

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: P776628

Luminaire Tested: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776628
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: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K
Description: 4 INCH SQUARE MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4803.8 lumens
Efficiency: N/A
Efficacy: 100.1 lumens/watt
Spacing Criteria (0/90/45): 1.05 / 1.05 / 1.09
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

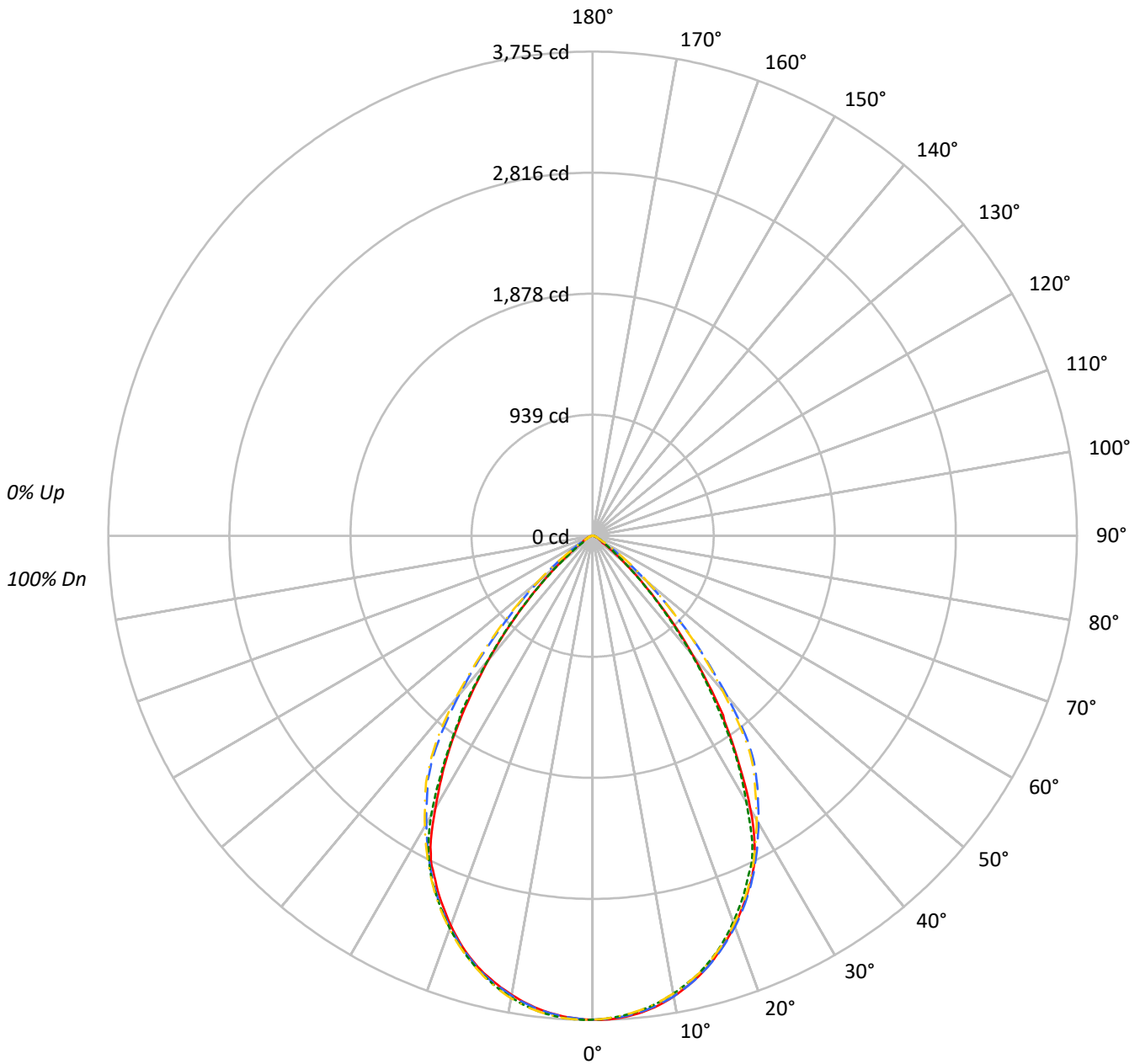
Input Watts (W): 48
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P776628

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K

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	104	110	107	105	103	103	101	100	100	98	97	96	95	94	92			92																
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	88	85	84			84																
3	100	93	87	82	98	91	86	82	88	84	80	86	82	79	84	81	78	76			76																
4	94	85	79	74	92	84	78	74	82	77	73	80	76	72	78	74	71	70			70																
5	88	79	72	67	87	78	72	67	76	71	66	74	70	66	73	69	65	64			64																
6	83	73	66	61	82	72	66	61	71	65	61	69	64	60	68	63	60	58			58																
7	78	68	61	56	77	67	61	56	66	60	56	65	59	56	63	59	55	54			54																
8	74	63	56	52	73	63	56	52	61	56	51	60	55	51	59	55	51	49			49																
9	70	59	52	48	69	58	52	48	57	52	48	57	51	47	56	51	47	46			46																
10	66	55	49	44	65	55	49	44	54	48	44	53	48	44	52	47	44	43			43																

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	370895	370895	370895	370895
5°	369891	368274	368750	370229
10°	363991	361783	362797	365045
15°	353690	351776	353639	355255
20°	338414	335248	338214	340823
25°	319067	313745	317082	321782
30°	279489	272230	278348	285664
35°	219319	214649	223590	226595
40°	156048	152706	162022	163635
45°	95389	92984	101134	101735
50°	46839	48315	52128	50437
55°	17560	24229	25539	19611
60°	12770	16171	16348	12948
65°	10057	12746	12980	10408
70°	8005	10230	10375	8439
75°	6225	8020	8020	6951
80°	4098	6261	5977	5464
85°	1588	4877	2722	3742

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 315°

Vertical Angle: 45°

Luminance: 146326 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	352.0	7.3
10°-20°	970.4	20.2
20°-30°	1335.5	27.8
30°-40°	1227.0	25.5
40°-50°	663.6	13.8
50°-60°	178.8	3.7
60°-70°	51.0	1.1
70°-80°	21.4	0.4
80°-90°	4.1	0.1
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°	2657.9	55.3
0°-40°	3884.9	80.9
0°-60°	4727.2	98.4
0°-90°	4803.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4803.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3752	3752	3752	3752	3752	
5°	3728	3712	3716	3731	3728	353
15°	3456	3438	3456	3472	3456	970
25°	2926	2877	2907	2950	2926	1328
35°	1818	1779	1853	1878	1818	1130
45°	682	665	724	728	682	538
55°	102	141	148	114	102	119
65°	43	54	56	44	43	44
75°	16	21	21	18	16	17
85°	1	4	2	3	1	2
90°	0	0	0	0	0	



TEST NUMBER: P776628

CATALOG NUMBER: HCDJBL4050CSD-HCD4TSQH-5000lm-4000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	3752.4	3752.4	3752.4	3752.4	3752.4	3752.4	3752.4	3752.4	3752.4	3752.4	3752.4
0.5°	3754.3	3752.9	3751.4	3750.0	3752.4	3750.0	3751.0	3751.4	3752.9	3752.9	3751.0
1°	3754.3	3751.9	3750.0	3749.0	3750.5	3748.1	3748.6	3749.0	3751.0	3751.9	3750.0
1.5°	3752.9	3750.0	3749.5	3746.7	3747.1	3744.3	3745.7	3746.2	3749.0	3749.5	3747.6
2°	3751.9	3748.6	3746.7	3744.3	3743.3	3741.4	3741.9	3742.8	3745.2	3747.1	3745.2
2.5°	3749.5	3746.2	3744.3	3740.9	3739.5	3737.1	3738.0	3738.5	3742.4	3743.8	3742.4
3°	3746.7	3741.9	3740.9	3737.6	3735.7	3732.3	3733.3	3734.2	3738.5	3740.9	3738.5
3.5°	3742.8	3738.0	3736.6	3733.3	3730.9	3727.0	3727.5	3729.0	3733.7	3736.6	3734.7
4°	3738.5	3733.3	3733.3	3728.5	3725.1	3721.8	3721.8	3723.7	3728.0	3732.3	3729.9
4.5°	3733.7	3727.5	3727.0	3723.2	3718.4	3714.6	3715.6	3717.5	3722.7	3727.5	3724.2
5°	3728.0	3721.3	3721.3	3716.5	3711.7	3707.9	3708.4	3710.8	3716.5	3720.8	3718.0
5.5°	3720.8	3714.6	3715.1	3709.8	3704.1	3699.8	3700.7	3703.1	3709.4	3715.1	3711.3
6°	3714.1	3706.5	3707.4	3702.2	3696.0	3691.2	3692.6	3695.5	3701.2	3707.4	3703.6
6.5°	3706.0	3698.4	3699.8	3694.5	3686.9	3682.1	3683.5	3686.4	3693.1	3700.3	3696.0
7°	3696.9	3688.8	3690.7	3685.0	3677.3	3672.1	3674.4	3677.8	3684.0	3691.7	3687.4
7.5°	3687.4	3679.2	3681.6	3676.4	3666.8	3662.0	3663.9	3667.8	3674.0	3682.6	3677.8
8°	3677.3	3668.7	3672.5	3664.9	3655.8	3650.1	3652.9	3656.3	3663.9	3672.5	3667.8
8.5°	3665.8	3657.7	3661.5	3653.4	3643.4	3639.1	3641.9	3645.3	3652.5	3661.5	3657.2
9°	3653.9	3646.2	3650.1	3641.9	3631.4	3626.1	3629.5	3633.3	3640.5	3650.1	3646.2
9.5°	3641.0	3632.4	3638.6	3630.0	3618.0	3613.2	3616.6	3620.4	3627.6	3638.6	3633.8
10°	3626.6	3619.0	3625.2	3616.1	3604.6	3599.8	3603.7	3607.5	3614.7	3626.1	3621.4
10.5°	3612.8	3604.2	3611.8	3602.2	3590.8	3586.0	3590.3	3593.6	3600.8	3613.2	3607.5
11°	3597.9	3589.3	3598.9	3587.9	3576.4	3571.6	3575.9	3579.3	3586.9	3599.4	3593.6
11.5°	3582.6	3574.0	3582.6	3573.1	3560.6	3555.9	3560.2	3565.9	3573.1	3585.0	3578.8
12°	3565.9	3557.3	3567.3	3556.8	3544.9	3540.6	3544.9	3550.1	3557.3	3571.2	3568.8
12.5°	3549.6	3540.1	3550.1	3540.6	3529.1	3524.8	3529.1	3534.8	3541.5	3554.9	3552.5
13°	3532.4	3522.9	3533.9	3523.3	3513.8	3509.0	3513.3	3519.0	3525.7	3539.1	3536.2
13.5°	3514.7	3504.2	3516.2	3505.6	3497.5	3493.2	3497.5	3503.7	3509.9	3523.3	3520.0
14°	3496.1	3486.0	3497.0	3487.5	3478.4	3473.6	3479.3	3484.6	3494.2	3507.6	3504.2
14.5°	3476.0	3465.5	3477.4	3468.8	3458.3	3454.0	3459.7	3465.0	3475.5	3491.8	3481.7
15°	3456.4	3445.4	3458.3	3449.7	3437.7	3434.4	3439.2	3445.9	3455.9	3472.6	3462.1
15.5°	3435.4	3424.8	3438.2	3428.7	3416.7	3412.9	3418.1	3424.8	3435.4	3453.0	3441.6
16°	3414.3	3403.3	3416.2	3407.1	3395.2	3391.8	3396.6	3404.3	3414.3	3432.5	3421.0
16.5°	3391.4	3382.3	3394.2	3385.6	3372.2	3368.9	3375.1	3382.3	3393.3	3411.0	3399.5
17°	3368.9	3358.4	3372.7	3363.6	3348.8	3346.4	3352.6	3360.3	3371.3	3389.4	3377.0
17.5°	3345.4	3335.4	3349.3	3340.2	3324.4	3323.0	3329.2	3336.4	3346.9	3367.4	3354.1
18°	3321.1	3311.0	3326.3	3315.8	3297.6	3298.1	3305.8	3312.9	3321.5	3344.5	3331.1
18.5°	3294.8	3285.7	3301.5	3291.9	3270.9	3272.3	3280.9	3288.1	3296.2	3320.1	3307.2
19°	3269.9	3259.9	3277.5	3266.5	3243.1	3245.5	3256.0	3262.2	3269.9	3294.8	3282.3
19.5°	3243.6	3234.0	3252.2	3239.3	3215.9	3218.2	3230.7	3235.9	3243.1	3268.5	3257.0
20°	3217.3	3207.3	3226.9	3211.6	3187.2	3189.6	3204.9	3208.7	3215.4	3241.7	3231.6
20.5°	3189.6	3180.0	3200.6	3183.3	3158.5	3160.9	3177.6	3180.5	3187.2	3214.4	3204.4
21°	3161.3	3151.3	3172.3	3154.2	3128.8	3131.7	3150.3	3151.8	3158.5	3185.7	3177.6



TEST NUMBER: P776628

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	3075.3	3063.8	3087.7	3063.3	3038.9	3041.3	3064.7	3061.9	3069.1	3097.3	3093.4
23°	3043.2	3033.7	3058.1	3031.3	3006.9	3009.8	3035.6	3029.8	3038.9	3066.7	3063.8
23.5°	3013.6	3003.5	3027.0	3001.1	2973.4	2979.2	3004.5	2998.8	3006.9	3035.6	3032.7
24°	2983.0	2971.5	2996.8	2968.6	2939.0	2946.6	2972.9	2967.2	2974.4	3004.5	3001.1
24.5°	2955.2	2939.9	2964.8	2937.1	2906.9	2913.2	2939.5	2935.2	2940.4	2972.5	2968.6
25°	2925.6	2906.5	2931.8	2902.2	2876.8	2878.7	2906.5	2902.2	2907.4	2939.5	2936.1
25.5°	2886.9	2875.4	2897.9	2867.7	2846.7	2843.8	2872.0	2868.2	2876.3	2905.0	2902.6
26°	2852.0	2845.3	2862.5	2831.9	2816.6	2809.9	2837.6	2833.8	2847.2	2870.6	2869.2
26.5°	2814.2	2815.6	2828.5	2797.9	2772.6	2777.8	2801.7	2798.4	2811.3	2835.7	2833.8
27°	2769.2	2776.4	2793.1	2764.9	2726.2	2747.2	2765.9	2764.4	2764.4	2803.7	2798.4
27.5°	2722.4	2738.6	2757.3	2734.3	2682.7	2715.7	2729.5	2731.4	2723.3	2773.5	2762.5
28°	2673.1	2698.5	2720.0	2703.2	2622.9	2679.3	2692.7	2700.4	2672.6	2740.5	2726.2
28.5°	2621.5	2656.4	2684.1	2668.8	2562.2	2630.1	2655.9	2664.5	2614.8	2693.7	2690.3
29°	2567.9	2610.5	2646.3	2621.5	2503.8	2589.4	2619.1	2618.6	2556.4	2651.1	2653.0
29.5°	2509.1	2562.6	2610.5	2577.5	2444.1	2539.2	2580.3	2576.5	2496.7	2608.1	2616.7
30°	2448.8	2510.5	2573.6	2530.6	2385.2	2479.9	2543.0	2529.2	2438.8	2552.6	2579.4
30.5°	2385.2	2460.3	2535.9	2473.2	2327.9	2420.6	2504.3	2472.3	2379.5	2493.3	2542.1
31°	2321.2	2402.4	2497.6	2413.4	2270.9	2363.2	2465.1	2416.3	2323.5	2435.9	2503.8
31.5°	2256.1	2346.0	2459.4	2355.1	2213.6	2304.4	2425.4	2357.5	2267.6	2377.1	2464.6
32°	2189.7	2283.4	2420.6	2297.2	2157.6	2247.5	2387.1	2300.1	2211.2	2320.2	2426.8
32.5°	2125.6	2223.6	2384.8	2238.9	2098.3	2192.0	2347.9	2242.7	2153.8	2263.3	2388.1
33°	2062.9	2160.0	2349.8	2182.5	2038.5	2137.5	2311.1	2188.2	2096.9	2207.3	2351.8
33.5°	2000.8	2095.4	2312.5	2126.5	1974.0	2081.6	2275.2	2131.8	2039.0	2150.9	2319.7
34°	1940.0	2033.3	2270.0	2071.1	1910.9	2026.1	2240.3	2078.2	1978.8	2095.4	2286.7
34.5°	1878.8	1970.6	2233.2	2014.6	1843.9	1968.2	2203.5	2022.8	1915.6	2039.5	2238.4
35°	1817.6	1908.0	2195.4	1957.7	1778.9	1913.3	2162.9	1969.7	1853.0	1983.1	2189.7
35.5°	1757.8	1848.7	2154.7	1899.4	1713.4	1852.0	2117.9	1913.3	1790.4	1924.7	2147.6
36°	1721.0	1789.9	2106.9	1840.6	1651.7	1791.3	2072.5	1858.3	1727.2	1866.4	2095.4
36.5°	1654.1	1732.5	2051.9	1779.8	1589.0	1729.6	2014.6	1799.9	1664.6	1806.6	2037.6
37°	1585.7	1674.6	2000.3	1718.2	1529.3	1667.9	1956.8	1741.6	1601.0	1745.4	1978.3
37.5°	1517.3	1616.3	1944.8	1658.4	1470.4	1604.8	1894.6	1682.8	1541.2	1683.2	1918.5
38°	1448.9	1558.4	1880.3	1598.6	1413.1	1544.6	1827.2	1623.5	1482.9	1623.5	1857.8
38.5°	1387.7	1500.6	1813.3	1539.3	1355.2	1486.2	1760.2	1563.2	1425.0	1561.8	1797.1
39°	1327.0	1442.2	1748.3	1479.5	1299.7	1429.3	1693.3	1504.4	1367.2	1503.4	1734.9
39.5°	1267.7	1382.9	1683.7	1419.8	1241.4	1375.8	1629.2	1446.5	1310.7	1445.6	1673.2
40°	1209.4	1324.6	1619.2	1362.9	1183.5	1319.3	1566.1	1391.1	1255.7	1388.7	1611.0
40.5°	1153.4	1265.3	1554.6	1307.9	1125.2	1265.3	1505.4	1334.2	1198.4	1332.3	1549.8
41°	1097.5	1208.9	1489.6	1253.8	1069.2	1212.7	1446.1	1280.6	1141.5	1277.7	1486.7
41.5°	1042.0	1153.4	1425.0	1200.3	1011.9	1160.6	1387.7	1228.0	1083.6	1224.7	1425.5
42°	988.4	1099.8	1363.3	1145.8	957.8	1105.6	1330.8	1175.4	1028.1	1170.6	1362.9
42.5°	934.9	1046.3	1303.1	1093.2	905.2	1051.5	1275.8	1123.8	974.1	1117.5	1301.6
43°	882.7	994.6	1243.3	1040.1	854.1	998.9	1221.3	1071.2	921.5	1063.5	1239.5
43.5°	829.2	944.4	1185.0	987.5	803.8	947.8	1166.8	1019.5	869.8	1010.4	1180.2



TEST NUMBER: P776628

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	682.4	797.2	1013.8	834.9	665.2	798.1	1004.2	868.4	723.5	857.4	1007.1
45.5°	636.5	748.9	957.8	787.6	620.7	753.2	952.1	819.1	677.6	809.1	953.5
46°	592.5	702.9	904.3	740.7	577.2	707.7	900.0	772.8	633.1	762.2	900.0
46.5°	549.4	658.0	852.1	696.7	536.5	664.2	850.2	726.9	590.1	717.3	848.8
47°	508.8	615.0	801.0	653.7	497.8	621.7	802.4	682.9	547.5	672.8	800.0
47.5°	471.0	572.9	751.7	611.1	461.5	580.5	756.0	638.9	507.8	628.8	752.2
48°	434.2	532.7	704.9	569.5	430.9	540.4	713.0	597.3	470.1	588.2	705.8
48.5°	399.8	494.9	659.9	529.8	400.2	502.1	670.0	557.6	437.1	547.5	660.9
49°	366.8	458.6	616.9	493.0	369.6	465.8	629.3	517.9	404.6	508.8	619.7
49.5°	334.7	423.7	576.2	456.7	339.5	434.2	590.6	480.6	371.6	471.5	576.2
50°	304.6	390.2	536.5	421.3	314.2	402.6	553.3	448.5	339.0	438.5	536.1
50.5°	276.9	357.7	497.3	387.3	290.7	371.1	517.9	416.5	312.7	405.0	498.8
51°	251.1	327.6	461.0	356.7	270.7	339.5	482.0	384.0	288.4	371.6	463.8
51.5°	227.1	299.3	426.1	328.0	251.5	313.7	450.9	352.0	266.4	338.6	431.3
52°	204.7	272.6	393.6	301.3	233.4	289.8	420.8	319.9	245.8	310.3	399.3
52.5°	184.1	246.7	361.5	277.4	216.1	267.8	390.2	293.1	227.6	285.0	367.3
53°	165.0	222.8	332.3	255.4	199.9	247.7	359.6	268.7	209.9	262.1	335.2
53.5°	149.2	201.3	304.6	235.7	185.1	229.5	329.0	246.7	193.7	241.0	306.0
54°	133.4	181.2	278.8	217.1	169.8	212.8	303.2	226.7	177.9	221.9	280.2
54.5°	117.6	162.1	253.9	199.9	154.9	196.5	278.8	208.0	162.6	203.7	256.3
55°	101.9	144.4	232.4	184.6	140.6	181.2	255.8	191.3	148.2	187.5	233.4
55.5°	91.3	131.5	211.4	169.3	127.7	166.9	234.3	175.5	133.9	172.2	212.3
56°	87.5	119.1	192.2	156.8	116.2	152.5	214.2	160.2	121.5	157.3	192.7
56.5°	84.2	106.2	174.5	143.9	108.1	138.7	195.6	146.3	111.4	143.5	175.0
57°	81.3	93.7	161.6	131.0	103.3	125.3	178.4	132.9	104.2	129.6	158.3
57.5°	77.9	80.8	148.2	118.1	99.5	113.3	162.6	120.0	100.4	116.7	143.5
58°	75.1	77.9	135.3	107.1	95.6	102.3	147.8	107.6	96.6	105.7	130.1
58.5°	72.2	75.1	122.4	97.6	92.3	94.2	134.9	97.6	92.8	97.1	117.6
59°	69.3	72.2	109.5	90.4	88.5	89.9	122.4	89.9	89.4	91.3	107.1
59.5°	66.9	69.3	99.9	86.6	85.1	86.1	111.9	85.6	86.1	88.0	98.0
60°	64.6	66.9	91.8	82.7	81.8	82.7	102.3	82.2	82.7	84.6	89.9
60.5°	61.7	64.6	84.2	79.9	78.4	79.9	93.7	78.9	79.4	81.3	82.2
61°	59.3	61.7	77.9	76.5	75.6	76.5	86.1	75.6	76.5	77.9	76.5
61.5°	57.4	59.8	72.2	73.6	72.7	73.6	79.4	72.7	73.6	75.1	70.8
62°	55.0	57.4	67.4	70.3	69.8	70.8	73.6	69.8	70.3	72.2	66.0
62.5°	52.6	55.0	62.6	67.9	66.9	67.9	68.9	66.9	67.9	69.3	61.7
63°	50.7	53.1	58.8	65.0	64.1	65.0	64.1	64.6	65.0	66.5	58.3
63.5°	48.8	50.7	55.5	62.2	61.7	62.6	60.3	61.7	62.6	64.1	55.0
64°	46.9	48.8	53.1	59.8	59.3	60.3	56.4	59.3	59.8	61.2	52.6
64.5°	45.0	46.9	51.2	57.4	56.9	57.9	53.6	56.9	57.4	58.8	50.2
65°	43.0	45.4	48.8	55.0	54.5	55.5	51.2	54.5	55.5	56.4	48.3
65.5°	41.6	43.5	46.9	53.1	52.1	53.1	49.3	52.1	53.1	54.0	46.4
66°	39.7	41.6	45.4	50.7	49.7	51.2	47.3	50.2	50.7	52.1	44.5



TEST NUMBER: P776628

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	34.9	36.8	40.2	44.5	44.0	45.0	42.1	44.0	44.5	45.9	39.2
68°	33.5	35.4	38.3	42.6	42.1	43.0	40.2	42.1	42.6	44.0	37.8
68.5°	32.0	33.5	36.8	41.1	40.2	41.1	38.7	40.2	40.6	42.1	36.3
69°	30.6	32.0	35.4	39.2	38.7	39.7	36.8	38.7	39.2	40.2	34.9
69.5°	29.2	30.6	34.0	37.8	36.8	37.8	35.4	36.8	37.3	38.3	33.5
70°	27.7	29.2	32.5	35.9	35.4	36.3	34.0	35.4	35.9	36.8	31.6
70.5°	26.3	28.2	31.1	34.4	33.5	34.9	32.0	33.5	34.0	34.9	30.6
71°	25.3	26.8	29.6	33.0	32.0	33.0	30.6	32.0	32.5	33.5	29.2
71.5°	23.9	25.3	28.2	31.1	30.6	31.6	29.2	30.6	30.6	31.6	27.7
72°	23.0	24.4	26.8	30.1	29.2	30.1	28.2	29.2	29.2	30.1	26.3
72.5°	21.5	23.0	25.8	28.7	27.7	28.7	26.8	27.7	27.7	28.7	25.3
73°	20.6	22.0	24.4	27.3	26.3	27.3	25.3	26.3	26.3	27.3	23.9
73.5°	19.1	20.6	23.0	25.8	24.9	25.8	24.4	24.9	24.9	25.8	23.0
74°	18.2	19.6	22.0	24.4	23.9	24.9	23.0	23.4	23.9	24.9	22.0
74.5°	17.2	18.6	21.0	23.4	22.5	23.4	22.0	22.5	22.5	23.4	20.6
75°	16.3	17.2	19.6	22.0	21.0	22.5	20.6	21.0	21.0	22.0	19.6
75.5°	15.3	16.3	18.6	21.0	20.1	21.0	19.6	20.1	20.1	21.0	18.6
76°	13.9	15.3	17.7	20.1	19.1	20.1	18.6	18.6	18.6	19.6	17.7
76.5°	12.9	14.3	16.7	18.6	17.7	19.1	17.7	17.7	17.7	18.6	16.3
77°	12.4	13.4	15.8	17.7	16.7	17.7	16.7	16.3	16.3	17.2	15.3
77.5°	11.5	12.4	14.8	16.7	15.8	16.7	15.8	15.3	15.3	16.3	14.3
78°	10.5	11.5	13.9	15.8	14.8	15.8	14.8	14.3	14.3	15.3	13.4
78.5°	9.6	10.5	12.9	14.8	13.9	14.8	13.9	13.4	13.4	13.9	12.9
79°	9.1	9.6	12.0	13.9	12.9	13.9	12.9	12.4	12.4	12.9	12.0
79.5°	8.1	8.6	11.5	12.9	12.0	12.9	12.0	11.5	11.5	12.0	11.0
80°	7.2	8.1	10.5	12.0	11.0	12.0	11.5	10.5	10.5	11.0	10.0
80.5°	6.7	7.2	9.6	11.0	10.5	11.0	10.5	9.6	9.6	10.0	9.6
81°	5.7	6.2	9.1	10.0	9.6	10.0	9.6	8.6	8.6	9.1	8.6
81.5°	5.3	5.7	8.1	9.1	8.6	9.6	9.1	7.7	7.7	8.1	8.1
82°	4.8	4.8	7.7	8.6	8.1	8.6	8.1	7.2	7.2	7.2	7.2
82.5°	3.8	4.3	6.7	7.7	7.2	8.1	7.7	6.2	6.2	6.2	6.7
83°	3.3	3.8	6.2	7.2	6.7	7.2	6.7	5.7	5.3	5.7	5.7
83.5°	2.4	2.9	5.3	6.2	6.2	6.7	6.2	4.8	4.8	4.8	5.3
84°	1.9	2.4	4.8	5.7	5.3	5.7	5.7	4.3	3.8	4.3	4.8
84.5°	1.9	1.9	4.3	4.8	4.8	5.3	4.8	3.8	3.3	3.3	4.3
85°	1.4	1.9	3.8	4.3	4.3	4.8	4.3	2.9	2.4	2.9	3.8
85.5°	1.0	1.4	3.3	3.8	3.3	3.8	3.8	2.4	1.9	2.4	2.9
86°	1.0	1.0	2.4	2.9	2.9	3.3	3.3	1.9	1.9	1.9	2.4
86.5°	1.0	1.0	1.9	2.4	2.4	2.9	2.9	1.9	1.4	1.4	1.9
87°	0.5	0.5	1.4	1.9	1.9	1.9	2.4	1.4	1.4	1.4	1.4
87.5°	0.0	0.5	1.0	1.4	1.4	1.4	1.9	1.0	1.0	1.0	1.0
88°	0.0	0.0	0.5	1.0	1.0	1.0	1.4	1.0	1.0	1.0	0.5
88.5°	0.0	0.0	0.0	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5



TEST NUMBER: P776628

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K

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: P776628

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3752.4	3752.4	3752.4	3752.4	3752.4	3752.4
0.5°	3751.4	3754.8	3752.9	3753.8	3752.9	3754.3
1°	3751.0	3754.3	3752.9	3753.8	3752.9	3754.3
1.5°	3749.5	3754.3	3752.9	3753.3	3752.9	3752.9
2°	3747.6	3752.9	3752.4	3752.4	3751.9	3751.9
2.5°	3745.2	3751.9	3750.5	3751.9	3750.0	3749.5
3°	3741.9	3749.5	3748.1	3749.0	3747.6	3746.7
3.5°	3738.0	3745.7	3745.2	3746.2	3744.3	3742.8
4°	3733.3	3741.4	3741.4	3742.4	3740.9	3738.5
4.5°	3728.0	3736.6	3737.1	3738.0	3736.1	3733.7
5°	3722.3	3731.4	3731.8	3732.8	3730.9	3728.0
5.5°	3715.6	3725.6	3726.1	3726.6	3724.7	3720.8
6°	3708.4	3718.4	3719.4	3720.4	3718.0	3714.1
6.5°	3700.3	3710.8	3712.2	3712.7	3710.3	3706.0
7°	3691.7	3702.7	3704.1	3705.1	3702.2	3696.9
7.5°	3682.1	3694.1	3696.0	3696.0	3693.1	3687.4
8°	3671.6	3683.5	3685.9	3686.9	3683.1	3677.3
8.5°	3661.1	3673.5	3675.9	3676.4	3672.5	3665.8
9°	3650.1	3661.5	3665.4	3665.8	3660.6	3653.9
9.5°	3637.6	3649.1	3652.9	3653.9	3649.6	3641.0
10°	3624.7	3637.1	3640.0	3641.9	3636.2	3626.6
10.5°	3610.8	3623.8	3627.1	3628.5	3622.8	3612.8
11°	3597.5	3608.9	3612.8	3614.2	3608.5	3597.9
11.5°	3582.6	3594.6	3597.9	3599.8	3593.6	3582.6
12°	3567.3	3578.3	3582.6	3584.5	3576.9	3565.9
12.5°	3550.1	3562.5	3566.4	3567.8	3561.1	3549.6
13°	3533.4	3545.8	3550.1	3552.0	3544.4	3532.4
13.5°	3516.6	3528.6	3532.9	3533.9	3526.2	3514.7
14°	3499.4	3510.9	3515.2	3514.7	3508.0	3496.1
14.5°	3486.0	3491.8	3496.6	3495.1	3488.9	3476.0
15°	3466.4	3471.7	3477.4	3475.5	3469.3	3456.4
15.5°	3445.9	3452.1	3455.9	3455.4	3448.7	3435.4
16°	3424.8	3431.0	3435.8	3435.4	3427.7	3414.3
16.5°	3403.3	3409.5	3414.8	3413.4	3406.7	3391.4
17°	3380.8	3386.6	3392.8	3390.9	3384.7	3368.9
17.5°	3357.9	3364.1	3369.8	3368.4	3361.2	3345.4
18°	3334.0	3339.7	3346.4	3345.0	3337.8	3321.1
18.5°	3309.6	3315.8	3322.5	3320.1	3312.5	3294.8
19°	3285.2	3290.9	3297.6	3296.2	3287.1	3269.9
19.5°	3258.9	3266.1	3271.8	3270.9	3261.8	3243.6
20°	3232.6	3240.2	3246.5	3245.5	3235.5	3217.3
20.5°	3205.8	3213.0	3219.7	3218.7	3208.2	3189.6
21°	3178.1	3185.7	3191.5	3191.9	3179.5	3161.3

TEST NUMBER: P776628

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3092.0	3099.7	3105.9	3107.3	3093.0	3075.3
23°	3062.8	3070.0	3075.7	3077.7	3062.8	3043.2
23.5°	3032.2	3039.4	3045.6	3047.1	3032.2	3013.6
24°	3000.2	3007.8	3014.5	3016.0	3001.6	2983.0
24.5°	2969.1	2977.7	2983.0	2983.9	2970.1	2955.2
25°	2937.5	2950.5	2950.0	2951.9	2937.5	2925.6
25.5°	2904.1	2913.2	2917.0	2918.9	2904.1	2886.9
26°	2870.1	2877.3	2885.9	2884.5	2872.5	2852.0
26.5°	2841.0	2841.0	2856.7	2851.0	2842.9	2814.2
27°	2808.4	2798.4	2817.5	2817.0	2812.7	2769.2
27.5°	2767.8	2756.3	2781.2	2781.7	2774.0	2722.4
28°	2731.9	2710.9	2743.4	2745.3	2735.3	2673.1
28.5°	2692.2	2663.1	2701.8	2710.4	2697.5	2621.5
29°	2651.1	2611.4	2659.7	2675.0	2654.9	2567.9
29.5°	2606.2	2559.3	2613.8	2638.7	2610.5	2509.1
30°	2560.7	2502.9	2566.5	2602.3	2563.1	2448.8
30.5°	2512.0	2443.1	2517.7	2565.5	2512.0	2385.2
31°	2461.7	2379.5	2464.1	2528.2	2459.8	2321.2
31.5°	2408.7	2319.2	2409.1	2490.4	2404.4	2256.1
32°	2354.6	2254.2	2352.7	2453.1	2347.9	2189.7
32.5°	2296.3	2188.2	2292.9	2419.7	2288.6	2125.6
33°	2236.0	2125.6	2230.3	2382.8	2226.5	2062.9
33.5°	2174.4	2062.5	2167.7	2343.6	2163.8	2000.8
34°	2113.1	2000.8	2105.0	2308.7	2101.2	1940.0
34.5°	2049.5	1937.6	2043.3	2267.6	2038.5	1878.8
35°	1988.3	1877.9	1980.7	2221.2	1975.9	1817.6
35.5°	1928.1	1818.1	1919.0	2175.8	1916.1	1757.8
36°	1868.3	1758.8	1860.2	2129.9	1857.3	1721.0
36.5°	1808.1	1724.4	1801.8	2078.7	1798.5	1654.1
37°	1750.2	1656.9	1743.5	2025.6	1741.1	1585.7
37.5°	1692.8	1587.6	1685.2	1970.6	1683.2	1517.3
38°	1635.9	1518.3	1626.8	1912.8	1625.9	1448.9
38.5°	1578.0	1448.9	1568.5	1854.0	1568.0	1387.7
39°	1520.2	1389.2	1510.1	1791.8	1510.1	1327.0
39.5°	1462.3	1327.9	1451.8	1730.6	1452.8	1267.7
40°	1404.0	1268.2	1392.0	1665.1	1392.5	1209.4
40.5°	1345.6	1210.3	1332.3	1599.1	1334.2	1153.4
41°	1287.3	1154.8	1274.4	1533.6	1277.3	1097.5
41.5°	1230.9	1097.5	1217.0	1468.1	1220.8	1042.0
42°	1175.9	1043.4	1162.0	1402.5	1166.3	988.4
42.5°	1121.4	990.3	1107.0	1339.4	1111.8	934.9
43°	1068.3	934.4	1054.4	1277.7	1059.2	882.7
43.5°	1016.2	880.8	1001.8	1217.5	1006.6	829.2



TEST NUMBER: P776628

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	867.9	727.8	848.8	1046.8	857.4	682.4
45.5°	820.1	680.0	799.1	993.7	809.1	636.5
46°	772.8	633.6	751.2	941.1	762.2	592.5
46.5°	725.4	589.1	702.5	888.0	715.4	549.4
47°	680.5	546.6	657.5	836.8	671.4	508.8
47.5°	636.5	505.0	613.0	786.6	627.4	471.0
48°	593.9	465.3	570.0	739.3	585.3	434.2
48.5°	553.3	428.5	529.4	691.0	543.7	399.8
49°	513.6	393.1	490.1	645.6	505.9	366.8
49.5°	476.8	360.1	451.4	601.6	468.2	334.7
50°	442.8	328.0	416.0	558.5	430.9	304.6
50.5°	408.9	297.4	382.1	518.4	396.4	276.9
51°	374.9	269.7	348.6	479.6	363.9	251.1
51.5°	341.4	244.4	318.5	442.3	332.8	227.1
52°	310.8	220.9	290.3	407.4	303.7	204.7
52.5°	282.6	198.5	262.5	373.9	275.4	184.1
53°	255.8	177.9	237.7	342.4	248.7	165.0
53.5°	230.5	162.1	213.8	313.2	224.3	149.2
54°	206.6	145.8	192.2	283.6	201.8	133.4
54.5°	185.5	129.6	172.6	257.7	181.2	117.6
55°	165.9	113.8	156.4	233.4	164.5	101.9
55.5°	148.2	97.6	140.6	209.9	148.2	91.3
56°	130.5	89.9	124.3	188.4	132.0	87.5
56.5°	114.8	86.1	108.6	168.3	115.7	84.2
57°	100.9	82.7	92.3	154.5	99.5	81.3
57.5°	88.9	79.4	83.2	141.1	87.5	77.9
58°	79.9	76.5	79.9	127.2	79.9	75.1
58.5°	76.5	73.6	77.0	113.3	76.5	72.2
59°	73.2	70.8	74.1	99.9	73.6	69.3
59.5°	70.8	68.4	71.3	90.9	70.8	66.9
60°	67.9	65.5	68.4	83.2	68.4	64.6
60.5°	65.5	63.1	66.0	76.5	65.5	61.7
61°	63.1	60.7	63.6	70.8	63.1	59.3
61.5°	60.7	58.3	61.2	65.5	60.7	57.4
62°	58.3	56.4	58.8	61.2	58.3	55.0
62.5°	55.9	54.0	56.4	57.4	56.4	52.6
63°	54.0	52.1	54.5	54.0	54.0	50.7
63.5°	52.1	50.2	52.1	51.6	51.6	48.8
64°	49.7	48.3	50.2	49.7	49.7	46.9
64.5°	48.3	46.4	48.3	47.8	47.8	45.0
65°	46.4	44.5	46.4	45.9	45.9	43.0
65.5°	44.5	42.6	45.0	44.0	44.0	41.6
66°	42.6	41.1	43.0	42.6	42.6	39.7



TEST NUMBER: P776628

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	38.3	36.3	38.3	37.8	37.3	34.9
68°	36.3	34.9	36.3	35.9	35.9	33.5
68.5°	34.9	33.5	34.9	34.4	34.4	32.0
69°	33.5	32.0	33.5	33.0	33.0	30.6
69.5°	32.0	30.6	32.0	31.6	31.6	29.2
70°	30.6	29.2	31.1	30.1	30.1	27.7
70.5°	29.6	28.2	29.6	29.2	28.7	26.3
71°	28.2	26.8	28.2	27.7	27.3	25.3
71.5°	26.8	25.8	26.8	26.3	25.8	23.9
72°	25.8	24.4	25.8	25.3	24.9	23.0
72.5°	24.9	23.4	24.4	23.9	23.4	21.5
73°	23.4	22.0	23.4	23.0	22.0	20.6
73.5°	22.5	21.0	22.5	22.0	21.0	19.1
74°	21.5	20.1	21.0	20.6	20.1	18.2
74.5°	20.6	19.1	20.1	19.6	18.6	17.2
75°	19.1	18.2	19.1	18.6	17.7	16.3
75.5°	18.2	17.2	18.2	17.7	16.7	15.3
76°	17.2	16.3	17.2	16.7	15.8	13.9
76.5°	16.3	15.3	16.3	15.8	14.8	12.9
77°	15.3	14.3	15.3	14.3	13.9	12.4
77.5°	14.3	13.4	14.3	13.9	12.4	11.5
78°	13.4	12.4	13.4	12.9	11.5	10.5
78.5°	12.9	12.0	12.4	12.0	11.0	9.6
79°	12.0	11.0	11.5	11.0	10.0	9.1
79.5°	11.0	10.0	11.0	10.0	9.1	8.1
80°	10.0	9.6	10.0	9.6	8.1	7.2
80.5°	9.6	9.1	9.6	8.6	7.2	6.7
81°	8.6	8.1	8.6	8.1	6.7	5.7
81.5°	8.1	7.7	7.7	7.2	5.7	5.3
82°	7.2	6.7	7.2	6.7	4.8	4.8
82.5°	6.7	6.2	6.7	5.7	4.3	3.8
83°	6.2	5.7	5.7	5.3	3.8	3.3
83.5°	5.3	5.3	5.3	4.8	3.3	2.4
84°	4.8	4.8	4.8	4.3	2.4	1.9
84.5°	4.3	4.3	3.8	3.8	1.9	1.9
85°	3.8	3.3	3.3	2.9	1.9	1.4
85.5°	2.9	2.9	2.9	2.4	1.4	1.0
86°	2.4	2.4	2.4	1.9	1.0	1.0
86.5°	1.9	1.9	1.9	1.4	1.0	1.0
87°	1.4	1.4	1.4	1.0	0.5	0.5
87.5°	1.0	1.0	1.0	0.5	0.5	0.0
88°	0.5	0.5	0.5	0.5	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776628

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQH-5000lm-4000K

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
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





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

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Peachtree City, GA 30269

Scaled Data Report



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Peachtree City, GA 30269

Scaled Data Report





21.5°	3133.1	3122.1	3144.6	3124.0	3099.7	3101.6	3122.6	3122.1	3128.8	3156.6	3149.9
22°	3104.4	3093.4	3116.4	3093.9	3070.0	3071.9	3093.4	3092.0	3099.2	3126.9	3122.6



44°	778.5	894.7	1127.1	934.9	756.5	895.2	1111.3	968.3	818.2	958.8	1120.9
44.5°	729.7	845.4	1070.2	883.2	709.6	846.9	1057.3	917.7	770.4	907.6	1063.0



66.5°	38.3	40.2	43.5	48.8	47.8	48.8	45.4	47.8	48.8	49.7	42.6
67°	36.3	38.3	41.6	46.4	45.9	46.9	43.5	45.9	46.4	47.8	41.1



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.5	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°	3149.4	3157.0	3163.7	3164.2	3151.3	3133.1
22°	3121.2	3128.8	3135.0	3136.0	3122.6	3104.4



44°	966.0	829.7	949.7	1159.1	956.4	778.5
44.5°	917.2	778.0	899.0	1101.8	906.2	729.7



66.5°	41.1	39.2	41.1	40.6	40.6	38.3
67°	39.7	37.8	39.7	39.2	38.7	36.3



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)