Pulse xenon lamp energy storage

This paper developed a pulsed xenon lamp power supply with a high-voltage pulse synchronous trigger function, a DC charging voltage of 1kV-3kV, an output pulse current range of 1kA-3kA, and a pulse width of 50mS for a pulsed xenon lamp with a 196mm×F10mm and a resistivity of 12O?A 1/2. This paper presented the experimental results of ...

Pulsed xenon and krypton flashlamps are used to convert electrical energy to optical radiation for pumping solid-state lasers and some dye lasers. ... dynamic resistance (impedance). A flashlamp power supply usually consists of a high-voltage DC charging supply, an energy-storage capacitor bank, a pulse-forming network (PFN), and a trigger ...

To determine the dependence of the radiation characteristics of xenon lamps on the rate of energy deposition to the discharge gap, we employ a conventional LC oscillator in which storage capacitor C0, trigatron-type switch S0, and spherical pulsed lamp (with a tube diameter of 1 cm, a xenon pressure of 450 Torr, and an interelectrode distance ...

The lamp released photons to generate light pulse in the moment of ionic recombination, The pulse xenon lamp light energy output and spectral characteristic is related to electron energy in ...

The use of xenon plasma radiation limited by a quartz shell (flask) as a source of UV radiation (flash lamp) has proven its effectiveness in the development of optoelectronic systems for disinfecting air and surfaces [1, 2].The advantages of a xenon flash lamp in comparison with other sources of UV radiation (low- and high-pressure mercury lamps, metal ...

While xenon lamps are somewhat more efficient themselves, the emission spectrum of krypton lamps fits somewhat better to the neodymium absorption. ... (or per joule of pulse energy) is far lower. Note also that for lasers with low pulse repetition rates and thus low average power (or few operation hours), the poor energy efficiency may not be ...

Pulse Duration: The duration of the light pulse can be precisely controlled through the design of the electrical circuit and the characteristics of the xenon gas and lamp construction. Repeatability : Xenon flash lamps can be designed to operate at different repetition rates, from single flashes to several hundred flashes per second, depending ...

In this paper, we propose a new xenon lamp sintering system with an additional capacitor charger and bank. The proposed system features three power supplies. Two power supplies, called the trigger and the simmer, ionize gaseous xenon using a 23-kV trigger pulse output and sustain the ionized xenon gas using a 2.5-kW simmer power supply.

which releases energy (photons) in the form of light. The pulse into the primary of the trigger transformer T1 is produces by closing switch S1 which causes condenser C2 to discharge through the primary winding. The correct voltage is derived for C2 by charging it from a divider consisting of R2 and R3 across the main energy storage capacitor C1 .

The xenon flash lamp was discharged at a pulse energy of 830 J at 0.5 ms duration. ... Table 2 Summarization table of light sources, applications, and other details, applied for light-induced energy conversion and storage applications. Full size table. 4 Applications of LMIs in Energy Conversion and Energy Storage Devices.

Comparative testing of the Xenex devices with pulsed xenon lamps and Tru-D devices with mercury lamps was carried out in the USA . The disinfection efficiency at a distance of 1.2 m for the pulsed device with the xenon lamps was lower and was determined by the UV dose rather than the pulse power.

The µPAX-3 offers a wide range of flash energy levels and 2 watts maximum power in a compact, pre-aligned module. It utilizes Excelitas" high stability short arc Xenon flash lamps. Known for their stability and long life characteristics, these Xenon lamps generate light over a continuous spectrum from ultraviolet to infrared.

pulse energy/power and energy density) for different Xe lamps have b een measured and optimized. Varying temporal/luminous parameters of used light sources by means of rea lized driving boards, different pulse energy and power values were obtained, in order to fully exploit and analyze MWCNTs/ferrocen e photo-induced ignition.

4 pulses at 1 joule/cm 2 per pulse, but are not damaged if exposed to 4 joules/cm 2 total dose delivered in 8 pulses at 0.5 joules/cm 2 per pulse. This energy versus time sensitivity is typical of many packaging materials which develop black spots at high energy per pulse but not at low energy per pulse. Effective sterilization of the contents ...

spherical xenon lamp (also known as short-arc xenon lamp) is a point light [...] source with high brightness, color temperature around 6000K, the light color close to the sun, the gas discharge lamp is in the best color rendering of a light source, is widely used for film screenings, civilian illumination, train locomotives and simulated ...

--The radiation characteristics of a pulsed discharge xenon lamp are experimentally and theoretically ... of the lamp. The charging voltage of the storage capac-itors in the main circuits ranges from 16 (30) to ... the time profile and the energy of the excitation pulse, the configuration of the discharge gap, the spectral ...

According to the characteristics of pulsed xenon lamp discharge, the energy stored in the storage capacitor is released by the discharge of the xenon lamp, so the energy of a single pulse is ...

The nPAX-N2 offers a wide range of flash energy levels and 2 Watts maximum power in a compact, pre-aligned module. It utilizes Excelitas" high stability short arc Xenon flash lamps. Known for their stability and long life characteristics, Excelitas Xenon lamps generate light over a continuous spectrum from ultraviolet to infrared.

As with PUV, it does not tell the full story as Pulsed Light by XENON emits a much broader range of wavelengths than simply the ultraviolet. ... XENON"s Pulsed Light systems and lamps generate the highest energy, with less heat than any available technology. Its ability to generate the full spectrum of light means that the number of ...

Shipping Containers, Storage Spaces and COVID-19 oShipments carrying produce from high-risk locations are suffering from the fear associated with Covid-19. oXENON"s Pulsed Light sanitization and decontamination technology could provide the solution. 25 XENON"s 60" Lamp Housing

The XENON Z-1000 is is designed for surface microbial decontamination offering a range of user-defined, application-specific configurations and yielding pathogen reductions from 3-to-6 log. The high-speed system delivers high energy, short broadband pulses with high germicidal power. SteriPulse(TM) technology; Instant ON/OFF; High irradiance, high ...

o A high-intensity light delivering 3.8 Joules/cm2 of radiant energy/pulse (7.5 Joules/cm2 for the X-1100/2x OPTION) o Sets up in minutes, with multiple user screens featuring a simple-to-follow graphical user interface (GUI) o R& D tool to assist researchers in uncovering new applications for high energy Pulsed Light

The basics of pulsed UV lamp technology . Figure 1: Xenon Flashlamp System . A modern high power xenon pulsed lamp system consists of four major elements, a power supply, a pulse forming network (PFN), a xenon flashlamp and a trigger circuit. See figure 1. The power supply called a "cap charger" acts as a current source converting AC

B asic principle of pulsed xenon lamp The trigger transformer generates a high-voltage pulse to break down the helium gas in the xenon lamp, generally reaching a voltage of 10kV or higher, so that the gas inside the xenon lamp is in a pre-ionization state, which is called a start-up circuit, and the xenon lamp enters a pre-ionization state to ...

deliver the same light energy. A major restriction on the light energy delivered by a xenon pulse is the size of the electrolytic 330V storage capacitor. In this article we show the results of light power over time for: - Three xenon camera phones, with varying size storage capacitors, the largest of which has an external xenon flash accessory

The pulse xenon lamp setup is composed of a pulse xenon light, a boost module, a trigger module and a storage capacitor. It converts the electric energy into radiant energy and emits pulsed light covering a wide range of wavelength from 200 nm to 1100 nm.

high voltage energy storage capacitor C1 will be charged by the flash capacitor C2 in the xenon flash lamp circuit by virtue of the thyristor SCR. AND electronic switching circuit needs to work on ...

exposed to Pulsed Light emitted by XENON Corporation"s S-2100 flash lamp with pulse energies of 1-7 J cm-2. The flash lamp voltage was set at 3 kV and the pulse width was modulated from 0.3 to 2 ms to achieve the different pulse energies. Samples were held at a distance of 25 mm from the flash lamp while applying single pulses.

XENON lamps are made of fused quartz tubing sealed at each end ... storage -40 to 85oC Relative Humidity 10 - 80% (non-condensing) ... and pulse electrical energy, 505 J/pulse, are factory set. Controller - modular Description Controller Lamp power, Pulse Forming Network, PLC I/O PLC I/O Interface

Novel coronavirus pneumonia affects the health of people all over the world. In this study, UV pulse high-light sterilization technology was used to combat coronavirus. The light source of the ultraviolet pulsed high-light disinfection robot is a kind of high-brightness flash light source using pulsed xenon lamps as the output load. This paper developed a pulsed xenon lamp power ...

Xenon flash-lamp is a device that emit large amounts of spectral energy in short duration pulses. When an accumulated energy in a storage capacitor is released and dissipated, it forms highly excited xenon plasma within the flash-lamp. This article reports the development of a power supply of xenon flash-lamp which is used to pump optically a pulsed solid-state laser. The ...

The total peak current I P is 335 kA, the 10 % current pulse width t 0.1 is 440 ms, the current passing through the xenon lamp is critical damping current, peak current is 16.75 kA, the energy consumed by each pulsed xenon lamp is 34.02 kJ, and the energy conversion efficiency of the pulsed power supply is 93.2 %.

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