

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: P776615

Luminaire Tested: HCDJBS4050CSD-HCD4TRMW-5000lm-2700K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776615
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-HCD4TRMW-5000lm-2700K
Description: 4 INCH ROUND MEDIUM MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

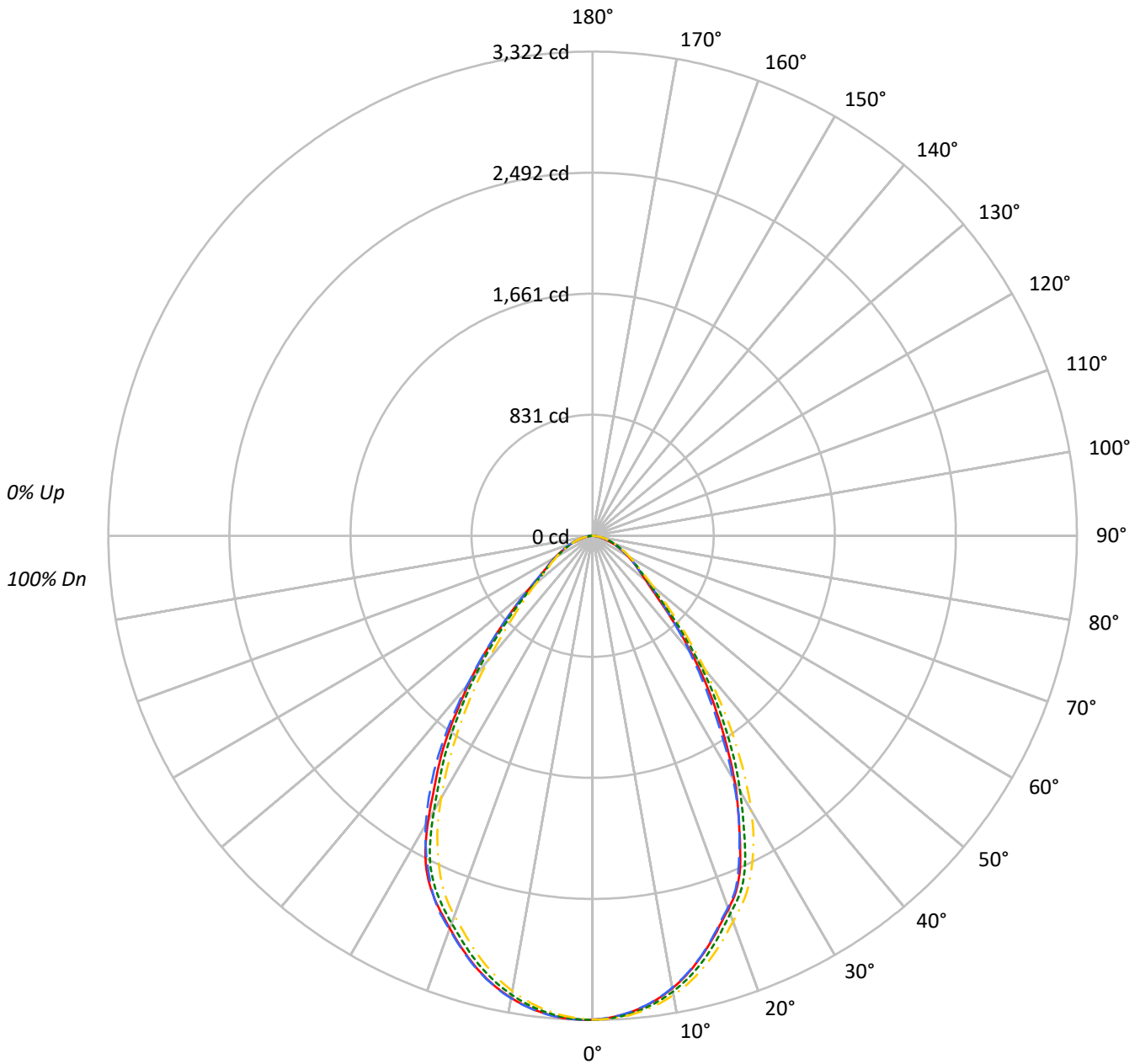
Lumens per Lamp: N/A
Luminaire Lumens: 4630.8 lumens
Efficiency: N/A
Efficacy: 96.5 lumens/watt
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.02
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P776615
CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-2700K

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								
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	95	93	92	90								
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80								
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	76	73	72								
4	91	82	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	65								
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	58								
6	80	69	62	56	78	68	61	56	66	60	56	65	60	55	64	59	55	53								
7	75	64	57	51	74	63	56	51	62	56	51	60	55	51	59	54	50	49								
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45								
9	67	55	48	44	65	55	48	43	54	48	43	53	47	43	52	47	43	41								
10	63	52	45	40	62	51	45	40	50	44	40	49	44	40	49	44	40	38								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	417796	417796	417796	417796
5°	413290	414844	417156	415880
10°	402824	405737	411437	408702
15°	385526	390099	400066	395858
20°	364990	369691	383847	378784
25°	332819	343706	367173	360536
30°	283285	294154	327781	316330
35°	228731	240991	274790	263237
40°	174011	186595	216380	205521
45°	122930	133626	159326	149271
50°	93743	99284	112030	104355
55°	79866	83267	86075	82060
60°	69847	73622	74755	71558
65°	59706	64977	63905	62416
70°	50631	57843	54495	55304
75°	40747	51639	45659	48722
80°	28410	44934	35005	41600
85°	9819	35522	15739	30323

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 202.5°
 Vertical Angle: 45°
 Luminance: 161515 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	310.5	6.7
10°-20°	845.8	18.3
20°-30°	1146.7	24.8
30°-40°	1018.4	22.0
40°-50°	623.6	13.5
50°-60°	345.8	7.5
60°-70°	212.2	4.6
70°-80°	104.9	2.3
80°-90°	22.8	0.5
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°	2303.1	49.7
0°-40°	3321.5	71.7
0°-60°	4290.9	92.7
0°-90°	4630.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4630.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3320	3320	3320	3320	3320	
5°	3272	3284	3302	3292	3272	309
15°	2959	2994	3071	3038	2959	830
25°	2397	2475	2644	2596	2397	1089
35°	1489	1569	1789	1713	1489	928
45°	691	751	895	839	691	551
55°	364	380	392	374	364	329
65°	200	218	215	210	200	201
75°	84	106	94	100	84	90
85°	7	25	11	21	7	12
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°	3319.8	3319.8	3319.8	3319.8	3319.8	3319.8	3319.8	3319.8	3319.8	3319.8	3319.8
0.5°	3318.5	3318.9	3318.0	3316.2	3320.7	3319.4	3319.4	3320.3	3321.2	3322.1	3321.2
1°	3316.2	3316.6	3315.7	3313.9	3319.4	3318.9	3318.9	3320.7	3321.7	3322.6	3321.7
1.5°	3313.0	3313.0	3312.1	3310.7	3317.1	3317.6	3317.6	3320.3	3321.7	3322.6	3321.7
2°	3309.4	3308.9	3308.0	3307.1	3314.4	3315.3	3316.2	3318.5	3320.7	3322.1	3320.7
2.5°	3304.8	3304.3	3303.4	3302.5	3310.7	3312.5	3313.9	3317.1	3319.4	3320.7	3319.4
3°	3299.3	3299.3	3298.4	3297.5	3306.6	3308.9	3311.2	3314.8	3317.1	3318.5	3317.1
3.5°	3293.4	3293.4	3292.0	3292.0	3302.1	3304.8	3307.5	3311.6	3314.4	3315.7	3314.4
4°	3287.0	3286.6	3285.2	3285.7	3296.6	3300.2	3303.0	3308.0	3311.2	3312.5	3311.2
4.5°	3280.2	3279.3	3277.9	3278.8	3290.7	3294.3	3298.0	3303.4	3307.1	3308.9	3307.1
5°	3271.5	3271.1	3270.2	3271.1	3283.8	3288.4	3292.5	3298.4	3302.1	3304.3	3302.5
5.5°	3262.9	3262.0	3261.1	3262.4	3275.6	3281.1	3285.7	3293.0	3296.6	3298.9	3297.5
6°	3253.8	3252.4	3251.5	3252.9	3267.4	3273.8	3279.3	3286.6	3290.7	3293.0	3292.0
6.5°	3243.3	3241.9	3241.9	3243.3	3258.3	3265.2	3271.5	3279.3	3284.3	3286.6	3285.7
7°	3232.8	3231.5	3231.0	3232.8	3248.8	3256.1	3263.3	3271.5	3277.5	3279.7	3278.4
7.5°	3221.0	3219.2	3218.7	3221.4	3238.3	3246.5	3254.2	3263.3	3269.3	3272.0	3270.6
8°	3209.1	3207.3	3206.4	3209.1	3226.4	3236.0	3244.7	3254.2	3260.2	3263.3	3262.0
8.5°	3195.9	3194.1	3193.2	3195.9	3215.1	3225.1	3234.2	3244.7	3251.0	3253.8	3253.3
9°	3182.3	3180.0	3179.1	3182.7	3202.3	3213.2	3223.3	3233.7	3241.5	3244.7	3243.8
9.5°	3167.2	3164.5	3164.0	3168.1	3188.6	3200.9	3211.4	3223.3	3231.0	3234.2	3233.3
10°	3152.2	3149.0	3148.5	3152.6	3175.0	3187.7	3199.1	3211.4	3219.6	3223.7	3222.3
10.5°	3136.2	3133.0	3132.6	3136.7	3160.4	3174.1	3185.9	3199.1	3207.3	3211.9	3211.0
11°	3119.4	3116.2	3115.3	3120.3	3144.0	3159.0	3171.8	3186.4	3195.0	3199.6	3198.7
11.5°	3101.6	3097.5	3097.5	3103.0	3128.5	3143.5	3157.6	3171.8	3182.3	3186.4	3185.9
12°	3083.4	3079.7	3079.3	3084.8	3111.6	3127.6	3142.2	3157.6	3168.6	3173.1	3171.8
12.5°	3064.3	3060.2	3060.2	3065.2	3093.0	3110.3	3125.8	3142.6	3153.5	3158.6	3157.2
13°	3044.7	3040.6	3039.7	3046.0	3074.7	3093.0	3109.4	3127.1	3138.5	3144.0	3142.6
13.5°	3023.3	3018.7	3019.6	3025.5	3056.1	3074.3	3092.0	3110.7	3122.6	3128.0	3127.1
14°	3003.2	2998.2	2997.7	3004.1	3036.0	3055.1	3073.4	3093.0	3106.2	3111.6	3109.8
14.5°	2981.3	2976.3	2975.9	2983.2	3015.1	3035.6	3055.1	3075.2	3089.3	3094.3	3092.5
15°	2959.0	2953.1	2952.6	2960.4	2994.1	3015.1	3036.0	3056.5	3070.6	3076.6	3074.7
15.5°	2935.8	2930.3	2930.3	2937.6	2971.8	2994.1	3015.5	3037.8	3052.0	3058.3	3057.0
16°	2912.1	2906.6	2906.2	2913.9	2949.4	2972.7	2995.0	3018.7	3033.3	3039.7	3037.8
16.5°	2888.4	2882.0	2882.0	2890.7	2926.7	2950.4	2974.0	2998.2	3013.7	3020.1	3018.2
17°	2864.7	2857.4	2857.9	2866.5	2903.0	2927.6	2952.6	2977.7	2993.2	3000.0	2998.7
17.5°	2840.6	2832.8	2832.8	2841.9	2878.8	2904.8	2930.3	2956.3	2972.7	2980.0	2977.7
18°	2815.1	2807.8	2807.3	2816.9	2855.1	2881.1	2908.0	2934.4	2951.7	2959.0	2957.2
18.5°	2791.4	2783.2	2782.2	2792.3	2830.5	2857.0	2884.8	2912.5	2930.3	2937.6	2935.8
19°	2768.6	2759.9	2758.6	2768.1	2805.9	2833.7	2861.5	2890.2	2908.9	2916.6	2914.4
19.5°	2746.7	2737.6	2736.2	2745.8	2782.7	2810.5	2838.3	2868.4	2886.6	2895.2	2893.4
20°	2725.3	2715.7	2714.8	2723.9	2760.4	2788.6	2817.3	2846.5	2866.1	2874.3	2873.4
20.5°	2702.5	2693.0	2692.0	2701.6	2738.5	2766.8	2795.5	2825.1	2844.7	2854.2	2853.3
21°	2679.7	2670.2	2669.7	2679.7	2716.6	2746.3	2774.5	2803.7	2824.2	2834.6	2833.7



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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°	2597.7	2584.1	2583.2	2598.6	2647.9	2678.8	2708.9	2739.9	2760.8	2771.8	2770.4
23°	2564.0	2549.9	2546.7	2565.4	2620.5	2652.4	2683.4	2717.6	2739.4	2749.4	2745.8
23.5°	2528.0	2513.5	2507.5	2530.3	2589.1	2623.2	2657.0	2694.3	2717.1	2724.8	2720.3
24°	2487.5	2473.4	2465.6	2492.0	2554.0	2592.3	2628.3	2669.3	2693.9	2699.3	2692.5
24.5°	2443.8	2432.4	2423.7	2451.5	2516.6	2559.0	2597.7	2643.3	2669.3	2672.0	2663.8
25°	2396.8	2389.1	2380.9	2409.1	2475.2	2523.5	2565.8	2615.0	2644.2	2643.3	2633.3
25.5°	2350.8	2343.5	2339.4	2364.9	2431.9	2483.8	2532.1	2585.9	2617.3	2612.8	2600.9
26°	2304.3	2297.1	2298.4	2319.4	2386.8	2442.8	2498.0	2554.5	2587.7	2581.3	2568.6
26.5°	2257.9	2247.8	2257.0	2272.9	2338.5	2400.0	2461.5	2520.3	2555.8	2547.2	2535.3
27°	2211.9	2200.0	2214.1	2226.4	2291.1	2355.8	2426.0	2485.2	2522.1	2513.0	2503.0
27.5°	2168.1	2151.7	2170.4	2178.1	2245.6	2311.2	2389.1	2448.8	2485.2	2477.5	2470.2
28°	2124.8	2102.5	2123.5	2130.8	2200.0	2265.2	2350.4	2410.0	2445.1	2442.8	2435.5
28.5°	2082.0	2056.0	2075.2	2084.3	2155.8	2221.9	2309.8	2370.9	2400.9	2405.9	2401.4
29°	2037.4	2009.6	2025.5	2037.4	2112.1	2179.5	2266.1	2328.9	2354.5	2368.1	2366.3
29.5°	1994.1	1963.6	1975.9	1990.4	2068.3	2137.6	2221.4	2285.2	2306.2	2328.9	2328.9
30°	1949.4	1917.1	1925.3	1943.5	2024.2	2095.7	2175.0	2239.6	2255.6	2288.9	2290.7
30.5°	1904.3	1872.0	1873.8	1896.1	1980.9	2054.2	2128.0	2190.0	2204.1	2245.1	2249.2
31°	1857.4	1825.1	1823.7	1848.8	1937.1	2011.4	2079.3	2139.4	2153.1	2201.8	2207.8
31.5°	1810.9	1778.6	1774.0	1802.3	1891.6	1968.1	2030.1	2086.6	2103.9	2156.7	2163.6
32°	1761.7	1733.0	1723.9	1755.8	1846.9	1924.4	1982.7	2033.3	2057.4	2110.3	2120.3
32.5°	1714.4	1686.1	1673.8	1708.9	1801.8	1879.7	1935.3	1980.4	2011.9	2061.1	2077.0
33°	1667.9	1639.6	1625.5	1663.3	1754.0	1832.8	1885.2	1927.1	1966.8	2010.9	2033.7
33.5°	1621.9	1595.5	1577.2	1618.2	1706.6	1785.9	1835.1	1876.1	1922.1	1961.3	1987.7
34°	1577.2	1549.0	1529.4	1572.7	1659.7	1737.6	1785.0	1828.7	1878.8	1912.5	1943.5
34.5°	1532.6	1503.4	1482.5	1527.1	1614.1	1687.9	1735.8	1779.1	1833.7	1863.3	1894.8
35°	1488.8	1457.0	1435.1	1482.0	1568.6	1638.3	1686.1	1728.9	1788.6	1816.4	1846.5
35.5°	1446.0	1413.7	1390.4	1436.9	1525.3	1590.9	1637.4	1681.1	1741.2	1770.4	1795.9
36°	1403.7	1367.7	1347.6	1391.4	1480.2	1542.2	1586.8	1632.8	1692.0	1724.4	1746.3
36.5°	1360.4	1323.0	1305.7	1344.9	1437.8	1495.2	1539.0	1584.5	1643.3	1677.9	1694.8
37°	1316.6	1280.2	1264.7	1300.2	1394.5	1447.8	1488.4	1535.3	1593.6	1631.0	1643.3
37.5°	1272.9	1237.4	1223.7	1255.6	1351.7	1402.3	1439.6	1486.6	1544.4	1585.9	1592.7
38°	1229.2	1195.5	1183.2	1211.9	1309.3	1356.7	1390.0	1438.7	1497.5	1538.0	1541.7
38.5°	1185.4	1153.1	1142.6	1171.3	1266.5	1312.1	1342.6	1391.8	1453.3	1491.1	1489.8
39°	1143.5	1113.9	1103.9	1131.2	1220.1	1267.4	1295.2	1344.9	1406.4	1443.3	1439.6
39.5°	1100.7	1074.7	1065.6	1092.0	1177.7	1222.8	1251.0	1300.7	1362.2	1395.9	1389.5
40°	1059.2	1036.0	1026.9	1052.9	1135.8	1178.1	1204.1	1256.5	1317.1	1348.1	1340.3
40.5°	1019.1	998.2	990.9	1015.5	1092.0	1131.7	1159.5	1214.1	1276.5	1301.1	1291.1
41°	980.4	961.3	956.3	978.6	1050.6	1087.5	1115.3	1171.8	1231.9	1255.1	1244.7
41.5°	941.2	924.8	922.1	943.1	1010.5	1044.2	1073.8	1131.2	1186.3	1209.6	1199.1
42°	902.5	890.2	890.7	908.0	972.2	1001.8	1032.4	1092.0	1141.7	1164.5	1154.4
42.5°	865.6	857.0	859.2	873.8	933.0	959.9	993.2	1052.9	1100.2	1120.7	1111.2
43°	828.7	824.6	828.7	841.0	895.2	920.3	954.9	1013.7	1056.0	1076.1	1067.4
43.5°	792.3	792.7	798.2	809.1	857.4	882.0	918.9	976.3	1013.7	1032.8	1025.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	690.7	705.7	714.8	721.2	750.8	776.8	812.8	864.7	895.2	907.5	903.9
45.5°	661.5	678.8	688.8	694.3	718.0	744.4	781.3	829.2	858.8	867.9	865.2
46°	634.2	653.3	664.7	668.8	686.6	712.5	749.9	794.5	822.3	829.2	827.8
46.5°	608.2	628.7	640.1	643.7	657.0	683.8	719.4	761.3	787.7	791.3	791.8
47°	584.5	605.0	617.8	619.6	630.1	655.1	690.7	729.4	753.5	754.0	756.7
47.5°	563.1	582.2	595.4	596.8	605.0	628.2	663.3	698.0	720.3	719.8	723.9
48°	544.0	561.7	574.0	575.4	581.3	603.6	637.8	668.8	688.8	687.0	691.1
48.5°	525.7	541.7	553.5	554.9	559.9	580.4	613.2	641.0	657.9	656.0	660.1
49°	509.3	523.0	535.3	535.3	540.8	559.5	589.1	614.1	627.8	626.0	630.1
49.5°	493.4	505.2	516.6	516.6	523.0	539.0	567.2	589.1	599.5	598.2	602.3
50°	478.8	488.4	498.9	498.9	507.1	520.3	545.8	564.9	572.2	571.8	574.9
50.5°	465.2	472.4	481.1	482.5	491.1	503.0	525.7	542.1	547.6	547.6	549.4
51°	451.9	457.9	465.6	466.5	476.1	487.0	506.6	520.7	524.4	524.8	525.7
51.5°	438.7	443.3	450.1	451.9	462.4	472.0	488.4	500.7	503.0	503.9	503.0
52°	426.4	429.6	435.5	437.4	449.7	457.4	471.5	482.0	482.9	483.8	482.0
52.5°	414.1	416.4	421.4	424.1	436.4	443.7	455.1	463.8	464.7	465.2	462.4
53°	402.3	404.6	408.2	410.9	423.7	430.5	440.1	446.9	448.3	447.8	444.2
53.5°	391.3	393.2	395.9	398.6	411.4	417.8	425.5	431.9	432.3	431.9	428.2
54°	381.3	382.7	384.5	387.2	400.0	406.4	411.8	417.3	417.8	416.9	413.7
54.5°	372.7	373.6	374.9	377.7	388.6	394.1	399.1	403.6	404.6	402.7	400.0
55°	364.0	364.9	366.3	368.6	379.5	385.0	389.1	391.3	392.3	390.9	390.0
55.5°	355.4	356.3	357.6	359.9	370.4	375.4	379.5	381.8	382.7	381.3	380.0
56°	346.7	347.6	349.0	350.8	361.3	366.3	369.9	372.2	372.7	371.3	369.9
56.5°	337.6	339.0	340.3	342.6	352.2	356.7	359.9	362.6	362.6	361.7	360.4
57°	328.9	330.3	331.7	333.5	344.0	347.6	350.3	352.6	352.6	351.7	350.3
57.5°	320.3	321.6	322.6	324.8	334.9	338.5	341.2	343.5	344.4	342.6	340.8
58°	311.6	313.0	313.9	316.2	326.2	329.8	332.1	334.4	334.9	333.5	331.2
58.5°	303.0	304.3	305.7	308.0	317.5	320.7	323.0	325.7	325.3	324.4	322.1
59°	294.8	296.1	297.5	299.8	308.9	312.1	314.4	316.6	315.7	314.8	313.0
59.5°	286.1	287.9	289.3	291.1	300.7	303.4	305.2	307.5	306.6	305.7	303.9
60°	277.5	280.2	281.1	283.4	292.5	295.7	297.0	298.9	297.0	297.0	295.2
60.5°	269.2	272.0	273.4	275.2	284.7	287.0	288.8	290.2	287.9	287.9	286.6
61°	261.0	263.8	265.6	267.4	276.5	279.3	280.6	282.0	279.3	279.3	278.4
61.5°	253.3	256.0	258.3	260.1	268.8	271.5	272.4	273.8	270.6	270.6	270.2
62°	245.1	248.3	251.0	252.4	261.0	263.8	264.7	266.1	262.0	262.4	262.4
62.5°	237.4	241.0	243.3	245.1	253.3	256.0	257.4	257.9	253.8	254.2	254.7
63°	229.6	233.3	236.4	238.3	246.0	248.7	249.7	250.1	245.6	246.0	246.9
63.5°	222.3	226.0	229.2	231.0	238.7	241.5	242.4	241.9	237.4	238.3	239.6
64°	215.0	218.7	222.8	224.1	231.9	234.2	235.1	234.2	229.6	230.5	232.3
64.5°	207.7	211.8	215.9	217.8	225.1	227.3	228.2	226.9	221.9	223.2	225.5
65°	200.5	204.6	209.6	210.9	218.2	220.5	221.4	219.6	214.6	215.9	218.2
65.5°	193.6	197.7	202.7	204.6	211.8	213.7	215.0	212.3	206.8	208.7	211.4
66°	186.8	191.3	196.4	198.2	205.0	207.3	208.2	205.5	200.0	201.8	205.0



TEST NUMBER: P776615

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	167.2	171.8	177.7	180.0	186.3	188.2	189.1	185.0	179.5	181.3	185.4
68°	161.3	165.4	171.8	174.0	180.4	182.2	183.1	178.6	173.1	174.9	179.0
68.5°	155.4	159.9	166.3	168.1	174.5	176.3	176.8	172.2	166.3	168.6	173.1
69°	149.4	154.0	160.4	162.6	168.6	170.4	170.8	165.8	160.4	162.6	167.2
69.5°	143.5	148.1	154.9	157.2	163.1	164.9	164.9	159.9	154.0	156.7	161.3
70°	137.6	142.1	149.4	152.2	157.2	159.0	159.5	154.0	148.1	150.8	155.4
70.5°	131.7	136.2	144.0	146.7	152.2	153.5	154.0	148.1	142.1	144.9	149.9
71°	126.2	130.8	138.5	141.2	146.7	148.1	148.1	142.1	136.7	139.0	144.4
71.5°	120.7	125.3	133.0	136.2	141.2	143.1	142.6	136.2	130.8	133.5	139.0
72°	114.8	119.8	127.6	130.8	135.8	137.6	137.1	130.8	125.3	128.0	133.5
72.5°	109.3	114.4	122.6	125.7	130.8	132.6	132.1	125.3	119.8	122.6	128.5
73°	103.9	108.9	117.1	120.7	125.7	127.1	126.7	119.8	114.4	117.1	123.0
73.5°	98.9	103.4	112.1	115.7	120.7	122.1	121.2	114.4	108.9	111.6	118.0
74°	93.9	98.4	107.1	111.2	115.7	117.5	116.6	109.3	103.9	106.6	113.0
74.5°	88.8	93.4	102.1	106.2	110.7	112.5	111.2	104.3	98.9	101.6	108.0
75°	83.8	88.4	97.0	101.6	106.2	107.5	106.6	98.9	93.9	96.6	103.0
75.5°	78.8	83.4	92.5	96.6	101.6	103.0	101.6	94.3	88.8	91.6	98.4
76°	74.3	78.8	87.5	92.5	96.6	98.4	96.6	88.8	83.8	86.6	93.9
76.5°	69.7	73.8	82.9	87.5	92.0	93.9	92.0	84.3	79.3	82.0	88.8
77°	65.1	69.2	78.4	83.4	87.5	89.3	87.5	79.3	74.3	77.0	84.3
77.5°	60.6	64.7	73.8	78.8	83.4	85.2	82.9	74.7	69.7	72.4	79.7
78°	56.0	60.1	69.7	74.7	78.8	80.6	78.4	70.2	65.1	68.3	75.2
78.5°	51.5	55.6	65.1	70.2	74.7	76.1	73.8	65.6	61.0	63.8	71.1
79°	47.4	51.0	61.0	66.1	70.2	72.0	69.7	61.0	56.5	59.2	67.0
79.5°	43.3	46.9	56.5	62.0	66.1	67.9	65.6	56.9	52.4	54.7	62.4
80°	39.2	42.8	52.4	57.9	62.0	63.8	61.0	52.4	48.3	50.6	58.3
80.5°	35.1	38.7	48.7	54.2	58.3	59.7	57.4	48.3	44.2	46.5	54.2
81°	31.0	34.6	44.6	50.1	54.2	55.6	53.3	44.2	40.1	42.8	50.6
81.5°	27.3	30.5	41.0	46.0	50.1	51.9	49.2	40.5	36.4	38.7	46.5
82°	23.2	26.9	37.4	42.4	46.5	47.8	45.6	36.9	32.3	34.6	42.8
82.5°	19.6	23.2	33.7	38.7	42.4	44.2	41.9	33.3	28.7	31.0	39.6
83°	15.9	20.0	30.5	35.1	39.2	40.5	38.7	29.6	24.6	26.9	36.4
83.5°	13.7	16.9	26.9	31.4	35.5	36.9	35.1	25.5	21.0	23.7	32.8
84°	11.4	15.0	24.1	28.2	31.9	33.3	31.4	22.3	17.3	20.5	29.6
84.5°	9.1	13.2	21.0	24.6	28.2	29.6	28.2	19.6	14.1	17.3	26.4
85°	6.8	10.9	17.8	21.0	24.6	26.0	24.6	16.9	10.9	15.0	23.2
85.5°	5.5	9.1	15.0	17.8	21.0	22.8	21.9	14.6	9.1	13.2	20.0
86°	4.1	7.3	12.3	14.6	17.8	19.6	18.7	12.8	7.7	11.4	17.3
86.5°	3.2	5.5	9.6	11.4	14.6	15.9	15.9	10.5	6.4	9.6	14.6
87°	1.8	3.6	6.4	8.2	11.4	12.8	12.8	8.7	5.0	7.7	11.8
87.5°	0.9	2.3	3.6	5.0	8.2	10.0	10.0	6.8	4.1	5.9	9.1
88°	0.5	0.9	1.4	2.3	5.5	6.8	7.3	5.0	2.7	4.6	6.4
88.5°	0.0	0.5	0.5	0.9	2.7	3.6	4.6	3.2	1.8	2.7	3.6



TEST NUMBER: P776615
CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0



TEST NUMBER: P776615

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3319.8	3319.8	3319.8	3319.8	3319.8	3319.8
0.5°	3318.9	3321.2	3319.4	3317.6	3318.0	3318.5
1°	3319.4	3320.7	3318.0	3315.7	3315.7	3316.2
1.5°	3318.5	3319.4	3316.2	3313.5	3313.0	3313.0
2°	3317.6	3317.6	3313.9	3310.3	3309.4	3309.4
2.5°	3315.7	3314.8	3311.2	3307.1	3305.3	3304.8
3°	3313.5	3311.6	3307.1	3303.0	3300.2	3299.3
3.5°	3310.7	3308.0	3303.0	3298.0	3294.8	3293.4
4°	3307.1	3303.9	3297.5	3293.0	3288.9	3287.0
4.5°	3303.0	3298.0	3292.0	3286.1	3282.0	3280.2
5°	3298.4	3292.0	3285.2	3279.3	3274.3	3271.5
5.5°	3292.5	3285.7	3278.4	3271.5	3266.1	3262.9
6°	3286.1	3278.8	3270.2	3263.3	3257.4	3253.8
6.5°	3279.7	3271.5	3262.0	3254.7	3247.4	3243.3
7°	3272.5	3262.9	3252.9	3244.7	3236.9	3232.8
7.5°	3264.7	3253.3	3243.3	3234.2	3226.0	3221.0
8°	3255.6	3244.2	3232.8	3222.8	3214.1	3209.1
8.5°	3246.5	3233.7	3221.9	3211.4	3201.8	3195.9
9°	3236.5	3222.3	3210.0	3198.2	3187.7	3182.3
9.5°	3226.0	3211.0	3197.7	3185.4	3174.1	3167.2
10°	3214.6	3198.2	3184.5	3171.8	3159.5	3152.2
10.5°	3202.8	3185.4	3170.4	3157.2	3144.4	3136.2
11°	3189.5	3171.8	3155.8	3141.7	3128.0	3119.4
11.5°	3176.3	3157.6	3140.8	3125.8	3110.3	3101.6
12°	3162.2	3142.2	3124.8	3108.0	3093.0	3083.4
12.5°	3147.6	3126.2	3108.0	3090.2	3074.3	3064.3
13°	3132.1	3109.8	3091.1	3072.5	3055.6	3044.7
13.5°	3116.2	3093.4	3072.9	3053.8	3035.1	3023.3
14°	3099.3	3075.6	3054.7	3034.2	3014.1	3003.2
14.5°	3082.0	3057.4	3035.6	3014.1	2993.2	2981.3
15°	3063.8	3038.3	3015.5	2992.7	2971.3	2959.0
15.5°	3045.1	3018.2	2995.0	2971.8	2949.4	2935.8
16°	3026.0	2998.7	2974.0	2949.9	2927.1	2912.1
16.5°	3006.4	2978.1	2952.6	2928.0	2903.4	2888.4
17°	2985.9	2956.3	2930.8	2905.7	2880.2	2864.7
17.5°	2965.4	2935.8	2908.4	2882.0	2856.1	2840.6
18°	2944.4	2913.9	2886.6	2859.2	2832.4	2815.1
18.5°	2923.0	2891.6	2864.3	2836.5	2809.1	2791.4
19°	2900.7	2871.1	2842.4	2814.6	2787.3	2768.6
19.5°	2880.2	2849.2	2821.0	2793.6	2765.8	2746.7
20°	2860.2	2828.3	2800.9	2772.2	2744.4	2725.3
20.5°	2840.1	2808.2	2779.1	2750.8	2722.1	2702.5
21°	2819.6	2786.8	2758.1	2728.9	2699.8	2679.7

TEST NUMBER: P776615

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2756.7	2722.1	2690.2	2653.3	2619.6	2597.7
23°	2733.5	2699.8	2666.5	2625.5	2589.1	2564.0
23.5°	2708.9	2675.6	2640.6	2595.0	2554.9	2528.0
24°	2682.0	2652.0	2612.8	2563.1	2518.5	2487.5
24.5°	2654.2	2624.2	2583.6	2528.9	2479.7	2443.8
25°	2624.6	2596.4	2552.2	2494.3	2439.6	2396.8
25.5°	2593.6	2565.8	2519.4	2458.8	2397.3	2350.8
26°	2561.3	2534.4	2484.8	2423.2	2353.5	2304.3
26.5°	2526.2	2497.5	2447.4	2385.4	2308.4	2257.9
27°	2492.0	2460.2	2408.7	2346.3	2264.3	2211.9
27.5°	2457.4	2417.8	2368.6	2306.2	2219.6	2168.1
28°	2421.4	2373.1	2326.7	2263.8	2176.3	2124.8
28.5°	2384.5	2325.8	2282.5	2219.6	2133.5	2082.0
29°	2346.3	2277.9	2236.5	2173.6	2091.1	2037.4
29.5°	2308.0	2227.3	2188.6	2126.7	2049.2	1994.1
30°	2266.5	2176.8	2139.0	2078.8	2007.3	1949.4
30.5°	2223.7	2127.6	2087.0	2031.0	1964.0	1904.3
31°	2179.1	2079.3	2032.8	1982.7	1918.9	1857.4
31.5°	2133.0	2032.8	1980.9	1932.6	1874.3	1810.9
32°	2086.1	1987.3	1929.4	1883.4	1829.2	1761.7
32.5°	2037.4	1942.6	1878.8	1833.7	1782.7	1714.4
33°	1987.7	1898.4	1830.5	1784.5	1732.6	1667.9
33.5°	1937.6	1854.2	1781.3	1734.4	1684.3	1621.9
34°	1888.8	1809.6	1734.4	1685.2	1633.7	1577.2
34.5°	1840.6	1761.3	1686.6	1634.6	1584.1	1532.6
35°	1793.2	1713.4	1638.7	1585.0	1533.5	1488.8
35.5°	1746.7	1665.2	1590.4	1536.2	1486.6	1446.0
36°	1700.2	1616.4	1541.7	1488.4	1438.7	1403.7
36.5°	1653.8	1568.6	1493.4	1440.6	1392.7	1360.4
37°	1607.8	1519.4	1445.1	1391.4	1347.2	1316.6
37.5°	1559.9	1472.4	1397.7	1344.0	1303.9	1272.9
38°	1512.5	1426.9	1350.8	1296.6	1258.3	1229.2
38.5°	1465.6	1382.7	1304.8	1250.6	1214.1	1185.4
39°	1419.1	1339.0	1261.5	1204.1	1169.0	1143.5
39.5°	1370.9	1294.8	1218.2	1159.0	1123.5	1100.7
40°	1323.9	1251.0	1176.3	1114.4	1078.8	1059.2
40.5°	1276.5	1207.3	1135.3	1071.1	1035.1	1019.1
41°	1232.8	1162.6	1094.3	1028.7	991.8	980.4
41.5°	1186.3	1119.8	1054.7	989.1	950.3	941.2
42°	1142.1	1076.1	1014.6	949.4	911.2	902.5
42.5°	1097.5	1033.7	978.1	913.0	873.8	865.6
43°	1055.6	991.8	939.0	876.5	837.4	828.7
43.5°	1011.4	952.2	901.6	841.0	802.3	792.3



TEST NUMBER: P776615

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	889.8	838.7	793.6	743.5	706.2	690.7
45.5°	849.7	803.2	760.4	713.9	677.5	661.5
46°	812.3	769.0	728.5	686.1	649.7	634.2
46.5°	774.9	734.9	697.0	658.8	623.7	608.2
47°	739.4	702.5	667.0	631.9	599.1	584.5
47.5°	705.7	670.6	639.2	607.3	576.3	563.1
48°	672.9	640.6	611.4	584.5	555.4	544.0
48.5°	643.3	610.9	585.9	562.6	535.3	525.7
49°	613.2	583.6	562.2	541.7	517.1	509.3
49.5°	586.3	557.6	539.4	521.6	500.2	493.4
50°	560.8	533.0	517.5	502.5	484.3	478.8
50.5°	536.7	509.8	497.0	484.7	469.3	465.2
51°	513.9	489.3	478.4	467.9	454.7	451.9
51.5°	493.4	470.2	460.6	452.4	441.0	438.7
52°	473.8	452.4	444.6	436.9	428.2	426.4
52.5°	455.6	436.4	429.2	422.8	415.5	414.1
53°	438.7	421.4	414.6	409.1	403.6	402.3
53.5°	422.8	407.7	400.9	396.8	392.3	391.3
54°	408.2	395.0	389.1	385.4	382.2	381.3
54.5°	395.4	384.1	379.0	375.9	373.1	372.7
55°	385.9	374.0	369.9	367.2	364.5	364.0
55.5°	375.9	365.4	360.8	358.1	355.4	355.4
56°	366.3	356.3	351.7	349.4	346.7	346.7
56.5°	356.7	347.2	343.1	340.3	337.6	337.6
57°	346.7	337.6	333.9	331.2	328.9	328.9
57.5°	337.6	328.0	324.4	322.1	320.3	320.3
58°	328.5	319.4	315.7	313.4	311.6	311.6
58.5°	319.4	310.3	306.6	304.8	303.0	303.0
59°	309.8	301.6	298.0	296.1	294.8	294.8
59.5°	301.1	292.5	289.3	287.9	286.6	286.1
60°	292.5	284.3	281.1	279.7	278.4	277.5
60.5°	283.8	275.6	272.9	272.0	270.6	269.2
61°	275.6	267.9	265.1	263.8	262.9	261.0
61.5°	267.4	260.1	257.4	256.0	254.7	253.3
62°	259.7	252.4	250.1	248.7	247.4	245.1
62.5°	251.9	244.6	241.9	241.5	239.6	237.4
63°	244.2	237.4	235.1	234.2	232.3	229.6
63.5°	237.4	230.1	227.8	227.3	225.1	222.3
64°	230.1	223.2	221.0	220.5	217.8	215.0
64.5°	222.8	216.4	214.1	213.7	210.9	207.7
65°	215.9	209.6	207.7	207.3	204.1	200.5
65.5°	209.1	203.2	201.4	200.5	197.3	193.6
66°	202.7	196.8	195.0	194.5	190.4	186.8

TEST NUMBER: P776615

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	184.1	178.1	176.8	175.9	170.8	167.2
68°	177.7	172.2	170.8	170.4	164.0	161.3
68.5°	172.2	166.7	164.5	164.0	158.5	155.4
69°	166.3	161.3	159.5	158.5	153.1	149.4
69.5°	160.4	155.8	154.0	153.1	147.2	143.5
70°	154.9	150.3	149.0	148.1	141.7	137.6
70.5°	149.4	145.3	143.5	142.6	135.8	131.7
71°	144.4	139.9	138.0	137.1	130.3	126.2
71.5°	139.0	134.4	133.0	131.7	124.8	120.7
72°	133.9	129.4	128.0	126.7	119.4	114.8
72.5°	128.5	124.4	123.0	121.2	113.9	109.3
73°	123.5	119.4	118.0	116.2	108.9	103.9
73.5°	118.5	114.4	113.0	111.2	103.4	98.9
74°	113.9	109.8	108.4	106.2	98.4	93.9
74.5°	108.9	104.8	103.4	101.6	93.4	88.8
75°	104.3	100.2	98.9	96.6	88.4	83.8
75.5°	99.8	95.7	94.3	92.0	83.8	78.8
76°	95.2	91.1	89.7	87.0	78.8	74.3
76.5°	90.7	86.6	85.2	82.5	73.8	69.7
77°	86.1	82.5	81.1	77.9	69.2	65.1
77.5°	82.0	77.9	76.5	73.8	64.7	60.6
78°	77.4	73.8	72.4	69.2	60.1	56.0
78.5°	73.3	69.7	68.3	65.1	56.0	51.5
79°	69.2	65.6	64.2	60.6	51.5	47.4
79.5°	65.1	61.5	60.1	56.5	47.4	43.3
80°	61.0	57.4	56.0	52.8	43.3	39.2
80.5°	56.9	53.8	52.4	48.7	39.2	35.1
81°	53.3	49.7	48.3	44.6	35.1	31.0
81.5°	49.2	46.0	44.6	41.0	31.4	27.3
82°	45.6	42.4	41.0	37.4	27.8	23.2
82.5°	41.9	38.7	37.4	34.2	24.1	19.6
83°	38.7	35.1	33.7	30.5	21.0	15.9
83.5°	35.1	31.4	30.1	27.3	18.2	13.7
84°	31.4	27.8	26.4	24.1	15.9	11.4
84.5°	27.8	24.6	23.2	21.0	14.1	9.1
85°	24.6	21.0	20.0	17.8	11.8	6.8
85.5°	21.0	17.8	16.4	15.0	9.6	5.5
86°	17.8	15.0	13.7	11.8	7.7	4.1
86.5°	14.6	11.8	10.5	9.1	5.9	3.2
87°	11.8	8.7	7.3	5.9	4.1	1.8
87.5°	8.7	5.5	4.1	3.2	2.3	0.9
88°	5.5	2.7	1.8	1.4	0.9	0.5
88.5°	2.7	0.9	0.5	0.5	0.5	0.0



TEST NUMBER: P776615

CATALOG NUMBER: HCDJBL54050CSD-HCD4TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.5	0.0



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Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

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°	2656.1	2643.8	2644.7	2655.6	2695.2	2724.4	2753.5	2782.7	2802.7	2813.7	2813.2
22°	2628.7	2615.0	2616.0	2628.3	2672.9	2703.0	2733.0	2761.3	2782.2	2793.6	2792.7



44°	756.7	762.6	769.9	779.0	820.5	846.0	882.0	938.0	972.7	990.4	983.6
44.5°	723.5	733.5	740.8	749.9	785.4	810.9	846.0	901.6	934.4	948.1	943.1



66.5°	180.4	184.5	190.4	191.8	198.6	200.9	201.4	198.2	192.7	194.5	198.2
67°	173.6	178.1	184.1	185.9	192.7	194.5	195.4	191.8	186.3	188.2	191.8



89°	0.0	0.5	0.0	0.0	0.9	1.4	1.8	1.8	0.9	1.4	1.4
89.5°	0.0	0.5	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.5	0.5

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21.5°	2798.6	2764.9	2736.2	2705.7	2675.2	2656.1
22°	2778.6	2744.4	2713.9	2680.2	2648.8	2628.7



44°	970.4	912.5	865.2	807.3	768.6	756.7
44.5°	928.9	875.2	829.6	774.5	736.7	723.5



66.5°	196.4	190.4	188.6	188.2	183.6	180.4
67°	190.0	184.1	182.7	182.2	177.2	173.6

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Scaled Data Report



89°	0.9	0.0	0.0	0.0	0.5	0.0
89.5°	0.0	0.0	0.0	0.0	0.5	0.0

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Scaled Data Report



(END OF REPORT)