Photonic Sintering for Wide-Width Roll-to-Roll Production

The XENON S-5100 is a giant step forward in printed electronics; for the first time enabling the sintering of wide substrates in a roll-to-roll production environment.

In Printed Electronics, as in all printing, wide-area capability is essential for volume production. It's also required for products such as large screen digital displays.

Now XENON, the world leader in Pulsed Light, has created the S-5100 Wide-Width Sintering System. The S-5100 delivers the uniformity and precision control demanded by printed electronics applications. The advanced touch screen interface allows manufacturers to easily program and deliver the correct energy to achieve proper sintering without damaging the substrate. And, thanks to XENON's expertise in Pulsed Light, the unique design of the lamps and housing ensures uniform light energy across the entire sintering area (see sidebar).

The S-5100 can be used to sinter copper as well as silver inks, and is designed to work with inks from various manufacturers so users are not locked into one vendor. XENON engineers will work with you to customize the system to your specific printing requirements.
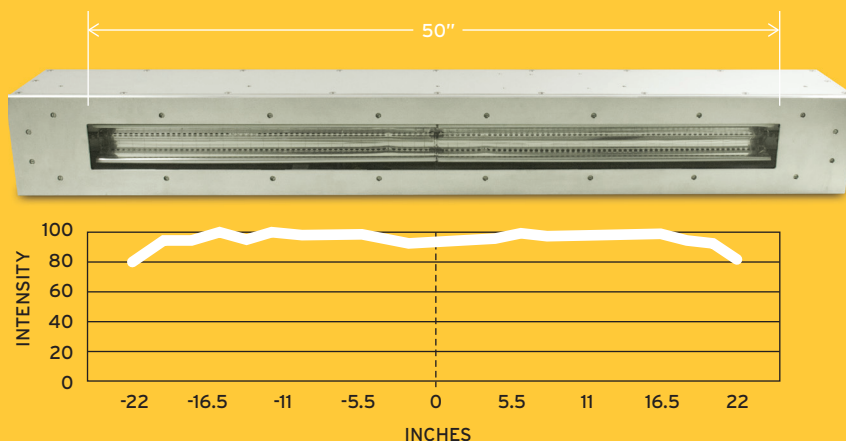
High energy sintering system for driving four 50" lamp housings

SYSTEM HIGHLIGHTS

- Widths up to 50 inches (1.27 meters)
- Uniform energy delivered across entire target area
- Synchronization to address striping issues
- Smooth transition from R&D to production with XENON's lab-to-fab solutions
- Air-cooled for easier deployment in production environment

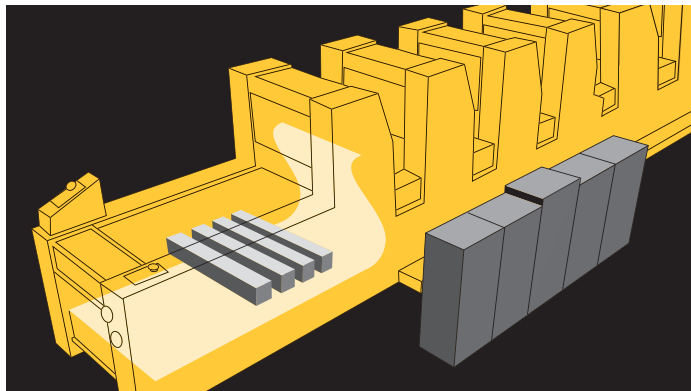## Delivering uniform energy over a wide width

A major challenge in developing a wide-width sintering system has been the ability to deliver uniform energy over the entire area. At XENON, we were able to meet this challenge because we design and manufacture our own Pulsed Light lamps. Specially designed lamps, coupled with XENON's engineering expertise honed over decades of manufacturing experience, has resulted in a production system that can deliver up to 5 joules per square centimeter with minimal energy variability.

Designed for production

Based on XENON's decades of manufacturing experience, the S-5100 is built for production from top to bottom. It consists of a power source and advanced controls developed by XENON, enabling precise delivery of energy to the target. The air-cooled system is easy to deploy and lamp housings can be embedded in the printing line for easy integration into new or existing processes.
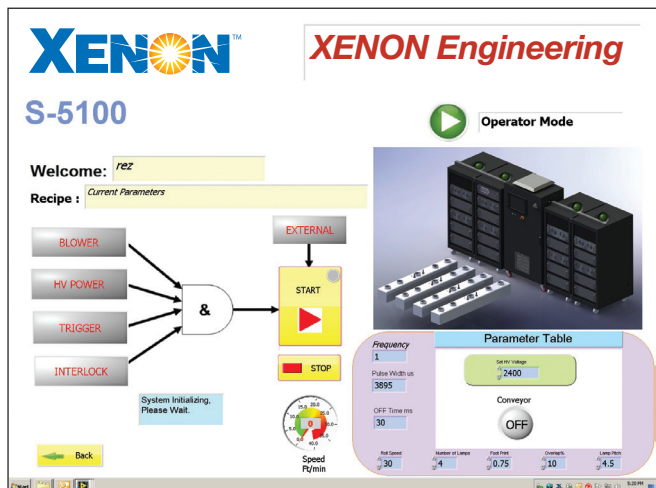
The S-5100 also provides synchronization at web speed, with the flash frequency automatically tracking the printing line to deliver the right energy for the ideal cure at speeds up to 6.1 meters/min (20 ft/min).

Lamp housing can placed anywhere in printing line, for easy integration into processes.

Touchscreen software for precise control

The S-5100 features an integrated touchscreen user interface, providing software control over all system parameters. Users can easily program pulse energy, width and frequency to achieve the desired cure. A USB port on the touch panel provides for recipe storage and system updates. Energy can be adjusted from 1 J/cm2 to 5 J/cm2 to meet specific customer requirements.

Customize a system for your requirements

Because XENON makes all components of the system—from the mainframe control center to the lamps and housing—our engineers can adapt it to virtually any production requirement. We can work with you to tailor the S-5100 to your exact manufacturing requirements.

Part of the XENON family of Pulsed Light solutions

XENON has pioneered Pulsed Light for more than 50 years, and has helped drive many applications from the laboratory to online production, in industries ranging from display and medical devices, to the latest advances in optical storage and printed electronics.

For more information on the XENON S-5100, visit www.xenoncorp.com or contact one of our sales representatives.

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