

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: P776642

Luminaire Tested: HCDJBS4050CSD-HCD4TSQMW-5000lm-3500K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776642
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-HCD4TSQMW-5000lm-3500K
Description: 4 INCH SQUARE MEDIUM MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

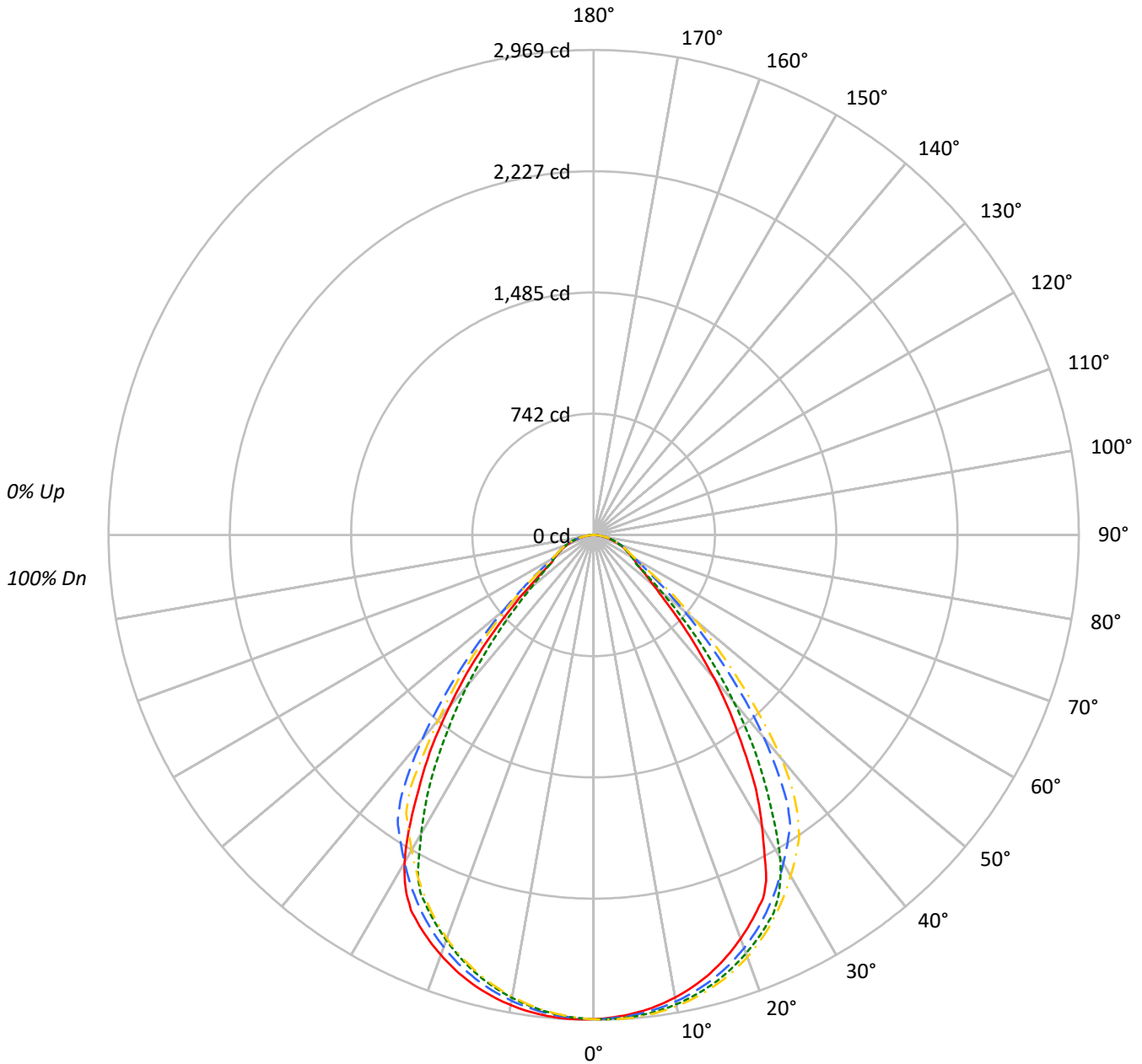
Lumens per Lamp: N/A
Luminaire Lumens: 4902.3 lumens
Efficiency: N/A
Efficacy: 102.1 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.13 / 1.17
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P776642
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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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89								
2	104	97	92	88	101	96	91	86	92	88	85	89	86	83	86	83	81	79								
3	97	88	82	77	94	87	81	76	84	79	75	81	77	73	79	75	72	70								
4	90	80	73	68	88	79	72	67	77	71	66	75	70	66	73	68	65	63								
5	84	73	66	61	82	72	65	60	70	64	60	69	63	59	67	62	58	57								
6	79	67	60	55	77	67	59	54	65	59	54	63	58	53	62	57	53	51								
7	74	62	55	49	72	61	54	49	60	54	49	59	53	49	57	52	48	47								
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	53	48	44	43								
9	65	53	46	41	64	53	46	41	52	46	41	51	45	41	50	45	41	39								
10	61	50	43	38	60	49	43	38	48	42	38	48	42	38	47	41	38	36								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	293008	293008	293008	293008
5°	291458	293472	293750	291597
10°	288575	292841	293363	288856
15°	283840	290737	291566	284372
20°	276575	286747	287788	277617
25°	267721	281256	282084	268801
30°	235103	260303	264184	240924
35°	192881	218161	222879	200230
40°	147932	172035	177209	155235
45°	103999	124841	129859	110737
50°	73564	83575	87865	76178
55°	58212	57488	60900	59435
60°	54561	52881	53810	54462
65°	51430	50752	51080	52647
70°	47453	48667	48118	51008
75°	42696	46133	44338	49188
80°	33811	42691	38422	46220
85°	16558	34816	23022	40714

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 175625 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	279.8	5.7
10°-20°	791.8	16.2
20°-30°	1154.2	23.5
30°-40°	1160.9	23.7
40°-50°	761.1	15.5
50°-60°	368.8	7.5
60°-70°	224.2	4.6
70°-80°	129.1	2.6
80°-90°	32.4	0.7
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°	2225.8	45.4
0°-40°	3386.8	69.1
0°-60°	4516.7	92.1
0°-90°	4902.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4902.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2964	2964	2964	2964	2964	
5°	2938	2958	2961	2939	2938	278
15°	2774	2841	2849	2779	2774	780
25°	2455	2579	2586	2465	2455	1106
35°	1598	1808	1847	1659	1598	997
45°	744	893	929	792	744	586
55°	338	334	353	345	338	316
65°	220	217	218	225	220	218
75°	112	121	116	129	112	118
85°	15	31	20	36	15	21
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°	2964.4	2964.4	2964.4	2964.4	2964.4	2964.4	2964.4	2964.4	2964.4	2964.4	2964.4
0.5°	2963.9	2963.0	2963.4	2963.4	2965.3	2965.8	2966.7	2967.2	2966.3	2964.4	2963.0
1°	2962.5	2961.6	2963.0	2963.9	2965.8	2966.7	2967.7	2968.2	2966.7	2964.4	2962.5
1.5°	2960.1	2960.1	2962.5	2963.9	2965.8	2967.2	2968.6	2968.6	2967.2	2964.4	2961.6
2°	2957.8	2958.3	2961.6	2963.9	2965.8	2967.2	2968.6	2968.6	2967.2	2963.9	2960.1
2.5°	2955.4	2956.4	2960.1	2963.0	2965.3	2967.2	2968.6	2968.6	2967.2	2963.4	2958.7
3°	2952.1	2953.5	2958.3	2962.0	2963.9	2966.7	2968.2	2968.6	2966.3	2962.5	2956.8
3.5°	2949.3	2950.7	2956.4	2961.1	2963.0	2965.8	2967.7	2967.7	2965.3	2961.1	2954.5
4°	2946.0	2947.9	2954.0	2959.7	2961.6	2964.9	2966.7	2967.2	2964.4	2959.2	2952.6
4.5°	2941.7	2944.1	2951.2	2957.8	2960.1	2963.0	2965.8	2965.8	2963.0	2957.3	2949.8
5°	2937.5	2940.3	2947.9	2955.4	2957.8	2961.6	2963.9	2963.9	2960.6	2955.0	2946.0
5.5°	2933.2	2936.1	2944.6	2953.1	2955.4	2959.2	2962.0	2962.0	2958.7	2952.6	2942.7
6°	2928.5	2931.8	2941.3	2950.2	2952.6	2956.4	2959.7	2959.7	2955.9	2949.3	2938.9
6.5°	2923.3	2927.1	2937.5	2947.4	2949.3	2954.0	2956.8	2956.8	2952.6	2946.0	2934.7
7°	2917.2	2921.5	2933.2	2944.1	2945.5	2950.7	2954.0	2954.0	2949.8	2942.7	2929.9
7.5°	2911.1	2915.8	2928.5	2940.3	2941.7	2947.4	2950.7	2950.2	2946.0	2938.4	2925.2
8°	2904.9	2910.1	2922.9	2936.1	2937.5	2943.6	2946.9	2946.5	2942.2	2934.2	2920.0
8.5°	2897.9	2903.1	2918.2	2931.8	2933.2	2939.4	2942.7	2942.7	2938.0	2929.5	2914.4
9°	2890.8	2896.4	2912.5	2927.1	2928.5	2935.1	2938.4	2938.4	2933.2	2924.8	2908.7
9.5°	2883.2	2889.4	2906.4	2921.5	2923.3	2930.4	2933.7	2933.2	2928.1	2919.1	2902.6
10°	2875.2	2882.3	2899.8	2916.3	2917.7	2924.8	2929.0	2928.5	2922.9	2913.4	2896.0
10.5°	2866.7	2874.3	2893.1	2910.1	2911.5	2919.1	2923.3	2922.9	2917.2	2907.8	2888.9
11°	2858.2	2865.8	2886.1	2904.0	2905.4	2913.0	2917.7	2917.2	2911.5	2901.2	2881.4
11.5°	2849.3	2857.3	2878.5	2897.4	2898.3	2906.8	2911.5	2910.6	2904.9	2894.6	2873.8
12°	2839.4	2848.3	2870.5	2890.3	2891.3	2900.7	2905.4	2904.0	2897.9	2887.5	2865.8
12.5°	2829.5	2838.9	2862.0	2882.8	2883.7	2893.6	2898.3	2896.9	2890.8	2879.9	2857.3
13°	2819.1	2829.5	2853.5	2875.7	2876.2	2885.6	2891.3	2889.8	2883.2	2872.4	2848.8
13.5°	2808.7	2819.1	2845.0	2867.2	2868.1	2878.5	2883.7	2881.8	2875.2	2863.9	2839.4
14°	2797.8	2808.2	2835.1	2859.2	2859.6	2870.0	2875.7	2873.8	2866.7	2854.9	2829.9
14.5°	2786.0	2796.9	2825.7	2850.2	2850.7	2861.1	2867.2	2865.8	2858.2	2846.0	2820.0
15°	2773.8	2785.6	2815.3	2841.2	2841.2	2852.6	2858.7	2856.3	2849.3	2837.0	2809.6
15.5°	2761.0	2773.8	2804.9	2831.8	2831.8	2843.6	2849.7	2847.4	2839.4	2827.1	2798.8
16°	2748.3	2761.5	2793.6	2821.9	2821.4	2833.2	2840.3	2837.5	2829.5	2817.2	2787.9
16.5°	2734.6	2748.8	2782.3	2811.1	2810.6	2823.3	2830.4	2827.6	2819.1	2806.3	2776.1
17°	2720.9	2735.6	2770.9	2800.7	2799.7	2812.5	2820.0	2817.7	2808.7	2795.5	2764.3
17.5°	2706.3	2721.9	2758.7	2789.8	2788.4	2802.1	2809.2	2806.8	2796.9	2784.2	2752.1
18°	2692.2	2708.2	2745.9	2778.0	2776.6	2790.8	2797.8	2795.0	2785.1	2772.4	2739.3
18.5°	2676.6	2693.1	2733.2	2766.2	2764.8	2778.5	2786.5	2783.2	2773.8	2760.6	2726.1
19°	2661.5	2678.5	2719.5	2754.4	2752.1	2765.8	2774.7	2770.9	2761.5	2747.8	2712.9
19.5°	2645.4	2662.9	2705.8	2741.2	2739.3	2754.4	2762.5	2758.2	2749.2	2734.6	2699.2
20°	2629.4	2647.8	2691.7	2728.0	2726.1	2740.8	2749.2	2745.9	2736.0	2721.4	2684.6
20.5°	2613.4	2631.8	2676.6	2714.3	2712.4	2727.5	2736.5	2732.3	2722.3	2707.7	2669.5
21°	2596.8	2615.2	2661.5	2700.6	2698.3	2713.9	2722.8	2718.6	2708.7	2694.0	2654.9



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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°	2544.0	2564.3	2613.8	2656.3	2655.4	2670.9	2679.4	2676.1	2665.7	2649.7	2607.2
23°	2526.1	2546.8	2596.4	2641.7	2639.8	2655.8	2664.3	2661.0	2650.6	2634.1	2590.2
23.5°	2508.1	2528.4	2578.9	2626.1	2624.2	2640.7	2648.7	2645.4	2636.0	2618.1	2572.8
24°	2488.8	2510.0	2561.5	2610.1	2608.6	2625.2	2632.7	2629.9	2620.4	2602.0	2555.3
24.5°	2472.3	2492.1	2543.5	2594.0	2592.6	2609.1	2615.7	2613.8	2603.9	2586.0	2537.4
25°	2454.8	2473.2	2524.7	2577.0	2578.9	2593.1	2598.7	2597.3	2586.5	2569.5	2518.5
25.5°	2426.5	2454.4	2505.8	2560.0	2560.0	2576.6	2581.8	2581.3	2570.4	2552.5	2500.1
26°	2395.4	2436.0	2486.4	2543.1	2534.6	2559.1	2563.8	2564.3	2554.4	2535.0	2480.3
26.5°	2366.1	2418.5	2467.1	2525.6	2512.9	2542.6	2545.9	2546.4	2525.6	2517.1	2461.0
27°	2322.3	2396.3	2447.3	2507.2	2487.9	2527.0	2527.5	2528.4	2503.4	2498.2	2441.2
27.5°	2276.0	2362.4	2427.0	2491.2	2459.6	2505.3	2509.1	2511.9	2478.9	2481.3	2420.9
28°	2230.3	2335.0	2406.2	2473.2	2427.9	2479.4	2489.3	2488.3	2450.6	2460.0	2400.1
28.5°	2185.9	2297.7	2385.5	2446.3	2395.4	2457.7	2470.4	2461.0	2420.4	2432.2	2379.8
29°	2143.0	2253.4	2364.7	2422.3	2360.0	2430.8	2451.1	2439.3	2387.4	2409.1	2358.1
29.5°	2101.4	2208.5	2344.0	2398.2	2322.3	2401.5	2431.2	2412.8	2352.4	2383.6	2337.4
30°	2059.9	2163.7	2322.3	2370.4	2280.7	2370.9	2411.0	2383.1	2314.7	2354.8	2315.6
30.5°	2019.4	2119.8	2301.0	2340.2	2236.4	2338.3	2391.1	2352.4	2274.6	2323.7	2293.9
31°	1978.8	2076.9	2279.3	2307.2	2190.6	2302.4	2370.9	2319.9	2231.2	2291.6	2272.2
31.5°	1937.3	2036.3	2257.1	2273.7	2142.5	2266.6	2350.1	2284.5	2184.0	2256.7	2250.5
32°	1892.0	1995.3	2235.9	2237.3	2093.9	2226.9	2328.9	2246.8	2135.4	2220.3	2228.4
32.5°	1848.1	1955.7	2213.3	2199.1	2044.4	2183.5	2308.1	2207.6	2086.8	2180.2	2205.7
33°	1800.4	1914.6	2192.5	2156.6	1995.3	2138.7	2286.4	2164.7	2038.2	2138.7	2183.5
33.5°	1750.4	1873.6	2172.2	2115.1	1947.2	2092.0	2266.1	2119.8	1988.2	2093.9	2161.4
34°	1698.0	1829.7	2151.5	2069.8	1900.0	2044.4	2245.8	2073.1	1939.1	2048.1	2142.0
34.5°	1649.0	1785.3	2118.4	2022.2	1853.7	1996.7	2219.4	2025.0	1892.4	2001.0	2117.0
35°	1598.5	1739.1	2081.2	1974.5	1808.0	1949.1	2185.4	1975.9	1847.1	1951.9	2079.7
35.5°	1550.8	1690.5	2049.1	1927.3	1762.7	1901.9	2155.7	1929.7	1802.8	1904.7	2045.8
36°	1503.7	1640.5	2008.5	1880.6	1717.4	1856.1	2126.0	1882.5	1757.0	1858.5	2014.6
36.5°	1459.3	1590.9	1962.3	1834.4	1671.2	1810.3	2090.1	1836.3	1710.3	1812.2	1973.1
37°	1414.5	1542.4	1915.1	1787.7	1624.0	1765.0	2053.3	1790.5	1666.0	1766.9	1926.4
37.5°	1371.1	1497.5	1866.0	1743.3	1575.8	1721.6	2014.2	1746.6	1618.3	1723.5	1879.2
38°	1327.7	1450.3	1817.9	1699.0	1526.8	1675.9	1972.6	1701.8	1569.7	1679.2	1831.1
38.5°	1283.8	1406.9	1769.3	1655.1	1478.2	1631.5	1930.7	1658.9	1519.7	1636.2	1781.1
39°	1238.5	1364.0	1721.6	1611.2	1430.5	1586.7	1884.4	1613.1	1470.6	1592.4	1732.5
39.5°	1192.7	1322.0	1673.5	1566.4	1381.9	1540.0	1836.8	1567.8	1422.5	1548.5	1682.0
40°	1146.5	1277.7	1623.5	1522.5	1333.3	1493.8	1786.7	1520.6	1373.4	1503.2	1631.5
40.5°	1101.2	1236.1	1573.5	1477.2	1286.6	1446.6	1735.3	1473.9	1326.3	1456.5	1579.6
41°	1056.9	1192.7	1522.5	1431.0	1242.3	1398.9	1681.1	1425.8	1279.6	1409.8	1528.7
41.5°	1014.4	1149.8	1472.5	1385.2	1196.5	1353.2	1625.9	1378.6	1235.7	1363.5	1477.7
42°	971.9	1105.9	1421.1	1339.0	1152.2	1307.9	1570.2	1331.9	1190.4	1317.8	1426.3
42.5°	932.3	1063.0	1369.7	1293.7	1107.8	1262.6	1515.0	1285.2	1146.5	1273.4	1375.8
43°	893.1	1020.1	1317.8	1248.9	1063.5	1217.7	1461.7	1240.9	1103.6	1229.1	1326.7
43.5°	854.9	978.5	1266.3	1205.9	1020.1	1174.3	1408.4	1197.0	1059.2	1186.6	1274.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	744.0	861.5	1119.6	1079.0	893.1	1047.4	1256.4	1068.7	929.0	1062.0	1130.9
45.5°	709.6	824.7	1072.9	1038.5	851.6	1004.0	1209.7	1027.6	887.9	1022.9	1084.2
46°	676.6	788.4	1029.0	997.9	812.0	963.4	1164.0	985.1	846.9	981.4	1039.9
46.5°	645.0	753.0	986.6	957.8	772.8	923.8	1117.2	943.6	807.7	940.8	996.0
47°	614.3	718.6	945.5	918.1	736.0	883.2	1072.9	902.1	770.0	901.2	954.5
47.5°	586.9	685.1	905.4	879.0	700.2	844.5	1028.5	861.5	733.7	862.5	913.4
48°	561.5	653.0	865.3	840.3	665.7	806.3	983.7	823.3	698.3	824.3	872.9
48.5°	538.3	621.8	826.6	801.6	633.6	768.1	941.7	785.6	665.3	787.5	833.7
49°	517.1	592.6	789.8	765.3	602.0	732.3	897.9	749.2	632.2	751.6	795.9
49.5°	496.8	565.7	754.0	730.4	572.3	695.9	855.9	712.4	601.6	717.6	759.6
50°	478.4	539.8	718.6	696.4	543.5	662.4	815.8	678.9	571.4	683.7	724.7
50.5°	461.9	516.2	684.1	663.4	515.7	628.9	776.1	645.0	542.6	651.6	689.8
51°	446.3	494.9	651.6	632.7	489.7	597.8	738.9	613.4	515.7	620.4	657.7
51.5°	431.2	475.1	620.4	601.6	466.1	568.1	702.5	583.2	490.7	591.2	626.6
52°	417.1	457.7	590.7	572.8	443.5	539.8	668.1	554.8	467.1	562.9	596.8
52.5°	402.9	440.7	563.3	544.0	424.6	511.9	633.6	525.6	444.4	534.6	568.5
53°	389.7	425.1	536.4	516.6	405.8	486.0	602.5	498.7	424.2	509.1	541.2
53.5°	375.6	410.5	511.4	489.7	386.9	461.0	571.4	474.2	406.2	483.6	515.7
54°	362.4	396.8	486.9	465.2	368.0	437.8	542.6	450.6	388.8	459.5	491.2
54.5°	349.6	383.1	464.7	441.6	349.6	419.0	514.3	427.9	370.8	436.9	469.0
55°	337.8	369.9	443.5	419.4	333.6	399.6	488.8	409.1	353.4	418.5	447.7
55.5°	327.4	356.7	423.7	399.6	320.8	380.8	462.8	390.7	337.3	400.1	427.0
56°	319.9	344.0	404.8	380.3	310.9	361.4	438.8	372.3	323.7	381.7	410.0
56.5°	314.2	331.2	387.4	362.8	304.8	342.5	419.4	353.9	312.3	363.8	392.5
57°	309.0	320.4	371.3	346.3	299.1	326.5	399.6	337.3	304.8	345.4	375.1
57.5°	303.4	310.5	355.7	330.7	293.9	312.3	380.3	322.2	299.1	329.8	358.1
58°	298.2	303.8	342.1	316.1	288.7	301.0	360.9	309.5	293.9	315.6	344.4
58.5°	293.0	298.2	329.8	304.3	283.6	293.9	341.1	298.7	288.7	304.3	331.2
59°	287.3	292.5	318.0	296.8	277.9	287.8	326.5	291.6	283.1	295.4	318.9
59.5°	281.7	287.3	307.6	290.6	272.7	282.6	313.3	285.4	277.9	289.2	308.1
60°	276.0	282.1	297.7	285.0	267.5	277.4	301.5	280.3	272.2	283.6	297.7
60.5°	269.9	276.5	288.7	279.8	262.3	271.8	291.1	274.6	267.0	278.4	288.3
61°	264.7	270.8	280.3	274.1	257.1	266.6	282.1	269.4	261.4	273.2	279.8
61.5°	259.0	265.2	272.2	268.5	251.9	261.4	273.2	264.2	255.7	267.5	271.8
62°	253.4	259.5	265.2	263.3	247.2	256.2	265.2	258.6	250.5	262.3	264.2
62.5°	247.2	253.4	257.6	258.1	242.0	251.0	257.6	252.9	245.3	256.7	256.7
63°	242.0	247.7	251.0	252.9	236.8	245.3	250.5	247.7	239.7	251.0	250.1
63.5°	236.4	242.0	244.4	247.2	231.7	240.2	243.9	242.0	234.5	245.8	243.9
64°	230.7	236.4	238.7	242.0	226.9	235.0	237.3	236.4	229.3	240.2	237.8
64.5°	225.1	231.2	233.1	236.8	221.8	229.8	231.7	231.2	223.6	234.5	232.1
65°	219.9	225.1	227.9	231.7	217.0	225.1	226.5	225.5	218.4	229.3	226.5
65.5°	214.2	219.4	222.7	226.5	211.8	219.9	220.8	220.3	213.3	223.6	221.3
66°	208.5	214.2	217.0	221.3	207.1	214.7	215.6	214.7	208.1	218.4	216.1



TEST NUMBER: P776642

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	192.0	197.2	201.0	205.7	192.5	199.6	200.0	198.6	192.5	202.4	200.5
68°	186.8	191.6	195.8	200.5	187.8	194.4	194.4	193.4	187.3	197.2	195.3
68.5°	181.2	185.9	190.1	195.3	182.6	189.7	189.2	188.3	182.1	191.6	190.1
69°	176.0	180.7	184.9	190.1	177.9	184.5	184.0	183.1	176.9	186.4	184.5
69.5°	169.4	175.0	179.3	185.4	173.2	179.3	178.8	177.4	171.7	181.2	179.3
70°	164.2	171.3	174.1	180.2	168.4	174.6	173.2	172.2	166.5	176.0	174.1
70.5°	159.5	165.6	168.4	175.0	163.7	169.9	168.0	167.0	161.8	170.8	168.9
71°	154.3	159.9	163.2	170.8	159.0	164.7	162.8	161.8	156.6	165.6	163.7
71.5°	149.6	153.8	158.1	165.6	154.3	159.5	157.6	156.6	151.5	159.9	158.5
72°	143.9	148.1	152.9	160.9	149.6	154.8	152.4	151.5	146.3	154.8	153.3
72.5°	138.7	142.5	147.7	155.7	144.8	150.0	147.2	146.3	141.5	149.6	148.1
73°	133.1	137.3	142.5	151.0	139.7	145.3	142.0	141.1	136.4	144.4	143.0
73.5°	127.9	131.6	137.3	145.8	134.9	140.1	137.3	135.9	131.2	139.2	137.8
74°	122.2	126.4	132.1	141.1	130.7	135.4	132.1	130.7	126.4	134.0	132.6
74.5°	117.0	120.8	126.4	135.9	126.0	130.7	126.9	125.5	121.3	128.8	127.9
75°	111.8	115.1	121.3	131.2	120.8	125.5	122.2	120.3	116.1	123.6	122.7
75.5°	106.6	109.9	116.1	126.0	116.1	120.8	117.0	115.1	111.3	118.4	117.5
76°	101.0	104.3	110.9	121.3	111.3	116.1	111.8	109.9	106.2	113.2	112.3
76.5°	95.8	99.1	105.7	116.5	107.1	111.3	107.1	104.7	101.4	108.5	107.1
77°	90.6	93.4	100.5	111.3	102.4	106.6	102.4	99.6	96.2	103.3	101.9
77.5°	85.4	88.2	95.3	106.6	97.7	101.9	97.7	94.4	91.5	98.1	97.2
78°	80.2	82.6	90.6	101.4	92.9	96.7	92.5	89.2	86.8	92.9	92.0
78.5°	75.0	77.4	85.4	96.7	88.2	92.0	87.8	84.0	81.6	87.8	86.8
79°	69.8	71.7	80.7	91.5	84.0	87.3	83.0	78.8	76.9	82.6	82.1
79.5°	64.6	66.5	75.5	86.8	79.3	82.6	78.3	73.6	72.2	77.8	77.4
80°	59.4	61.3	70.8	82.1	75.0	77.8	73.6	68.9	67.5	72.7	72.7
80.5°	54.7	56.1	66.1	76.9	70.3	73.1	69.4	63.7	62.8	67.5	67.5
81°	49.5	50.5	61.3	72.2	66.1	68.4	64.6	59.0	58.0	62.3	63.2
81.5°	44.4	45.3	56.6	67.5	61.3	64.2	60.4	54.7	53.3	57.6	58.5
82°	39.2	40.6	51.9	62.8	57.1	59.4	55.7	50.0	48.1	52.4	53.8
82.5°	34.4	35.9	47.7	58.5	52.8	55.2	51.4	45.8	43.4	47.2	49.5
83°	29.3	31.6	43.4	53.8	48.6	50.5	47.2	41.5	39.2	42.9	45.3
83.5°	24.1	26.9	39.2	49.5	43.9	46.2	43.4	37.3	34.4	38.2	41.5
84°	19.3	23.1	34.9	44.8	39.6	41.5	39.2	33.0	29.7	33.5	37.7
84.5°	17.0	19.3	31.1	40.6	35.4	37.3	35.4	29.3	25.0	29.3	34.0
85°	14.6	16.5	27.4	35.9	30.7	33.0	31.1	25.0	20.3	24.5	30.2
85.5°	11.8	13.7	23.1	31.6	26.4	28.3	27.4	21.2	17.0	20.8	25.9
86°	9.4	11.3	19.3	26.9	22.2	24.1	23.6	18.4	14.2	17.9	22.6
86.5°	7.1	9.0	16.0	22.6	17.9	19.8	19.8	15.6	12.3	15.6	18.9
87°	5.2	6.1	12.3	18.4	13.7	15.6	16.0	12.7	10.4	13.2	15.1
87.5°	2.8	3.8	9.0	14.2	9.4	11.3	12.3	9.9	8.0	10.4	11.3
88°	0.9	1.4	5.2	10.4	5.7	7.1	8.5	7.5	6.1	8.0	8.0
88.5°	0.0	0.5	1.9	6.1	1.9	3.3	4.7	4.7	4.2	5.7	4.2



TEST NUMBER: P776642

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P776642

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2964.4	2964.4	2964.4	2964.4	2964.4	2964.4
0.5°	2961.1	2963.4	2963.4	2963.9	2964.4	2963.9
1°	2960.1	2962.0	2961.6	2962.0	2963.0	2962.5
1.5°	2958.3	2960.1	2959.2	2959.7	2960.6	2960.1
2°	2956.4	2958.3	2956.8	2956.8	2957.8	2957.8
2.5°	2954.0	2955.9	2954.0	2954.0	2955.0	2955.4
3°	2951.2	2953.1	2950.7	2950.7	2951.6	2952.1
3.5°	2947.9	2950.2	2947.9	2947.4	2948.3	2949.3
4°	2944.6	2946.5	2944.1	2943.6	2944.6	2946.0
4.5°	2940.8	2943.2	2939.9	2939.4	2940.3	2941.7
5°	2936.6	2938.9	2935.1	2935.1	2936.1	2937.5
5.5°	2932.3	2934.7	2930.4	2929.9	2931.4	2933.2
6°	2927.6	2929.5	2925.2	2924.8	2926.2	2928.5
6.5°	2922.4	2924.3	2920.0	2919.6	2920.5	2923.3
7°	2916.7	2918.6	2913.9	2913.4	2914.8	2917.2
7.5°	2910.6	2913.0	2907.8	2907.3	2908.2	2911.1
8°	2904.5	2906.4	2901.2	2900.7	2902.1	2904.9
8.5°	2897.9	2899.8	2894.1	2893.6	2895.0	2897.9
9°	2891.3	2892.7	2887.0	2886.1	2887.5	2890.8
9.5°	2883.7	2885.1	2879.5	2878.5	2879.9	2883.2
10°	2875.7	2878.0	2871.4	2870.0	2871.9	2875.2
10.5°	2867.7	2870.0	2862.9	2862.0	2862.9	2866.7
11°	2859.2	2861.1	2854.5	2853.0	2854.5	2858.2
11.5°	2850.7	2852.1	2845.0	2843.6	2845.5	2849.3
12°	2841.2	2843.1	2835.6	2834.2	2835.6	2839.4
12.5°	2831.8	2833.2	2825.7	2824.3	2825.2	2829.5
13°	2821.9	2823.3	2815.3	2813.9	2815.3	2819.1
13.5°	2811.1	2812.9	2804.9	2803.5	2804.4	2808.7
14°	2800.7	2802.1	2793.6	2792.2	2793.6	2797.8
14.5°	2789.3	2790.8	2782.3	2780.4	2781.3	2786.0
15°	2778.0	2779.0	2770.5	2768.6	2769.1	2773.8
15.5°	2765.8	2766.7	2757.7	2756.3	2756.3	2761.0
16°	2753.5	2754.4	2745.0	2743.6	2744.1	2748.3
16.5°	2740.3	2741.7	2732.3	2730.4	2730.8	2734.6
17°	2727.1	2728.0	2719.0	2717.2	2717.2	2720.9
17.5°	2713.4	2714.3	2704.9	2703.0	2702.5	2706.3
18°	2699.7	2699.7	2690.7	2688.9	2688.4	2692.2
18.5°	2684.6	2685.1	2675.6	2674.7	2673.3	2676.6
19°	2670.0	2670.5	2660.5	2659.1	2657.7	2661.5
19.5°	2654.9	2654.9	2645.0	2644.0	2642.1	2645.4
20°	2638.8	2639.3	2628.9	2628.0	2625.6	2629.4
20.5°	2622.8	2623.3	2612.9	2611.0	2609.1	2613.4
21°	2606.3	2606.8	2595.9	2595.0	2592.1	2596.8



TEST NUMBER: P776642

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2554.9	2555.8	2543.5	2541.2	2539.3	2544.0
23°	2536.9	2537.9	2525.6	2523.2	2521.4	2526.1
23.5°	2519.5	2519.5	2507.7	2503.4	2503.0	2508.1
24°	2501.1	2501.5	2488.8	2484.6	2484.1	2488.8
24.5°	2482.2	2482.7	2469.5	2464.7	2464.7	2472.3
25°	2462.9	2464.7	2450.6	2444.9	2444.9	2454.8
25.5°	2444.0	2448.2	2430.8	2423.7	2426.1	2426.5
26°	2425.1	2426.1	2411.0	2404.3	2405.8	2395.4
26.5°	2408.1	2392.6	2391.6	2382.2	2388.3	2366.1
27°	2388.8	2366.6	2374.2	2361.9	2369.4	2322.3
27.5°	2358.1	2329.8	2353.4	2339.7	2339.7	2276.0
28°	2327.4	2285.5	2322.3	2318.0	2309.0	2230.3
28.5°	2298.2	2240.6	2292.1	2295.8	2278.4	2185.9
29°	2257.6	2196.8	2262.8	2274.1	2236.4	2143.0
29.5°	2213.7	2152.9	2221.3	2250.5	2192.0	2101.4
30°	2169.9	2110.9	2178.8	2228.8	2146.3	2059.9
30.5°	2126.9	2067.5	2133.5	2206.2	2103.3	2019.4
31°	2084.9	2026.0	2091.5	2183.5	2060.4	1978.8
31.5°	2042.0	1984.0	2048.1	2160.4	2018.4	1937.3
32°	2000.5	1941.5	2007.1	2137.3	1978.3	1892.0
32.5°	1959.0	1897.2	1966.5	2114.7	1939.6	1848.1
33°	1917.9	1852.3	1925.5	2093.0	1899.5	1800.4
33.5°	1875.9	1805.6	1884.4	2073.6	1860.8	1750.4
34°	1832.0	1757.5	1843.8	2052.4	1819.8	1698.0
34.5°	1788.2	1708.9	1800.9	2017.5	1777.8	1649.0
35°	1743.3	1659.4	1757.0	1975.9	1732.5	1598.5
35.5°	1696.6	1609.8	1712.7	1944.8	1688.1	1550.8
36°	1649.5	1562.6	1666.0	1900.0	1640.0	1503.7
36.5°	1601.3	1515.0	1620.2	1844.3	1593.3	1459.3
37°	1554.1	1470.2	1573.0	1788.6	1544.2	1414.5
37.5°	1507.4	1424.9	1526.8	1733.4	1498.5	1371.1
38°	1462.1	1380.5	1480.1	1678.7	1453.2	1327.7
38.5°	1418.3	1336.6	1436.7	1626.3	1409.8	1283.8
39°	1373.4	1293.7	1392.3	1575.4	1367.3	1238.5
39.5°	1330.5	1248.4	1351.3	1526.3	1325.8	1192.7
40°	1288.5	1203.1	1308.8	1479.1	1285.2	1146.5
40.5°	1247.5	1159.2	1266.8	1433.8	1244.6	1101.2
41°	1204.1	1114.4	1225.3	1389.5	1203.6	1056.9
41.5°	1161.6	1070.5	1184.2	1345.1	1161.1	1014.4
42°	1118.7	1027.6	1141.8	1301.7	1119.1	971.9
42.5°	1077.1	986.1	1099.3	1259.7	1077.6	932.3
43°	1034.7	945.0	1057.8	1216.3	1035.6	893.1
43.5°	992.7	905.4	1015.8	1172.0	994.6	854.9



TEST NUMBER: P776642

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	875.7	792.2	897.4	1039.4	878.5	744.0
45.5°	839.8	756.3	861.1	997.4	842.7	709.6
46°	802.6	720.9	824.7	956.8	806.8	676.6
46.5°	767.2	686.5	788.4	916.7	771.9	645.0
47°	732.7	653.9	754.0	879.0	737.9	614.3
47.5°	699.2	621.8	718.6	843.1	704.9	586.9
48°	665.7	593.5	685.1	809.2	672.3	561.5
48.5°	634.6	565.2	653.5	776.6	641.2	538.3
49°	603.4	540.2	622.8	744.0	611.5	517.1
49.5°	575.1	517.1	593.5	713.4	583.6	496.8
50°	546.8	495.4	565.7	683.2	557.7	478.4
50.5°	521.8	475.6	540.2	653.9	533.1	461.9
51°	498.2	458.1	515.7	625.6	511.0	446.3
51.5°	476.5	441.6	494.5	597.8	490.2	431.2
52°	456.7	426.5	475.1	571.4	471.3	417.1
52.5°	438.8	411.9	456.2	545.9	453.9	402.9
53°	422.3	397.7	439.3	521.8	437.4	389.7
53.5°	408.1	384.1	423.2	498.7	421.8	375.6
54°	394.4	370.4	407.6	477.0	407.2	362.4
54.5°	380.8	357.6	394.4	456.2	393.0	349.6
55°	366.6	344.9	380.3	436.9	380.3	337.8
55.5°	352.9	332.6	366.6	418.5	366.6	327.4
56°	340.6	322.2	353.9	401.5	353.9	319.9
56.5°	327.9	313.8	341.1	385.5	341.1	314.2
57°	316.6	307.1	328.9	369.9	329.3	309.0
57.5°	306.7	302.0	317.5	355.7	318.5	303.4
58°	298.2	296.3	308.1	342.5	309.5	298.2
58.5°	292.1	291.1	300.5	330.3	302.4	293.0
59°	286.9	285.9	294.9	318.9	297.2	287.3
59.5°	281.7	281.2	289.2	307.6	291.6	281.7
60°	276.5	275.5	284.0	298.2	286.4	276.0
60.5°	271.3	270.8	278.8	289.2	280.3	269.9
61°	265.6	265.6	273.2	280.7	275.1	264.7
61.5°	260.4	260.4	268.0	272.7	269.4	259.0
62°	255.2	255.2	262.8	265.2	263.7	253.4
62.5°	250.1	250.1	257.1	258.1	257.6	247.2
63°	244.9	245.3	251.9	251.5	251.9	242.0
63.5°	239.7	240.2	246.8	245.3	246.3	236.4
64°	234.5	235.4	241.6	239.2	240.6	230.7
64.5°	229.3	230.2	235.9	234.0	235.0	225.1
65°	224.6	225.1	231.2	228.8	229.3	219.9
65.5°	219.4	220.3	226.0	223.2	223.6	214.2
66°	214.2	215.1	220.3	218.0	218.0	208.5



TEST NUMBER: P776642

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	199.1	200.5	205.2	202.4	201.0	192.0
68°	193.9	195.8	200.0	196.7	195.3	186.8
68.5°	189.2	190.6	194.9	191.1	189.7	181.2
69°	184.0	185.9	189.7	185.9	184.5	176.0
69.5°	178.8	181.2	184.5	180.2	178.8	169.4
70°	174.1	176.5	179.3	175.0	173.2	164.2
70.5°	168.9	170.8	174.6	170.3	168.0	159.5
71°	164.2	166.1	171.3	165.1	162.3	154.3
71.5°	159.0	161.8	166.1	159.5	157.1	149.6
72°	154.3	157.1	160.4	154.3	151.9	143.9
72.5°	149.1	152.4	155.2	149.1	146.3	138.7
73°	144.4	148.1	150.0	143.9	140.6	133.1
73.5°	139.7	143.0	144.8	138.2	135.4	127.9
74°	134.5	138.2	140.1	133.1	129.7	122.2
74.5°	129.7	133.5	134.9	127.9	124.1	117.0
75°	124.6	128.8	129.7	122.7	118.9	111.8
75.5°	119.8	124.1	125.0	117.5	113.2	106.6
76°	114.7	119.4	119.8	111.8	108.0	101.0
76.5°	109.9	114.2	115.1	106.6	102.4	95.8
77°	105.2	109.5	109.9	101.9	96.7	90.6
77.5°	100.0	104.7	105.2	96.7	91.5	85.4
78°	95.3	100.0	100.0	91.5	85.9	80.2
78.5°	90.1	95.3	95.3	86.3	80.7	75.0
79°	85.4	90.6	90.1	81.6	75.0	69.8
79.5°	80.7	85.9	85.4	76.4	69.8	64.6
80°	75.5	81.2	80.2	71.7	64.2	59.4
80.5°	70.8	76.4	75.5	67.0	59.0	54.7
81°	66.1	72.2	70.8	62.3	53.8	49.5
81.5°	61.8	67.5	66.1	57.6	49.1	44.4
82°	57.1	62.8	61.3	52.8	43.9	39.2
82.5°	52.4	58.5	56.6	48.6	39.6	34.4
83°	48.1	53.8	51.9	44.4	34.9	29.3
83.5°	43.4	49.1	47.2	40.1	30.7	24.1
84°	39.2	44.8	42.5	35.9	26.4	19.3
84.5°	34.4	40.6	38.2	32.1	22.6	17.0
85°	30.2	35.9	33.5	27.8	19.3	14.6
85.5°	25.5	31.6	28.8	24.1	16.5	11.8
86°	21.2	26.9	24.1	19.8	13.7	9.4
86.5°	16.5	22.6	19.8	16.0	10.9	7.1
87°	12.3	17.9	15.6	12.3	8.0	5.2
87.5°	8.0	14.2	11.8	9.0	5.2	2.8
88°	4.2	9.9	8.0	5.2	2.4	0.9
88.5°	1.4	5.7	4.2	1.4	0.9	0.0



TEST NUMBER: P776642

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.5	0.5	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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Scaled Data Report



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Scaled Data Report





21.5°	2579.4	2598.3	2645.9	2686.5	2684.1	2699.7	2709.1	2704.9	2695.0	2678.9	2639.8
22°	2561.5	2581.3	2629.9	2671.4	2670.0	2685.1	2694.5	2690.7	2680.8	2664.8	2623.3



44°	817.6	937.0	1215.4	1161.6	976.6	1130.9	1355.0	1153.6	1014.4	1143.2	1224.8
44.5°	780.4	899.3	1167.3	1119.6	934.7	1088.9	1306.0	1112.1	971.9	1103.6	1176.7



66.5°	203.4	208.5	211.8	216.1	201.9	209.5	210.4	209.5	202.9	213.3	210.9
67°	197.7	202.9	206.7	210.9	197.2	204.3	205.2	204.3	197.7	207.6	205.7



89°	0.0	0.5	0.5	2.4	0.5	0.9	1.9	2.4	2.4	3.3	1.9
89.5°	0.0	0.5	0.5	0.5	0.0	0.0	0.5	0.5	0.5	1.4	0.5

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21.5°	2589.8	2590.2	2578.9	2577.0	2574.7	2579.4
22°	2572.8	2572.8	2561.5	2559.6	2557.2	2561.5



44°	953.1	866.7	975.7	1127.2	954.0	817.6
44.5°	914.8	829.0	937.0	1083.3	916.3	780.4



66.5°	209.0	210.4	215.6	212.8	212.3	203.4
67°	204.3	205.7	210.4	207.6	206.7	197.7

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89°	0.5	1.9	0.9	0.5	0.5	0.0
89.5°	0.0	0.5	0.5	0.5	0.5	0.0

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(END OF REPORT)