



www.marktechopto.com/understanding-ultraviolet-LED-applications-and-precautions.cfm

Advantages of UV LED

- > No IR radiation, less heat
- > More compact than mercury systems
- > Low voltage
- > No shutters or glass quartz
- > Consistent and immediate UV output over operating life
- > No UVC and therefore no ozone emitted, eliminating need for exhaust
- > Does not contain heavy metals (mercury)
- > Longer life, + 20,000 hrs as compared to 1,500 hrs on a standard UV mercury lamp
- > Easier to convert materials that are heat sensitive
- > LEDs are more efficient than mercury bulbs

Disadvantages of UV LED

- > More expensive technology
- > Limited spectral output
- > Higher ink cost because of special photoinitiator and formulation

In a recent UV LED trial at one of our customers, an LED lamp was positioned on one half of the 30" web, focused on curing through the liner for clear materials, as opposed to mounting the lamp and focusing the energy on the face material. The result was curing at speeds in excess of 800 ft/min. Press side testing was done by means of cross hatch and 610 tape.

Cost

UV LED inks and curing units are more expensive than current UV technologies. In the digital arena, UV LED curing is a standard on most UV Inkjet platforms. Many press manufacturers now offer UV LED as an option if a customer is purchasing a new press. For customers looking to take advantage of the latest technology, many UV LED manufacturers are offering retrofits to existing presses. UV LED curing solutions for both new and retrofit narrow web presses, offer higher yields and decreased operating costs for increased profitability.

UV LED technology enables ink manufacturers to provide true low-migration ink solutions for food packaging.

* Forte, V. C. (n.d.). Technical Articles: Understanding Ultraviolet LED Applications and Precautions. Retrieved from <http://www.marktechopto.com/understanding-ultraviolet-LED-applications-and-precautions.cfm>

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