

Flatbed scanner's Cinderella act, a functioning camera

January 1 2015, by Nancy Owano



Photography enthusiasts in do-it-yourself mode recently saw how Dario Morelli managed to take parts from an Epson flatbed scanner to create a medium format camera. ("Flatbed" refers to a scanner providing a flat, glass surface.)

His success in using components from an Epson flatbed [scanner](#) was

impressive but not all that surprising to Jon Fingas of *Engadget*: "Scanners are really extra-large image sensors at heart, so it stands to reason that you could make a decent camera out of one." Morelli, a computer aided designer and programmer, has a page devoted to "My scanner-camera project" with pictures on his [work](#). The scanner is an Epson. Detailing Morelli's work, Michael Zhang of *PetaPixel* said that the parts are from the EPSON V30/V33/V37. "I really only needed the scanner's main board, sensor board, and stepper motor," Morelli told *PetaPixel*. An internal light is for the scanner's auto-calibration. After getting the desired framing, DPI resolution and bit depth are chosen and Start Scan is clicked in the software used. When done, a 16-bit TIFF image is saved to the hard drive.

The device can sit on a tripod. *PetaPixel* said Morelli used heavy-duty tripod equipment to make sure things stayed in place during shots. Vibration "is one of the main issues with this type of photography," said Zhang. The scanner has no manual controls for exposure. To control exposure, you stop down the lens (stopping down is to reduce the [aperture](#), or increase the f-stop number - reducing the amount of light passing into the camera through by the lens) or use neutral density filters.

Fingas relayed some limitations: He said, "You need to connect to a [computer](#) and a big external battery to get anything done, [Morelli's camera was hooked up to a 12V lead battery, said Zhang] and there's no live viewfinder to help you frame the shot."

Zhang said [exposures](#) may take from two to five minutes while the scanner sensor scans the scene or as little as 15 seconds if certain gear is used in certain conditions.

The very idea of a flatbed scanner resulting in a functioning digital [camera](#) is of interest to many creative minds exploring their own home brews. Zhang said, "There's an entire niche of photographers who are

interested in the idea of turning flatbed scanners into digital cameras."

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