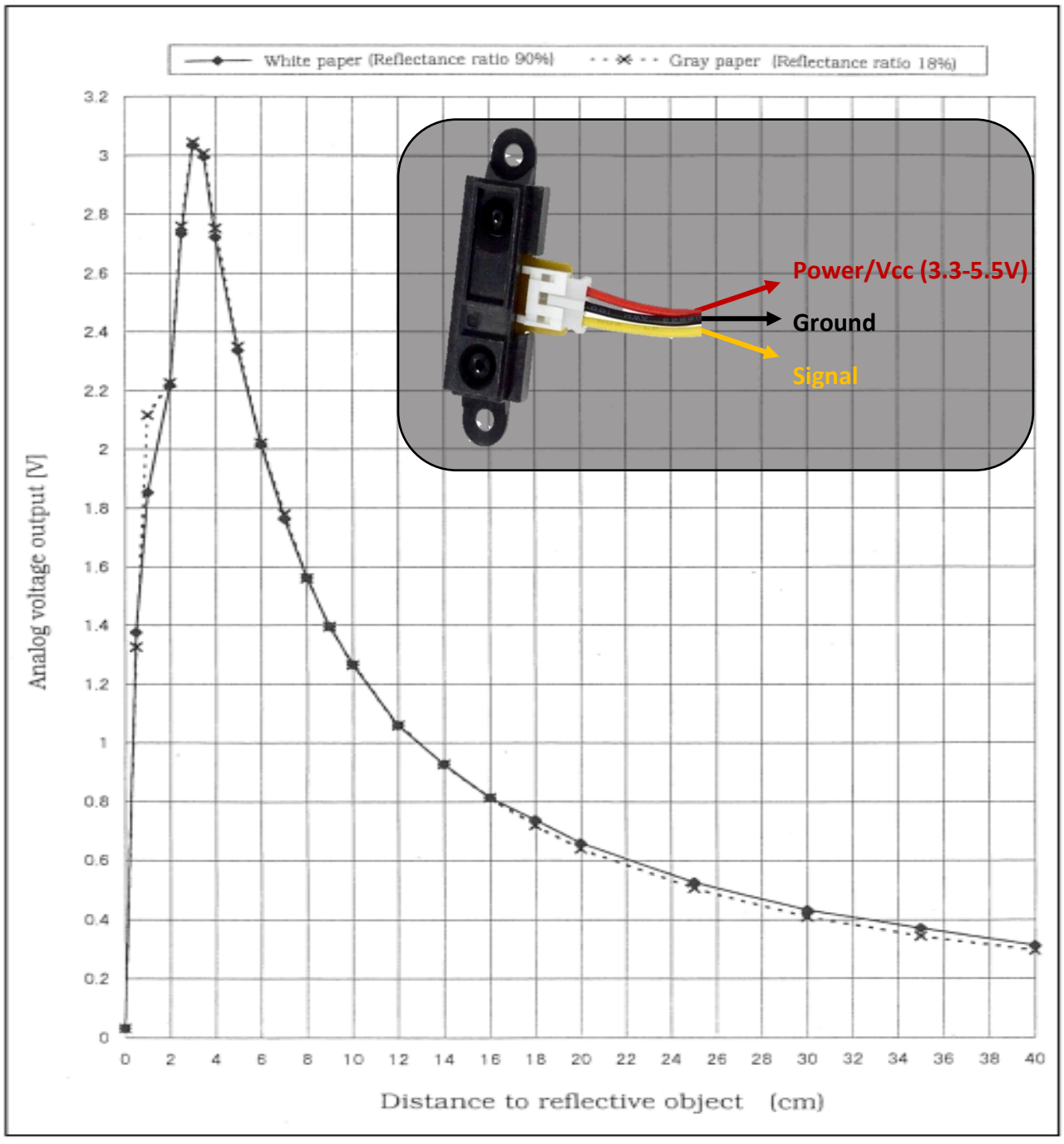
Sharp Distance Sensors

0A41S Sensor Characteristics	
Distance Range	4 to 30 cm
Supply Voltage	3.3 to 5.5 V
Average supply current	12-22 mA

2YOA21 and GP2D12 Sensor Characteristics	
Distance Range	10 to 80 cm
Supply Voltage	3.3 to 5.5 V
Average supply current	12-22 mA

Note: There is no calibration curve for the 10-80cm sensors



PSC Notes-

1/31/2023 Colter took measurements on all 3 sensors using plywood as the reflective object. Data was collected at 3.3V, 4.5V, and 5.5V input. Measurements were taken both with lights on and off, and no difference was seen.

Barring experimental error, no difference was seen between output values of the 2Y0A21 and GP2D12 sensors(10-80cm), so their data is grouped together. There was also no significant difference from 3.3V input to 5.5V input, so all these measurements are grouped together into the same chart as well.

With the 0A41S sensor(4-30cm) there was no difference in output values at 4.5V input or 5.5V input so those are grouped in the same chart. Output voltage was slightly lower at 3.3V, so that data is in a separate chart.

2YOA21 and GP2D12	
Input: 3.3-5.5 Volts	
Distance (cm)	Output Voltage (V)
80	0.372
60	0.48
40	0.67
25	1
15	1.585
10	2.19

OA41S, Input: 4.5-5.5 Volts	
Distance (cm)	Output Voltage (V)
30	0.336
20	0.55
15	0.788
10	1.2
4	2.61

OA41S, Input: 3.3 Volts	
Distance (cm)	Output Voltage (V)
30	0.308
20	0.512
15	0.725
10	1.119
4	2.385

NOTE: The sharp sensors will pick up reflections from the ground if not careful. Keep sensors vertical or tilted slightly up, and keep at least an inch above the ground (especially the 10-80cm sensors).