

Quintic Software

Tutorial 9

Infrared (IR) LED

Ring Light

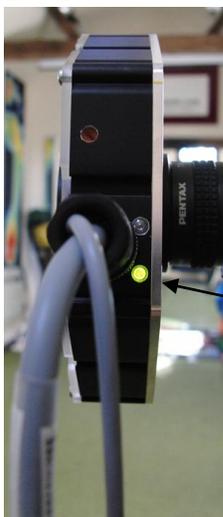
Setting up the LED Ring Light

Infrared (IR) light is a form of electromagnetic radiation which sits outside of the wavelength of that of visible light, and thus cannot be detected by the human eye.

IR is responsible for most of thermal radiation, and is emitted and absorbed by molecules. It is used in many different applications such as industrial, scientific and medical, as well as in night vision equipment where it is important that the observer is not detected. We have utilized the properties of IR light, thus ensuring that the reflective markers are still visible to the camera even though to the naked eye there is no light emitted. This we feel is very important when working in close proximity to the cameras. (I.e. athletes are not blinded by spotlights.)

The following information will guide you through how to set up and configure your IR LED light to work with Quintic.

Connect the IR LED light and the Quintic High – Speed camera via the power supply provided. Connect the camera to your computer as normal, and open up the Quintic software.



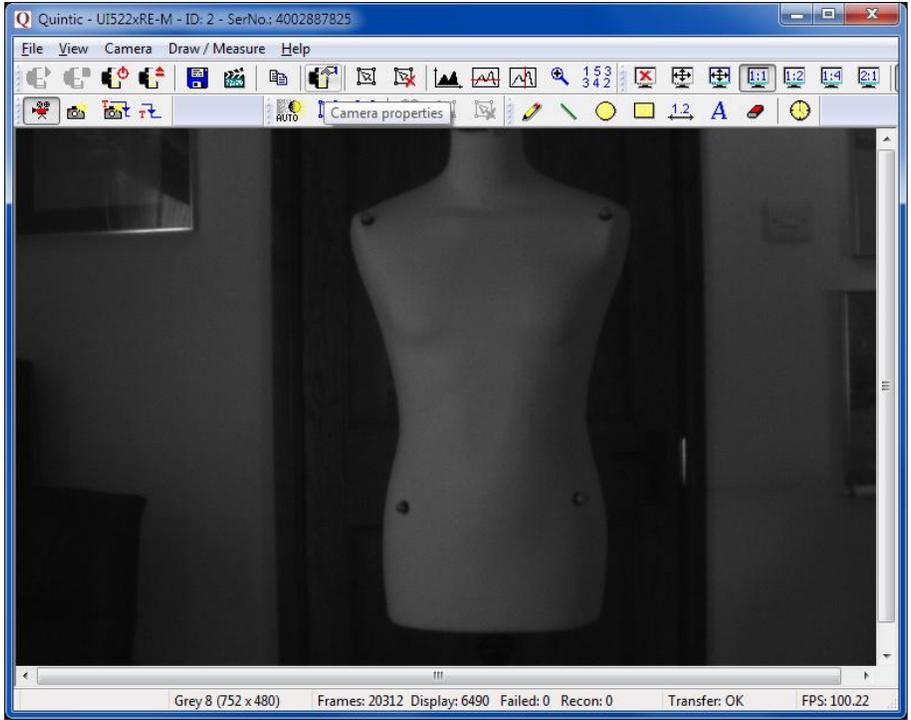
Check the lights on the back of the high-speed camera are flashing to ensure it is connected and powered properly.

Additionally, check there is a green light illuminated on the side of the LED.

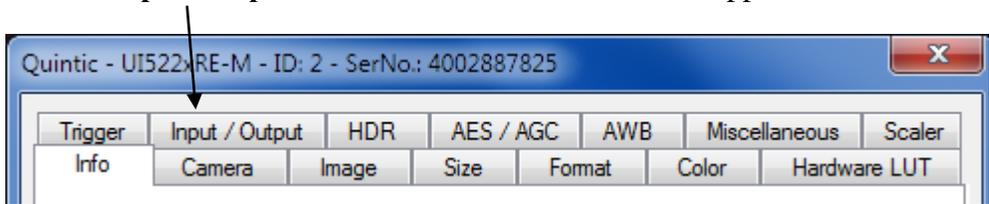


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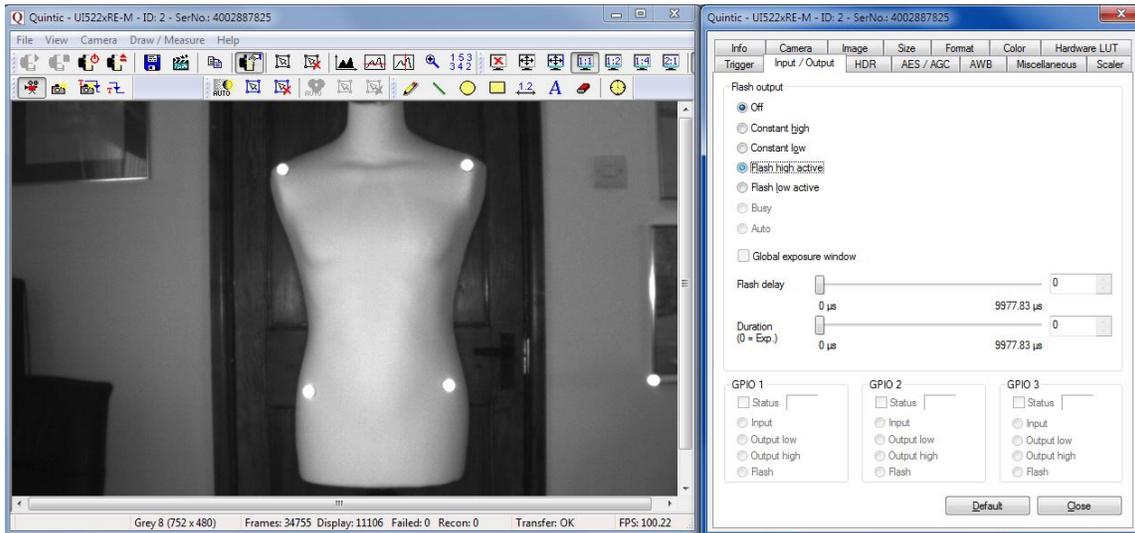
1. Open up the ‘Single High – Speed Capture’ window under the ‘Camera’ tab as normal.
2. Click on the ‘Camera Properties’ button. 



3. Click the ‘Input/Output’ tab on the camera window that appears.



4. The following screen will appear. This is where the LED light is controlled.



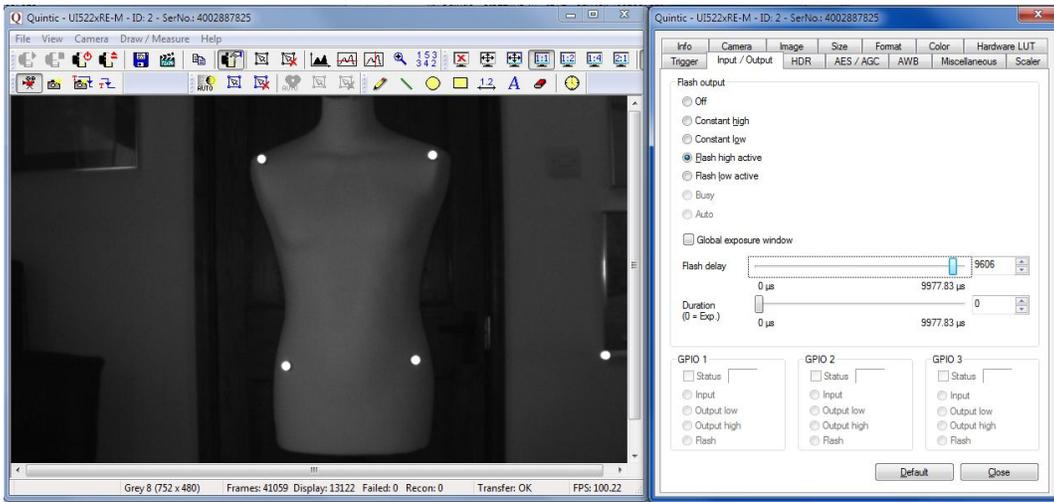
5. Click on the setting '**Flash High Active**'. You will notice (as shown in the screenshot above) that the image will flash once. This confirms that the LED light is now turned on.
6. You then need to adjust the '**Flash Delay**' slider. You will notice that the markers will start to flicker, and the further you move the slider to the right, the more frequent the flashes. In order for the markers to reflect continuously, you must keep moving the slider right until the markers no longer flash.
7. Once the flash delay slider is set so as the markers are no longer flashing, click '**Close**'.
8. You can now record as normal, and the markers should be clearly visible.

N.B. The Flash Delay value you set the LED to keep the markers constantly illuminated depends upon the frame speed the camera is set to. You need to marry up the frame speed of the camera to the frequency of the LED so that they are pulsing at the same time. Below are some examples of different frame speeds.

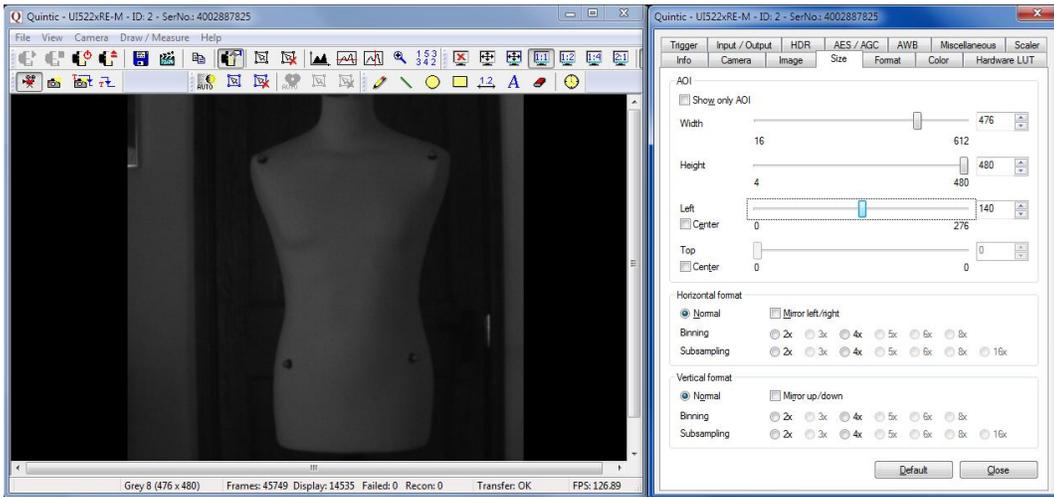
N.B. If you are using Multi Camera High- Speed capture, you will need to save the camera parameters as 'cam1', 'cam2', 'cam3', or 'cam4' to ensure that the LED remains on during Multi camera capture. To do this, click '**File**', '**Save camera parameters**'. Save these to the desktop first, then copy into:

C:\Program Files \ Quintic \ Biomechanics.

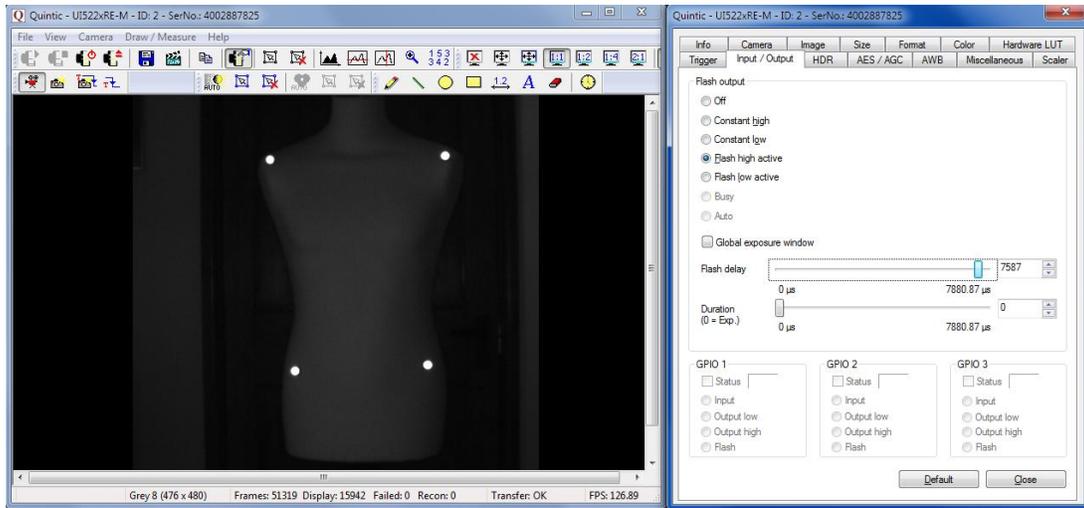
Frame Speed: 100 fps; Flash Delay: 9606 μ s



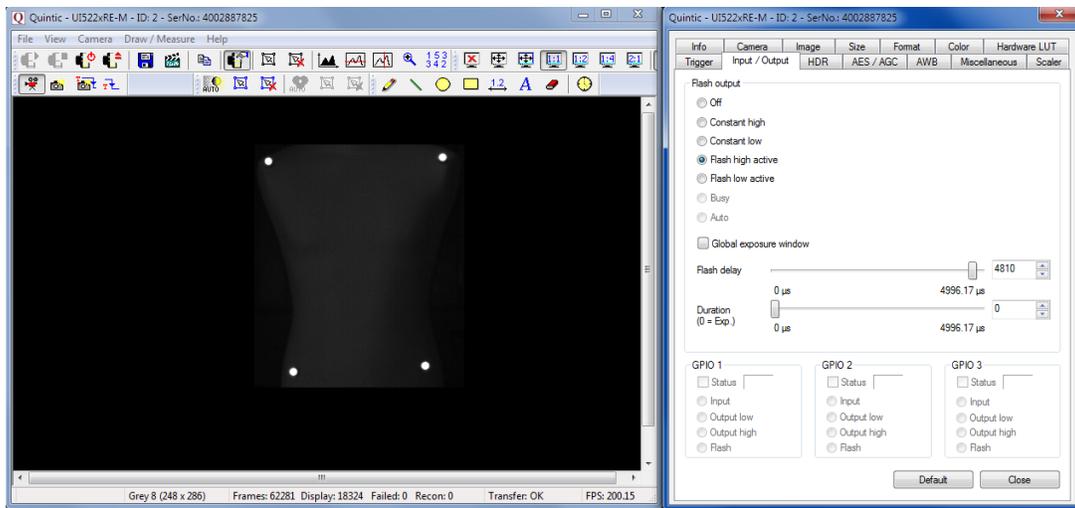
If the camera is already running at it's maximum frame speed, you may need to adjust the size of the image / the area of interest in order to increase the frame speed. The window for this is shown below.



Frame Speed: ≈ 125 fps; Flash delay: 7587 μ s



Frame Speed: 200 fps; Flash delay: 4810 μ s



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