

# Light Hammer® 10

The Light Hammer® 10 brings all the benefits of microwave-powered UV curing to a ten-inch (250 mm) system with exciting new features to enhance your productivity.

Operating in the power class of 600 watts/inch, the Light Hammer® 10 features two easy-to-service modular components: the microwave-powered irradiator and the solid-state power supply. At the heart of Fusion UV's technology is the electrodeless bulb mounted in an elliptical reflector for focusing an intense strip of light 53 mm (2.1 inches) below the face of the lamp. Offering many advantages over traditional drying methods, our systems have been shown to increase production speed, reduce reject rates, improve scratch and solvent resistance, and facilitate superior bonding.



## Higher Efficiency from the Solid-State Power Supply

Each lamp system has its own microprocessor-based, modular power supply. The high voltage circuit inside the power supply consists of a solid-state, switching engine. This reduces ownership costs because it extends the life of the magnetron and the bulb by supplying a constant non-fluctuating source of power to the lamp. The solid-state electronics run cooler and more efficiently – saving money on power, reducing environmental noise and space requirements. Power output from 35% to 100% can easily be controlled from the front panel or remotely through a PLC (programmable logic controller). This variable power feature permits matching of the lamp output to the machine/line speed or to the ink/coating demands.

## Built-In Communications Software

Utilizing DeviceNet™, our sophisticated control system allows multiple lamp systems to be interconnected and controlled individually or as a group. It also allows the collection of system operation data that will enhance preventative maintenance and line productivity.

## Improved Cure

The ultimate benefits of the Light Hammer® 10 are the achievement of higher degrees of conversion, higher speed and better depth of cure than is typically achieved with other UV sources. (Process patents: US 6908586B2 and US 7037460B2)

## Electrodeless Technology

The microwave-powered lamp and its electrodeless bulb technology have proven themselves over time and in hundreds of demanding applications. These long life bulbs are known for their stable performance, high intensity and low maintenance operation.

## Fast UV Curing from High Peak Irradiance and Low Infrared

The small diameter bulb combined with the elliptical reflector provides high peak of UV irradiance for high-speed cure. The small diameter bulb also reduces infrared emission resulting in lower surface temperatures of the substrate, thus eliminating the need for complicated heat removal methods.

## Popular Bulb Spectra Available

The standard bulb spectra are available: "H" spectral distribution is suited for clearcoats and varnishes; the "D" spectral distribution is popular and proven for inks and thick coatings or adhesives; and the "V" distribution is effective in the UV curing of white basecoats, through laminating materials and in other specialty applications.

## Multiple Lamp Systems

To operate multiple lamps in a system, a controller with master DeviceNet™ compatibility is required.

# SPECIFICATIONS: Light Hammer® 10

## System Designation

**System Designation:** Light Hammer® 10

**Power Supply:** LHP10

**Irradiator:** LHI10

**Available Input Voltages (50/60 Hz) Three Phase:**  
200-240 VAC, 380 VAC, 415 VAC, 480 VAC

**System Ambient Operating Temperature:**  
0-50 degrees Celsius

**Relative Humidity:** 30-95%, non condensing

**Altitude:** 0-1000 m

**Mobility:** Stationary position

## LH10 Communication Bus –

complies with DeviceNet™ specifications for a DeviceNet™ Slave

**Transmission Media:** DeviceNet™

**Configuration:** Two twisted pair wires (24 V dc power and signal) plus drain in one cable

**Theoretical Bus Capacity:** 63 nodes per DeviceNet™ master controller (customer supplied)

**Data Rates:** Max Cable Length (Drop & Trunk)

|          | Thin Cable* | Thick Cable | Flat Cable |
|----------|-------------|-------------|------------|
| 500 kb/s | 100 m       | 100 m       | 75 m       |
| 250 kb/s | 100 m       | 250 m       | 200 m      |
| 125 kb/s | 100 m       | 500 m       | 420 m      |

\* Only Thin Cables are available from Fusion UV Systems. Other types of cables can be purchased from other manufacturers of DeviceNet™ media.

## Power Supply Model LHP10

**Mag Current @ 100% Power:** 880 mA/Mag

**Output Range:** 35% to 100%

**Input Voltages:** 200-240 VAC, 380 VAC, 415 VAC, 480 VAC (50/60 Hz)

**Max Line Current for 380-480 V version:**  
20 Amps maximum

**Max Line Current for 200-240 V version:**  
32 Amps maximum

**Dimensions (W x H x L):** 423 mm (16.6 in.) x 217 mm (8.6 in.) x 808 mm (31.8 in.) for 380-480 V, 819 mm (32.3 in.) for 200-240 V

**Weight:** 37 kg (81 lbs.)

**Rear Clearance:** 305 mm (12 in.)

**Enclosure Rating:** IP20 (NEMA 1)

**Enclosure Finish:** Textured chemical resistant finish

**Line Power @ 100%:** 8 kW

## Irradiator Model LHI10

**Output @ 100% Power:** 600 W/inch

**Weight:** 19 kg (42 lbs.)

**Dimensions:** Same size as I600M type

**Cooling Requirements:** 8.9 m<sup>3</sup>/min. @ 2750 Pa (315 scfm @ 11.0 in. w.c.) at irradiator inlet. 1600 – 2000 Pa (6.4 – 8.0 in. w.c.) inside the irradiator

**Reflector Geometry:** Elliptical (with bulb at focus)

**Substrate Location:** 53 mm (2.1 in.) from face of lamp, for maximum irradiance

**Mounting Position:** Any angle with respect to vertical

**Footprint:** 267 mm x 200 mm (10.5 in. x 7.9 in.)

**Exhaust:** Recommend 130% of the nominal volume of cooling air be exhausted

**Housing Collar:** 149 mm (5.9 in.)

## System Features

| Features                                 | Advantages   | Benefits   |
|--|--|--|
| <b>Solid State Power Supply</b>          | Continuously Variable  | Variable Power output – from 35% to 100%   |
|  | Greater Efficiency   | Lower cost of ownership  |
|  |  | Longer life of internal components   |
|  | Lower Ripple   | Stable Bulb Output   |
|  | Lower Weight   | Ease of handling   |
| <b>Irradiator</b>                        | Improved Magnetron Control   | Lower cost of ownership  |
|  |  | Longer magnetron life  |
| <b>Quick Restart Mode</b>                | Rapid UV Output change from full power to low power; and return to full power immediately on command | Quick system re-start after temporary interruption                                   |
|  |  | Eliminates need for costly mechanical shutters (not intended for continuous cycling) |
| <b>Industrial Communication Protocol</b> | DeviceNet™ slave   | Standard hardware from multiple manufacturers  |
|  |  | ODVA controlled standard   |
|  |  | Computer Interface possible  |
|  |  | Capable of PLC control   |
|  |  | Monitor and control individual lamps   |

Contact your local Fusion UV office for an engineered solution for your specific requirements.



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