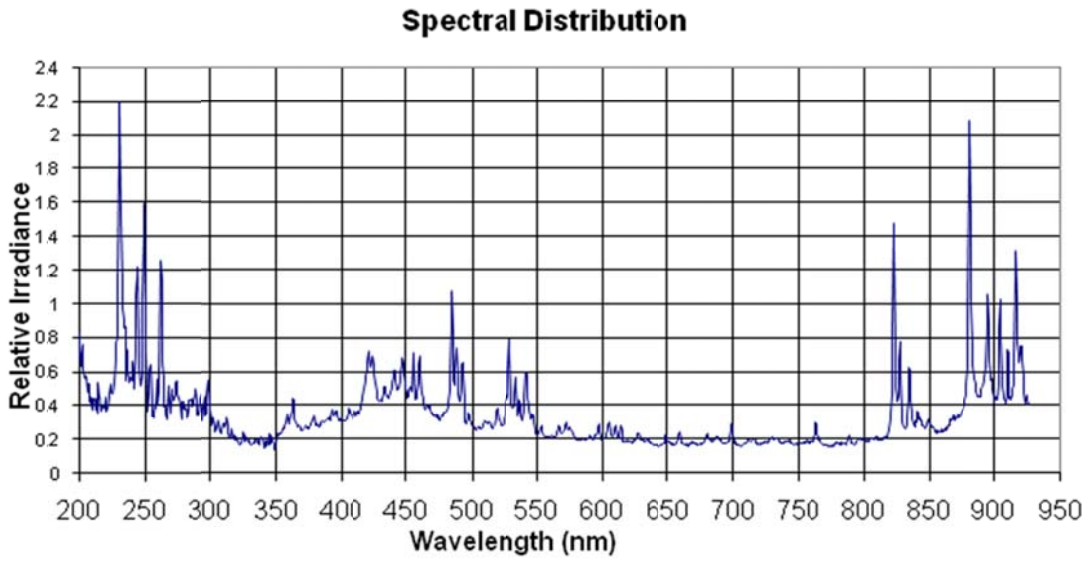


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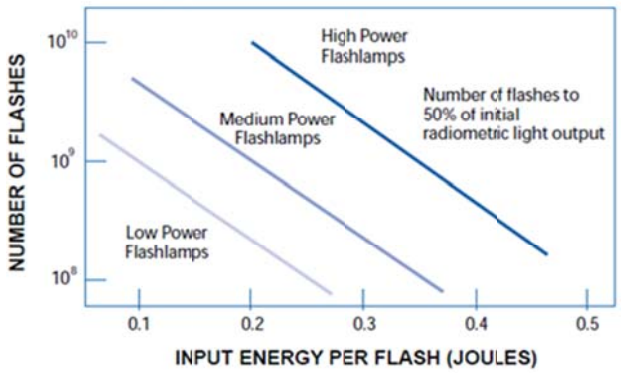
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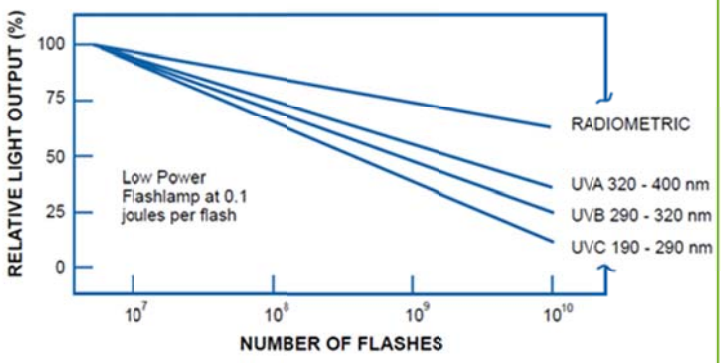
Spectral Distribution



Life vs. Input Energy



Life vs. Wavelength



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Circuit Equations

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}	=	$V(C/L)^{½}$	I_{PK}	= Peak discharge current (keep below 1000 amps)
			L	= Circuit inductance (use 0.5µH for best approximation)
$t_{1/3}$	=	$\pi\ (LC)^{½}$	$t_{1/3}$	= Pulse width at 1/3 peak.

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.

Excelitas Technologies
35 Congress Street
Salem, Massachusetts
01970 USA
Telephone: (+1) 978.745.3200
Toll free: (+1) 800.950.3441
Fax: (+1) 978.745.0894

Excelitas Technologies
LED Solutions, Inc.
160 E. Marquardt Drive
Wheeling, Illinois
60090 USA
Telephone: (+1) 847.537.4277
Fax: (+1) 847.537.4785

Excelitas Technologies
Illumination, Inc.
44370 Christy Street
Fremont, California
94538-3180 USA
Telephone: (+1) 510.979.6500
Toll-free: (+1) 800.775.6786
Fax: (+1) 510.687.1140

Excelitas Technologies
GmbH & Co. KG
Wenzel-Jaksch-Straβe 31
D-65199 Wiesbaden
Germany
Telephone: (+49) 611 492 430
Fax: (+49) 611 492 165

Excelitas Technologies Shenzhen Co., Ltd.
Wearnes Technology Center
No.10 Kefa Road, Science & Industry Park
Nanshan District,
Shenzhen, Guangdong
P.R. of China 518057
Telephone: +86 2655 3861
Fax: +86 755 2661 7311

For a complete listing of our global offices, visit www.excelitas.com/ContactUs

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