

STROBE LIGHT SOURCE

FLASH LIGHT SOURCES

LIGHTNINGFLASH™ LF1

L10211/L10212 SERIES

High-power strobe light sources with high stability

OVERVIEW

This flash light source, called "LF1", consists of a xenon flash lamp, power supply and control circuit, all integrated into one package. Selecting the desired optical system components such as the lightguide allows the LF1 to emit a variety of different types of light. Light emission is highly intense for a period of microseconds, making the LF1 ideal for strobe light sources. The LF1 is also easy to use and handle, offering features such as programmable light emission, flash count and control from a PC.



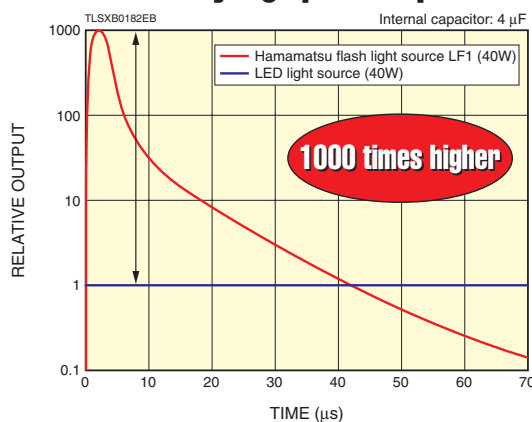
Left: Rear panel light guide type L10211 series,
Right: Front panel light guide type L10212 series
(Light guide is sold separately)

APPLICATIONS

- Light source for industry and lab use
(factory automation, semiconductor inspection, image processing, fluorescence microscope, etc.)

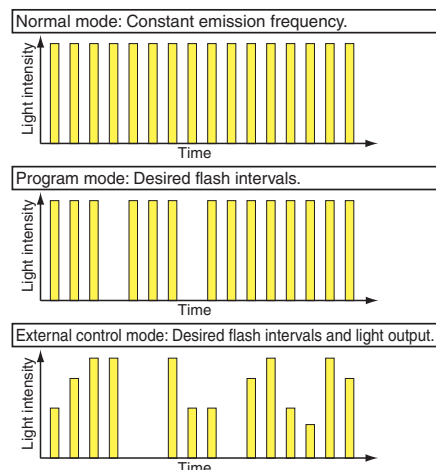
FEATURES

- Long service life: 1×10^8 flashes
- High stability: $\pm 5\%$ (typical)
- Instantaneously high peak output



- External control
Ease for synchronization with CCD camera
- Filter attachable
- Low noise and connectable to a PC

- Programmable light emission
(5 types of 16 flashing program)



- Easy lamp replacement
Precise arc alignment with cassette
- CE marked
With EMC directives and CISPR Class A

LINEUP

Type No.	Lightguide connector	Spectral distribution (nm)	Internal capacitor (μF)
L10211-03-01	Front panel [Ⓐ]	290 to 1600 (synthetic silica light guide [Ⓑ])	1
L10211-03-02			2
L10211-03-04			4
L10211-04-01		385 to 1600 (glass light guide [Ⓑ])	1
L10211-04-02			2
L10211-04-04			4
L10212-03-01	Rear panel [Ⓐ]	290 to 1600 (synthetic silica light guide [Ⓑ])	1
L10212-03-02			2
L10212-03-04			4
L10212-04-01		385 to 1600 (glass light guide [Ⓑ])	1
L10212-04-02			2
L10212-04-04			4

NOTE:

- Ⓐ As viewed from the operation panel (front panel)
- Ⓑ Recommended light guide (see the last page)
- Type No. (synthetic silica light guide): A10014-50-0110
- Type No. (glass light guide): A10015-100-0110

SPECIFICATIONS

Parameters	L10211 / L10212						Unit
	-03-01	-03-02	-03-04	-04-01	-04-02	-04-04	
Spectral distribution	290 to 1600			385 to 1600			nm
Flash duration (FWHM)	2 to 4						μs
Delay time	20						μs Max.
Light output stability [Ⓐ] (Typ.)	±5						%
Input voltage (AC)	100 to 240						V
Power consumption (Max.)	150						W
Lamp guaranteed life [Ⓑ]	1 × 10 ⁸						Flash
Light emission control	Light emission by internal trigger or external trigger						—
Lamp for maintenance	L10213-11						—
Trigger socket for maintenance	E10303-02						—
Operating ambient temperature	+5 to +35						°C
Operating ambient humidity	10 to 80 (No condensation)						%
Storage temperature	-10 to +70						°C
Storage humidity	Below 80 (No condensation)						%
External control	RS-232C, D-SUB 25 Pin						—
Applicable standards	EN61326 : CLASS A						—

NOTE: Ⓐ Measured with lamp supply voltage of 800 V, internal capacitor of 4 μF, and emission frequency of 30 Hz (at 40 W input).

Ⓑ Flash count at which the light output intensity is still more than 60 % of the initial light output intensity and also the incidence of misflash is 1/10000 or less.

OPERATING CONDITIONS

Parameters	L10211 / L10212						Unit
	-03-01	-03-02	-03-04	-04-01	-04-02	-04-04	
Internal capacitor	1	2	4	1	2	4	μF
Lamp supply voltage	300 to 1000		300 to 800	300 to 1000		300 to 800	V
Repetition rate [Ⓐ] Ⓒ	1 to 70	1 to 40	1 to 30	1 to 70	1 to 40	1 to 30	Hz
Maximum lamp input energy (per flash) [Ⓑ] Ⓒ	0.5	1	1.28	0.5	1	1.28	J
Maximum lamp input power [Ⓑ] Ⓒ	40						W

<Maximum lamp input energy (per flash)>

$$E = 1/2 \times C \times V^2$$

<Maximum lamp input power>

$W = E \times f$ *Set the repetition rate so that the lamp input power is 40 W or less.

E: maximum lamp input energy (J), C: internal capacitor (F), V: lamp supply voltage (V dc), f: repetition rate (Hz), W: Maximum lamp input power (W)

Calculation example

[Lamp supply voltage: 800 V, Internal capacitor: 4 μF, Repetition rate: 30 Hz]

$$1/2 \times 4 \mu\text{F} \times 800^2 \text{ V} = 1.28 \text{ J}$$

$$1.28 \text{ J} \times 30 \text{ Hz} = 38.4 \text{ W}$$

Maximum lamp input energy (per flash): 1.28 J

Maximum lamp input power: 38.4 W

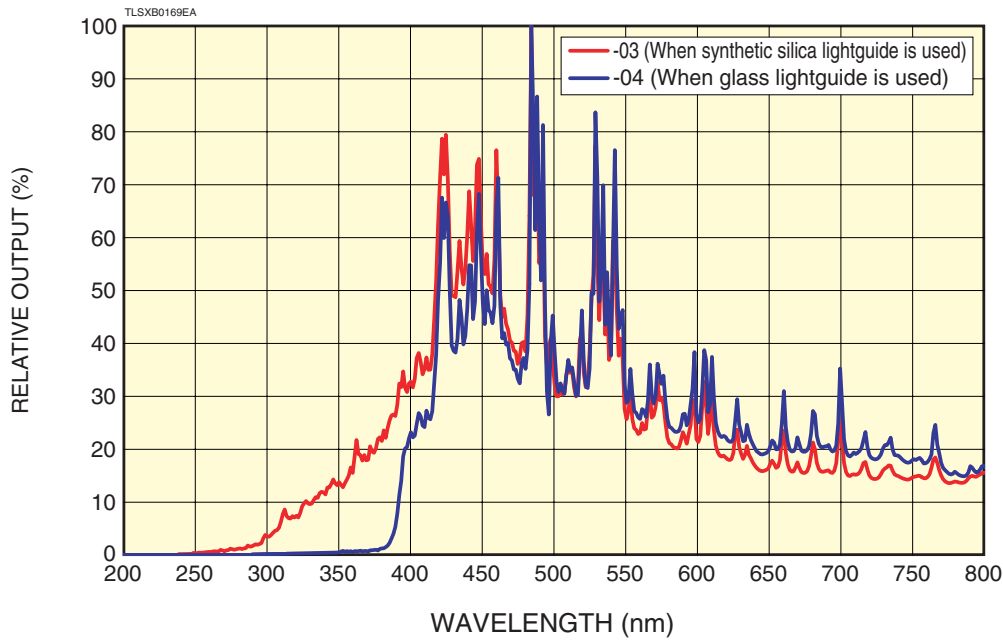
NOTE: Ⓐ Setting the repetition rate outside the conditions shown above may cause deterioration of the stability and a misflash.

Please consult us if you need a higher repetition rate than shown above.

Ⓑ Do not set the value exceeding the maximum lamp input energy (per flash) and the maximum lamp input power. as it may cause deterioration and damage to the lamp.

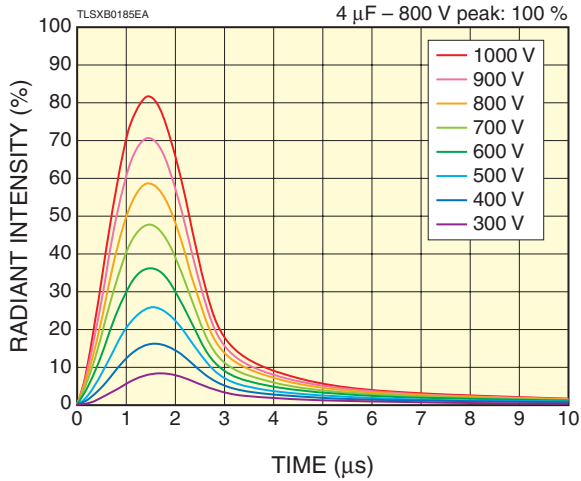
Ⓒ Light emission by trigger.

RADIANT SPECTRAL DISTRIBUTION

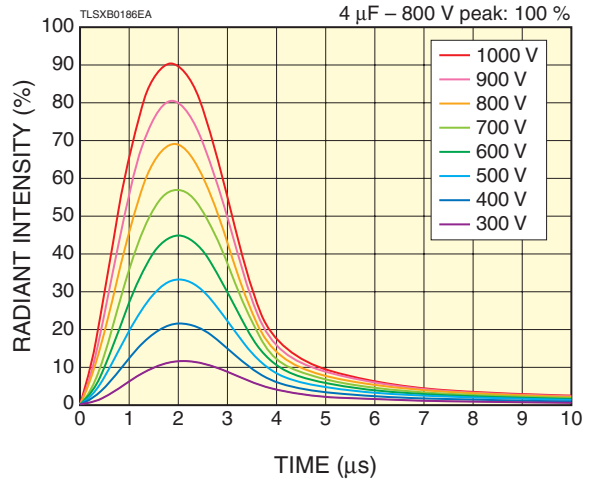


LIGHT OUTPUT INTENSITY

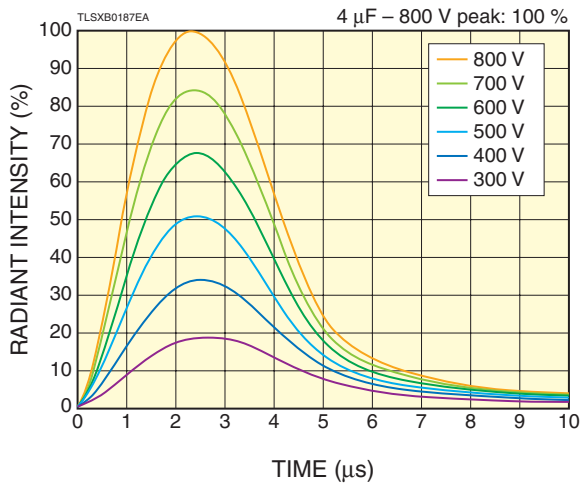
Internal capacitor: 1 μ F type



Internal capacitor: 2 μ F type

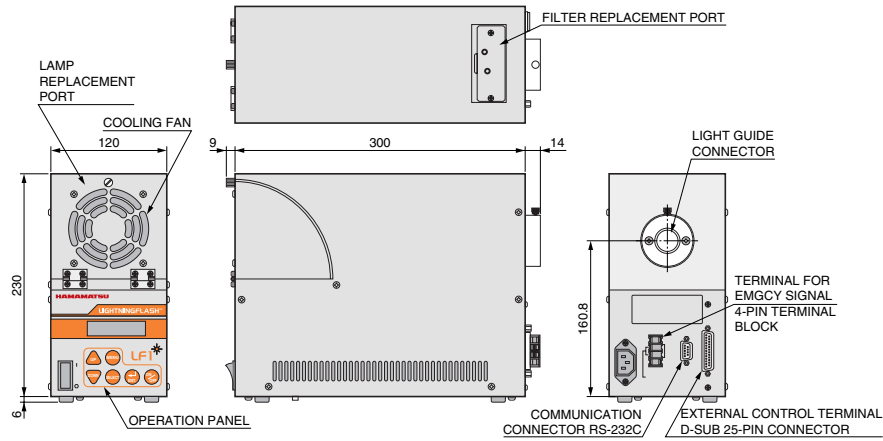


Internal capacitor: 4 μ F type



DIMENSIONAL OUTLINES (Unit: mm)

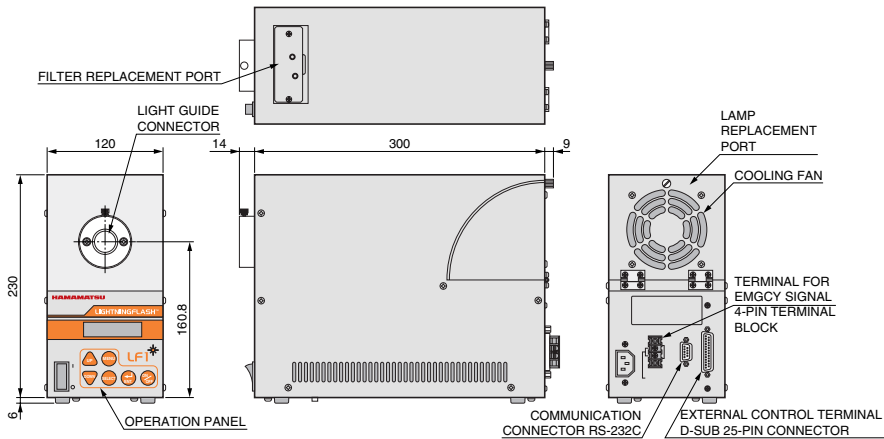
L10211 series



Weight: Approx. 6 kg

TLXSA0124EA

L10212 series



Weight: Approx. 6 kg

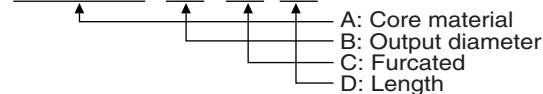
TLXSA0119EB

LIGHT GUIDES (Sold separately)

Various light guides using a core material with high UV transmittance are available ranging from the single type up to a 6-furcated type. Select the desired light guide that suits your application. We also welcome requests for custom light guides with different numbers of furcated ends, output end shapes and lengths.

●TYPE NO. GUIDE

A10014-50-0110



A: Core material

Type No.	Core material
A10014	Synthetic silica
A10015	Glass

B: Output diameter

Suffix	Output diameter
50	φ5 mm
70	φ7 mm
100	φ10 mm

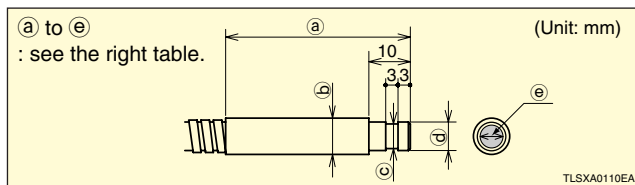
C: Furcated

Suffix	Furcated
01	Single
02	2
04	4

D: Length

Suffix	Length
10	1 m
15	1.5 m
30	3 m

●DIMENSIONAL OUTLINE OF OUTPUT END



* PATENT PENDING: JAPAN 5

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