



Meet Ultraflex, the C.I. UV LED hybrid

September 22, 2020 | KYMC Marketing



(UV-LED + Solvent/Water based ink)

KYMC, with more than 50 years of experience in Flexographic press design and in application integration teamed up with TSLC and Rainbow Pigment Co., Ltd to develop the next generation of CI Flexographic press. TSLC is the leading LED manufacturer and technology developer. TSLC has more than 10 years of experience in the LED industry providing reliable and quality UV-LED solutions to the global market. Rainbow Pigment is the ink expert with a strong R&D team to meet the demand of the market spanning across product lines and industries. Together, the work of art is born. We call it the Ultraflex.

The Ultraflex press is an integration of 3 key technologies, the UV-LED ink application, solvent/water-based ink application, and the central impression (CI) design. This type of application was never to be seen in the Asia Pacific region. The Ultraflex press is a representation of flexibility, cost reduction, and efficiency. There are many advantages to the UV-LED ink application. However, UV-LED is not without flaws. Therefore, with the Ultraflex press, printers can select between UV-LED ink or solvent/water-based ink or both at the same time for different production jobs. On top of the hybrid design, the UV-LED application on CI drum design is superior over the inline UV design in terms of production speed, registration, and tension control.



With the Ultraflex press, printers can obtain 3 technologies with one press. Let's look at the Ultraflex press from 6 perspectives (Table 1).

Opened Up New Business Opportunities

From the business standpoint, the Ultraflex will open up new business opportunities with the expanded product line for printers. PET shrink films, in-mold label, pouch packaging that are traditionally produced on the inline UV presses can now be achieved easily on the Ultraflex press.

High Print Quality

From a quality standpoint, the high opacity of the ink is perfect for reproducing solid designs (Figure 1). To use the UV-LED print stations for the solid prints and the solvent/water-based print stations for the halftone areas.

Leveraged Ink Operational Efficiency

When it comes to the ink operational efficiency. The UV-LED ink stable characteristic can reduce setup time and reduce the amount of time needed to control the ink properties. It does not require the operators to make constant adjustments.

Reduced Waste

In terms of waste, the UV-LED print deck allows for low printing speed during print setup as the ink does not dry up under room temperature. This will reduce the amount of substrate and ink being wasted during print job setup.

Improved Working Condition

When compared to hot air drying, the UV-LED curing operates at a much lower noise level. Therefore, it will greatly improve the working conditions for the operators.

Rise in Eco-Friendliness

Lastly, the UV-LED is an environmentally friendly solution as it does not emit VOCs. The UV-LED ink goes through a curing process, unlike solvent and water-based ink which goes through a drying process. During the drying process, the solvents (VOCs) will be evaporated into the surrounding causing environmental hazards and at the same time detrimental to human health when inhaled.

In the constantly changing market, to take on the challenge and to remain competitive, printers need to adjust to the needs of the market. To be flexible, cost-effective and production efficient. The best quality comes at a high cost. The question is, will the customers pay for it? Low quality can be achieved through low cost. The question is, will the customer accept it? The printers that are able to find the balance between quality and cost are the ones that will remain competitive on the market.



There is no one right formula for production as there are various types of customers on the market. KYMC understands printers' challenges by responding with the Ultraflex. The best part of Ultraflex is that you do not need to choose between a UV-LED press or a solvent/water-based press. You can have it all in one. Printers can take advantage of the UV-LED print stations on the Ultraflex when they can, and drawback to the solvent-based or water-based print stations when needed. In a nutshell, Ultraflex is a 2 in 1 investment designed to help printers get the most out of their investment.

Table 1 : Ultraflex Comparison Chart

	Business Opportunities	Print Quality	Ink Control Efficiency	Waste	Noise Level	Eco Friendly
Ultraflex (Hybrid)	High	High	Medium	Low	Medium	High
Full UV-LED	Medium	High	High	Low	Low	High
Full solvent / water based	Medium	Medium	Low	Medium	High	Medium

Table 2 : Ultraflex UV-LED Unit Test Results

	Test Results
Substrate Temperature (Pre/Post) Curing	[Pre-curing] 31 Celsius [Post-curing] 32.5 Celsius
Valuation of Solid Print Opacity - White	Excellent Performance
Press Noise Level	50 decibels
UV-LED Lamp Lifespan	>30,000 hours
UV LED Print Lamination Capability Valuation	Capable

Table 3 : Electricity Savings Comparison Chart

	Percentage Savings
Electricity savings compared with traditional UV curing	60 - 80%
Electricity savings compared with hot air drying	35% - 50%



Table 4 : Ultraflex Press General Specification

	Ultraflex
Number of Colors	6 / 8
Max Machine Speed	350m/min
Printing Sleeve Width	800mm / 1300mm
Print Repeat	360mm ~ 800mm
Drive	Gearless – Servo Motor

Figure 1 : Solid print with high opacity and providing a lifted relief touch





Figure 2 : The Ultraflex press



Figure 3. UV-LED Station

