

Using the Olympus E-420 Digital Camera for *iWitnessPRO*

By DeChant Consulting Services – DCS Inc

This document was prepared for illustration of the Olympus E-420 for *iWitnessPRO*[™] (close-range photogrammetry.) ***The same relative settings can be used on any Digital SLR camera.***

Step 1.

Assure the 14-42mm zoom lens is set to wide angle (14mm in this case.)



Note: the E-420 uses “*focus by wire*” technology... there isn’t an infinity focus “OO” on the lens. In our view, this is fine on this camera, as one doesn’t have to worry about “focus” as the lens defaults to INFINITY focus as long as the zoom is originally set to “14mm”. In subsequent surveys, that’s about the only thing one needs to do for “camera setup”; assure the “14mm” is aligned with the tick mark as noted above. This setup is good for imaging at the 14mm focal length (which is equivalent to 28mm focal length in standard 35mm film format.) This 14mm zoom setting, for this camera, is recommended for most photogrammetry imaging projects.

Step 2.

Remove the lens cap and **turn the camera on.**

Step 3. **Turn the Mode dial to the “A”, and then turn the Control Dial until it reads “F11” in the upper right corner of the LCD display.**

*This document was prepared by DeChant Consulting Services – DCS Inc for iWitnessPRO customers utilizing the Olympus E-420 Digital SLR camera. **The same relative settings can be used for any Digital SLR camera***

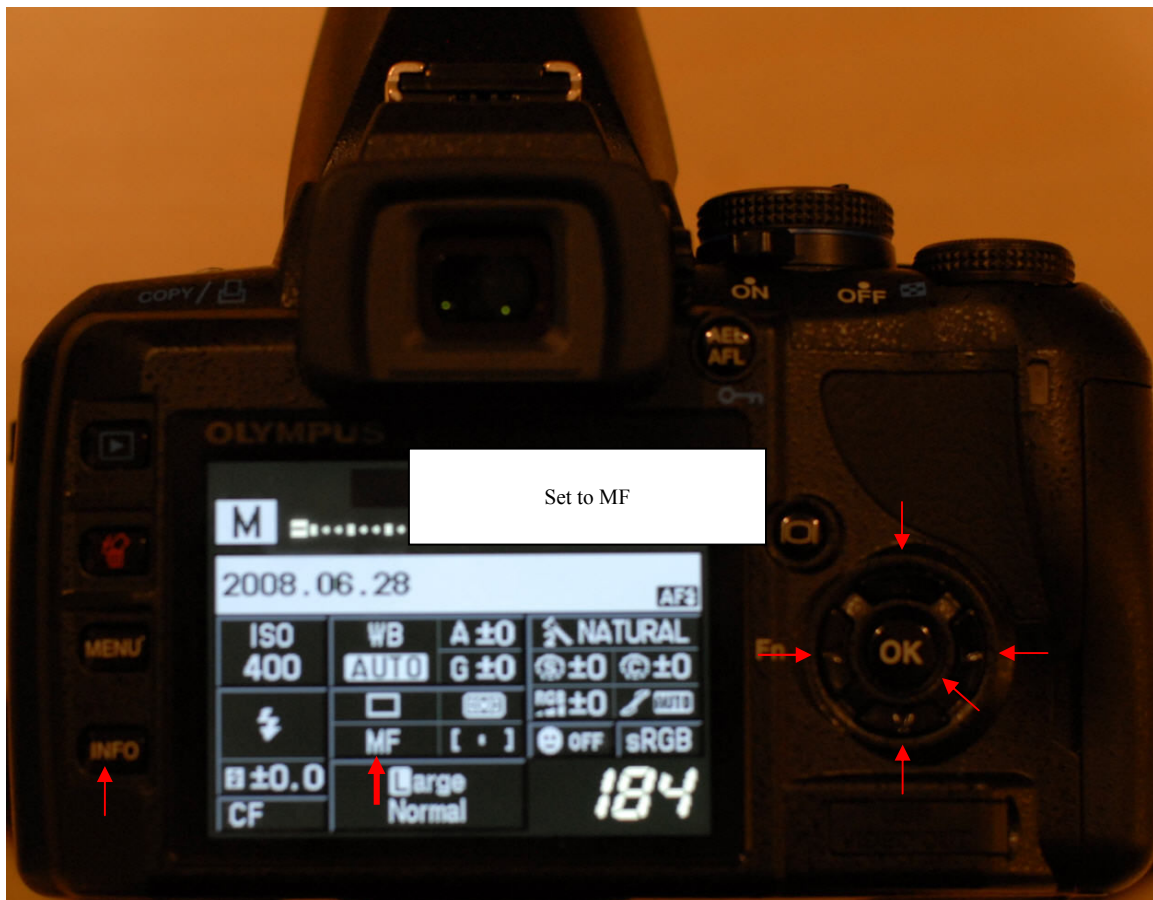
Step 4. Pop the Flash up (you will always use the flash.)

Step 5. Set the focus to Manual and ALWAYS do your “photogrammetry images” in Manual Focus (MF).

Note in the image below. The “MF” is most likely going to be initially highlighted in the box presented with “S-AF”. If that is the case, the camera is currently set to *Single shot, Auto Focus*. **This “S-AF” changed to “MF” is what you are going to do for the purposes of photogrammetry.** Once it is setup as MF, your job will be to **assure the lens is at 14mm, then turn the camera on, verify the Control Mode dial is on “A” with F11 and push the shutter button while the camera’s flash is up.**

Navigating:

To get the box “highlighted yellow”, click the **OK** button one-time, and one of the LCD display boxes will be highlighted yellow. Use the **Arrow Keys** (located around the OK button) to navigate to the “MF” which will be highlighted yellow, or optionally use the Control Mode dial to scroll, which does the same thing. Click OK one more time to invoke the **MF** setting.



You're all set for the *iWitnessPRO* photogrammetry imaging. The **Manual Focus and the Shutter Speed (S dial) and the Aperture (A dial)** will stay invoked until you change it, regardless if the batteries are removed or not. You should make it a habit to **VERIFY the MF is invoked, as well as lens set at 14mm every time the E-420 is used to do photogrammetry imaging.**

Other Settings (recommended):

1. Shoot at **ISO 400**



2. The camera does an excellent job of color in the White Balance “AUTO”. Shoot at **HIGEST Image Resolution** (this is noted above as **L**arge. It is important that the camera is calibrated and used at the same image resolution (best to leave it at **L**arge).
3. Notice now the flash (*Lightening Bolt*) is displayed (lower left).

http://www.olympusamerica.com/files/E-420_Instruction_Manual_EN.pdf (User manual for more info)

Final NOTE:

The objective is to underexpose the images a few F-stops so that the coded targets and feature point targets stand out well against the black backer (background). There is nothing “special” about *aperture F11*, other than we’ve found that the images have good depth of field and in most applications the exposure is satisfactory for imaging with the Flash. You may find, for example, when imaging outdoors that using “**Manual Mode**” and setting **shutter speed as much as 180**, and **aperture as much as F22 (with flash)** does a better job of providing good contrast for the codes and feature point targets, while still providing adequate exposure for “natural feature point marking” as the user decides for the project measurement needs.

Experiment a little with your camera to find the best image exposure for the application.

Remember to get at least 4 good perspective angle images for every feature point and coded target. Finally, make sure you “roll” the camera (i.e., landscape and portrait) when taking the pictures for the automatic camera calibration within *iWitnessPRO*.

