

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: P776290

Luminaire Tested: HCDJBL3040CSD-HCD4TRH-4000lm-2700K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776290
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-HCD4TRH-4000lm-2700K
Description: 4 INCH ROUND MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

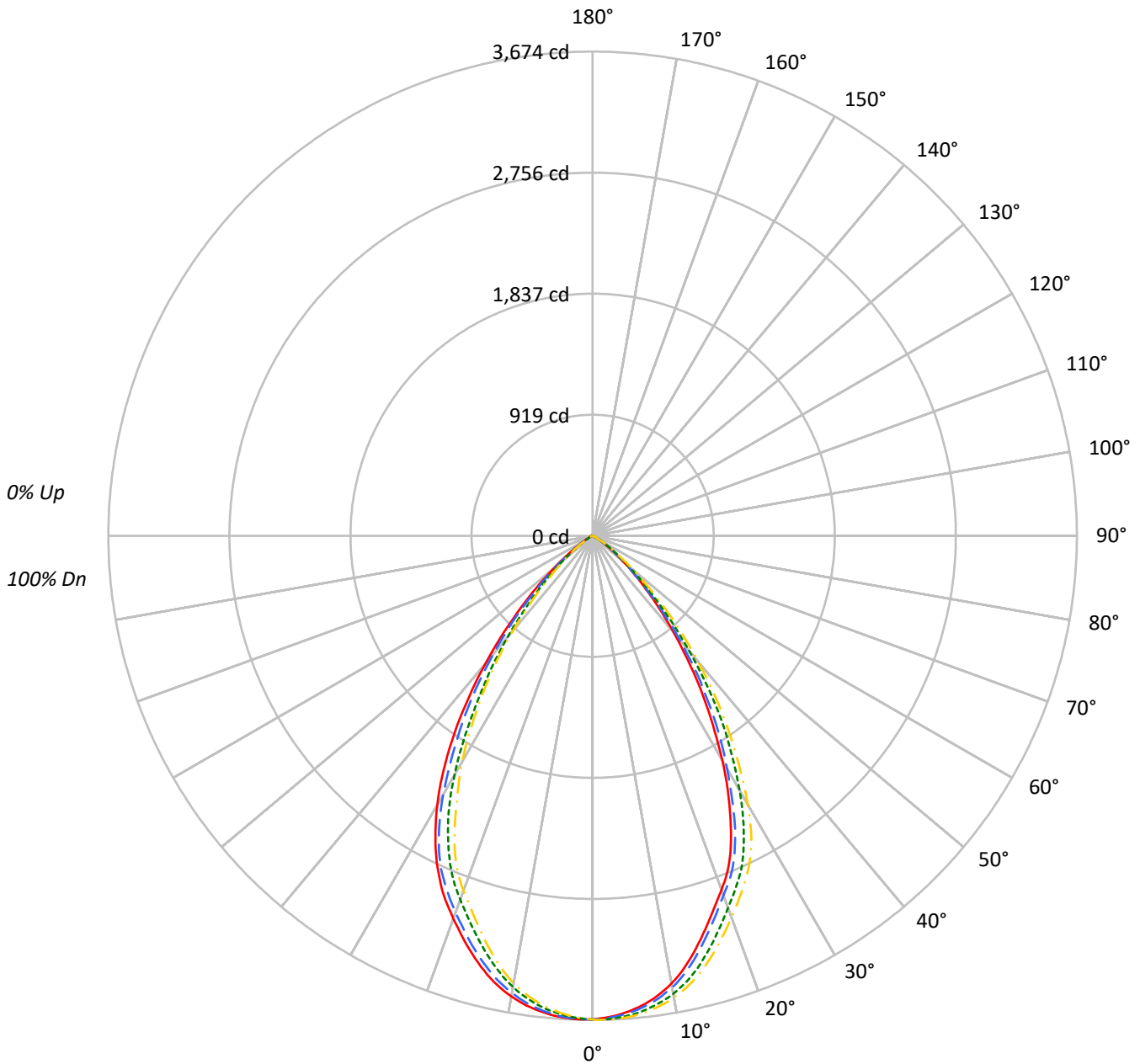
Lumens per Lamp: N/A
Luminaire Lumens: 4135.5 lumens
Efficiency: N/A
Efficacy: 107.4 lumens/watt
Spacing Criteria (0/90/45): 0.98 / 0.98 / 0.98
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): 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			100																
1	113	110	107	105	111	108	105	103	104	102	100	100	99	97	97	95	94	92			92																
2	107	101	97	93	104	100	96	92	96	93	90	93	91	88	91	88	86	85			85																
3	101	94	88	84	99	92	87	83	90	85	82	87	84	81	85	82	79	78			78																
4	95	87	81	76	93	85	80	75	83	78	75	81	77	74	79	76	73	71			71																
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65			65																
6	84	75	68	63	83	74	68	63	72	67	63	71	66	62	69	65	62	60			60																
7	80	70	63	58	78	69	63	58	68	62	58	66	61	58	65	61	57	56			56																
8	75	65	58	54	74	64	58	54	63	58	54	62	57	53	61	57	53	52			52																
9	71	61	54	50	70	60	54	50	59	54	50	58	53	50	58	53	49	48			48																
10	68	57	51	47	67	57	51	47	56	50	46	55	50	46	54	50	46	45			45																

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	461869	461869	461869	461869
5°	455636	460045	460917	457228
10°	440778	450886	453595	444368
15°	412770	430033	437095	420626
20°	382896	402436	413913	393436
25°	344956	374602	386336	359675
30°	286162	324119	342589	304632
35°	220173	260825	280536	232449
40°	156268	186989	207755	164975
45°	101288	119815	135940	102996
50°	58560	69700	75868	56171
55°	28809	35128	35567	25869
60°	12082	13718	14120	10043
65°	6283	6522	6760	5271
70°	3680	3827	4084	3091
75°	2237	2431	2431	1848
80°	1087	1667	1377	1087
85°	578	1155	578	578

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 139019 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	342.4	8.3
10°-20°	914.2	22.1
20°-30°	1198.2	29.0
30°-40°	1003.4	24.3
40°-50°	508.8	12.3
50°-60°	139.0	3.4
60°-70°	23.4	0.6
70°-80°	5.4	0.1
80°-90°	0.7	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°	2454.8	59.4
0°-40°	3458.2	83.6
0°-60°	4106.0	99.3
0°-90°	4135.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4135.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3670	3670	3670	3670	3670	
5°	3607	3642	3648	3619	3607	339
15°	3168	3301	3355	3228	3168	887
25°	2484	2698	2782	2590	2484	1126
35°	1433	1698	1826	1513	1433	893
45°	569	673	764	579	569	448
55°	131	160	162	118	131	127
65°	21	22	23	18	21	23
75°	5	5	5	4	5	5
85°	0	1	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°	3670.0	3670.0	3670.0	3670.0	3670.0	3670.0	3670.0	3670.0	3670.0	3670.0	3670.0
0.5°	3665.8	3666.2	3667.7	3670.4	3671.6	3672.7	3673.1	3672.7	3669.6	3668.9	3669.3
1°	3662.7	3663.1	3665.8	3668.9	3671.6	3673.1	3673.9	3673.5	3670.8	3669.3	3669.3
1.5°	3658.5	3660.0	3663.1	3667.0	3670.8	3673.1	3673.9	3673.9	3670.4	3668.9	3667.3
2°	3653.9	3656.2	3659.3	3664.3	3668.9	3672.0	3673.9	3673.5	3669.6	3667.3	3666.2
2.5°	3648.1	3650.8	3655.4	3660.4	3666.6	3670.8	3672.7	3672.0	3668.1	3665.0	3663.5
3°	3641.6	3645.1	3649.7	3656.2	3662.7	3667.7	3670.4	3670.4	3665.4	3662.4	3660.0
3.5°	3633.9	3638.2	3643.9	3650.1	3658.9	3664.7	3667.3	3667.0	3662.7	3658.9	3655.8
4°	3625.9	3630.5	3636.2	3643.5	3654.3	3660.4	3664.3	3663.5	3658.9	3654.7	3651.2
4.5°	3617.0	3621.6	3628.6	3636.6	3648.5	3655.8	3660.4	3659.7	3653.5	3649.3	3645.1
5°	3606.7	3612.8	3619.3	3627.8	3641.6	3650.4	3655.1	3654.3	3648.5	3643.5	3638.9
5.5°	3595.9	3601.7	3609.7	3619.0	3634.3	3643.9	3649.3	3648.1	3642.0	3636.6	3631.2
6°	3583.2	3590.2	3599.8	3609.4	3625.5	3636.6	3642.8	3642.0	3635.1	3629.3	3623.6
6.5°	3571.0	3579.0	3588.2	3599.4	3616.7	3628.9	3635.9	3634.3	3627.4	3620.5	3614.0
7°	3556.7	3565.2	3575.9	3588.2	3606.7	3620.1	3627.4	3626.6	3618.6	3611.7	3604.0
7.5°	3541.8	3550.2	3562.5	3575.9	3595.9	3610.5	3617.8	3617.0	3609.4	3601.3	3592.8
8°	3525.6	3535.2	3548.3	3562.9	3584.4	3599.8	3607.4	3605.9	3599.4	3590.5	3580.9
8.5°	3508.4	3518.3	3532.6	3548.3	3571.7	3587.9	3596.7	3595.9	3587.9	3578.6	3567.9
9°	3489.5	3500.3	3515.3	3532.9	3558.7	3575.6	3584.4	3583.6	3575.9	3566.0	3554.1
9.5°	3470.3	3481.5	3497.6	3516.4	3543.7	3561.7	3571.7	3571.0	3563.7	3552.5	3539.1
10°	3449.2	3461.5	3478.8	3498.8	3528.3	3547.1	3556.7	3557.1	3549.5	3538.3	3523.3
10.5°	3426.2	3439.2	3459.2	3479.6	3511.0	3530.6	3541.8	3542.9	3534.9	3522.2	3507.2
11°	3403.1	3416.6	3436.5	3459.6	3493.0	3513.7	3526.0	3526.4	3518.7	3506.1	3489.2
11.5°	3377.0	3392.4	3413.1	3437.7	3474.2	3496.1	3508.7	3509.9	3502.2	3488.4	3470.0
12°	3349.8	3365.5	3387.8	3414.7	3453.8	3476.1	3489.9	3491.8	3484.6	3470.0	3450.8
12.5°	3321.7	3337.9	3361.3	3389.3	3430.8	3455.4	3471.5	3473.8	3465.7	3450.4	3430.0
13°	3292.9	3309.8	3333.6	3364.4	3407.4	3434.2	3450.0	3453.1	3445.4	3429.3	3408.1
13.5°	3262.6	3279.5	3305.6	3335.9	3382.8	3410.1	3428.9	3432.3	3424.3	3407.7	3385.9
14°	3231.1	3249.5	3275.3	3307.5	3356.7	3386.2	3405.4	3409.3	3401.6	3385.5	3361.3
14.5°	3200.0	3217.3	3244.2	3277.6	3329.0	3360.9	3381.3	3387.0	3379.3	3362.1	3337.5
15°	3168.1	3186.6	3213.1	3248.4	3300.6	3334.8	3356.7	3361.7	3354.8	3337.1	3312.5
15.5°	3135.9	3154.7	3181.6	3217.7	3272.6	3307.5	3331.7	3337.9	3330.2	3312.9	3287.2
16°	3104.4	3122.8	3150.8	3186.6	3243.4	3280.6	3306.0	3312.5	3305.6	3287.2	3261.1
16.5°	3071.7	3090.9	3119.0	3156.6	3214.6	3253.0	3278.3	3287.9	3280.3	3261.8	3234.2
17°	3040.6	3058.7	3087.5	3124.7	3183.9	3225.0	3251.1	3261.1	3253.8	3235.7	3206.5
17.5°	3008.4	3027.2	3055.2	3094.0	3153.5	3195.4	3223.8	3233.4	3227.3	3208.1	3179.6
18°	2976.9	2996.1	3024.5	3063.3	3124.0	3167.0	3195.4	3205.8	3200.0	3181.2	3150.8
18.5°	2945.0	2964.2	2992.6	3031.8	3093.6	3137.8	3167.4	3179.6	3172.0	3153.9	3122.4
19°	2915.8	2934.3	2962.3	3001.5	3063.7	3107.8	3138.9	3149.7	3144.7	3126.3	3094.8
19.5°	2886.3	2904.7	2933.1	2971.5	3034.9	3079.0	3110.5	3122.0	3117.4	3099.0	3067.9
20°	2859.0	2876.3	2903.9	2942.7	3004.9	3049.8	3081.3	3095.2	3090.6	3072.1	3040.2
20.5°	2829.8	2847.9	2875.5	2913.5	2976.5	3020.7	3053.7	3067.5	3063.3	3045.2	3012.6
21°	2801.4	2819.1	2847.5	2884.7	2948.1	2992.6	3025.3	3038.7	3036.0	3018.0	2985.3



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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°	2699.2	2724.2	2757.6	2798.7	2860.9	2907.8	2941.9	2957.3	2952.3	2932.3	2898.2
23°	2662.0	2686.6	2722.7	2767.2	2831.7	2876.7	2913.9	2928.1	2922.0	2898.2	2867.4
23.5°	2620.5	2645.5	2685.4	2731.5	2802.2	2845.9	2884.0	2896.6	2887.0	2864.4	2836.7
24°	2576.4	2603.2	2644.7	2693.5	2772.6	2814.8	2853.6	2865.1	2852.1	2830.2	2805.6
24.5°	2529.9	2557.2	2602.1	2653.2	2736.1	2784.1	2823.7	2834.0	2817.1	2796.0	2774.9
25°	2484.2	2511.1	2557.9	2609.0	2697.7	2753.4	2793.7	2802.5	2782.2	2761.8	2736.9
25.5°	2434.7	2462.7	2511.1	2562.9	2657.4	2716.1	2763.4	2771.1	2747.2	2723.8	2698.1
26°	2386.7	2417.0	2462.7	2512.6	2614.4	2677.0	2727.7	2732.3	2707.3	2681.2	2657.4
26.5°	2336.3	2369.0	2411.2	2460.4	2571.0	2636.3	2689.6	2694.2	2667.0	2639.3	2614.4
27°	2287.2	2320.2	2358.6	2407.4	2526.1	2593.3	2649.7	2650.9	2624.7	2597.5	2569.8
27.5°	2235.7	2270.3	2302.6	2355.5	2480.7	2551.0	2607.8	2609.0	2582.1	2555.2	2523.0
28°	2185.0	2220.0	2248.8	2304.9	2433.1	2506.8	2561.8	2562.9	2539.1	2511.8	2475.0
28.5°	2131.7	2168.9	2194.6	2254.6	2382.4	2461.9	2513.4	2517.2	2496.9	2468.1	2425.4
29°	2078.7	2116.7	2140.5	2205.4	2332.1	2415.1	2463.8	2468.8	2451.6	2422.4	2374.4
29.5°	2024.5	2062.2	2089.0	2157.8	2280.3	2367.1	2410.5	2419.7	2405.5	2375.9	2321.4
30°	1969.2	2006.1	2038.4	2109.0	2230.4	2317.1	2354.8	2367.1	2357.5	2326.7	2264.9
30.5°	1912.4	1950.4	1987.7	2061.4	2173.5	2264.2	2296.4	2314.1	2309.1	2277.2	2208.5
31°	1857.1	1894.7	1937.4	2009.9	2120.1	2209.6	2240.3	2259.2	2258.0	2227.3	2152.0
31.5°	1802.2	1838.3	1887.0	1959.6	2067.2	2152.0	2180.8	2203.1	2206.5	2173.9	2094.0
32°	1747.7	1783.0	1836.0	1905.5	2017.6	2095.6	2123.2	2145.9	2153.6	2120.1	2038.0
32.5°	1695.8	1727.7	1784.1	1852.1	1963.1	2039.1	2066.4	2090.2	2102.1	2066.4	1981.9
33°	1644.0	1675.1	1732.7	1796.4	1910.5	1980.4	2011.1	2034.1	2047.6	2013.8	1926.2
33.5°	1591.0	1622.5	1679.7	1740.0	1858.6	1921.2	1955.8	1978.1	1994.2	1958.1	1872.1
34°	1539.1	1569.1	1625.2	1682.8	1807.9	1859.8	1901.3	1922.8	1938.1	1900.9	1818.3
34.5°	1486.5	1514.9	1570.6	1628.6	1751.9	1798.7	1847.1	1868.6	1883.2	1846.0	1765.3
35°	1433.1	1460.0	1517.2	1575.2	1697.7	1737.7	1791.8	1815.2	1826.0	1789.1	1711.6
35.5°	1384.0	1408.6	1464.6	1523.8	1641.7	1678.9	1737.3	1762.2	1770.7	1730.4	1658.6
36°	1334.1	1358.3	1412.8	1473.5	1588.7	1620.5	1682.4	1708.1	1711.9	1672.8	1605.6
36.5°	1283.4	1308.3	1377.1	1422.8	1528.0	1563.7	1627.5	1655.5	1654.3	1614.4	1551.4
37°	1233.1	1258.0	1324.1	1364.8	1471.5	1507.3	1571.0	1600.6	1596.0	1557.6	1496.5
37.5°	1182.8	1208.1	1271.5	1316.4	1413.2	1453.1	1514.2	1546.4	1540.7	1500.7	1441.6
38°	1132.5	1158.2	1218.9	1267.6	1357.9	1400.5	1458.1	1491.5	1483.8	1444.7	1385.9
38.5°	1085.2	1112.1	1165.9	1219.2	1299.5	1346.7	1403.2	1436.6	1428.2	1389.4	1331.8
39°	1039.9	1066.8	1117.1	1170.9	1245.4	1294.9	1348.7	1381.7	1374.0	1335.6	1278.8
39.5°	995.0	1020.3	1068.3	1119.0	1189.7	1241.9	1295.3	1328.3	1319.9	1281.5	1226.9
40°	951.2	974.2	1019.9	1067.2	1138.2	1191.6	1241.9	1274.2	1264.6	1228.5	1174.3
40.5°	907.4	931.2	973.1	1017.3	1084.1	1139.4	1190.4	1221.2	1211.2	1175.5	1125.9
41°	865.6	887.8	925.9	968.1	1034.5	1089.8	1140.5	1170.9	1157.8	1120.9	1074.9
41.5°	824.9	847.9	880.2	920.9	984.6	1039.9	1090.2	1119.8	1105.2	1069.1	1026.1
42°	785.7	807.6	836.0	874.8	937.0	992.3	1041.4	1069.9	1052.2	1018.4	976.9
42.5°	746.1	768.4	793.4	829.9	890.1	943.9	993.4	1019.2	1001.5	968.5	928.9
43°	708.5	730.0	750.7	785.3	844.4	897.4	945.8	970.8	951.6	920.9	881.3
43.5°	672.0	693.5	710.8	740.8	798.8	851.7	899.4	923.6	902.4	871.7	834.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	569.1	589.1	598.3	614.8	673.2	723.5	766.9	781.1	763.8	736.5	698.5
45.5°	537.6	556.8	563.3	576.4	635.2	682.0	725.0	735.4	720.4	694.3	655.9
46°	506.5	525.7	529.6	538.0	597.5	643.2	685.5	692.4	678.6	652.1	615.2
46.5°	476.9	495.8	496.5	502.3	561.8	605.6	644.8	648.2	637.5	611.0	575.6
47°	447.4	465.8	465.8	469.3	527.6	568.7	605.6	607.5	597.1	573.3	536.9
47.5°	420.9	437.8	436.2	437.8	494.6	533.4	567.2	567.6	558.4	536.5	500.8
48°	394.4	411.3	408.2	408.6	463.1	500.0	531.1	529.9	521.1	498.1	466.2
48.5°	369.0	385.6	382.1	382.5	433.6	468.1	495.0	493.1	485.4	463.5	433.2
49°	344.5	360.6	356.4	357.9	405.5	437.0	460.4	458.5	451.2	430.9	401.3
49.5°	321.4	336.8	332.9	334.5	378.6	407.8	427.8	426.3	417.8	399.0	374.4
50°	299.1	313.7	311.1	313.4	356.0	380.2	396.3	395.5	387.5	372.5	347.9
50.5°	278.0	291.9	290.3	293.0	332.9	356.0	369.8	369.0	361.4	346.0	321.4
51°	257.7	270.7	270.7	274.2	310.3	331.8	343.3	342.5	334.9	319.1	294.9
51.5°	238.1	250.8	251.5	255.8	287.2	308.0	316.8	316.4	308.4	292.6	268.4
52°	220.0	231.9	233.5	238.5	264.6	283.8	290.3	289.9	281.9	266.1	245.8
52.5°	202.4	213.9	216.2	221.2	245.0	259.6	263.8	263.8	255.8	242.3	224.6
53°	185.9	196.2	199.3	204.7	225.8	239.2	242.3	241.9	234.2	221.6	205.4
53.5°	170.1	179.7	183.6	188.9	208.5	219.7	222.3	220.8	214.3	202.4	187.0
54°	155.5	164.4	168.6	173.6	191.6	200.5	203.5	201.6	195.5	184.7	170.5
54.5°	142.9	150.5	154.4	159.4	175.1	182.8	185.5	183.6	177.4	167.4	154.8
55°	131.3	137.5	141.3	145.9	160.1	166.7	168.6	167.4	162.1	152.5	141.7
55.5°	120.2	126.3	129.8	134.4	145.9	151.3	153.2	152.5	147.5	139.4	129.0
56°	108.7	115.2	118.3	122.5	132.9	137.5	139.4	138.6	134.4	127.1	116.0
56.5°	97.2	104.1	106.8	110.6	120.6	124.8	126.7	125.6	121.7	113.7	103.7
57°	85.6	92.5	95.2	98.7	107.9	112.1	114.1	112.5	109.4	102.1	92.5
57.5°	77.2	81.4	83.7	86.8	96.0	99.8	101.4	101.0	97.5	91.0	82.6
58°	69.9	73.3	75.3	77.6	85.6	88.7	90.2	89.9	87.2	81.4	73.7
58.5°	63.4	66.4	67.6	69.1	76.4	79.1	80.3	80.3	78.0	73.0	66.1
59°	57.6	60.3	61.1	62.2	68.0	69.9	71.4	71.4	69.5	65.7	59.5
59.5°	52.6	54.9	54.9	56.1	60.7	62.6	63.7	63.7	62.2	58.8	53.4
60°	48.0	49.9	50.3	50.7	54.5	56.1	56.8	57.2	56.1	53.0	48.4
60.5°	43.8	45.7	45.7	45.7	49.2	50.3	51.1	51.8	50.7	48.4	44.2
61°	39.9	41.9	41.9	41.5	44.5	45.7	46.1	46.8	45.7	43.8	39.9
61.5°	36.9	38.4	38.4	38.0	40.3	41.5	41.9	42.6	41.5	39.9	36.9
62°	33.8	35.3	34.9	34.9	36.9	37.6	38.0	38.8	38.0	36.5	34.2
62.5°	31.5	32.6	32.3	31.9	34.2	34.9	34.9	35.3	34.6	33.8	31.9
63°	28.8	30.3	30.0	29.2	31.5	32.3	32.6	33.0	32.3	31.5	29.2
63.5°	26.5	28.0	27.3	26.9	28.8	29.6	30.0	30.3	30.0	28.8	26.9
64°	24.6	25.7	25.3	25.0	26.5	26.9	27.6	28.0	27.6	26.5	24.2
64.5°	22.7	23.8	23.4	23.0	23.8	24.2	25.3	25.7	25.3	23.8	22.3
65°	21.1	22.3	21.9	21.1	21.9	22.3	22.7	23.0	22.7	22.3	20.7
65.5°	19.6	20.4	20.4	19.6	20.4	20.7	21.1	21.5	21.1	20.7	19.2
66°	18.0	19.2	18.8	18.4	18.8	19.2	19.6	20.0	19.6	19.2	18.0



TEST NUMBER: P776290

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	14.6	15.4	15.0	14.6	15.0	15.4	15.7	15.7	15.7	15.4	14.2
68°	13.4	14.2	14.2	13.8	13.8	14.2	14.6	14.6	14.6	14.2	13.4
68.5°	12.7	13.4	13.4	13.1	13.1	13.1	13.4	13.8	13.4	13.4	12.3
69°	11.9	12.3	12.3	11.9	12.3	12.3	12.7	12.7	12.7	12.3	11.5
69.5°	10.8	11.5	11.5	11.1	11.5	11.5	11.9	11.9	11.9	11.5	10.8
70°	10.0	10.8	10.8	10.4	10.4	10.8	11.1	11.1	11.1	10.8	10.0
70.5°	9.2	10.0	10.0	9.6	10.0	10.0	10.4	10.4	10.4	10.0	9.2
71°	8.8	9.2	9.2	8.8	9.2	9.2	9.6	9.6	9.6	9.2	8.8
71.5°	8.1	8.4	8.4	8.4	8.4	8.4	8.8	8.8	8.8	8.4	8.1
72°	7.3	8.1	8.1	7.7	8.1	8.1	8.1	8.4	8.1	8.1	7.7
72.5°	6.9	7.3	7.3	7.3	7.3	7.7	7.7	7.7	7.7	7.3	6.9
73°	6.1	6.9	6.9	6.5	6.9	6.9	7.3	7.3	6.9	6.9	6.5
73.5°	5.8	6.1	6.1	6.1	6.5	6.5	6.5	6.5	6.5	6.1	6.1
74°	5.4	5.8	5.8	5.8	6.1	6.1	6.1	6.1	6.1	5.8	5.8
74.5°	5.0	5.4	5.4	5.4	5.4	5.8	5.8	5.8	5.8	5.4	5.0
75°	4.6	5.0	5.0	5.0	5.0	5.4	5.4	5.4	5.0	5.0	4.6
75.5°	4.2	4.6	4.6	4.6	4.6	5.0	5.0	5.0	4.6	4.6	4.2
76°	3.8	4.2	4.2	4.2	4.2	4.6	4.6	4.2	4.2	4.2	3.8
76.5°	3.5	3.8	3.8	3.8	4.2	4.2	4.2	4.2	3.8	3.8	3.8
77°	3.1	3.5	3.5	3.5	3.8	3.8	3.8	3.8	3.8	3.5	3.5
77.5°	2.7	3.1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.1	3.1
78°	2.7	2.7	3.1	3.1	3.1	3.5	3.1	3.1	3.1	3.1	2.7
78.5°	2.3	2.7	2.7	2.7	3.1	3.1	3.1	2.7	2.7	2.7	2.7
79°	1.9	2.3	2.3	2.7	2.7	2.7	2.7	2.7	2.7	2.3	2.3
79.5°	1.9	1.9	2.3	2.3	2.3	2.7	2.3	2.3	2.3	1.9	2.3
80°	1.5	1.9	1.9	1.9	2.3	2.3	2.3	1.9	1.9	1.9	1.9
80.5°	1.5	1.5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	1.5
81°	1.2	1.5	1.5	1.9	1.9	1.9	1.9	1.5	1.5	1.5	1.5
81.5°	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.2	1.5
82°	0.8	1.2	1.2	1.5	1.5	1.5	1.5	1.2	1.2	1.2	1.2
82.5°	0.8	0.8	1.2	1.2	1.2	1.5	1.2	1.2	1.2	0.8	1.2
83°	0.4	0.8	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8
83.5°	0.4	0.8	0.8	1.2	1.2	1.2	1.2	0.8	0.8	0.8	0.8
84°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.8
84.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.8
85°	0.4	0.4	0.4	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4
85.5°	0.0	0.4	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.4	0.4
86°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
86.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4
87°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.4	0.4	0.4	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: P776290
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-2700K

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: P776290

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3670.0	3670.0	3670.0	3670.0	3670.0	3670.0
0.5°	3669.3	3668.9	3669.3	3668.5	3667.7	3665.8
1°	3668.5	3666.6	3665.8	3664.7	3663.9	3662.7
1.5°	3666.6	3663.5	3661.6	3660.4	3660.0	3658.5
2°	3663.9	3659.7	3657.4	3655.8	3655.1	3653.9
2.5°	3660.0	3655.1	3651.2	3648.9	3648.5	3648.1
3°	3656.2	3649.3	3645.1	3642.0	3641.2	3641.6
3.5°	3651.6	3643.1	3637.4	3634.3	3633.5	3633.9
4°	3645.8	3635.9	3629.3	3625.1	3624.7	3625.9
4.5°	3639.3	3628.2	3620.5	3616.3	3615.1	3617.0
5°	3632.0	3619.3	3610.9	3605.9	3604.4	3606.7
5.5°	3623.6	3609.7	3599.4	3594.8	3593.6	3595.9
6°	3614.7	3599.4	3588.2	3582.1	3581.3	3583.2
6.5°	3604.7	3587.5	3575.9	3569.8	3568.3	3571.0
7°	3593.6	3575.2	3562.1	3555.6	3553.3	3556.7
7.5°	3581.3	3561.7	3547.9	3540.6	3538.3	3541.8
8°	3568.7	3547.1	3532.9	3524.5	3522.2	3525.6
8.5°	3554.4	3531.0	3516.0	3507.6	3504.9	3508.4
9°	3539.5	3514.1	3498.4	3488.8	3485.7	3489.5
9.5°	3523.0	3496.5	3479.9	3468.4	3466.1	3470.3
10°	3506.1	3477.3	3459.2	3448.1	3444.2	3449.2
10.5°	3487.6	3456.5	3437.7	3425.8	3422.3	3426.2
11°	3468.0	3435.4	3415.0	3401.2	3396.6	3403.1
11.5°	3447.7	3413.1	3390.1	3375.1	3371.7	3377.0
12°	3426.9	3388.9	3364.4	3348.2	3344.0	3349.8
12.5°	3403.9	3364.0	3337.5	3320.2	3314.8	3321.7
13°	3380.9	3338.2	3309.8	3291.0	3285.2	3292.9
13.5°	3356.3	3312.1	3282.2	3261.1	3255.7	3262.6
14°	3331.3	3284.9	3252.2	3231.1	3224.6	3231.1
14.5°	3304.4	3256.8	3223.4	3201.1	3193.5	3200.0
15°	3279.1	3228.4	3191.9	3169.3	3160.8	3168.1
15.5°	3251.5	3199.2	3162.7	3138.2	3129.0	3135.9
16°	3224.2	3170.4	3131.6	3105.9	3097.1	3104.4
16.5°	3195.8	3141.6	3103.2	3074.8	3066.0	3071.7
17°	3168.1	3110.9	3072.1	3042.2	3034.1	3040.6
17.5°	3139.3	3082.5	3041.8	3011.8	3001.8	3008.4
18°	3110.1	3052.5	3010.7	2980.3	2970.7	2976.9
18.5°	3081.3	3023.0	2981.9	2950.0	2940.4	2945.0
19°	3053.3	2993.8	2952.7	2922.0	2911.2	2915.8
19.5°	3025.3	2966.5	2924.3	2893.6	2882.0	2886.3
20°	2998.0	2937.7	2895.5	2864.8	2853.2	2859.0
20.5°	2969.2	2908.9	2866.7	2836.3	2824.0	2829.8
21°	2942.7	2879.7	2835.6	2804.8	2794.9	2801.4

TEST NUMBER: P776290

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2855.2	2784.5	2732.7	2702.3	2692.3	2699.2
23°	2825.6	2748.0	2695.0	2662.0	2653.5	2662.0
23.5°	2795.6	2711.9	2655.1	2620.1	2612.5	2620.5
24°	2766.1	2672.7	2613.2	2576.0	2567.5	2576.4
24.5°	2730.3	2632.4	2570.6	2527.6	2520.3	2529.9
25°	2693.5	2590.2	2527.2	2477.7	2472.7	2484.2
25.5°	2653.2	2547.2	2482.3	2425.8	2420.4	2434.7
26°	2612.1	2503.8	2436.2	2373.6	2369.4	2386.7
26.5°	2566.0	2458.8	2387.8	2322.9	2315.2	2336.3
27°	2518.8	2413.1	2338.7	2273.0	2260.7	2287.2
27.5°	2467.3	2364.4	2288.0	2223.1	2206.5	2235.7
28°	2414.7	2314.5	2235.7	2174.7	2153.9	2185.0
28.5°	2358.6	2263.0	2182.4	2127.1	2100.6	2131.7
29°	2300.6	2208.9	2129.0	2079.1	2051.0	2078.7
29.5°	2241.9	2153.6	2074.8	2029.9	1998.4	2024.5
30°	2184.3	2096.3	2021.5	1980.4	1948.5	1969.2
30.5°	2124.8	2039.1	1967.3	1927.8	1899.0	1912.4
31°	2068.7	1980.7	1916.6	1874.8	1848.3	1857.1
31.5°	2013.8	1921.2	1863.6	1819.5	1796.8	1802.2
32°	1959.6	1862.5	1811.4	1762.6	1745.3	1747.7
32.5°	1906.6	1803.0	1758.8	1706.6	1692.7	1695.8
33°	1851.3	1743.0	1704.6	1652.0	1639.7	1644.0
33.5°	1797.6	1682.8	1648.6	1597.9	1586.7	1591.0
34°	1743.4	1625.9	1594.0	1544.1	1533.4	1539.1
34.5°	1688.9	1569.1	1537.6	1490.4	1478.5	1486.5
35°	1633.2	1513.0	1481.5	1440.1	1426.6	1433.1
35.5°	1577.5	1460.4	1424.3	1390.9	1375.2	1384.0
36°	1521.5	1407.8	1361.7	1340.2	1326.8	1334.1
36.5°	1465.8	1356.3	1308.7	1289.9	1278.4	1283.4
37°	1410.1	1304.9	1255.3	1239.2	1230.0	1233.1
37.5°	1355.6	1253.8	1202.4	1188.9	1182.0	1182.8
38°	1302.6	1202.4	1149.0	1138.2	1133.6	1132.5
38.5°	1250.7	1151.3	1096.4	1087.5	1086.4	1085.2
39°	1199.3	1101.4	1047.6	1038.0	1039.5	1039.9
39.5°	1149.4	1051.8	998.1	988.5	990.8	995.0
40°	1099.4	1004.2	949.3	939.7	943.5	951.2
40.5°	1050.7	956.6	902.4	892.1	897.8	907.4
41°	1002.7	909.3	856.7	845.2	853.3	865.6
41.5°	955.4	863.3	811.4	800.3	809.5	824.9
42°	908.6	819.9	768.4	756.5	766.1	785.7
42.5°	863.6	775.7	726.9	713.5	725.4	746.1
43°	819.5	733.9	686.6	671.6	685.1	708.5
43.5°	776.1	692.8	647.4	630.2	646.3	672.0



TEST NUMBER: P776290

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	653.2	578.7	539.2	518.4	537.2	569.1
45.5°	614.8	543.0	506.5	484.6	503.4	537.6
46°	576.8	509.2	475.0	452.4	471.2	506.5
46.5°	539.5	476.9	444.3	422.0	440.8	476.9
47°	503.8	445.8	415.9	394.8	412.4	447.4
47.5°	468.5	415.1	388.6	369.4	385.2	420.9
48°	435.1	387.1	362.9	344.8	360.2	394.4
48.5°	404.4	360.6	338.3	322.2	336.4	369.0
49°	374.0	334.9	314.5	300.7	313.7	344.5
49.5°	347.9	310.7	292.2	281.5	293.8	321.4
50°	321.8	286.9	271.1	262.7	273.4	299.1
50.5°	295.7	264.6	250.8	244.2	255.0	278.0
51°	269.6	243.8	231.6	227.0	236.9	257.7
51.5°	247.7	223.9	213.5	210.8	219.7	238.1
52°	227.3	205.4	196.2	195.1	203.1	220.0
52.5°	207.4	187.0	180.1	179.7	187.8	202.4
53°	189.7	170.1	164.7	164.7	172.8	185.9
53.5°	172.8	154.8	150.5	151.3	158.6	170.1
54°	157.1	140.9	137.1	138.6	145.2	155.5
54.5°	143.2	129.4	126.0	127.5	134.4	142.9
55°	130.6	117.9	114.8	116.4	122.9	131.3
55.5°	117.9	106.0	103.3	105.2	111.4	120.2
56°	105.2	94.5	92.2	94.1	99.8	108.7
56.5°	94.1	82.9	81.0	82.9	88.3	97.2
57°	83.7	73.7	72.2	74.1	79.1	85.6
57.5°	74.5	66.1	64.9	66.8	71.4	77.2
58°	66.4	59.5	58.4	60.3	64.9	69.9
58.5°	59.9	53.4	53.0	54.5	58.8	63.4
59°	53.8	48.4	48.0	49.9	53.8	57.6
59.5°	48.8	43.8	43.4	45.3	48.8	52.6
60°	44.2	39.9	39.6	41.5	44.9	48.0
60.5°	40.3	36.5	36.1	38.0	41.1	43.8
61°	36.9	33.4	33.0	34.9	37.6	39.9
61.5°	34.2	30.7	30.3	32.3	34.9	36.9
62°	31.5	28.0	28.0	29.6	32.3	33.8
62.5°	29.2	25.7	25.7	27.3	29.6	31.5
63°	26.5	23.8	23.8	25.3	27.3	28.8
63.5°	24.2	21.9	22.3	23.4	25.3	26.5
64°	22.3	20.4	20.4	21.5	23.4	24.6
64.5°	20.7	18.8	18.8	20.0	21.5	22.7
65°	19.2	17.7	17.7	18.4	20.0	21.1
65.5°	17.7	16.1	16.5	17.3	18.8	19.6
66°	16.5	15.0	15.4	16.1	17.3	18.0



TEST NUMBER: P776290

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	13.1	12.3	12.3	13.1	13.8	14.6
68°	12.3	11.5	11.5	12.3	13.1	13.4
68.5°	11.5	10.8	10.8	11.1	11.9	12.7
69°	10.8	10.0	10.0	10.4	11.1	11.9
69.5°	10.0	9.2	9.2	9.6	10.4	10.8
70°	9.2	8.4	8.4	9.2	9.6	10.0
70.5°	8.8	8.1	8.1	8.4	8.8	9.2
71°	8.1	7.3	7.3	7.7	8.1	8.8
71.5°	7.7	6.9	6.9	7.3	7.7	8.1
72°	6.9	6.5	6.5	6.9	6.9	7.3
72.5°	6.5	5.8	5.8	6.1	6.5	6.9
73°	6.1	5.4	5.4	5.8	6.1	6.1
73.5°	5.8	5.0	5.0	5.4	5.4	5.8
74°	5.4	4.6	4.6	5.0	5.0	5.4
74.5°	5.0	4.2	4.2	4.6	4.6	5.0
75°	4.6	3.8	3.8	4.2	4.2	4.6
75.5°	4.2	3.8	3.8	3.8	3.8	4.2
76°	3.8	3.5	3.5	3.5	3.5	3.8
76.5°	3.5	3.1	3.1	3.1	3.1	3.5
77°	3.1	2.7	2.7	2.7	3.1	3.1
77.5°	3.1	2.7	2.7	2.7	2.7	2.7
78°	2.7	2.3	2.3	2.3	2.3	2.7
78.5°	2.3	2.3	2.3	2.3	2.3	2.3
79°	2.3	1.9	1.9	1.9	1.9	1.9
79.5°	1.9	1.9	1.9	1.9	1.5	1.9
80°	1.9	1.5	1.5	1.5	1.5	1.5
80.5°	1.5	1.5	1.5	1.5	1.2	1.5
81°	1.5	1.2	1.2	1.2	1.2	1.2
81.5°	1.2	1.2	1.2	1.2	1.2	1.2
82°	1.2	1.2	1.2	0.8	0.8	0.8
82.5°	1.2	0.8	0.8	0.8	0.8	0.8
83°	0.8	0.8	0.8	0.8	0.8	0.4
83.5°	0.8	0.8	0.8	0.8	0.4	0.4
84°	0.8	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	0.4	0.4
85.5°	0.4	0.4	0.4	0.4	0.0	0.0
86°	0.4	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	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
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: P776290

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRH-4000lm-2700K

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°	2769.5	2789.5	2818.7	2856.3	2920.0	2964.2	2997.2	3011.4	3008.8	2990.3	2957.7
22°	2736.5	2759.5	2789.1	2828.3	2890.5	2936.6	2968.8	2984.2	2981.1	2961.9	2929.3



44°	636.3	657.0	672.0	698.1	755.7	807.6	854.0	874.8	855.2	824.5	788.0
44.5°	602.5	622.5	634.4	655.9	714.3	763.8	809.9	826.8	808.7	780.7	743.1



66.5°	16.9	17.7	17.7	16.9	17.3	17.7	18.0	18.4	18.0	17.7	16.5
67°	15.7	16.5	16.1	15.7	16.1	16.5	16.9	16.9	16.9	16.5	15.4



89°	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

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21.5°	2914.7	2849.4	2803.3	2771.4	2763.4	2769.5
22°	2884.7	2817.1	2768.7	2738.0	2728.8	2736.5



44°	734.2	653.6	610.2	592.2	609.0	636.3
44.5°	693.9	615.6	573.7	554.5	573.0	602.5

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66.5°	15.4	14.2	14.2	15.0	16.1	16.9
67°	14.2	13.1	13.4	14.2	15.0	15.7

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Peachtree City, GA 30269

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)