UV-LED SPOT LIGHT SOURCE

LIGHTNINGCURE®

LC·L1

"Original easy-to-use design" – How about giving it a try?

APPLICATIONS
● UV adhesive curing
● UV ink drying
● UV coating drying

FEATURES
● High output and high stability
● Compact and lightweight
● Low power consumption
● Driving 4 heads independently
Features

Compact body easily installs into narrow confined spaces

We came up with a unit that drives 4 heads but is small enough to fit in the palm of your hand! Unit can also be freely placed standing or horizontal in just a tiny space, so it needs no special layout!

Further increase in light output stability

Our unique feedback function minimizes drift during initial light emission period and constantly maintains fluctuations in light output within 5% right after light emission starts. Ideal for applications requiring both high quality.

PC communication control improves work efficiency

PC communication allows batch control with other devices. Various tasks can be easily controlled by software command.

Huge reduction in power consumption

The LC-L1V5 emits high intensity UV beams yet now consumes only half the power of UV-LED light sources made by other companies. These energy savings drastically cut your costs and place a smaller load on the environment. The light source also emits little heat, so less power is needed for air conditioning during production.

● POWER CONSUMPTION

<table>
<thead>
<tr>
<th>UV-LED SPOT LIGHT SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC-L1V5*</td>
</tr>
<tr>
<td>24 W</td>
</tr>
</tbody>
</table>

* Measured when 4 heads units are operated.

Prevents operator errors for better safety

The LC-L1V5 now has a key locking function designed to lower the risk of faulty entries such as by mistakenly coming in contact with the buttons. This also helps improve operator safety.

Boost in quality by optimizing irradiation conditions

You can program the irradiance and time you need in 3 easy steps. Storing the programs in the unit allows you to irradiate each object under optimal conditions. This will improve product yield of components.

The irradiation conditions can be easily changed when processing multiple objects or shifting to another production line, etc.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description / Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength</td>
<td>365</td>
<td>nm</td>
</tr>
<tr>
<td>UV irradiance (2)</td>
<td>14000</td>
<td>mW/cm²</td>
</tr>
<tr>
<td>LED design life (2)</td>
<td>20000</td>
<td>h</td>
</tr>
<tr>
<td>Input voltage (DC)</td>
<td>12 ± 0.5</td>
<td>V</td>
</tr>
<tr>
<td>Power consumption (Max.) (2)</td>
<td>24</td>
<td>W</td>
</tr>
<tr>
<td>Cooling method</td>
<td>Air cooling without fan</td>
<td>—</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>+5 to +40</td>
<td>°C</td>
</tr>
<tr>
<td>Storage temperature range</td>
<td>-10 to +50</td>
<td>°C</td>
</tr>
<tr>
<td>Operating humidity range</td>
<td>20 % to 80 % (no condensation)</td>
<td>—</td>
</tr>
<tr>
<td>Storage humidity range</td>
<td>Below 80 % (no condensation)</td>
<td>—</td>
</tr>
<tr>
<td>Control method *</td>
<td>Front panel control / external control / communication control</td>
<td>—</td>
</tr>
<tr>
<td>Applicable standards</td>
<td>EMS standard</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>IEC61326-1: 2005 Group1 ClassA</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Safety standard</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>IEC61010-1: 2010</td>
<td>—</td>
</tr>
<tr>
<td>Warranty period</td>
<td>1 year</td>
<td>—</td>
</tr>
</tbody>
</table>

* Control description

Front panel control
- Manual irradiation / auto irradiation switching
- Irradiation program
- Irradiation time check / reset
- Various error signal
- Life warning time setting

External control
- Manual irradiation / auto irradiation switching
- Irradiation program
- Irradiation time check / reset
- Various error signal

Communication control
- Manual irradiation / auto irradiation switching
- Irradiation program
- Irradiation time check / reset
- Various error signal

(1) Maximum UV irradiance within the irradiation area when a LED head unit L14310-110 is used at a distance of 10 mm.
(2) Average time until the irradiance drops to 70 % of the initial level when the LED head unit is properly cooled with mounting holder.
(3) Measured when 4 head units are operated.
(4) The warranty period is 1 year from the date of delivery.
### WAVELENGTH

**SPECTRAL DISTRIBUTION**

![Spectral Distribution Graph](image)

### IRRADIANCE DISTRIBUTIONS (Typ.: 365 nm)

<table>
<thead>
<tr>
<th>Irradiation area</th>
<th>Irradiance (mW/cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø3 mm</td>
<td>14000</td>
</tr>
<tr>
<td>ø6 mm</td>
<td>6500</td>
</tr>
<tr>
<td>ø8 mm</td>
<td>4000</td>
</tr>
<tr>
<td>ø12 mm</td>
<td>1000</td>
</tr>
</tbody>
</table>

### IRRADIATION BEAM SHAPE VARIATIONS

**STANDARD TYPE**

- Mid focal point type
  - LED head installs even in narrow spaces for more placement freedom.
- Long focal point type
  - This type has focal point extended longer than type on left.

**RIGHT-ANGLE TYPE**

- Wide range type
  - Emits light over a wide range in elliptical area and so is ideal for curing adhesive on irregular shaped workpieces or at multiple locations.
- Narrow range type
  - Light beam is narrower than type on left and so has higher irradiance.

**LINEAR BEAM TYPE**

- Irradiation area: ø3 mm
- Irradiation area: ø6 mm
- Irradiation area: ø8 mm
- Irradiation area: ø12 mm

- Z: Distance from end of lens
  - Z=10 mm
  - Z=15 mm
  - Z=20 mm
  - Z=25 mm
  - Z=30 mm
**LED CONTROLLER C14052 SERIES**

**Type No.** | **Communication control** | **Control method**
--- | --- | ---
C14052-0 | N/A | —
C14052-1 | Available | Control via USB
C14052-2 | — | Control via RS-232C

Type No. in “”:
● Without AC adapter

Not described: Please prepare adapters with AC DC 12 V, 24 W or more output by yourself.

* In case there is no suffix to C14052 (C14052-0), “0” is omitted. Therefore, type number is C14052.

● With AC adapter
Regional specifications:
   - A1: For Japan
   - A2: For North America
   - A3: For EU
   - A4: For China
   - A5: For UK
   - A7: For Thailand

**LED HEAD UNIT L14310 / L14311 SERIES**

- **Type No.**
- **Irradiation beam shape variation**
- **Irradiation area (mm)**
- **Mounted condenser lens**
- **Dimension (mm)**
- **Weight (g)**

<table>
<thead>
<tr>
<th>Type No.</th>
<th>Standard type</th>
<th>Mid focal point type</th>
<th>Long focal point type</th>
<th>Mid focal point type</th>
<th>Long focal point type</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>L14310-110</td>
<td>e3</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>72</td>
</tr>
<tr>
<td>L14310-115</td>
<td>e6</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>72</td>
</tr>
<tr>
<td>L14310-120</td>
<td>e7</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>72</td>
</tr>
<tr>
<td>L14310-100</td>
<td>e8</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>72</td>
</tr>
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</table>

This is the model No. including the L14310-100 and condenser lens E11923 series. Replacing the condenser lens with the E11923 series (sold separately) allows changing the irradiation area.

**CONденSER LENS E11923 SERIES**

**Type No.** | **Irradiation area (mm)** | **Number of line**
--- | --- | ---
E11923-010 | e3 | 1
E11923-015 | e6 | 3
E11923-020 | e8 | 3

We can also fabricate condenser lenses that meet your specifications.

Irradiation area can be changed as needed by combining with the standard type LED head unit (12 mm dia.) L14310-100.

**ACCESSORY**

- **Mounting holder**

Please make sure to use this mounting holder in order to improve efficiency of heat dissipation.

This mounting holder is fixed to the metal that has high thermal conductivity with screw hole (2-M3 depth 6 mm).

**HAMAMATSU PHOTONICS K.K.**

www.hamamatsu.com

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