

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: P776624

Luminaire Tested: HCDJBL54050CSD-HCD4TSQC-5000lm-5000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776624
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-5000K
Description: 4 INCH SQUARE MEDIUM SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5403.6 lumens
Efficiency: N/A
Efficacy: 112.6 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

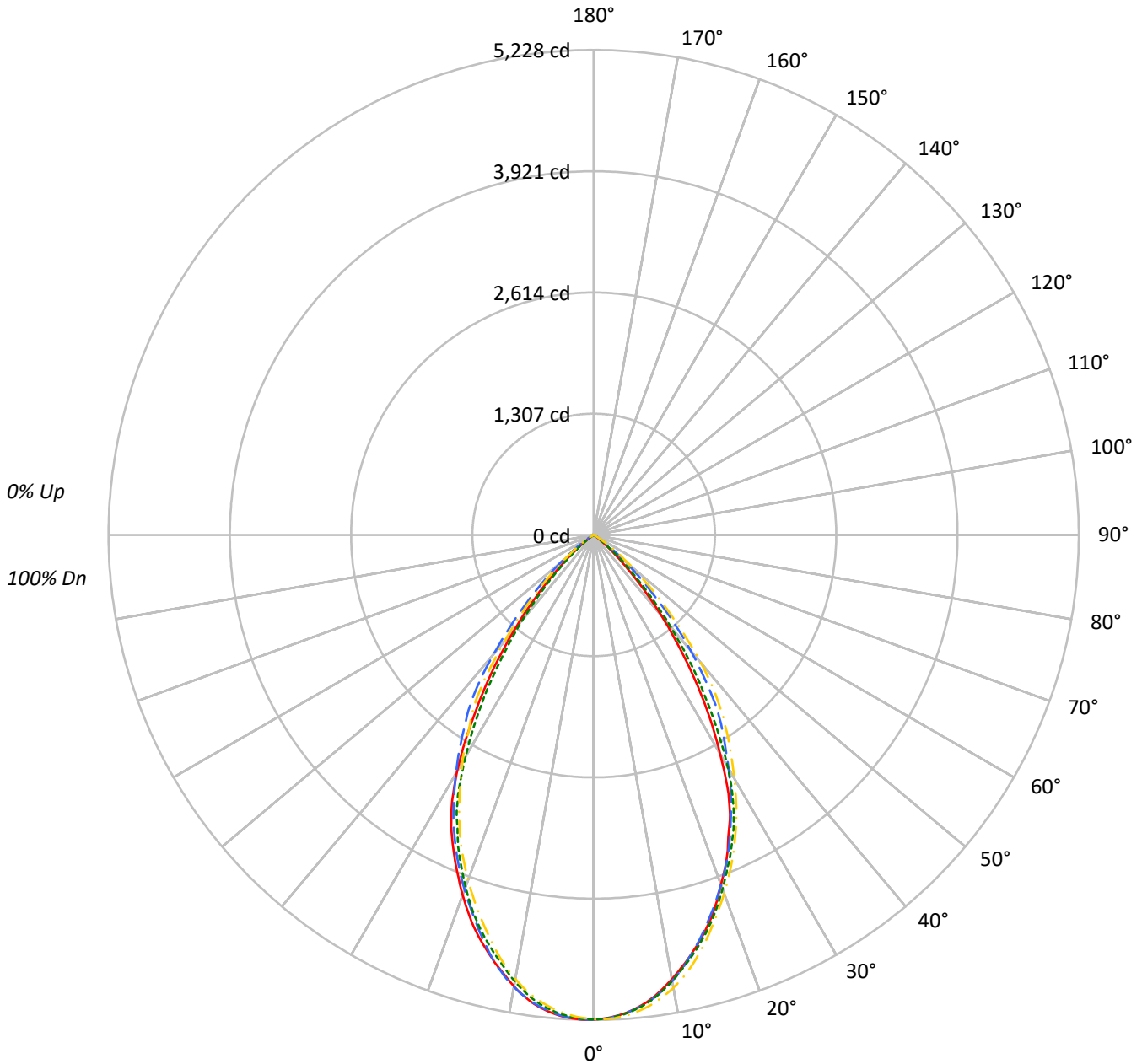
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	516352	516352	516352	516352
5°	508878	509741	513165	510615
10°	487964	490012	496104	490544
15°	459795	462230	468841	461043
20°	422236	427085	434291	424582
25°	377381	387491	393588	378865
30°	311435	329947	336145	314985
35°	229153	247832	252586	234547
40°	146629	165867	169119	152461
45°	74169	90720	93515	79663
50°	26049	34706	36951	29555
55°	4860	6273	7117	7031
60°	1819	1720	1542	2115
65°	1473	1357	1240	1590
70°	1127	1127	983	1272
75°	917	917	726	1108
80°	569	569	569	854
85°	567	567	0	567

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 150715 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	483.6	8.9
10°-20°	1264.9	23.4
20°-30°	1606.4	29.7
30°-40°	1328.3	24.6
40°-50°	607.9	11.2
50°-60°	102.1	1.9
60°-70°	7.2	0.1
70°-80°	2.7	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°	3354.8	62.1
0°-40°	4683.2	86.7
0°-60°	5393.2	99.8
0°-90°	5403.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5403.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	5224	5224	5224	5224	5224	
5°	5129	5138	5172	5146	5129	481
15°	4493	4517	4582	4506	4493	1256
25°	3460	3553	3609	3474	3460	1572
35°	1899	2054	2093	1944	1899	1179
45°	531	649	669	570	531	431
55°	28	36	41	41	28	46
65°	6	6	5	7	6	6
75°	2	2	2	3	2	3
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



TEST NUMBER: P776624

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	5224.0	5224.0	5224.0	5224.0	5224.0	5224.0	5224.0	5224.0	5224.0	5224.0	5224.0
0.5°	5223.0	5223.5	5223.5	5221.0	5223.0	5223.0	5223.0	5224.9	5227.8	5228.3	5227.4
1°	5217.6	5219.1	5219.6	5218.1	5220.6	5221.5	5223.0	5224.9	5227.8	5227.8	5226.4
1.5°	5212.3	5213.3	5214.2	5213.8	5215.7	5217.6	5221.0	5223.0	5226.4	5227.4	5224.0
2°	5204.1	5205.5	5207.0	5206.5	5209.4	5213.8	5217.6	5219.6	5223.5	5224.9	5221.0
2.5°	5194.8	5196.3	5198.2	5198.2	5201.1	5207.0	5213.8	5214.2	5218.1	5219.6	5217.2
3°	5185.6	5186.6	5187.5	5188.5	5191.9	5198.7	5207.0	5207.9	5212.3	5212.8	5209.4
3.5°	5174.0	5174.4	5175.9	5177.4	5180.7	5190.0	5199.7	5198.2	5204.5	5205.0	5200.7
4°	5161.3	5161.3	5162.3	5164.7	5168.1	5178.8	5189.5	5189.0	5195.3	5195.3	5190.5
4.5°	5145.8	5146.8	5148.7	5151.1	5154.5	5167.2	5178.3	5177.4	5185.1	5184.6	5178.8
5°	5128.8	5129.3	5132.7	5135.6	5137.5	5153.1	5166.2	5164.7	5172.0	5173.0	5165.2
5.5°	5109.9	5110.8	5115.2	5118.6	5121.0	5137.1	5152.6	5150.7	5157.9	5158.9	5151.1
6°	5089.0	5090.0	5096.3	5099.2	5101.6	5120.6	5136.1	5134.1	5142.4	5142.9	5134.6
6.5°	5067.2	5067.6	5074.9	5079.3	5080.7	5101.1	5119.6	5116.7	5125.9	5125.9	5118.6
7°	5042.4	5043.4	5052.1	5057.4	5058.4	5079.8	5101.6	5097.3	5106.5	5107.0	5099.2
7.5°	5017.2	5017.2	5028.3	5033.7	5032.7	5057.0	5081.2	5076.9	5084.1	5086.6	5078.8
8°	4989.5	4990.0	5000.6	5008.4	5006.0	5031.7	5059.4	5053.1	5059.9	5062.3	5056.0
8.5°	4959.9	4961.8	4973.9	4980.7	4976.4	5005.0	5036.1	5028.3	5033.7	5038.5	5031.2
9°	4926.4	4930.3	4943.8	4950.6	4946.3	4976.9	5010.8	5000.6	5004.5	5010.8	5006.5
9.5°	4893.4	4897.7	4913.3	4920.1	4914.7	4946.8	4984.6	4971.0	4974.9	4981.7	4978.8
10°	4861.8	4863.7	4880.3	4888.0	4882.2	4916.7	4956.5	4940.5	4942.9	4950.6	4947.7
10.5°	4826.9	4829.3	4846.8	4853.6	4848.2	4885.6	4925.9	4907.0	4909.4	4918.1	4916.2
11°	4792.4	4794.8	4811.3	4819.1	4814.2	4850.6	4892.4	4873.0	4873.5	4885.1	4883.7
11.5°	4756.5	4759.4	4773.0	4782.2	4777.8	4816.7	4860.4	4836.1	4836.1	4849.2	4848.7
12°	4722.0	4723.0	4734.1	4743.8	4741.9	4781.7	4824.9	4799.2	4800.2	4810.8	4809.9
12.5°	4686.1	4686.1	4691.4	4706.5	4706.5	4745.8	4786.6	4760.3	4766.2	4773.9	4773.5
13°	4648.2	4649.2	4651.1	4667.1	4671.0	4709.9	4747.7	4721.0	4731.2	4737.0	4731.2
13.5°	4610.3	4610.3	4609.4	4626.8	4633.2	4673.5	4709.9	4682.7	4694.3	4697.2	4688.0
14°	4572.0	4571.0	4565.7	4587.5	4594.8	4636.1	4665.2	4643.8	4656.9	4658.4	4642.9
14.5°	4532.7	4531.2	4522.0	4546.7	4556.5	4598.2	4622.5	4604.5	4619.6	4620.1	4598.2
15°	4493.3	4491.4	4479.3	4506.9	4517.1	4559.4	4579.3	4565.2	4581.7	4580.7	4549.2
15.5°	4453.5	4450.1	4432.7	4465.2	4477.3	4519.6	4533.6	4523.4	4541.4	4540.0	4501.1
16°	4410.3	4406.0	4388.0	4421.5	4436.1	4478.8	4486.1	4482.7	4502.6	4500.1	4452.1
16.5°	4367.6	4365.7	4341.9	4377.8	4393.8	4439.5	4439.9	4440.4	4460.8	4457.9	4405.5
17°	4323.0	4322.5	4296.3	4334.1	4350.1	4395.3	4392.4	4397.7	4417.6	4415.2	4356.0
17.5°	4275.9	4277.3	4249.7	4289.5	4304.0	4352.6	4345.3	4353.1	4372.0	4372.5	4308.4
18°	4224.9	4227.3	4203.0	4244.3	4256.4	4307.9	4299.2	4307.4	4324.9	4328.3	4259.4
18.5°	4172.0	4181.2	4156.4	4196.3	4208.9	4262.8	4253.0	4259.8	4276.8	4280.7	4212.3
19°	4118.1	4128.8	4108.9	4147.2	4160.3	4213.2	4206.0	4211.8	4229.3	4232.7	4165.2
19.5°	4067.1	4074.9	4060.3	4096.2	4110.8	4166.6	4159.4	4163.7	4179.7	4182.7	4117.6
20°	4014.2	4021.5	4013.2	4046.7	4060.3	4115.7	4111.8	4111.8	4128.8	4132.7	4069.1
20.5°	3962.7	3968.6	3965.7	3994.8	4009.4	4065.2	4063.7	4060.3	4077.3	4081.2	4020.0
21°	3912.3	3915.2	3916.6	3942.8	3957.4	4013.2	4015.2	4008.4	4025.9	4029.3	3969.5



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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°	3754.5	3756.9	3765.7	3783.1	3810.3	3854.5	3868.1	3847.2	3872.0	3869.1	3820.5
23°	3693.3	3704.5	3712.7	3729.2	3760.3	3801.1	3818.1	3792.4	3822.0	3815.2	3768.6
23.5°	3628.8	3648.7	3657.9	3671.5	3708.4	3750.6	3767.6	3737.5	3770.0	3760.8	3719.1
24°	3567.1	3588.5	3603.0	3620.0	3656.4	3694.3	3715.7	3682.6	3715.7	3705.9	3664.2
24.5°	3513.7	3525.4	3546.2	3568.6	3605.0	3638.5	3661.3	3628.3	3662.3	3651.1	3608.9
25°	3460.3	3459.3	3488.9	3516.1	3553.0	3582.6	3606.9	3573.4	3608.9	3595.7	3554.0
25.5°	3407.4	3399.1	3431.2	3456.4	3501.1	3526.3	3552.5	3518.6	3555.9	3540.9	3499.1
26°	3351.6	3344.3	3373.9	3396.7	3442.3	3470.5	3498.2	3464.2	3502.5	3486.0	3446.7
26.5°	3282.1	3291.4	3316.6	3336.0	3380.7	3419.5	3445.3	3401.1	3439.9	3422.9	3388.0
27°	3215.2	3237.0	3260.3	3282.6	3321.0	3367.6	3386.5	3344.8	3379.7	3369.5	3328.3
27.5°	3146.2	3180.7	3203.0	3231.7	3254.5	3311.8	3328.3	3292.3	3314.7	3311.8	3268.6
28°	3063.2	3109.3	3147.2	3180.2	3188.0	3246.7	3267.1	3235.5	3247.2	3247.2	3206.4
28.5°	2977.8	3041.4	3088.4	3118.1	3116.6	3184.6	3208.4	3173.4	3174.4	3187.0	3146.2
29°	2894.3	2973.4	3030.2	3057.4	3044.8	3120.0	3149.1	3114.7	3101.1	3121.0	3085.5
29.5°	2811.7	2894.8	2968.5	2997.2	2969.5	3052.0	3090.4	3050.1	3022.9	3052.0	3025.3
30°	2728.7	2812.2	2907.4	2933.6	2890.9	2981.6	3033.6	2983.1	2945.2	2982.1	2964.7
30.5°	2645.7	2729.2	2843.8	2866.1	2807.4	2907.9	2974.9	2915.1	2862.7	2909.3	2905.9
31°	2563.2	2647.7	2783.6	2796.7	2724.4	2835.0	2913.7	2844.8	2775.8	2836.0	2848.1
31.5°	2482.1	2566.6	2724.4	2726.3	2638.4	2758.8	2852.0	2772.9	2689.4	2758.3	2790.4
32°	2402.0	2487.9	2671.4	2654.0	2552.0	2681.2	2789.9	2697.2	2603.5	2680.7	2729.7
32.5°	2320.5	2407.8	2617.1	2578.2	2464.2	2601.1	2734.6	2619.5	2514.2	2600.1	2665.6
33°	2236.5	2329.2	2563.7	2502.0	2380.2	2517.1	2680.2	2540.9	2428.7	2519.0	2605.9
33.5°	2153.5	2252.5	2508.3	2422.9	2294.2	2434.1	2625.8	2460.3	2338.9	2434.1	2549.1
34°	2070.5	2174.3	2450.6	2342.8	2212.7	2351.0	2567.6	2377.3	2256.4	2347.6	2490.9
34.5°	1985.0	2095.7	2389.9	2261.7	2131.1	2268.5	2504.9	2294.2	2172.9	2264.2	2432.6
35°	1899.1	2016.6	2336.5	2181.1	2053.9	2187.4	2452.0	2214.6	2093.3	2185.5	2380.7
35.5°	1814.1	1936.0	2275.3	2100.1	1974.8	2108.3	2400.1	2133.6	2009.3	2102.0	2328.2
36°	1727.7	1856.4	2202.5	2020.9	1897.6	2030.6	2336.0	2054.4	1930.6	2022.9	2264.6
36.5°	1651.5	1775.3	2131.1	1944.7	1821.4	1954.4	2273.4	1976.8	1851.5	1942.8	2196.2
37°	1575.3	1700.1	2061.7	1869.0	1742.8	1879.2	2213.7	1899.6	1774.8	1870.4	2134.0
37.5°	1499.1	1624.8	1987.4	1794.2	1663.2	1805.4	2146.7	1825.3	1694.7	1793.7	2062.7
38°	1422.4	1549.6	1913.7	1716.1	1586.0	1732.6	2079.7	1752.0	1613.6	1721.4	1987.9
38.5°	1349.6	1473.8	1840.4	1647.1	1508.8	1659.3	2013.2	1680.2	1535.5	1648.6	1911.7
39°	1278.2	1399.1	1768.0	1577.7	1433.1	1590.3	1940.4	1608.3	1461.2	1576.7	1834.5
39.5°	1205.9	1329.2	1695.2	1508.8	1358.3	1516.6	1867.5	1535.0	1384.5	1503.9	1755.4
40°	1136.4	1261.2	1622.9	1439.9	1285.5	1444.2	1795.2	1464.1	1310.7	1433.5	1678.7
40.5°	1065.6	1192.3	1550.5	1370.9	1215.1	1372.4	1720.4	1393.7	1237.9	1362.7	1602.0
41°	997.1	1127.7	1478.2	1303.0	1146.6	1304.4	1644.7	1323.8	1170.4	1293.7	1527.2
41.5°	930.1	1061.7	1405.9	1236.4	1080.1	1235.5	1567.5	1254.9	1101.5	1223.8	1453.4
42°	865.1	998.6	1333.5	1169.5	1013.1	1169.9	1491.3	1188.9	1036.4	1158.8	1381.1
42.5°	802.5	936.4	1262.7	1107.8	950.5	1103.9	1418.0	1124.8	971.4	1095.7	1310.2
43°	743.7	874.8	1191.3	1046.6	886.4	1044.7	1345.2	1062.7	906.3	1032.6	1242.8
43.5°	686.9	813.6	1120.4	987.4	824.3	981.6	1275.3	1002.5	844.7	971.9	1175.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	530.6	649.5	925.8	819.4	649.0	809.2	1078.2	830.6	669.0	802.0	985.0
45.5°	482.1	598.1	867.0	766.5	595.7	753.4	1016.1	776.7	615.1	748.6	925.3
46°	436.9	551.5	808.8	713.6	544.7	700.0	956.8	724.8	563.6	696.1	866.0
46.5°	393.7	506.3	754.9	663.1	496.6	648.6	898.6	672.4	514.6	645.2	808.3
47°	352.4	461.2	702.0	613.1	453.9	599.0	843.7	622.8	472.8	597.1	753.4
47.5°	314.6	418.9	651.5	566.5	411.2	550.0	787.9	576.2	431.1	550.5	700.5
48°	279.6	378.7	602.0	521.9	368.9	505.4	735.9	529.6	389.3	505.8	650.0
48.5°	247.6	340.8	555.4	478.7	326.7	466.0	684.0	486.4	348.1	467.5	602.0
49°	218.9	304.4	510.2	438.8	290.3	426.2	635.5	448.1	306.3	429.1	556.3
49.5°	192.7	271.9	467.5	401.5	257.3	386.9	586.4	409.7	272.3	391.3	511.7
50°	169.4	241.8	425.3	365.1	225.7	347.6	540.8	371.4	240.3	352.9	473.8
50.5°	151.9	213.6	387.9	328.2	197.1	308.3	497.1	333.0	211.2	314.6	436.4
51°	134.5	187.9	351.0	295.2	171.4	275.7	458.8	298.6	185.0	283.5	398.6
51.5°	117.0	165.5	317.5	263.6	147.6	245.6	419.9	267.0	160.2	253.4	360.7
52°	99.5	148.5	285.4	234.5	126.2	218.0	381.1	236.9	136.9	225.2	323.3
52.5°	85.9	131.6	256.8	206.8	106.3	190.8	342.2	209.7	116.0	198.6	291.8
53°	73.3	114.1	227.7	180.6	88.8	166.0	309.2	183.0	97.6	173.8	262.1
53.5°	61.2	97.6	203.9	160.2	72.8	143.7	278.6	159.2	80.6	150.5	235.0
54°	50.0	84.5	179.6	139.8	60.7	122.8	248.6	136.4	67.5	129.1	208.7
54.5°	38.4	72.3	161.2	119.9	48.5	103.9	220.4	116.5	54.4	110.7	185.0
55°	28.2	61.2	143.7	99.5	36.4	87.4	195.2	97.6	41.3	92.7	163.1
55.5°	20.4	50.0	125.7	79.6	24.8	70.9	170.9	80.6	28.2	76.7	143.2
56°	18.4	38.8	107.8	64.6	12.6	59.2	148.5	67.5	15.0	64.1	125.2
56.5°	16.5	29.1	89.8	51.0	11.7	47.1	127.7	54.9	10.7	51.5	108.3
57°	14.6	20.4	75.7	38.8	11.2	35.4	109.2	42.2	10.2	39.3	93.2
57.5°	12.6	18.0	64.6	26.7	10.7	23.8	92.2	29.6	9.7	26.7	80.1
58°	10.7	16.0	54.4	17.5	10.2	11.7	77.2	17.0	9.2	14.1	68.4
58.5°	10.2	14.1	45.6	15.5	9.7	10.2	64.6	10.2	8.7	10.2	57.8
59°	9.7	12.1	37.9	13.6	9.2	9.7	56.3	9.2	8.3	9.2	51.0
59.5°	9.7	9.7	31.6	11.7	8.7	9.2	48.1	8.7	7.8	9.2	44.2
60°	9.2	9.2	26.7	9.2	8.7	8.7	40.3	8.3	7.8	8.7	36.9
60.5°	8.7	9.2	22.3	9.2	8.3	8.7	32.0	8.3	7.3	8.3	30.1
61°	8.3	8.7	18.4	8.7	7.8	8.3	23.8	7.8	7.3	7.8	23.3
61.5°	8.3	8.3	16.0	8.3	7.8	7.8	19.4	7.3	6.8	7.8	18.9
62°	7.8	8.3	13.6	7.8	7.3	7.8	16.0	7.3	6.3	7.3	16.0
62.5°	7.3	7.8	11.2	7.8	7.3	7.3	13.1	6.8	6.3	7.3	13.1
63°	7.3	7.3	8.7	7.3	6.8	6.8	10.7	6.8	5.8	6.8	10.7
63.5°	6.8	7.3	7.8	7.3	6.3	6.8	8.7	6.3	5.8	6.3	9.2
64°	6.8	6.8	7.3	6.8	6.3	6.3	7.3	6.3	5.8	6.3	7.8
64.5°	6.3	6.8	6.8	6.8	5.8	6.3	6.8	5.8	5.3	5.8	6.8
65°	6.3	6.3	6.8	6.3	5.8	5.8	6.3	5.8	5.3	5.8	6.8
65.5°	5.8	6.3	6.3	6.3	5.8	5.8	5.8	5.3	4.9	5.8	6.3
66°	5.8	5.8	5.8	5.8	5.3	5.3	5.8	5.3	4.9	5.3	5.8



TEST NUMBER: P776624

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	4.9	5.3	5.3	5.3	4.9	4.9	5.3	4.9	4.4	4.9	5.3
68°	4.9	4.9	5.3	4.9	4.4	4.9	4.9	4.4	3.9	4.9	4.9
68.5°	4.4	4.9	4.9	4.9	4.4	4.4	4.9	4.4	3.9	4.4	4.9
69°	4.4	4.4	4.9	4.4	4.4	4.4	4.4	3.9	3.9	4.4	4.9
69.5°	4.4	4.4	4.4	4.4	3.9	4.4	4.4	3.9	3.4	3.9	4.4
70°	3.9	4.4	4.4	4.4	3.9	3.9	4.4	3.9	3.4	3.9	4.4
70.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.4	3.4	3.9	3.9
71°	3.4	3.9	3.9	3.9	3.4	3.9	3.9	3.4	3.4	3.4	3.9
71.5°	3.4	3.9	3.9	3.9	3.4	3.4	3.4	3.4	2.9	3.4	3.9
72°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	2.9	2.9	3.4	3.4
72.5°	2.9	3.4	3.4	3.4	2.9	3.4	3.4	2.9	2.9	2.9	3.4
73°	2.9	2.9	3.4	3.4	2.9	2.9	2.9	2.9	2.4	2.9	3.4
73.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.4	2.9	2.9
74°	2.4	2.9	2.9	2.9	2.4	2.9	2.9	2.4	2.4	2.9	2.9
74.5°	2.4	2.4	2.9	2.9	2.4	2.4	2.9	2.4	2.4	2.4	2.9
75°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.9	2.4	2.4
75.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.9	1.9	2.4	2.4
76°	1.9	2.4	2.4	2.4	1.9	2.4	2.4	1.9	1.9	1.9	2.4
76.5°	1.9	1.9	2.4	2.4	1.9	1.9	2.4	1.9	1.9	1.9	2.4
77°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	1.9	1.9
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	1.5	1.9	1.9
78°	1.5	1.5	1.9	1.9	1.5	1.9	1.9	1.5	1.5	1.5	1.9
78.5°	1.5	1.5	1.9	1.5	1.5	1.5	1.9	1.5	1.5	1.5	1.9
79°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.5	1.5
79.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.5	1.5
80°	1.0	1.0	1.5	1.5	1.0	1.5	1.5	1.0	1.0	1.0	1.5
80.5°	1.0	1.0	1.5	1.5	1.0	1.5	1.5	1.0	1.0	1.0	1.5
81°	1.0	1.0	1.5	1.0	1.0	1.0	1.5	1.0	1.0	1.0	1.0
81.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	1.0
82°	1.0	0.5	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	1.0
82.5°	0.5	0.5	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	1.0
83°	0.5	0.5	1.0	1.0	0.5	1.0	1.0	0.5	0.5	0.5	1.0
83.5°	0.5	0.5	1.0	0.5	0.5	0.5	1.0	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: P776624

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

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: P776624

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	5224.0	5224.0	5224.0	5224.0	5224.0	5224.0
0.5°	5223.0	5223.0	5220.1	5217.2	5220.6	5223.0
1°	5221.0	5220.6	5216.2	5212.3	5216.7	5217.6
1.5°	5217.6	5217.2	5211.8	5206.5	5210.4	5212.3
2°	5213.3	5211.8	5205.5	5198.2	5203.6	5204.1
2.5°	5206.5	5204.5	5196.8	5189.5	5194.8	5194.8
3°	5198.7	5196.3	5186.6	5177.8	5185.6	5185.6
3.5°	5190.0	5186.1	5175.4	5166.7	5174.9	5174.0
4°	5179.3	5175.4	5162.8	5152.6	5162.3	5161.3
4.5°	5166.7	5161.3	5148.2	5138.5	5147.7	5145.8
5°	5153.1	5146.3	5132.7	5121.5	5132.2	5128.8
5.5°	5137.1	5129.8	5114.7	5103.6	5113.8	5109.9
6°	5119.6	5111.3	5095.3	5085.1	5094.3	5089.0
6.5°	5099.7	5090.5	5074.4	5062.8	5072.5	5067.2
7°	5078.3	5067.6	5050.6	5039.0	5049.2	5042.4
7.5°	5054.0	5043.4	5026.4	5014.2	5024.9	5017.2
8°	5029.3	5016.2	4998.2	4987.1	4998.2	4989.5
8.5°	5001.6	4987.1	4969.1	4958.4	4971.0	4959.9
9°	4972.0	4954.5	4938.0	4928.3	4940.0	4926.4
9.5°	4940.5	4921.5	4905.0	4896.8	4907.9	4893.4
10°	4907.4	4887.5	4869.6	4860.4	4874.4	4861.8
10.5°	4873.5	4851.1	4832.7	4828.3	4840.9	4826.9
11°	4837.5	4815.2	4796.3	4790.4	4806.5	4792.4
11.5°	4801.6	4776.4	4757.9	4750.2	4770.5	4756.5
12°	4762.8	4738.0	4718.1	4707.4	4733.2	4722.0
12.5°	4724.9	4700.6	4677.8	4666.2	4695.8	4686.1
13°	4686.1	4662.3	4637.0	4622.0	4658.4	4648.2
13.5°	4646.8	4624.4	4597.2	4577.3	4619.6	4610.3
14°	4606.9	4585.6	4555.5	4530.2	4579.3	4572.0
14.5°	4566.7	4547.2	4515.7	4484.6	4539.5	4532.7
15°	4526.8	4505.5	4473.4	4437.0	4498.2	4493.3
15.5°	4486.1	4464.2	4430.2	4389.9	4455.5	4453.5
16°	4443.8	4423.0	4386.1	4342.4	4413.2	4410.3
16.5°	4400.6	4380.2	4342.9	4295.3	4370.0	4367.6
17°	4355.5	4335.1	4297.7	4247.2	4324.9	4323.0
17.5°	4311.8	4290.4	4251.6	4200.1	4279.7	4275.9
18°	4265.2	4241.4	4203.5	4152.6	4233.1	4224.9
18.5°	4218.6	4190.9	4155.5	4104.0	4184.6	4172.0
19°	4169.6	4141.4	4105.0	4056.0	4133.1	4118.1
19.5°	4118.6	4089.9	4053.5	4007.4	4079.7	4067.1
20°	4067.6	4036.5	4002.1	3956.0	4025.4	4014.2
20.5°	4014.2	3984.6	3947.7	3906.4	3971.0	3962.7
21°	3961.3	3930.7	3894.3	3855.9	3914.7	3912.3



TEST NUMBER: P776624

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3798.7	3770.0	3726.8	3703.0	3748.7	3754.5
23°	3741.4	3716.6	3670.0	3650.6	3693.3	3693.3
23.5°	3685.6	3661.8	3613.2	3597.2	3639.4	3628.8
24°	3629.2	3600.1	3557.4	3541.4	3582.2	3567.1
24.5°	3572.9	3535.1	3500.1	3482.6	3521.5	3513.7
25°	3517.1	3473.9	3440.4	3424.4	3457.4	3460.3
25.5°	3460.8	3421.0	3378.3	3366.1	3392.8	3407.4
26°	3395.7	3369.0	3312.7	3306.9	3327.3	3351.6
26.5°	3330.2	3304.5	3251.1	3245.2	3270.5	3282.1
27°	3269.0	3234.6	3196.2	3186.0	3215.2	3215.2
27.5°	3212.2	3171.0	3140.9	3123.9	3161.3	3146.2
28°	3157.4	3090.4	3075.8	3063.2	3104.5	3063.2
28.5°	3094.8	3008.3	3005.0	3003.5	3040.4	2977.8
29°	3021.9	2924.4	2941.4	2945.7	2971.0	2894.3
29.5°	2957.9	2841.8	2864.2	2887.5	2906.9	2811.7
30°	2879.2	2759.8	2783.1	2829.2	2831.6	2728.7
30.5°	2802.0	2679.2	2700.1	2769.0	2754.0	2645.7
31°	2718.5	2598.1	2619.5	2707.4	2673.9	2563.2
31.5°	2638.4	2517.1	2539.9	2639.9	2592.8	2482.1
32°	2560.3	2437.9	2461.7	2573.9	2513.2	2402.0
32.5°	2483.6	2359.3	2382.1	2511.2	2434.5	2320.5
33°	2403.0	2279.2	2307.8	2454.4	2359.3	2236.5
33.5°	2328.7	2196.7	2232.1	2405.9	2282.6	2153.5
34°	2251.5	2112.7	2157.4	2358.8	2206.9	2070.5
34.5°	2178.7	2028.2	2079.2	2296.7	2129.7	1985.0
35°	2100.1	1943.8	2004.4	2239.4	2055.4	1899.1
35.5°	2025.3	1860.7	1925.8	2180.7	1979.2	1814.1
36°	1946.7	1778.2	1848.6	2104.9	1904.4	1727.7
36.5°	1872.4	1701.0	1770.0	2033.6	1827.2	1651.5
37°	1791.8	1623.8	1695.7	1958.3	1753.0	1575.3
37.5°	1713.6	1547.1	1621.4	1877.2	1679.2	1499.1
38°	1636.0	1470.0	1547.6	1795.7	1604.9	1422.4
38.5°	1560.7	1393.2	1473.8	1713.2	1531.1	1349.6
39°	1486.9	1322.9	1400.0	1640.3	1457.3	1278.2
39.5°	1416.1	1253.0	1330.6	1568.0	1383.5	1205.9
40°	1345.7	1181.6	1265.6	1495.2	1316.5	1136.4
40.5°	1278.7	1110.2	1199.1	1422.9	1249.6	1065.6
41°	1213.6	1043.7	1135.5	1354.4	1185.5	997.1
41.5°	1149.6	972.4	1071.9	1287.9	1120.4	930.1
42°	1086.4	910.2	1009.3	1222.9	1058.8	865.1
42.5°	1023.3	847.1	947.6	1160.2	997.6	802.5
43°	961.7	788.4	886.4	1097.1	939.4	743.7
43.5°	902.0	727.7	827.7	1036.0	880.1	686.9



TEST NUMBER: P776624

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	732.1	569.9	665.1	858.3	712.2	530.6
45.5°	679.6	519.4	615.6	803.4	661.2	482.1
46°	629.6	473.8	568.5	749.1	611.2	436.9
46.5°	581.6	429.1	522.8	699.1	564.6	393.7
47°	535.5	386.4	479.1	650.0	518.9	352.4
47.5°	491.8	345.6	435.9	603.9	474.3	314.6
48°	452.0	310.7	395.6	558.8	433.5	279.6
48.5°	412.1	276.2	357.8	518.0	393.2	247.6
49°	372.3	245.6	321.9	478.2	355.4	218.9
49.5°	333.0	218.0	288.8	441.3	318.5	192.7
50°	298.6	192.2	257.3	403.9	287.4	169.4
50.5°	266.5	168.9	228.6	369.9	256.8	151.9
51°	238.4	151.9	202.9	336.4	227.7	134.5
51.5°	211.2	135.0	180.1	306.3	200.5	117.0
52°	185.9	118.5	163.1	277.7	177.7	99.5
52.5°	163.6	101.5	146.1	250.0	160.2	85.9
53°	143.7	87.9	129.1	223.8	142.7	73.3
53.5°	126.2	75.2	112.1	200.5	125.2	61.2
54°	110.2	63.1	95.1	178.6	107.8	50.0
54.5°	96.1	51.9	83.0	161.2	90.3	38.4
55°	83.5	40.8	70.9	144.2	77.7	28.2
55.5°	71.4	30.1	59.7	126.7	66.5	20.4
56°	62.1	22.3	48.1	109.7	55.3	18.4
56.5°	52.9	16.0	37.9	92.2	45.1	16.5
57°	43.7	15.0	27.7	79.1	35.4	14.6
57.5°	34.5	14.1	19.9	68.0	26.2	12.6
58°	25.2	13.6	18.0	57.8	18.4	10.7
58.5°	16.0	12.6	16.0	48.5	16.5	10.2
59°	12.6	12.1	14.6	40.8	14.6	9.7
59.5°	11.7	11.7	12.6	34.0	12.1	9.7
60°	11.2	10.7	11.2	28.2	10.2	9.2
60.5°	10.7	10.2	10.7	23.3	9.7	8.7
61°	10.2	9.7	10.2	19.4	9.2	8.3
61.5°	9.7	9.2	9.7	17.0	8.7	8.3
62°	9.2	9.2	9.2	14.6	8.3	7.8
62.5°	8.7	8.7	8.7	12.1	8.3	7.3
63°	8.3	8.3	8.3	9.7	7.8	7.3
63.5°	7.8	7.8	7.8	8.3	7.3	6.8
64°	7.8	7.3	7.8	7.3	7.3	6.8
64.5°	7.3	7.3	7.3	7.3	6.8	6.3
65°	6.8	6.8	6.8	6.8	6.8	6.3
65.5°	6.8	6.8	6.8	6.8	6.3	5.8
66°	6.3	6.3	6.3	6.3	6.3	5.8



TEST NUMBER: P776624

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

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	5.8	5.3	5.8	5.3	5.3	4.9
68°	5.3	5.3	5.3	5.3	5.3	4.9
68.5°	5.3	4.9	5.3	4.9	4.9	4.4
69°	4.9	4.9	4.9	4.9	4.9	4.4
69.5°	4.9	4.9	4.9	4.9	4.4	4.4
70°	4.4	4.4	4.4	4.4	4.4	3.9
70.5°	4.4	4.4	4.4	4.4	4.4	3.9
71°	3.9	3.9	3.9	3.9	3.9	3.4
71.5°	3.9	3.9	3.9	3.9	3.9	3.4
72°	3.9	3.9	3.9	3.9	3.4	3.4
72.5°	3.4	3.4	3.4	3.4	3.4	2.9
73°	3.4	3.4	3.4	3.4	3.4	2.9
73.5°	3.4	3.4	3.4	3.4	2.9	2.9
74°	2.9	2.9	2.9	2.9	2.9	2.4
74.5°	2.9	2.9	2.9	2.9	2.9	2.4
75°	2.9	2.9	2.9	2.9	2.4	2.4
75.5°	2.4	2.4	2.4	2.4	2.4	2.4
76°	2.4	2.4	2.4	2.4	2.4	1.9
76.5°	2.4	2.4	2.4	2.4	2.4	1.9
77°	2.4	1.9	2.4	2.4	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	1.5
78.5°	1.9	1.9	1.9	1.9	1.5	1.5
79°	1.5	1.5	1.9	1.9	1.5	1.5
79.5°	1.5	1.5	1.5	1.5	1.5	1.5
80°	1.5	1.5	1.5	1.5	1.5	1.0
80.5°	1.5	1.5	1.5	1.5	1.0	1.0
81°	1.5	1.5	1.5	1.5	1.0	1.0
81.5°	1.0	1.0	1.0	1.0	1.0	1.0
82°	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	0.5	0.5
83°	1.0	1.0	1.0	1.0	0.5	0.5
83.5°	1.0	1.0	1.0	1.0	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: P776624

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

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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Scaled Data Report





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

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21.5°	3862.7	3862.3	3865.7	3889.4	3906.4	3961.8	3966.6	3955.5	3974.4	3976.3	3921.0
22°	3810.8	3807.4	3816.1	3837.0	3858.9	3907.9	3916.6	3904.0	3923.4	3922.5	3871.0



44°	632.1	756.8	1052.5	928.7	764.1	923.3	1205.9	942.3	785.0	912.7	1111.7
44.5°	579.1	702.0	986.9	874.3	704.9	865.1	1140.3	886.0	726.7	856.8	1047.1



66.5°	5.3	5.8	5.8	5.8	5.3	5.3	5.3	4.9	4.9	5.3	5.8
67°	5.3	5.3	5.3	5.3	4.9	5.3	5.3	4.9	4.4	4.9	5.3



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°	3907.9	3875.4	3839.0	3804.5	3859.8	3862.7
22°	3853.0	3822.9	3783.6	3754.5	3804.5	3810.8



44°	843.7	673.8	771.4	974.8	820.9	632.1
44.5°	785.9	621.4	718.0	916.5	764.6	579.1

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66.5°	6.3	5.8	6.3	5.8	5.8	5.3
67°	5.8	5.8	5.8	5.8	5.8	5.3

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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)