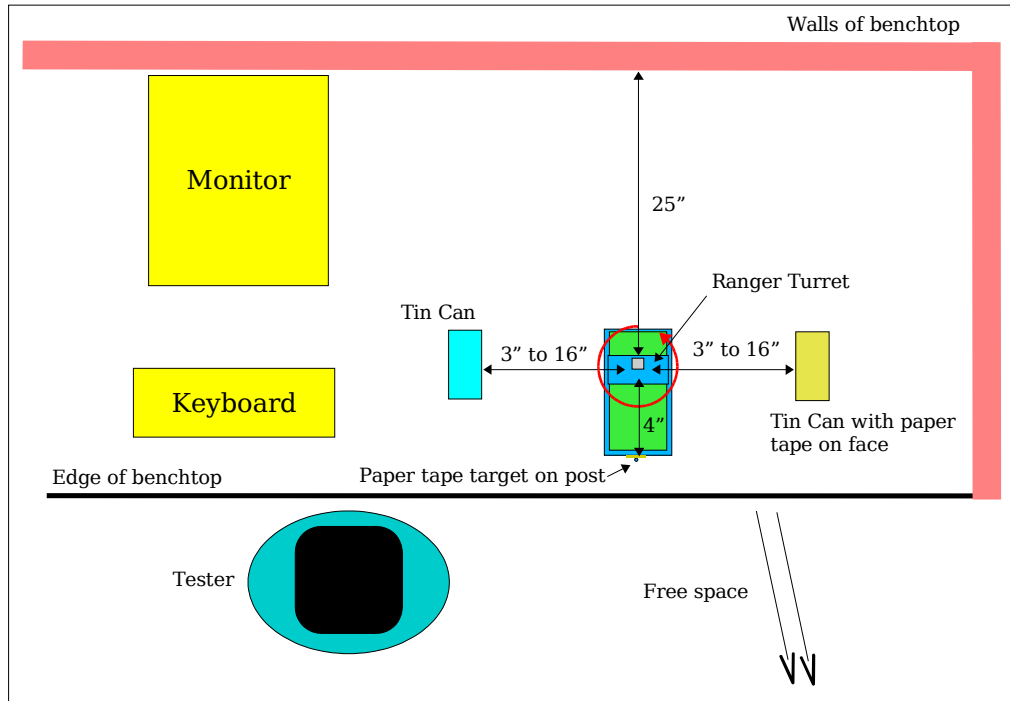


## Introduction

Below is the setup of the test. The side targets consist of two tin cans (Jetson series Electrosol Dishwashing tablets). One is unmodified, off the shelf. The other has adhesive-backed paper tape applied to the side that is "seen" by the ranger. The spacing of the cans from the ranger is varied from 3" to 16". The turret is rotated 360 degrees, 5.14 degrees at a time, by the stepper motor. At each step, a ranger measurement is taken.

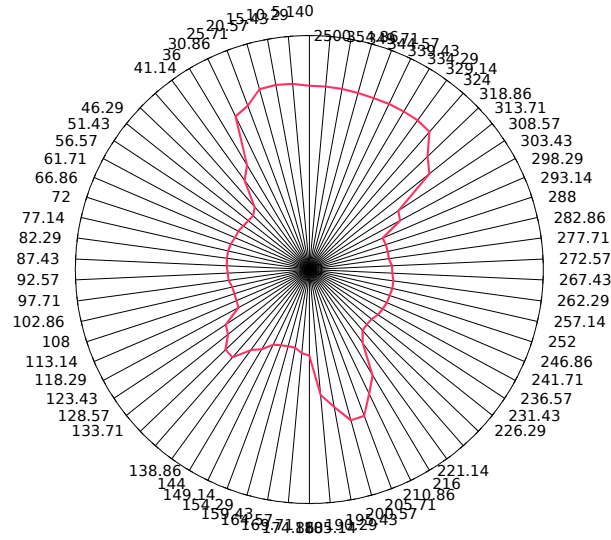


Side Distance	Rear Target	Back Wall	Free Space	Left Target	Right Target
3	28850	29963		28890	28906
4	28825	29962		28820	28829
5	28829	29949		28788	28797
6	28782	29942	30040	28762	28777
7	28760	29932	30059	28777	28796
8	28742	29929	30075	28864	28867
9	28722	29917	30095	29022	29007
10	28707	29913	30066	29254	29144
11	28679	29904	30087	29434	29288
12	28680	29911	30088	29581	29396
13	28659	29910	30093	29726	29483
14	28629	29892	30085	29755	29539
15	28620	29884	30080	29815	29566
16	28521	29849	30054	29848	29568

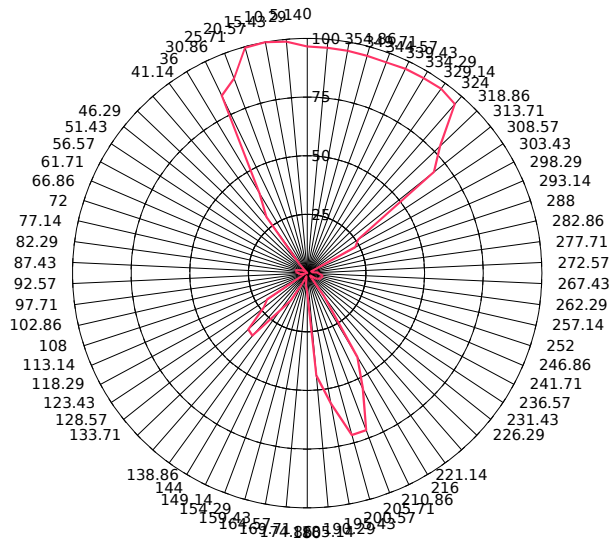
29963	0	1963	30004	96.5
29992	5.14	1992	28831	98.98
30004	10.29	2004		100
29999	15.43	1999		99.57
29870	20.57	1870		88.58
29815	25.71	1815		83.89
29295	30.86	1295		39.56
29177	36	1177		29.5
28887	41.14	887		4.77
28831	46.29	831		0
28835	51.43	835		0.34
28844	56.57	844		1.11
28862	61.71	862		2.64
28863	66.86	863		2.73
28883	72	883		4.43
28890	77.14	890		5.03
28886	82.29	886		4.69
28884	87.43	884		4.52
28871	92.57	871		3.41
28869	97.71	869		3.24
28845	102.86	845		1.19
28840	108	840		0.77
28846	113.14	846		1.28
28860	118.29	860		2.47
29071	123.43	1071		20.46
29109	128.57	1109		23.7
29238	133.71	1238		34.7
29246	138.86	1246		35.38
29064	144	1064		19.86
28992	149.14	992		13.73
28893	154.29	893		5.29
28865	159.43	865		2.9
28850	164.57	850		1.62
28848	169.71	848		1.45
28897	174.86	897		5.63
28919	180	919		7.5
29345	185.14	1345		43.82
29493	190.29	1493		56.44
29671	195.43	1671		71.61
29670	200.57	1670		71.53
29473	205.71	1473		54.73
29321	210.86	1321		41.77
28971	216	971		11.94
28866	221.14	866		2.98
28851	226.29	851		1.71
28851	231.43	851		1.71
28879	236.57	879		4.09
28891	241.71	891		5.12
28902	246.86	902		6.05
28903	252	903		6.14
28910	257.14	910		6.73
28906	262.29	906		6.39
28889	267.43	889		4.94
28886	272.57	886		4.69
28857	277.71	857		2.22
28860	282.86	860		2.47
28859	288	859		2.39
28853	293.14	853		1.88
29103	298.29	1103		23.19
29138	303.43	1138		26.17
29641	308.57	1641		69.05
29750	313.71	1750		78.35
29953	318.86	1953		95.65
29970	324	1970		97.1
29966	329.14	1966		96.76
29964	334.29	1964		96.59
29956	339.43	1956		95.91
29957	344.57	1957		95.99
29961	349.71	1961		96.33
29962	354.86	1962		96.42

3in

### Ranger Calibration, 3-Inch Side Targets

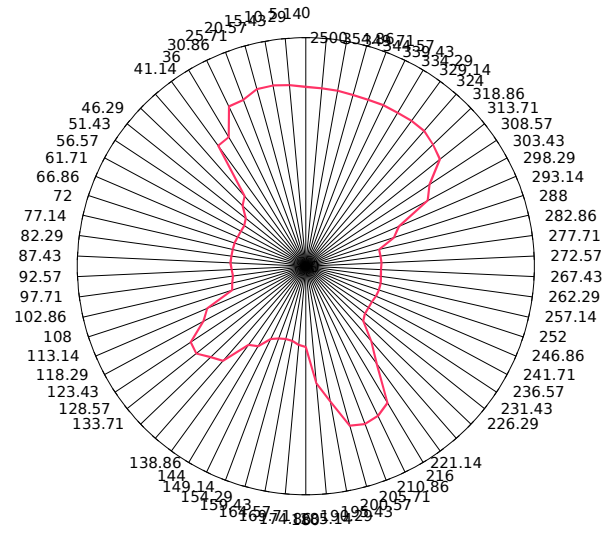


### Normalized Ranger Calibration, 3-Inch Side Targets

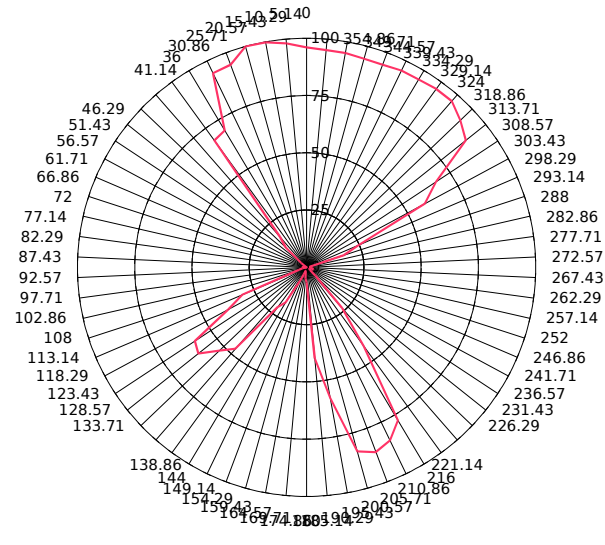


29962	0	1962	30011	95.94
29988	5.14	1988	28805	98.09
30009	10.29	2009		99.83
30011	15.43	2011		100
29944	20.57	1944		94.44
29939	25.71	1939		94.03
29644	30.86	1644		69.57
29631	36	1631		68.49
29018	41.14	1018		17.66
28958	46.29	958		12.69
28840	51.43	840		2.9
28807	56.57	807		0.17
28807	61.71	807		0.17
28811	66.86	811		0.5
28820	72	820		1.24
28820	77.14	820		1.24
28822	82.29	822		1.41
28825	87.43	825		1.66
28813	92.57	813		0.66
28805	97.71	805		0
28826	102.86	826		1.74
28847	108	847		3.48
29173	113.14	1173		30.51
29273	118.29	1273		38.81
29509	123.43	1509		58.37
29533	128.57	1533		60.36
29439	133.71	1439		52.57
29375	138.86	1375		47.26
29063	144	1063		21.39
29020	149.14	1020		17.83
28884	154.29	884		6.55
28844	159.43	844		3.23
28825	164.57	825		1.66
28829	169.71	829		1.99
28865	174.86	865		4.98
28885	180	885		6.63
29286	185.14	1286		39.88
29504	190.29	1504		57.96
29811	195.43	1811		83.42
29844	200.57	1844		86.15
29817	205.71	1817		83.91
29743	210.86	1743		77.78
29319	216	1319		42.62
29089	221.14	1089		23.55
28869	226.29	869		5.31
28829	231.43	829		1.99
28823	236.57	823		1.49
28822	241.71	822		1.41
28835	246.86	835		2.49
28841	252	841		2.99
28840	257.14	840		2.9
28829	262.29	829		1.99
28824	267.43	824		1.58
28828	272.57	828		1.91
28824	277.71	824		1.58
28824	282.86	824		1.58
29013	288	1013		17.25
29107	293.14	1107		25.04
29513	298.29	1513		58.71
29621	303.43	1621		67.66
29877	308.57	1877		88.89
29925	313.71	1925		92.87
29967	318.86	1967		96.35
29966	324	1966		96.27
29956	329.14	1956		95.44
29955	334.29	1955		95.36
29944	339.43	1944		94.44
29944	344.57	1944		94.44
29951	349.71	1951		95.02
29953	354.86	1953		95.19

### Ranger Calibration, 4-Inch Side Targets



### Normalized Ranger Calibration, 4-Inch Side Targets

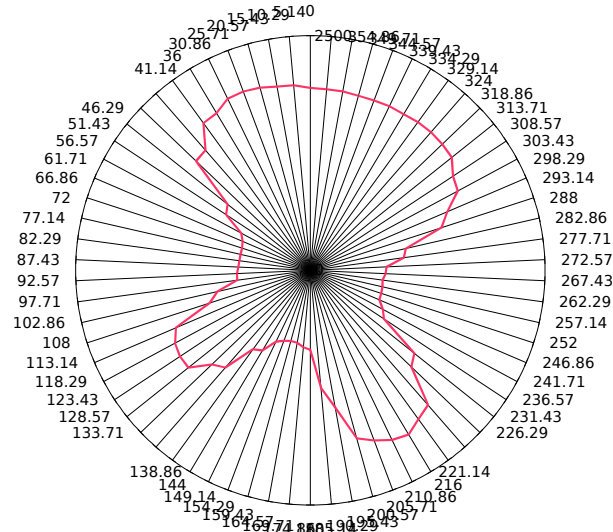




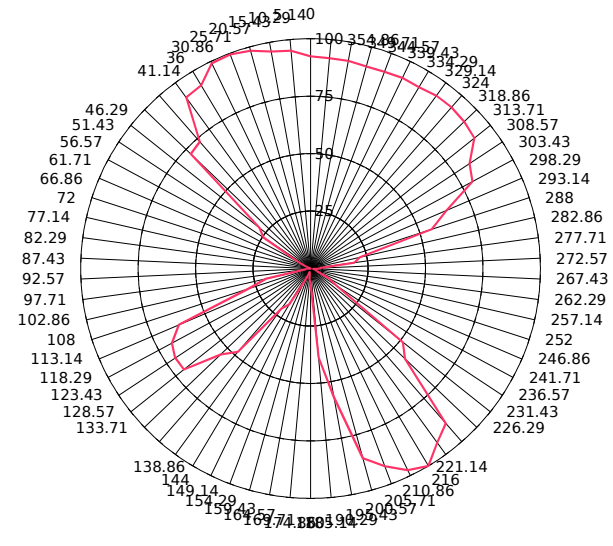
29942	0	1942	30040	92.33
29978	5.14	1978	28762	95.15
29989	10.29	1989		96.01
30019	15.43	2019		98.36
30034	20.57	2034		99.53
30029	25.71	2029		99.14
29949	30.86	1949		92.88
29938	36	1938		92.02
29698	41.14	1698		73.24
29684	46.29	1684		72.14
29126	51.43	1126		28.48
29075	56.57	1075		24.49
28837	61.71	837		5.87
28785	66.86	785		1.8
28765	72	765		0.23
28762	77.14	762		0
28763	82.29	763		0.08
28768	87.43	768		0.47
28781	92.57	781		1.49
28786	97.71	786		1.88
29016	102.86	1016		19.87
29127	108	1127		28.56
29558	113.14	1558		62.28
29637	118.29	1637		68.47
29664	123.43	1664		70.58
29663	128.57	1663		70.5
29453	133.71	1453		54.07
29376	138.86	1376		48.04
29039	144	1039		21.67
28995	149.14	995		18.23
28844	154.29	844		6.42
28801	159.43	801		3.05
28782	164.57	782		1.56
28785	169.71	785		1.8
28824	174.86	824		4.85
28847	180	847		6.65
29256	185.14	1256		38.65
29487	190.29	1487		56.73
29856	195.43	1856		85.6
29936	200.57	1936		91.86
30007	205.71	2007		97.42
30040	210.86	2040		100
29960	216	1960		93.74
29905	221.14	1905		89.44
29489	226.29	1489		56.89
29418	231.43	1418		51.33
28939	236.57	939		13.85
28878	241.71	878		9.08
28800	246.86	800		2.97
28794	252	794		2.5
28788	257.14	788		2.03
28777	262.29	777		1.17
28803	267.43	803		3.21
28813	272.57	813		3.99
29007	277.71	1007		19.17
29043	282.86	1043		21.99
29470	288	1470		55.4
29585	293.14	1585		64.4
29784	298.29	1784		79.97
29821	303.43	1821		82.86
29927	308.57	1927		91.16
29944	313.71	1944		92.49
29953	318.86	1953		93.19
29951	324	1951		93.04
29937	329.14	1937		91.94
29939	334.29	1939		92.1
29931	339.43	1931		91.47
29928	344.57	1928		91.24
29936	349.71	1936		91.86
29937	354.86	1937		91.94

6in

### Ranger Calibration, 6-Inch Side Targets



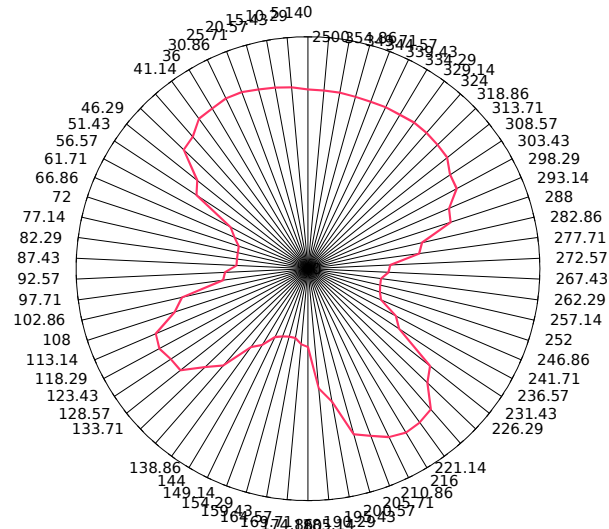
### Normalized Ranger Calibration, 6-Inch Side Targets



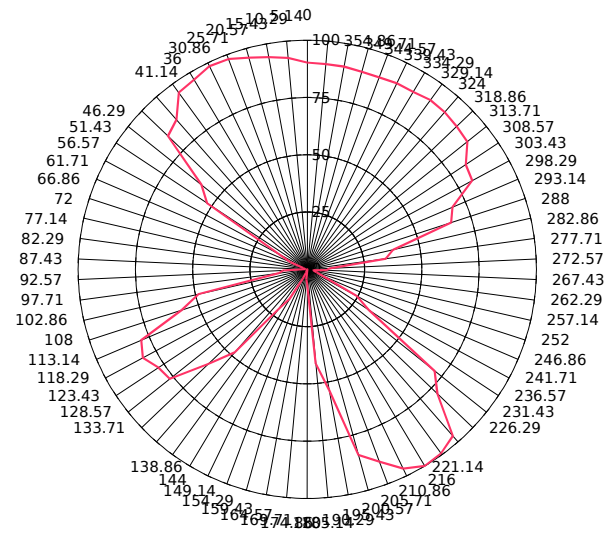
29932	0	1932	30059	90.22
29963	5.14	1963	28760	92.61
29983	10.29	1983		94.15
30005	15.43	2005		95.84
30033	20.57	2033		98
30038	25.71	2038		98.38
30012	30.86	2012		96.38
29999	36	1999		95.38
29887	41.14	1887		86.76
29853	46.29	1853		84.14
29526	51.43	1526		58.97
29440	56.57	1440		52.35
28948	61.71	948		14.47
28863	66.86	863		7.93
28784	72	784		1.85
28777	77.14	777		1.31
28772	82.29	772		0.92
28771	87.43	771		0.85
28895	92.57	895		10.39
28922	97.71	922		12.47
29392	102.86	1392		48.65
29509	108	1509		57.66
29784	113.14	1784		78.83
29819	118.29	1819		81.52
29771	123.43	1771		77.83
29757	128.57	1757		76.75
29536	133.71	1536		59.74
29385	138.86	1385		48.11
29046	144	1046		22.02
28957	149.14	957		15.17
28819	154.29	819		4.54
28781	159.43	781		1.62
28762	164.57	762		0.15
28760	169.71	760		0
28818	174.86	818		4.46
28844	180	844		6.47
29297	185.14	1297		41.34
29458	190.29	1458		53.73
29853	195.43	1853		84.14
29925	200.57	1925		89.68
30015	205.71	2015		96.61
30059	210.86	2059		100
30050	216	2050		99.31
30015	221.14	2015		96.61
29781	226.29	1781		78.6
29684	231.43	1684		71.13
29178	236.57	1178		32.18
29078	241.71	1078		24.48
28858	246.86	858		7.54
28815	252	815		4.23
28799	257.14	799		3
28796	262.29	796		2.77
28870	267.43	870		8.47
28890	272.57	890		10.01
29210	277.71	1210		34.64
29261	282.86	1261		38.57
29618	288	1618		66.05
29655	293.14	1655		68.9
29822	298.29	1822		81.76
29837	303.43	1837		82.91
29921	308.57	1921		89.38
29932	313.71	1932		90.22
29944	318.86	1944		91.15
29947	324	1947		91.38
29932	329.14	1932		90.22
29931	334.29	1931		90.15
29922	339.43	1922		89.45
29922	344.57	1922		89.45
29928	349.71	1928		89.92
29928	354.86	1928		89.92

7in

### Ranger Calibration, 7-Inch Side Targets



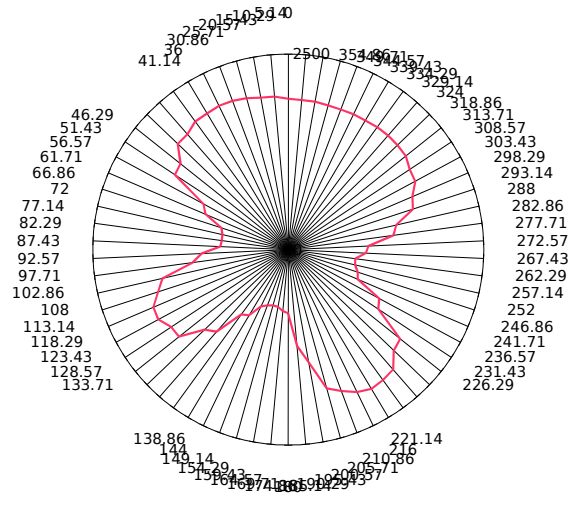
### Normalized Ranger Calibration, 7-Inch Side Targets



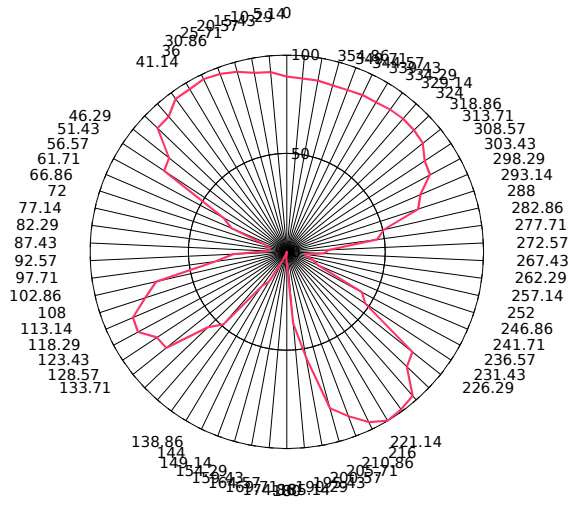
29929	0	1929	30075	89.05
29965	5.14	1965	28742	91.75
29975	10.29	1975		92.5
30007	15.43	2007		94.9
30030	20.57	2030		96.62
30041	25.71	2041		97.45
30026	30.86	2026		96.32
30024	36	2024		96.17
29959	41.14	1959		91.3
29954	46.29	1954		90.92
29762	51.43	1762		76.52
29738	56.57	1738		74.72
29231	61.71	1231		36.68
29150	66.86	1150		30.61
28899	72	899		11.78
28864	77.14	864		9.15
28858	82.29	858		8.7
28869	87.43	869		9.53
29107	92.57	1107		27.38
29232	97.71	1232		36.76
29649	102.86	1649		68.04
29750	108	1750		75.62
29876	113.14	1876		85.07
29888	118.29	1888		85.97
29796	123.43	1796		79.07
29787	128.57	1787		78.39
29482	133.71	1482		55.51
29394	138.86	1394		48.91
29027	144	1027		21.38
28979	149.14	979		17.78
28808	154.29	808		4.95
28763	159.43	763		1.58
28742	164.57	742		0
28744	169.71	744		0.15
28789	174.86	789		3.53
28815	180	815		5.48
29232	185.14	1232		36.76
29467	190.29	1467		54.39
29842	195.43	1842		82.52
29932	200.57	1932		89.27
30023	205.71	2023		96.1
30075	210.86	2075		100
30061	216	2061		98.95
30038	221.14	2038		97.22
29868	226.29	1868		84.47
29831	231.43	1831		81.7
29380	236.57	1380		47.86
29321	241.71	1321		43.44
28966	246.86	966		16.8
28935	252	935		14.48
28877	257.14	877		10.13
28867	262.29	867		9.38
28994	267.43	994		18.9
29027	272.57	1027		21.38
29359	277.71	1359		46.29
29417	282.86	1417		50.64
29678	288	1678		70.22
29726	293.14	1726		73.82
29844	298.29	1844		82.67
29862	303.43	1862		84.02
29922	308.57	1922		88.52
29934	313.71	1934		89.42
29940	318.86	1940		89.87
29934	324	1934		89.42
29922	329.14	1922		88.52
29922	334.29	1922		88.52
29913	339.43	1913		87.85
29912	344.57	1912		87.77
29921	349.71	1921		88.45
29921	354.86	1921		88.45

8in

### Ranger Calibration, 8-Inch Side Targets



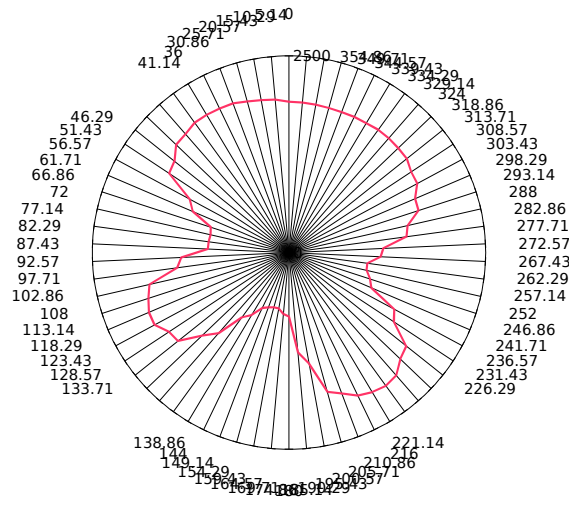
### Normalized Ranger Calibration, 8-Inch Side Targets



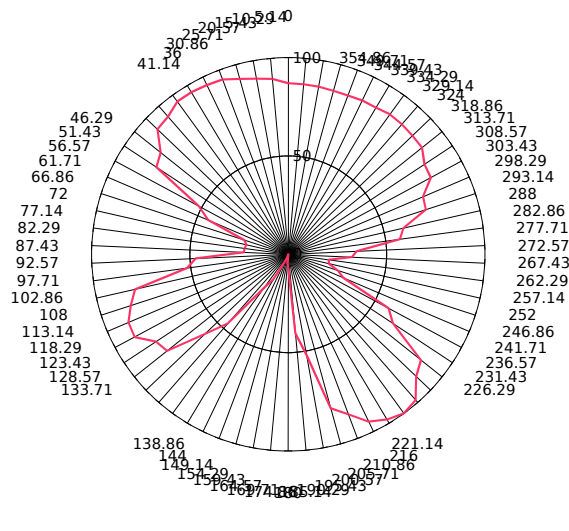
29917	0	1917	30095	87.04
29951	5.14	1951	28722	89.51
29969	10.29	1969		90.82
29992	15.43	1992		92.5
30026	20.57	2026		94.97
30033	25.71	2033		95.48
30040	30.86	2040		95.99
30040	36	2040		95.99
29998	41.14	1998		92.94
29985	46.29	1985		91.99
29862	51.43	1862		83.03
29825	56.57	1825		80.34
29431	61.71	1431		51.64
29329	66.86	1329		44.21
29045	72	1045		23.53
29022	77.14	1022		21.85
29029	82.29	1029		22.36
29032	87.43	1032		22.58
29369	92.57	1369		47.12
29434	97.71	1434		51.86
29819	102.86	1819		79.9
29878	108	1878		84.2
29935	113.14	1935		88.35
29940	118.29	1940		88.71
29828	123.43	1828		80.55
29803	128.57	1803		78.73
29528	133.71	1528		58.7
29362	138.86	1362		46.61
29018	144	1018		21.56
28925	149.14	925		14.79
28782	154.29	782		4.37
28743	159.43	743		1.53
28723	164.57	723		0.07
28722	169.71	722		0
28784	174.86	784		4.52
28813	180	813		6.63
29275	185.14	1275		40.28
29436	190.29	1436		52
29837	195.43	1837		81.21
29915	200.57	1915		86.89
30019	205.71	2019		94.46
30066	210.86	2066		97.89
30095	216	2095		100
30074	221.14	2074		98.47
29958	226.29	1958		90.02
29907	231.43	1907		86.31
29598	236.57	1598		63.8
29519	241.71	1519		58.05
29139	246.86	1139		30.37
29085	252	1085		26.44
29013	257.14	1013		21.19
29007	262.29	1007		20.76
29166	267.43	1166		32.34
29200	272.57	1200		34.81
29508	277.71	1508		57.25
29547	282.86	1547		60.09
29732	288	1732		73.56
29745	293.14	1745		74.51
29852	298.29	1852		82.3
29862	303.43	1862		83.03
29916	308.57	1916		86.96
29921	313.71	1921		87.33
29928	318.86	1928		87.84
29930	324	1930		87.98
29915	329.14	1915		86.89
29914	334.29	1914		86.82
29907	339.43	1907		86.31
29906	344.57	1906		86.23
29912	349.71	1912		86.67
29914	354.86	1914		86.82

9in

### Ranger Calibration, 9-Inch Side Targets



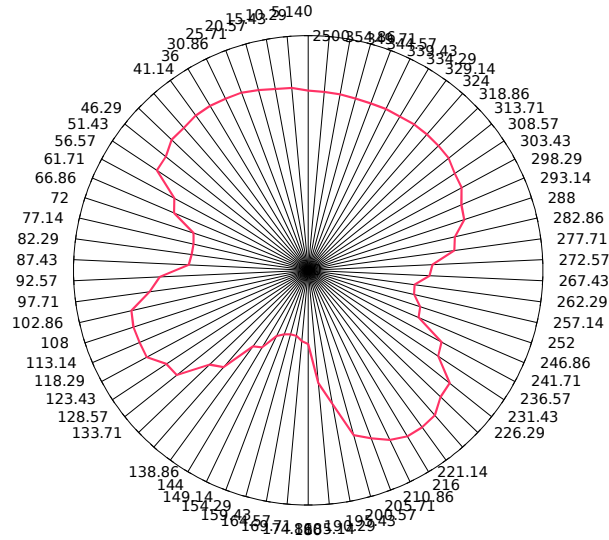
### Normalized Ranger Calibration, 9-Inch Side Targets



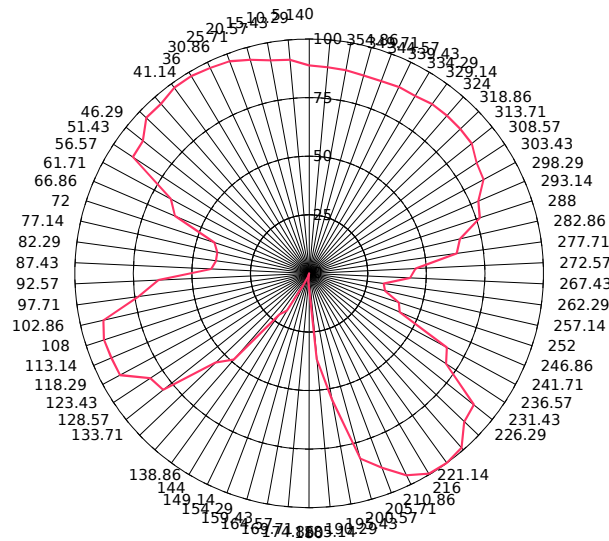
29913	0	1913	30066	88.74
29951	5.14	1951	28707	91.54
29963	10.29	1963		92.42
29992	15.43	1992		94.55
30021	20.57	2021		96.69
30029	25.71	2029		97.28
30040	30.86	2040		98.09
30038	36	2038		97.94
30013	41.14	2013		96.1
30013	46.29	2013		96.1
29940	51.43	1940		90.73
29932	56.57	1932		90.14
29618	61.71	1618		67.03
29553	66.86	1553		62.25
29284	72	1284		42.46
29254	77.14	1254		40.25
29252	82.29	1252		40.1
29275	87.43	1275		41.8
29582	92.57	1582		64.39
29705	97.71	1705		73.44
29931	102.86	1931		90.07
29958	108	1958		92.05
29954	113.14	1954		91.76
29953	118.29	1953		91.69
29810	123.43	1810		81.16
29790	128.57	1790		79.69
29454	133.71	1454		54.97
29371	138.86	1371		48.86
29003	144	1003		21.78
28958	149.14	958		18.47
28778	154.29	778		5.22
28730	159.43	730		1.69
28707	164.57	707		0
28709	169.71	709		0.15
28757	174.86	757		3.68
28786	180	786		5.81
29208	185.14	1208		36.87
29450	190.29	1450		54.67
29822	195.43	1822		82.05
29912	200.57	1912		88.67
30007	205.71	2007		95.66
30061	210.86	2061		99.63
30066	216	2066		100
30051	221.14	2051		98.9
29952	226.29	1952		91.61
29929	231.43	1929		89.92
29659	236.57	1659		70.05
29614	241.71	1614		66.74
29278	246.86	1278		42.02
29254	252	1254		40.25
29158	257.14	1158		33.19
29144	262.29	1144		32.16
29293	267.43	1293		43.12
29325	272.57	1325		45.47
29571	277.71	1571		63.58
29604	282.86	1604		66
29748	288	1748		76.6
29775	293.14	1775		78.59
29856	298.29	1856		84.55
29871	303.43	1871		85.65
29914	308.57	1914		88.82
29920	313.71	1920		89.26
29922	318.86	1922		89.4
29921	324	1921		89.33
29906	329.14	1906		88.23
29907	334.29	1907		88.3
29898	339.43	1898		87.64
29897	344.57	1897		87.56
29905	349.71	1905		88.15
29907	354.86	1907		88.3

10in

### Ranger Calibration, 10-Inch Side Targets

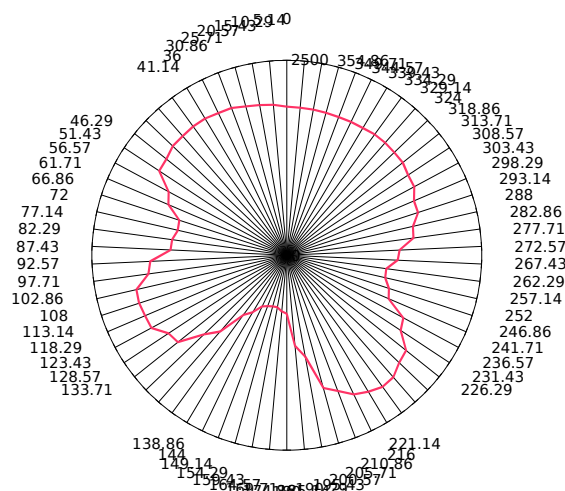


### Normalized Ranger Calibration, 10-Inch Side Targets

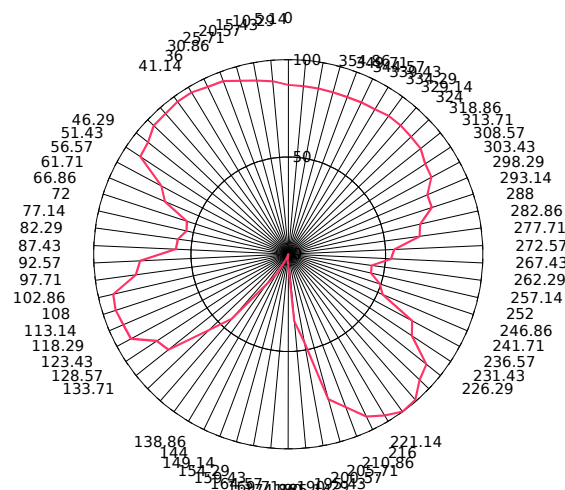


29904	0	1904	30087	87
29936	5.14	1936	28679	89.28
29956	10.29	1956		90.7
29981	15.43	1981		92.47
30017	20.57	2017		95.03
30023	25.71	2023		95.45
30043	30.86	2043		96.88
30043	36	2043		96.88
30029	41.14	2029		95.88
30025	46.29	2025		95.6
29977	51.43	1977		92.19
29962	56.57	1962		91.12
29722	61.71	1722		74.08
29650	66.86	1650		68.96
29450	72	1450		54.76
29434	77.14	1434		53.62
29485	82.29	1485		57.24
29493	87.43	1493		57.81
29752	92.57	1752		76.21
29792	97.71	1792		79.05
29978	102.86	1978		92.26
29992	108	1992		93.25
29977	113.14	1977		92.19
29971	118.29	1971		91.76
29818	123.43	1818		80.89
29788	128.57	1788		78.76
29472	133.71	1472		56.32
29301	138.86	1301		44.18
28947	144	947		19.03
28852	149.14	852		12.29
28729	154.29	729		3.55
28696	159.43	696		1.21
28680	164.57	680		0.07
28679	169.71	679		0
28724	174.86	724		3.2
28751	180	751		5.11
29168	185.14	1168		34.73
29322	190.29	1322		45.67
29768	195.43	1768		77.34
29861	200.57	1861		83.95
29983	205.71	1983		92.61
30039	210.86	2039		96.59
30087	216	2087		100
30078	221.14	2078		99.36
29995	226.29	1995		93.47
29958	231.43	1958		90.84
29751	236.57	1751		76.14
29697	241.71	1697		72.3
29421	246.86	1421		52.7
29376	252	1376		49.5
29294	257.14	1294		43.68
29288	262.29	1288		43.25
29424	267.43	1424		52.91
29447	272.57	1447		54.55
29638	277.71	1638		68.11
29659	282.86	1659		69.6
29771	288	1771		77.56
29773	293.14	1773		77.7
29856	298.29	1856		83.59
29866	303.43	1866		84.3
29904	308.57	1904		87
29908	313.71	1908		87.29
29916	318.86	1916		87.86
29916	324	1916		87.86
29901	329.14	1901		86.79
29899	334.29	1899		86.65
29894	339.43	1894		86.29
29894	344.57	1894		86.29
29898	349.71	1898		86.58
29900	354.86	1900		86.72

### Ranger Calibration, 11-Inch Side Targets



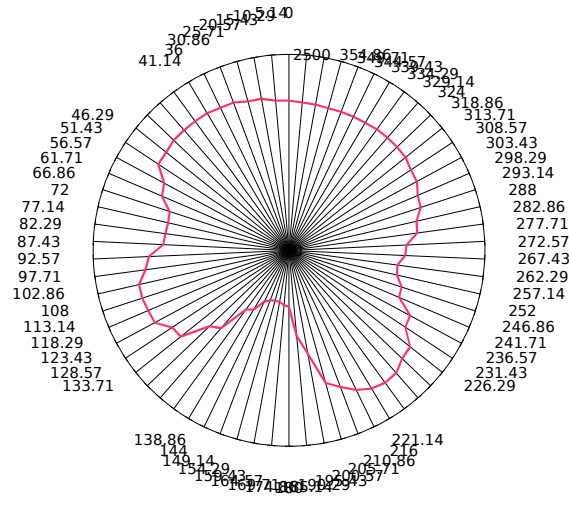
### Normalized Ranger Calibration, 11-Inch Side Targets



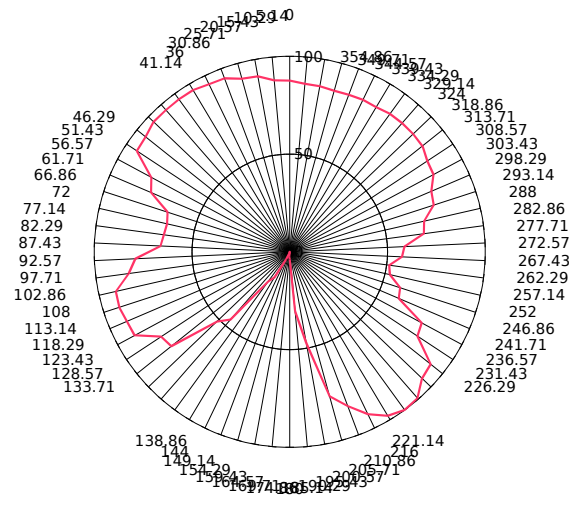
29911	0	1911	30088	87.55
29919	5.14	1919	28666	88.12
29964	10.29	1964		91.28
29972	15.43	1972		91.84
30014	20.57	2014		94.8
30019	25.71	2019		95.15
30037	30.86	2037		96.41
30038	36	2038		96.48
30035	41.14	2035		96.27
30035	46.29	2035		96.27
30006	51.43	2006		94.23
29998	56.57	1998		93.67
29810	61.71	1810		80.45
29763	66.86	1763		77.14
29601	72	1601		65.75
29581	77.14	1581		64.35
29590	82.29	1590		64.98
29607	87.43	1607		66.17
29790	92.57	1790		79.04
29848	97.71	1848		83.12
29963	102.86	1963		91.21
29970	108	1970		91.7
29954	113.14	1954		90.58
29948	118.29	1948		90.15
29787	123.43	1787		78.83
29767	128.57	1767		77.43
29402	133.71	1402		51.76
29320	138.86	1320		45.99
28933	144	933		18.78
28884	149.14	884		15.33
28726	154.29	726		4.22
28683	159.43	683		1.2
28666	164.57	666		0
28669	169.71	669		0.21
28702	174.86	702		2.53
28722	180	722		3.94
29099	185.14	1099		30.45
29340	190.29	1340		47.4
29755	195.43	1755		76.58
29864	200.57	1864		84.25
29977	205.71	1977		92.19
30055	210.86	2055		97.68
30088	216	2088		100
30079	221.14	2079		99.37
29998	226.29	1998		93.67
29977	231.43	1977		92.19
29779	236.57	1779		78.27
29756	241.71	1756		76.65
29529	246.86	1529		60.69
29511	252	1511		59.42
29413	257.14	1413		52.53
29396	262.29	1396		51.34
29483	267.43	1483		57.45
29501	272.57	1501		58.72
29650	277.71	1650		69.2
29669	282.86	1669		70.53
29767	288	1767		77.43
29787	293.14	1787		78.83
29853	298.29	1853		83.47
29865	303.43	1865		84.32
29901	308.57	1901		86.85
29907	313.71	1907		87.27
29909	318.86	1909		87.41
29907	324	1907		87.27
29893	329.14	1893		86.29
29894	334.29	1894		86.36
29887	339.43	1887		85.86
29881	344.57	1881		85.44
29891	349.71	1891		86.15
29893	354.86	1893		86.29

12in

### Ranger Calibration, 12-Inch Side Targets

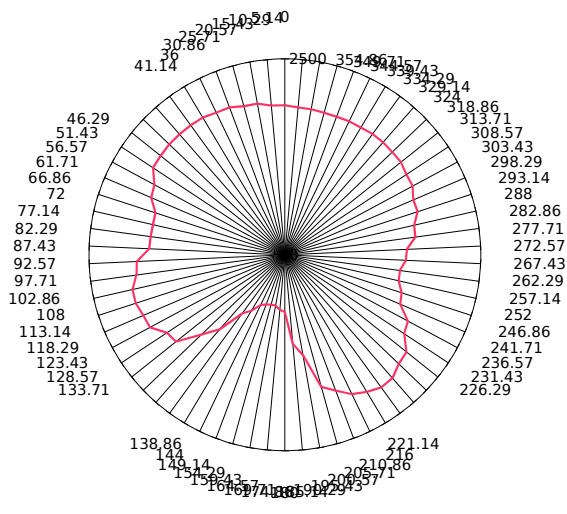


### Normalized Ranger Calibration, 12-Inch Side Targets

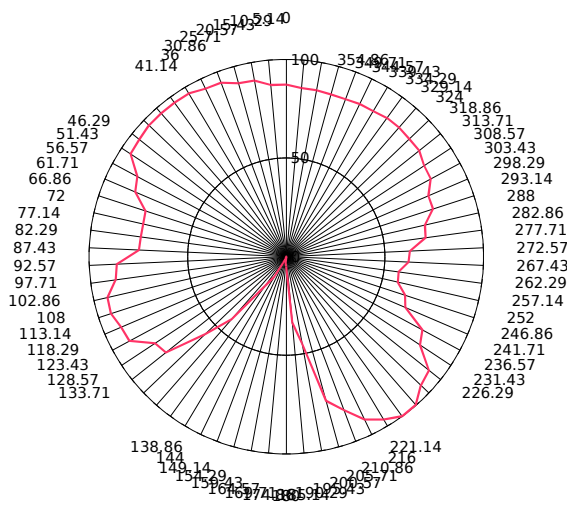


29910	0	1910	30093	87.24
29912	5.14	1912	28659	87.38
29960	10.29	1960		90.73
29967	15.43	1967		91.21
30010	20.57	2010		94.21
30014	25.71	2014		94.49
30041	30.86	2041		96.37
30043	36	2043		96.51
30042	41.14	2042		96.44
30041	46.29	2041		96.37
30026	51.43	2026		95.33
30016	56.57	2016		94.63
29889	61.71	1889		85.77
29853	66.86	1853		83.26
29735	72	1735		75.03
29726	77.14	1726		74.41
29727	82.29	1727		74.48
29732	87.43	1732		74.83
29892	92.57	1892		85.98
29911	97.71	1911		87.31
29993	102.86	1993		93.03
30000	108	2000		93.51
29964	113.14	1964		91
29953	118.29	1953		90.24
29803	123.43	1803		79.78
29777	128.57	1777		77.96
29474	133.71	1474		56.83
29263	138.86	1263		42.12
28924	144	924		18.48
28831	149.14	831		11.99
28711	154.29	711		3.63
28677	159.43	677		1.26
28662	164.57	662		0.21
28659	169.71	659		0
28705	174.86	705		3.21
28730	180	730		4.95
29141	185.14	1141		33.61
29301	190.29	1301		44.77
29747	195.43	1747		75.87
29851	200.57	1851		83.12
29974	205.71	1974		91.7
30038	210.86	2038		96.16
30093	216	2093		100
30090	221.14	2090		99.79
30013	226.29	2013		94.42
29986	231.43	1986		92.54
29825	236.57	1825		81.31
29784	241.71	1784		78.45
29601	246.86	1601		65.69
29568	252	1568		63.39
29491	257.14	1491		58.02
29483	262.29	1483		57.46
29548	267.43	1548		61.99
29559	272.57	1559		62.76
29681	277.71	1681		71.27
29693	282.86	1693		72.11
29781	288	1781		78.24
29783	293.14	1783		78.38
29852	298.29	1852		83.19
29860	303.43	1860		83.75
29896	308.57	1896		86.26
29897	313.71	1897		86.33
29905	318.86	1905		86.89
29905	324	1905		86.89
29892	329.14	1892		85.98
29891	334.29	1891		85.91
29882	339.43	1882		85.29
29882	344.57	1882		85.29
29889	349.71	1889		85.77
29889	354.86	1889		85.77

### Ranger Calibration, 13-Inch Side Targets



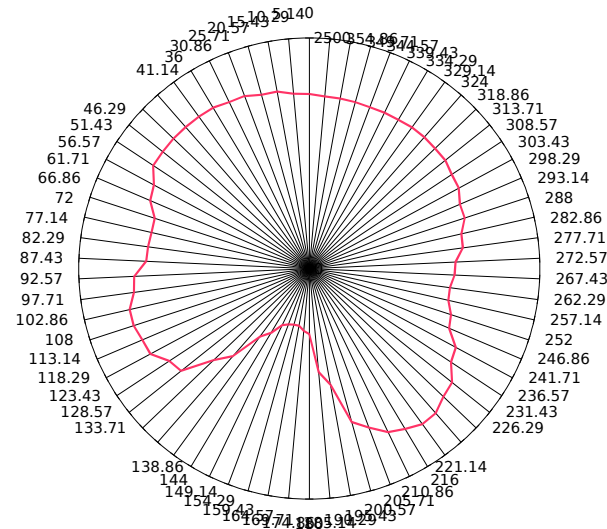
### Normalized Ranger Calibration, 13-Inch Side Targets



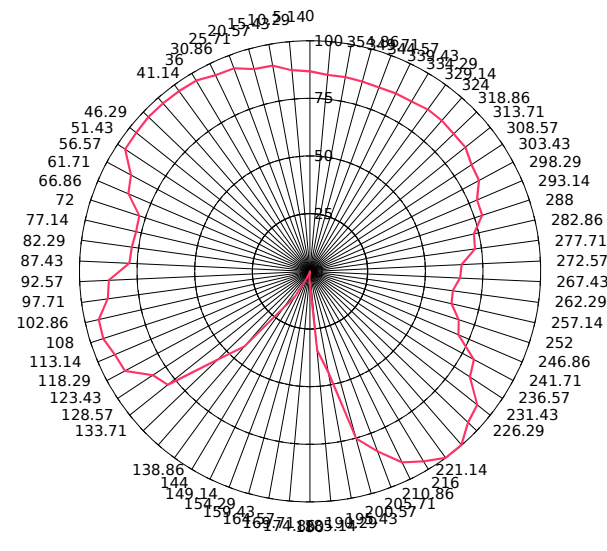
29892	0	1892	30085	86.74
29904	5.14	1904	28629	87.57
29950	10.29	1950		90.73
29954	15.43	1954		91
29998	20.57	1998		94.02
30003	25.71	2003		94.37
30032	30.86	2032		96.36
30036	36	2036		96.63
30038	41.14	2038		96.77
30040	46.29	2040		96.91
30032	51.43	2032		96.36
30028	56.57	2028		96.09
29912	61.71	1912		88.12
29876	66.86	1876		85.65
29762	72	1762		77.82
29755	77.14	1755		77.34
29764	82.29	1764		77.95
29771	87.43	1771		78.43
29901	92.57	1901		87.36
29918	97.71	1918		88.53
29997	102.86	1997		93.96
30002	108	2002		94.3
29969	113.14	1969		92.03
29956	118.29	1956		91.14
29819	123.43	1819		81.73
29778	128.57	1778		78.91
29436	133.71	1436		55.43
29260	138.86	1260		43.34
28912	144	912		19.44
28814	149.14	814		12.71
28683	154.29	683		3.71
28646	159.43	646		1.17
28632	164.57	632		0.21
28629	169.71	629		0
28678	174.86	678		3.37
28710	180	710		5.56
29127	185.14	1127		34.2
29277	190.29	1277		44.51
29725	195.43	1725		75.27
29843	200.57	1843		83.38
29968	205.71	1968		91.96
30026	210.86	2026		95.95
30085	216	2085		100
30083	221.14	2083		99.86
30010	226.29	2010		94.85
29980	231.43	1980		92.79
29840	236.57	1840		83.17
29804	241.71	1804		80.7
29648	246.86	1648		69.99
29616	252	1616		67.79
29546	257.14	1546		62.98
29539	262.29	1539		62.5
29577	267.43	1577		65.11
29587	272.57	1587		65.8
29680	277.71	1680		72.18
29691	282.86	1691		72.94
29772	288	1772		78.5
29776	293.14	1776		78.78
29841	298.29	1841		83.24
29851	303.43	1851		83.93
29885	308.57	1885		86.26
29885	313.71	1885		86.26
29893	318.86	1893		86.81
29893	324	1893		86.81
29879	329.14	1879		85.85
29876	334.29	1876		85.65
29869	339.43	1869		85.16
29872	344.57	1872		85.37
29875	349.71	1875		85.58
29875	354.86	1875		85.58

14in

### Ranger Calibration, 14-Inch Side Targets



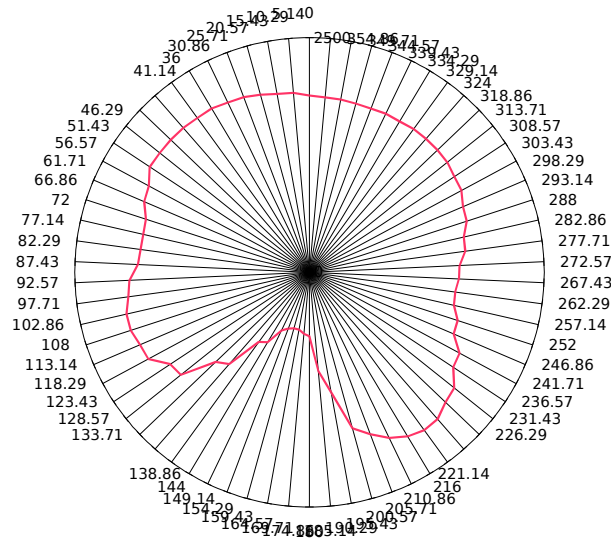
### Normalized Ranger Calibration, 14-Inch Side Targets



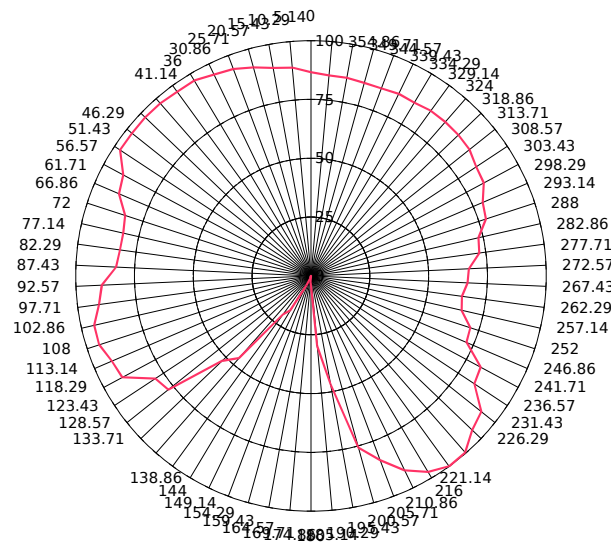
29884	0	1884	30080	86.58
29918	5.14	1918	28620	88.9
29931	10.29	1931		89.79
29962	15.43	1962		91.92
29992	20.57	1992		93.97
30006	25.71	2006		94.93
30032	30.86	2032		96.71
30032	36	2032		96.71
30042	41.14	2042		97.4
30043	46.29	2043		97.47
30040	51.43	2040		97.26
30039	56.57	2039		97.19
29942	61.71	1942		90.55
29915	66.86	1915		88.7
29833	72	1833		83.08
29815	77.14	1815		81.85
29816	82.29	1816		81.92
29830	87.43	1830		82.88
29919	92.57	1919		88.97
29947	97.71	1947		90.89
29999	102.86	1999		94.45
30002	108	2002		94.66
29964	113.14	1964		92.05
29949	118.29	1949		91.03
29777	123.43	1777		79.25
29752	128.57	1752		77.53
29383	133.71	1383		52.26
29298	138.86	1298		46.44
28916	144	916		20.27
28868	149.14	868		16.99
28687	154.29	687		4.59
28640	159.43	640		1.37
28620	164.57	620		0
28622	169.71	622		0.14
28658	174.86	658		2.6
28683	180	683		4.32
29056	185.14	1056		29.86
29304	190.29	1304		46.85
29725	195.43	1725		75.68
29842	200.57	1842		83.7
29959	205.71	1959		91.71
30037	210.86	2037		97.05
30080	216	2080		100
30075	221.14	2075		99.66
30004	226.29	2004		94.79
29973	231.43	1973		92.67
29835	236.57	1835		83.22
29816	241.71	1816		81.92
29670	246.86	1670		71.92
29660	252	1660		71.23
29579	257.14	1579		65.68
29566	262.29	1566		64.79
29593	267.43	1593		66.64
29601	272.57	1601		67.19
29675	277.71	1675		72.26
29686	282.86	1686		73.01
29762	288	1762		78.22
29779	293.14	1779		79.38
29838	298.29	1838		83.42
29849	303.43	1849		84.18
29878	308.57	1878		86.16
29886	313.71	1886		86.71
29888	318.86	1888		86.85
29886	324	1886		86.71
29872	329.14	1872		85.75
29874	334.29	1874		85.89
29863	339.43	1863		85.14
29863	344.57	1863		85.14
29869	349.71	1869		85.55
29869	354.86	1869		85.55

15in

### Ranger Calibration, 15-Inch Side Targets



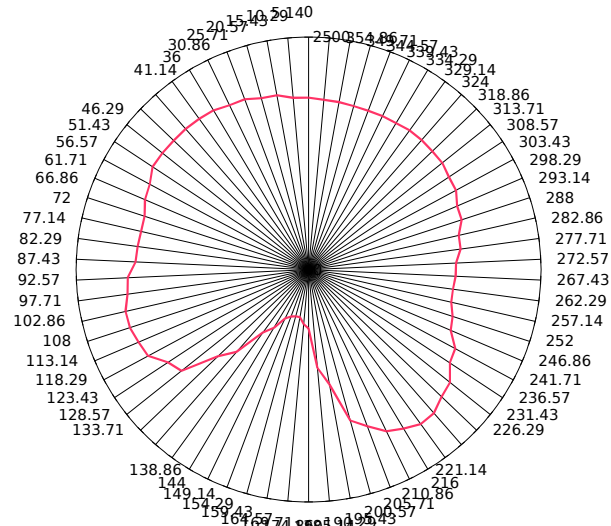
### Normalized Ranger Calibration, 15-Inch Side Targets



29849	0	1849	30054	86.63
29855	5.14	1855	28521	87.02
29904	10.29	1904		90.22
29913	15.43	1913		90.8
29956	20.57	1956		93.61
29961	25.71	1961		93.93
29994	30.86	1994		96.09
30003	36	2003		96.67
30008	41.14	2008		97
30008	46.29	2008		97
30010	51.43	2010		97.13
30009	56.57	2009		97.06
29939	61.71	1939		92.5
29913	66.86	1913		90.8
29855	72	1855		87.02
29848	77.14	1848		86.56
29855	82.29	1855		87.02
29862	87.43	1862		87.48
29947	92.57	1947		93.02
29964	97.71	1964		94.13
30019	102.86	2019		97.72
30021	108	2021		97.85
29988	113.14	1988		95.69
29960	118.29	1960		93.87
29812	123.43	1812		84.21
29748	128.57	1748		80.04
29352	133.71	1352		54.21
29174	138.86	1174		42.6
28839	144	839		20.74
28732	149.14	732		13.76
28583	154.29	583		4.04
28539	159.43	539		1.17
28521	164.57	521		0
28521	169.71	521		0
28588	174.86	588		4.37
28636	180	636		7.5
29061	185.14	1061		35.23
29255	190.29	1255		47.88
29684	195.43	1684		75.86
29799	200.57	1799		83.37
29931	205.71	1931		91.98
29993	210.86	1993		96.02
30054	216	2054		100
30049	221.14	2049		99.67
29980	226.29	1980		95.17
29946	231.43	1946		92.95
29821	236.57	1821		84.8
29792	241.71	1792		82.91
29664	246.86	1664		74.56
29630	252	1630		72.34
29575	257.14	1575		68.75
29568	262.29	1568		68.3
29584	267.43	1584		69.34
29588	272.57	1588		69.6
29649	277.71	1649		73.58
29658	282.86	1658		74.17
29732	288	1732		79
29738	293.14	1738		79.39
29801	298.29	1801		83.5
29809	303.43	1809		84.02
29840	308.57	1840		86.04
29842	313.71	1842		86.13
29849	318.86	1849		86.63
29850	324	1850		86.69
29835	329.14	1835		85.71
29832	334.29	1832		85.52
29825	339.43	1825		85.06
29824	344.57	1824		85
29831	349.71	1831		85.45
29833	354.86	1833		85.58

16in

### Ranger Calibration, 16-Inch Side Targets



### Normalized Ranger Calibration, 16-Inch Side Targets

