

Putting the Ultra in Ultra Violet. UV LED Curing System Options.

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UV LED curing is an integral part in any manufacturing facility looking into adding digital printing technology. Direct printing with UV LED ink sets requires curing and with that UV LED lamps. While it is suggested to speak with a professional before and determine exactly what the job will require, here we provide products from some suppliers of UV LED curing systems—that also make great consultants for the entire process.

The American Ultraviolet ModCure series comes in small three-inch arrays and can be combined for any width. They are available in 365 and 395 NM wavelengths. Powerful air cooling maintains optimal LED performance with an overheat protection feature that shuts off the LEDs if temperature exceeds the critical limit.

Excelitas Technologies Corp.'s OmniCure AC Series of products offer a variety of UV LED solutions. From small to large area curing, and various output power tiers that utilize the same mechanical form factor, the OmniCure AC Series allows for manufacturers to scale their process speeds without major changes in integration. To further enable growth and scalability, AC Series products can be adjoined end to end without any impact to the optical uniformity to expand the cure width. OmniCure systems also feature a patented technology to individually address each LED module segment in the curing unit. This allows for the unique ability to precisely control the illumination area for extremely tight uniformity and/or unique custom curing profiles.

GEW, Inc.'s full cure UV LED systems are a hybrid design. This means that the outer casing is constructed to accommodate either a UV LED or a mercury arc lamp cassette with a common power supply. Customers that require only one technology or the other can purchase a dedicated UV LED or arc lamp system; however, for applications that are still transitioning from mercury ink technology to UV LED technology, the hybrid solution offers a more versatile option by allowing users to go back and forth between mercury arc and LED.

Heraeus Noblelight America LLC offers the Semray UV4000 series, with the newest addition the Semray UV4103. Like its predecessor, it uses plug-and-play technology with one UV LED segment, one backplane, one data cable, and one power cable—this is all independent of

the width. It offers reliable and maximized UV energy with minimum stray light for different wavelengths.

Kyocera Corporation's newest UV LED system is the G5A air-cooled UV LED light. Compact and offering high irradiance, it reaches a peak irradiance of 24,000 mW/cm² with air cooling achieved through the utilization of high head dissipation. The G5A can reach wavelengths of 365, 385, or 395 NM.

In December 2019, Phoseon Technology launched the FireJet FJ801 area curing solution, targeting electronics manufacturing, adhesives cure applications, and lab material/substrate curing. The new air-cooled solution provides increased power of up to 50 percent over its predecessor, the J800. Starting from a base curing area of 100×100 mm, these modular products can scale in three directions, to provide contiguous, uniform UV output. The FJ801 is available in 365, 385, 395, and 405 NM wavelengths. The FJ801 light source comes with a separate controller that uses a simple, intuitive graphical interface, controlling up to two lamps. The controller display now includes the accumulated time that the UV lamp has been on, as well as lamp temperature.

The ProPhotonix COBRA Cure FX Series allows system designers to select power levels and tailor mechanical, electronic, and optical options to their application ensuring optimal performance in the field. The series is designed to incorporate a range of options and unique features such as a patented replaceable window mechanism, which allows output windows to be replaced easily and quickly reducing system downtime and drops in performance due to ink mist build up. New products to the range include COBRA Cure FX1 Max and COBRA Cure Mini. COBRA Cure FX1 Max utilizes the compact COBRA Cure FX1 form factor but through innovative LED technology delivers 20 percent higher intensity. COBRA Cure Mini is designed to offer high performance up to 6W/cm² where space is restricted or a low weight solution is required.

UV LED Curing

There are many options when it comes to UV LED curing systems. Be sure to understand your application and its needs prior to educating yourself on all of the options. Having that knowledge first and foremost is helpful when determining the most suitable technology for your business.

[Click here to read part one of this exclusive online series, Getting into it with UV.](#)

Feb2020, *Industrial Print Magazine*

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Feb 3, 2020Olivia Cahoon