

NEW

LINEAR IRRADIATION TYPE UV-LED UNIT

LIGHTNINGCURE™ LC-L5

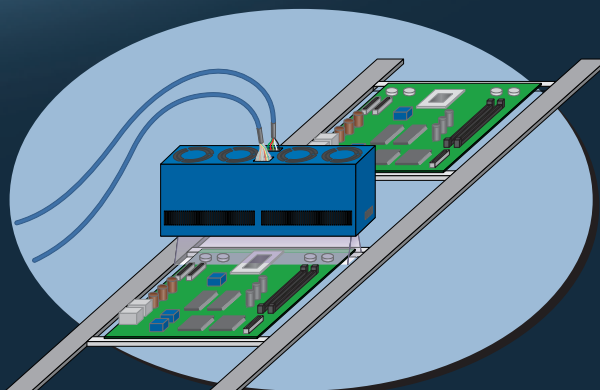
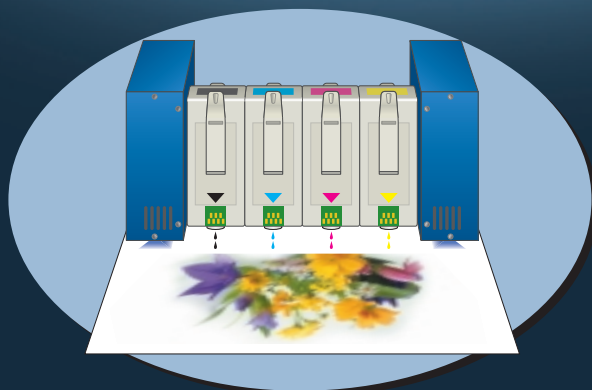
**Breaking all the old limits on product
line irradiation work using UV lamps!**

**A whole new generation
of light sources is on the scene!**



Why Hamamatsu?

As a pioneer and leader in photonics technology, Hamamatsu has stacked up many successes along the way. Hamamatsu now offers a new twist with linear irradiation type UV-LED units in a "New Profile" UV light source that incorporates all the technologies we have accumulated. These UV-LED units work in new production processes impossible for conventional lamp units up to now. The UV-LED units will soon find their way into UV print devices and various types of industrial equipment.



APPLICATIONS

- **UV Ink Drying**
UV inkjet printers
UV seal & label printing
UV offset equipment
- **UV Coating Agent Drying**
Printed circuit board protective films
IC cards & IC tag coatings
Blu-ray & DVD media coatings
Furniture & building materials (walls, floors, etc.) /
woodworking applications
- **UV Tape Peeling**
- **UV Gluing**
Manufacture of digital home electronics
products
- **Fluorescence Excitation /
Scratch & Flaw Inspection Lighting**

SPECIFICATIONS

Parameter	L11403-1104	L11403-2104	L11403-1112	L11403-2112	Unit
Illumination Area ①	105 × 10		305 × 10		mm
UV Irradiation Intensity ②	1000	1200	1000	1200	mW/cm ²
Peak Wavelength	365 ± 5	385 ± 5	365 ± 5	385 ± 5	nm
Class	4 (JIS C 6802: 2005)				—
LED Service Life ③	20 000				h
Input Voltage (DC)	36 ± 2				V
Power Consumption (Max.)	180		450		W
Cooling Method	Forced-air cooling by fan motor				—
Operating Ambient Temperature	+5 to +40				°C
Storage Ambient Temperature	-10 to +50				°C
Operating Ambient Humidity	20 to 80 (No condensation)				%
Storage Ambient Humidity	Below 80 (No condensation)				%
External Control	Lighting control, Irradiation power adjustment, Various alarm signal outputs				—
Applicable Standard	IEC 61326-1 Group 1 Class A				—
	IEC 61010-1				—

NOTE: ① Area subject to at least 80% irradiation intensity at distance of 2 mm

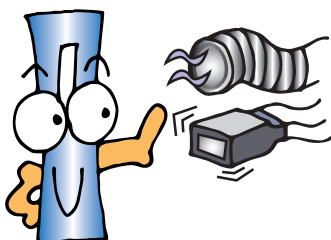
② 5 minutes after lamp ON at distance of 2 mm within irradiation area

③ Average time until irradiation intensity reaches 70% of initial value

* Feel free to consult us about any custom specifications you might need.

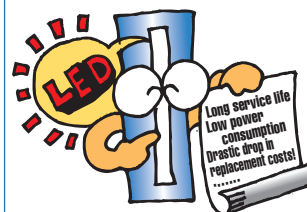
Needs NO duct installation & NO chiller equipment!

Air cooling eliminates need for bulky chiller equipment. Also minimal heat emissions means that no exhaust ducts are needed. This not only cuts the initial equipment investment cost but also helps save space!



Huge cuts in maintenance costs!

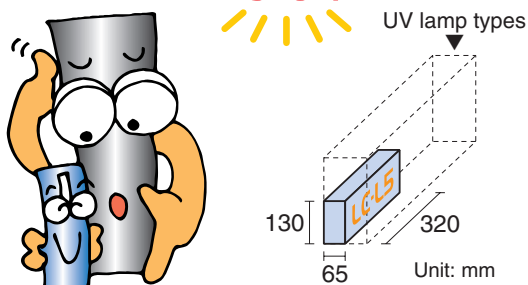
Our new UV-LED units ease the service chore of frequent lamp replacement which is a big problem in conventional UV lamps. LED units also have a service life far greater than conventional lamps. The LED units not only have low power consumption which cuts electrical bills but need very little service work such as lamp replacement, and so give huge savings in maintenance costs.



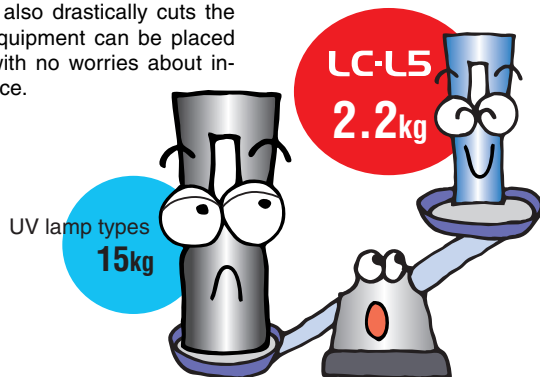
Greater freedom in component layout and no worries about space.

Using UV-LED allowed us to cut space requirements by some 90% compared to conventional UV lamps.

Cuts unit size some 90%



This change also drastically cuts the weight, so equipment can be placed as needed with no worries about installation space.

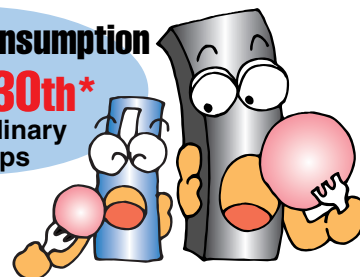


* Compared with other irradiation units

Environmental impact reduction

These UV-LED units cut power consumption to about 1/30th* that of conventional UV lamps. So switching over to the LC-L5 reduces the CO₂ in the air by 20,000 kg over a one-year period. That gives the same effect as planting about 1800 buna (beech) trees.

Low power consumption
about 1/30th*
that of ordinary
UV lamps



■ Estimate conditions

Light source type	quantity	operating time	operating time per day
Metal halide lamp (4 kW)	4 units	260 days	ON for 9 h
LC-L5 (0.4 kW)	4 units	260 days	ON for 3 h/Standby for 6 h

* Value allowing for duty cycle (LC-L5) for operating time per day

Cuts CO₂ emission quantity by
about 20,000 kg per year



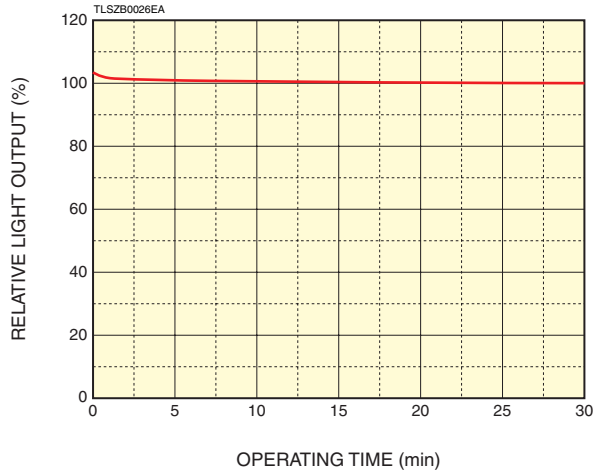
Yields same effect
as planting about 1800
buna trees

CO₂ emissions were calculated as equivalent to 0.555 kg/kWh (Value based on Section 3 of enforcement order for act on promoting global warming prevention measures)
Calculated at 11 kg which is the amount of CO₂ absorbed by one buna tree over a one-year period
(Estimate by Forestry and Forest Product Research Institute: independent institution)

Stable output accuracy

Advance heat-dissipation technology is yet another in a long string of UV-LED successes from Hamamatsu. This technology delivers stable irradiation that suppresses heat drift to an absolute minimum by a cooling technique that ensures both ample light intensity and long service life.

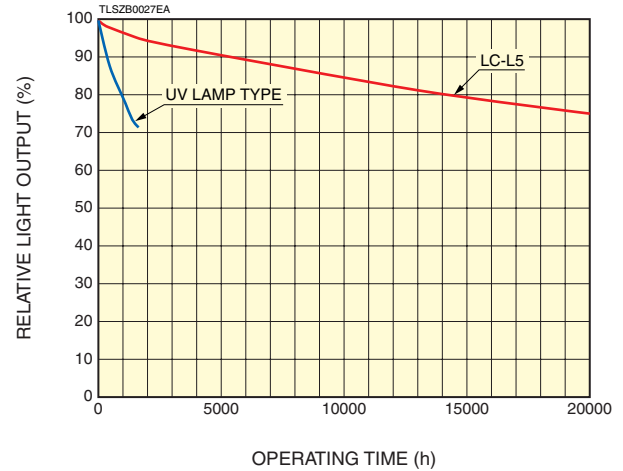
●Drift Characteristics



Long service life and huge cut in running costs.

A great feature of LED type UV lamps is their super long service life compared to ordinary UV lamps. These UV lamps only need to turn on momentarily unlike other lamps which are ON most of the time. This smaller ON time makes a huge difference in actual service life!

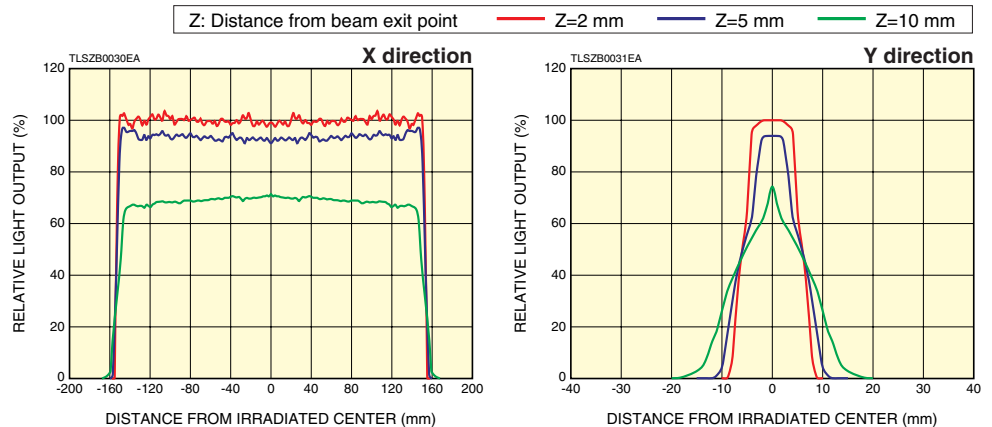
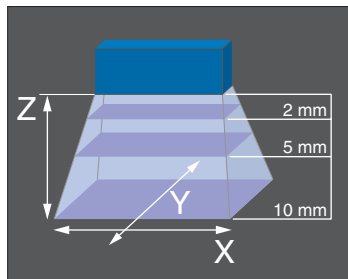
●Service Life Characteristics



Uniform UV irradiation over a wide range

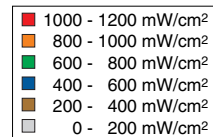
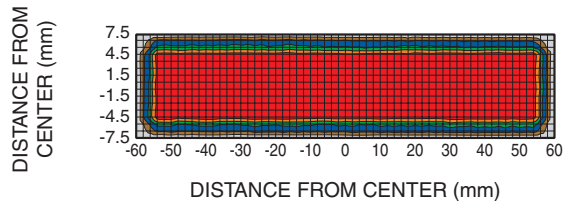
Our uniquely designed optical systems are what make super-uniform UV irradiation possible over a wide range with minimal variations in light intensity (these can replace UV ovens). Uniform UV irradiation supports quality control by minimizing uneven drying of printed items and warping from adhesive hardening.

●Irradiated area



●Irradiation intensity distribution (typical example)

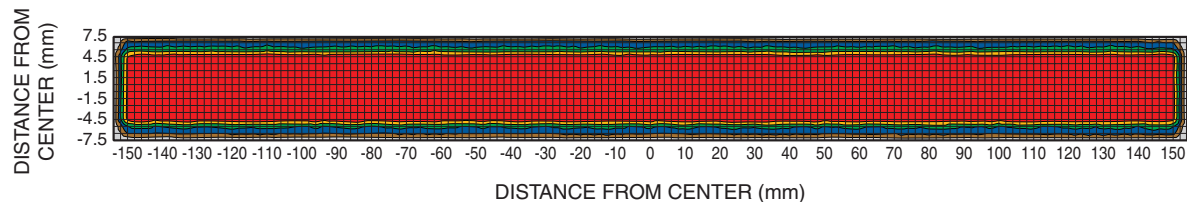
●L11403-2104



* Light intensity at distance 2 mm from beam exit point (at 385 nm)

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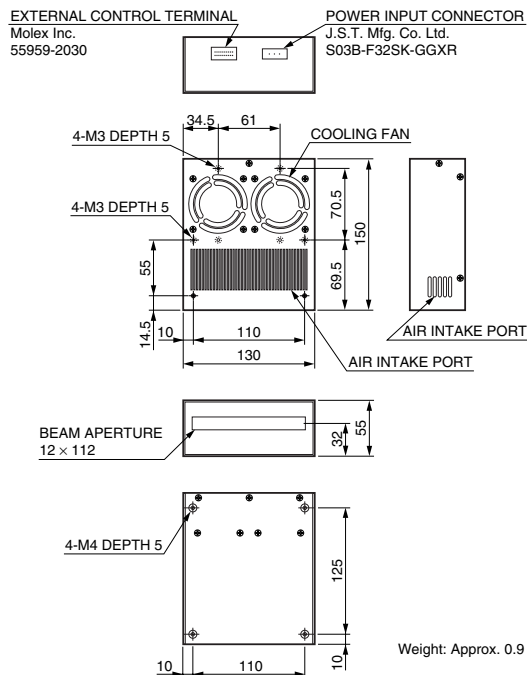
●L11403-2112



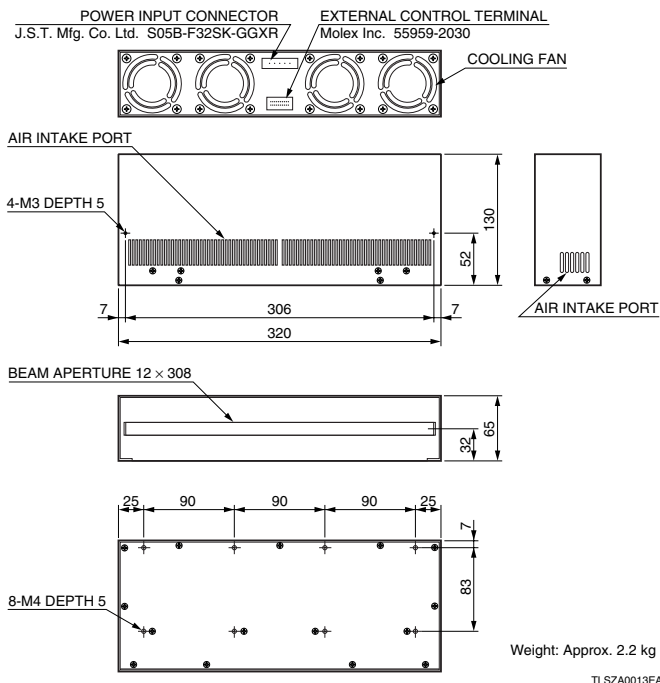
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DIMENSIONAL OUTLINES (Unit: mm)

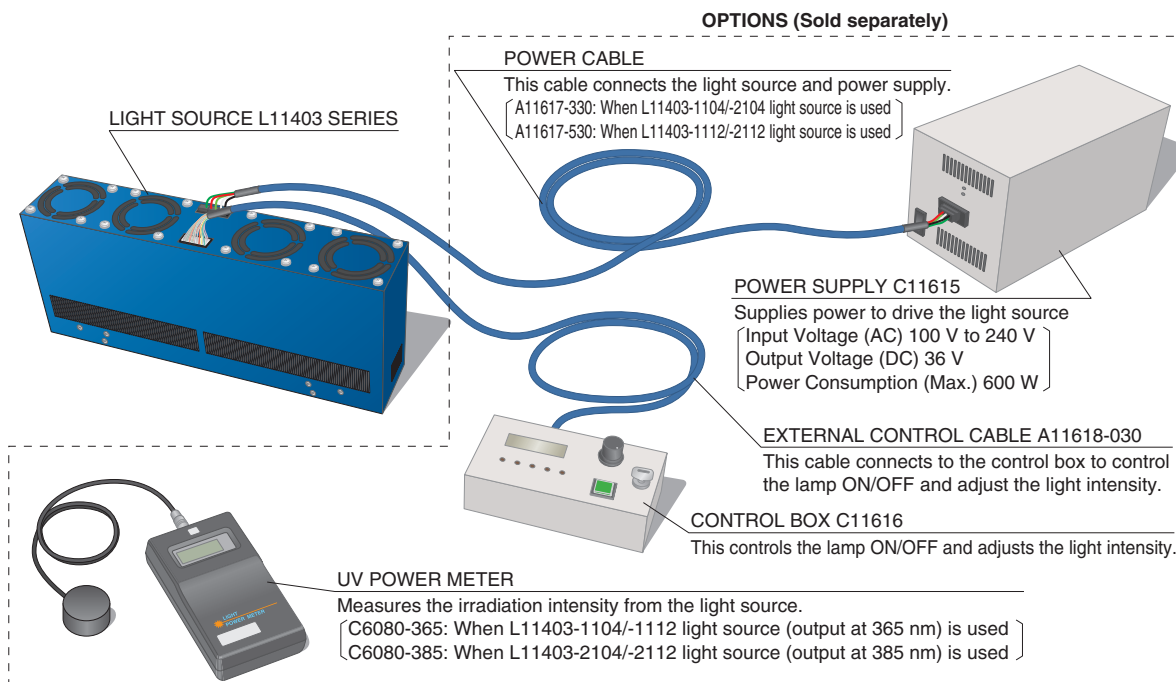
●L11403-1104/-2104



●L11403-1112/-2112



SETUP EXAMPLE



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