

Short Throw Camera Setup Guide

This guide will cover the setup and calibration of the optional Smokeless Range® Short Throw camera. This is a supplemental guide so you should still watch the Smokeless Range® Getting Started video or look through the Smokeless Range® user guide for general setup information.

General

The short throw camera is designed to match and be used with a .5:1 short throw projector. This means the projector and camera will be located half the width of the projected image away from the screen. For example, an 8ft wide image would locate the front of the projector and camera 4ft back from the screen. It can be used with other throw distance projectors, but it will then not be located with the projector.

Special driver software required

To use the short throw camera you will need to download and install our new SL Driver software. This has a step that the standard camera driver does not where it pauses and allows you to drop the filter into the filter slot on the camera. It can be downloaded from the below address.

<http://simlabstudios.com/stdriver>

Camera location

The short throw camera (ST Camera) has a special lens and lens mount that has been modified to remove both the lens distortion and perspective distortion to provide very accurate calibration and tracking from a short throw setup.

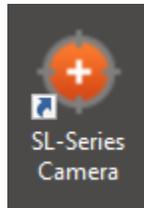
To ensure you get the most from these modifications the camera needs to be close to level with the bottom of the screen and centered left and right as pictured below. It should also be pointing directly at the bottom of the screen and not angled looking up at the middle of the screen to ensure a nice uniformly rectangular camera image.



Install Camera Driver

The ST Camera requires our new SL Driver software that will be bundled with our Smokeless Range® 2.0 when released. For now, we have the driver available to download and install separately from the current Smokeless Range® installer. Visit <http://simlabstudios.com/stdriver> to download the SL Driver installer.

Once you have installed the downloaded SL Driver it will place a new icon on your desktop as seen below. Use this driver to calibrate the camera instead of the DF Driver that is installed with the current Smokeless Range®.



Calibrate the camera

1. Double click the SL-Series Camera icon on your desktop.
2. Adjust the brightness of the camera image using the Darker and Brighter buttons.
3. Align the camera image so that the entire projected image is visible and centered in the camera feed box as pictured below.

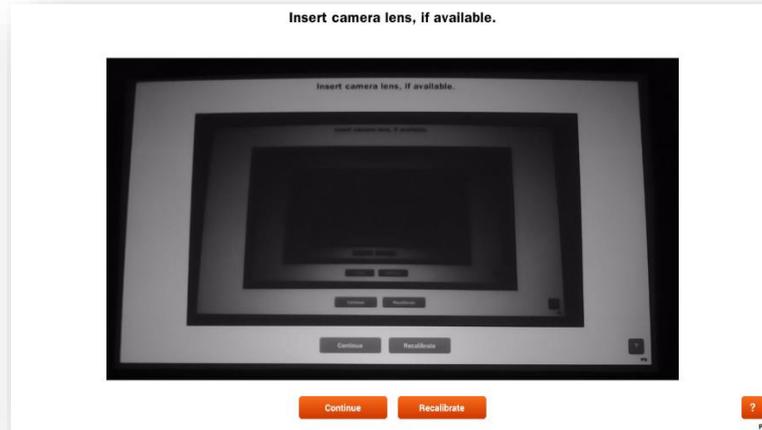
The image should look like this



Not like this



4. Now click the Calibrate button to start the calibration process. This will flash a series of dots and partial dots across the screen. It is important to not shoot a laser on the screen or walk in front of the screen during this portion.
5. Then the Pause to insert filter screen will be displayed. At this time drop the filter into the filter slot without moving the camera. The slot is shaped like a funnel to help guide the filter into place.



6. With the filter in place, click Continue to proceed with the rest of the calibration process. The camera will then flash some additional screens to measure the ambient light in the room and set the tracking threshold.
7. The calibration will stop at the Test Tracking screen with 5 crosshairs on the screen. Use this screen to test the alignment or to align the laser on your training device.
8. Set the tracking mode by clicking the Settings button at the bottom of the Test Tracking screen.
9. When ready, click Save to minimize and launch the tracking.
10. You are now ready to launch and use the Smokeless Range®.

Remove the filter for calibration

To recalibrate or to run future calibrations you will need to remove the filter from the camera filter holder. To do so simply place your finger on the filter and slide it up until there is enough sticking out of the top to pinch between your fingers and pull it the rest of the way out of the holder as pictured below.



Filter Care

If the filter becomes noticeably dirty clean it with a lens cloth or if you don't have one use a soft cotton T-shirt to gently clean the filter. Do not use any cleaning agents. Only use a little water if needed.