





PHOSEON LIGHTING THE WAY: FirePower

The FirePower family of high intensity water cooled UV light sources offers 150, 225 and 300mm curing lengths.

FirePower	Peak Irradiance	Emitting Window Dimensions	Mechanical Dimensions	Cooling System
	16 W/cm ²	 150 x 20mm	160 x 49 x 76mm	Water Cooled
		 225 x 20mm	235 x 49 x 76mm	
		 300 x 20mm	310 x 49 x 76mm	

A BRILLIANT DISPLAY BY PHOSEON

Upcoming Events

Labelexpo Europe
Brussels, Belgium
September 28-October 1, 2011
Booth 9G45
<http://www.labelexpo-europe.com>

Radtech UV.EB East
Sheraton Syracuse University Hotel
Syracuse, New York
October 4-5, 2011
<http://www.uvebeast.com/>

Radtech Europe
Congress Center Basel
Basel, Switzerland
October 19-21, 2011
<http://www.radtech-europe.com>

P&G Print Expo
The Manor House
Cincinnati, OH
October 26, 2011
<http://www.pg.com>

Phoseon UV curing systems with their trademarked Phoseon purple are available in a wide range of shapes and sizes and are being used today in commercial applications for curing inks, coatings, adhesives, and a variety of other materials.

www.phoseon.com
info@phoseon.com



The Leader in UV LED Curing
Superior Performance. Maximum UV Energy.

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Specifications are subject to change without notice.
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SLM ILLUMINATIONS

Quarterly Newsletter



SUMMER 2011 ISSUE:

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28 September - 1 October, Brussels
LABELXPO
Europe 2011
www.labelexpo-europe.com

APPLICATION: LABEL PRINTING

Stork Displays DSI Label Press with UV LED Curing Lamps

Stork Prints will be demonstrating its unrivalled expertise in many different aspects of digital and screen label printing at the Labelexpo Europe 2011 in Brussels (Hall 6, booth 6H40). Stork Prints is a pioneer in digital textile printing and active in the digital printing industry for over 25 years. On show will be everything from digital label printer and engravers to rotary screen printing modules and screens. There will also be plenty of demonstrations so visitors can witness the advantages of Stork Prints solutions firsthand.

Brilliant, rapid and low-cost labels with the DSI®

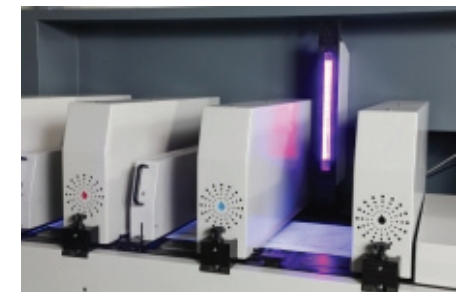
One of the main attractions at the stand will be the DSI® digital label printer. This digital printing press produces eye-catching labels with excellent colour strength and brilliance, at speeds up to a remarkable 720m²/hour, while keeping costs low. Multiple demos will be given each day.

The DSI is a truly cost-effective UV inkjet label printer, offering sublime printing quality at amazing speeds. Its combination of photographic quality and a rotary screen "look and feel" makes it suitable for everything from short- to medium- and even long-run jobs. Especially when used in combination with our own-brand inks, all developed and produced in-house, it gives superior results characterised by a high resistance to light and impressive scratch-proofing.

The DSI achieves visual resolution on labels of up to 1000dpi, as well as 3D effects that resemble screen printing. It also accurately reproduces tonal values as low as 1%. Printing on many different types of substrates can be accomplished and the new digital primer even enables printing on machine coated paper. Repeat lengths of up to 7m are possible, and are therefore not limited by the drum size.

But that's not all; the DSI is modular in design, and therefore suitable for everything from stand-alone

digital printing to use in complete lines with in-line (semi-rotary) converting. Hence the excellent TCO (total cost of ownership) per printed label. It is supplied with four print heads as standard, although an additional six can be added to enable options like digital white, digital primer and an extended colour gamut. This versatile unit is ideal for markets ranging from food and personal care to wine and spirits, household goods and outdoor applications.



Phoseon's UV LED Curing Lamp for Pinning on the DSI® Digital Label Printer

For more information on Stork Prints, visit www.spgprints.com

spgprints | Stork Prints

SLM TECHNOLOGY

The Building Blocks for UV LED Curing Systems

Sara Jennings, Technical Marketing Engineer, Phoseon Technology

What are the basic building blocks that make up a UV LED curing lamp?



UV LED Curing Lamp

LEDs - The base building block

Let's start with the LED. As the base building block, this is the first choice a UV LED lamp supplier has to make. It is a critical choice that impacts the remainder of the systems architecture and design. Simply put, an LED is a solid state device that produces light when an electrical current is allowed to flow from the positive (anode) side of the circuit to the negative (cathode) side.

Not all LEDs are built the same nor do they exhibit the same characteristics. UV LED lamp suppliers have critical choices to make as to the quality, type, material and shape of LED for their systems. Key LED characteristics considered by each UV LED lamp supplier include wavelength and UV output.

Array - Grouping of LEDs

Arrays are the second area where suppliers can begin to differentiate their product offerings. How the LED's are combined, the number and type of LEDs chosen, the shape of the

array, the method of electrically connecting the LEDs, and even the size of the LEDs all have significant impact on the performance of the system.

Most applications require UV LED curing systems that consist of more than one LED or LED array in order to achieve not only the desired throughput, but also to meet the demands for curing applications where the media can be 1-2m wide. Therefore, a key question is if the LED array can be uniformly scaled.

Thermals - Keeping it Cool

The third component is cooling. As any reader knows after using a notebook PC on their lap for a length of time, the by-product of solid-state devices is heat. UV LEDs transfer about 15-25% of the received electrical energy into light. While this is significantly better energy efficiency than mercury lamps, the remaining 75-85% is transferred as heat; thus, the need to cool the LED arrays.

Optics - Guiding the Light

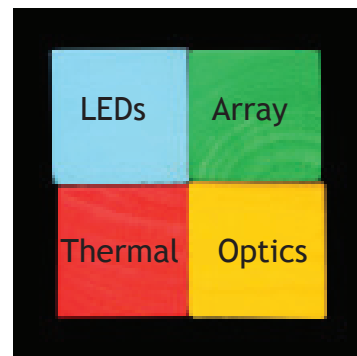
The final component and one of the most important differentiators is optics. The science of optically improving the LEDs to maximize their UV output is key to the lamp's final capability. Based on the end application the optical engineer has to decide what shape, form, and material best utilizes the LED's unique characteristics. Next they have to balance the fact the LEDs are

a 'flood' type of light, unlike a focused mercury lamp where the light is captured by a reflector and directed to a specific point, a focal length.

Summary

Suppliers of UV LED lamps have significant architectural and implementation decisions that significantly impact their product's performance. The end result will be a UV LED curing system with optimized LEDs, Arrays, Cooling and Optics for a specific application.

Knowing how to characterize the performance allows the user to identify the best overall system to meet their specific needs. OEMs and end-users would be wise to learn these differences and ensure their chosen suppliers are capable of not only meeting their needs today, but have the technical ability to design, manufacture, and support their needs in the future.



Basic Building Blocks for UV LED Curing Lamps

PHOSEON LIGHTING THE WAY

Phoseon Technology News

Phoseon Technology Launches Higher Power UV LED Lamps

FirePower™ product family breaks the 16W/cm2 barrier

Phoseon Technology extends its leadership position by introducing the FirePower™ product family with three curing length options, a 150x20 mm, a 225x20mm, and a 300x20mm solution. The water-cooled FirePower family allows new applications in the flexographic segment while also allowing increased speed in the narrow and wide-web segments.

Utilizing Phoseon's patented SLM™ technology, the latest FirePower family provides customers with:

- High power 16 W/cm2 of UV LED light for maximum UV energy
- Integrated, sophisticated control electronics for simple system integration
- Advanced structural capability for better field serviceability

"The three-product FirePower family provides breakthrough performance for flexographic print systems," commented Bill Cortelyou, CEO and President of Phoseon Technology. "These products prove UV LEDs have the power and long-life capability to replace older mercury-based lamp technology. Current Alpha-site customers are enjoying the benefits of energy-efficient, reliable, and safe UV LED curing. Phoseon continues to focus and lead the charge to make high-performance, high-reliable UV LEDcuring systems a success."

Phoseon Technology to Display Market Leading Solutions at Labelexpo

Labelexpo 2011, to be held this year in Brussels, Belgium from September 28th to October 1st, shows the worldwide acceptance of UV LED curing solutions in the printing industry. The Phoseon exhibit will display new and exciting products that utilize patented Semiconductor Light Matrix (SLM)™ technology for UV curing. The products to be shown span a wide range of applications in label printing.

The following are the digital printing exhibits at Labelexpo 2011 that include Phoseon's technology and products:

- **Atlantic Zeiser** (Hall 11, R95) will show their SMARTCURE LED systems with their new Gamma 70 full-colour inkjet printing module.
- **CSAT** (Hall 9, F10) company of Heidelberg, will show the ITM 600 - top mount printing module for integration in existing production lines: 2-color DOD w/UV LED curing, as well as CSAT's latest digital print solution - the iTS600 standalone, full color, roll to roll digital label press utilizing 600 dpi DOD imaging technology coupled with UV LED curing as well.
- **Durst** (Hall 9, H57) will exhibit the Tau150 8C, a high speed, eight color single-pass digital UV inkjet printing press, specifically designed for short-run label production.
- **EFI Jetrion** (Hall 9, H55) will run demonstrations of its market



Environmentally
Friendly Solution

leading Jetrion 4830 digital label press with Phoseon's UV LED curing products both in its booth and as the only inkjet solution in Labelexpo's Digital Print Workshop.

- **INX International Ink Co.** (Spartanics stand Hall 9, H54) will introduce its new NW140 UV Digital Narrow Web Press, which features Xaar 1001 inkjet print heads and UV LED curing lamps from Phoseon.
- **Stork Prints** (Hall 6, H40) will demonstrate the DSI® digital label printer. This digital printing press produces eye-catching labels with excellent colour strength and brilliance, at speeds up to a remarkable 720m2/hour.

