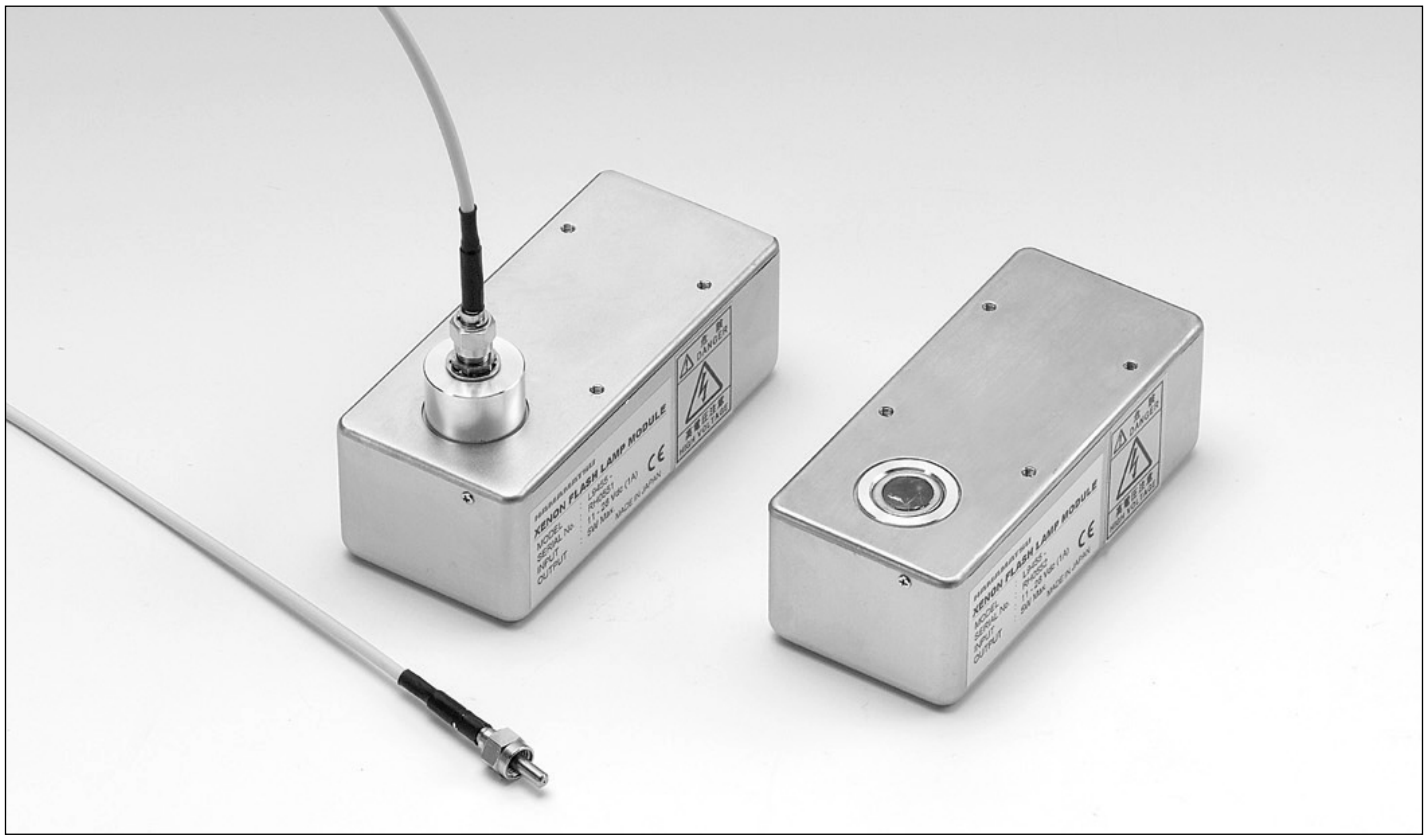
LAMP

COMPACT 5-WATT XENON FLASH LAMP MODULE

L9455 SERIES, L9456 SERIES



▲Right: Standard Type
Left: With SMA fiber adapter Type (L9455 series): SMA fiber is option (sold separately).

OVER VIEW

The L9455 and L9456 are compact xenon flash lamp modules integrating a 5-watt xenon flash lamp with its power supply and trigger socket. These lamp modules allow an energy input up to 5 watts, which is the maximum among similar lamp modules of the same size. The high stability and long operating life make them ideal as light sources for water quality analyzers and atmospheric analyzers.

APPLICATIONS

- Blood Analysis
- In-vitro Testing
- Atmospheric Analyzers
- Water Quality Analyzers
- Microplate Reader
- Fluorescence Spectrophotometers

FEATURES

- High Stability: 2.0 % CV (Max.) *5
- Long Service Life: 1.0 × 10^9 flash
- Compact: Smallest Size Among 5-watt Input Lamp Modules
- Repetition Rate: 530 Hz Max. *12
- Broad Radiant Spectrum from UV to Near Infrared Region
- Reduced Radiant Noise by Using Metal Package
- Compatible with SMA Optical Fiber: No Lens Design Required

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LINE-UP

Standard Type (without Fiber Adapter)

Type No.	Arc Size (mm)	Main Discharge Capacitor (μF)*2
L9455-01	1.5	0.22
L9455-02		0.11
L9455-03		0.047
L9456-01	3.0	0.22
L9456-02		0.11
L9456-03		0.047

With SMA Fiber Adapter Type

Type No.	Arc Size (mm)	Main Discharge Capacitor (μF)*2
L9455-11	1.5	0.22
L9455-12		0.11
L9455-13		0.047

SPECIFICATIONS

Parameter		L9455 SERIES	L9456 SERIES	Unit
Arc Size		1.5	3.0	mm
Window Material		UV glass		—
Spectral Distribution		185 to 2000		nm
Main Discharge Voltage Adjustable Range *1		400 to 600		V
Main Discharge Capacitor *2		0.047 / 0.11 / 0.22		μF
Max. Average Input Energy (per flash) *3		See below table		J
Max. Average Input (continuous) *4		5		W
Light Output Stability		2.0 *5	1.5 *5	% CV
		(5.0) *6	(3.0) *6	% p-p
Guaranteed Life *7		1.0×10^9		Flash
Input Voltage Range		11 to 28		V
Input Current		1		A
Rush Current		4		A
Trigger Input		Rectangular Wave (pulse width 10 μs or more) at 5 V TTL *8		—
Trigger Input Impedance		330		Ω
Cooling		Natural air cooling *9		—
Weight	Standard Type	Approx. 170		g
	With SMA Fiber Adaptor Type	Approx. 180		g
Operating Ambient Temperature		0 to +40		°C
Storage Ambient Temperature		-40 to +90		°C
Storage Ambient Humidity		Less than 95 *10		% RH
Conformance Standard		EN61326 (1997+A1: 1998+A2: 2001 class A)		—
Other		SMA fiber adapter *11		—

NOTE:

*1: Adjustable with internal trimmer potentiometer or external voltage supply of 3.2 V to 4.8 V.

*2: Adjusted at factory prior to shipment.

*3: Maximum average input energy (per flash) E is given by: $E=1/2\ CV^2$ [J], where V is the main discharge voltage (V) and C is the main discharge capacitance (F).

*4: Maximum average input (continuous) W is given by: $W=E \times f$ [W], where E is the maximum input energy (J) and f is the repetition frequency (Hz).

*5: Calculated by: standard deviation / average light output × 100 [%]

*6: Calculated by: (maximum light output - minimum light output) / average light output × 100 [%], Reference data

*7: At 5-watt operation

*8: External trigger only, flash pulse is synchronized with rising edge of rectangular wave.

*9: Cooling is required if temperature on the lamp module exceeds 50 °C during operation.

*10: No condensation

*11: 905 type, attached at factory prior to shipment.

*12: Please see below "OPERATING CONDITIONS".

OPERATING CONDITIONS

Type No.	Main Discharge Capacitor (μF)*2	Main Discharge Voltage (V)	Max. Average Input Energy: per flash*3 (mJ)	Repetition Rate Max. (Hz)	Max Average Input (W)*4
L945□-□1	0.22	400	17.6	284	5.0
		500	27.5	182	5.0
		600	39.6	126	5.0
L945□-□2	0.11	400	8.8	530	4.7
		500	13.8	362	5.0
		600	19.8	252	5.0
L945□-□3	0.047	400	3.8	530	2.0
		500	5.9	530	3.1
		600	8.5	530	4.5

NOTE: Please refer to above "NOTE"

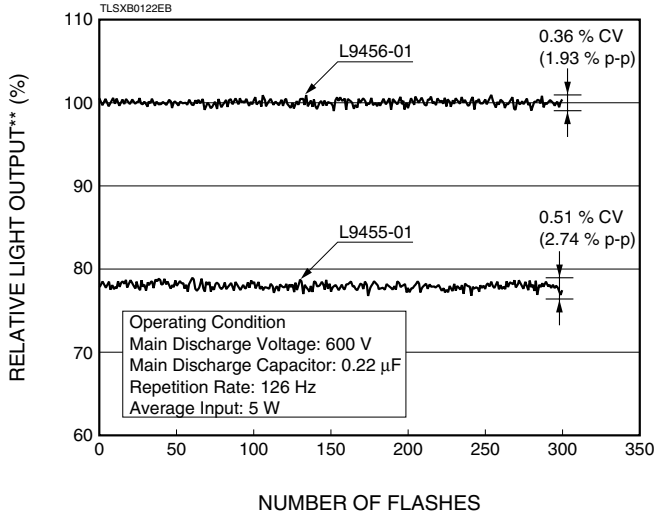
ENVIRONMENTAL TESTING

Vibration: 5 Hz to 200 Hz, 15 m/s^2

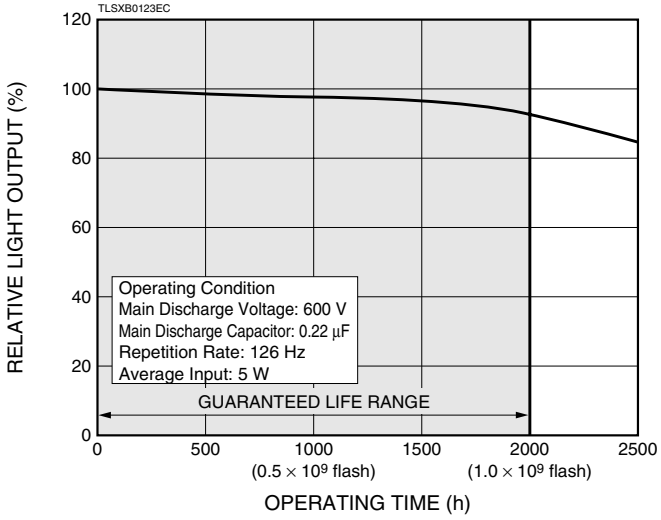
Shock: 500 m/s^2

CHARACTERISTICS

●Light Output Stability*



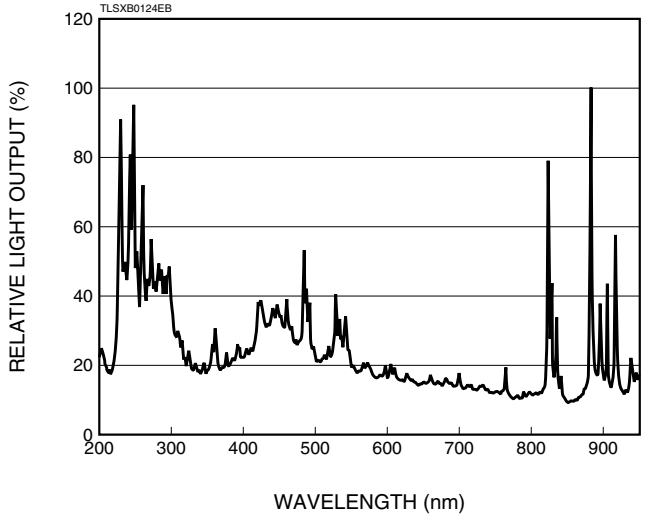
●Life



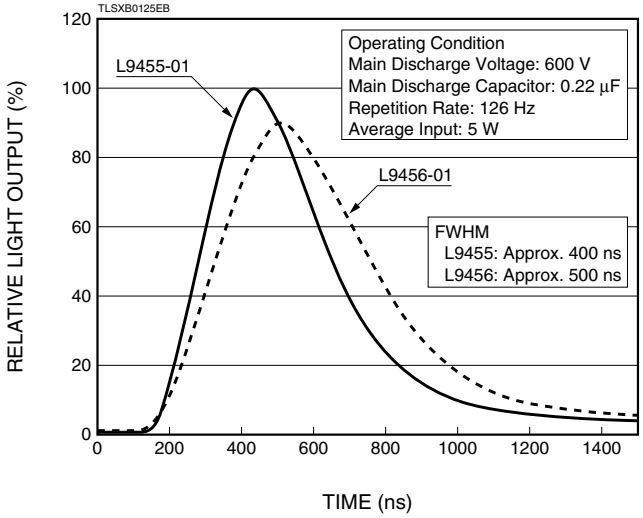
* Calculated by: standard deviation / average light output × 100 [%]
Calculated by: (maximum light output - minimum light output) / average light output × 100 [%]
** The light output when making the average light output of L9456-01 into 100%

Values in parenthese show number of flashes

●Spectral distributions

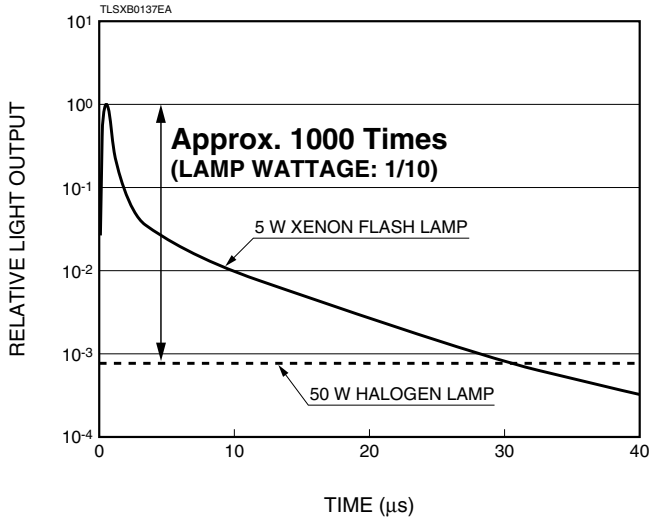


●Flash Pulse Waveform



XENON FLASH LAMP'S FEATURES

●Instantaneously high peak output

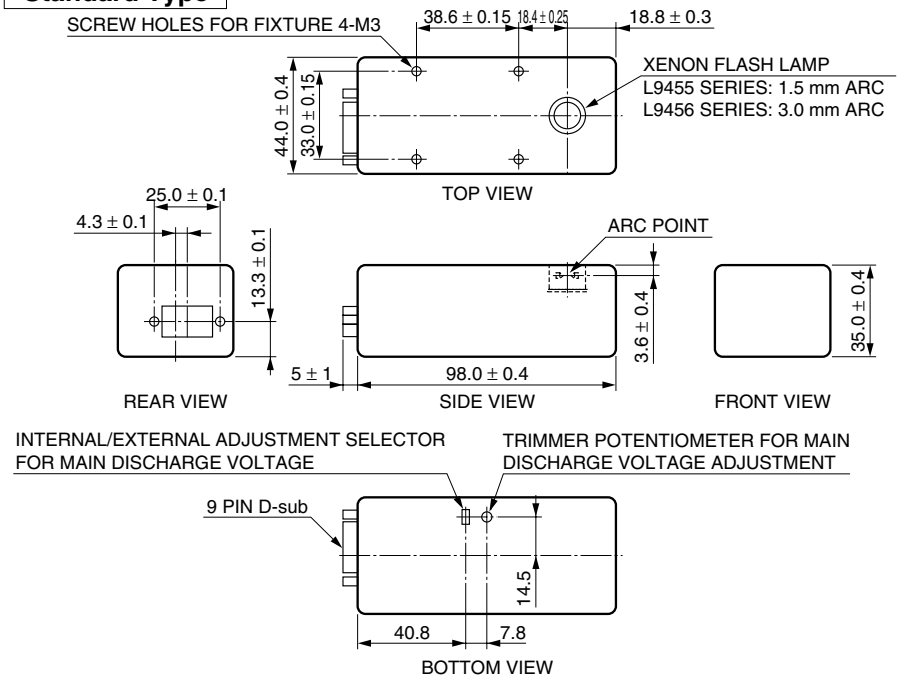


●Less heat buildup

●No warm-up required

DIMENSIONAL OUTLINES (Unit: mm)

Standard Type



9 PIN D-sub Connection

PIN No.	Signal
1	+Input Voltage (11 V to 28 V) Ⓐ
2	+Input Voltage (11 V to 28 V) Ⓐ
3	+Main Discharge Voltage Control (3.2 V to 4.8 V)
4	Trigger RTN Ⓑ
5	+Trigger Input Ⓑ
6	Input Voltage RTN
7	Input Voltage RTN
8	Main Discharge Voltage Control RTN
9	No Connection

Ⓐ Input Current: 1 A, Rush Current: 4 A
Ⓑ Trigger Input: Rectangular wave (pulse width 10 µs or more) at 5 V TTL
* Make sure that he enclosure case of this lamp module is properly grounded using one of the four M3 mounting screws.

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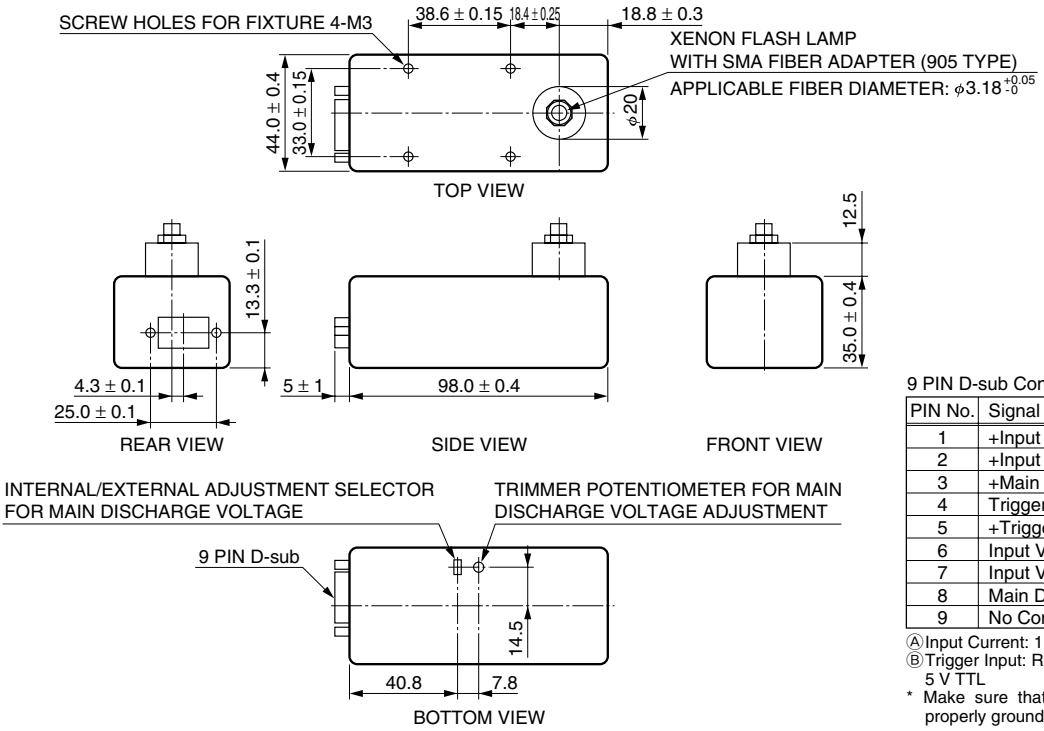
With SMA Fiber Adapter Type (L9455 series)



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Ⓑ Trigger Input: Rectangular wave (pulse width 10 µs or more) at 5 V TTL
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* PATENT PENDING: 2

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