

XENON

If you have a problem
with mercury UV curing,
we have a better solution.

Pulsed UV Light



POLYTEC GmbH

Polytec-Platz 1 - 7

D - 76337 Waldbronn

GERMANY

Tel: +49 (72 43) 60 41 74

Fax: +49 (72 43) 6 99 44

E-Mail: ot@polytec.de

www.polytec.de

Xenon Pulsed UV Light

When mercury UV just isn't good enough.

Conventional UV lamps use mercury and run continuously. Pulsed UV light is fundamentally different. Xenon's unique technology generates ultra high peak power UV pulses that produce rapid and complete cures at low temperatures. In addition Xenon's lamps reduce potential safety and environmental hazards and use less energy.

MAJOR FEATURES

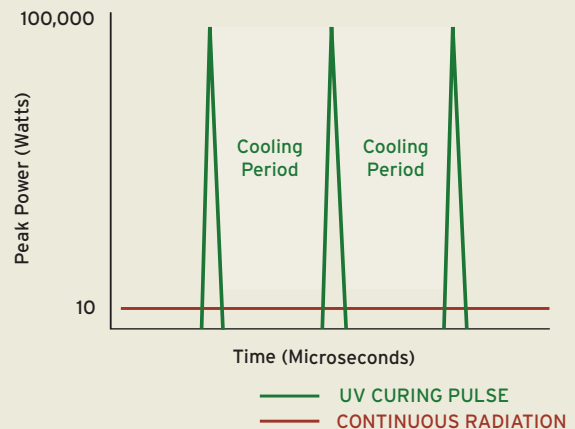
- Deep Penetration
- Less Power
- Low Heat
- Process Flexibility
- High Throughput
- Modular Design
- Mercury Free
- Instant On/Off

Xenon Pulsed UV Light is used by process engineers for a wide range of curing challenges, from cosmetic packaging to medical devices to the latest advances in optical storage media. It's suitable for any chemistries that absorb UV light from 180 nm to 1000 nm, and our modular product design lets you easily integrate our systems into any application.

If you're having problems with mercury UV curing, talk to the engineers at Xenon.

Why Pulsed is Better than Continuous

Pulsed UV light produces peak power more than 100,000 times greater than the sun. Why is this better than continuous UV light? Consider two ways of expending the equivalent of 100 Joules of energy: one can either power a 10 watt continuous lamp for 10 seconds or power a 1,000,000 watt pulsed lamp for 100 microseconds. This is analogous to penetrating a block of wood with a nail: one could press a nail into the wood with a finger for 10 seconds without effect, or exert the same amount of energy and drive the nail instantaneously into the wood with a single strike of a hammer. Pulsed UV, like the hammer, delivers light at high peak power for deep penetration.



Pulsed UV light provides cooling between pulses whereas mercury UV curing continuously warms the substrate.

The Benefits of Pulsed UV Light

Deeper penetration for full and consistent cures.

Pulsed UV provides better penetration, while maintaining low average power. The high peak power UV pulses penetrate thick and/or semi-opaque substrates much more effectively than continuous mercury UV. Adhesives and coatings are cured without the risk of substrate changes from exposure to unwanted heat.

Uses far less power for lower cost of ownership.

Pulsed UV systems consume up to 80% less energy than mercury UV systems. Short, high-energy bursts – which are off for a good portion of a typical duty cycle – result in significantly less energy use compared to the continuous mercury UV cycle. Additionally, these high-peak energy pulses trigger photochemical reactions faster.

Process flexibility.

Pulsed UV systems allow engineers to tailor key parameters to the application, including changing the peak power, pulse repetition rate, pulse sequencing, cure duration, and output spectrum. This unique flexibility helps process engineers, integrators, and formulators find the optimal balance between high energy, low heat, and short cure times.

Reduced cure time for much higher throughput.

Cure time is directly related to the speed at which optimum UV energy is delivered to the substrate. Pulsed UV delivers high intensity bursts of energy in short time periods which results in higher throughputs for volume manufacturing.

Modular products for easy integration.

Xenon's modular systems allow configurations that match a variety of curing requirements. Choices include a wide range of optical footprints and different lamp designs, including the ability to operate two lamps from one power source. Installation is simple. No mechanical shutters or water cooling equipment are required.

Safe and environmentally sound.

Xenon pulsed UV lamps do not contain mercury, a known toxic material. Pulsed UV lamps do not generate potentially dangerous microwaves.

Call or Visit our Labs

We'll configure a solution for you.

Xenon's Pulsed UV curing systems are based on decades of industry-leading engineering and experience. Our engineers are experts at delivering the optimum light footprint for each application. For example, we created a new spiral lamp specifically for high-volume manufacturing of DVDs. Xenon can develop a wide range of lamp shapes, each with a unique footprint, to suit virtually every application.

We combine this optics knowledge with our expertise in matching the correct electrical energy components and lamps to tailor the optimum curing solution for each challenge.

We invite you to visit our labs and bring your application with you. Or call us to arrange a conference call with our engineering staff. You can even rent a system to try out at your own facility.

Together, we'll create a curing solution for your most demanding applications.



Xenon designs and manufactures complete pulsed UV light curing systems from a wide array of housings, lamps, and other components. Rental systems are available for trial use at your own facility.

What's your curing challenge?

Here are a few examples of the curing problems Xenon has solved for manufacturers and systems integrators in the last few years. This is only a sampling of the hundreds of curing solutions we have provided for a wide range of industries.



The cure for next-generation optical discs.

Blu-ray Disc™ technology uses 100 micron coatings.

Pulsed UV technology allows manufacturers to penetrate thick coatings without compromising throughput.



Helping the wood coating industry grow.

The trend toward thermally sensitive wood and energy reduction is a challenge for conventional mercury UV technology.

Pulsed UV technology provides this industry with a greater than 50% reduction in energy consumption as well as reduced down time.



Keeping pace with medical electrodes.

The production of electrode hydrogels requires a tight process window, with a tradeoff between temperature and UV dose.

Pulsed UV's ability to control energy per pulse allows for excellent curing and throughput.



Driving down hard disc curing times.

New lubricious coating materials are required to protect the disc and reduce surface friction at the same time.

Manufacturing economics demand a fast cure and high-volume production.

Pulsed UV technology provides the solution.



A beautiful solution for the cosmetic industry.

A large contract packager found that mercury UV was melting their beauty product container.

Pulsed UV technology provided a low-heat, energy-saving solution with a complete cure – without sacrificing production rates.

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