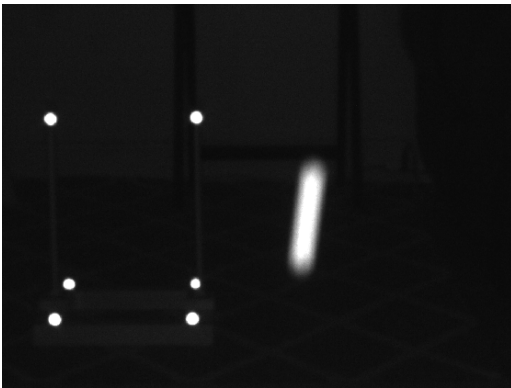


How to Adjust Cameras for Best Marker Contrast

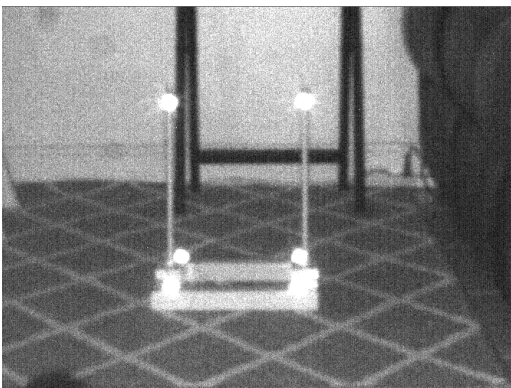
To use the cameras for reflective marker tracking they need to be adjusted so that the markers shows up nice and bright on a dark background. It is also important that the shutter (aka exposure) is set to the lowest possible value to avoid blurred images or smeared markers. If the shutter is opened while the markers are moving they will appear elongated and this will cause the centroid to be shifted.

The goal is to make the markers to stand out against the dark background so that the markers can easily be tracked by the cameras or software.



Moving marker with long shutter/exposure

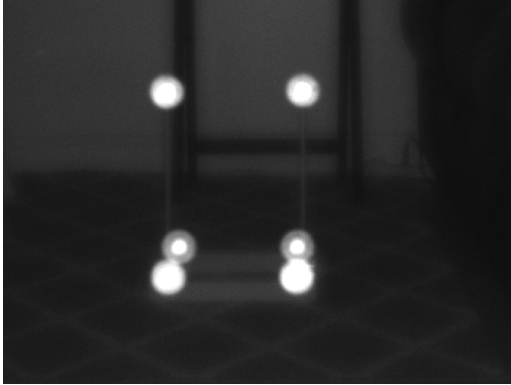
Some cameras are equipped with gain. This will increase the brightness of the image by amplifying the signal from the sensor. Using analog gain will also increase the image noise so it shouldn't be used unless needed. Using the digital gain will not increase the noise dramatically and is preferred if you need to use gain to make the image brighter.



Noise from too much analog gain

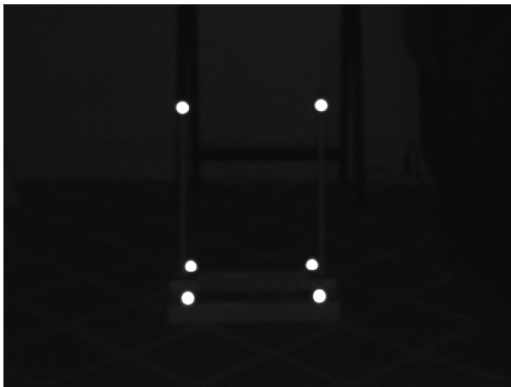
Follow these steps

1. Open the aperture almost all the way. Maybe 5-10% less than max.
2. Use video preview mode and make sure that the image is focused



Example of Unfocused Image

3. Set the Gain to defaults or 0
4. Adjust the shutter/exposure setting so you have a video view that looks like



5. Adjust gain if needed. Gain should not be needed in most cases.
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