

Advice on Adjusting the Sony PS Eye's Camera Settings

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Default Camera Settings for the Calliope2SP (as of Aug. 8, 2013)

Setting Variable	Value Type	Values	Default Value
Contrast	Integer	0 – 255	32
Exposure	Integer	0 – 255	120
Main Gain	Integer	0 – 63	20
VFlip	Boolean	0 – 1	0
Sharpness	Integer	0 – 63	0

Adjusting and Saving Camera Settings

Adjusting the Camera Parameters:

set Drivers.Camera.Options.<setting variable>=<value>

Replace “<setting variable>” with one of the variables on the previous page, and “<value>” with a valid value.

E.g.: set Drivers.Camera.Options.Main Gain=0

Saving the Camera Parameters:

save <name>.plist

Replace “<name>” with a name of your choosing.

E.g.: save mysettings.plist

Loading Camera Settings

Adjusting the Camera Parameters:

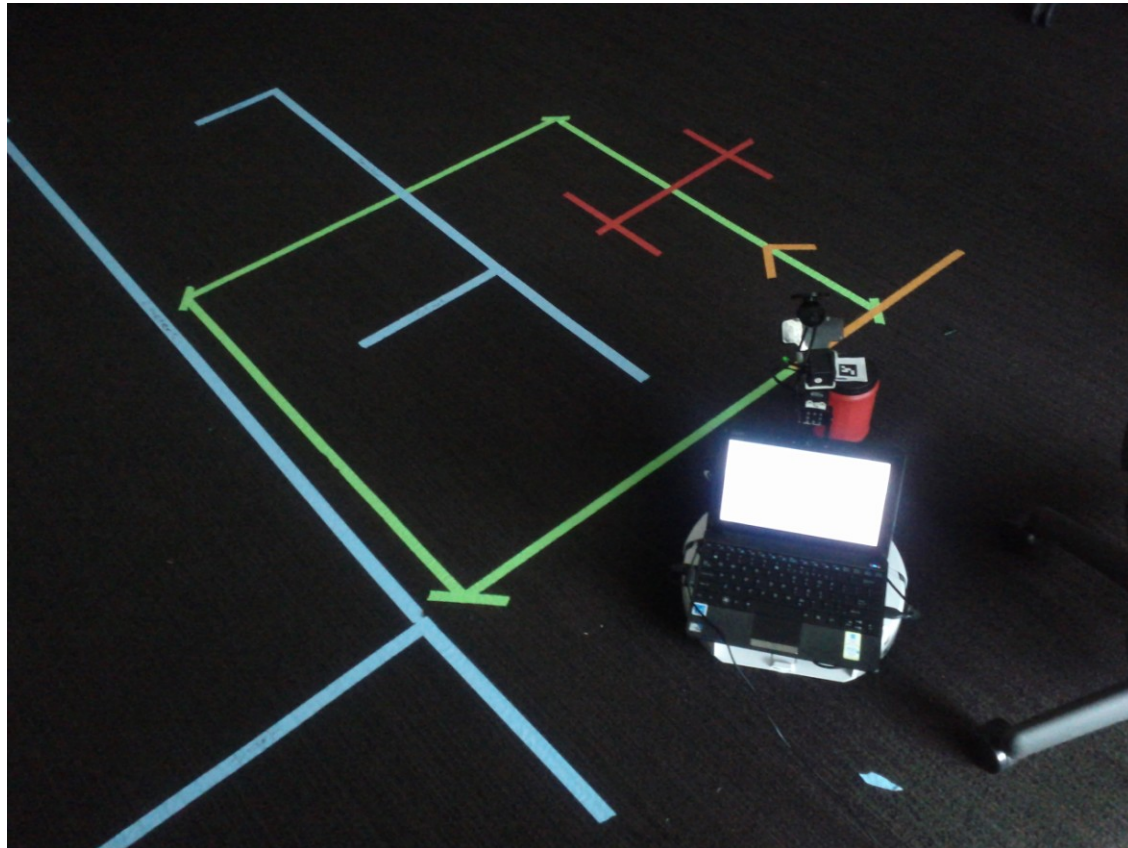
`./tekkotsu-CALLIOPE2SP -c <settings file>`

Replace “<settings file>” with the name of the file you created using the *save* command.

E.g.: `./tekkotsu-CALLIOPE2SP -c mysettings.plist`

Without Lights, Dark Floor

This image shows the approx. lighting of the room and the floor color when the screenshots (in the upcoming slides) were taken.



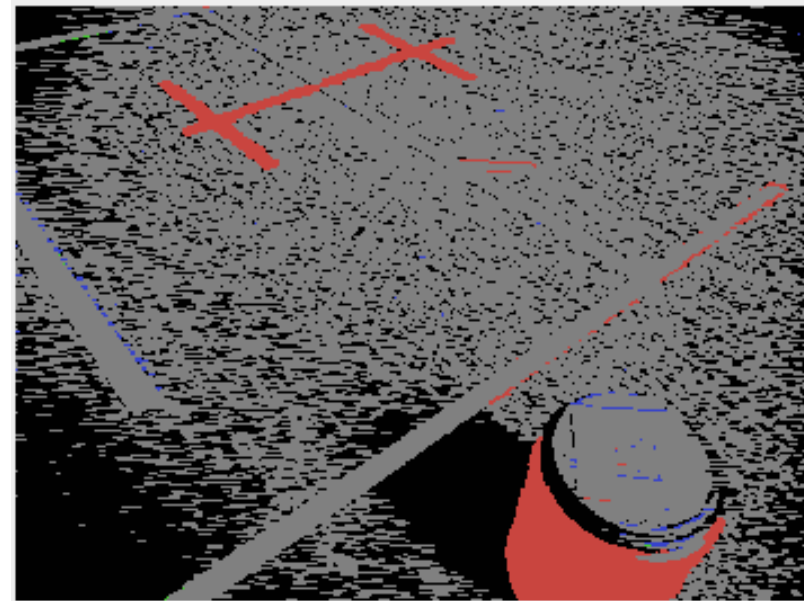
Without Lights, Dark Floor

Tape colors used:



Without Lights, Dark Floor

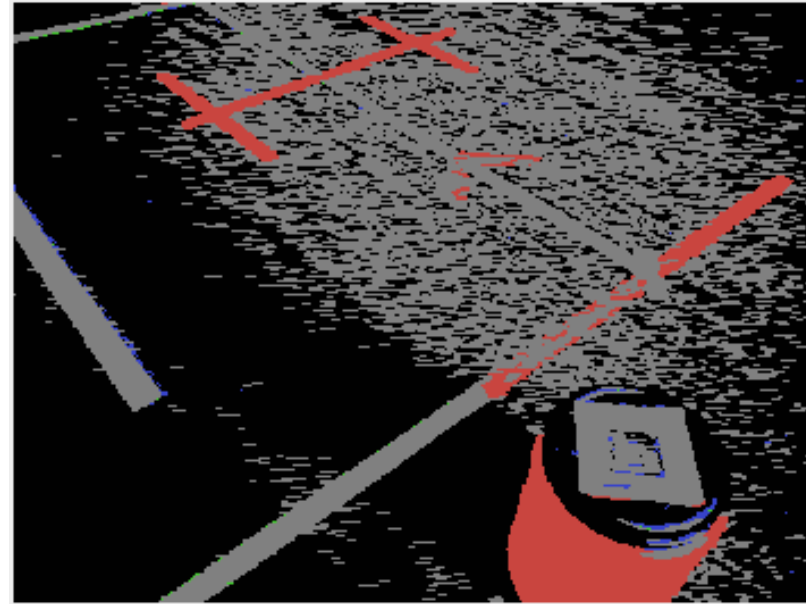
Settings: Default



Without Lights, Dark Floor

Settings:

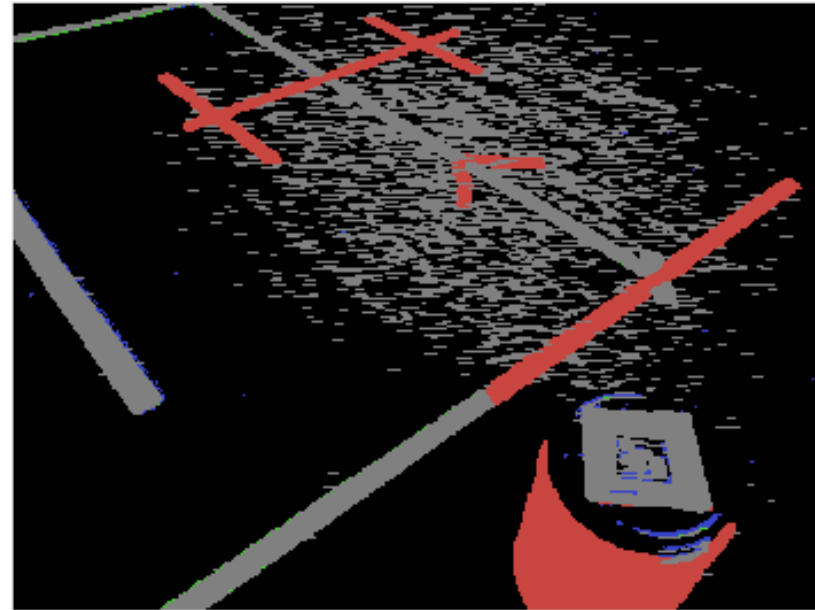
- Auto Gain: Off



Without Lights, Dark Floor

Settings:

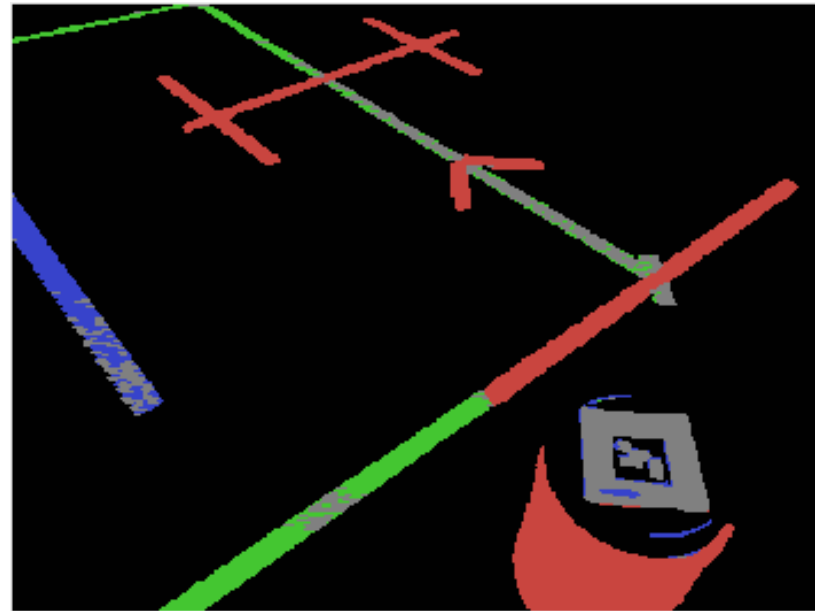
- Main Gain: 20 (default)
- Auto Gain: Off



Without Lights, Dark Floor

Settings:

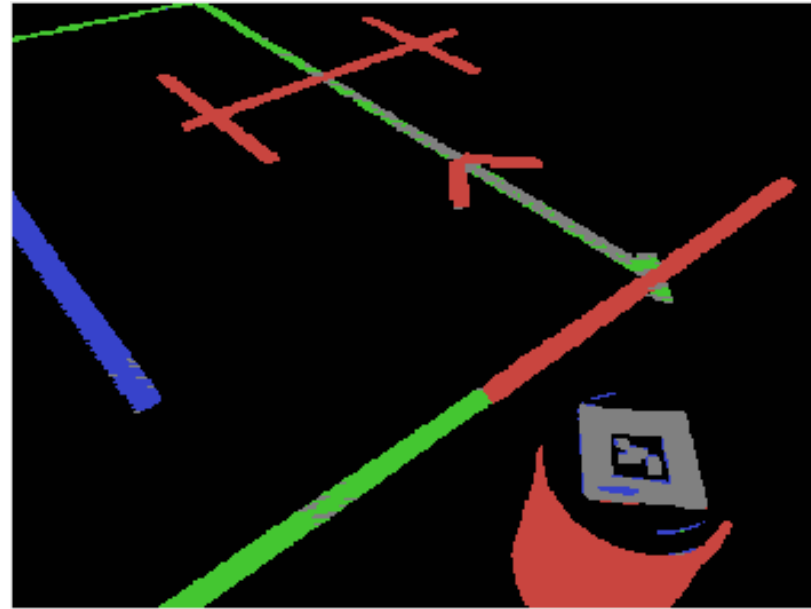
- Main Gain: 15
- Auto Gain: Off



Without Lights, Dark Floor

Settings:

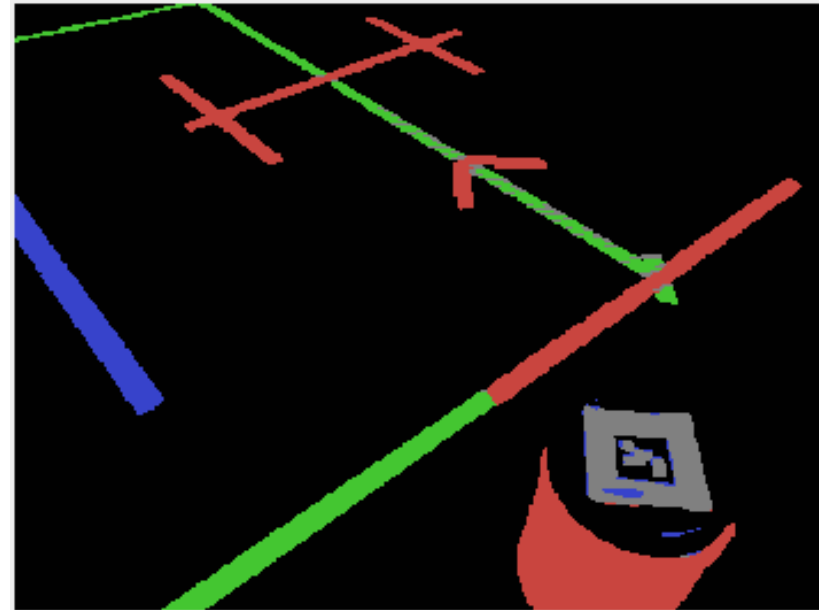
- Main Gain: 10
- Auto Gain: Off



Without Lights, Dark Floor

Settings:

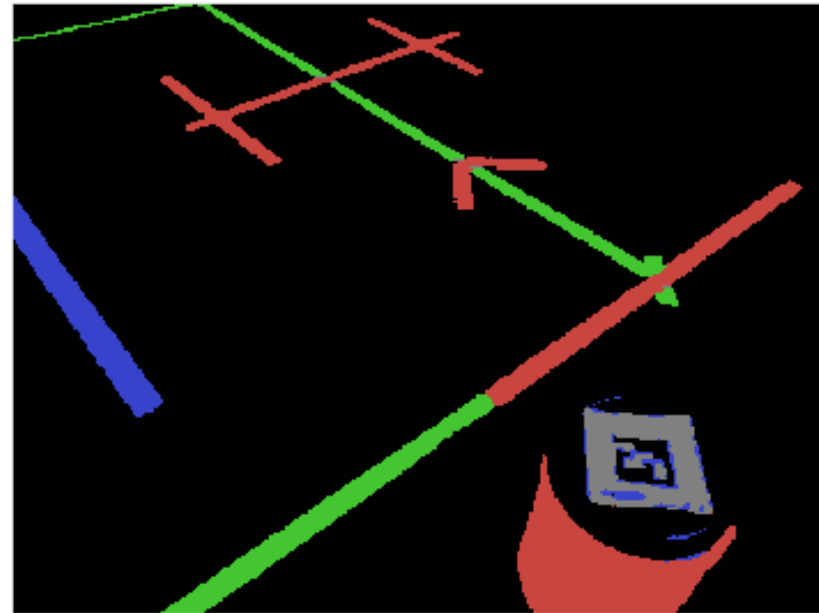
- Light Frequency Filter: Off
- Main Gain: 10
- Auto Gain: Off



Without Lights, Dark Floor

Settings:

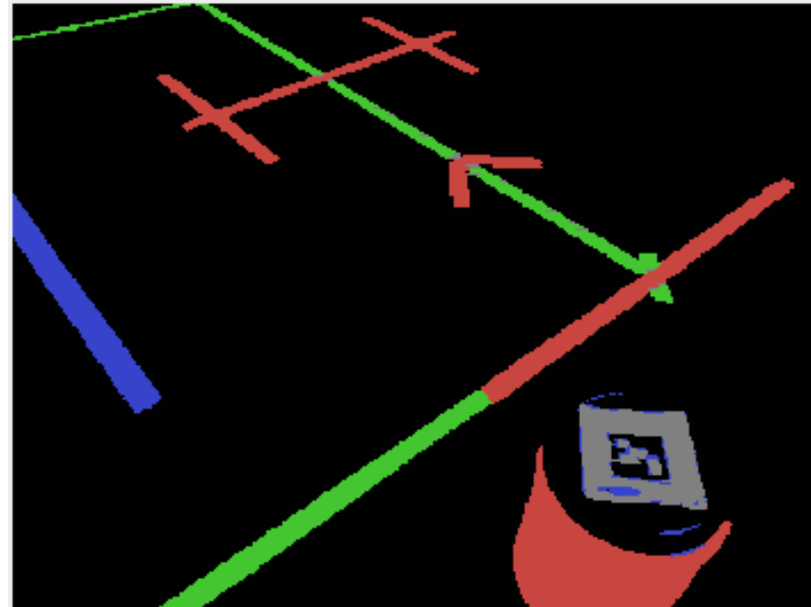
- Contrast: 32 (Default)
- Light Frequency Filter: Off
- Auto Gain: Off
- Main Gain: 10



Without Lights, Dark Floor

Settings:

- Contrast: 35
- Light Frequency Filter: Off
- Auto Gain: Off
- Main Gain: 10



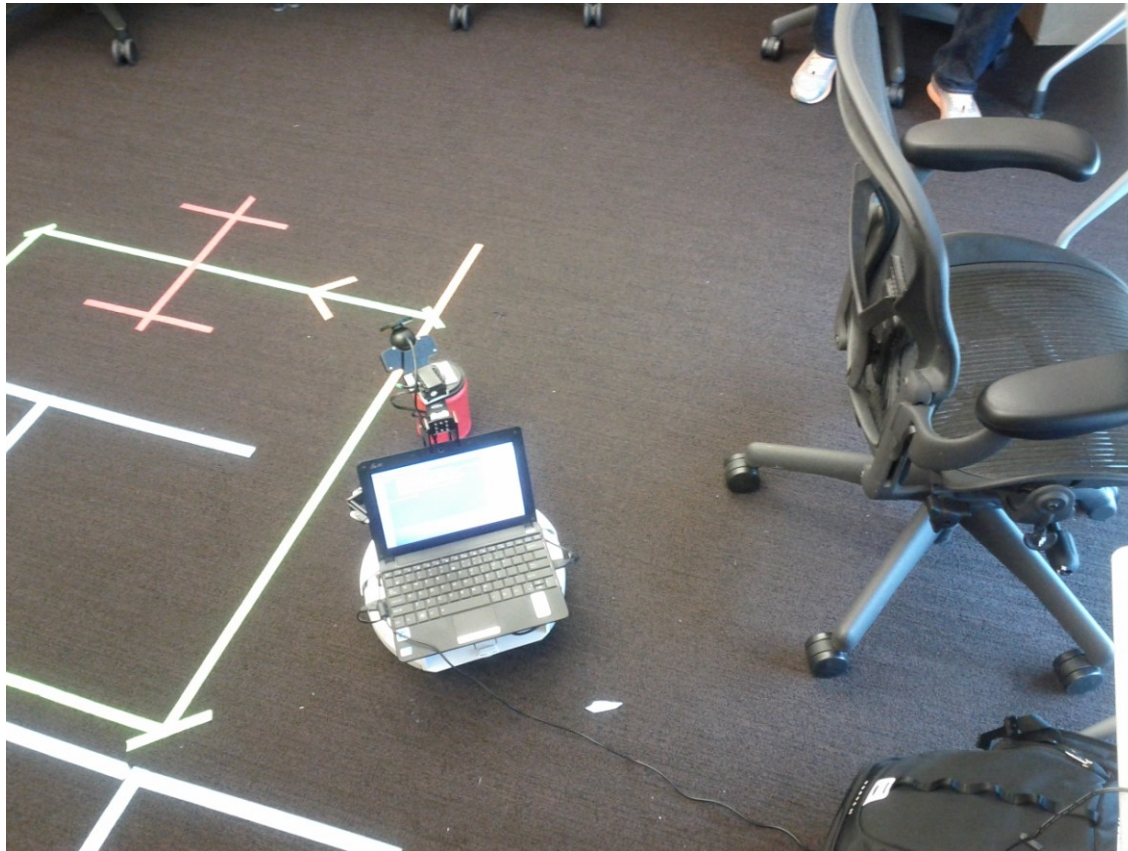
Optimal Settings for Without Lights, Dark Floor

NOTE: May vary depending on the lighting conditions and the color of the floor.

- Auto Gain: Off
- Main Gain: 10 – 20 (3 – 5 step increments)
- Contrast: 32 – 35 (1 step increments)
- Light Frequency Filter: On or off (results may vary)

With Lights, Dark Floor

This image shows the approx. lighting of the room and the floor color when the screenshots (in the upcoming slides) were taken.



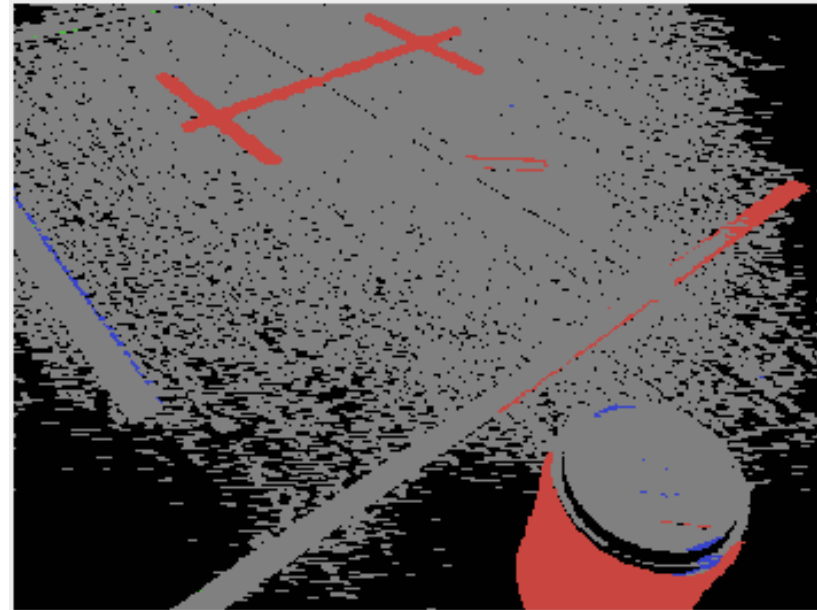
With Lights, Dark Floor

Tape colors used:



With Lights, Dark Floor

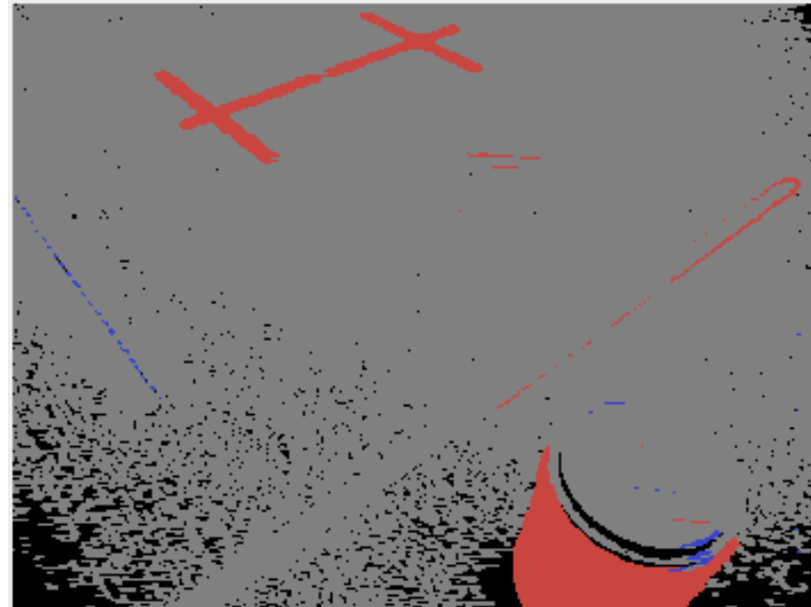
Settings: Default



With Lights, Dark Floor

Settings: Default

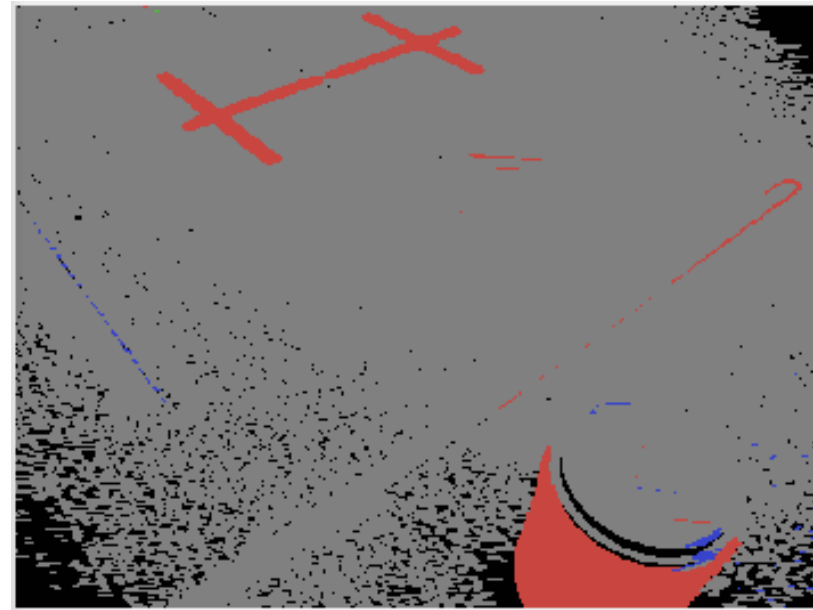
- Auto Gain: Off



With Lights, Dark Floor

Settings: Default

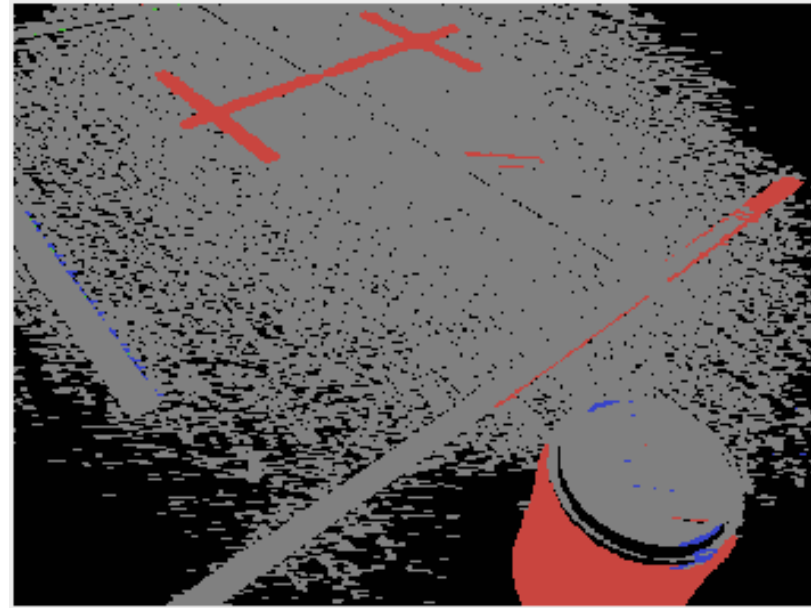
- Main Gain: 10
- Auto Gain: Off



With Lights, Dark Floor

Settings: Default

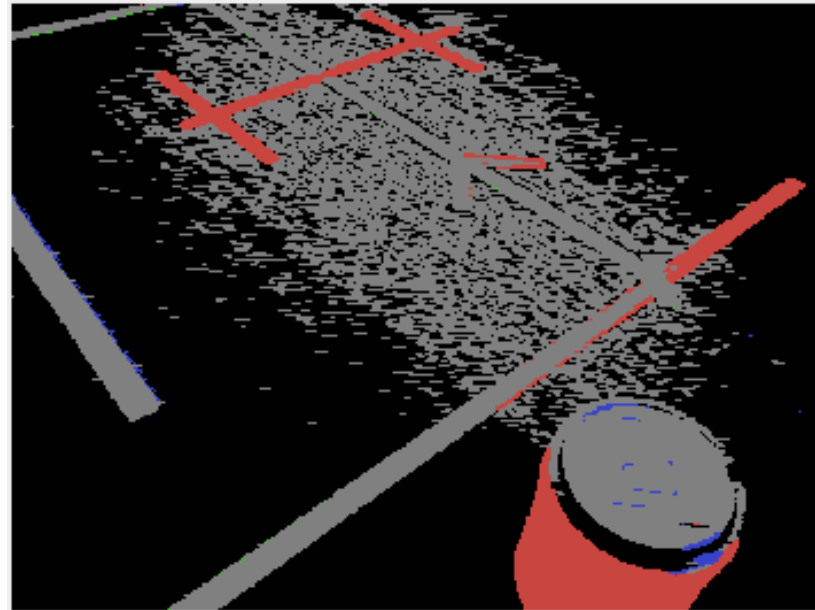
- Main Gain: 5
- Auto Gain: Off



With Lights, Dark Floor

Settings: Default

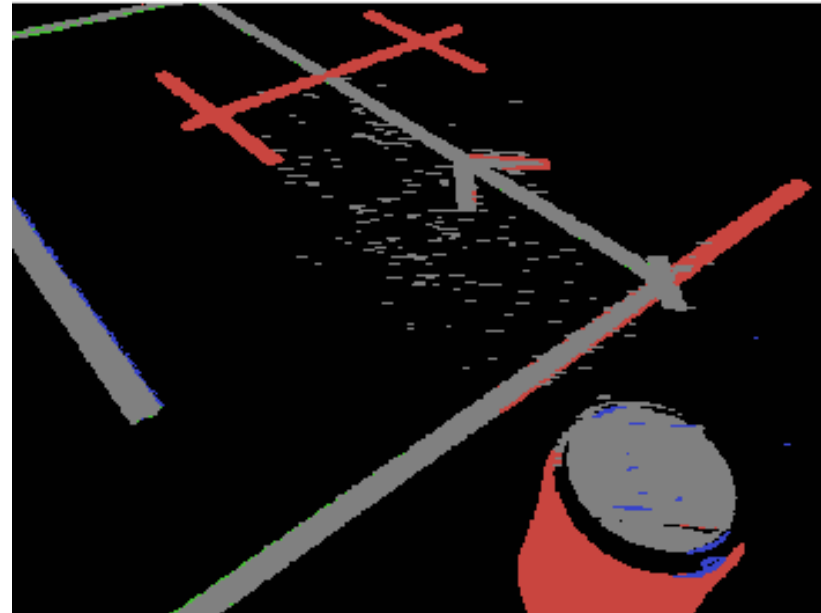
- Main Gain: 0
- Auto Gain: Off



With Lights, Dark Floor

Settings: Default

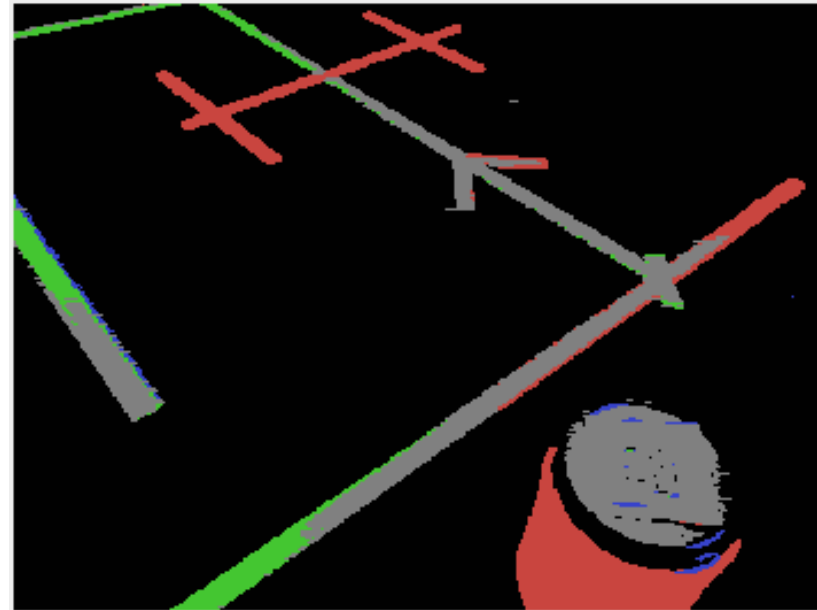
- Contrast: 25
- Main Gain: 0
- Auto Gain: Off



With Lights, Dark Floor

Settings: Default

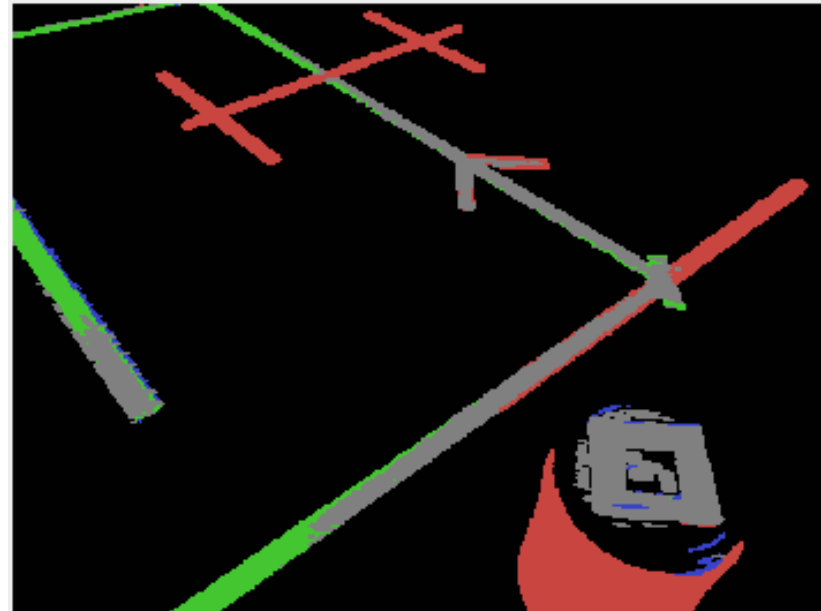
- Contrast: 20
- Main Gain: 0
- Auto Gain: Off



With Lights, Dark Floor

Settings: Default

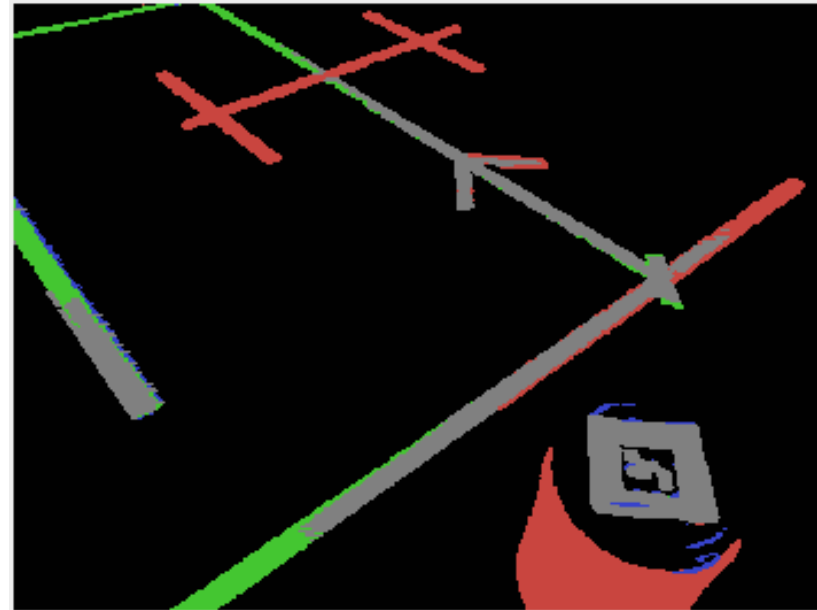
- Contrast: 15
- Main Gain: 0
- Auto Gain: Off



With Lights, Dark Floor

Settings: Default

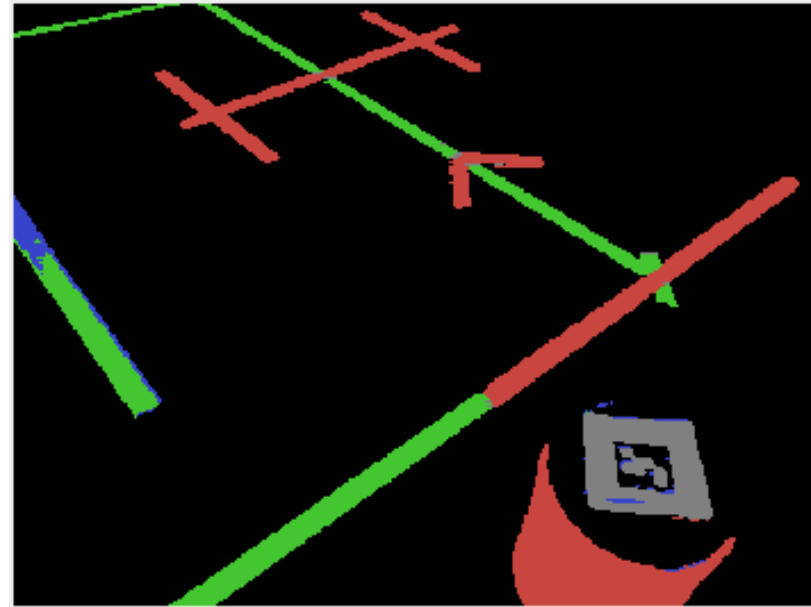
- Contrast: 10
- Main Gain: 0
- Auto Gain: Off



With Lights, Dark Floor

Settings: Default

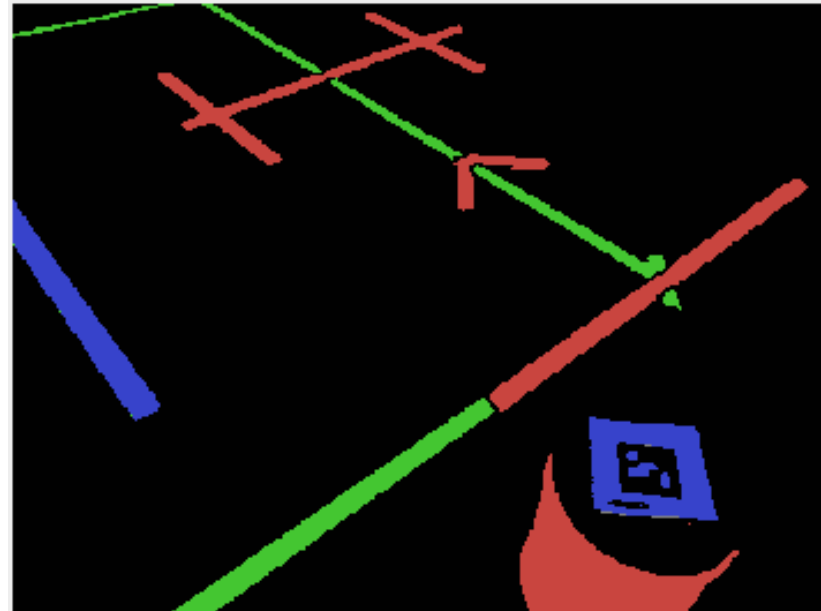
- Light Frequency Filter: Off
- Contrast: 10
- Main Gain: 0
- Auto Gain: Off



With Lights, Dark Floor

Settings: Default

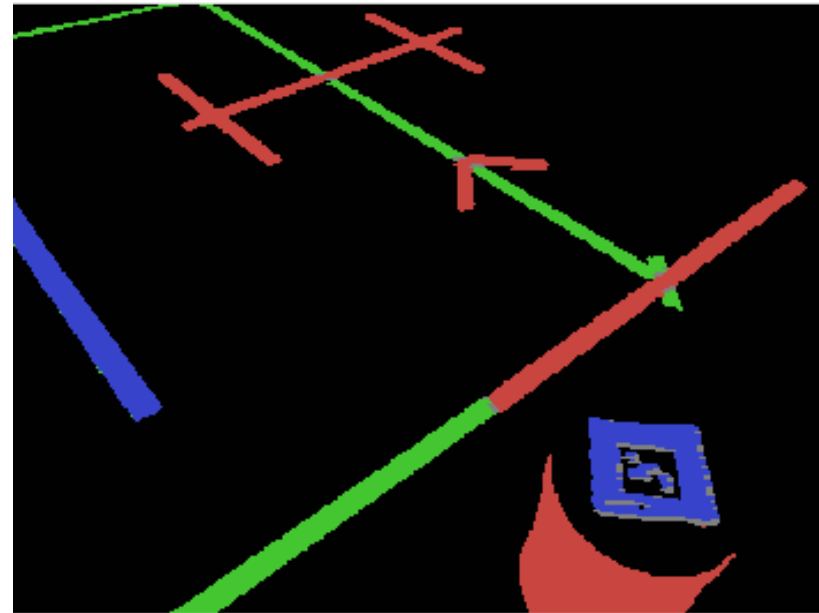
- Auto Exposure: Off
- Light Frequency Filter: Off
- Contrast: 10
- Main Gain: 0
- Auto Gain: Off



With Lights, Dark Floor

Settings: Default

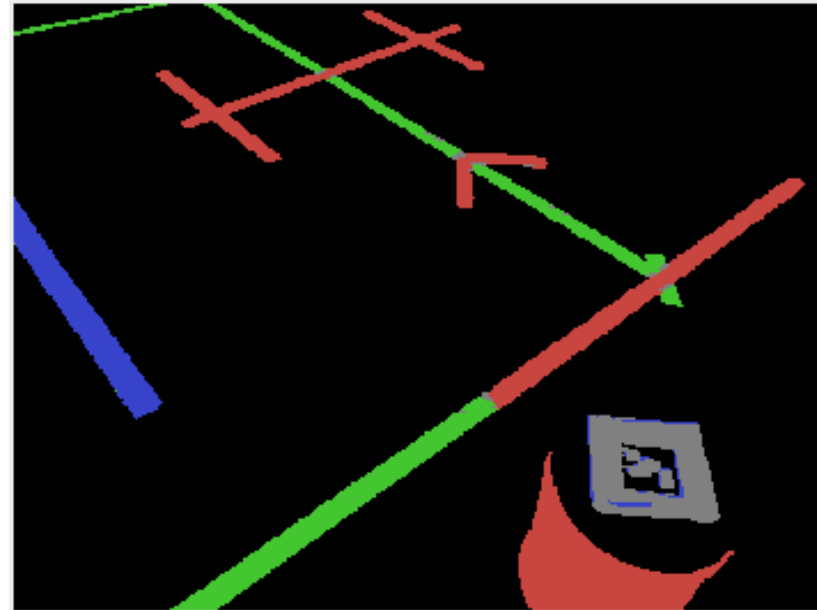
- Auto Exposure: Off
- Light Frequency Filter: Off
- Contrast: 20 (Amended)
- Main Gain: 0
- Auto Gain: Off



With Lights, Dark Floor

Settings: Default

- Auto Exposure: Off
- Light Frequency Filter: Off
- Contrast: 30 (Amended)
- Main Gain: 0
- Auto Gain: Off



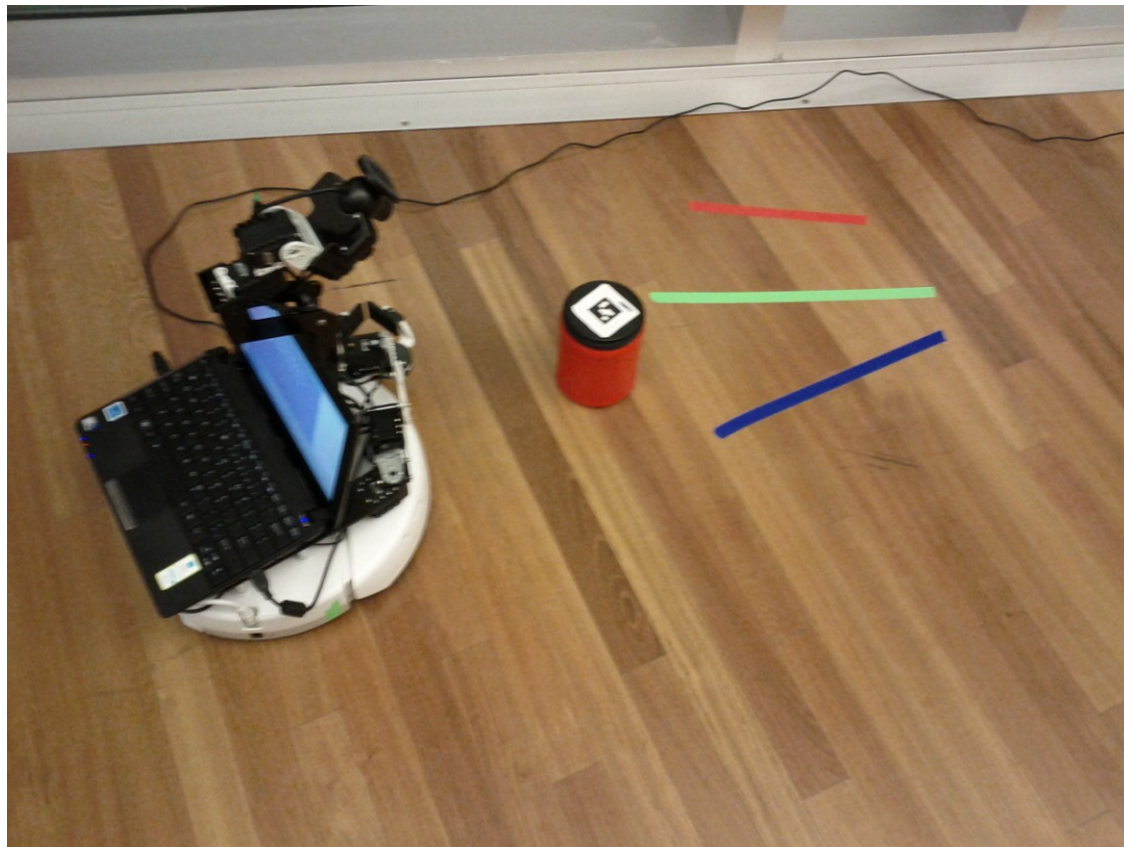
Optimal Settings for With Lights, Dark Floor

NOTE: May vary depending on the lighting conditions and the color of the floor.

- Auto Gain: 0
- Main Gain: 0
- Contrast: approx. 30
- Light Frequency Filter: 0
- Auto Exposure: 0

Dim Lights, Light Floor

This image shows the approx. lighting of the room and the floor color when the screenshots (in the upcoming slides) were taken.



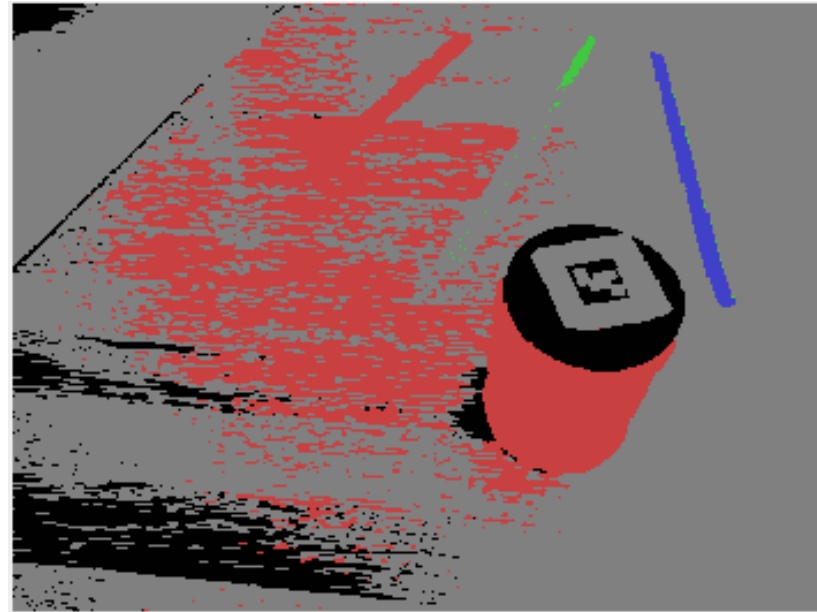
Dim Lights, Light Floor

Tape colors used:



Dim Lights, Light Floor

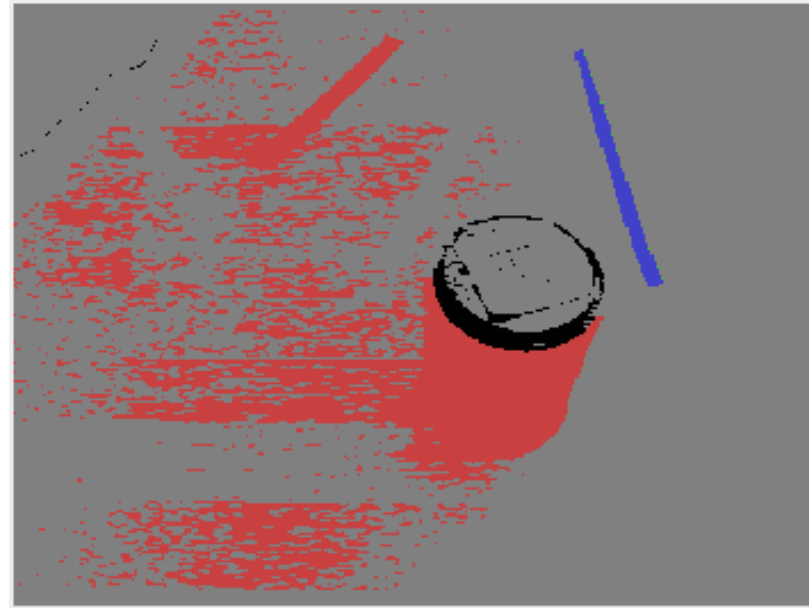
Settings: Default



Dim Lights, Light Floor

Settings:

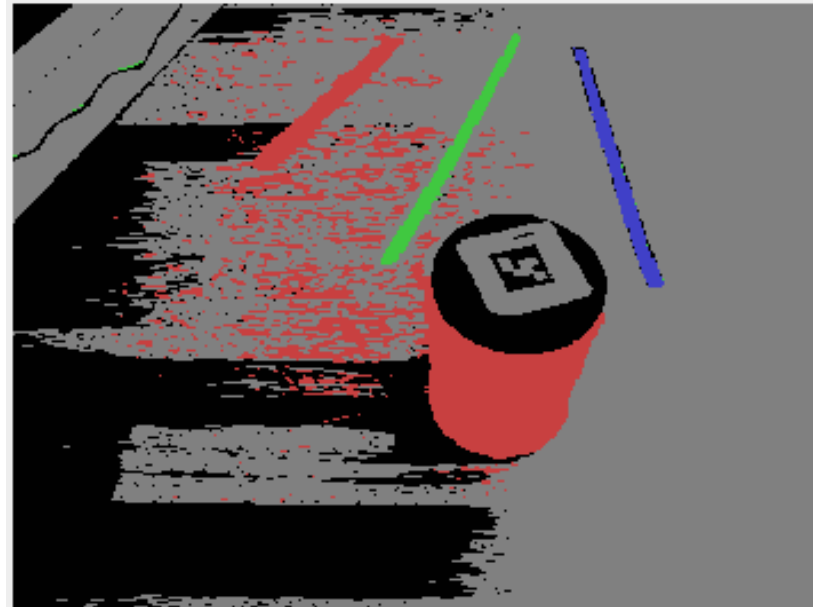
- Auto Gain: Off



Dim Lights, Light Floor

Settings:

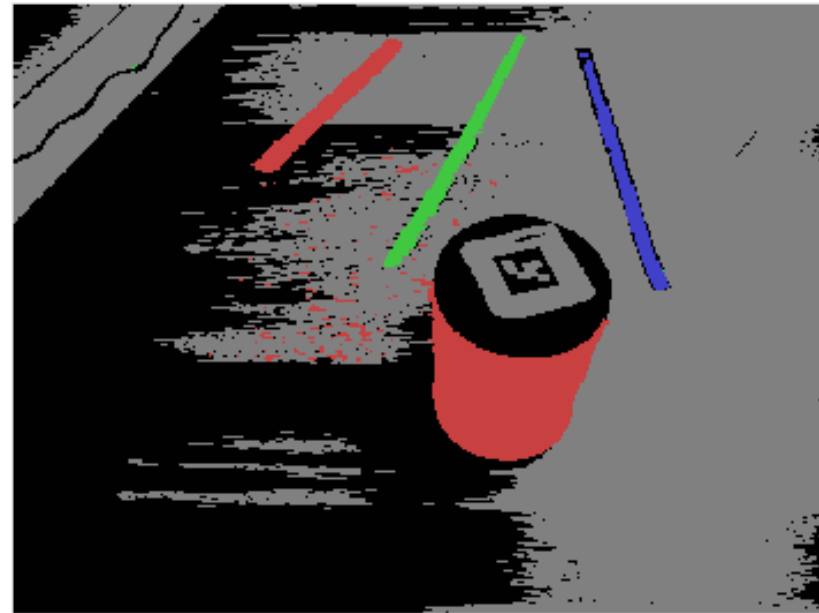
- Main Gain: 10
- Auto Gain: Off



Dim Lights, Light Floor

Settings:

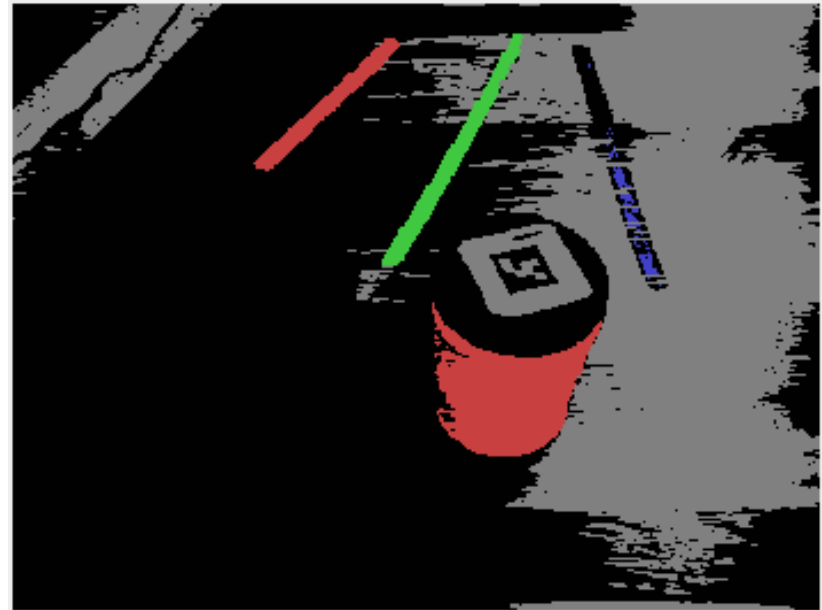
- Main Gain: 5
- Auto Gain: Off



Dim Lights, Light Floor

Settings:

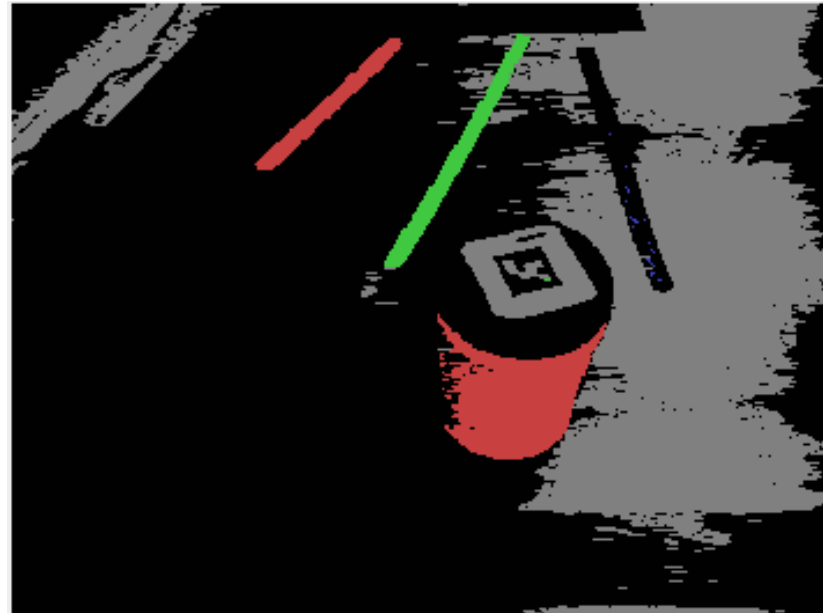
- Main Gain: 0
- Auto Gain: Off



Dim Lights, Light Floor

Settings:

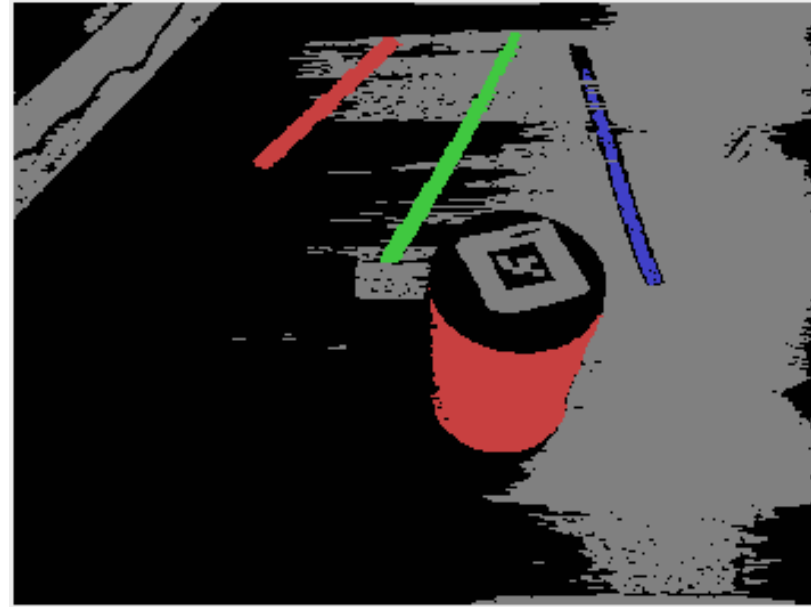
- Auto Exposure: 0
- Main Gain: 0
- Auto Gain: Off



Dim Lights, Light Floor

Settings:

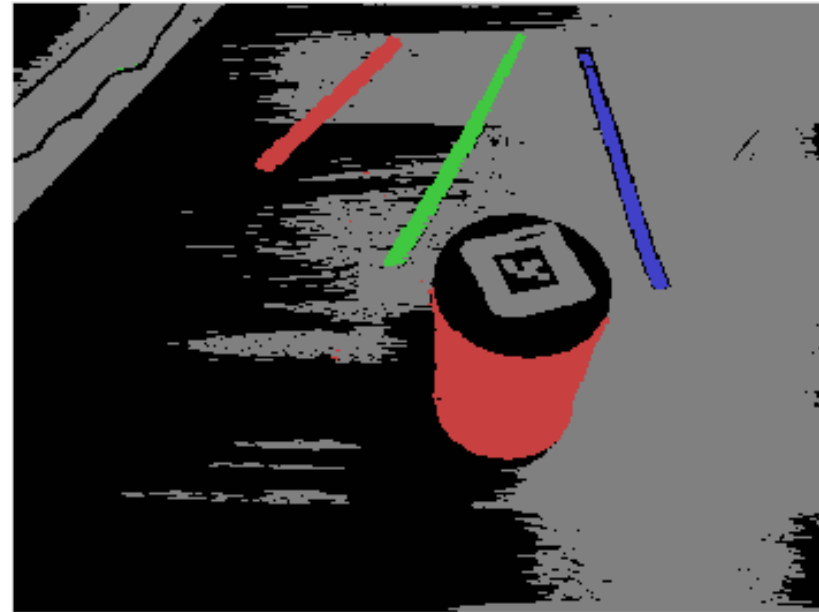
- Exposure: 140
- Auto Exposure: 0
- Main Gain: 0
- Auto Gain: Off



Dim Lights, Light Floor

Settings:

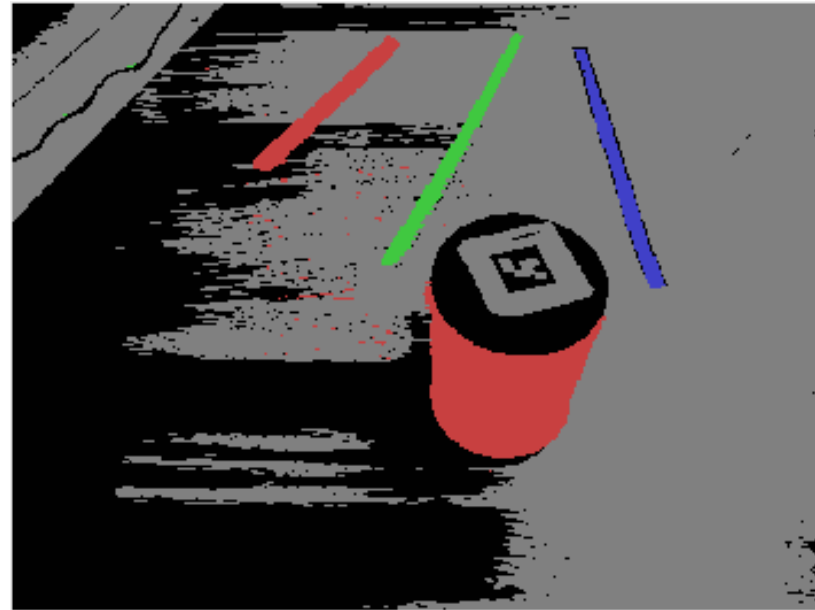
- Exposure: 160
- Auto Exposure: 0
- Main Gain: 0
- Auto Gain: Off



Dim Lights, Dark Floor

Settings:

- Exposure: 180
- Auto Exposure: 0
- Main Gain: 0
- Auto Gain: Off



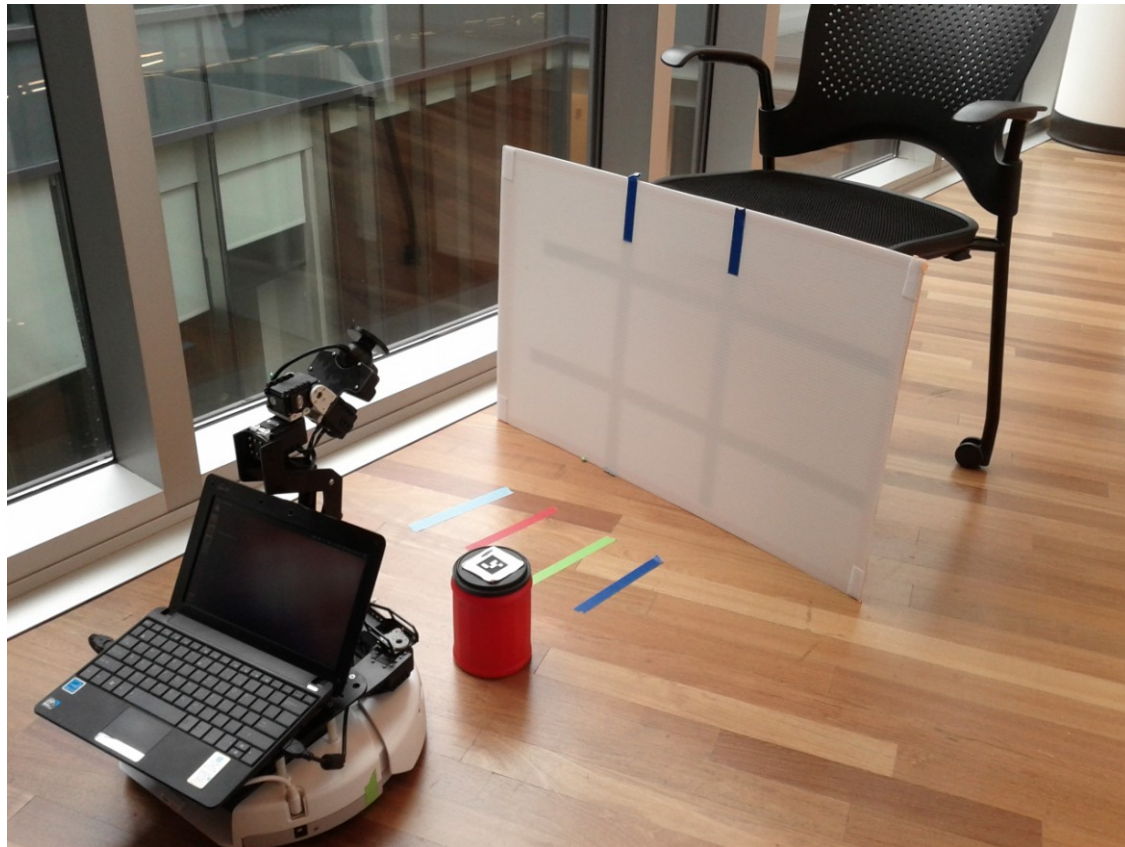
Optimal Settings for Dim Lights, Light Floor

NOTE: May vary depending on the lighting conditions and the color of the floor.

- Auto Gain: 0
- Main Gain: 0
- Auto Exposure: 0
- Exposure: 160 – 180

Daylight, Light Floor

This image shows the approx. lighting of the room and the floor color when the screenshots (in the upcoming slides) were taken.



Daylight, Light Floor

Tape colors used:

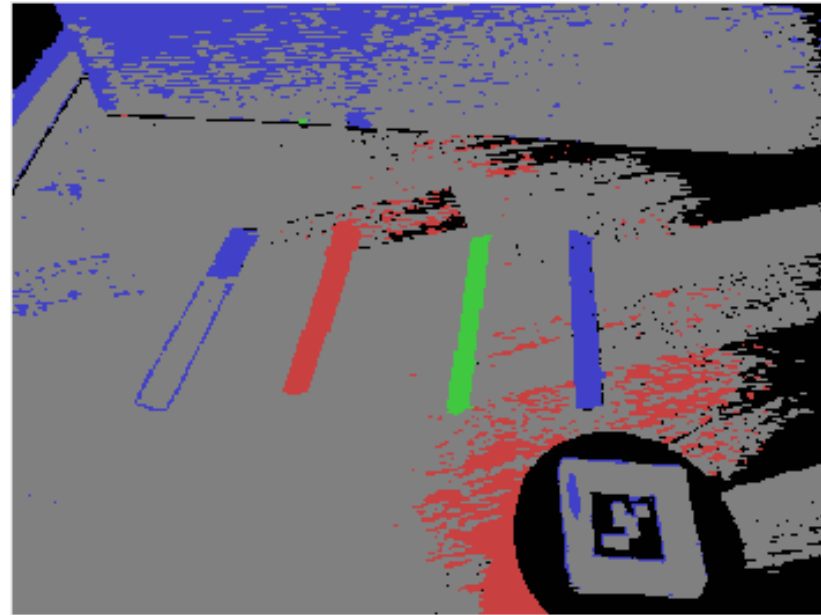


*****NOTE:** The dark blue tape may not be visible using these settings.
Use light blue tape (image #3 on the right) instead.



Daylight, Light Floor

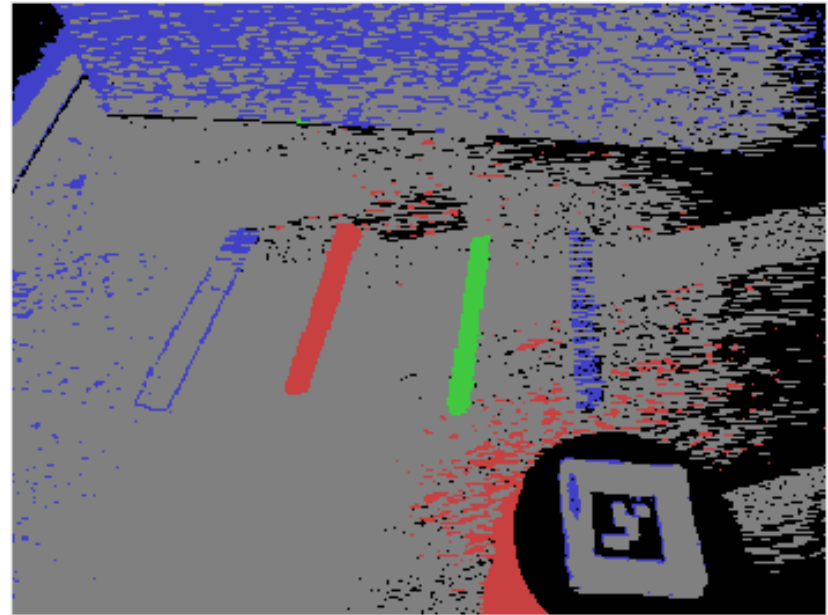
Settings: Default



Daylight, Light Floor

Settings:

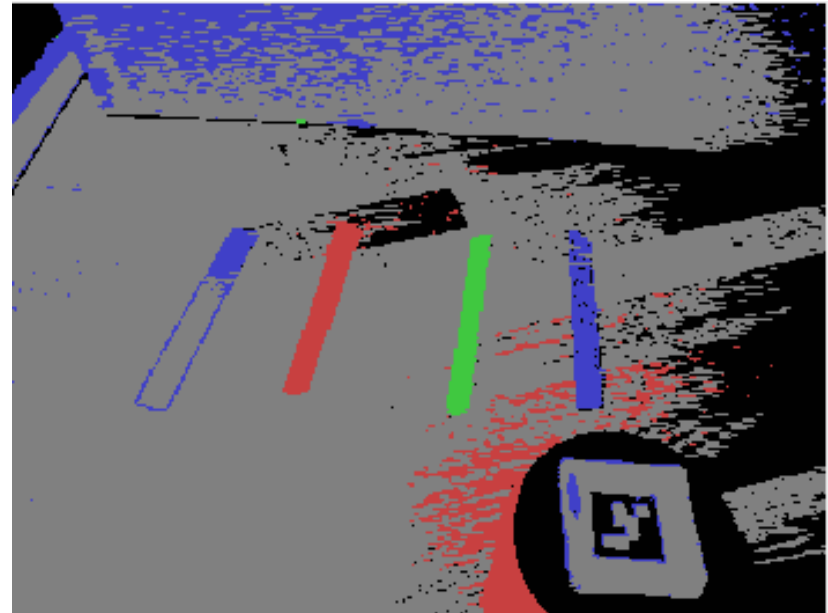
- Auto Gain: Off



Daylight, Light Floor

Settings:

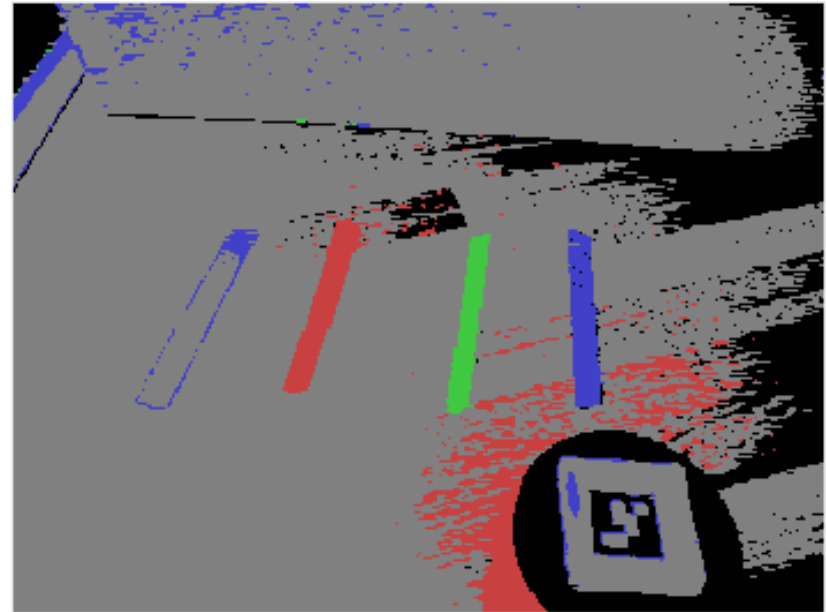
- Main Gain: 10
- Auto Gain: Off



Daylight, Light Floor

Settings:

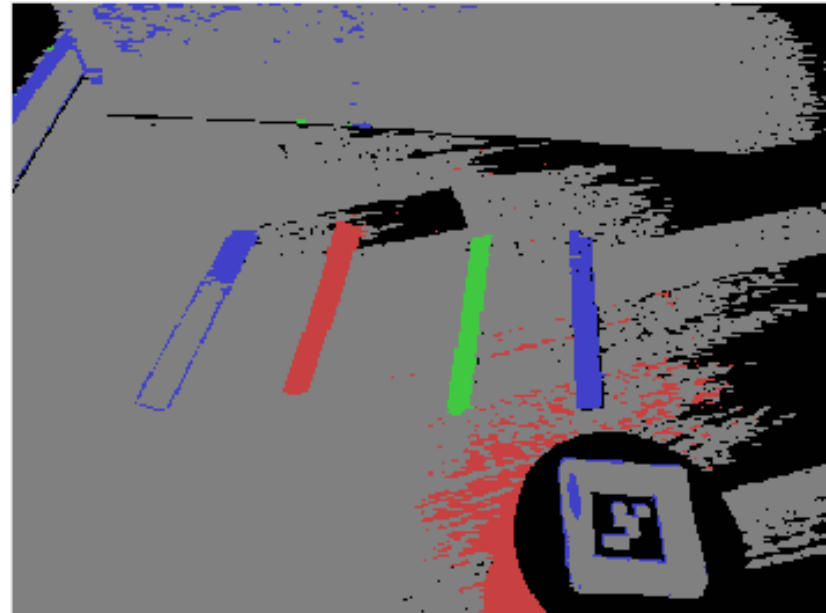
- Main Gain: 5
- Auto Gain: Off



Daylight, Light Floor

Settings:

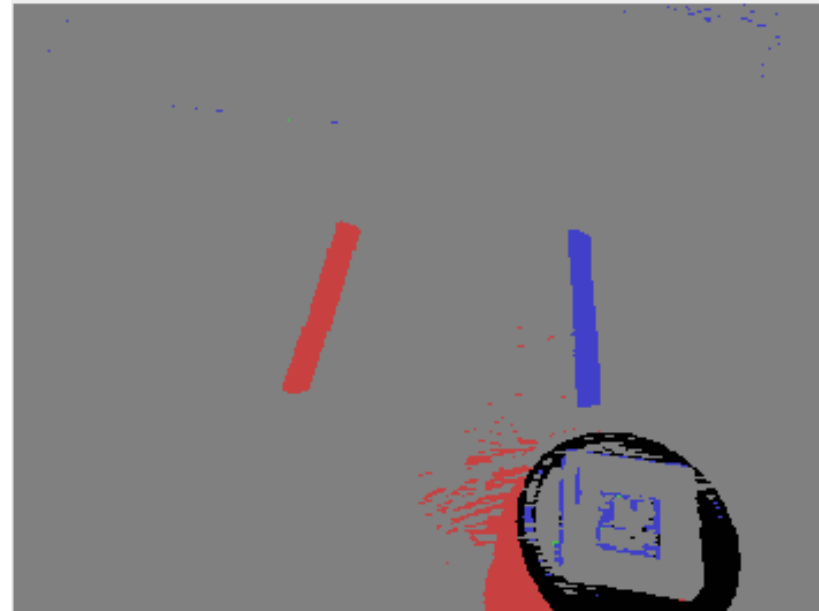
- Main Gain: 0
- Auto Gain: Off



Daylight, Light Floor

Settings:

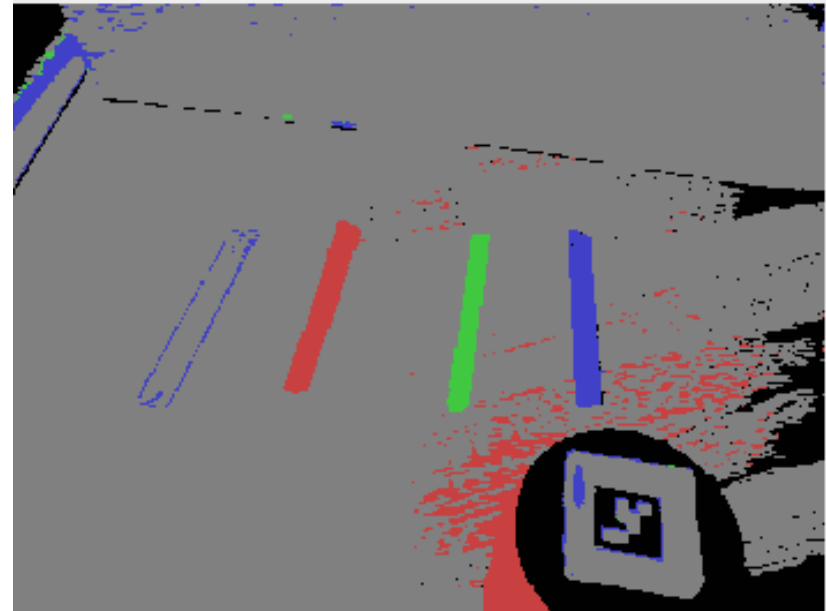
- Auto Exposure: Off
- Main Gain: 0
- Auto Gain: Off



Daylight, Light Floor

Settings:

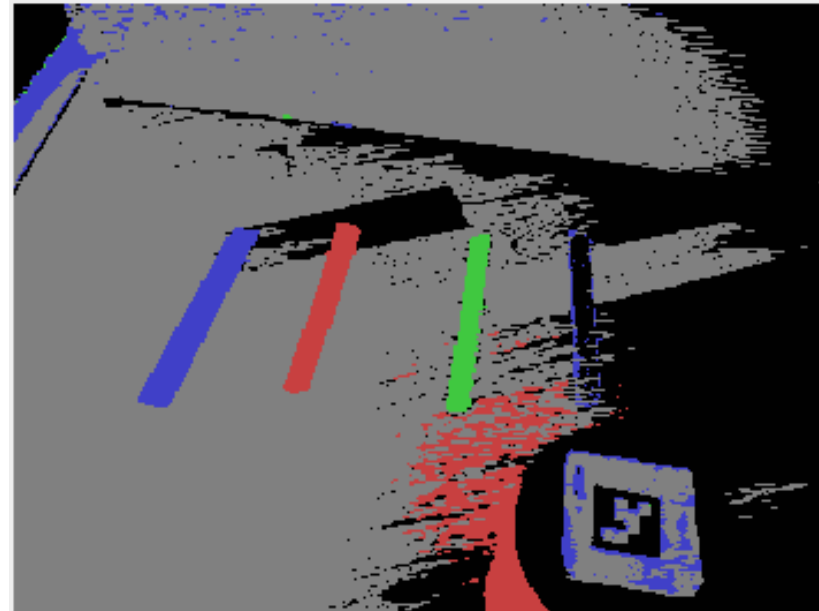
- Exposure: 45
- Auto Exposure: Off
- Main Gain: 0
- Auto Gain: Off



Daylight, Light Floor

Settings:

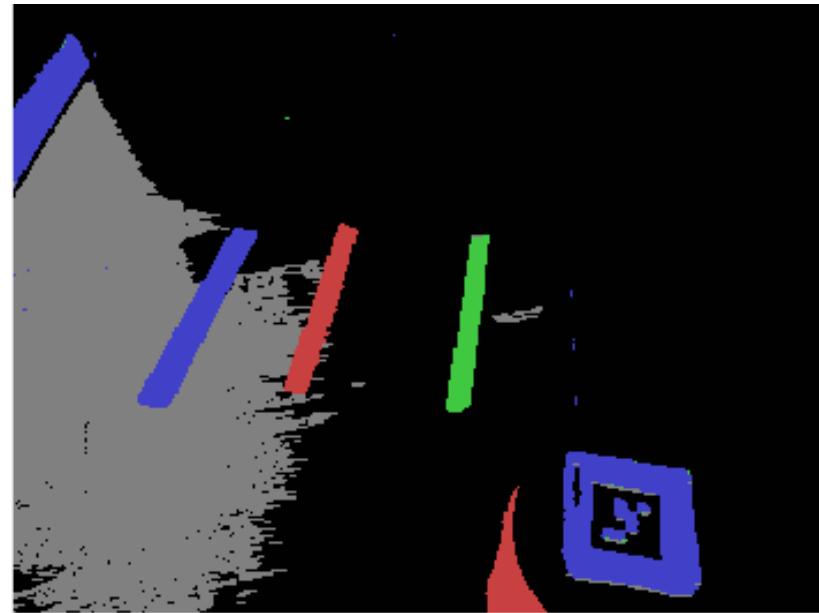
- Exposure: 35
- Auto Exposure: Off
- Main Gain: 0
- Auto Gain: Off



Daylight, Light Floor

Settings:

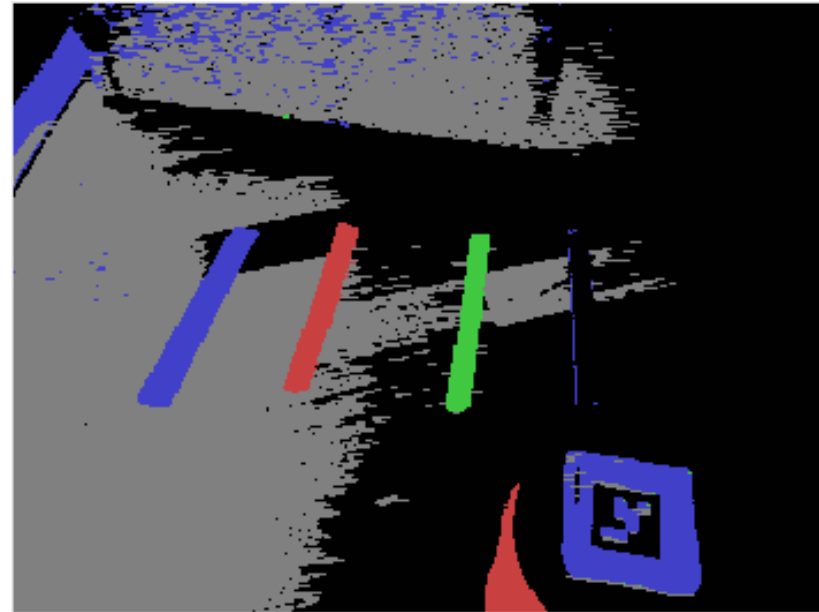
- Exposure: 25
- Auto Exposure: Off
- Main Gain: 0
- Auto Gain: Off



Daylight, Light Floor

Settings:

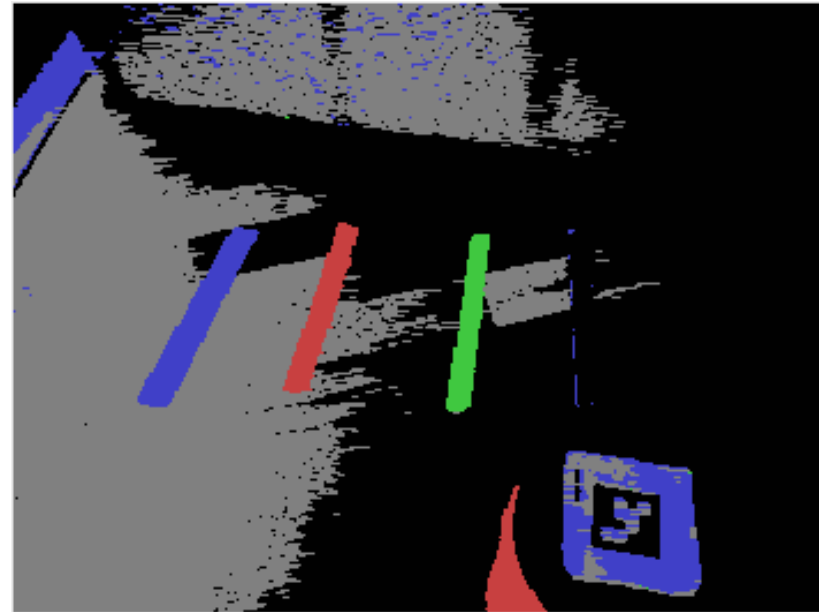
- Contrast: 35
- Exposure: 25
- Auto Exposure: Off
- Main Gain: 0
- Auto Gain: Off



Daylight, Light Floor

Settings:

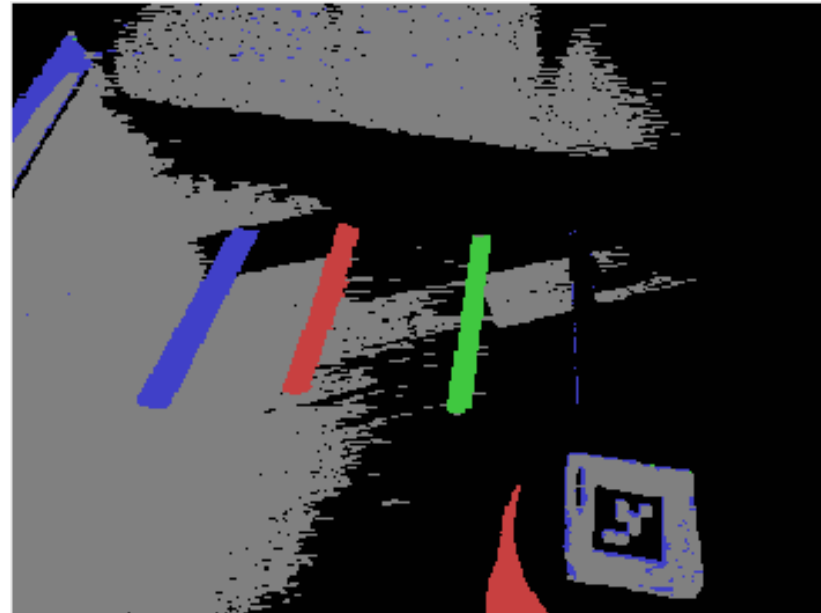
- Contrast: 38
- Exposure: 25
- Auto Exposure: Off
- Main Gain: 0
- Auto Gain: Off



Daylight, Light Floor

Settings:

- Contrast: 40
- Exposure: 25
- Auto Exposure: Off
- Main Gain: 0
- Auto Gain: Off



Optimal Settings for Daylight, Light Floor

NOTE: May vary depending on the lighting conditions and the color of the floor.

- Auto Gain: 0
- Main Gain: 0
- Auto Exposure: 0
- Exposure: approx. 25
- Contrast: 40 – 45

Some Advice for the Optimal Experience

1. Any sudden or gradual change in lighting can affect the robot's segmented view, especially in daylight and on cloudy days. So, try to operate the robot in static lighting.
1. Also, use floors that are mostly, if not all, one color, and that are not the same color as the tape(s) or object(s) (such as canisters) being used.