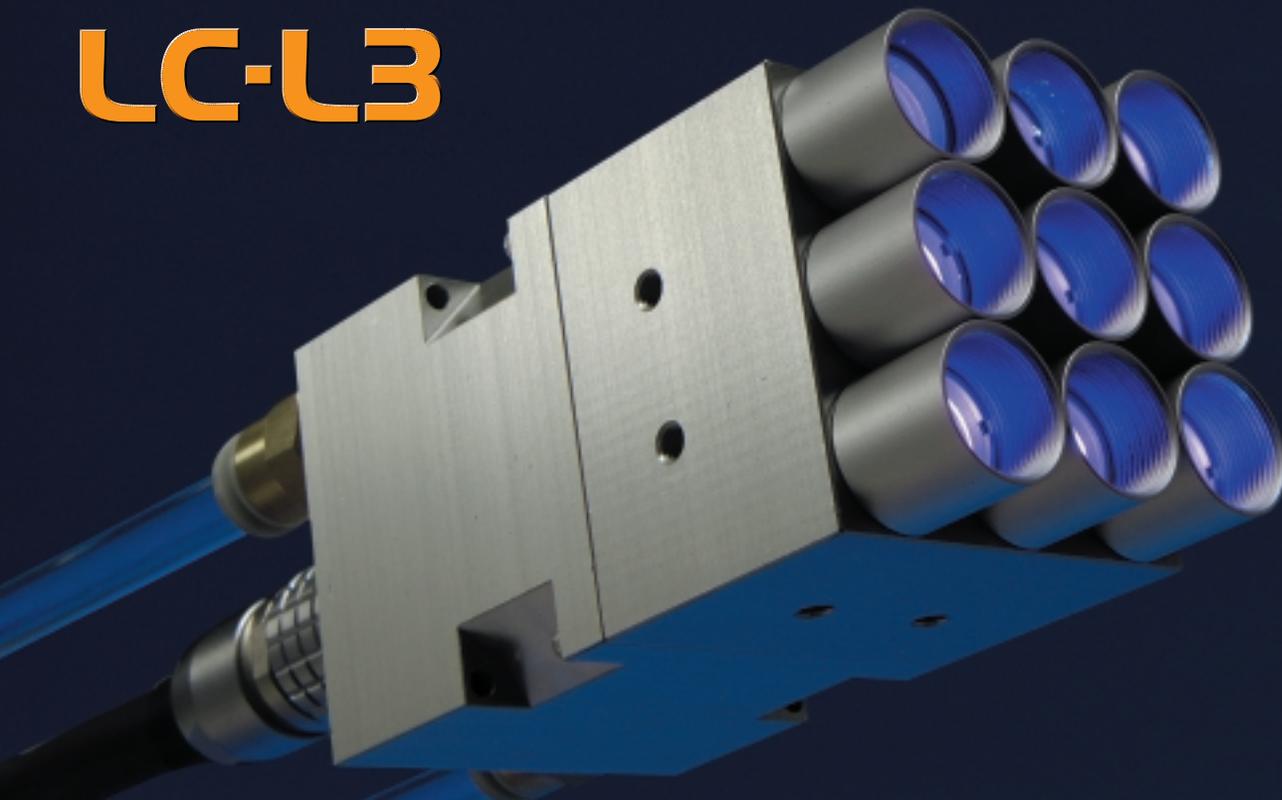


NEW

HAMAMATSU

UV-LED UNIT

LIGHTNINGCURE[®] **LC-L3**



Why Hamamatsu?

Hamamatsu has built a solid reputation through providing high-quality spot light sources, and now offers a UV-LED unit as a "new solution" of UV light sources. This UV-LED unit was developed by consolidating all our technologies accumulated over long years. Besides reducing the load on the environment, it will support UV curing and related applications. We are also applying our expertise as an optical device manufacturer to UV light monitoring and control (UV power meter) in order to enhance the possibilities of UV-LED.

FEATURES

- Uses a high output UV-LED (365 nm or 385 nm)
- Long life and high stability
- Highly uniform irradiation via our dedicated optical system

APPLICATION

- UV adhesive curing
- UV ink drying
- Semiconductor and liquid crystal exposure
- High-resolution optical microscopes
- Wide range of experiments requiring UV irradiation



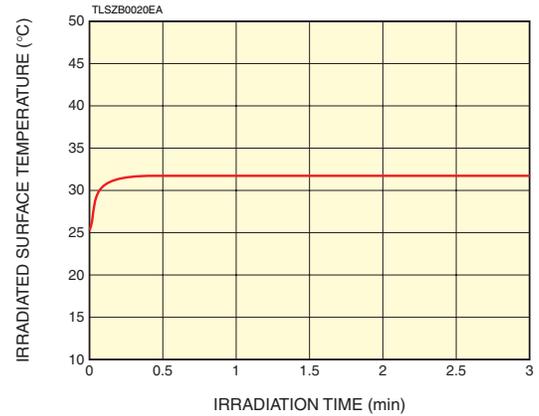
FEATURES

Low heat emission light source

Emitted light contains no heat rays, so thermal effects on objects are minimized.

Temperature Change On Irradiated Surface

Conditions
 Light source: L11195-10111500
 Irradiated object: Glass substrate
 Irradiation distance: 30 mm
 Light level: 100 %



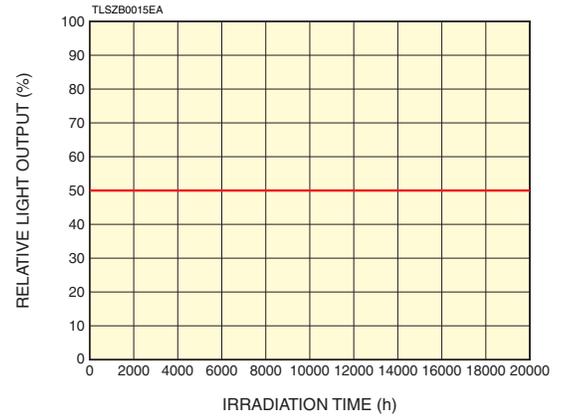
Uniform light level function

Maintains a uniform light level throughout the LED life of up to 20 000 hours.

This unit monitors the temperature inside the head unit to control and maintain light intensity at a constant level. This function eliminates the need to make daily light level checks.

(Light level is set to 50 % of maximum at time of shipping.)

Uniform light level function

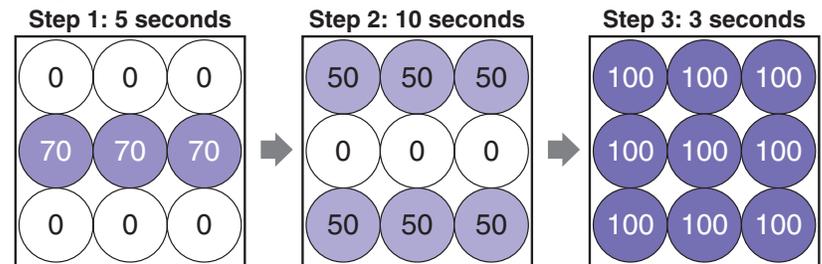


Programmable irradiation

LED ON/OFF switching and light level adjustment can be separately controlled on each LED.

Up to 16 steps can be input into a program.

Program Example



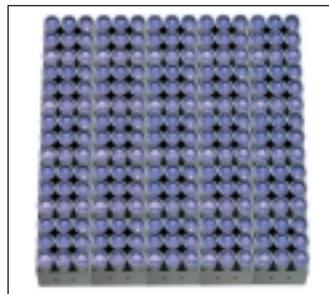
* These values are light level.

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Any combination possible

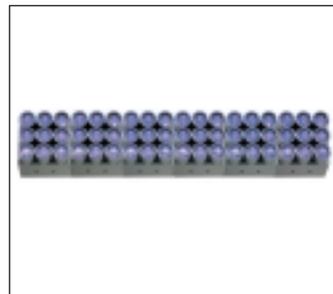
Combining multiple LC-L3 units allows irradiating larger areas or a linear area.

5 × 5 (large area irradiation)



Irradiation area: 180 mm × 180 mm

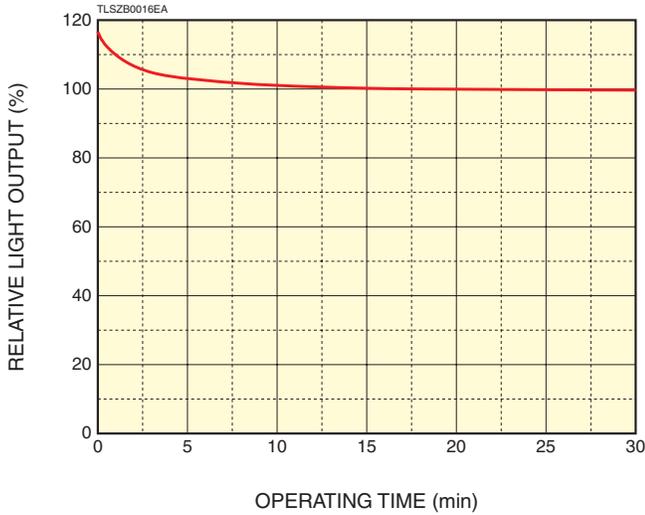
1 × 6 (linear area irradiation)



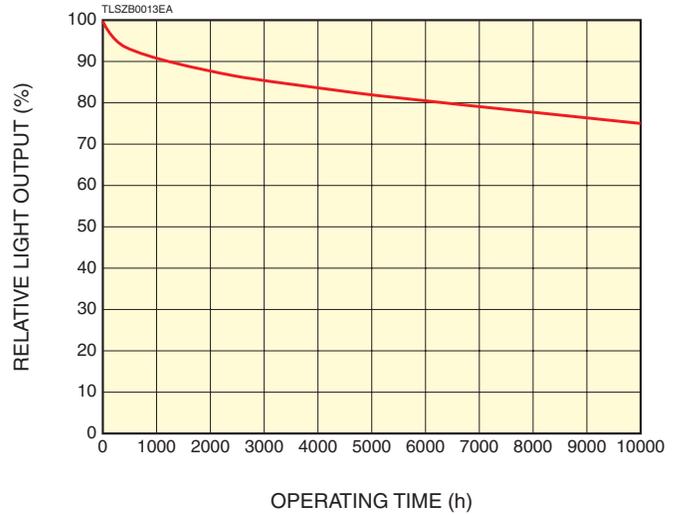
Irradiation area: 215 mm × 215 mm

LIGHT OUTPUT CHANGE

● Drift Characteristics

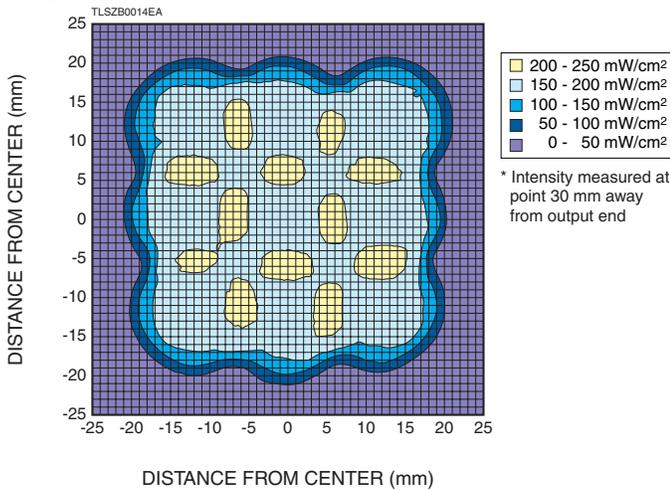


● Service Life Characteristics



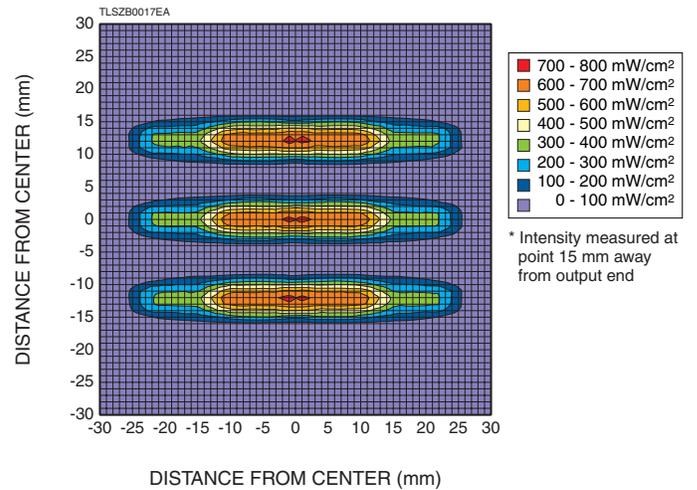
LIGHT BEAM DISTRIBUTION (Light level set to 50 % of maximum at time of shipping)

● Uniform irradiation type – Full irradiation: Light level 100 % at 365 nm

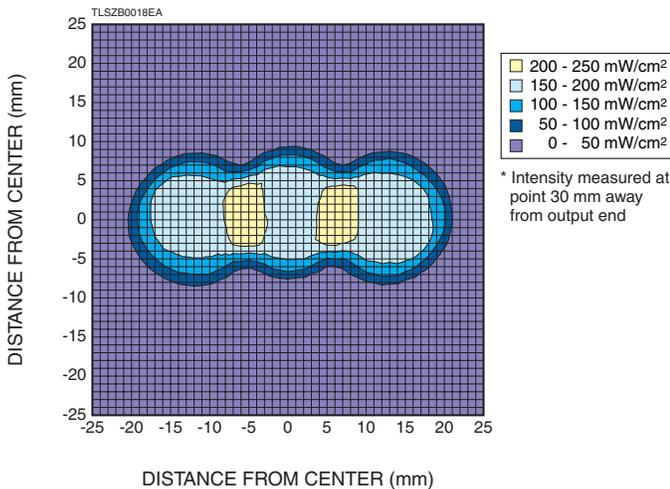


* Large area irradiation type is also available. Please contact us for information.

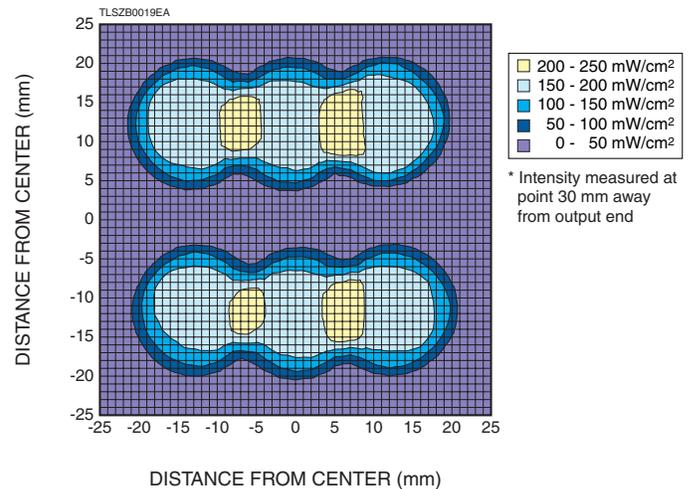
● Linear beam type: Light level 100 % at 365 nm



● Uniform irradiation type – Separate irradiation (middle row): Light level 100 % at 365 nm



● Uniform irradiation type – Separate irradiation (top and bottom rows): Light level 100 % at 365 nm



SPECIFICATIONS

Parameter	Description / Value
UV intensity	250 mW/cm ² at 365 nm 325 mW/cm ² at 385 nm
Peak wavelength	365 nm ± 5 nm or 385 nm ± 5 nm
Class	3B (JIS C 6802: 2005)
Input voltage	(DC) 12 V to 24 V (external control connector) or (AC) 100 V to 240 V (AC adapter)
Power consumption	60 W or less
Operating temperature range	-5 °C to +35 °C
Operating humidity range	80 % or less (no condensation)
Storage temperature range	-10 °C to +60 °C
Storage humidity range	80 % or less (no condensation)
Cooling method (LED head unit and LED driver)	Forced air cooling [Ⓐ] by high-pressure air or high-pressure nitrogen (Flow rate) 0.12 MPa to 0.22 MPa (Gas temperature) +25 °C ± 10 °C
LED service life	1 year (average life: 10 000 hours, when light level has dropped to 50 % of initial value)
Applicable safety standard	(Safety standard) EN61010-1: 2001 (EMC standard) EN61326-1: 2006 Class A
Weight	1.73 kg (L11195-00111500)

NOTE: [Ⓐ]Suitable air tube: 6 mm

EXTERNAL CONTROL

This unit can be controlled by "RS-232C communication" or from "front operation panel" or via "external control terminal".

This unit does not have a monitor screen, so the operation status cannot be checked during control by the toggle switches on the front operation panel or via the external control terminal. When this unit is controlled by RS-232C communication, the status can be checked since the reply is displayed on the communication screen.

Item	RS-232C	Front Operation Panel	External Control Terminal
LED ON/OFF	○	○	○
Shift to SET/USER mode	○	○	○
Timer / manual switching	○	○	○
Switching to program mode	○	○	○
PWM [Ⓑ] / linear drive mode switching	○	○	○
Selection of individual LED	○	○	○
Individual LED / all LED switching	○	○	○
Filter ON/OFF	○	○	○
Filter value input (check)	○	△1	△1
Input (check) for individual output	○	△1	△1
Timer setting	○	×	×
Program input	○	×	×
SAVE/LOAD function	○	×	×
Temperature check	○	×	×
Initializing function	○	×	×
Alarm check	○	△2	△2

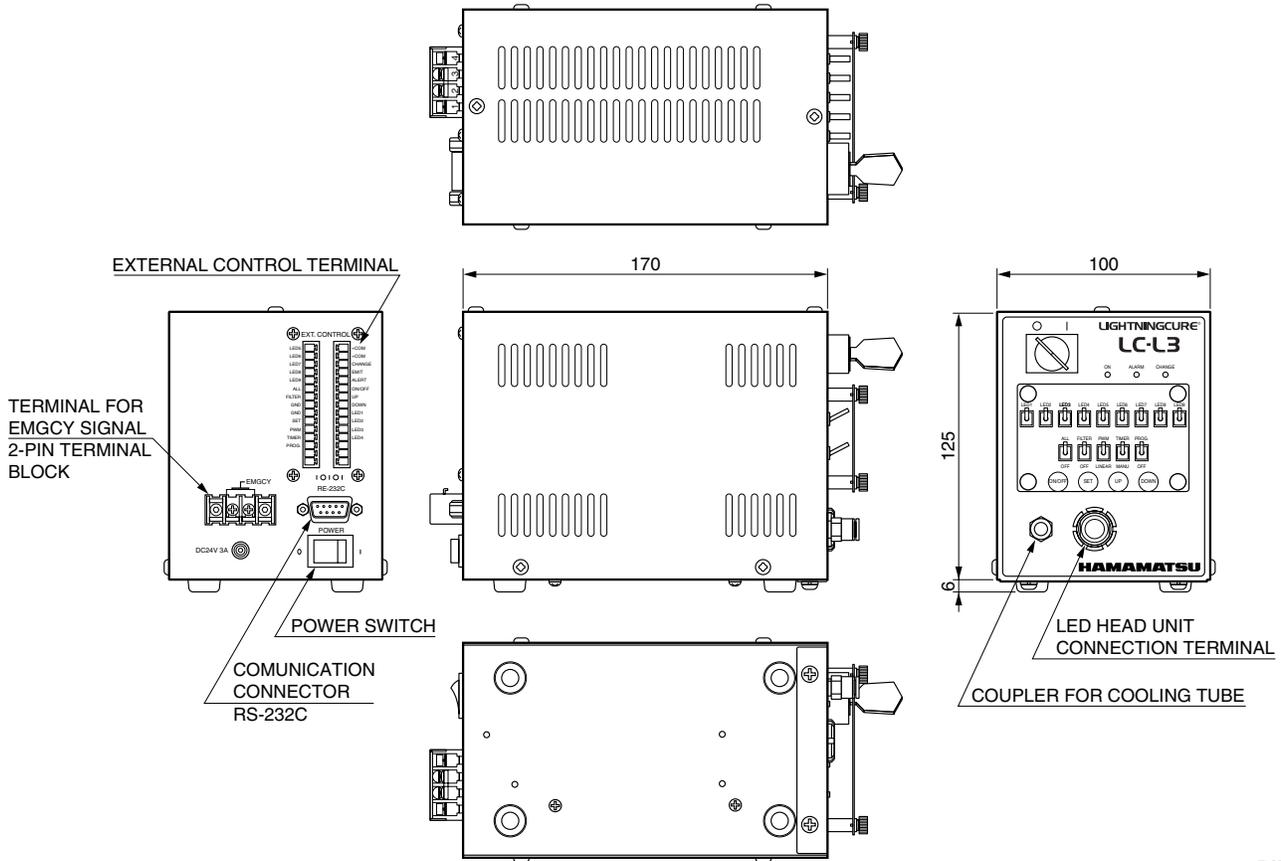
○: Possible, △1: Can be entered but cannot be checked, △2: Can be checked but the setting item cannot be identified, ×: Not possible

NOTE: [Ⓑ]Pulse width modulation

The toggle switches and tact switches on the front operation panel can be exclusively selected by communication control.

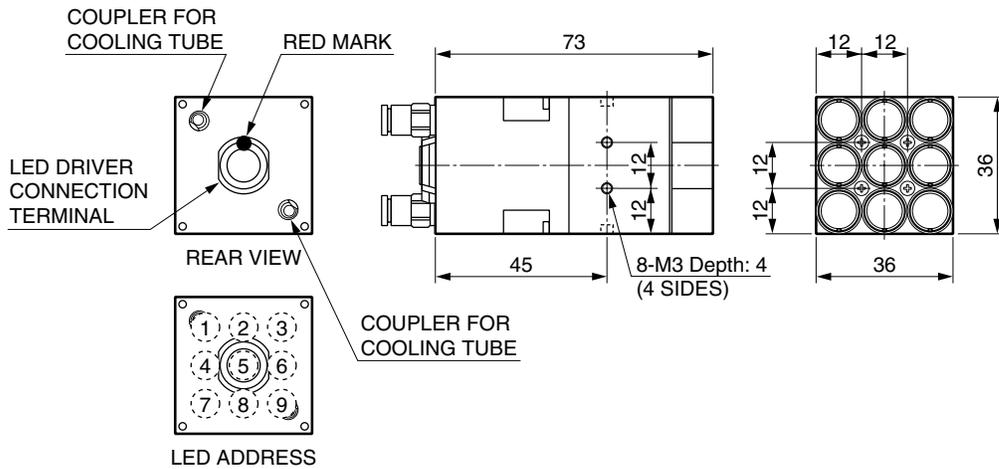
DIMENSIONAL OUTLINE (Unit: mm)

●LED DRIVER C11196 Series



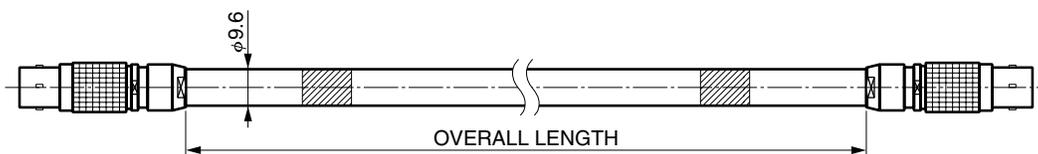
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●LED HEAD UNIT L11197 Series



TLSZA0007EB

●LED HEAD UNIT CABLE A11198 Series



Type No.	Overall Length
A11198-050	500
A11198-100	1000
A11198-150	1500

Cables can be manufactured in incremental 500 mm lengths. Minimum length: 500 mm

TLSZA0008EB

TYPE NO. SUFFIX

●L11195 (combination model No.) (LED driver + LED head unit + LED head unit cable)

L11195–A BC D EFG 0

Indicates if AC adapter is included, or AC adapter type

0: Does not include AC adapter and AC cable.
 2: Include AC adapter and AC cable. (for 220 V to 240 V: CE)
 5: Include AC adapter and AC cable. (for 120 V: UL)

Type of LED

01: All elements are 365 nm LEDs
 14: All elements are 385 nm LEDs

Please contact us if a combination of different wavelength LED is needed.

Cable length

050: 0.5 m (minimum length)
 100: 1.0 m
 150: 1.5 m (standard length)

Type of lens

1: Uniform irradiation type
 2: Linear beam type

●L11196 (LED Driver)

C11196–A BC 0

Indicates if AC adapter is included, or AC adapter type

0: Does not include AC adapter and AC cable.
 2: Include AC adapter and AC cable. (for 220 V to 240 V: CE)
 5: Include AC adapter and AC cable. (for 120 V: UL)

Type of LED

01: All elements are 365 nm LEDs
 14: All elements are 385 nm LEDs

Please contact us if a combination of different wavelength LED is needed.

●L11197 (LED Head Unit)

L11197–BC D 0

Type of LED

01: All elements are 365 nm LEDs
 14: All elements are 385 nm LEDs

Please contact us if a combination of different wavelength LED is needed.

Type of lens

1: Uniform irradiation type
 2: Linear beam type

●A11198 (LED Head Unit Cable)

A11198–EFG

Cable length

050: 0.5 m (minimum length)
 100: 1.0 m
 150: 1.5 m (standard length)

TYPE NO. COMBINATION TABLE

●Combination model (LED driver + LED head unit + LED head unit cable)

The following table shows LC-L3 series combinations when using a standard 1.5 meter cable. The 3 digits shown under "Cable length" will change if other cable lengths are needed.

	Suffix description				
	With or without AC Adapter	LED type	Lens type	Cable length	—
L11195 –	0	01	1	150	0
	0	01	2	150	0
	0	14	1	150	0
	0	14	2	150	0
	2	01	1	150	0
	2	01	2	150	0
	2	14	1	150	0
	2	14	2	150	0
	5	01	1	150	0
	5	01	2	150	0
	5	14	1	150	0
	5	14	2	150	0

●LED Driver

Suffix will differ depending on whether an AC adapter is included. This suffix is jointly used for all LED head unit types.

	Suffix description		
	With or without AC Adapter	LED type	—
C11196 –	0	01	0
	0	14	0
	2	01	0
	2	14	0
	5	01	0
	5	14	0

●LED Head Unit

Select the type of LED and lens to install.

	Suffix description		
	LED type	Lens type	—
L11197 –	01	1	0
	01	2	0
	14	1	0
	14	2	0

●LED Head Unit Cable

Select the cable from three different lengths.

	Suffix description
	Cable length
A11198 –	050
	100
	150

UV-LED MODULE LIGHTNINGCURE® LC-L2 L10561 SERIES

This light source is a compact UV-LED module containing an ultra-violet LED element (365 nm). Designed for low power consumption, it is easy on the environment and allows UV irradiation with less thermal effect. Its fanless design ensures reliable use even in clean rooms. The same functions as those of the conventional UV irradiators are included, such as output intensity adjustment and irradiation time setting, etc. Various types of condenser lenses are available as options that allow to obtain irradiation patterns according to the application.



SPOT LIGHT SOURCE LIGHTNINGCURE® LC8

The LC8 is a spot light source using a 200 W mercury-xenon lamp. The 365 nm type LC8 emits high-intensity UV light of 4500 mW/cm². Various light guides and condenser lenses are available for multi-point irradiation or forming linear/rectangular irradiation areas.



Left: Rear light guide port type L9566
Right: Front light guide port type L9588

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OCT. 2009 IP