

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: P776312

Luminaire Tested: HCDJBL3040CSD-HCD4TSQC-4000lm-3500K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776312  
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: HCDJBL3040CSD-HCD4TSQC-4000lm-3500K  
Description: 4 INCH SQUARE MEDIUM SPECULAR CLEAR TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4424.2 lumens  
Efficiency: N/A  
Efficacy: 114.9 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

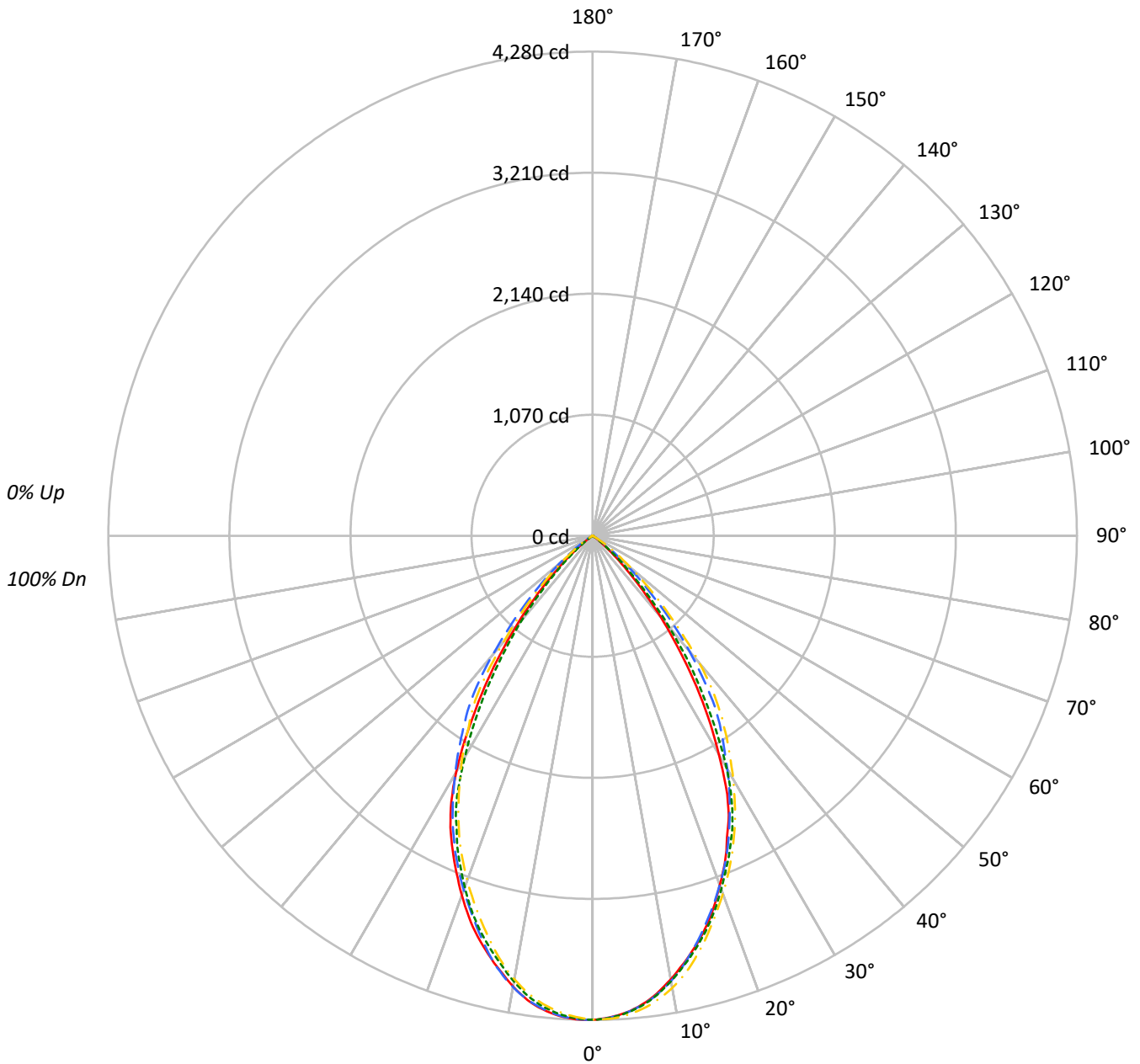
Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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					70					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	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°	422758	422758	422758	422758
5°	416644	417348	420156	418062
10°	399521	401197	406185	401629
15°	376458	378453	383856	377471
20°	345703	349679	355570	347628
25°	308979	317256	322240	310189
30°	254985	270142	275221	257895
35°	187621	202921	206806	192025
40°	120062	135803	138461	124823
45°	60722	74281	76560	65223
50°	21328	28417	30247	24204
55°	3981	5135	5825	5756
60°	1502	1423	1265	1720
65°	1216	1123	1029	1310
70°	925	925	809	1040
75°	764	764	611	917
80°	455	455	455	683
85°	454	454	0	454

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 135°  
 Vertical Angle: 45°  
 Luminance: 123401 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	395.9	8.9
10°-20°	1035.6	23.4
20°-30°	1315.2	29.7
30°-40°	1087.6	24.6
40°-50°	497.7	11.2
50°-60°	83.6	1.9
60°-70°	5.9	0.1
70°-80°	2.3	0.1
80°-90°	0.4	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°	2746.7	62.1
0°-40°	3834.3	86.7
0°-60°	4415.6	99.8
0°-90°	4424.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4424.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	4277	4277	4277	4277	4277	
5°	4199	4206	4235	4214	4199	394
15°	3679	3698	3751	3689	3679	1028
25°	2833	2909	2955	2844	2833	1287
35°	1555	1682	1714	1591	1555	966
45°	434	531	548	467	434	353
55°	23	30	34	33	23	37
65°	5	5	4	6	5	5
75°	2	2	2	2	2	2
85°	0	0	0	0	0	0
90°	0	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°	4277.1	4277.1	4277.1	4277.1	4277.1	4277.1	4277.1	4277.1	4277.1	4277.1	4277.1
0.5°	4276.3	4276.7	4276.7	4274.7	4276.3	4276.3	4276.3	4277.9	4280.3	4280.7	4279.9
1°	4271.9	4273.1	4273.5	4272.3	4274.3	4275.1	4276.3	4277.9	4280.3	4280.3	4279.1
1.5°	4267.5	4268.3	4269.1	4268.7	4270.3	4271.9	4274.7	4276.3	4279.1	4279.9	4277.1
2°	4260.8	4262.0	4263.2	4262.8	4265.2	4268.7	4271.9	4273.5	4276.7	4277.9	4274.7
2.5°	4253.2	4254.4	4256.0	4256.0	4258.4	4263.2	4268.7	4269.1	4272.3	4273.5	4271.5
3°	4245.7	4246.5	4247.3	4248.1	4250.9	4256.4	4263.2	4264.0	4267.5	4267.9	4265.2
3.5°	4236.1	4236.5	4237.7	4238.9	4241.7	4249.3	4257.2	4256.0	4261.2	4261.6	4258.0
4°	4225.8	4225.8	4226.6	4228.6	4231.4	4240.1	4248.9	4248.5	4253.6	4253.6	4249.7
4.5°	4213.1	4213.9	4215.5	4217.5	4220.3	4230.6	4239.7	4238.9	4245.3	4244.9	4240.1
5°	4199.2	4199.6	4202.4	4204.7	4206.3	4219.1	4229.8	4228.6	4234.6	4235.4	4229.0
5.5°	4183.7	4184.5	4188.1	4190.8	4192.8	4205.9	4218.7	4217.1	4223.0	4223.8	4217.5
6°	4166.6	4167.4	4172.6	4174.9	4176.9	4192.4	4205.1	4203.6	4210.3	4210.7	4204.0
6.5°	4148.7	4149.1	4155.1	4158.6	4159.8	4176.5	4191.6	4189.2	4196.8	4196.8	4190.8
7°	4128.4	4129.2	4136.4	4140.8	4141.6	4159.0	4176.9	4173.3	4180.9	4181.3	4174.9
7.5°	4107.8	4107.8	4116.9	4121.3	4120.5	4140.4	4160.2	4156.7	4162.6	4164.6	4158.2
8°	4085.1	4085.5	4094.3	4100.6	4098.6	4119.7	4142.3	4137.2	4142.7	4144.7	4139.6
8.5°	4060.9	4062.5	4072.4	4078.0	4074.4	4097.8	4123.3	4116.9	4121.3	4125.3	4119.3
9°	4033.4	4036.6	4047.8	4053.3	4049.7	4074.8	4102.6	4094.3	4097.4	4102.6	4099.0
9.5°	4006.4	4010.0	4022.7	4028.3	4023.9	4050.1	4081.1	4070.0	4073.2	4078.8	4076.4
10°	3980.6	3982.2	3995.7	4002.0	3997.3	4025.5	4058.1	4045.0	4047.0	4053.3	4050.9
10.5°	3952.0	3954.0	3968.3	3973.8	3969.5	4000.1	4033.0	4017.5	4019.5	4026.7	4025.1
11°	3923.7	3925.7	3939.2	3945.6	3941.6	3971.4	4005.6	3989.7	3990.1	3999.7	3998.5
11.5°	3894.3	3896.7	3907.8	3915.4	3911.8	3943.6	3979.4	3959.5	3959.5	3970.2	3969.8
12°	3866.1	3866.9	3876.0	3884.0	3882.4	3915.0	3950.4	3929.3	3930.1	3938.8	3938.1
12.5°	3836.7	3836.7	3841.1	3853.4	3853.4	3885.6	3919.0	3897.5	3902.3	3908.6	3908.2
13°	3805.7	3806.5	3808.1	3821.2	3824.4	3856.2	3887.2	3865.3	3873.7	3878.4	3873.7
13.5°	3774.7	3774.7	3773.9	3788.2	3793.4	3826.4	3856.2	3833.9	3843.5	3845.8	3838.3
14°	3743.3	3742.5	3738.1	3756.0	3762.0	3795.8	3819.6	3802.1	3812.9	3814.0	3801.3
14.5°	3711.1	3709.9	3702.4	3722.6	3730.6	3764.8	3784.6	3769.9	3782.2	3782.6	3764.8
15°	3678.9	3677.3	3667.4	3690.0	3698.4	3733.0	3749.3	3737.7	3751.2	3750.5	3724.6
15.5°	3646.3	3643.5	3629.2	3655.9	3665.8	3700.4	3711.9	3703.5	3718.3	3717.1	3685.3
16°	3610.9	3607.4	3592.7	3620.1	3632.0	3667.0	3672.9	3670.2	3686.5	3684.5	3645.1
16.5°	3576.0	3574.4	3554.9	3584.3	3597.4	3634.8	3635.2	3635.6	3652.3	3649.9	3607.0
17°	3539.4	3539.0	3517.5	3548.5	3561.7	3598.6	3596.2	3600.6	3616.9	3614.9	3566.4
17.5°	3500.8	3502.0	3479.4	3512.0	3523.9	3563.6	3557.7	3564.0	3579.5	3579.9	3527.5
18°	3459.1	3461.1	3441.2	3475.0	3484.9	3527.1	3519.9	3526.7	3541.0	3543.8	3487.3
18.5°	3415.8	3423.3	3403.1	3435.7	3446.0	3490.1	3482.2	3487.7	3501.6	3504.8	3448.8
19°	3371.7	3380.4	3364.1	3395.5	3406.2	3449.6	3443.6	3448.4	3462.7	3465.5	3410.2
19.5°	3329.9	3336.3	3324.4	3353.8	3365.7	3411.4	3405.5	3409.0	3422.1	3424.5	3371.3
20°	3286.6	3292.6	3285.8	3313.2	3324.4	3369.7	3366.5	3366.5	3380.4	3383.6	3331.5
20.5°	3244.5	3249.3	3246.9	3270.7	3282.6	3328.3	3327.2	3324.4	3338.3	3341.5	3291.4
21°	3203.1	3205.5	3206.7	3228.2	3240.1	3285.8	3287.4	3281.8	3296.2	3298.9	3250.0



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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°	3074.0	3076.0	3083.1	3097.4	3119.7	3155.8	3167.0	3149.9	3170.2	3167.8	3128.0
23°	3023.9	3033.0	3039.8	3053.3	3078.7	3112.1	3126.0	3105.0	3129.2	3123.7	3085.5
23.5°	2971.0	2987.3	2994.9	3006.0	3036.2	3070.8	3084.7	3060.1	3086.7	3079.1	3045.0
24°	2920.5	2938.0	2950.0	2963.9	2993.7	3024.7	3042.2	3015.1	3042.2	3034.2	3000.0
24.5°	2876.8	2886.4	2903.5	2921.7	2951.6	2979.0	2997.7	2970.6	2998.5	2989.3	2954.7
25°	2833.1	2832.3	2856.6	2878.8	2909.0	2933.3	2953.1	2925.7	2954.7	2944.0	2909.8
25.5°	2789.8	2783.0	2809.3	2829.9	2866.5	2887.2	2908.6	2880.8	2911.4	2899.1	2864.9
26°	2744.1	2738.1	2762.4	2781.0	2818.4	2841.5	2864.1	2836.3	2867.7	2854.2	2822.0
26.5°	2687.2	2694.8	2715.5	2731.4	2767.9	2799.7	2820.8	2784.6	2816.4	2802.5	2773.9
27°	2632.4	2650.3	2669.4	2687.6	2719.0	2757.2	2772.7	2738.5	2767.1	2758.8	2725.0
27.5°	2576.0	2604.2	2622.5	2645.9	2664.6	2711.5	2725.0	2695.6	2713.9	2711.5	2676.1
28°	2508.0	2545.7	2576.7	2603.8	2610.1	2658.2	2674.9	2649.1	2658.6	2658.6	2625.2
28.5°	2438.0	2490.1	2528.7	2552.9	2551.7	2607.3	2626.8	2598.2	2599.0	2609.3	2576.0
29°	2369.7	2434.5	2481.0	2503.2	2492.9	2554.5	2578.3	2550.1	2539.0	2555.3	2526.3
29.5°	2302.1	2370.1	2430.5	2453.9	2431.3	2498.8	2530.2	2497.3	2475.0	2498.8	2477.0
30°	2234.1	2302.5	2380.4	2401.9	2366.9	2441.2	2483.7	2442.4	2411.4	2441.6	2427.3
30.5°	2166.2	2234.5	2328.3	2346.6	2298.5	2380.8	2435.6	2386.8	2343.8	2382.0	2379.2
31°	2098.6	2167.8	2279.0	2289.8	2230.6	2321.2	2385.6	2329.1	2272.7	2322.0	2331.9
31.5°	2032.2	2101.4	2230.6	2232.1	2160.2	2258.8	2335.1	2270.3	2201.9	2258.4	2284.6
32°	1966.6	2037.0	2187.2	2172.9	2089.5	2195.2	2284.2	2208.3	2131.6	2194.8	2234.9
32.5°	1899.9	1971.4	2142.7	2110.9	2017.5	2129.6	2238.9	2144.7	2058.5	2128.8	2182.5
33°	1831.1	1907.0	2099.0	2048.5	1948.8	2060.8	2194.4	2080.3	1988.5	2062.4	2133.6
33.5°	1763.1	1844.2	2053.7	1983.7	1878.4	1992.9	2149.9	2014.3	1915.0	1992.9	2087.1
34°	1695.2	1780.2	2006.4	1918.2	1811.6	1924.9	2102.2	1946.4	1847.4	1922.1	2039.4
34.5°	1625.2	1715.8	1956.7	1851.8	1744.9	1857.3	2050.9	1878.4	1779.0	1853.8	1991.7
35°	1554.9	1651.1	1913.0	1785.8	1681.7	1791.0	2007.6	1813.2	1713.9	1789.4	1949.2
35.5°	1485.3	1585.1	1862.9	1719.4	1616.9	1726.2	1965.1	1746.8	1645.1	1721.0	1906.2
36°	1414.6	1519.9	1803.3	1654.6	1553.7	1662.6	1912.6	1682.1	1580.7	1656.2	1854.2
36.5°	1352.2	1453.5	1744.9	1592.2	1491.3	1600.2	1861.3	1618.5	1515.9	1590.6	1798.1
37°	1289.8	1391.9	1688.0	1530.2	1426.9	1538.6	1812.4	1555.3	1453.1	1531.4	1747.2
37.5°	1227.4	1330.3	1627.2	1469.0	1361.7	1478.2	1757.6	1494.5	1387.5	1468.6	1688.8
38°	1164.6	1268.7	1566.8	1405.0	1298.5	1418.5	1702.7	1434.4	1321.2	1409.4	1627.6
38.5°	1104.9	1206.7	1506.8	1348.6	1235.3	1358.5	1648.3	1375.6	1257.2	1349.8	1565.2
39°	1046.5	1145.5	1447.6	1291.8	1173.3	1302.1	1588.7	1316.8	1196.4	1291.0	1502.0
39.5°	987.3	1088.3	1387.9	1235.3	1112.1	1241.7	1529.0	1256.8	1133.6	1231.3	1437.2
40°	930.5	1032.6	1328.7	1178.9	1052.5	1182.4	1469.8	1198.7	1073.1	1173.7	1374.4
40.5°	872.4	976.2	1269.5	1122.4	994.8	1123.6	1408.6	1141.1	1013.5	1115.7	1311.6
41°	816.4	923.3	1210.3	1066.8	938.8	1068.0	1346.6	1083.9	958.3	1059.2	1250.4
41.5°	761.5	869.2	1151.0	1012.3	884.4	1011.5	1283.4	1027.4	901.8	1002.0	1190.0
42°	708.3	817.6	1091.8	957.5	829.5	957.9	1221.0	973.4	848.6	948.7	1130.8
42.5°	657.0	766.7	1033.8	907.0	778.2	903.8	1161.0	920.9	795.3	897.1	1072.7
43°	608.9	716.2	975.4	856.9	725.8	855.3	1101.4	870.0	742.1	845.4	1017.5
43.5°	562.4	666.1	917.3	808.4	674.9	803.7	1044.1	820.8	691.6	795.7	962.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	434.4	531.8	758.0	670.9	531.4	662.6	882.8	680.1	547.7	656.6	806.5
45.5°	394.7	489.7	709.9	627.6	487.7	616.9	831.9	635.9	503.6	612.9	757.6
46°	357.7	451.5	662.2	584.3	446.0	573.1	783.4	593.4	461.5	570.0	709.1
46.5°	322.3	414.6	618.1	542.9	406.6	531.0	735.7	550.5	421.3	528.2	661.8
47°	288.6	377.6	574.7	502.0	371.6	490.5	690.8	509.9	387.1	488.9	616.9
47.5°	257.6	343.0	533.4	463.8	336.7	450.3	645.1	471.8	352.9	450.7	573.5
48°	228.9	310.0	492.9	427.3	302.1	413.8	602.6	433.6	318.8	414.2	532.2
48.5°	202.7	279.0	454.7	391.9	267.5	381.6	560.0	398.3	285.0	382.8	492.9
49°	179.3	249.2	417.7	359.3	237.7	349.0	520.3	366.9	250.8	351.4	455.5
49.5°	157.8	222.6	382.8	328.7	210.7	316.8	480.1	335.5	223.0	320.4	418.9
50°	138.7	197.9	348.2	298.9	184.8	284.6	442.8	304.1	196.7	289.0	387.9
50.5°	124.4	174.9	317.6	268.7	161.4	252.4	407.0	272.7	172.9	257.6	357.3
51°	110.1	153.8	287.4	241.7	140.3	225.8	375.6	244.4	151.4	232.1	326.3
51.5°	95.8	135.5	259.9	215.8	120.8	201.1	343.8	218.6	131.2	207.5	295.3
52°	81.5	121.6	233.7	192.0	103.3	178.5	312.0	194.0	112.1	184.4	264.7
52.5°	70.4	107.7	210.3	169.3	87.0	156.2	280.2	171.7	95.0	162.6	238.9
53°	60.0	93.4	186.4	147.9	72.7	135.9	253.2	149.8	79.9	142.3	214.6
53.5°	50.1	79.9	166.9	131.2	59.6	117.6	228.1	130.4	66.0	123.2	192.4
54°	40.9	69.2	147.1	114.5	49.7	100.6	203.5	111.7	55.2	105.7	170.9
54.5°	31.4	59.2	132.0	98.2	39.7	85.1	180.4	95.4	44.5	90.6	151.4
55°	23.1	50.1	117.6	81.5	29.8	71.5	159.8	79.9	33.8	75.9	133.5
55.5°	16.7	40.9	102.9	65.2	20.3	58.0	139.9	66.0	23.1	62.8	117.3
56°	15.1	31.8	88.2	52.9	10.3	48.5	121.6	55.2	12.3	52.5	102.5
56.5°	13.5	23.8	73.5	41.7	9.5	38.6	104.5	44.9	8.7	42.1	88.6
57°	11.9	16.7	62.0	31.8	9.1	29.0	89.4	34.6	8.3	32.2	76.3
57.5°	10.3	14.7	52.9	21.9	8.7	19.5	75.5	24.2	7.9	21.9	65.6
58°	8.7	13.1	44.5	14.3	8.3	9.5	63.2	13.9	7.6	11.5	56.0
58.5°	8.3	11.5	37.4	12.7	7.9	8.3	52.9	8.3	7.2	8.3	47.3
59°	7.9	9.9	31.0	11.1	7.6	7.9	46.1	7.6	6.8	7.6	41.7
59.5°	7.9	7.9	25.8	9.5	7.2	7.6	39.3	7.2	6.4	7.6	36.2
60°	7.6	7.6	21.9	7.6	7.2	7.2	33.0	6.8	6.4	7.2	30.2
60.5°	7.2	7.6	18.3	7.6	6.8	7.2	26.2	6.8	6.0	6.8	24.6
61°	6.8	7.2	15.1	7.2	6.4	6.8	19.5	6.4	6.0	6.4	19.1
61.5°	6.8	6.8	13.1	6.8	6.4	6.4	15.9	6.0	5.6	6.4	15.5
62°	6.4	6.8	11.1	6.4	6.0	6.4	13.1	6.0	5.2	6.0	13.1
62.5°	6.0	6.4	9.1	6.4	6.0	6.0	10.7	5.6	5.2	6.0	10.7
63°	6.0	6.0	7.2	6.0	5.6	5.6	8.7	5.6	4.8	5.6	8.7
63.5°	5.6	6.0	6.4	6.0	5.2	5.6	7.2	5.2	4.8	5.2	7.6
64°	5.6	5.6	6.0	5.6	5.2	5.2	6.0	5.2	4.8	5.2	6.4
64.5°	5.2	5.6	5.6	5.6	4.8	5.2	5.6	4.8	4.4	4.8	5.6
65°	5.2	5.2	5.6	5.2	4.8	4.8	5.2	4.8	4.4	4.8	5.6
65.5°	4.8	5.2	5.2	5.2	4.8	4.8	4.8	4.4	4.0	4.8	5.2
66°	4.8	4.8	4.8	4.8	4.4	4.4	4.8	4.4	4.0	4.4	4.8





TEST NUMBER: P776312

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	4.0	4.4	4.4	4.4	4.0	4.0	4.4	4.0	3.6	4.0	4.4
68°	4.0	4.0	4.4	4.0	3.6	4.0	4.0	3.6	3.2	4.0	4.0
68.5°	3.6	4.0	4.0	4.0	3.6	3.6	4.0	3.6	3.2	3.6	4.0
69°	3.6	3.6	4.0	3.6	3.6	3.6	3.6	3.2	3.2	3.6	4.0
69.5°	3.6	3.6	3.6	3.6	3.2	3.6	3.6	3.2	2.8	3.2	3.6
70°	3.2	3.6	3.6	3.6	3.2	3.2	3.6	3.2	2.8	3.2	3.6
70.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.8	2.8	3.2	3.2
71°	2.8	3.2	3.2	3.2	2.8	3.2	3.2	2.8	2.8	2.8	3.2
71.5°	2.8	3.2	3.2	3.2	2.8	2.8	2.8	2.8	2.4	2.8	3.2
72°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.4	2.4	2.8	2.8
72.5°	2.4	2.8	2.8	2.8	2.4	2.8	2.8	2.4	2.4	2.4	2.8
73°	2.4	2.4	2.8	2.8	2.4	2.4	2.4	2.4	2.0	2.4	2.8
73.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.0	2.4	2.4
74°	2.0	2.4	2.4	2.4	2.0	2.4	2.4	2.0	2.0	2.4	2.4
74.5°	2.0	2.0	2.4	2.4	2.0	2.0	2.4	2.0	2.0	2.0	2.4
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.6	2.0	2.0
75.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.6	1.6	2.0	2.0
76°	1.6	2.0	2.0	2.0	1.6	2.0	2.0	1.6	1.6	1.6	2.0
76.5°	1.6	1.6	2.0	2.0	1.6	1.6	2.0	1.6	1.6	1.6	2.0
77°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.2	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.6	1.6
78°	1.2	1.2	1.6	1.6	1.2	1.6	1.6	1.2	1.2	1.2	1.6
78.5°	1.2	1.2	1.6	1.2	1.2	1.2	1.6	1.2	1.2	1.2	1.6
79°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	1.2	1.2
79.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	1.2	1.2
80°	0.8	0.8	1.2	1.2	0.8	1.2	1.2	0.8	0.8	0.8	1.2
80.5°	0.8	0.8	1.2	1.2	0.8	1.2	1.2	0.8	0.8	0.8	1.2
81°	0.8	0.8	1.2	0.8	0.8	0.8	1.2	0.8	0.8	0.8	0.8
81.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.8	0.8	0.8
82°	0.8	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
82.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
83°	0.4	0.4	0.8	0.8	0.4	0.8	0.8	0.4	0.4	0.4	0.8
83.5°	0.4	0.4	0.8	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.4	0.4	0.4
85°	0.4	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
85.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
86°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
86.5°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.4
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: P776312

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-3500K

**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: P776312

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	4277.1	4277.1	4277.1	4277.1	4277.1	4277.1
0.5°	4276.3	4276.3	4273.9	4271.5	4274.3	4276.3
1°	4274.7	4274.3	4270.7	4267.5	4271.1	4271.9
1.5°	4271.9	4271.5	4267.2	4262.8	4266.0	4267.5
2°	4268.3	4267.2	4262.0	4256.0	4260.4	4260.8
2.5°	4262.8	4261.2	4254.8	4248.9	4253.2	4253.2
3°	4256.4	4254.4	4246.5	4239.3	4245.7	4245.7
3.5°	4249.3	4246.1	4237.3	4230.2	4236.9	4236.1
4°	4240.5	4237.3	4227.0	4218.7	4226.6	4225.8
4.5°	4230.2	4225.8	4215.1	4207.1	4214.7	4213.1
5°	4219.1	4213.5	4202.4	4193.2	4202.0	4199.2
5.5°	4205.9	4200.0	4187.7	4178.5	4186.9	4183.7
6°	4191.6	4184.9	4171.8	4163.4	4171.0	4166.6
6.5°	4175.3	4167.8	4154.7	4145.1	4153.1	4148.7
7°	4157.8	4149.1	4135.2	4125.7	4134.0	4128.4
7.5°	4138.0	4129.2	4115.3	4105.4	4114.1	4107.8
8°	4117.7	4107.0	4092.3	4083.1	4092.3	4085.1
8.5°	4095.0	4083.1	4068.4	4059.7	4070.0	4060.9
9°	4070.8	4056.5	4043.0	4035.0	4044.6	4033.4
9.5°	4045.0	4029.5	4016.0	4009.2	4018.3	4006.4
10°	4017.9	4001.6	3986.9	3979.4	3990.9	3980.6
10.5°	3990.1	3971.8	3956.7	3953.2	3963.5	3952.0
11°	3960.7	3942.4	3926.9	3922.2	3935.3	3923.7
11.5°	3931.3	3910.6	3895.5	3889.2	3905.9	3894.3
12°	3899.5	3879.2	3862.9	3854.2	3875.3	3866.1
12.5°	3868.5	3848.6	3829.9	3820.4	3844.6	3836.7
13°	3836.7	3817.2	3796.6	3784.2	3814.0	3805.7
13.5°	3804.5	3786.2	3764.0	3747.7	3782.2	3774.7
14°	3771.9	3754.4	3729.8	3709.1	3749.3	3743.3
14.5°	3738.9	3723.0	3697.2	3671.8	3716.7	3711.1
15°	3706.3	3688.8	3662.6	3632.8	3682.9	3678.9
15.5°	3672.9	3655.1	3627.2	3594.2	3647.9	3646.3
16°	3638.4	3621.3	3591.1	3555.3	3613.3	3610.9
16.5°	3603.0	3586.3	3555.7	3516.7	3578.0	3576.0
17°	3566.0	3549.3	3518.7	3477.4	3541.0	3539.4
17.5°	3530.3	3512.8	3481.0	3438.8	3504.0	3500.8
18°	3492.1	3472.6	3441.6	3399.9	3465.9	3459.1
18.5°	3453.9	3431.3	3402.3	3360.1	3426.1	3415.8
19°	3413.8	3390.7	3360.9	3320.8	3384.0	3371.7
19.5°	3372.1	3348.6	3318.8	3281.0	3340.3	3329.9
20°	3330.3	3304.9	3276.7	3238.9	3295.8	3286.6
20.5°	3286.6	3262.4	3232.2	3198.4	3251.2	3244.5
21°	3243.3	3218.2	3188.4	3157.0	3205.1	3203.1

TEST NUMBER: P776312

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3110.1	3086.7	3051.3	3031.8	3069.2	3074.0
23°	3063.2	3043.0	3004.8	2988.9	3023.9	3023.9
23.5°	3017.5	2998.1	2958.3	2945.2	2979.8	2971.0
24°	2971.4	2947.6	2912.6	2899.5	2932.9	2920.5
24.5°	2925.3	2894.3	2865.7	2851.4	2883.2	2876.8
25°	2879.6	2844.2	2816.8	2803.7	2830.7	2833.1
25.5°	2833.5	2800.9	2765.9	2756.0	2777.9	2789.8
26°	2780.2	2758.4	2712.3	2707.5	2724.2	2744.1
26.5°	2726.6	2705.5	2661.8	2657.0	2677.7	2687.2
27°	2676.5	2648.3	2616.9	2608.5	2632.4	2632.4
27.5°	2630.0	2596.2	2571.6	2557.7	2588.3	2576.0
28°	2585.1	2530.2	2518.3	2508.0	2541.8	2508.0
28.5°	2533.8	2463.1	2460.3	2459.1	2489.3	2438.0
29°	2474.2	2394.3	2408.2	2411.8	2432.5	2369.7
29.5°	2421.7	2326.7	2345.0	2364.1	2380.0	2302.1
30°	2357.3	2259.6	2278.6	2316.4	2318.4	2234.1
30.5°	2294.1	2193.6	2210.7	2267.1	2254.8	2166.2
31°	2225.8	2127.2	2144.7	2216.6	2189.2	2098.6
31.5°	2160.2	2060.8	2079.5	2161.4	2122.8	2032.2
32°	2096.2	1996.1	2015.5	2107.3	2057.7	1966.6
32.5°	2033.4	1931.7	1950.3	2056.1	1993.3	1899.9
33°	1967.4	1866.1	1889.5	2009.6	1931.7	1831.1
33.5°	1906.6	1798.5	1827.5	1969.8	1868.9	1763.1
34°	1843.4	1729.8	1766.3	1931.3	1806.9	1695.2
34.5°	1783.8	1660.6	1702.3	1880.4	1743.7	1625.2
35°	1719.4	1591.4	1641.1	1833.5	1682.9	1554.9
35.5°	1658.2	1523.5	1576.7	1785.4	1620.5	1485.3
36°	1593.8	1455.9	1513.5	1723.4	1559.2	1414.6
36.5°	1533.0	1392.7	1449.1	1665.0	1496.0	1352.2
37°	1467.0	1329.5	1388.3	1603.4	1435.2	1289.8
37.5°	1403.0	1266.7	1327.5	1537.0	1374.8	1227.4
38°	1339.4	1203.5	1267.1	1470.2	1314.0	1164.6
38.5°	1277.8	1140.7	1206.7	1402.6	1253.6	1104.9
39°	1217.4	1083.1	1146.3	1343.0	1193.2	1046.5
39.5°	1159.4	1025.8	1089.4	1283.8	1132.8	987.3
40°	1101.8	967.4	1036.2	1224.2	1077.9	930.5
40.5°	1046.9	909.0	981.7	1165.0	1023.1	872.4
41°	993.7	854.5	929.7	1108.9	970.6	816.4
41.5°	941.2	796.1	877.6	1054.5	917.3	761.5
42°	889.5	745.2	826.3	1001.2	866.9	708.3
42.5°	837.8	693.6	775.8	949.9	816.8	657.0
43°	787.4	645.5	725.8	898.3	769.1	608.9
43.5°	738.5	595.8	677.7	848.2	720.6	562.4



TEST NUMBER: P776312

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	599.4	466.6	544.5	702.7	583.1	434.4
45.5°	556.4	425.3	504.0	657.8	541.3	394.7
46°	515.5	387.9	465.4	613.3	500.4	357.7
46.5°	476.2	351.4	428.1	572.3	462.2	322.3
47°	438.4	316.4	392.3	532.2	424.9	288.6
47.5°	402.6	283.0	356.9	494.4	388.3	257.6
48°	370.0	254.4	323.9	457.5	354.9	228.9
48.5°	337.4	226.2	292.9	424.1	321.9	202.7
49°	304.9	201.1	263.5	391.5	290.9	179.3
49.5°	272.7	178.5	236.5	361.3	260.7	157.8
50°	244.4	157.4	210.7	330.7	235.3	138.7
50.5°	218.2	138.3	187.2	302.9	210.3	124.4
51°	195.2	124.4	166.1	275.4	186.4	110.1
51.5°	172.9	110.5	147.5	250.8	164.2	95.8
52°	152.2	97.0	133.5	227.3	145.5	81.5
52.5°	133.9	83.1	119.6	204.7	131.2	70.4
53°	117.6	71.9	105.7	183.2	116.9	60.0
53.5°	103.3	61.6	91.8	164.2	102.5	50.1
54°	90.2	51.7	77.9	146.3	88.2	40.9
54.5°	78.7	42.5	68.0	132.0	73.9	31.4
55°	68.4	33.4	58.0	118.0	63.6	23.1
55.5°	58.4	24.6	48.9	103.7	54.5	16.7
56°	50.9	18.3	39.3	89.8	45.3	15.1
56.5°	43.3	13.1	31.0	75.5	37.0	13.5
57°	35.8	12.3	22.7	64.8	29.0	11.9
57.5°	28.2	11.5	16.3	55.6	21.5	10.3
58°	20.7	11.1	14.7	47.3	15.1	8.7
58.5°	13.1	10.3	13.1	39.7	13.5	8.3
59°	10.3	9.9	11.9	33.4	11.9	7.9
59.5°	9.5	9.5	10.3	27.8	9.9	7.9
60°	9.1	8.7	9.1	23.1	8.3	7.6
60.5°	8.7	8.3	8.7	19.1	7.9	7.2
61°	8.3	7.9	8.3	15.9	7.6	6.8
61.5°	7.9	7.6	7.9	13.9	7.2	6.8
62°	7.6	7.6	7.6	11.9	6.8	6.4
62.5°	7.2	7.2	7.2	9.9	6.8	6.0
63°	6.8	6.8	6.8	7.9	6.4	6.0
63.5°	6.4	6.4	6.4	6.8	6.0	5.6
64°	6.4	6.0	6.4	6.0	6.0	5.6
64.5°	6.0	6.0	6.0	6.0	5.6	5.2
65°	5.6	5.6	5.6	5.6	5.6	5.2
65.5°	5.6	5.6	5.6	5.6	5.2	4.8
66°	5.2	5.2	5.2	5.2	5.2	4.8



TEST NUMBER: P776312

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	4.8	4.4	4.8	4.4	4.4	4.0
68°	4.4	4.4	4.4	4.4	4.4	4.0
68.5°	4.4	4.0	4.4	4.0	4.0	3.6
69°	4.0	4.0	4.0	4.0	4.0	3.6
69.5°	4.0	4.0	4.0	4.0	3.6	3.6
70°	3.6	3.6	3.6	3.6	3.6	3.2
70.5°	3.6	3.6	3.6	3.6	3.6	3.2
71°	3.2	3.2	3.2	3.2	3.2	2.8
71.5°	3.2	3.2	3.2	3.2	3.2	2.8
72°	3.2	3.2	3.2	3.2	2.8	2.8
72.5°	2.8	2.8	2.8	2.8	2.8	2.4
73°	2.8	2.8	2.8	2.8	2.8	2.4
73.5°	2.8	2.8	2.8	2.8	2.4	2.4
74°	2.4	2.4	2.4	2.4	2.4	2.0
74.5°	2.4	2.4	2.4	2.4	2.4	2.0
75°	2.4	2.4	2.4	2.4	2.0	2.0
75.5°	2.0	2.0	2.0	2.0	2.0	2.0
76°	2.0	2.0	2.0	2.0	2.0	1.6
76.5°	2.0	2.0	2.0	2.0	2.0	1.6
77°	2.0	1.6	2.0	2.0	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6
78°	1.6	1.6	1.6	1.6	1.6	1.2
78.5°	1.6	1.6	1.6	1.6	1.2	1.2
79°	1.2	1.2	1.6	1.6	1.2	1.2
79.5°	1.2	1.2	1.2	1.2	1.2	1.2
80°	1.2	1.2	1.2	1.2	1.2	0.8
80.5°	1.2	1.2	1.2	1.2	0.8	0.8
81°	1.2	1.2	1.2	1.2	0.8	0.8
81.5°	0.8	0.8	0.8	0.8	0.8	0.8
82°	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.8	0.8	0.8	0.4	0.4
83°	0.8	0.8	0.8	0.8	0.4	0.4
83.5°	0.8	0.8	0.8	0.8	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.4
85°	0.4	0.4	0.4	0.4	0.0	0.4
85.5°	0.4	0.4	0.4	0.4	0.0	0.0
86°	0.4	0.4	0.4	0.4	0.0	0.0
86.5°	0.4	0.4	0.4	0.4	0.0	0.0
87°	0.0	0.4	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: P776312

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQC-4000lm-3500K

**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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Scaled Data Report



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Scaled Data Report





21.5°	3162.6	3162.2	3165.0	3184.5	3198.4	3243.7	3247.7	3238.5	3254.0	3255.6	3210.3
22°	3120.1	3117.3	3124.4	3141.5	3159.4	3199.6	3206.7	3196.4	3212.3	3211.5	3169.4



44°	517.5	619.6	861.7	760.3	625.6	756.0	987.3	771.5	642.7	747.2	910.2
44.5°	474.2	574.7	808.0	715.8	577.1	708.3	933.6	725.4	595.0	701.5	857.3



66.5°	4.4	4.8	4.8	4.8	4.4	4.4	4.4	4.0	4.0	4.4	4.8
67°	4.4	4.4	4.4	4.4	4.0	4.4	4.4	4.0	3.6	4.0	4.4



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°	3199.6	3172.9	3143.1	3114.9	3160.2	3162.6
22°	3154.7	3130.0	3097.8	3074.0	3114.9	3120.1



44°	690.8	551.7	631.6	798.1	672.1	517.5
44.5°	643.5	508.8	587.8	750.4	626.0	474.2

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66.5°	5.2	4.8	5.2	4.8	4.8	4.4
67°	4.8	4.8	4.8	4.8	4.8	4.4

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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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Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)