

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: P776517

Luminaire Tested: HCDJBL3040CSD-HCD8TSQH-4000lm-3500K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776517
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B005-HCD4TSQC)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD8TSQH-4000lm-3500K
Description: 8 INCH SQUARE MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3907.9 lumens
Efficiency: N/A
Efficacy: 101.5 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.15
Luminous Opening: Rectangular (W 0.67' x L: 0.67' x H: 0')
CIE Type: Direct

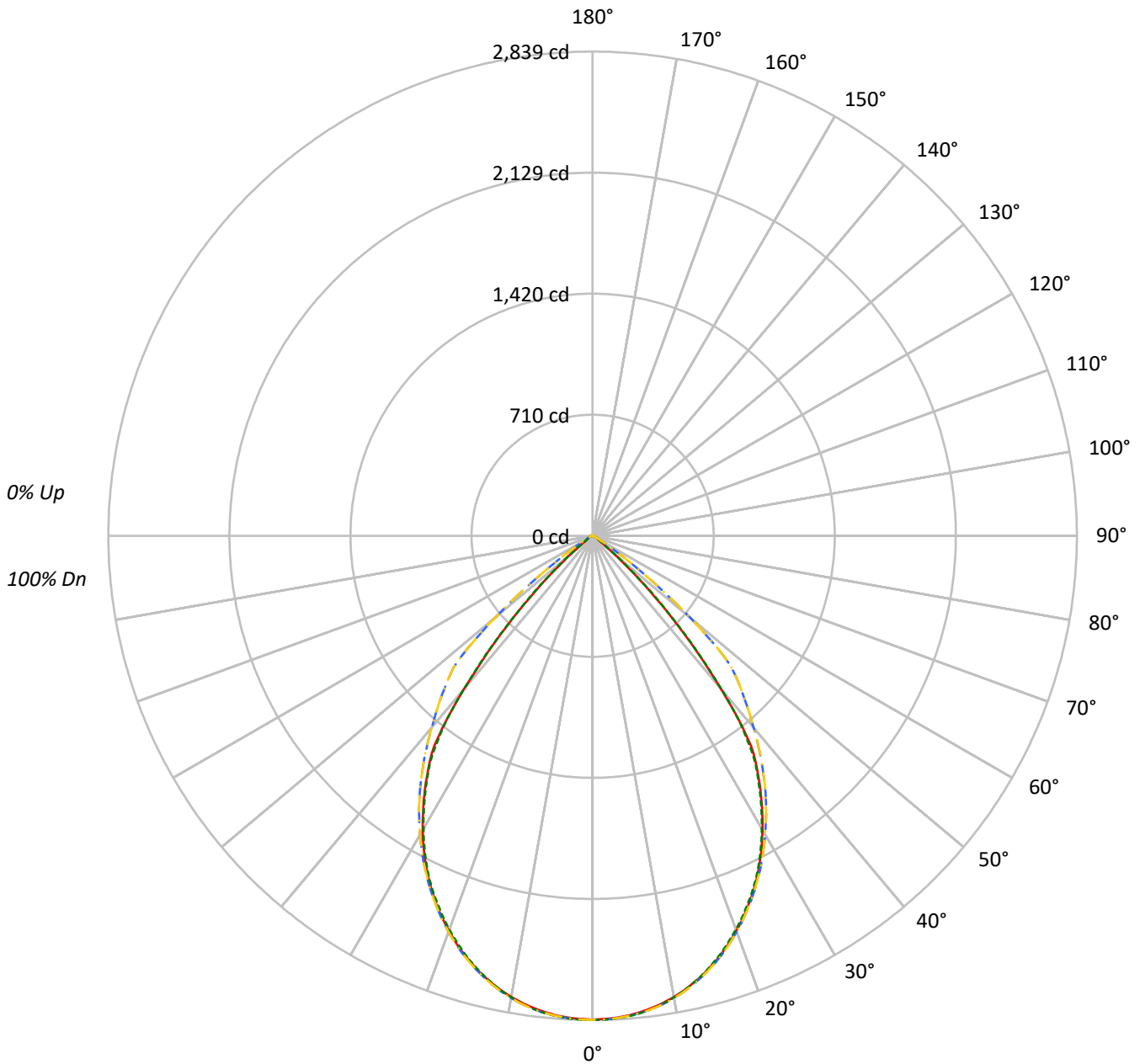
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	104	110	107	105	103	103	101	99	100	98	97	96	95	94	92			92																
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	87	85	84			84																
3	100	92	87	82	98	91	86	82	88	84	80	86	82	79	83	80	78	76			76																
4	94	85	79	74	92	84	78	73	82	77	72	80	75	72	78	74	71	69			69																
5	88	78	72	67	86	77	71	66	76	70	66	74	69	65	72	68	65	63			63																
6	83	72	66	61	81	72	65	60	70	64	60	69	63	60	67	63	59	58			58																
7	78	67	60	55	76	66	60	55	65	59	55	64	59	55	63	58	54	53			53																
8	73	62	56	51	72	62	55	51	61	55	51	59	54	50	58	54	50	48			48																
9	69	58	51	47	68	58	51	47	57	51	47	56	50	46	55	50	46	45			45																
10	65	54	48	43	64	54	48	43	53	47	43	52	47	43	51	46	43	41			41																

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	68053	68053	68053	68053
5°	67731	67873	67731	67873
10°	66848	66907	66848	66907
15°	65256	65179	65256	65179
20°	62900	62668	62900	62668
25°	59656	59457	59656	59457
30°	55171	54919	55171	54919
35°	49303	49046	49303	49046
40°	36613	36814	36613	36814
45°	19187	19672	19187	19672
50°	6226	6730	6226	6730
55°	2061	1894	2061	1894
60°	1563	1467	1563	1467
65°	1197	1152	1197	1152
70°	946	918	946	918
75°	769	769	769	769
80°	608	663	608	663
85°	440	440	440	440

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 40784 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	266.8	6.8
10°-20°	739.4	18.9
20°-30°	1035.8	26.5
30°-40°	1064.0	27.2
40°-50°	644.5	16.5
50°-60°	121.1	3.1
60°-70°	23.5	0.6
70°-80°	10.5	0.3
80°-90°	2.3	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°	2042.0	52.3
0°-40°	3106.0	79.5
0°-60°	3871.6	99.1
0°-90°	3907.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3907.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2838	2838	2838	2838	2838	
5°	2814	2820	2814	2820	2814	266
15°	2629	2626	2629	2626	2629	739
25°	2255	2247	2255	2247	2255	1033
35°	1684	1676	1684	1676	1684	1029
45°	566	580	566	580	566	452
55°	49	45	49	45	49	56
65°	21	20	21	20	21	22
75°	8	8	8	8	8	9
85°	2	2	2	2	2	2
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°	2838.1	2838.1	2838.1	2838.1	2838.1	2838.1	2838.1	2838.1	2838.1	2838.1	2838.1
0.5°	2835.3	2836.5	2838.5	2839.7	2838.9	2839.7	2838.5	2836.5	2835.3	2836.5	2838.5
1°	2834.9	2836.1	2837.7	2838.9	2838.5	2838.9	2837.7	2836.1	2834.9	2836.1	2837.7
1.5°	2833.8	2834.9	2836.9	2838.1	2837.7	2838.1	2836.9	2834.9	2833.8	2834.9	2836.9
2°	2832.2	2833.4	2835.3	2836.9	2836.1	2836.9	2835.3	2833.4	2832.2	2833.4	2835.3
2.5°	2830.2	2831.4	2833.8	2834.9	2834.6	2834.9	2833.8	2831.4	2830.2	2831.4	2833.8
3°	2827.8	2829.4	2831.4	2833.0	2832.6	2833.0	2831.4	2829.4	2827.8	2829.4	2831.4
3.5°	2825.0	2826.6	2829.0	2830.6	2830.2	2830.6	2829.0	2826.6	2825.0	2826.6	2829.0
4°	2821.8	2823.4	2825.8	2827.8	2827.4	2827.8	2825.8	2823.4	2821.8	2823.4	2825.8
4.5°	2818.3	2819.5	2822.2	2824.2	2823.8	2824.2	2822.2	2819.5	2818.3	2819.5	2822.2
5°	2813.9	2815.5	2818.7	2820.6	2819.8	2820.6	2818.7	2815.5	2813.9	2815.5	2818.7
5.5°	2809.5	2811.1	2814.3	2816.3	2815.1	2816.3	2814.3	2811.1	2809.5	2811.1	2814.3
6°	2804.0	2805.9	2809.5	2811.5	2810.3	2811.5	2809.5	2805.9	2804.0	2805.9	2809.5
6.5°	2798.4	2800.8	2804.4	2805.9	2804.4	2805.9	2804.4	2800.8	2798.4	2800.8	2804.4
7°	2792.4	2794.8	2798.4	2799.6	2798.0	2799.6	2798.4	2794.8	2792.4	2794.8	2798.4
7.5°	2785.7	2788.5	2792.0	2792.8	2790.8	2792.8	2792.0	2788.5	2785.7	2788.5	2792.0
8°	2778.5	2781.7	2785.3	2785.7	2783.7	2785.7	2785.3	2781.7	2778.5	2781.7	2785.3
8.5°	2771.0	2774.2	2777.7	2777.3	2775.3	2777.3	2777.7	2774.2	2771.0	2774.2	2777.7
9°	2763.0	2766.2	2769.8	2769.0	2766.6	2769.0	2769.8	2766.2	2763.0	2766.2	2769.8
9.5°	2754.7	2757.9	2761.4	2759.9	2757.5	2759.9	2761.4	2757.9	2754.7	2757.9	2761.4
10°	2745.5	2749.5	2752.3	2750.7	2747.9	2750.7	2752.3	2749.5	2745.5	2749.5	2752.3
10.5°	2736.0	2740.0	2742.8	2740.8	2738.0	2740.8	2742.8	2740.0	2736.0	2740.0	2742.8
11°	2726.1	2730.5	2732.8	2730.5	2727.3	2730.5	2732.8	2730.5	2726.1	2730.5	2732.8
11.5°	2715.7	2720.1	2722.1	2719.3	2716.1	2719.3	2722.1	2720.1	2715.7	2720.1	2722.1
12°	2704.6	2709.4	2711.0	2708.2	2705.0	2708.2	2711.0	2709.4	2704.6	2709.4	2711.0
12.5°	2693.1	2698.3	2699.5	2696.3	2692.7	2696.3	2699.5	2698.3	2693.1	2698.3	2699.5
13°	2681.2	2686.3	2687.5	2684.0	2680.4	2684.0	2687.5	2686.3	2681.2	2686.3	2687.5
13.5°	2668.9	2674.0	2674.8	2671.2	2667.3	2671.2	2674.8	2674.0	2668.9	2674.0	2674.8
14°	2655.8	2661.7	2662.1	2658.1	2653.8	2658.1	2662.1	2661.7	2655.8	2661.7	2662.1
14.5°	2642.6	2648.2	2648.6	2644.2	2639.9	2644.2	2648.6	2648.2	2642.6	2648.2	2648.6
15°	2628.7	2634.7	2635.1	2629.9	2625.6	2629.9	2635.1	2634.7	2628.7	2634.7	2635.1
15.5°	2614.4	2620.8	2620.4	2615.2	2610.5	2615.2	2620.4	2620.8	2614.4	2620.8	2620.4
16°	2599.7	2606.1	2605.7	2600.1	2595.4	2600.1	2605.7	2606.1	2599.7	2606.1	2605.7
16.5°	2584.6	2591.0	2590.2	2584.6	2579.5	2584.6	2590.2	2591.0	2584.6	2591.0	2590.2
17°	2569.1	2575.5	2574.7	2568.3	2563.2	2568.3	2574.7	2575.5	2569.1	2575.5	2574.7
17.5°	2552.8	2559.6	2558.4	2552.0	2546.5	2552.0	2558.4	2559.6	2552.8	2559.6	2558.4
18°	2536.2	2542.9	2541.3	2535.0	2529.0	2535.0	2541.3	2542.9	2536.2	2542.9	2541.3
18.5°	2519.1	2525.8	2524.6	2517.9	2511.1	2517.9	2524.6	2525.8	2519.1	2525.8	2524.6
19°	2501.6	2508.7	2507.2	2500.0	2493.2	2500.0	2507.2	2508.7	2501.6	2508.7	2507.2
19.5°	2483.3	2490.9	2488.9	2481.7	2474.6	2481.7	2488.9	2490.9	2483.3	2490.9	2488.9
20°	2465.0	2472.6	2470.6	2463.4	2455.9	2463.4	2470.6	2472.6	2465.0	2472.6	2470.6
20.5°	2446.4	2453.9	2451.9	2444.0	2436.4	2444.0	2451.9	2453.9	2446.4	2453.9	2451.9
21°	2426.9	2434.4	2432.9	2424.5	2416.6	2424.5	2432.9	2434.4	2426.9	2434.4	2432.9



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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°	2366.1	2374.4	2372.5	2363.7	2356.2	2363.7	2372.5	2374.4	2366.1	2374.4	2372.5
23°	2345.0	2353.4	2351.8	2342.7	2335.1	2342.7	2351.8	2353.4	2345.0	2353.4	2351.8
23.5°	2323.2	2332.3	2330.7	2321.6	2314.4	2321.6	2330.7	2332.3	2323.2	2332.3	2330.7
24°	2301.3	2310.1	2309.3	2300.1	2293.0	2300.1	2309.3	2310.1	2301.3	2310.1	2309.3
24.5°	2278.3	2287.8	2287.4	2278.7	2270.3	2278.7	2287.4	2287.8	2278.3	2287.8	2287.4
25°	2254.8	2265.2	2264.8	2256.8	2247.3	2256.8	2264.8	2265.2	2254.8	2265.2	2264.8
25.5°	2231.4	2242.1	2242.1	2233.8	2224.3	2233.8	2242.1	2242.1	2231.4	2242.1	2242.1
26°	2206.8	2218.3	2219.1	2211.5	2200.4	2211.5	2219.1	2218.3	2206.8	2218.3	2219.1
26.5°	2182.1	2194.1	2195.6	2188.1	2175.4	2188.1	2195.6	2194.1	2182.1	2194.1	2195.6
27°	2156.3	2169.4	2171.8	2164.3	2149.6	2164.3	2171.8	2169.4	2156.3	2169.4	2171.8
27.5°	2130.9	2144.4	2148.0	2139.6	2123.7	2139.6	2148.0	2144.4	2130.9	2144.4	2148.0
28°	2104.3	2118.6	2123.7	2114.2	2096.3	2114.2	2123.7	2118.6	2104.3	2118.6	2123.7
28.5°	2077.2	2092.3	2098.7	2088.4	2068.5	2088.4	2098.7	2092.3	2077.2	2092.3	2098.7
29°	2049.0	2066.5	2074.1	2062.1	2040.7	2062.1	2074.1	2066.5	2049.0	2066.5	2074.1
29.5°	2020.8	2039.9	2049.4	2034.7	2012.1	2034.7	2049.4	2039.9	2020.8	2039.9	2049.4
30°	1992.6	2012.5	2023.6	2007.3	1983.5	2007.3	2023.6	2012.5	1992.6	2012.5	2023.6
30.5°	1963.6	1984.7	1998.2	1979.1	1954.1	1979.1	1998.2	1984.7	1963.6	1984.7	1998.2
31°	1933.4	1956.5	1971.9	1951.3	1924.7	1951.3	1971.9	1956.5	1933.4	1956.5	1971.9
31.5°	1904.0	1928.2	1946.1	1922.7	1894.5	1922.7	1946.1	1928.2	1904.0	1928.2	1946.1
32°	1873.8	1899.2	1919.9	1894.1	1863.9	1894.1	1919.9	1899.2	1873.8	1899.2	1919.9
32.5°	1843.2	1869.8	1893.3	1864.3	1833.3	1864.3	1893.3	1869.8	1843.2	1869.8	1893.3
33°	1812.2	1840.4	1866.3	1835.7	1802.7	1835.7	1866.3	1840.4	1812.2	1840.4	1866.3
33.5°	1781.2	1811.4	1838.8	1806.3	1771.3	1806.3	1838.8	1811.4	1781.2	1811.4	1838.8
34°	1749.0	1781.6	1811.0	1776.9	1739.5	1776.9	1811.0	1781.6	1749.0	1781.6	1811.0
34.5°	1717.3	1751.4	1783.2	1747.5	1707.3	1747.5	1783.2	1751.4	1717.3	1751.4	1783.2
35°	1684.3	1721.2	1755.4	1717.3	1675.5	1717.3	1755.4	1721.2	1684.3	1721.2	1755.4
35.5°	1652.5	1691.4	1726.4	1687.5	1643.8	1687.5	1726.4	1691.4	1652.5	1691.4	1726.4
36°	1619.5	1660.8	1697.4	1657.3	1606.0	1657.3	1697.4	1660.8	1619.5	1660.8	1697.4
36.5°	1584.2	1629.4	1669.2	1626.7	1563.5	1626.7	1669.2	1629.4	1584.2	1629.4	1669.2
37°	1541.6	1598.9	1640.2	1596.1	1516.6	1596.1	1640.2	1598.9	1541.6	1598.9	1640.2
37.5°	1486.0	1567.5	1611.6	1565.1	1468.1	1565.1	1611.6	1567.5	1486.0	1567.5	1611.6
38°	1430.0	1536.5	1581.8	1534.5	1416.5	1534.5	1581.8	1536.5	1430.0	1536.5	1581.8
38.5°	1368.0	1505.1	1553.2	1500.7	1363.6	1500.7	1553.2	1505.1	1368.0	1505.1	1553.2
39°	1303.6	1472.5	1524.6	1461.4	1304.4	1461.4	1524.6	1472.5	1303.6	1472.5	1524.6
39.5°	1236.5	1425.2	1496.3	1417.3	1242.1	1417.3	1496.3	1425.2	1236.5	1425.2	1496.3
40°	1169.7	1374.4	1467.7	1369.2	1176.1	1369.2	1467.7	1374.4	1169.7	1374.4	1467.7
40.5°	1103.0	1316.8	1439.5	1317.9	1110.9	1317.9	1439.5	1316.8	1103.0	1316.8	1439.5
41°	1039.8	1257.2	1412.1	1263.1	1048.2	1263.1	1412.1	1257.2	1039.8	1257.2	1412.1
41.5°	977.0	1196.0	1385.5	1205.5	985.8	1205.5	1385.5	1196.0	977.0	1196.0	1385.5
42°	915.8	1134.8	1358.9	1145.1	925.4	1145.1	1358.9	1134.8	915.8	1134.8	1358.9
42.5°	854.7	1074.4	1332.6	1084.7	864.2	1084.7	1332.6	1074.4	854.7	1074.4	1332.6
43°	794.3	1013.2	1306.4	1023.9	805.0	1023.9	1306.4	1013.2	794.3	1013.2	1306.4
43.5°	733.5	953.6	1280.6	964.3	745.4	964.3	1280.6	953.6	733.5	953.6	1280.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	565.8	780.4	1202.7	793.9	580.1	793.9	1202.7	780.4	565.8	780.4	1202.7
45.5°	513.4	723.5	1176.9	737.4	529.6	737.4	1176.9	723.5	513.4	723.5	1176.9
46°	464.5	668.7	1150.7	681.8	481.2	681.8	1150.7	668.7	464.5	668.7	1150.7
46.5°	416.4	615.5	1123.6	627.8	431.9	627.8	1123.6	615.5	416.4	615.5	1123.6
47°	369.1	563.0	1085.9	574.9	384.2	574.9	1085.9	563.0	369.1	563.0	1085.9
47.5°	323.8	512.6	1039.8	525.7	341.7	525.7	1039.8	512.6	323.8	512.6	1039.8
48°	285.3	463.7	985.0	477.2	304.4	477.2	985.0	463.7	285.3	463.7	985.0
48.5°	249.9	417.2	927.0	430.3	269.4	430.3	927.0	417.2	249.9	417.2	927.0
49°	218.5	371.9	866.2	384.2	237.6	384.2	866.2	371.9	218.5	371.9	866.2
49.5°	191.1	328.2	803.8	342.9	207.8	342.9	803.8	328.2	191.1	328.2	803.8
50°	166.9	287.3	740.6	303.2	180.4	303.2	740.6	287.3	166.9	287.3	740.6
50.5°	144.2	250.3	678.2	266.6	154.6	266.6	678.2	250.3	144.2	250.3	678.2
51°	123.6	217.3	616.7	232.4	129.9	232.4	616.7	217.3	123.6	217.3	616.7
51.5°	106.9	188.3	559.0	201.4	109.3	201.4	559.0	188.3	106.9	188.3	559.0
52°	90.2	162.9	506.2	174.4	93.0	174.4	506.2	162.9	90.2	162.9	506.2
52.5°	75.9	140.3	454.5	149.4	81.8	149.4	454.5	140.3	75.9	140.3	454.5
53°	65.6	119.6	406.5	126.4	71.1	126.4	406.5	119.6	65.6	119.6	406.5
53.5°	56.0	102.1	359.2	104.9	60.0	104.9	359.2	102.1	56.0	102.1	359.2
54°	53.6	85.4	315.9	85.8	49.3	85.8	315.9	85.4	53.6	85.4	315.9
54.5°	51.3	71.5	274.6	71.1	46.9	71.1	274.6	71.5	51.3	71.5	274.6
55°	49.3	59.2	238.0	59.6	45.3	59.6	238.0	59.2	49.3	59.2	238.0
55.5°	47.3	50.5	205.0	51.3	43.3	51.3	205.0	50.5	47.3	50.5	205.0
56°	45.3	46.5	175.2	44.9	41.7	44.9	175.2	46.5	45.3	46.5	175.2
56.5°	43.3	44.5	148.6	41.7	40.1	41.7	148.6	44.5	43.3	44.5	148.6
57°	41.7	42.9	126.4	40.1	38.5	40.1	126.4	42.9	41.7	42.9	126.4
57.5°	39.7	41.3	106.9	38.5	37.0	38.5	106.9	41.3	39.7	41.3	106.9
58°	38.1	39.7	91.0	37.3	35.8	37.3	91.0	39.7	38.1	39.7	91.0
58.5°	36.6	38.1	76.7	35.8	34.2	35.8	76.7	38.1	36.6	38.1	76.7
59°	35.4	37.0	65.2	34.6	33.0	34.6	65.2	37.0	35.4	37.0	65.2
59.5°	33.8	35.8	55.2	33.4	31.8	33.4	55.2	35.8	33.8	35.8	55.2
60°	32.6	34.2	46.5	32.2	30.6	32.2	46.5	34.2	32.6	34.2	46.5
60.5°	31.0	33.0	41.3	31.0	29.0	31.0	41.3	33.0	31.0	33.0	41.3
61°	29.8	31.8	37.3	30.2	28.2	30.2	37.3	31.8	29.8	31.8	37.3
61.5°	28.6	30.6	34.2	29.0	27.0	29.0	34.2	30.6	28.6	30.6	34.2
62°	27.4	29.8	32.2	27.8	25.8	27.8	32.2	29.8	27.4	29.8	32.2
62.5°	26.2	28.6	30.6	27.0	25.0	27.0	30.6	28.6	26.2	28.6	30.6
63°	25.0	27.4	29.4	26.2	23.8	26.2	29.4	27.4	25.0	27.4	29.4
63.5°	24.2	26.6	28.2	25.0	23.0	25.0	28.2	26.6	24.2	26.6	28.2
64°	23.0	25.4	27.4	24.2	21.9	24.2	27.4	25.4	23.0	25.4	27.4
64.5°	22.3	24.6	26.2	23.4	21.1	23.4	26.2	24.6	22.3	24.6	26.2
65°	21.1	23.8	25.4	22.6	20.3	22.6	25.4	23.8	21.1	23.8	25.4
65.5°	20.3	22.6	24.2	21.9	19.5	21.9	24.2	22.6	20.3	22.6	24.2
66°	19.5	21.9	23.4	21.1	18.7	21.1	23.4	21.9	19.5	21.9	23.4



TEST NUMBER: P776517

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	17.1	19.5	21.1	18.7	16.3	18.7	21.1	19.5	17.1	19.5	21.1
68°	16.3	18.7	20.3	17.9	15.9	17.9	20.3	18.7	16.3	18.7	20.3
68.5°	15.5	17.9	19.5	17.5	15.1	17.5	19.5	17.9	15.5	17.9	19.5
69°	15.1	17.1	18.7	16.7	14.3	16.7	18.7	17.1	15.1	17.1	18.7
69.5°	14.3	16.7	17.9	15.9	13.9	15.9	17.9	16.7	14.3	16.7	17.9
70°	13.5	15.9	17.1	15.5	13.1	15.5	17.1	15.9	13.5	15.9	17.1
70.5°	13.1	15.1	16.7	14.7	12.7	14.7	16.7	15.1	13.1	15.1	16.7
71°	12.3	14.7	15.9	14.3	12.3	14.3	15.9	14.7	12.3	14.7	15.9
71.5°	11.9	13.9	15.1	13.5	11.5	13.5	15.1	13.9	11.9	13.9	15.1
72°	11.1	13.5	14.7	13.1	11.1	13.1	14.7	13.5	11.1	13.5	14.7
72.5°	10.7	12.7	13.9	12.3	10.7	12.3	13.9	12.7	10.7	12.7	13.9
73°	10.3	12.3	13.1	11.9	9.9	11.9	13.1	12.3	10.3	12.3	13.1
73.5°	9.5	11.5	12.7	11.5	9.5	11.5	12.7	11.5	9.5	11.5	12.7
74°	9.1	11.1	11.9	10.7	9.1	10.7	11.9	11.1	9.1	11.1	11.9
74.5°	8.7	10.7	11.5	10.3	8.7	10.3	11.5	10.7	8.7	10.7	11.5
75°	8.3	9.9	10.7	9.9	8.3	9.9	10.7	9.9	8.3	9.9	10.7
75.5°	7.9	9.5	10.3	9.5	7.9	9.5	10.3	9.5	7.9	9.5	10.3
76°	7.5	9.1	9.9	8.7	7.5	8.7	9.9	9.1	7.5	9.1	9.9
76.5°	7.2	8.3	9.1	8.3	7.2	8.3	9.1	8.3	7.2	8.3	9.1
77°	6.4	7.9	8.7	7.9	6.4	7.9	8.7	7.9	6.4	7.9	8.7
77.5°	6.0	7.5	8.3	7.5	6.0	7.5	8.3	7.5	6.0	7.5	8.3
78°	6.0	7.2	7.5	7.2	6.0	7.2	7.5	7.2	6.0	7.2	7.5
78.5°	5.6	6.8	7.2	6.8	5.6	6.8	7.2	6.8	5.6	6.8	7.2
79°	5.2	6.4	6.8	6.4	5.2	6.4	6.8	6.4	5.2	6.4	6.8
79.5°	4.8	5.6	6.4	6.0	4.8	6.0	6.4	5.6	4.8	5.6	6.4
80°	4.4	5.2	6.0	5.6	4.4	5.6	6.0	5.2	4.4	5.2	6.0
80.5°	4.0	4.8	5.6	5.2	4.0	5.2	5.6	4.8	4.0	4.8	5.6
81°	3.6	4.4	5.2	4.8	4.0	4.8	5.2	4.4	3.6	4.4	5.2
81.5°	3.6	4.0	4.8	4.4	3.6	4.4	4.8	4.0	3.6	4.0	4.8
82°	3.2	3.6	4.4	4.0	3.6	4.0	4.4	3.6	3.2	3.6	4.4
82.5°	2.8	3.2	4.0	3.6	3.2	3.6	4.0	3.2	2.8	3.2	4.0
83°	2.4	3.2	3.6	3.2	2.8	3.2	3.6	3.2	2.4	3.2	3.6
83.5°	2.4	2.8	3.2	3.2	2.4	3.2	3.2	2.8	2.4	2.8	3.2
84°	2.0	2.4	2.8	2.8	2.4	2.8	2.8	2.4	2.0	2.4	2.8
84.5°	1.6	2.0	2.4	2.4	2.0	2.4	2.4	2.0	1.6	2.0	2.4
85°	1.6	1.6	2.0	2.0	1.6	2.0	2.0	1.6	1.6	1.6	2.0
85.5°	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.6
86°	0.8	1.2	1.6	1.6	1.2	1.6	1.6	1.2	0.8	1.2	1.6
86.5°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	1.2
87°	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.8	0.8
87.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
88°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
88.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4



TEST NUMBER: P776517

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P776517

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2838.1	2838.1	2838.1	2838.1	2838.1	2838.1
0.5°	2839.7	2838.9	2839.7	2838.5	2836.5	2835.3
1°	2838.9	2838.5	2838.9	2837.7	2836.1	2834.9
1.5°	2838.1	2837.7	2838.1	2836.9	2834.9	2833.8
2°	2836.9	2836.1	2836.9	2835.3	2833.4	2832.2
2.5°	2834.9	2834.6	2834.9	2833.8	2831.4	2830.2
3°	2833.0	2832.6	2833.0	2831.4	2829.4	2827.8
3.5°	2830.6	2830.2	2830.6	2829.0	2826.6	2825.0
4°	2827.8	2827.4	2827.8	2825.8	2823.4	2821.8
4.5°	2824.2	2823.8	2824.2	2822.2	2819.5	2818.3
5°	2820.6	2819.8	2820.6	2818.7	2815.5	2813.9
5.5°	2816.3	2815.1	2816.3	2814.3	2811.1	2809.5
6°	2811.5	2810.3	2811.5	2809.5	2805.9	2804.0
6.5°	2805.9	2804.4	2805.9	2804.4	2800.8	2798.4
7°	2799.6	2798.0	2799.6	2798.4	2794.8	2792.4
7.5°	2792.8	2790.8	2792.8	2792.0	2788.5	2785.7
8°	2785.7	2783.7	2785.7	2785.3	2781.7	2778.5
8.5°	2777.3	2775.3	2777.3	2777.7	2774.2	2771.0
9°	2769.0	2766.6	2769.0	2769.8	2766.2	2763.0
9.5°	2759.9	2757.5	2759.9	2761.4	2757.9	2754.7
10°	2750.7	2747.9	2750.7	2752.3	2749.5	2745.5
10.5°	2740.8	2738.0	2740.8	2742.8	2740.0	2736.0
11°	2730.5	2727.3	2730.5	2732.8	2730.5	2726.1
11.5°	2719.3	2716.1	2719.3	2722.1	2720.1	2715.7
12°	2708.2	2705.0	2708.2	2711.0	2709.4	2704.6
12.5°	2696.3	2692.7	2696.3	2699.5	2698.3	2693.1
13°	2684.0	2680.4	2684.0	2687.5	2686.3	2681.2
13.5°	2671.2	2667.3	2671.2	2674.8	2674.0	2668.9
14°	2658.1	2653.8	2658.1	2662.1	2661.7	2655.8
14.5°	2644.2	2639.9	2644.2	2648.6	2648.2	2642.6
15°	2629.9	2625.6	2629.9	2635.1	2634.7	2628.7
15.5°	2615.2	2610.5	2615.2	2620.4	2620.8	2614.4
16°	2600.1	2595.4	2600.1	2605.7	2606.1	2599.7
16.5°	2584.6	2579.5	2584.6	2590.2	2591.0	2584.6
17°	2568.3	2563.2	2568.3	2574.7	2575.5	2569.1
17.5°	2552.0	2546.5	2552.0	2558.4	2559.6	2552.8
18°	2535.0	2529.0	2535.0	2541.3	2542.9	2536.2
18.5°	2517.9	2511.1	2517.9	2524.6	2525.8	2519.1
19°	2500.0	2493.2	2500.0	2507.2	2508.7	2501.6
19.5°	2481.7	2474.6	2481.7	2488.9	2490.9	2483.3
20°	2463.4	2455.9	2463.4	2470.6	2472.6	2465.0
20.5°	2444.0	2436.4	2444.0	2451.9	2453.9	2446.4
21°	2424.5	2416.6	2424.5	2432.9	2434.4	2426.9

TEST NUMBER: P776517

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2363.7	2356.2	2363.7	2372.5	2374.4	2366.1
23°	2342.7	2335.1	2342.7	2351.8	2353.4	2345.0
23.5°	2321.6	2314.4	2321.6	2330.7	2332.3	2323.2
24°	2300.1	2293.0	2300.1	2309.3	2310.1	2301.3
24.5°	2278.7	2270.3	2278.7	2287.4	2287.8	2278.3
25°	2256.8	2247.3	2256.8	2264.8	2265.2	2254.8
25.5°	2233.8	2224.3	2233.8	2242.1	2242.1	2231.4
26°	2211.5	2200.4	2211.5	2219.1	2218.3	2206.8
26.5°	2188.1	2175.4	2188.1	2195.6	2194.1	2182.1
27°	2164.3	2149.6	2164.3	2171.8	2169.4	2156.3
27.5°	2139.6	2123.7	2139.6	2148.0	2144.4	2130.9
28°	2114.2	2096.3	2114.2	2123.7	2118.6	2104.3
28.5°	2088.4	2068.5	2088.4	2098.7	2092.3	2077.2
29°	2062.1	2040.7	2062.1	2074.1	2066.5	2049.0
29.5°	2034.7	2012.1	2034.7	2049.4	2039.9	2020.8
30°	2007.3	1983.5	2007.3	2023.6	2012.5	1992.6
30.5°	1979.1	1954.1	1979.1	1998.2	1984.7	1963.6
31°	1951.3	1924.7	1951.3	1971.9	1956.5	1933.4
31.5°	1922.7	1894.5	1922.7	1946.1	1928.2	1904.0
32°	1894.1	1863.9	1894.1	1919.9	1899.2	1873.8
32.5°	1864.3	1833.3	1864.3	1893.3	1869.8	1843.2
33°	1835.7	1802.7	1835.7	1866.3	1840.4	1812.2
33.5°	1806.3	1771.3	1806.3	1838.8	1811.4	1781.2
34°	1776.9	1739.5	1776.9	1811.0	1781.6	1749.0
34.5°	1747.5	1707.3	1747.5	1783.2	1751.4	1717.3
35°	1717.3	1675.5	1717.3	1755.4	1721.2	1684.3
35.5°	1687.5	1643.8	1687.5	1726.4	1691.4	1652.5
36°	1657.3	1606.0	1657.3	1697.4	1660.8	1619.5
36.5°	1626.7	1563.5	1626.7	1669.2	1629.4	1584.2
37°	1596.1	1516.6	1596.1	1640.2	1598.9	1541.6
37.5°	1565.1	1468.1	1565.1	1611.6	1567.5	1486.0
38°	1534.5	1416.5	1534.5	1581.8	1536.5	1430.0
38.5°	1500.7	1363.6	1500.7	1553.2	1505.1	1368.0
39°	1461.4	1304.4	1461.4	1524.6	1472.5	1303.6
39.5°	1417.3	1242.1	1417.3	1496.3	1425.2	1236.5
40°	1369.2	1176.1	1369.2	1467.7	1374.4	1169.7
40.5°	1317.9	1110.9	1317.9	1439.5	1316.8	1103.0
41°	1263.1	1048.2	1263.1	1412.1	1257.2	1039.8
41.5°	1205.5	985.8	1205.5	1385.5	1196.0	977.0
42°	1145.1	925.4	1145.1	1358.9	1134.8	915.8
42.5°	1084.7	864.2	1084.7	1332.6	1074.4	854.7
43°	1023.9	805.0	1023.9	1306.4	1013.2	794.3
43.5°	964.3	745.4	964.3	1280.6	953.6	733.5



TEST NUMBER: P776517

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	793.9	580.1	793.9	1202.7	780.4	565.8
45.5°	737.4	529.6	737.4	1176.9	723.5	513.4
46°	681.8	481.2	681.8	1150.7	668.7	464.5
46.5°	627.8	431.9	627.8	1123.6	615.5	416.4
47°	574.9	384.2	574.9	1085.9	563.0	369.1
47.5°	525.7	341.7	525.7	1039.8	512.6	323.8
48°	477.2	304.4	477.2	985.0	463.7	285.3
48.5°	430.3	269.4	430.3	927.0	417.2	249.9
49°	384.2	237.6	384.2	866.2	371.9	218.5
49.5°	342.9	207.8	342.9	803.8	328.2	191.1
50°	303.2	180.4	303.2	740.6	287.3	166.9
50.5°	266.6	154.6	266.6	678.2	250.3	144.2
51°	232.4	129.9	232.4	616.7	217.3	123.6
51.5°	201.4	109.3	201.4	559.0	188.3	106.9
52°	174.4	93.0	174.4	506.2	162.9	90.2
52.5°	149.4	81.8	149.4	454.5	140.3	75.9
53°	126.4	71.1	126.4	406.5	119.6	65.6
53.5°	104.9	60.0	104.9	359.2	102.1	56.0
54°	85.8	49.3	85.8	315.9	85.4	53.6
54.5°	71.1	46.9	71.1	274.6	71.5	51.3
55°	59.6	45.3	59.6	238.0	59.2	49.3
55.5°	51.3	43.3	51.3	205.0	50.5	47.3
56°	44.9	41.7	44.9	175.2	46.5	45.3
56.5°	41.7	40.1	41.7	148.6	44.5	43.3
57°	40.1	38.5	40.1	126.4	42.9	41.7
57.5°	38.5	37.0	38.5	106.9	41.3	39.7
58°	37.3	35.8	37.3	91.0	39.7	38.1
58.5°	35.8	34.2	35.8	76.7	38.1	36.6
59°	34.6	33.0	34.6	65.2	37.0	35.4
59.5°	33.4	31.8	33.4	55.2	35.8	33.8
60°	32.2	30.6	32.2	46.5	34.2	32.6
60.5°	31.0	29.0	31.0	41.3	33.0	31.0
61°	30.2	28.2	30.2	37.3	31.8	29.8
61.5°	29.0	27.0	29.0	34.2	30.6	28.6
62°	27.8	25.8	27.8	32.2	29.8	27.4
62.5°	27.0	25.0	27.0	30.6	28.6	26.2
63°	26.2	23.8	26.2	29.4	27.4	25.0
63.5°	25.0	23.0	25.0	28.2	26.6	24.2
64°	24.2	21.9	24.2	27.4	25.4	23.0
64.5°	23.4	21.1	23.4	26.2	24.6	22.3
65°	22.6	20.3	22.6	25.4	23.8	21.1
65.5°	21.9	19.5	21.9	24.2	22.6	20.3
66°	21.1	18.7	21.1	23.4	21.9	19.5



TEST NUMBER: P776517

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	18.7	16.3	18.7	21.1	19.5	17.1
68°	17.9	15.9	17.9	20.3	18.7	16.3
68.5°	17.5	15.1	17.5	19.5	17.9	15.5
69°	16.7	14.3	16.7	18.7	17.1	15.1
69.5°	15.9	13.9	15.9	17.9	16.7	14.3
70°	15.5	13.1	15.5	17.1	15.9	13.5
70.5°	14.7	12.7	14.7	16.7	15.1	13.1
71°	14.3	12.3	14.3	15.9	14.7	12.3
71.5°	13.5	11.5	13.5	15.1	13.9	11.9
72°	13.1	11.1	13.1	14.7	13.5	11.1
72.5°	12.3	10.7	12.3	13.9	12.7	10.7
73°	11.9	9.9	11.9	13.1	12.3	10.3
73.5°	11.5	9.5	11.5	12.7	11.5	9.5
74°	10.7	9.1	10.7	11.9	11.1	9.1
74.5°	10.3	8.7	10.3	11.5	10.7	8.7
75°	9.9	8.3	9.9	10.7	9.9	8.3
75.5°	9.5	7.9	9.5	10.3	9.5	7.9
76°	8.7	7.5	8.7	9.9	9.1	7.5
76.5°	8.3	7.2	8.3	9.1	8.3	7.2
77°	7.9	6.8	7.9	8.7	7.9	6.4
77.5°	7.5	6.4	7.5	8.3	7.5	6.0
78°	7.2	6.0	7.2	7.5	7.2	6.0
78.5°	6.8	5.6	6.8	7.2	6.8	5.6
79°	6.4	5.2	6.4	6.8	6.4	5.2
79.5°	6.0	4.8	6.0	6.4	5.6	4.8
80°	5.6	4.8	5.6	6.0	5.2	4.4
80.5°	5.2	4.4	5.2	5.6	4.8	4.0
81°	4.8	4.0	4.8	5.2	4.4	3.6
81.5°	4.4	3.6	4.4	4.8	4.0	3.6
82°	4.0	3.6	4.0	4.4	3.6	3.2
82.5°	3.6	3.2	3.6	4.0	3.2	2.8
83°	3.2	2.8	3.2	3.6	3.2	2.4
83.5°	3.2	2.4	3.2	3.2	2.8	2.4
84°	2.8	2.4	2.8	2.8	2.4	2.0
84.5°	2.4	2.0	2.4	2.4	2.0	1.6
85°	2.0	1.6	2.0	2.0	1.6	1.6
85.5°	1.6	1.6	1.6	1.6	1.2	1.2
86°	1.6	1.2	1.6	1.6	1.2	0.8
86.5°	1.2	1.2	1.2	1.2	0.8	0.8
87°	0.8	0.8	0.8	0.8	0.8	0.4
87.5°	0.8	0.8	0.8	0.8	0.4	0.4
88°	0.4	0.4	0.4	0.4	0.4	0.4
88.5°	0.4	0.4	0.4	0.4	0.0	0.0



TEST NUMBER: P776517

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

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



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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°	2407.4	2415.0	2413.0	2404.6	2397.1	2404.6	2413.0	2415.0	2407.4	2415.0	2413.0
22°	2386.4	2395.1	2392.7	2384.4	2376.4	2384.4	2392.7	2395.1	2386.4	2395.1	2392.7



44°	675.1	895.6	1254.4	907.1	687.4	907.1	1254.4	895.6	675.1	895.6	1254.4
44.5°	620.2	838.8	1228.9	850.3	630.6	850.3	1228.9	838.8	620.2	838.8	1228.9



66.5°	18.7	21.1	22.6	20.3	17.9	20.3	22.6	21.1	18.7	21.1	22.6
67°	17.9	20.3	21.9	19.5	17.1	19.5	21.9	20.3	17.9	20.3	21.9



89°	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	2404.6	2397.1	2404.6	2413.0	2415.0	2407.4
22°	2384.4	2376.4	2384.4	2392.7	2395.1	2386.4



44°	907.1	687.4	907.1	1254.4	895.6	675.1
44.5°	850.3	630.6	850.3	1228.9	838.8	620.2

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66.5°	20.3	17.9	20.3	22.6	21.1	18.7
67°	19.5	17.1	19.5	21.9	20.3	17.9

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89°	0.0	0.4	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)