

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

HAMAMATSU

60 W XENON FLASH LAMP SERIES

BUILT-IN REFLECTIVE MIRROR

L7684, L7685/L6604, L6605

FEATURES

- **High Stability: Fluctuation (p-p) 3 % Max.**
- **High Input Energy: 1 J (per one flash)**
- **Long Life: 8×10^7 flashes Min.**
- **Short Arc: 3 mm**
- **Spectral Distribution: 190 nm to 2000 nm (Sapphire glass window type)**
- **High Repetition Rate Meeting TV rate: 60 Hz**
- **Short flash pulse-width (FWHM): 2.90 μs (at 2 μF, 1000 V)**
- **Built-in Reflective Mirror/1.5 Times Brighter (L7684, L7685)**



TLSXF0105



TLSXF0103

APPLICATIONS

- **Stroboscope for FA High Speed Image Processing**
- **Industrial Stroboscope**
- **Pollution Analysis**

CHARACTERISTICS

Parameter	L7684	L6604	L7685	L6605	Unit
Window Material	Borosilicate Glass		Single Crystal Sapphire Glass		–
Spectral Distribution	240 to 2000		190 to 2000		nm
Reflective Mirror	Built-in	—	Built-in	—	–
Operating Voltage	300 to 1000				V
Recommended Operating Voltage	700 to 1000				V
Trigger Voltage	5 to 10				kV
Trigger Capacitor Value	0.22				μF
Maximum Average Input Energy (single) ⓐ	1				J
Maximum Average Input (continuous) ⓑ	60				W
Arc Length	3				mm
Maximum Repetition Rate ⓒ	60				Hz
Output Fluctuation (p-p) ⓖ	3				% Max.
Guaranteed Life (number of flashes) ⓓ	8×10^7				flashes Min.
Applicable Trigger Socket	E6647				–
Applicable Power Supply	C6096 ⓔ				–
Applicable Cooling Jacket	E6611 ⓕ				–

NOTE: ⓐ Average input energy (E) is calculated by the below formula.

$E = 1/2\ CV^2$ E: Average input energy (J) C: Main discharge capacitor value (F)
V: Main discharge voltage (V dc)

ⓑ Average Input(W) is calculated by the below formula.

$W = E \times f$ f: Repetition frequency (repetition rate)

ⓒ At 1 J/flash (60 W) input. Maximum 100 Hz operation is possible with keeping average input 60 W or lower.
ⓓ At 1 J/flash input energy (60 W) with using the cooling jacket of E6611.
ⓔ It is necessary to have an additional external capacitor E7289-02 for 60 W input, when 1 J/flash input energy is needed.
ⓕ It has to be used for the operation more than 15 W input.
ⓖ Measured with supply voltage of 1000 V, main discharge capacitir of 2 μF and repetition rate of 10 Hz.

Subject to local technical requirements and regulations, availability of products included in this promotional material may vary. Please consult with our sales office.
Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein. ©2006 Hamamatsu Photonics K.K

60 W XENON FLASH LAMP SERIES

Figure 1: Spectral Distribution

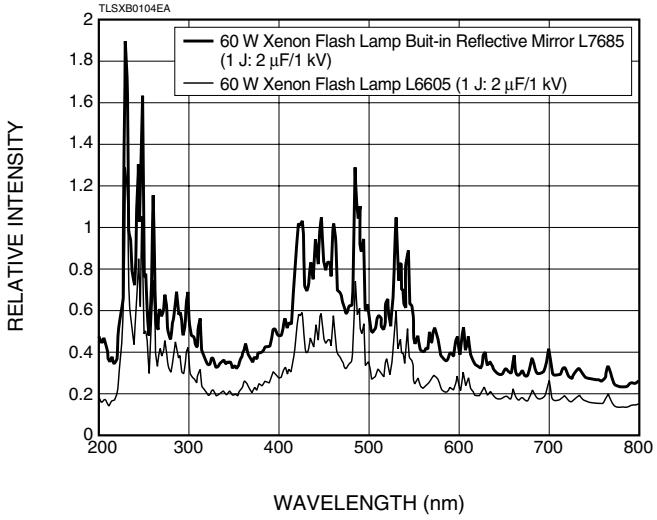


Figure 2: Flash Pulse Waveforms (L6604, L6605)

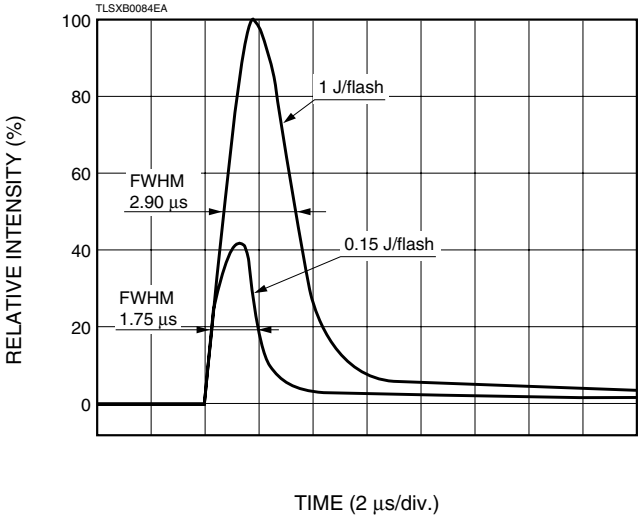
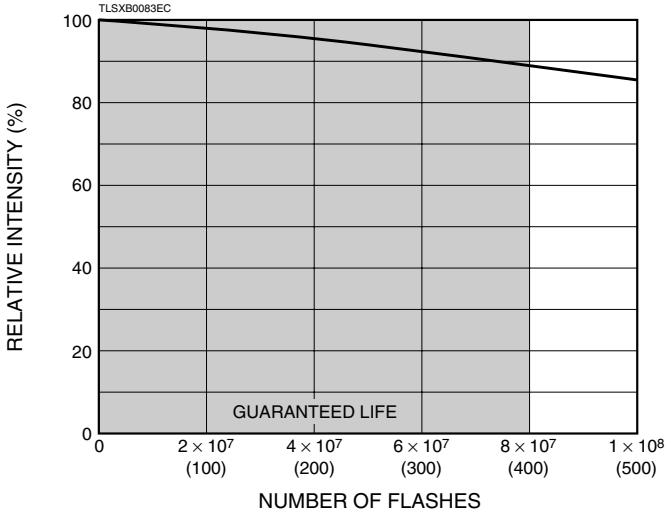


Figure 3: Life Characteristics

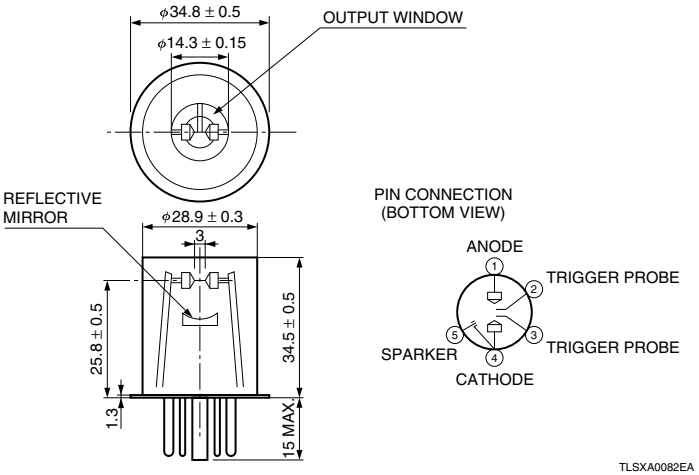


MAIN DISCHARGE VOLTAGE: 1 kV
MAIN DISCHARGE CAPACITOR: 2 µF
REPETITION RATE: 60 Hz
INPUT ENERGY: 1 J / FLASH

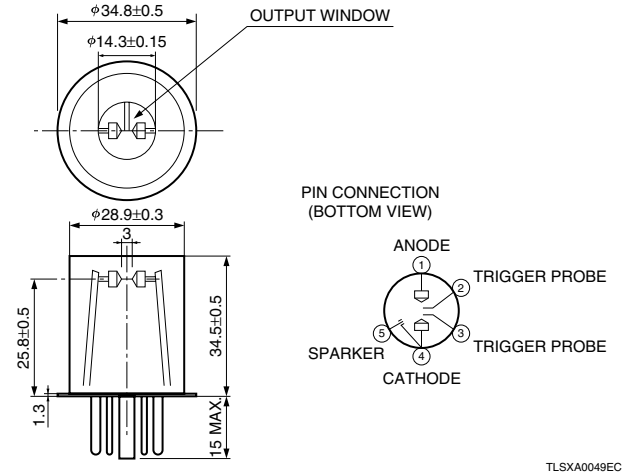
The life end is defined as the time when the radiant intensity falls to 50 % of its initial value or when the output flutuation exceeds ±3 %.

Figure 4: Dimensional Outline (Unit: mm)

L7684, L7685 (Built-in Reflective Mirror)



L6604, L6605

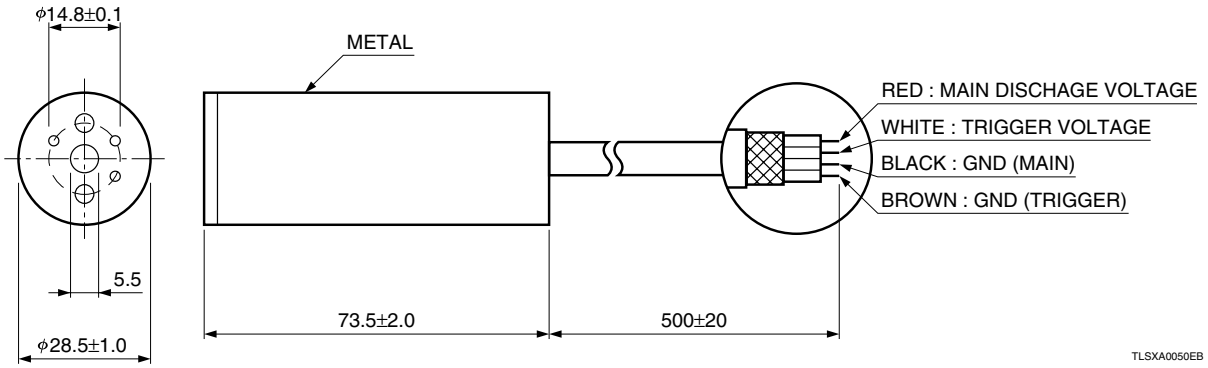


RELATED PRODUCTS

● Trigger Socket E6647

In order to operate a Xenon flash lamp, it is necessary to supply the prescribed high voltage between anode and cathode, and to trigger probes. To facilitate the above operation, the trigger socket consists of high voltage transformer and voltage divider resistors and capacitors chain to supply the appropriate pulse voltage to each electrode.
As E6647 radiates heat from its metal parts during the operation due to the input energy, it is recommended to use a cooling fan to keep the surface temperature of the metal parts at less than 50 °C.

■ Dimensional Outline (Unit: mm)



* Changing the length of the trigger socket cable vavies the current flowing through the lamp so the lamp might fail to meet its required specifications. Use the cable length as shipped.

● Power Supply C6096

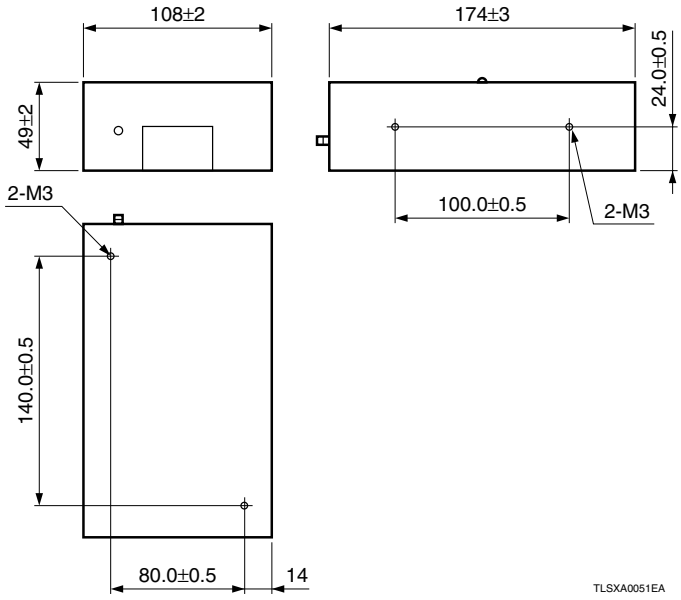
C6096 has large capability to operate the lamp stable in spite of its compact dimensions. When 1 flash input energy becomes over 0.05 J, it is necessary to have an additional external capacitor E7289-02 (option).

■ Specifications

Parameter		Description/Value
Main Power Supply	Output Voltage ⓗⓘ (dc)	300 V to 1000 V
	Output Capacity	60 W Max.
	Stability	±1 % Max.
	Main Supply Capacitor ⓘ	0.1 µF
Trigger Section	Trigger Output Voltage	180 V Typ.
	Trigger Capacitor	0.22 µF
Trigger Input Section	Trigger Type	Internal / External
	Repetition Rate ⓚ	10 Hz to 100 Hz
	Trigger Input Impedance	360 Ω
	Input Waveform ⓜ	Rectangular Waveform
	Input Voltage	5 V
Input Voltage (dc)		24 V ± 1.2 V
Power Consumption		90 W
Cooling		Not Required
Weight		Approx. 550 g

NOTE: ⓗ The range of 700 V to 1000 V is used for the operation of 60 W Xenon flash lamp series.
ⓘ In the case of connects temperature sensor lead lines from the cooling jacket, the output voltage becomes 0 V when the temperature sensor turns on.
ⓙ When 1 flash input energy becomes over 0.05 J, it is necessary to have an additional external capacitor E7289-02 (option).
ⓚ Don't use beyond 60 Hz at the operation of 60 W input.
ⓜ A trigger pulse voltage is supplied to each electrode at the same time as an input trigger signal rise.

■ Dimensional Outline (Unit: mm)

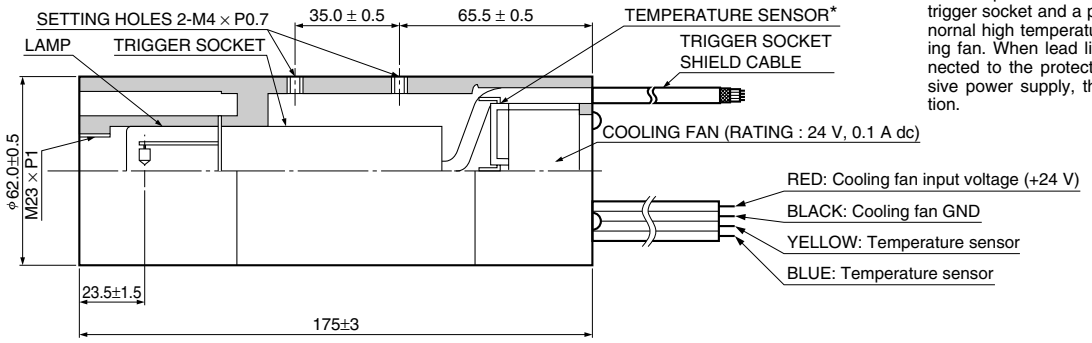


60 W XENON FLASH LAMP SERIES

● Cooling Jacket E6611

This cooling jacket is exclusively designed for 60 W Xenon flash lamps will keep the temperature of the lamp and electric parts such as the trigger socket at less than maximum ratings and maintain at even temperature by a built-in cooling fan, and offers the stable operation of the lamp. It has to be used for the operation of more than 15 W input.

■ Dimensional Outline (Unit:mm)



TLSXA0052ED

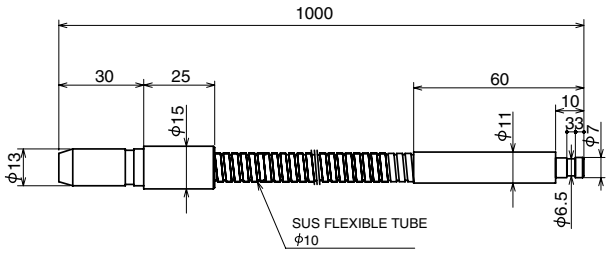
* The temperature sensor is for the protection of a lamp, a trigger socket and a power supply, when it detects an abnornal high temperature due to out of work with the cooling fan. When lead lines of temperature sensor are connected to the protection circuit terminal of C6096 exclusive power supply, the power supply will stop its operation.

● Light-Guides

Light-guides are effective to guide the output light into a place where does not allow to direct irradiation due to its construction or to plural places simultaneously. A short arc of 60 W Xenon flash lamps allows the light into the light-guides effectively. As the standard option, two types of light guide are available from us upon your application. Please refer to below table. The light-guides holder will be included for order of the cooling jacket E6611.

Type No.	Material	Transmittance wavelength	Output diameter	Length
A2873	Quartz glass fiber	220 nm to 1300 nm	φ5 mm	1 m
A7432	Compound glass fiber	380 nm to 1300 nm	φ5 mm	1 m

■ Dimensional Outline (Unit: mm)

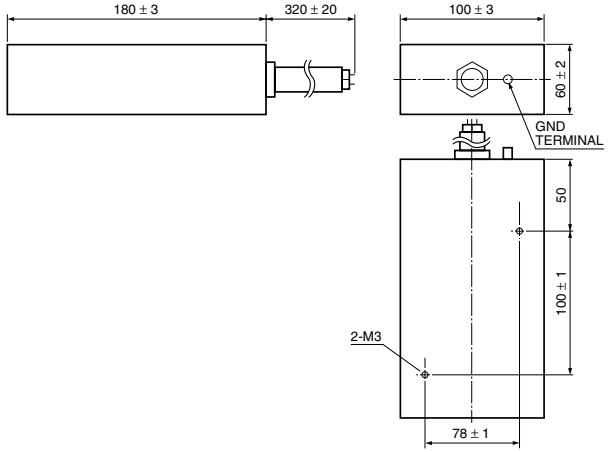


TLSXA0062EB

● External Main Discharge Capacitor E7289-02

The exclusive main discharge capacitor (2 μF) for 60 W (1 J/Flash, 60 Hz) inputs the operation of 60 W Xenon flash lamp series. It allows to operate safely by easy connection with a power supply.

■ Dimensional Outline (Unit: mm)



TLSXA0053ED

Warranty

The warranty period will be one year following the date of shipment or specified life time whichever comes first. The area of warranty is limited to replacement of the faulty lamp. Faults resulting from natural disasters and improper usage will also be excluded from warranty.

HAMAMATSU WEB SITE www.hamamatsu.com

HAMAMATSU PHOTONICS K.K., Electron Tube Division

314-5, Shimokanzo, Iwata City, Shizuoka Pref., 438-0193, Japan, Telephone: (81)539/62-5248, Fax: (81)539/62-2205

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P. O. Box 6910, Bridgewater. N.J. 08807-0910, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: usa@hamamatsu.com

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-2658 E-mail: info@hamamatsu.de

France: Hamamatsu Photonics France S.A.R.L.: 8, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10 E-mail: infos@hamamatsu.fr

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road Welwyn Garden City Hertfordshire AL7 1BW, United Kingdom, Telephone: 44-(0)1707-294888, Fax: 44(0)1707-325777 E-mail: info@hamamatsu.co.uk

North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171-41 SOLNA, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01 E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia: S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39)02-935 81 733, Fax: (39)02-935 81 741 E-mail: info@hamamatsu.it

TLSX1029E04

FEB. 2006 IP

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP