

XENON X-1100

High-Intensity Pulsed Light System

The low cost R&D tool for investigating the applicability of Pulsed Light for new and emerging applications.



The tool that researchers, scientists and engineers have been looking for is here. An easy-to-use photonic system developed by XENON that will open new doors and lead to new discoveries.

The power of Pulsed Light

In virtually all disciplines of science and technology there are applications which demand precise delivery of energy. One often neglected energy delivery mechanism is that of high-intensity Pulsed Light. At present the most familiar example of this is the pulsed laser. Lasers, however, are not ideally matched to the requirements of many applications. Laser light is monochromatic and highly coherent, which can cause interference effects and speckle. Moreover, while the intensity of a narrow beam is high, expanding the beam to cover the item being irradiated substantially reduces the intensity. For most applications, it is desirable to have a source with a broad emission spectrum, so as not to be limited by materials with specific absorption characteristics.

Because XENON sources generate light whose spectrum extends from the deep UV to the near IR, with peak pulse powers that can often be measured in Megawatts, these sources are ideally suited to perform such tasks as breaking chemical bonds, sintering, ablating or sterilizing. The high peak powers generated by XENON's production-level systems are possible because of tight control of the pulse durations. These can be varied from a few microseconds to milliseconds.

Until now there was no practical method of generating Pulsed Light of this intensity with a low-cost R&D tool that was safe, compact and versatile. XENON, with over 50 years of experience in the Pulsed Light industry, has developed a system to address these needs. This R&D-centric solution allows novel innovations by harnessing a technology that was previously either too inflexible or cost prohibitive.

As a researcher, the advantage of having the X-1100 is that the next discovery can be yours.



The X-1100 delivers

The X-1100 System is a low-cost benchtop research tool packed with the latest advances in Pulsed Light technology. It provides researchers with a unique photonic technology to deliver broadband high-intensity light that can be used in a vast number of potential new applications.

The X-1100 features:

- The lowest cost programmable Pulsed Light system on the market
- Benchtop design with small footprint, and connects to standard mains voltage
- A high-intensity light delivering up to 9 Joules/cm² of radiant energy/pulse
- Sets up in minutes, with multiple user screens featuring a simple-to-follow graphical user interface (GUI)
- R&D tool to assist researchers in uncovering new applications for high energy Pulsed Light

A world of possibilities

Pulsed Light technology is already in extensive use in industrial, scientific, food processing, and medical fields. Some of the current applications for XENON's Pulsed Light are:

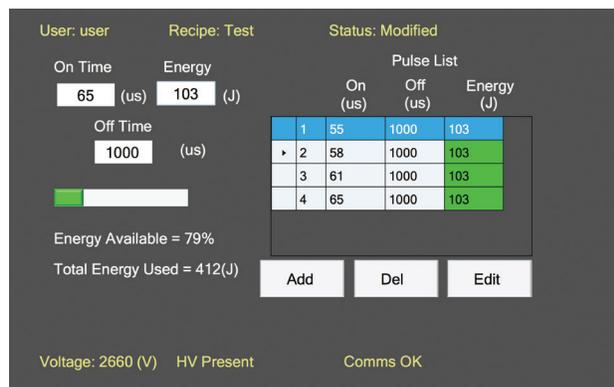
- Sintering silver, copper nano conductive and metallic inks
- Bacterial/germicidal package processing
- Water purification
- Semiconductor thin film research
- Surface modification
- Curing large area displays
- Solar simulation for PV testing
- Multi-layer bonding of adhesives
- Vitamin D enhancement of food
- Blu-ray Disc™ curing
- Medical device manufacturing

These applications represent just the tip of the iceberg. There are many more waiting to be uncovered and developed. With the X-1100, some of them can be yours.

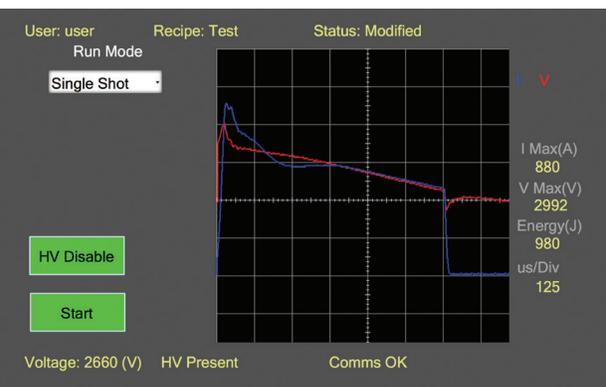


Versatile and user-friendly

The X-1100 offers a broad spectrum of light, from deep ultraviolet to visible to far infrared. In addition to its small footprint benchtop design, the X-1100 is able to connect to standard mains voltage, from 90 to 250 Vrms, 50 or 60Hz. The unit sets up in minutes, offers multiple user screens with a simple-to-follow graphical user interface (GUI). Its ease-of-use extends to how the system's energy is controlled; users simply select voltage and pulse duration, and the system automatically calculates and displays energy setting. Or, conversely, users can select voltage and energy, and the system sets the pulse duration.



Programming pulse profiles and sequencing is done on a single screen.



Lamp operating parameters (voltage and current) and pulse energy are monitored and displayed to confirm system operation.

Powerful and safe operation

XENON's High-Intensity Pulsed Light System offers a host of safety features, including:

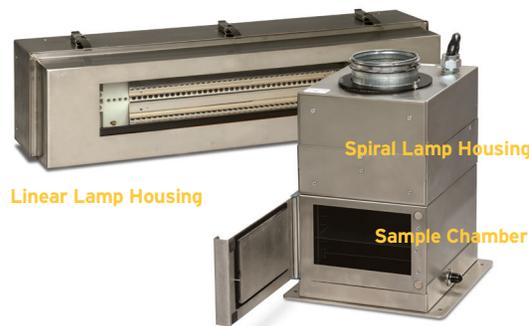
- Software to ensure that users select and maintain safe energy settings
- Diagnostic monitoring that is performed continuously for reliable, consistent operation
- High voltage disabling if a fault occurs, alerting the operator of corrective actions required to restore operation

An array of accessories

A family of lamp housings, sample chambers and a linear stage are available to support the researcher in using the X-1100 to investigate Pulsed Light. Six lamp housings provide an enclosed assembly containing lamp, reflector and air filter in an air-cooled environment.

Shown at bottom, right is the model LH-912 lamp housing mounted on model LC-916 sample chamber. These stainless steel designs provide shielding from the intense light and heat normally generated with Pulsed Light. In addition, a safety interlock prevents the lamp from flashing when the chamber door is open. The LC-916 also features a slide-out shelf that lets researchers use small laboratory samples to achieve proof-of-principle validation and establish process variables.

Lamp housings are available with linear, spiral or U-shaped lamps in a variety of lengths—providing researchers with a wide range of treatment area options.



How it all began.

Lou Panico, XENON's founder, saw tremendous potential in an interesting new light technology while collaborating with its developer, the esteemed MIT professor, Dr. Harold Edgerton. He used strobe lights—extremely rapid flashes of light—to create dramatic photographs of people and things in motion, often capturing events that had never been seen before by the human eye. Edgerton's work is still famous today.



That was when the seeds of Pulsed Light were first planted. Since then XENON has been enhancing and expanding on the uses and benefits of this remarkable technology. So it should not come as a surprise, especially to anyone with knowledge of Pulsed Light, that XENON, a world leader in this field, has stepped forward to create the X-1100, a research tool destined to open new doors, leading to many exciting discoveries.

Let XENON help you to explore and realize the full potential of Pulsed Light. XENON has been an enabler of innovative applications for Pulsed Light since the company was founded over 50 years ago. The X-1100 joins the XENON family of Pulsed Light systems already in use around the world for Printed Electronics sintering, UV curing, surface sterilization, enhancing mushrooms with Vitamin D, and solar simulators – with new applications being discovered all the time.

With thousands of systems operating on industrial production lines worldwide, XENON has been established as the Pulsed Light solution provider to turn to when faced with complex process development and production challenges.



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