

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P776621

Luminaire Tested: HCDJBS4050CSD-HCD4TSQC-5000lm-3000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776621
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD4TSQC-5000lm-3000K
Description: 4 INCH SQUARE MEDIUM SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5172.3 lumens
Efficiency: N/A
Efficacy: 107.8 lumens/watt
Spacing Criteria (0/90/45): 0.94 / 0.93 / 0.98
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

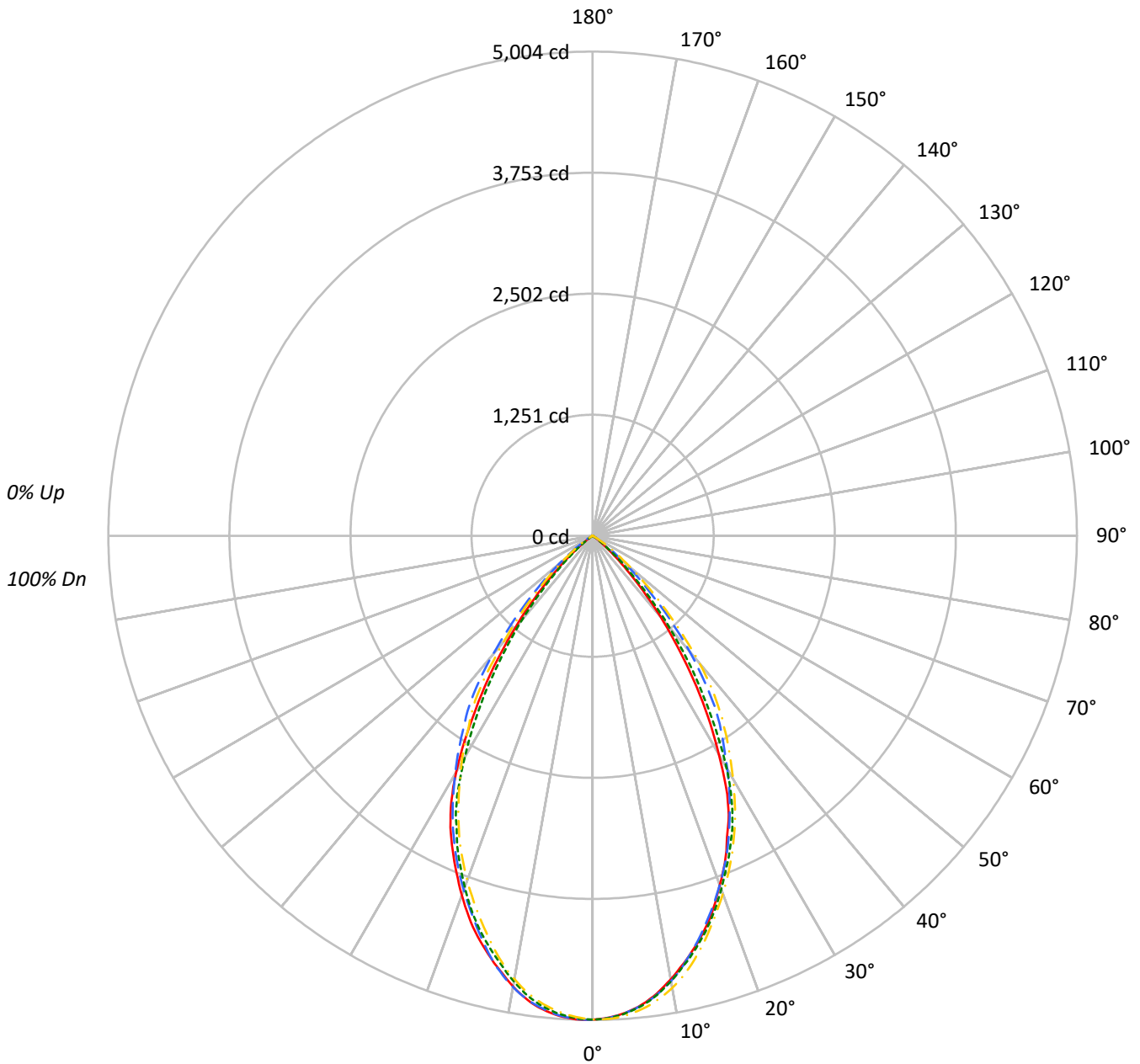
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P776621

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQC-5000lm-3000K

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100			100																
1	113	110	108	105	111	108	106	104	104	102	101	100	99	98	97	96	95	93			93																
2	107	102	98	94	105	100	96	93	97	94	91	94	91	89	91	89	87	86			86																
3	101	95	89	85	99	93	88	84	90	86	83	88	85	82	86	83	80	79			79																
4	96	88	82	77	94	87	81	77	84	80	76	82	78	75	80	77	74	73			73																
5	90	82	75	71	89	81	75	70	79	74	70	77	73	69	75	72	69	67			67																
6	85	76	70	65	84	75	69	65	74	68	64	72	68	64	71	67	64	62			62																
7	81	71	65	60	79	70	64	60	69	64	60	68	63	59	67	62	59	57			57																
8	77	66	60	56	75	66	60	56	65	59	55	64	59	55	63	58	55	53			53																
9	73	62	56	52	71	62	56	52	61	55	52	60	55	51	59	55	51	50			50																
10	69	59	53	48	68	58	52	48	57	52	48	57	52	48	56	51	48	47			47																

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	494251	494251	494251	494251
5°	487100	487923	491197	488757
10°	467078	469035	474866	469547
15°	440117	442450	448774	441304
20°	404165	408804	415704	406416
25°	361230	370914	376738	362647
30°	298104	315818	321764	301506
35°	219343	237226	241775	224508
40°	140358	158771	161880	145932
45°	70996	86848	89504	76252
50°	24942	33230	35367	28294
55°	4653	6014	6807	6721
60°	1740	1661	1463	2016
65°	1403	1310	1193	1520
70°	1069	1069	954	1214
75°	878	878	726	1069
80°	512	512	512	797
85°	567	567	0	567

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 144257 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	462.9	8.9
10°-20°	1210.8	23.4
20°-30°	1537.6	29.7
30°-40°	1271.5	24.6
40°-50°	581.9	11.2
50°-60°	97.8	1.9
60°-70°	6.9	0.1
70°-80°	2.6	0.1
80°-90°	0.5	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	3211.2	62.1
0°-40°	4482.7	86.7
0°-60°	5162.3	99.8
0°-90°	5172.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5172.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	5000	5000	5000	5000	5000	
5°	4909	4918	4951	4926	4909	460
15°	4301	4324	4386	4313	4301	1202
25°	3312	3401	3454	3325	3312	1504
35°	1818	1966	2004	1861	1818	1129
45°	508	621	640	546	508	412
55°	27	35	40	39	27	44
65°	6	6	5	6	6	6
75°	2	2	2	3	2	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	5000.4	5000.4	5000.4	5000.4	5000.4	5000.4	5000.4	5000.4	5000.4	5000.4	5000.4
0.5°	4999.4	4999.9	4999.9	4997.6	4999.4	4999.4	4999.4	5001.3	5004.1	5004.5	5003.6
1°	4994.3	4995.7	4996.2	4994.8	4997.1	4998.0	4999.4	5001.3	5004.1	5004.1	5002.7
1.5°	4989.2	4990.1	4991.1	4990.6	4992.5	4994.3	4997.6	4999.4	5002.7	5003.6	5000.4
2°	4981.3	4982.7	4984.1	4983.6	4986.4	4990.6	4994.3	4996.2	4999.9	5001.3	4997.6
2.5°	4972.5	4973.9	4975.7	4975.7	4978.5	4984.1	4990.6	4991.1	4994.8	4996.2	4993.9
3°	4963.7	4964.6	4965.5	4966.4	4969.7	4976.2	4984.1	4985.0	4989.2	4989.7	4986.4
3.5°	4952.5	4953.0	4954.4	4955.8	4959.0	4967.8	4977.1	4975.7	4981.8	4982.2	4978.1
4°	4940.4	4940.4	4941.3	4943.7	4946.9	4957.1	4967.4	4966.9	4972.9	4972.9	4968.3
4.5°	4925.5	4926.5	4928.3	4930.7	4933.9	4946.0	4956.7	4955.8	4963.2	4962.7	4957.1
5°	4909.3	4909.7	4913.0	4915.8	4917.6	4932.5	4945.1	4943.7	4950.6	4951.6	4944.1
5.5°	4891.2	4892.1	4896.3	4899.5	4901.9	4917.2	4932.1	4930.2	4937.2	4938.1	4930.7
6°	4871.2	4872.1	4878.2	4880.9	4883.3	4901.4	4916.3	4914.4	4922.3	4922.8	4914.9
6.5°	4850.3	4850.7	4857.7	4861.9	4863.3	4882.8	4900.5	4897.7	4906.5	4906.5	4899.5
7°	4826.6	4827.5	4835.9	4841.0	4841.9	4862.4	4883.3	4879.1	4887.9	4888.4	4880.9
7.5°	4802.4	4802.4	4813.1	4818.2	4817.3	4840.5	4863.7	4859.6	4866.5	4868.9	4861.4
8°	4775.9	4776.4	4786.6	4794.0	4791.7	4816.3	4842.8	4836.8	4843.3	4845.6	4839.6
8.5°	4747.6	4749.4	4761.1	4767.6	4763.4	4790.8	4820.5	4813.1	4818.2	4822.9	4815.9
9°	4715.5	4719.2	4732.2	4738.7	4734.6	4763.8	4796.4	4786.6	4790.3	4796.4	4792.2
9.5°	4683.9	4688.1	4703.0	4709.5	4704.4	4735.0	4771.3	4758.3	4762.0	4768.5	4765.7
10°	4653.7	4655.6	4671.4	4678.8	4673.2	4706.2	4744.3	4729.0	4731.3	4738.7	4736.0
10.5°	4620.3	4622.6	4639.3	4645.8	4640.7	4676.5	4715.1	4696.9	4699.3	4707.6	4705.8
11°	4587.3	4589.6	4605.4	4612.8	4608.2	4643.0	4683.0	4664.4	4664.9	4676.0	4674.6
11.5°	4552.9	4555.7	4568.7	4577.5	4573.3	4610.5	4652.3	4629.1	4629.1	4641.6	4641.2
12°	4519.9	4520.8	4531.5	4540.8	4538.9	4577.0	4618.4	4593.8	4594.7	4604.9	4604.0
12.5°	4485.5	4485.5	4490.6	4505.0	4505.0	4542.7	4581.7	4556.6	4562.2	4569.6	4569.1
13°	4449.3	4450.2	4452.0	4467.4	4471.1	4508.3	4544.5	4519.0	4528.7	4534.3	4528.7
13.5°	4413.0	4413.0	4412.1	4428.8	4434.9	4473.4	4508.3	4482.2	4493.4	4496.2	4487.4
14°	4376.3	4375.4	4370.3	4391.2	4398.1	4437.6	4465.5	4445.1	4457.6	4459.0	4444.1
14.5°	4338.7	4337.3	4328.4	4352.1	4361.4	4401.4	4424.6	4407.4	4421.8	4422.3	4401.4
15°	4301.0	4299.2	4287.6	4314.0	4323.8	4364.2	4383.3	4369.8	4385.6	4384.7	4354.5
15.5°	4262.9	4259.7	4242.9	4274.1	4285.7	4326.1	4339.6	4329.8	4347.0	4345.6	4308.5
16°	4221.6	4217.4	4200.2	4232.3	4246.2	4287.1	4294.1	4290.8	4309.9	4307.5	4261.5
16.5°	4180.7	4178.8	4156.0	4190.4	4205.8	4249.4	4249.9	4250.4	4269.9	4267.1	4216.9
17°	4137.9	4137.5	4112.4	4148.6	4163.9	4207.2	4204.4	4209.5	4228.5	4226.2	4169.5
17.5°	4092.9	4094.2	4067.8	4105.9	4119.8	4166.3	4159.3	4166.7	4184.9	4185.3	4124.0
18°	4044.1	4046.4	4023.2	4062.6	4074.3	4123.5	4115.2	4123.1	4139.8	4143.0	4077.1
18.5°	3993.4	4002.2	3978.5	4016.6	4028.7	4080.3	4071.0	4077.5	4093.8	4097.5	4032.0
19°	3941.8	3952.1	3933.0	3969.7	3982.3	4032.9	4025.9	4031.5	4048.2	4051.5	3986.9
19.5°	3893.0	3900.5	3886.5	3920.9	3934.9	3988.3	3981.3	3985.5	4000.8	4003.6	3941.4
20°	3842.4	3849.4	3841.5	3873.5	3886.5	3939.5	3935.8	3935.8	3952.1	3955.8	3894.9
20.5°	3793.1	3798.7	3795.9	3823.8	3837.7	3891.2	3889.8	3886.5	3902.8	3906.5	3848.0
21°	3744.8	3747.6	3749.0	3774.1	3788.0	3841.5	3843.3	3836.8	3853.5	3856.8	3799.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	3593.8	3596.1	3604.5	3621.2	3647.2	3689.5	3702.5	3682.5	3706.2	3703.5	3657.0
23°	3535.2	3545.9	3553.8	3569.6	3599.4	3638.4	3654.7	3630.0	3658.4	3651.9	3607.3
23.5°	3473.4	3492.5	3501.3	3514.3	3549.6	3590.1	3606.3	3577.5	3608.7	3599.8	3559.9
24°	3414.4	3434.9	3448.8	3465.1	3499.9	3536.2	3556.6	3525.0	3556.6	3547.3	3507.4
24.5°	3363.3	3374.5	3394.4	3415.8	3450.7	3482.7	3504.6	3473.0	3505.5	3494.8	3454.4
25°	3312.2	3311.3	3339.6	3365.6	3401.0	3429.3	3452.5	3420.5	3454.4	3441.8	3401.9
25.5°	3261.5	3253.6	3284.3	3308.5	3351.2	3375.4	3400.5	3368.0	3403.7	3389.3	3349.4
26°	3208.1	3201.1	3229.5	3251.3	3295.0	3322.0	3348.4	3315.9	3352.6	3336.8	3299.2
26.5°	3141.7	3150.5	3174.7	3193.2	3236.0	3273.2	3297.8	3255.5	3292.7	3276.4	3243.0
27°	3077.5	3098.4	3120.8	3142.1	3178.8	3223.4	3241.6	3201.6	3235.1	3225.3	3185.8
27.5°	3011.6	3044.5	3065.9	3093.3	3115.2	3170.0	3185.8	3151.4	3172.8	3170.0	3128.7
28°	2932.1	2976.2	3012.5	3044.1	3051.5	3107.7	3127.3	3097.1	3108.2	3108.2	3069.2
28.5°	2850.3	2911.2	2956.3	2984.6	2983.2	3048.3	3071.0	3037.6	3038.5	3050.6	3011.6
29°	2770.4	2846.1	2900.5	2926.5	2914.4	2986.5	3014.3	2981.4	2968.3	2987.4	2953.5
29.5°	2691.4	2770.9	2841.5	2868.9	2842.4	2921.4	2958.1	2919.5	2893.5	2921.4	2895.9
30°	2611.9	2691.9	2782.9	2808.0	2767.1	2854.0	2903.8	2855.4	2819.2	2854.5	2837.8
30.5°	2532.5	2612.4	2722.1	2743.4	2687.2	2783.4	2847.5	2790.4	2740.2	2784.8	2781.5
31°	2453.5	2534.3	2664.4	2677.0	2607.8	2713.7	2789.0	2723.0	2657.0	2714.6	2726.2
31.5°	2375.9	2456.7	2607.8	2609.6	2525.5	2640.7	2730.0	2654.2	2574.3	2640.3	2670.9
32°	2299.2	2381.5	2557.1	2540.4	2442.8	2566.4	2670.5	2581.7	2492.0	2565.9	2612.9
32.5°	2221.1	2304.8	2505.1	2467.9	2358.7	2489.7	2617.5	2507.4	2406.5	2488.8	2551.5
33°	2140.8	2229.5	2453.9	2394.9	2278.3	2409.3	2565.5	2432.1	2324.8	2411.2	2494.4
33.5°	2061.3	2156.1	2401.0	2319.2	2196.1	2329.9	2513.4	2355.0	2238.8	2329.9	2440.0
34°	1981.8	2081.3	2345.7	2242.5	2118.0	2250.4	2457.7	2275.5	2159.8	2247.2	2384.2
34.5°	1900.1	2006.0	2287.6	2164.9	2039.9	2171.4	2397.7	2196.1	2079.9	2167.2	2328.5
35°	1817.8	1930.3	2236.5	2087.8	1966.0	2093.8	2347.1	2119.8	2003.7	2092.0	2278.8
35.5°	1736.5	1853.1	2177.9	2010.2	1890.3	2018.1	2297.4	2042.2	1923.3	2012.0	2228.6
36°	1653.8	1776.9	2108.2	1934.4	1816.4	1943.7	2236.0	1966.5	1848.0	1936.3	2167.7
36.5°	1580.8	1699.3	2039.9	1861.5	1743.5	1870.8	2176.1	1892.2	1772.3	1859.6	2102.2
37°	1507.9	1627.3	1973.5	1789.0	1668.2	1798.8	2118.9	1818.3	1698.8	1790.4	2042.7
37.5°	1434.9	1555.3	1902.4	1717.4	1592.0	1728.1	2054.8	1747.2	1622.2	1717.0	1974.4
38°	1361.5	1483.2	1831.7	1642.6	1518.1	1658.4	1990.7	1677.0	1544.6	1647.7	1902.8
38.5°	1291.8	1410.8	1761.6	1576.6	1444.2	1588.3	1927.0	1608.2	1469.8	1578.0	1829.9
39°	1223.5	1339.2	1692.3	1510.2	1371.7	1522.3	1857.3	1539.5	1398.7	1509.3	1756.0
39.5°	1154.3	1272.3	1622.6	1444.2	1300.2	1451.6	1787.6	1469.3	1325.3	1439.6	1680.3
40°	1087.8	1207.2	1553.4	1378.2	1230.5	1382.4	1718.4	1401.5	1254.6	1372.2	1606.8
40.5°	1020.0	1141.2	1484.2	1312.2	1163.1	1313.6	1646.8	1334.1	1184.9	1304.3	1533.4
41°	954.4	1079.4	1414.9	1247.2	1097.6	1248.6	1574.3	1267.2	1120.3	1238.4	1461.9
41.5°	890.3	1016.2	1345.7	1183.5	1033.9	1182.6	1500.4	1201.2	1054.3	1171.4	1391.2
42°	828.0	955.8	1276.5	1119.4	969.8	1119.9	1427.5	1138.0	992.1	1109.2	1322.0
42.5°	768.1	896.4	1208.6	1060.4	909.8	1056.7	1357.3	1076.7	929.8	1048.8	1254.2
43°	711.9	837.3	1140.3	1001.8	848.5	1000.0	1287.6	1017.2	867.5	988.4	1189.6
43.5°	657.5	778.8	1072.5	945.1	789.0	939.6	1220.7	959.6	808.5	930.3	1125.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	507.9	621.7	886.1	784.4	621.3	774.6	1032.0	795.1	640.3	767.6	942.8
45.5°	461.4	572.5	829.9	733.7	570.2	721.2	972.6	743.5	588.7	716.5	885.7
46°	418.2	527.9	774.1	683.1	521.4	670.1	915.9	693.8	539.5	666.3	829.0
46.5°	376.9	484.7	722.6	634.7	475.4	620.8	860.1	643.6	492.6	617.6	773.7
47°	337.4	441.4	671.9	586.9	434.5	573.4	807.6	596.2	452.6	571.5	721.2
47.5°	301.1	401.0	623.6	542.3	393.6	526.5	754.2	551.6	412.6	526.9	670.5
48°	267.7	362.4	576.2	499.5	353.2	483.7	704.4	507.0	372.7	484.2	622.2
48.5°	237.0	326.2	531.6	458.2	312.7	446.1	654.7	465.6	333.2	447.5	576.2
49°	209.6	291.4	488.4	420.1	277.9	408.0	608.3	428.9	293.2	410.8	532.5
49.5°	184.5	260.2	447.5	384.3	246.3	370.3	561.3	392.2	260.7	374.5	489.8
50°	162.2	231.4	407.1	349.4	216.1	332.7	517.6	355.5	230.0	337.8	453.5
50.5°	145.4	204.5	371.3	314.1	188.7	295.1	475.8	318.8	202.1	301.1	417.7
51°	128.7	179.8	336.0	282.5	164.0	263.9	439.1	285.8	177.0	271.4	381.5
51.5°	112.0	158.5	303.9	252.3	141.3	235.1	401.9	255.6	153.3	242.6	345.3
52°	95.3	142.2	273.2	224.4	120.8	208.6	364.8	226.8	131.0	215.6	309.5
52.5°	82.2	125.9	245.8	198.0	101.8	182.6	327.6	200.7	111.1	190.1	279.3
53°	70.2	109.2	217.9	172.9	85.0	158.9	296.0	175.2	93.4	166.4	250.9
53.5°	58.5	93.4	195.2	153.3	69.7	137.5	266.7	152.4	77.1	144.0	224.9
54°	47.9	80.9	171.9	133.8	58.1	117.6	237.9	130.6	64.6	123.6	199.8
54.5°	36.7	69.2	154.3	114.8	46.5	99.4	211.0	111.5	52.0	105.9	177.0
55°	27.0	58.5	137.5	95.3	34.9	83.6	186.8	93.4	39.5	88.8	156.1
55.5°	19.5	47.9	120.4	76.2	23.7	67.8	163.6	77.1	27.0	73.4	137.1
56°	17.7	37.2	103.2	61.8	12.1	56.7	142.2	64.6	14.4	61.3	119.9
56.5°	15.8	27.9	86.0	48.8	11.2	45.1	122.2	52.5	10.2	49.3	103.6
57°	13.9	19.5	72.5	37.2	10.7	33.9	104.6	40.4	9.8	37.6	89.2
57.5°	12.1	17.2	61.8	25.6	10.2	22.8	88.3	28.3	9.3	25.6	76.7
58°	10.2	15.3	52.0	16.7	9.8	11.2	73.9	16.3	8.8	13.5	65.5
58.5°	9.8	13.5	43.7	14.9	9.3	9.8	61.8	9.8	8.4	9.8	55.3
59°	9.3	11.6	36.2	13.0	8.8	9.3	53.9	8.8	7.9	8.8	48.8
59.5°	9.3	9.3	30.2	11.2	8.4	8.8	46.0	8.4	7.4	8.8	42.3
60°	8.8	8.8	25.6	8.8	8.4	8.4	38.6	7.9	7.4	8.4	35.3
60.5°	8.4	8.8	21.4	8.8	7.9	8.4	30.7	7.9	7.0	7.9	28.8
61°	7.9	8.4	17.7	8.4	7.4	7.9	22.8	7.4	7.0	7.4	22.3
61.5°	7.9	7.9	15.3	7.9	7.4	7.4	18.6	7.0	6.5	7.4	18.1
62°	7.4	7.9	13.0	7.4	7.0	7.4	15.3	7.0	6.0	7.0	15.3
62.5°	7.0	7.4	10.7	7.4	7.0	7.0	12.5	6.5	6.0	7.0	12.5
63°	7.0	7.0	8.4	7.0	6.5	6.5	10.2	6.5	5.6	6.5	10.2
63.5°	6.5	7.0	7.4	7.0	6.0	6.5	8.4	6.0	5.6	6.0	8.8
64°	6.5	6.5	7.0	6.5	6.0	6.0	7.0	6.0	5.6	6.0	7.4
64.5°	6.0	6.5	6.5	6.5	5.6	6.0	6.5	5.6	5.1	5.6	6.5
65°	6.0	6.0	6.5	6.0	5.6	5.6	6.0	5.6	5.1	5.6	6.5
65.5°	5.6	6.0	6.0	6.0	5.6	5.6	5.6	5.1	4.6	5.6	6.0
66°	5.6	5.6	5.6	5.6	5.1	5.1	5.6	5.1	4.6	5.1	5.6



TEST NUMBER: P776621

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQC-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	4.6	5.1	5.1	5.1	4.6	4.6	5.1	4.6	4.2	4.6	5.1
68°	4.6	4.6	5.1	4.6	4.2	4.6	4.6	4.2	3.7	4.6	4.6
68.5°	4.2	4.6	4.6	4.6	4.2	4.2	4.6	4.2	3.7	4.2	4.6
69°	4.2	4.2	4.6	4.2	4.2	4.2	4.2	3.7	3.7	4.2	4.6
69.5°	4.2	4.2	4.2	4.2	3.7	4.2	4.2	3.7	3.3	3.7	4.2
70°	3.7	4.2	4.2	4.2	3.7	3.7	4.2	3.7	3.3	3.7	4.2
70.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.7	3.7
71°	3.3	3.7	3.7	3.7	3.3	3.7	3.7	3.3	3.3	3.3	3.7
71.5°	3.3	3.7	3.7	3.7	3.3	3.3	3.3	3.3	2.8	3.3	3.7
72°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.8	2.8	3.3	3.3
72.5°	2.8	3.3	3.3	3.3	2.8	3.3	3.3	2.8	2.8	2.8	3.3
73°	2.8	2.8	3.3	3.3	2.8	2.8	2.8	2.8	2.3	2.8	3.3
73.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.3	2.8	2.8
74°	2.3	2.8	2.8	2.8	2.3	2.8	2.8	2.3	2.3	2.8	2.8
74.5°	2.3	2.3	2.8	2.8	2.3	2.3	2.8	2.3	2.3	2.3	2.8
75°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.9	2.3	2.3
75.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.9	1.9	2.3	2.3
76°	1.9	2.3	2.3	2.3	1.9	2.3	2.3	1.9	1.9	1.9	2.3
76.5°	1.9	1.9	2.3	2.3	1.9	1.9	2.3	1.9	1.9	1.9	2.3
77°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.9	1.9
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.9	1.9
78°	1.4	1.4	1.9	1.9	1.4	1.9	1.9	1.4	1.4	1.4	1.9
78.5°	1.4	1.4	1.9	1.4	1.4	1.4	1.9	1.4	1.4	1.4	1.9
79°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.9	1.4	1.4
79.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.9	0.9	1.4	1.4
80°	0.9	0.9	1.4	1.4	0.9	1.4	1.4	0.9	0.9	0.9	1.4
80.5°	0.9	0.9	1.4	1.4	0.9	1.4	1.4	0.9	0.9	0.9	1.4
81°	0.9	0.9	1.4	0.9	0.9	0.9	1.4	0.9	0.9	0.9	0.9
81.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.5	0.9	0.9	0.9
82°	0.9	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.9
82.5°	0.5	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.5	0.5	0.9
83°	0.5	0.5	0.9	0.9	0.5	0.9	0.9	0.5	0.5	0.5	0.9
83.5°	0.5	0.5	0.9	0.5	0.5	0.5	0.9	0.5	0.5	0.5	0.5
84°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
84.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5	0.5	0.5
85°	0.5	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
85.5°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
86°	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5
86.5°	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.5
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776621

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQC-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776621

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQC-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	5000.4	5000.4	5000.4	5000.4	5000.4	5000.4
0.5°	4999.4	4999.4	4996.6	4993.9	4997.1	4999.4
1°	4997.6	4997.1	4992.9	4989.2	4993.4	4994.3
1.5°	4994.3	4993.9	4988.7	4983.6	4987.4	4989.2
2°	4990.1	4988.7	4982.7	4975.7	4980.8	4981.3
2.5°	4983.6	4981.8	4974.3	4967.4	4972.5	4972.5
3°	4976.2	4973.9	4964.6	4956.2	4963.7	4963.7
3.5°	4967.8	4964.1	4953.9	4945.5	4953.4	4952.5
4°	4957.6	4953.9	4941.8	4932.1	4941.3	4940.4
4.5°	4945.5	4940.4	4927.9	4918.6	4927.4	4925.5
5°	4932.5	4926.0	4913.0	4902.3	4912.5	4909.3
5.5°	4917.2	4910.2	4895.8	4885.1	4894.9	4891.2
6°	4900.5	4892.6	4877.2	4867.5	4876.3	4871.2
6.5°	4881.4	4872.6	4857.2	4846.1	4855.4	4850.3
7°	4861.0	4850.7	4834.5	4823.3	4833.1	4826.6
7.5°	4837.7	4827.5	4811.2	4799.6	4809.8	4802.4
8°	4814.0	4801.5	4784.3	4773.6	4784.3	4775.9
8.5°	4787.5	4773.6	4756.4	4746.2	4758.3	4747.6
9°	4759.2	4742.5	4726.7	4717.4	4728.5	4715.5
9.5°	4729.0	4710.9	4695.1	4687.2	4697.9	4683.9
10°	4697.4	4678.3	4661.1	4652.3	4665.8	4653.7
10.5°	4664.9	4643.5	4625.8	4621.7	4633.7	4620.3
11°	4630.5	4609.1	4591.0	4585.4	4600.7	4587.3
11.5°	4596.1	4571.9	4554.3	4546.8	4566.4	4552.9
12°	4558.9	4535.2	4516.2	4505.9	4530.6	4519.9
12.5°	4522.7	4499.4	4477.6	4466.5	4494.8	4485.5
13°	4485.5	4462.7	4438.6	4424.2	4459.0	4449.3
13.5°	4447.9	4426.5	4400.5	4381.4	4421.8	4413.0
14°	4409.8	4389.3	4360.5	4336.3	4383.3	4376.3
14.5°	4371.2	4352.6	4322.4	4292.7	4345.2	4338.7
15°	4333.1	4312.6	4282.0	4247.1	4305.7	4301.0
15.5°	4294.1	4273.1	4240.6	4202.1	4264.8	4262.9
16°	4253.6	4233.6	4198.3	4156.5	4224.4	4221.6
16.5°	4212.3	4192.8	4157.0	4111.4	4183.0	4180.7
17°	4169.1	4149.5	4113.8	4065.4	4139.8	4137.9
17.5°	4127.2	4106.8	4069.6	4020.4	4096.6	4092.9
18°	4082.6	4059.9	4023.6	3974.8	4052.0	4044.1
18.5°	4038.0	4011.5	3977.6	3928.4	4005.5	3993.4
19°	3991.1	3964.1	3929.3	3882.4	3956.2	3941.8
19.5°	3942.3	3914.9	3880.0	3835.9	3905.1	3893.0
20°	3893.5	3863.8	3830.8	3786.6	3853.1	3842.4
20.5°	3842.4	3814.0	3778.7	3739.2	3801.0	3793.1
21°	3791.7	3762.5	3727.6	3690.9	3747.1	3744.8

TEST NUMBER: P776621

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQC-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3636.1	3608.7	3567.3	3544.5	3588.2	3593.8
23°	3581.2	3557.5	3512.9	3494.4	3535.2	3535.2
23.5°	3527.8	3505.0	3458.6	3443.2	3483.7	3473.4
24°	3473.9	3446.0	3405.1	3389.8	3428.8	3414.4
24.5°	3420.0	3383.8	3350.3	3333.6	3370.7	3363.3
25°	3366.6	3325.2	3293.1	3277.8	3309.4	3312.2
25.5°	3312.7	3274.6	3233.7	3222.1	3247.6	3261.5
26°	3250.4	3224.8	3170.9	3165.4	3184.9	3208.1
26.5°	3187.7	3163.0	3111.9	3106.3	3130.5	3141.7
27°	3129.1	3096.1	3059.4	3049.7	3077.5	3077.5
27.5°	3074.8	3035.3	3006.4	2990.2	3026.0	3011.6
28°	3022.2	2958.1	2944.2	2932.1	2971.6	2932.1
28.5°	2962.3	2879.6	2876.3	2874.9	2910.3	2850.3
29°	2892.6	2799.2	2815.5	2819.6	2843.8	2770.4
29.5°	2831.3	2720.2	2741.6	2763.9	2782.5	2691.4
30°	2756.0	2641.7	2664.0	2708.1	2710.4	2611.9
30.5°	2682.1	2564.5	2584.5	2650.5	2636.1	2532.5
31°	2602.2	2486.9	2507.4	2591.5	2559.4	2453.5
31.5°	2525.5	2409.3	2431.2	2526.9	2481.8	2375.9
32°	2450.7	2333.6	2356.4	2463.7	2405.6	2299.2
32.5°	2377.3	2258.3	2280.2	2403.8	2330.3	2221.1
33°	2300.1	2181.6	2209.1	2349.4	2258.3	2140.8
33.5°	2229.0	2102.7	2136.6	2302.9	2184.9	2061.3
34°	2155.2	2022.3	2065.0	2257.9	2112.4	1981.8
34.5°	2085.5	1941.4	1990.2	2198.4	2038.5	1900.1
35°	2010.2	1860.6	1918.6	2143.5	1967.4	1817.8
35.5°	1938.6	1781.1	1843.4	2087.3	1894.5	1736.5
36°	1863.3	1702.1	1769.5	2014.8	1822.9	1653.8
36.5°	1792.2	1628.2	1694.2	1946.5	1749.0	1580.8
37°	1715.1	1554.3	1623.1	1874.5	1677.9	1507.9
37.5°	1640.3	1480.9	1552.0	1796.9	1607.3	1434.9
38°	1566.0	1407.0	1481.4	1718.8	1536.2	1361.5
38.5°	1493.9	1333.6	1410.8	1639.8	1465.6	1291.8
39°	1423.3	1266.2	1340.1	1570.1	1395.0	1223.5
39.5°	1355.5	1199.3	1273.7	1500.9	1324.3	1154.3
40°	1288.1	1131.0	1211.4	1431.2	1260.2	1087.8
40.5°	1224.0	1062.7	1147.7	1362.0	1196.1	1020.0
41°	1161.7	999.0	1086.9	1296.4	1134.7	954.4
41.5°	1100.3	930.7	1026.0	1232.8	1072.5	890.3
42°	1039.9	871.3	966.1	1170.5	1013.5	828.0
42.5°	979.5	810.9	907.0	1110.6	954.9	768.1
43°	920.5	754.6	848.5	1050.2	899.1	711.9
43.5°	863.4	696.5	792.3	991.6	842.5	657.5



TEST NUMBER: P776621

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQC-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	700.7	545.5	636.6	821.5	681.7	507.9
45.5°	650.5	497.2	589.2	769.0	632.9	461.4
46°	602.7	453.5	544.1	717.0	585.0	418.2
46.5°	556.7	410.8	500.5	669.1	540.4	376.9
47°	512.5	369.9	458.6	622.2	496.7	337.4
47.5°	470.7	330.8	417.3	578.1	454.0	301.1
48°	432.6	297.4	378.7	534.8	415.0	267.7
48.5°	394.5	264.4	342.5	495.8	376.4	237.0
49°	356.4	235.1	308.1	457.7	340.1	209.6
49.5°	318.8	208.6	276.5	422.4	304.8	184.5
50°	285.8	184.0	246.3	386.6	275.1	162.2
50.5°	255.1	161.7	218.9	354.1	245.8	145.4
51°	228.2	145.4	194.2	322.0	217.9	128.7
51.5°	202.1	129.2	172.4	293.2	191.9	112.0
52°	178.0	113.4	156.1	265.8	170.1	95.3
52.5°	156.6	97.1	139.9	239.3	153.3	82.2
53°	137.5	84.1	123.6	214.2	136.6	70.2
53.5°	120.8	72.0	107.3	191.9	119.9	58.5
54°	105.5	60.4	91.1	171.0	103.2	47.9
54.5°	92.0	49.7	79.5	154.3	86.4	36.7
55°	79.9	39.0	67.8	138.0	74.3	27.0
55.5°	68.3	28.8	57.2	121.3	63.7	19.5
56°	59.5	21.4	46.0	105.0	53.0	17.7
56.5°	50.6	15.3	36.2	88.3	43.2	15.8
57°	41.8	14.4	26.5	75.7	33.9	13.9
57.5°	33.0	13.5	19.1	65.1	25.1	12.1
58°	24.2	13.0	17.2	55.3	17.7	10.2
58.5°	15.3	12.1	15.3	46.5	15.8	9.8
59°	12.1	11.6	13.9	39.0	13.9	9.3
59.5°	11.2	11.2	12.1	32.5	11.6	9.3
60°	10.7	10.2	10.7	27.0	9.8	8.8
60.5°	10.2	9.8	10.2	22.3	9.3	8.4
61°	9.8	9.3	9.8	18.6	8.8	7.9
61.5°	9.3	8.8	9.3	16.3	8.4	7.9
62°	8.8	8.8	8.8	13.9	7.9	7.4
62.5°	8.4	8.4	8.4	11.6	7.9	7.0
63°	7.9	7.9	7.9	9.3	7.4	7.0
63.5°	7.4	7.4	7.4	7.9	7.0	6.5
64°	7.4	7.0	7.4	7.0	7.0	6.5
64.5°	7.0	7.0	7.0	7.0	6.5	6.0
65°	6.5	6.5	6.5	6.5	6.5	6.0
65.5°	6.5	6.5	6.5	6.5	6.0	5.6
66°	6.0	6.0	6.0	6.0	6.0	5.6



TEST NUMBER: P776621

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQC-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	5.6	5.1	5.6	5.1	5.1	4.6
68°	5.1	5.1	5.1	5.1	5.1	4.6
68.5°	5.1	4.6	5.1	4.6	4.6	4.2
69°	4.6	4.6	4.6	4.6	4.6	4.2
69.5°	4.6	4.6	4.6	4.6	4.2	4.2
70°	4.2	4.2	4.2	4.2	4.2	3.7
70.5°	4.2	4.2	4.2	4.2	4.2	3.7
71°	3.7	3.7	3.7	3.7	3.7	3.3
71.5°	3.7	3.7	3.7	3.7	3.7	3.3
72°	3.7	3.7	3.7	3.7	3.3	3.3
72.5°	3.3	3.3	3.3	3.3	3.3	2.8
73°	3.3	3.3	3.3	3.3	3.3	2.8
73.5°	3.3	3.3	3.3	3.3	2.8	2.8
74°	2.8	2.8	2.8	2.8	2.8	2.3
74.5°	2.8	2.8	2.8	2.8	2.8	2.3
75°	2.8	2.8	2.8	2.8	2.3	2.3
75.5°	2.3	2.3	2.3	2.3	2.3	2.3
76°	2.3	2.3	2.3	2.3	2.3	1.9
76.5°	2.3	2.3	2.3	2.3	2.3	1.9
77°	2.3	1.9	2.3	2.3	1.9	1.9
77.5°	1.9	1.9	1.9	1.9	1.9	1.9
78°	1.9	1.9	1.9	1.9	1.9	1.4
78.5°	1.9	1.9	1.9	1.9	1.4	1.4
79°	1.4	1.4	1.9	1.9	1.4	1.4
79.5°	1.4	1.4	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	0.9
80.5°	1.4	1.4	1.4	1.4	0.9	0.9
81°	1.4	1.4	1.4	1.4	0.9	0.9
81.5°	0.9	0.9	0.9	0.9	0.9	0.9
82°	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.9	0.9	0.9	0.9	0.5	0.5
83°	0.9	0.9	0.9	0.9	0.5	0.5
83.5°	0.9	0.9	0.9	0.9	0.5	0.5
84°	0.5	0.5	0.5	0.5	0.5	0.5
84.5°	0.5	0.5	0.5	0.5	0.5	0.5
85°	0.5	0.5	0.5	0.5	0.0	0.5
85.5°	0.5	0.5	0.5	0.5	0.0	0.0
86°	0.5	0.5	0.5	0.5	0.0	0.0
86.5°	0.5	0.5	0.5	0.5	0.0	0.0
87°	0.0	0.5	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776621

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQC-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0



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Cooper Lighting Solutions Photometric Lab
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Scaled Data Report





— 0°-180° - - 45°-225° - - - - 90°-270° - · - 135°-315°

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Scaled Data Report



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Scaled Data Report





21.5°	3697.4	3696.9	3700.2	3723.0	3739.2	3792.2	3796.9	3786.2	3804.3	3806.1	3753.2
22°	3647.7	3644.4	3652.8	3672.8	3693.7	3740.6	3749.0	3736.9	3755.5	3754.6	3705.3



44°	605.0	724.4	1007.4	888.9	731.4	883.8	1154.3	901.9	751.4	873.6	1064.1
44.5°	554.4	671.9	944.7	836.9	674.7	828.0	1091.5	848.0	695.6	820.2	1002.3



66.5°	5.1	5.6	5.6	5.6	5.1	5.1	5.1	4.6	4.6	5.1	5.6
67°	5.1	5.1	5.1	5.1	4.6	5.1	5.1	4.6	4.2	4.6	5.1



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	3740.6	3709.5	3674.6	3641.7	3694.6	3697.4
22°	3688.1	3659.3	3621.7	3593.8	3641.7	3647.7



44°	807.6	645.0	738.4	933.1	785.8	605.0
44.5°	752.3	594.8	687.3	877.3	731.9	554.4

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66.5°	6.0	5.6	6.0	5.6	5.6	5.1
67°	5.6	5.6	5.6	5.6	5.6	5.1

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Scaled Data Report



89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



(END OF REPORT)