Fusion UV®

The Power of Light®

Global leaders
in microwave
UV curing technology

excelitas®

Fusion UV® / excelitas®

Introduction

Unsurpassed power and reliability are the result of Fusion UV®'s continued commitment to develop improved ultraviolet curing solutions that meet our customers' demands for higher production speeds, better process control, and lower cost of ownership.

Microwave-Powered UV Curing Products Overview

Ultraviolet (UV) curing is a photochemical process in which high intensity UV instantly cures inks, coatings or adhesives in a wide range of industries. Offering many advantages over traditional drying methods, UV curing increases production speed, reduces reject rates, improves scratch and solvent resistance, and facilitates superior bonding.

Fusion UV®'s microwave-powered lamps are used in hundreds of industrial ultraviolet curing applications from automotive headlamps to flooring to medical devices to wire marking and electronic components.

Our customers have come to count on the quality of cure from Fusion UV's products – day-to-day, month-to-month and through thousands of hours of use. Our high-energy lamp systems generate a reliable and consistent source of UV energy. And when placing lamp systems side-by-side for extended widths, there is no loss of energy or need for overlap.

From the economical F300S, to the ultra high output 10-inch LightHammer® 10 Mark III lamp system, Fusion UV offers a wide range of products so that you can choose the right system for your process.

ACCESSORIES
Special fill bulbs available – matches the lamp spectrum to the process
8,000-hour warranty (non-prorated) on H bulbs; 6,000-hour warranty (non-prorated) on special fill bulbs
Lightshields, standard and custom for webs, sheets and 3D parts
Conveyors
Wide line system to 6 m (20 feet) and more
Custom design and engineering
Cabinet enclosures and racks for multiple power supplies
Turnkey system capability
Variable power output option

FEATURE/MODEL		
	F300S and F300SQ	**F600S**
Lamp type	Electrodeless UV	Electrodeless UV
Bulb length	15 cm (6-inch)	25 cm (10-inch)
Extended curing width	Unlimited cure width by stacking lamps end-to-end	Unlimited cure width by stacking lamps end-to-end
Bulb type	H, D, V, H+	H, D, V, H+
Start up time	20 seconds (cold start), 5 seconds (warm start)	15 seconds (cold start), 5 seconds (warm start)
Reflector geometry	Semi-elliptical	Semi-elliptical
Optimum focus distance to sample	5.3 cm (2.1 inches)	5.3 cm (2.1 inches)
Dichroic reflectors	Optional	Optional
Shutter	Optional mechanical	Optional mechanical
Power class	120 W/cm (300 W/inch)	240 W/cm (600 W/inch)
Power level	Fixed or quick restart (optional)*2	Dual level (160/240 W/cm)
External control	Standard	Standard
Cooling blower	Remote	Remote
Air flow @ irradiator inlet	2.8 m^3/min.; 100 scfm	8.9 m^3/min.; 315 scfm
Lamp footprint (WxL)	208 x 168 mm (8.2 x 6.6 inches)	206 x 267 mm (8.1 x 10.5 inches)
Compliance	CE, TÜV	CE, TÜV
AIMS cloud enabled		
Upgrade/retrofit capable		

*1: Depending on duty cycle and power level *2: Not for cycling operation
The following is recommended

- Additional irradiator cooling air may be required.
- Use of swept reflectors may not be desirable. Basic, non-swept reflectors maintain higher internal irradiator air pressures.
- Depending on temperatures and air flow, operation of 9 mm bulbs at 410 W/in. may result in shorter bulb life. 11 mm and 13 mm bulbs will typically operate at 410 W/in. more efficiently.

Note: Bulbs contain mercury. Dispose of according to local, state, or federal laws. Intact bulbs may be returned to the manufacturer for disposal.

FEATURE/MODEL		
	LightHammer® 6 Mark II	**LightHammer® 10 Mark II**
Lamp type	Electrodeless UV	Electrodeless UV
Bulb length	15 cm (6-inch)	25 cm (10-inch)
Extended curing width	Unlimited cure width by stacking lamps end-to-end	Unlimited cure width by stacking lamps end-to-end
Bulb type	H, D, V	H, D, V, H+
Start up time	15 seconds (cold start), instantaneous (warm start)*1	15 seconds (cold start), instantaneous (warm start)*1
Reflector geometry	Semi-elliptical	Semi-elliptical
Optimum focus distance to sample	5.3 cm (2.1 inches)	5.3 cm (2.1 inches)
Dichroic reflectors	Optional	Optional
Shutter	Electronic shutter*2 optional mechanical	Electronic Shutter*2 optional mechanical
Power class	200 W/cm (500 W/inch)	240 W/cm (600 W/inch)
Power level	Variable (35–100%) quick restart*2	Variable (35–100%) quick restart*2
External control	Std primary/secondary; opt DeviceNet™, Profinet®, Profibus®, EtherNet/IP™	Std primary/secondary; opt DeviceNet™, Profinet®, Profibus®, EtherNet/IP™
Cooling blower	Integral or remote	Integral or remote
Air flow @ irradiator inlet	1.4 to 4.2 m^3/min.; 50 to 150 scfm*1	8.9 m^3/min.; 315 scfm
Lamp footprint (WxL)	168 x 168 mm (6.6 x 6.6 inches)	206 x 267 mm (8.1 x 10.5 inches)
Compliance	CE, TÜV	CE, TÜV
AIMS cloud enabled	Optional	Optional
Upgrade/retrofit capable	Available	Available

*1: Depending on duty cycle and power level *2: Not for cycling operation

The following is recommended

- Additional irradiator cooling air may be required.
- Use of swept reflectors may not be desirable. Basic, non-swept reflectors maintain higher internal irradiator air pressures.
- Depending on temperatures and air flow, operation of 9 mm bulbs at 410 W/in. may result in shorter bulb life. 11 mm and 13 mm bulbs will typically operate at 410 W/in. more efficiently.

Note: Bulbs contain mercury. Dispose of according to local, state, or federal laws. Intact bulbs may be returned to the manufacturer for disposal.

FEATURE/MODEL		
	LightHammer® 10L Mark II	**LightHammer® 10H Mark II**
Lamp type	Electrodeless UV	Electrodeless UV
Bulb length	25 cm (10-inch)	25 cm (10-inch)
Extended curing width	Unlimited cure width by stacking lamps end-to-end	Unlimited cure width by stacking lamps end-to-end
Bulb type	H, D, V, H+	H, D, V, H+
Start up time	15 seconds (cold start), instantaneous (warm start)*1	15 seconds (cold start), instantaneous (warm start)*1
Reflector geometry	Semi-elliptical	Semi-elliptical
Optimum focus distance to sample	5.3 cm (2.1 inches)	5.3 cm (2.1 inches)
Dichroic reflectors	Optional	Optional
Shutter	Electronic shutter*2 optional mechanical	Electronic shutter*2 optional mechanical
Power class	170 W/cm (410 W/inch)*3	240 W/cm (600 W/inch)
Power level	Variable (35–100%) quick restart*2	Variable (35–100%) quick restart*2
External control	Std primary/secondary; opt DeviceNet™, Profinet®, Profibus®, EtherNet/IP™	Std primary/secondary; opt DeviceNet™, Profinet®, Profibus®, EtherNet/IP™
Cooling blower	Integral or remote	Remote
Air flow @ irradiator inlet	6.2 to 8.2 m^3/min.; 220 to 290 scfm	8.9 m^3/min.; 315 scfm
Lamp footprint (WxL)	206 x 267 mm (8.1 x 10.5 inches)	206 x 267 mm (8.1 x 10.5 inches)
Compliance	CE, TÜV	CE, TÜV
AIMS cloud enabled	Optional	Optional
Upgrade/retrofit capable	Available	Available

*1: Depending on duty cycle and power level *2: Not for cycling operation *3: Care should be taken in operating I250 irradiators at 410 W/in.
The following is recommended

- Additional irradiator cooling air may be required.
- Use of swept reflectors may not be desirable. Basic, non-swept reflectors maintain higher internal irradiator air pressures.
- Depending on temperatures and air flow, operation of 9 mm bulbs at 410 W/in. may result in shorter bulb life. 11 mm and 13 mm bulbs will typically operate at 410 W/in. more efficiently.

Note: Bulbs contain mercury. Dispose of according to local, state, or federal laws. Intact bulbs may be returned to the manufacturer for disposal.

FEATURE/MODEL	
	LightHammer® 10 Mark III
Lamp type	Electrodeless UV
Bulb length	25 cm (10-inch)
Extended curing width	Unlimited cure width by stacking lamps end-to-end
Bulb type	H, D, V, H+
Start up time	15 seconds (cold start), instantaneous (warm start)*1
Reflector geometry	Semi-elliptical
Optimum focus distance to sample	5.3 cm (2.1 inches)
Dichroic reflectors	Optional
Shutter	Electronic Shutter*2 optional mechanical
Power class	240 W/cm (600 W/inch)
Power level	Variable (35–100%)
External control	Std primary/secondary; opt DeviceNet™, Profinet®, Profibus®, EtherNet/IP™
Cooling blower	Integral or remote
Air flow @ irradiator inlet	8.9 m^3/min.; 315 scfm
Lamp footprint (WxL)	206 x 267 mm (8.1 x 10.5 inches)
Compliance	CE
AIMS cloud enabled	Optional
Upgrade/retrofit capable	Available

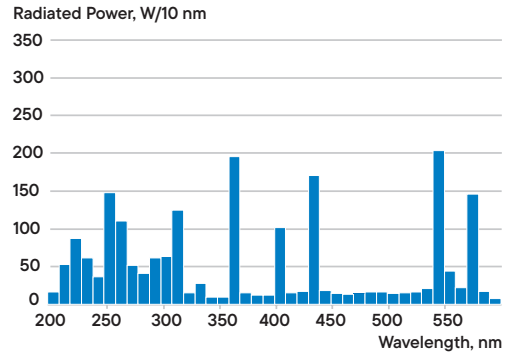
*1: Depending on duty cycle and power level *2: Not for cycling operation
The following is recommended

- Additional irradiator cooling air may be required.
- Use of swept reflectors may not be desirable. Basic, non-swept reflectors maintain higher internal irradiator air pressures.
- Depending on temperatures and air flow, operation of 9 mm bulbs at 410 W/in. may result in shorter bulb life. 11 mm and 13 mm bulbs will typically operate at 410 W/in. more efficiently.

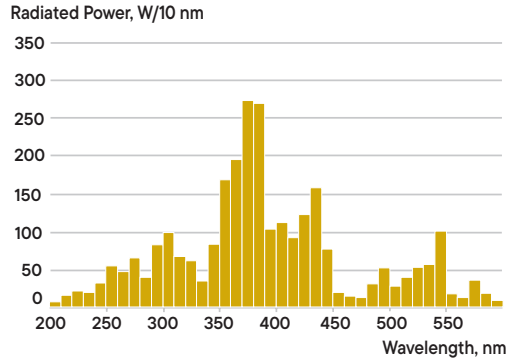
Note: Bulbs contain mercury. Dispose of according to local, state, or federal laws. Intact bulbs may be returned to the manufacturer for disposal.

Output Spectra of Typical Fusion UV Electrodeless Bulbs

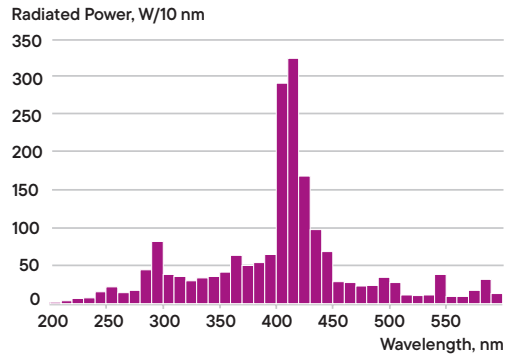
H BULB (13 MM)



D BULB (13 MM)



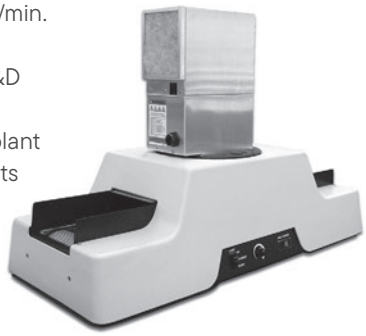
V BULB (13 MM)



UV Processing Systems

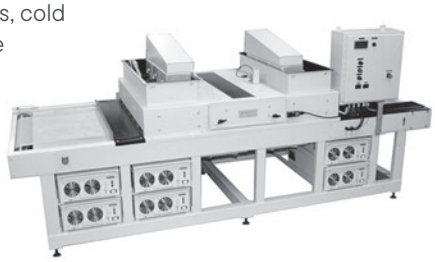
BENCHTOP CONVEYOR SYSTEMS

- Ideal curing system for small parts
- Lamp can rotate, raise and lower
- Belt speeds of 0.6 to 76 m/min. (2 to 250 fpm)
- Ideal for laboratory and R&D applications
- Rugged enough for pilot plant or production environments



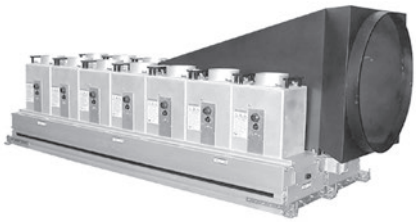
SHEET HANDLING AND PART HANDLING SYSTEMS*

- Conveyor widths 5 cm (2 in.) to 3 m (10 ft.) wide
- Conveyor speeds to 150 m/min. (500 fpm)
- Belts of Teflon®-coated Kevlar®, Nomex® (anti-static) or stainless steel
- Water-cooled beds, cold reflectors available
- Nitrogen inerting available



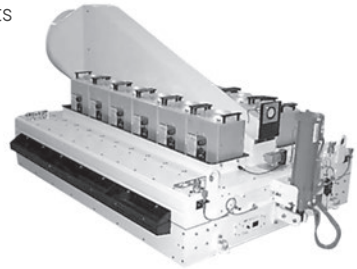
WEB SYSTEMS*

- 15 cm (6 in.) to 6 m (20 ft.) wide
- Nitrogen inerted to 50 ppm O_2 available
- Purged and pressurized available for hazardous locations
- Full integration with process controls
- On-line monitoring available



WIDE-LINE SYSTEMS*

- Widths unlimited
- 8-meter wide systems in production
- Excellent uniformity across entire product width
- Heat management options for thermally sensitive products
- Nitrogen-inerted systems available



WIRE, CABLE AND FIBER SYSTEMS

- 360° reflector systems for maximum efficiency
- High intensity, well-defined “sweet spot” for maximum product speed
- Nitrogen-inerted systems available
- Special reflector patented for optical fiber production

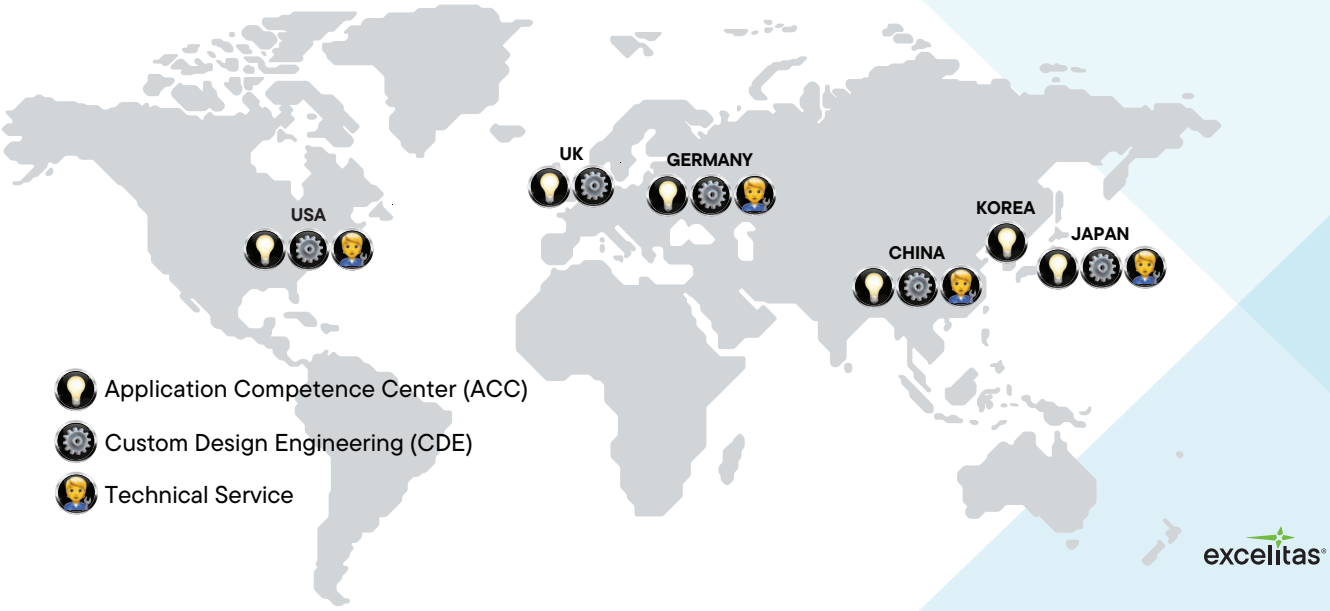
SPECIAL PRODUCT HANDLING SYSTEMS*

- Static exposure chambers
- 3D parts curing
- Rotational or non-rotational cure
- Robotic parts handling

* Custom solutions available.

Curing of coatings, inks, paints and adhesives with UV (ultraviolet) is considered a "green" technology. It provides a healthier environment to workers and offers several advantages over solvent-based technologies including a reduction in VOCs (volatile organic compounds), air pollutants and flammability.

Success Factor: Regional teams close to our customers



Enabling the future

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