



Replacing a Xenon Strobe with a LED Strobe How to Increase Production, Quality and Sustainability Goals

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Small technology upgrades to existing products can offer better products, at a lower cost, with better performance while providing advances towards your sustainability goals?

One of the favorite parts of my job is learning about a customer's needs and determining the best Monarch Instrument product for their application.

A converter was looking to replace an older Xenon bulb stroboscope on their Mark Andy 4150 press. After discussing the application, target distance and width of the web I suggested the [Monarch Instrument illumiNova™](#) 200 Fixed Mount Strobe designed for a 24" web width with 216 LED's and collimating spot lenses. We encourage customers to test-drive our new illumiNova™ with Monarch's strobe demo program and after a little paperwork we shipped an illumiNova™ 200 for them to try out. After a week I called to see how things were progressing and what they thought of the illumiNova™. The customer stated the light was too bright and that they could not freeze the "labels on the web as they seemed jittery". When I asked what flash rate the old Xenon strobe was operating at they did not know, the older unit had no display, they would just twist the knob until they "froze" the label image. We setup a time for a visit for the following week.

As we reviewed the setup, the competitors Xenon strobe had a white frosted lens and I was told the unit was "no longer as bright as it used to be and acts up at times". The frosted lens diffused the light and provided inconsistent illumination where the illumiNova™, which uses targeted optical grade spot lenses was uniform. The label impression, although frozen was not as clear as it could be due to the limited control of the Xenon bulb flash duration (how long the bulb is lit between pulses).

Monarch Instrument also manufactures [speed sensors](#) and tachometers, so using a [PLT-200](#), handheld laser tachometer, pointed at the outdated strobe I measured the flash rate at 1,817 flashes per minute (FPM). We turned on Monarch's LED strobe and entered the 1,817 FPM.



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The illumiNova™ was very bright and with a compacted illuminated area, but there was a repeating skip in the stop-motion images which seemed odd. The press speed was 227 feet per minute and the repeat was 16.01 labels per foot. Using the strobe to provide 100% inspection would have required the flash-rate to be 227×16.01 or 3,634.27 FPM. (Yes the illumiNova™ uses up to 3 decimal places to delineate a flash rate). The older strobe was only providing 50% inspection by flashing past every other label. The increased precision of the illumiNova™ allowed us to produce a sharper visual but there was still a “skip” in the web pass which with further investigation proved to be unequal spacing between the last and first impressions across the mounted flexo plate. Their next flexo plate had evenly spaced repeats which eliminated the skip.

The illumiNova™ has three brightness levels and pulse duration of the flash can be changed from 1 to 150 uSecs per pulse. We turned the brightness to medium and the pulse duration to 66 uSecs, the image froze with such clarity one could see the cursive writing perfectly. We also tried an illumiNova™ 200-2 with flood lenses which increased the illuminated area to a broader strobe coverage. By replacing the old Xenon strobe the customer has 100% visual inspection and is able to increase press speed and savings of 45% on this one strobe's energy costs.

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