

**The challenge:** Capturing both three dimensionality and definitive detail

*The conditions:*

Camera: Nikon D1X iris. Aperture f8. Exposure: 1/15s  
Images processed to compensate for the color temperature of incandescent light source.

*The results:*

Limited depth of field. To capture the full bee requires images at several optical planes.



Figure 1. Red Bee, imaged with conventional fiber optic illumination

(1)



(2)



Figure 2. Same bee, imaged with Microoptics TwinLight™ Illuminator

**The answer:**

TwinLight™ fiber optic illuminator with integrated Xenon Flash

*The conditions:*

Although the camera shutter was set to 1/250s, TwinLight's rapid flash produced a real exposure time of 1/6000s. Also, the pure white spectrum of TwinLight's Xenon source produces true color rendition.

*The results:*

Same bee, same optical system, same digital camera, same post-image editing but greater depth of field and higher resolution. Comparing Inset 2 to Inset 1 reveals significantly improved detail.

**The TwinLight Advantage:**

- Single shot high resolution images... in seconds
- No prior experience needed
- Consistent results every time
- Digital recording

**Don't take our word for it...**

Visit [www.microoptics-usa.com](http://www.microoptics-usa.com) and see what other entomologists are saying about this amazing new system... or request our Entomology CD from [sales@microoptics-usa.com](mailto:sales@microoptics-usa.com)

# How to take exquisite images like this in your lab

## System Components: The Microptics Digital Lab XL Photographic system

- Nikon D1X professional digital camera
- Infinity K2 long distance microscope, specially modified for Microptics DLXL system
- Microptics linear actuator
- ML-1000 TwinLight™ illuminator (a, b) with articulated arm (c) and transmitted light stage (d)

### The full imaging solution:

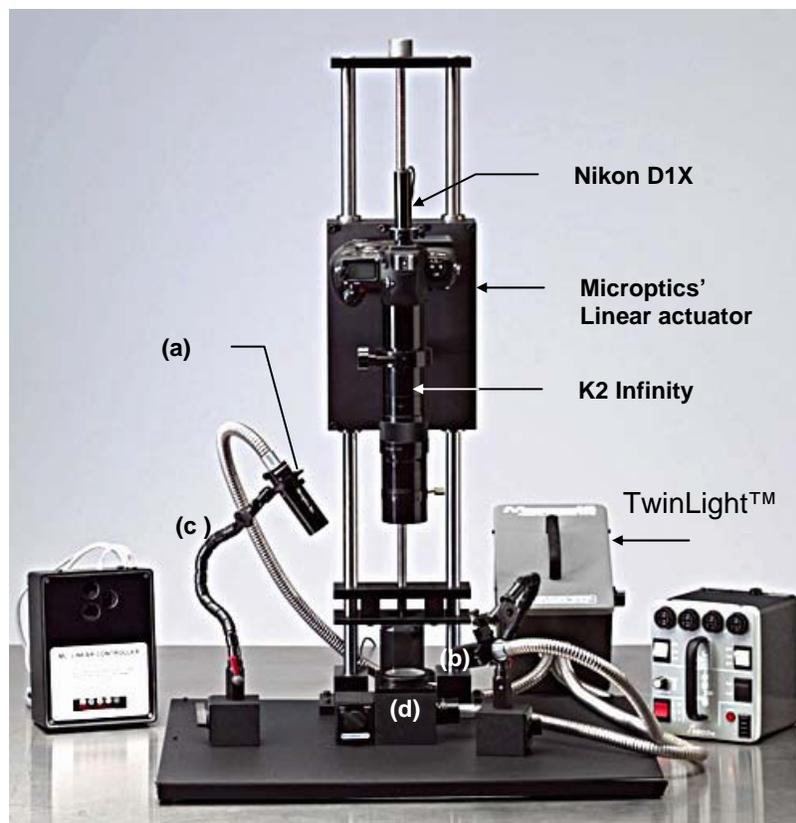
Combining the specially modified K2 with the professional imaging of the Nikon D1X camera is the secret to the blend of superb resolution and great depth of field. Using the linear actuator centers the system to a true Z-axis and provides effortless control of the camera and optics through the entire range of magnification. Its micro-step motion allows you to take precisely aligned multiple images at your choice of focal plane, all with a click of the mouse.

The ML-1000 TwinLight™ Illuminator provides unparalleled flexibility and choice. As shown here, light is directed from the bottom through

our transmitted light stage (d), as well as bi-directionally from the top (a, b), enabling you to set the background and surface illumination independently.

For fine-tuning, the surface of the subject is lit with a combination of pin-point directional lighting from Microptic's patented focusing light guide (a) and ambient fill light delivered by our standard iris light guide (b). The result: total control of all the lighting attributes to highlight exactly what and where you want.

All TwinLight lamps are calibrated to 5400K/daylight, rendering your images with true color fidelity and delicate tonal qualities.



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