|  |  |  |  |
| --- | --- | --- | --- |
| Actual distance measurement (cm) | Average 30 Times Distance Measurements By Sensor (cm) | Error Average Distance Measurements by Sensor (%) | Standard Deviation of Distance Measurement by Sensor (cm) |
| 15 | 16 | 0.0667 | 1.05 |
| 16 | 16.73 | 0.0458 | 1.53 |
| 17 | 17.13 | 0.0078 | 1.59 |
| 18 | 18.30 | 0.0167 | 1.95 |
| 19 | 19.50 | 0.0263 | 1.69 |
| 20 | 20.50 | 0.0250 | 1.94 |
| 30 | 33.27 | 0.1089 | 3.18 |
| 75 | 74.93 | 0.0009 | 1.57 |
| 90 | 90.87 | 0.0096 | 1.38 |
| 100 | 103.80 | 0.0380 | 2.11 |
| 150 | 155.17 | 0.0345 | 2.12 |
| 300 | 308.17 | 0.0272 | 3.51 |
| 600 | 603.37 | 0.0056 | 3.77 |
| 1200 | 1218.77 | 0.0156 | 10.11 |
| 2000 | 2008.87 | 0.0044 | 9.62 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Servo motor posi-tion (°)** | **Actual distance measure-ment**  **(cm)** | **Test 1 distance measure-ment**  **(cm)** | **Test 2 distance measure-ment**  **(cm)** | **Test 3 distance measure-ment**  **(cm)** | **Test 4 distance measure-ement**  **(cm)** | **Test 5 distance measure-ment**  **(cm)** | **Test 6 distance measure-ment**  **(cm)** | **Test 7 distance measure-ment**  **(cm)** | **Test 8 distance measure-ment**  **(cm)** | **Test 9 distance measure-ment**  **(cm)** | **Test 10 distance measure-ment**  **(cm)** |
| 0 | 47 | 43 | 43 | 43 | 45 | 44 | 42 | 47 | 42 | 43 | 44 |
| 15 | 49 | 44 | 44 | 46 | 43 | 47 | 45 | 47 | 45 | 43 | 45 |
| 30 | 57 | 53 | 53 | 53 | 53 | 53 | 56 | 55 | 52 | 50 | 52 |
| 45 | 70 | 62 | 62 | 65 | 67 | 63 | 65 | 68 | 63 | 61 | 60 |
| 60 | 68 | 74 | 72 | 74 | 73 | 72 | 74 | 69 | 74 | 70 | 68 |
| 75 | 63 | 61 | 70 | 67 | 56 | 65 | 63 | 65 | 70 | 62 | 63 |
| 90 | 61 | 52 | 64 | 63 | 52 | 61 | 59 | 61 | 52 | 59 | 61 |
| 105 | 63 | 50 | 61 | 61 | 51 | 62 | 59 | 60 | 61 | 59 | 65 |
| 120 | 69 | 51 | 66 | 66 | 51 | 66 | 67 | 65 | 30 | 66 | 66 |
| 135 | 62 | 59 | 67 | 67 | 60 | 67 | 64 | 60 | 58 | 65 | 67 |
| 150 | 48 | 54 | 54 | 54 | 59 | 61 | 59 | 57 | 50 | 50 | 52 |
| 165 | 39 | 30 | 30 | 37 | 37 | 30 | 30 | 36 | 35 | 45 | 36 |
| 180 | 36 | 30 | 30 | 37 | 30 | 30 | 31 | 31 | 31 | 38 | 32 |

|  |  |  |  |
| --- | --- | --- | --- |
| Actual distance measurement (cm) | Average 10 Times Distance Measurements By Sensor (cm) | Error Average Distance Measurements by Sensor (%) | Standard Deviation of Distance Measurement by Sensor (cm) |
| 47 | 43.6 | 7.234 | 3.4 |
| 49 | 44.9 | 8.367 | 4.1 |
| 57 | 53 | 6.315 | 3.6 |
| 70 | 63.6 | 9.142 | 6.4 |
| 68 | 72 | 5.882 | 4 |
| 63 | 64.2 | 1.904 | 1.2 |
| 61 | 58.4 | 4.262 | 2.6 |
| 63 | 58.9 | 6.507 | 4.1 |
| 69 | 59.4 | 13.913 | 9.6 |
| 62 | 63.4 | 2.258 | 1.4 |
| 48 | 55 | 14.583 | 7 |
| 39 | 34.6 | 11.282 | 4.4 |
| 36 | 32 | 11.111 | 4 |



