

# The Power of Pulsed Light to Control Pathogen Contamination

## Solutions That Respond to the Global Need for Microbial Deactivation

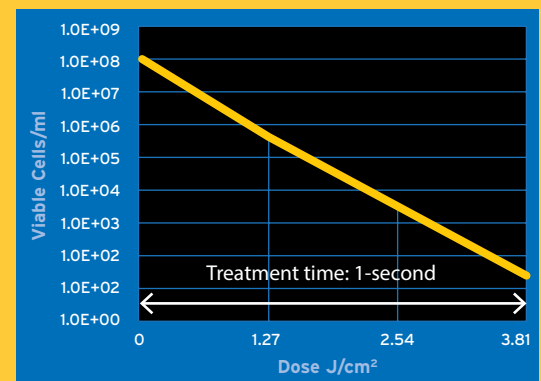
Infectious diseases are a significant concern for the safety of people living in worldwide communities. SteriPulse™ technology—high energy Pulsed Light for germ-free commercial and industrial processing—is an alternative to the use of chemical sterilants, continuous mercury-based UV sources or UV LEDs. Pulsed Light requires shorter exposure time (seconds) to achieve a 3 to 6 log reduction. Conventional low pressure monochromatic and medium pressure mercury vapor arc UV lamps are inherently low radiance sources and cannot practically deliver radiant flux magnitudes required for irreversible inactivation of nucleic acid repair mechanisms.

### Why XENON SteriPulse is the Right Choice

All microorganisms, with the exception of Mad Cow Disease, contain DNA. XENON's SteriPulse technology destroys DNA by photochemical, photothermal and photophysical mechanisms. It is classified as a sterilization agent because Pulsed Light is delivered with the instantaneous power of several megawatts. Systems are very easy to scale up and integrate into existing or new conveyor lines. All systems generate microsecond duration light pulses, 20,000 times more intense than the sun and rich in UVC, UVB and UVA (200 to 400nm).

## The Advantages of SteriPulse Technology

- Powerful sterilization agent providing high germicidal power
- Deactivates microorganisms in seconds, with no residuals
- Fits perfectly into continuous motion systems with compact modular units and PLC control (Z-1000 System)
- FDA approved technology for use with food or food surfaces
- Environmentally friendly- no mercury vapor lamps or VOC's created
- Proven process reliability - thousands of systems in operation globally
- Energy-efficient due to instantaneous ON/OFF control of lamp pulsing



**Destruction of *B. subtilis* in suspension exposed to Pulsed Light. Reduction of >6 log CFU/ml achieved within 1-second treatment time.**



### **XENON Z-1000 Modular Sterilization System**

The Z-1000 offers high speed solutions for surface microbial sterilization. Available in a range of user-defined, application-specific configurations for lab, pilot-scale and commercial manufacturing, the Z-1000 delivers pathogen reductions from 3 to 6 log in seconds. XENON's SteriPulse technology offers high intensity, microsecond pulses with high germicidal power. The Z-1000 application-specific configurations are based on a family of field-proven compact units that include sterilization chamber, single or dual-lamps, local or remote controllers, high voltage power supply and a light intensity monitor. The linear lamp is supplied in a fully enclosed, robust, air-cooled lamp housing that can be easily integrated into a range of existing continuous motion inline systems.

### **Talk to XENON today**

XENON is a pioneer in Pulsed Light technology and systems focused on what our customers tell us they require in a wide range of industries. We also work closely with research institutions and universities in the development of new emerging applications such as treating products packaged in aseptic conditions. Our Applications Engineering group is skilled at responding to your requirements and developing a custom engineered, economical solution. To learn more, visit [www.xenoncorp.com/sterilization](http://www.xenoncorp.com/sterilization), or contact our office listed below.

\*All results reported in published University and Research studies on a range of microorganisms.

### **Where is SteriPulse Used?**

High irradiance, Pulsed Light can be used as a simple, fast and reliable sterilization process in continuous operation in filling plants. Applications include the food and beverage production industry as well as pharmaceutical and cosmetics industries to disinfect packaging materials. Pulsed Light technology can inactivate pathogenic and spoilage microorganisms on food surfaces to significantly extend shelf life. It can be used as a post process treatment for the surfaces of fresh fruits and vegetables as well as packaged, ready-to-eat products such as meats.



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