Super-compact UV-LED Irradiator

- 365 nm high-power LED, new type of UV curing.
- UV irradiation with minimal heat damage.
- Reduced running cost.
- Smallest body in industry.

Features

**NEW**

Max irradiation of 6000mW/cm² *

**Stronger Than Lamp Irradiators**

The new ZUV provides you with the maximum irradiation of 6000mW/cm², which the previous LED models were unable to achieve. With a lamp irradiator, the more CH heads you use at a time, the smaller the power becomes. In comparison, LED irradiators has built-in light source in each CH head, which enables you to use several CH heads with the same maximum power. Also, the 3-10 dia. spot irradiation is suitable for actual resin coating area.

* When measured with Ushio's UV Meter (Model UIT-150) at a suggested distance.

**NEW**

1/4 Production Time (compared to our previous models)

By irradiating with 6000mW/cm², ZUV saves production time by 1/4 compared to our previous models. Suitable for operations with large daily production volume, such as bonding mobile phone camera module and pickup lens.
**UV Bonding without Heat Damage**

High-power 365 nm UV-LED used as light source. In contrast with lamp irradiation, the light is clear and free from the infrared light found with rising temperatures. This achieves high precision bonding with minimum damage to components.

**UV Bonding with Minimum Irradiation Deterioration**

Our original heat dissipation design technology has created Smart Canyon structure, whose small head maximize LED’s light emission capacity. This enables irradiation to be stable and be used over a long period of time. Also, with attached heat dissipation bracket, you can use the product straight away from the package.

**Ultra-compact Head**

With the smaller irradiating head (smaller by 40% compared to the previous models) you can install it into equipment or place it near adjusting jigs. For connection with Controller, we have employed robot cable, instead of silica glass, to make it possible to install it onto movable parts such as robots and cylinders.

**4 Spot Sizes**

You can change the spot size simply by replacing the head lens. Choose the most suitable spot from the 4 lenses to achieve the reliable bonding, depending on the size of your workplace.
Smallest Body in the Industry *

Super-compact body, approximately 1/8 size of the existing lamp irradiators. Suitable not only for cellular production lines but for built-in into small devices. Head connection is located at the rear for easier handling.

* Omron statistics, March 2006

Easy-to-operate LCD

Setting Mode

A simple and hassle-free LCD displays with easy-to-operate icons and irradiation status.

Run Mode

Reduce Running Costs

Using long-life 10,000 hour * LED.

You can save energy with power-conserving design, which enables you to light LED only when required. For example, suppose the proportion of irradiation time and other process (resin coating and transportation time) is 1:2, you would be able to use ZUV with 30,000 hour equivalent long life.

* When irradiated with 100% at 35°C, when irradiated at 25°C the energy saving is 25,000 hour equivalent.
Independent Control of 4 Heads

LED, unlike Lamp model, enables you to irradiate with different power, period and timing for each head. You can use head in the neighbouring operations and save an initial investment for controllers. Also, the programmable pattern irradiation helps you achieve high precision bonding.

Multi Access Link

You can externally control irradiation ON/OFF, irradiation pattern switching, alarms and more, via the I/O port or RS-232C communications. Easy switching of patterns and production modes.

I/O and RS-232C Communication Ports

You can transfer data during operation, including accumulative irradiation energy and frequencies, to your PC via USB. This helps quality data management and failure analyses.

Irradiation Log

The featured power tuning function provides irradiation power correction. By inputting analog output from an irradiation measuring device, you can correct power at startup inspection and maintain consistent operating conditions easily yet surely.

Irradiation Power Correction

Ordering Information

<table>
<thead>
<tr>
<th>Standard Units</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller ZUV-C30H</td>
<td></td>
</tr>
<tr>
<td>Head Unit ZUV-H30M (Mega Power Model)</td>
<td></td>
</tr>
<tr>
<td>ZUV-H30H (High Power Model)</td>
<td></td>
</tr>
<tr>
<td>Lens Unit ZUV-L3H/L4H/L6H/L8H/L10H</td>
<td>Extension Cable ZUV-XC2B</td>
</tr>
</tbody>
</table>

- Separate Lens Unit required
- Cable length: 0.3 m
- Max irradiation of 6000 mW/cm² with 3 beam dia.
- Separate Lens Unit required
- Cable length: 0.3 m
- Max irradiation of 3000 mW/cm² with 3 beam dia.
- Spot diameter:
  - 3 mm ZUV-L3H
  - 4 mm ZUV-L4H
  - 6 mm ZUV-L6H
  - 8 mm ZUV-L8H
  - 10 mm ZUV-L10H
- For extending length between Controller and Heads
- Cable length: 2 m
### ZUV

#### Ratings and Specifications

**Controller**

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item</strong></td>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>Irradiation method</td>
<td>Constant irradiation</td>
</tr>
<tr>
<td></td>
<td>Pattern irradiation</td>
</tr>
<tr>
<td>No. of settings</td>
<td>16 banks</td>
</tr>
<tr>
<td>Terminal block I/O</td>
<td>Inputs</td>
</tr>
<tr>
<td></td>
<td>Outputs</td>
</tr>
<tr>
<td>RS-232C and USB I/O</td>
<td>Start/stop UV irradiation (4 channels), select settings (banks), get/change settings data, save/read data, power tuning</td>
</tr>
<tr>
<td>Cooling method</td>
<td>Fan air cooling</td>
</tr>
<tr>
<td>Power supply voltage</td>
<td>Select AC or DC power supply</td>
</tr>
<tr>
<td></td>
<td>• AC power supply: 100 to 240 V AC±10%, 50/60 Hz (AC adapter included)</td>
</tr>
<tr>
<td></td>
<td>• DC power supply: 24 V DC±10% (supplied from terminal block on back of Unit)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>• With AC adapter: 4.2 A</td>
</tr>
<tr>
<td></td>
<td>• With DC power supply: 3.8 A</td>
</tr>
<tr>
<td>Vibration tolerance</td>
<td>10 to 150 Hz acceleration 50 m/s², half amplitude 0.35 mm, X/Y/Z direction 8 minutes each 10 times</td>
</tr>
<tr>
<td>Drop impact resistance</td>
<td>150 m/s², 6 directions (up/down, right/left, front/back)</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>Operating: 5 to 35°C; Storage: -10 to 50°C (with no condensation or icing)</td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>Operating/storage: 30% to 85% (with no condensation or icing)</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IEC 60529 IP20</td>
</tr>
<tr>
<td>Material</td>
<td>SUS, aluminum</td>
</tr>
<tr>
<td>Weight (package)</td>
<td>Approx. 2,950 g (Controller only: approx. 1,400 g)</td>
</tr>
<tr>
<td>Accessories</td>
<td>Instruction sheet, Key, AC adapter, Quick setting guide, CD-ROM (USB driver, user's manual PDF)</td>
</tr>
</tbody>
</table>

**Head Units**

<table>
<thead>
<tr>
<th>Item</th>
<th>Head Unit model</th>
<th>Lens Unit model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item</strong></td>
<td><strong>Head Unit model</strong></td>
<td><strong>Lens Unit model</strong></td>
</tr>
<tr>
<td>Light source</td>
<td>Wavelength</td>
<td>ZUV-L3H</td>
</tr>
<tr>
<td>Class</td>
<td>365 nm</td>
<td></td>
</tr>
<tr>
<td>Spot diameter</td>
<td>3 mm</td>
<td>4 mm</td>
</tr>
<tr>
<td>ZUV-H30M</td>
<td>Distance to workpiece</td>
<td>11 mm</td>
</tr>
<tr>
<td>Peak irradiation *</td>
<td>6,000 mW/cm²</td>
<td>4,600 mW/cm²</td>
</tr>
<tr>
<td>ZUV-H30H</td>
<td>Distance to workpiece</td>
<td>12 mm</td>
</tr>
<tr>
<td>Peak irradiation *</td>
<td>3,000 mW/cm²</td>
<td>2,200 mW/cm²</td>
</tr>
<tr>
<td>Vibration tolerance</td>
<td>10 to 150 Hz acceleration 50 m/s², half amplitude 0.35 mm, X/Y/Z direction 8 minutes each 10 times</td>
<td></td>
</tr>
<tr>
<td>Drop impact resistance</td>
<td>150 m/s², 6 directions (up/down, right/left, front/back)</td>
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<td></td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>Operating/storage: 30% to 85% (with no condensation or icing)</td>
<td></td>
</tr>
<tr>
<td>Degree of Protection</td>
<td>IEC60529 IP40</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Aluminum, glass, copper</td>
<td></td>
</tr>
<tr>
<td>Weight (package)</td>
<td>ZUV-H30MH30H: Approx. 130 g (Head only: approx. 55 g), ZUV-L3H/L4H/L6H/L8H/L10H: Approx. 10 g (Lens only: approx. 5 g)</td>
<td></td>
</tr>
<tr>
<td>Accessories</td>
<td>ZUV-H30MH30H: Instruction sheet, mounting brackets (with M3 screw), warning labels (English), ZUV-L3H/L4H/L6H/L8H/L10H: Instruction sheet</td>
<td></td>
</tr>
</tbody>
</table>

* Under the following conditions: 100% irradiation, 25°C room temperature and with heat sink. Values for reference only.
Beam Spot Profile (Typical Examples)

**ZUV-H30M Mega Power Model**  
(When ZUV-C30H Controller model and ZUV-H30M Head Unit are irradiating with 100% power)

**ZUV-L3H**

![Graph](image)

**ZUV-L4H**

![Graph](image)

**ZUV-L6H**

![Graph](image)

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**ZUV-H30H High Power Model**  
(When ZUV-C30H Controller model and ZUV-H30H Head Unit are irradiating with 100% power)

**ZUV-L3H**

![Graph](image)

**ZUV-L4H**

![Graph](image)

**ZUV-L6H**

![Graph](image)
Safety Precautions

Refer to Warranty and Limitations of Liability on page F-2.

Direct UV-light exposure could threaten vision or skin. Never look into the UV light in order to prevent exposure to the UV light. Workers shall wear protective goggles and equipment to protect from being exposed to light reflection.

Precautions for Safe Use

Please observe the following precautions for safe use of the product:

Installation Environment
- Do not use the product in environments where it can be exposed to inflammable/explosive gas.
- To secure the safety of operation and maintenance, do not install the product close to high-voltage devices and power devices.

Power Supply and Wiring
- When using an AC power supply, use the AC adaptor (supplied with the product, AC100 to 240V ±10%).
- When using a DC power supply, the supply voltage must be within the rated range (DC24V ±10%). In addition, reverse connection of the power supply is not allowed. Recommended power source: OMRON S82K-10024 (DC24V 4.3A)
- Open-collector outputs should not be short-circuited.
- Use the power supply within the rated load.
- High-voltage lines and power lines must be wired separately from this product. Wiring them together or placing them in the same duct may cause induction, resulting in malfunction or damage.
- Should you notice any abnormalities such as smoke, abnormal heat of the product surface, and/or any foul odor, immediately stop use, turn OFF the power supply, and disconnect the power plug from the outlet. Contact your OMRON representative for repair of the product. Repair by yourself may cause danger.

Irradiator Head
- Do not touch the head or lens for an extended period while there is UV light irradiation. Doing so may cause burn injury.

Others
- Do not attempt to dismantle, repair, or modify the product. Doing so may cause the product to not operate correctly as well as cause a malfunction resulting in a fire or an electric shock.
- Dispose of this product as industrial waste.
- Do not drop the product. Doing so may damage the product. If the product is dropped or damaged, turn OFF the power supply, disconnect the power plug from the outlet, and contact your OMRON representative. Using it continuously without repair may cause a fire.
- Do not insert any foreign objects into the ventilation hole and other opening. Doing so may cause a fire or an electric shock.
- Do not allow multiple controllers in contact or pile one above the other. Doing so may cause a fire or breakdown of the product.
- If some national regulation requires the health check for operators handling ultraviolet wave, please take proper means for ZUV by yourself according to the regulation.

Precautions for Correct Use

Please observe the following precautions to prevent failure to operate, malfunctions, or undesirable effects on product performance.

Installation Environment
Do not install this product in locations subjected to the following conditions:
- Ambient temperature outside the rating
- Rapid temperature fluctuations (causing condensation)
- Relative humidity outside the range of 30 to 85%
- Presence of corrosive or flammable gases
- Presence of dust, salt, or iron particles
- Direct vibration or shock
- Reflection of intense light (such as other UV lights, laser beams, or electric arc welding machines)
- Direct sunlight or near heaters
- Water, oil, chemical fumes or spray, or mist environment
• Strong magnetic or electric field

**Power Supply and Wiring**

• When using the product, make sure that the FG terminal is grounded.
• When using a DC power supply, make sure that the power source is grounded.
• To use a DC power supply, observe the following points.
• When using a commercially available switching regulator, make sure that the FG terminal is grounded.
• If surge currents are present in the power lines, connect surge absorbers that suit the operating environment.
• Before turning ON the power after the product is connected, make sure that the power supply voltage is correct, there are no incorrect connections (e.g., load short-circuit) and the load current is appropriate. Incorrect wiring may result in breakdown of the product.
• Before connecting/disconnecting the head, make sure that the product is turned OFF. The product may break down if the head is connected or disconnected while the power is ON.
• Connect/disconnect the lens unit, while the UV light is not being irradiated. Direct UV light exposure could threaten vision or skin.
• Use only correct combinations of the head and controller.

**Maintenance and Inspection**

• Do not use thinner, benzene, acetone or kerosene to clean the head and controller. To remove dust particles from the head, wipe gently with a soft cloth (for cleaning lenses) moistened with a small amount of ethanol. Do not use excessive force to wipe off dust particles. Doing so may damage the lens and peel off the protective coating.

**Dimensions**

(Unit: mm)

**Controller**

ZUV-C30H

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**Head Units**

ZUV-H30M/H30H

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**Mounting Bracket**

Two, M4 mounting holes, effective depth: 6

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**Lens Units**

ZUV-L3H/L4H/L6H/L8H/L10H

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In the interest of product improvement, specifications are subject to change without notice.