

Eye Gaze Calibration in Grid 3

Introduction

Calibration is the process of setting up the camera to interpret where the user is looking, enabling them to interact with the computer screen. Calibrating can be achieved through several types of software including Grid 3. Prior to calibration, please refer to the tutorial on *Eye Gaze Set-Up in Grid 3*.

Grid 3 will track the user's eye movements as they hold their gaze at each calibration point for a specified duration. Once all the point(s) have been tracked, Grid 3 will provide feedback on the quality of calibration. There is opportunity to repeat certain steps or adjust settings to improve the quality and accuracy. The calibration will then apply to all gaze interactions using Grid 3. Only re-calibrate when the user is experiencing less accuracy with gaze interaction.

Tips for Successful Calibration:

- **Patience:** Allow sufficient time for the user to comfortably complete the calibration process.
- **Environment:** Ensure the environment is conducive to calibration with adequate lighting and minimal distractions.
- **Adjustments:** If calibration results are not satisfactory, consider adjusting camera placement, lighting conditions, or recalibrating.

Learning Objectives

Completing this tutorial will give you experience with:

- How to adjust calibration settings in Grid 3.
- How to calibrate and improve calibration results.

This tutorial assumes that you have





- A device with a Windows operating system, such as a laptop, tablet, or integrated AAC (Augmentative and Alternative Communication) device.
- An installed eye gaze camera and positioning bracket or, the camera built into the integrated device.
- Grid 3 software.

Calibration Settings in Grid 3

Step	Instruction	Visual Depiction
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1 In the Eye gaze menu, below Calibration, select **Settings**. The Calibration menu will appear.



← Eye gaze

-  **Camera**
Change which eye gaze camera to use.
-  **Calibration**
Calibrate to improve eye gaze accuracy.
Settings
-  **Activation**
Settings for highlighting and activating cells.
-  **Computer control**
Configure access to Windows and other programs.






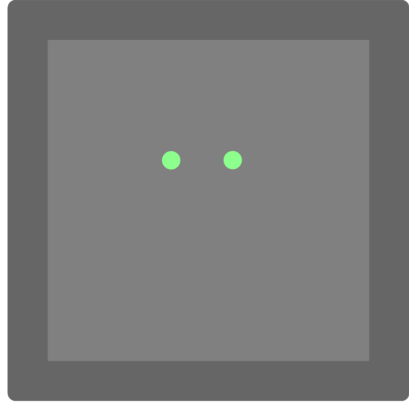

Under **Calibration**, set the number of targets (1). Select if all targets will be presented continuously, or one at a time (2), and set the speed (3).

Under **Target Style**, select the target style. The target can be customized by uploading image or animated gif files (4). Target size (6) and background colour (5) can also be adjusted.

← Calibration

Calibration	Target Style
1 Five targets ▾	4  Flapping bird ▾
2 Continuous calibration ▾	5  Background ▾
Speed - normal 3 <input type="text" value="-"/> <input type="text" value="normal"/> <input style="width: 20px;" type="text" value="+"/>	6 Size - normal <input type="text" value="-"/> <input type="text" value="normal"/> <input style="width: 20px;" type="text" value="+"/>

Positioning and Track Status for Calibration in Grid 3


Step	Instruction	Visual Depiction
1	<p>Position the user comfortably in front of the screen about arm's length from the camera. Minimize distractions and dim the lighting in the environment.</p> <p>The track status window in the Eye gaze menu will indicate the position of the face or eyes.</p>	<div data-bbox="643 352 930 411"> <p>← Eye gaze</p> </div> <div data-bbox="643 436 1015 877"> <ul style="list-style-type: none"> <li data-bbox="643 436 1015 531">  Camera Change which eye gaze camera to use. <li data-bbox="643 552 1015 646">  Calibration Calibrate to improve eye gaze accuracy. <input type="button" value="Settings"/> <li data-bbox="643 667 1015 762">  Activation Settings for highlighting and activating cells. <li data-bbox="643 783 1015 877">  Computer control Configure access to Windows and other programs. </div> <div data-bbox="1089 436 1495 961"> <div style="text-align: right; margin-bottom: 5px;"> <input checked="" type="radio"/> Face <input type="radio"/> Eyes </div>  </div>
2	<p>Track status can be set to either a face or eyes (two dots). Green indicates the best distance from the camera. Although a colour other than green indicates a less ideal position, gaze interaction can be still possible. Red indicates being out of range.</p> <p>The size of the face will also give feedback about being too close or far from the camera.</p>	<div data-bbox="781 1031 919 1062" style="text-align: center; margin-bottom: 10px;"> <input type="radio"/> Face <input checked="" type="radio"/> Eyes </div> <div style="display: flex; justify-content: space-around;"> <div data-bbox="643 1188 1049 1591">  </div> <div data-bbox="1097 1188 1503 1591">  </div> </div>


Step	Instruction	Visual Depiction
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3 To initiate calibration, select **Calibration** to start the process where the user will be prompted to focus their gaze on a series of calibration points displayed on the screen.


Note: Grid 3 only uses the most recent calibration results for gaze interaction. If you want to save calibration profiles, discuss the use of alternative software with your SET-BC team.

← Eye gaze

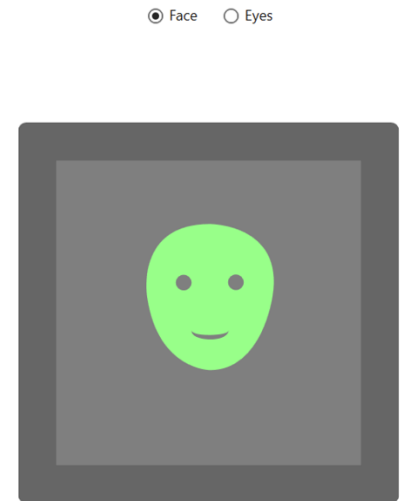
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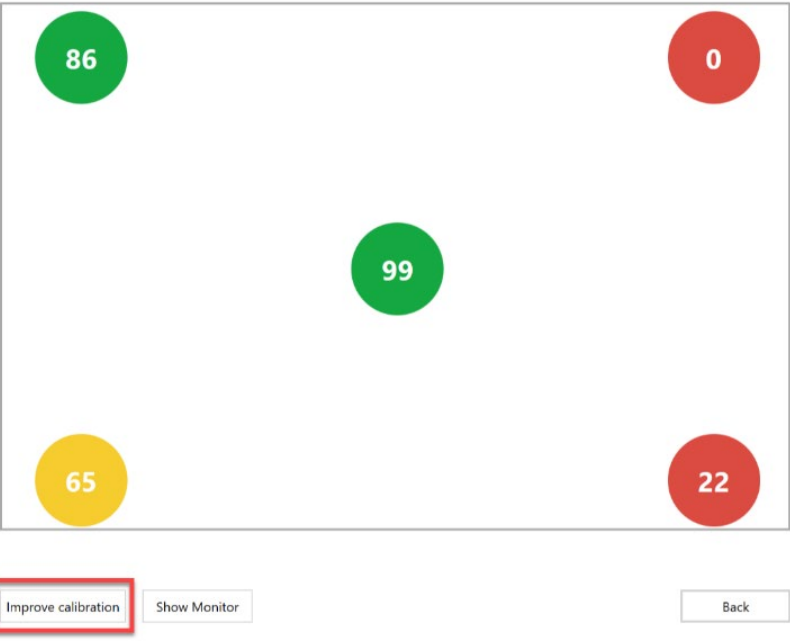
Camera
Change which eye gaze camera to use.
- 

Calibration
Calibrate to improve eye gaze accuracy.
- 

Activation
Settings for highlighting and activating cells.
- 

Computer control
Configure access to Windows and other programs.



Step	Instruction	Visual Depiction
4	<p>Once complete, a colour and number will indicate the quality of calibration. Each point can be selected to improve calibration as needed. Best calibration is indicated in green.</p> <p>Improve calibration button prompts calibration of all the data points that requires re-calibration. Or to calibrate one point, touch the target.</p>	 <p>The screenshot shows a 'Calibration' screen with a back arrow at the top left. It contains five circular data points: a green circle with '86' (top left), a red circle with '0' (top right), a green circle with '99' (center), a yellow circle with '65' (bottom left), and a red circle with '22' (bottom right). Below the grid are three buttons: 'Improve calibration' (highlighted with a red box), 'Show Monitor', and 'Back'.</p>
	<p>The Back button brings you back to Eye gaze menu. Press “OK” to return to most recent page on Grid 3.</p>	
5	<p>To learn more about adjusting eye gaze positioning and calibration in Grid 3, select the resource URL, or web search:</p> <p><i>‘Smartbox Hub Grid 3 calibration’.</i></p>	<p>Smartbox Hub resources:</p> <p>Eye gaze settings in Grid 3</p> <p>Calibration tips and techniques in Grid 3</p> <p>Troubleshooting eye tracking difficulties in Grid 3</p> <p>What is the Grid-3 positioning guide command?</p>