

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: P776516

Luminaire Tested: HCDJBL3040CSD-HCD8TSQH-4000lm-3000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776516
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-3000K
Description: 8 INCH SQUARE MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3849.2 lumens
Efficiency: N/A
Efficacy: 100.0 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

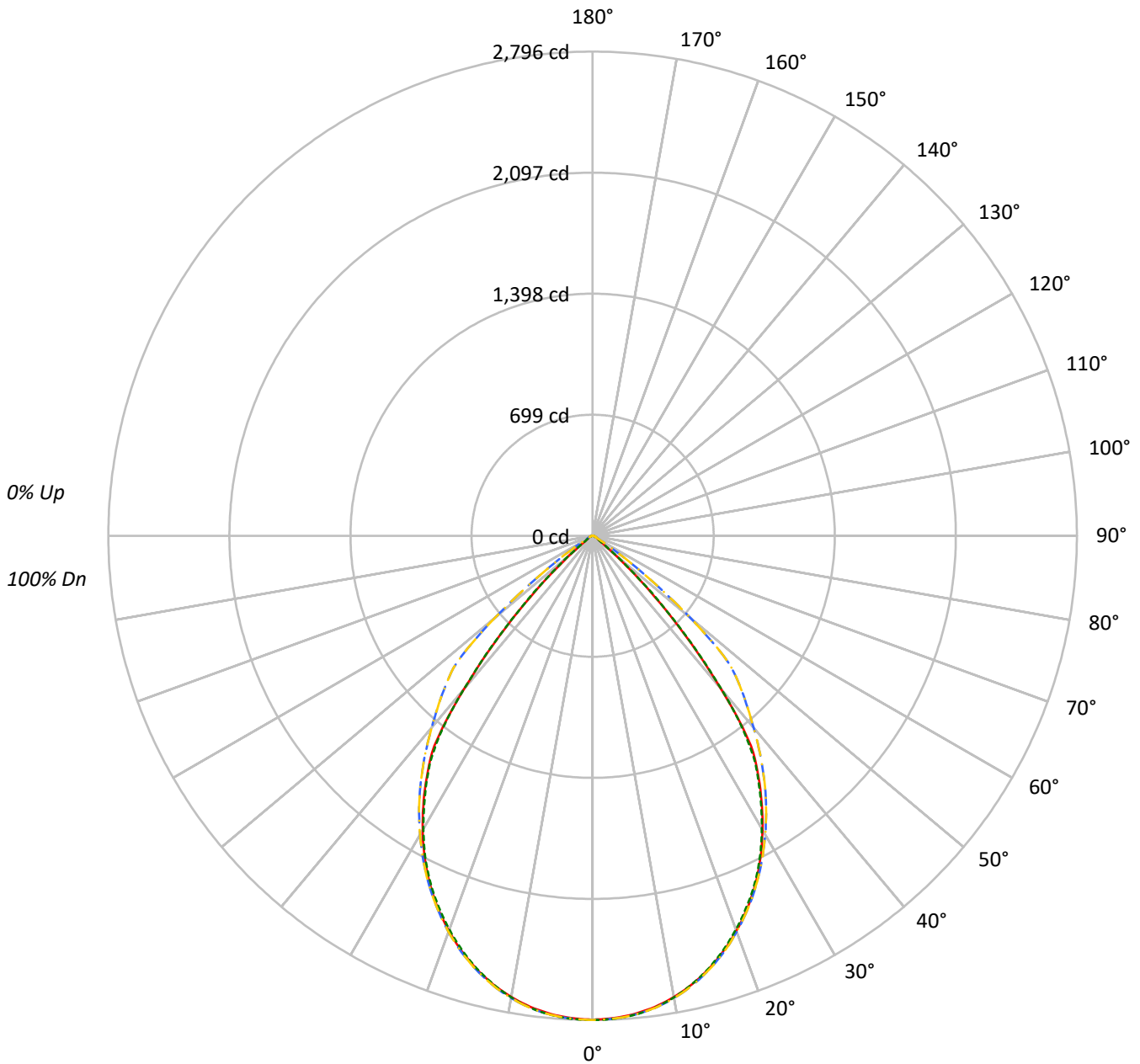
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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	100	100	100
1	113	110	107	104	110	107	105	103	103	101	99	100	98	97	96	95	94	92	92	92	92
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	87	85	84	84	84	84
3	100	92	87	82	98	91	86	82	88	84	80	86	82	79	83	80	78	76	76	76	76
4	94	85	79	74	92	84	78	73	82	77	72	80	75	72	78	74	71	69	69	69	69
5	88	78	72	67	86	77	71	66	76	70	66	74	69	65	72	68	65	63	63	63	63
6	83	72	66	61	81	72	65	60	70	64	60	69	63	60	67	63	59	58	58	58	58
7	78	67	60	55	76	66	60	55	65	59	55	64	59	55	63	58	54	53	53	53	53
8	73	62	56	51	72	62	55	51	61	55	51	59	54	50	58	54	50	48	48	48	48
9	69	58	51	47	68	58	51	47	57	51	47	56	50	46	55	50	46	45	45	45	45
10	65	54	48	43	64	54	48	43	53	47	43	52	47	43	51	46	43	41	41	41	41

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	67032	67032	67032	67032
5°	66712	66854	66712	66854
10°	65845	65904	65845	65904
15°	64278	64198	64278	64198
20°	61956	61726	61956	61726
25°	58762	58566	58762	58566
30°	54343	54094	54343	54094
35°	48563	48311	48563	48311
40°	36066	36260	36066	36260
45°	18898	19377	18898	19377
50°	6133	6629	6133	6629
55°	2028	1865	2028	1865
60°	1539	1444	1539	1444
65°	1174	1135	1174	1135
70°	932	904	932	904
75°	760	760	760	760
80°	594	649	594	649
85°	440	440	440	440

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 40174 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	262.8	6.8
10°-20°	728.3	18.9
20°-30°	1020.2	26.5
30°-40°	1048.0	27.2
40°-50°	634.8	16.5
50°-60°	119.3	3.1
60°-70°	23.1	0.6
70°-80°	10.4	0.3
80°-90°	2.2	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°	2011.4	52.3
0°-40°	3059.3	79.5
0°-60°	3813.5	99.1
0°-90°	3849.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3849.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2796	2796	2796	2796	2796	
5°	2772	2778	2772	2778	2772	262
15°	2589	2586	2589	2586	2589	728
25°	2221	2214	2221	2214	2221	1017
35°	1659	1650	1659	1650	1659	1013
45°	557	571	557	571	557	445
55°	48	45	48	45	48	55
65°	21	20	21	20	21	21
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°	2795.5	2795.5	2795.5	2795.5	2795.5	2795.5	2795.5	2795.5	2795.5	2795.5	2795.5
0.5°	2792.8	2793.9	2795.9	2797.1	2796.3	2797.1	2795.9	2793.9	2792.8	2793.9	2795.9
1°	2792.4	2793.6	2795.1	2796.3	2795.9	2796.3	2795.1	2793.6	2792.4	2793.6	2795.1
1.5°	2791.2	2792.4	2794.3	2795.5	2795.1	2795.5	2794.3	2792.4	2791.2	2792.4	2794.3
2°	2789.6	2790.8	2792.8	2794.3	2793.6	2794.3	2792.8	2790.8	2789.6	2790.8	2792.8
2.5°	2787.7	2788.9	2791.2	2792.4	2792.0	2792.4	2791.2	2788.9	2787.7	2788.9	2791.2
3°	2785.3	2786.9	2788.9	2790.4	2790.0	2790.4	2788.9	2786.9	2785.3	2786.9	2788.9
3.5°	2782.6	2784.2	2786.5	2788.1	2787.7	2788.1	2786.5	2784.2	2782.6	2784.2	2786.5
4°	2779.5	2781.0	2783.4	2785.3	2784.9	2785.3	2783.4	2781.0	2779.5	2781.0	2783.4
4.5°	2775.9	2777.1	2779.9	2781.8	2781.4	2781.8	2779.9	2777.1	2775.9	2777.1	2779.9
5°	2771.6	2773.2	2776.3	2778.3	2777.5	2778.3	2776.3	2773.2	2771.6	2773.2	2776.3
5.5°	2767.3	2768.9	2772.0	2774.0	2772.8	2774.0	2772.0	2768.9	2767.3	2768.9	2772.0
6°	2761.9	2763.8	2767.3	2769.3	2768.1	2769.3	2767.3	2763.8	2761.9	2763.8	2767.3
6.5°	2756.4	2758.7	2762.2	2763.8	2762.2	2763.8	2762.2	2758.7	2756.4	2758.7	2762.2
7°	2750.5	2752.9	2756.4	2757.5	2756.0	2757.5	2756.4	2752.9	2750.5	2752.9	2756.4
7.5°	2743.9	2746.6	2750.1	2750.9	2748.9	2750.9	2750.1	2746.6	2743.9	2746.6	2750.1
8°	2736.8	2739.9	2743.5	2743.9	2741.9	2743.9	2743.5	2739.9	2736.8	2739.9	2743.5
8.5°	2729.4	2732.5	2736.0	2735.6	2733.7	2735.6	2736.0	2732.5	2729.4	2732.5	2736.0
9°	2721.5	2724.7	2728.2	2727.4	2725.1	2727.4	2728.2	2724.7	2721.5	2724.7	2728.2
9.5°	2713.3	2716.5	2720.0	2718.4	2716.1	2718.4	2720.0	2716.5	2713.3	2716.5	2720.0
10°	2704.3	2708.2	2711.0	2709.4	2706.7	2709.4	2711.0	2708.2	2704.3	2708.2	2711.0
10.5°	2694.9	2698.8	2701.6	2699.6	2696.9	2699.6	2701.6	2698.8	2694.9	2698.8	2701.6
11°	2685.1	2689.5	2691.8	2689.5	2686.3	2689.5	2691.8	2689.5	2685.1	2689.5	2691.8
11.5°	2675.0	2679.3	2681.2	2678.5	2675.4	2678.5	2681.2	2679.3	2675.0	2679.3	2681.2
12°	2664.0	2668.7	2670.3	2667.5	2664.4	2667.5	2670.3	2668.7	2664.0	2668.7	2670.3
12.5°	2652.7	2657.8	2658.9	2655.8	2652.3	2655.8	2658.9	2657.8	2652.7	2657.8	2658.9
13°	2640.9	2646.0	2647.2	2643.7	2640.1	2643.7	2647.2	2646.0	2640.9	2646.0	2647.2
13.5°	2628.8	2633.9	2634.7	2631.1	2627.2	2631.1	2634.7	2633.9	2628.8	2633.9	2634.7
14°	2615.9	2621.7	2622.1	2618.2	2613.9	2618.2	2622.1	2621.7	2615.9	2621.7	2622.1
14.5°	2603.0	2608.4	2608.8	2604.5	2600.2	2604.5	2608.8	2608.4	2603.0	2608.4	2608.8
15°	2589.3	2595.1	2595.5	2590.4	2586.1	2590.4	2595.5	2595.1	2589.3	2595.1	2595.5
15.5°	2575.2	2581.4	2581.0	2576.0	2571.3	2576.0	2581.0	2581.4	2575.2	2581.4	2581.0
16°	2560.7	2567.0	2566.6	2561.1	2556.4	2561.1	2566.6	2567.0	2560.7	2567.0	2566.6
16.5°	2545.8	2552.1	2551.3	2545.8	2540.7	2545.8	2551.3	2552.1	2545.8	2552.1	2551.3
17°	2530.6	2536.8	2536.0	2529.8	2524.7	2529.8	2536.0	2536.8	2530.6	2536.8	2536.0
17.5°	2514.5	2521.2	2520.0	2513.7	2508.3	2513.7	2520.0	2521.2	2514.5	2521.2	2520.0
18°	2498.1	2504.7	2503.2	2496.9	2491.0	2496.9	2503.2	2504.7	2498.1	2504.7	2503.2
18.5°	2481.2	2487.9	2486.7	2480.1	2473.4	2480.1	2486.7	2487.9	2481.2	2487.9	2486.7
19°	2464.0	2471.1	2469.5	2462.5	2455.8	2462.5	2469.5	2471.1	2464.0	2471.1	2469.5
19.5°	2446.0	2453.5	2451.5	2444.5	2437.4	2444.5	2451.5	2453.5	2446.0	2453.5	2451.5
20°	2428.0	2435.5	2433.5	2426.5	2419.0	2426.5	2433.5	2435.5	2428.0	2435.5	2433.5
20.5°	2409.6	2417.1	2415.1	2407.3	2399.8	2407.3	2415.1	2417.1	2409.6	2417.1	2415.1
21°	2390.5	2397.9	2396.3	2388.1	2380.3	2388.1	2396.3	2397.9	2390.5	2397.9	2396.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2330.6	2338.8	2336.8	2328.2	2320.8	2328.2	2336.8	2338.8	2330.6	2338.8	2336.8
23°	2309.8	2318.0	2316.5	2307.5	2300.0	2307.5	2316.5	2318.0	2309.8	2318.0	2316.5
23.5°	2288.3	2297.3	2295.7	2286.7	2279.7	2286.7	2295.7	2297.3	2288.3	2297.3	2295.7
24°	2266.8	2275.4	2274.6	2265.6	2258.6	2265.6	2274.6	2275.4	2266.8	2275.4	2274.6
24.5°	2244.1	2253.5	2253.1	2244.5	2236.3	2244.5	2253.1	2253.5	2244.1	2253.5	2253.1
25°	2221.0	2231.2	2230.8	2222.9	2213.6	2222.9	2230.8	2231.2	2221.0	2231.2	2230.8
25.5°	2197.9	2208.5	2208.5	2200.2	2190.9	2200.2	2208.5	2208.5	2197.9	2208.5	2208.5
26°	2173.6	2185.0	2185.8	2178.3	2167.4	2178.3	2185.8	2185.0	2173.6	2185.0	2185.8
26.5°	2149.4	2161.1	2162.7	2155.2	2142.7	2155.2	2162.7	2161.1	2149.4	2161.1	2162.7
27°	2123.9	2136.8	2139.2	2131.8	2117.3	2131.8	2139.2	2136.8	2123.9	2136.8	2139.2
27.5°	2098.9	2112.2	2115.7	2107.5	2091.8	2107.5	2115.7	2112.2	2098.9	2112.2	2115.7
28°	2072.7	2086.8	2091.8	2082.4	2064.8	2082.4	2091.8	2086.8	2072.7	2086.8	2091.8
28.5°	2046.1	2060.9	2067.2	2057.0	2037.4	2057.0	2067.2	2060.9	2046.1	2060.9	2067.2
29°	2018.3	2035.5	2042.9	2031.2	2010.0	2031.2	2042.9	2035.5	2018.3	2035.5	2042.9
29.5°	1990.5	2009.3	2018.7	2004.2	1981.9	2004.2	2018.7	2009.3	1990.5	2009.3	2018.7
30°	1962.7	1982.3	1993.2	1977.2	1953.7	1977.2	1993.2	1982.3	1962.7	1982.3	1993.2
30.5°	1934.1	1954.9	1968.2	1949.4	1924.7	1949.4	1968.2	1954.9	1934.1	1954.9	1968.2
31°	1904.4	1927.1	1942.3	1922.0	1895.8	1922.0	1942.3	1927.1	1904.4	1927.1	1942.3
31.5°	1875.4	1899.3	1916.9	1893.8	1866.0	1893.8	1916.9	1899.3	1875.4	1899.3	1916.9
32°	1845.7	1870.7	1891.1	1865.6	1835.9	1865.6	1891.1	1870.7	1845.7	1870.7	1891.1
32.5°	1815.5	1841.8	1864.8	1836.3	1805.8	1836.3	1864.8	1841.8	1815.5	1841.8	1864.8
33°	1785.0	1812.8	1838.2	1808.1	1775.6	1808.1	1838.2	1812.8	1785.0	1812.8	1838.2
33.5°	1754.5	1784.2	1811.2	1779.1	1744.7	1779.1	1811.2	1784.2	1754.5	1784.2	1811.2
34°	1722.8	1754.9	1783.8	1750.2	1713.4	1750.2	1783.8	1754.9	1722.8	1754.9	1783.8
34.5°	1691.5	1725.1	1756.4	1721.2	1681.7	1721.2	1756.4	1725.1	1691.5	1725.1	1756.4
35°	1659.0	1695.4	1729.0	1691.5	1650.4	1691.5	1729.0	1695.4	1659.0	1695.4	1729.0
35.5°	1627.7	1666.0	1700.5	1662.1	1619.1	1662.1	1700.5	1666.0	1627.7	1666.0	1700.5
36°	1595.2	1635.9	1671.9	1632.4	1581.9	1632.4	1671.9	1635.9	1595.2	1635.9	1671.9
36.5°	1560.4	1605.0	1644.1	1602.2	1540.0	1602.2	1644.1	1605.0	1560.4	1605.0	1644.1
37°	1518.5	1574.8	1615.5	1572.1	1493.8	1572.1	1615.5	1574.8	1518.5	1574.8	1615.5
37.5°	1463.7	1543.9	1587.4	1541.6	1446.1	1541.6	1587.4	1543.9	1463.7	1543.9	1587.4
38°	1408.5	1513.4	1558.0	1511.4	1395.2	1511.4	1558.0	1513.4	1408.5	1513.4	1558.0
38.5°	1347.5	1482.5	1529.8	1478.2	1343.2	1478.2	1529.8	1482.5	1347.5	1482.5	1529.8
39°	1284.1	1450.4	1501.7	1439.4	1284.8	1439.4	1501.7	1450.4	1284.1	1450.4	1501.7
39.5°	1217.9	1403.8	1473.9	1396.0	1223.4	1396.0	1473.9	1403.8	1217.9	1403.8	1473.9
40°	1152.2	1353.7	1445.7	1348.6	1158.4	1348.6	1445.7	1353.7	1152.2	1353.7	1445.7
40.5°	1086.4	1297.0	1417.9	1298.2	1094.3	1298.2	1417.9	1297.0	1086.4	1297.0	1417.9
41°	1024.2	1238.3	1390.9	1244.1	1032.4	1244.1	1390.9	1238.3	1024.2	1238.3	1390.9
41.5°	962.4	1178.0	1364.7	1187.4	971.0	1187.4	1364.7	1178.0	962.4	1178.0	1364.7
42°	902.1	1117.7	1338.5	1127.9	911.5	1127.9	1338.5	1117.7	902.1	1117.7	1338.5
42.5°	841.8	1058.2	1312.6	1068.4	851.2	1068.4	1312.6	1058.2	841.8	1058.2	1312.6
43°	782.3	998.0	1286.8	1008.5	792.9	1008.5	1286.8	998.0	782.3	998.0	1286.8
43.5°	722.5	939.3	1261.4	949.8	734.2	949.8	1261.4	939.3	722.5	939.3	1261.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	557.3	768.6	1184.7	781.9	571.4	781.9	1184.7	768.6	557.3	768.6	1184.7
45.5°	505.6	712.7	1159.2	726.4	521.7	726.4	1159.2	712.7	505.6	712.7	1159.2
46°	457.5	658.7	1133.4	671.6	473.9	671.6	1133.4	658.7	457.5	658.7	1133.4
46.5°	410.1	606.2	1106.8	618.4	425.4	618.4	1106.8	606.2	410.1	606.2	1106.8
47°	363.6	554.6	1069.6	566.3	378.4	566.3	1069.6	554.6	363.6	554.6	1069.6
47.5°	319.0	504.9	1024.2	517.8	336.6	517.8	1024.2	504.9	319.0	504.9	1024.2
48°	281.0	456.7	970.2	470.0	299.8	470.0	970.2	456.7	281.0	456.7	970.2
48.5°	246.2	410.9	913.1	423.8	265.3	423.8	913.1	410.9	246.2	410.9	913.1
49°	215.3	366.3	853.2	378.4	234.0	378.4	853.2	366.3	215.3	366.3	853.2
49.5°	188.2	323.3	791.7	337.7	204.7	337.7	791.7	323.3	188.2	323.3	791.7
50°	164.4	283.0	729.5	298.6	177.7	298.6	729.5	283.0	164.4	283.0	729.5
50.5°	142.1	246.6	668.1	262.6	152.2	262.6	668.1	246.6	142.1	246.6	668.1
51°	121.7	214.1	607.4	228.9	128.0	228.9	607.4	214.1	121.7	214.1	607.4
51.5°	105.3	185.5	550.6	198.4	107.6	198.4	550.6	185.5	105.3	185.5	550.6
52°	88.8	160.5	498.6	171.8	91.6	171.8	498.6	160.5	88.8	160.5	498.6
52.5°	74.8	138.2	447.7	147.2	80.6	147.2	447.7	138.2	74.8	138.2	447.7
53°	64.6	117.8	400.4	124.5	70.1	124.5	400.4	117.8	64.6	117.8	400.4
53.5°	55.2	100.6	353.8	103.3	59.1	103.3	353.8	100.6	55.2	100.6	353.8
54°	52.8	84.1	311.1	84.5	48.5	84.5	311.1	84.1	52.8	84.1	311.1
54.5°	50.5	70.4	270.4	70.1	46.2	70.1	270.4	70.4	50.5	70.4	270.4
55°	48.5	58.3	234.4	58.7	44.6	58.7	234.4	58.3	48.5	58.3	234.4
55.5°	46.6	49.7	201.9	50.5	42.7	50.5	201.9	49.7	46.6	49.7	201.9
56°	44.6	45.8	172.6	44.2	41.1	44.2	172.6	45.8	44.6	45.8	172.6
56.5°	42.7	43.8	146.4	41.1	39.5	41.1	146.4	43.8	42.7	43.8	146.4
57°	41.1	42.3	124.5	39.5	38.0	39.5	124.5	42.3	41.1	42.3	124.5
57.5°	39.1	40.7	105.3	38.0	36.4	38.0	105.3	40.7	39.1	40.7	105.3
58°	37.6	39.1	89.6	36.8	35.2	36.8	89.6	39.1	37.6	39.1	89.6
58.5°	36.0	37.6	75.5	35.2	33.7	35.2	75.5	37.6	36.0	37.6	75.5
59°	34.8	36.4	64.2	34.0	32.5	34.0	64.2	36.4	34.8	36.4	64.2
59.5°	33.3	35.2	54.4	32.9	31.3	32.9	54.4	35.2	33.3	35.2	54.4
60°	32.1	33.7	45.8	31.7	30.1	31.7	45.8	33.7	32.1	33.7	45.8
60.5°	30.5	32.5	40.7	30.5	28.6	30.5	40.7	32.5	30.5	32.5	40.7
61°	29.4	31.3	36.8	29.7	27.8	29.7	36.8	31.3	29.4	31.3	36.8
61.5°	28.2	30.1	33.7	28.6	26.6	28.6	33.7	30.1	28.2	30.1	33.7
62°	27.0	29.4	31.7	27.4	25.4	27.4	31.7	29.4	27.0	29.4	31.7
62.5°	25.8	28.2	30.1	26.6	24.7	26.6	30.1	28.2	25.8	28.2	30.1
63°	24.7	27.0	29.0	25.8	23.5	25.8	29.0	27.0	24.7	27.0	29.0
63.5°	23.9	26.2	27.8	24.7	22.7	24.7	27.8	26.2	23.9	26.2	27.8
64°	22.7	25.0	27.0	23.9	21.5	23.9	27.0	25.0	22.7	25.0	27.0
64.5°	21.9	24.3	25.8	23.1	20.7	23.1	25.8	24.3	21.9	24.3	25.8
65°	20.7	23.5	25.0	22.3	20.0	22.3	25.0	23.5	20.7	23.5	25.0
65.5°	20.0	22.3	23.9	21.5	19.2	21.5	23.9	22.3	20.0	22.3	23.9
66°	19.2	21.5	23.1	20.7	18.4	20.7	23.1	21.5	19.2	21.5	23.1



TEST NUMBER: P776516

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	16.8	19.2	20.7	18.4	16.0	18.4	20.7	19.2	16.8	19.2	20.7
68°	16.0	18.4	20.0	17.6	15.7	17.6	20.0	18.4	16.0	18.4	20.0
68.5°	15.3	17.6	19.2	17.2	14.9	17.2	19.2	17.6	15.3	17.6	19.2
69°	14.9	16.8	18.4	16.4	14.1	16.4	18.4	16.8	14.9	16.8	18.4
69.5°	14.1	16.4	17.6	15.7	13.7	15.7	17.6	16.4	14.1	16.4	17.6
70°	13.3	15.7	16.8	15.3	12.9	15.3	16.8	15.7	13.3	15.7	16.8
70.5°	12.9	14.9	16.4	14.5	12.5	14.5	16.4	14.9	12.9	14.9	16.4
71°	12.1	14.5	15.7	14.1	12.1	14.1	15.7	14.5	12.1	14.5	15.7
71.5°	11.7	13.7	14.9	13.3	11.3	13.3	14.9	13.7	11.7	13.7	14.9
72°	11.0	13.3	14.5	12.9	11.0	12.9	14.5	13.3	11.0	13.3	14.5
72.5°	10.6	12.5	13.7	12.1	10.6	12.1	13.7	12.5	10.6	12.5	13.7
73°	10.2	12.1	12.9	11.7	9.8	11.7	12.9	12.1	10.2	12.1	12.9
73.5°	9.4	11.3	12.5	11.3	9.4	11.3	12.5	11.3	9.4	11.3	12.5
74°	9.0	11.0	11.7	10.6	9.0	10.6	11.7	11.0	9.0	11.0	11.7
74.5°	8.6	10.6	11.3	10.2	8.6	10.2	11.3	10.6	8.6	10.6	11.3
75°	8.2	9.8	10.6	9.8	8.2	9.8	10.6	9.8	8.2	9.8	10.6
75.5°	7.8	9.4	10.2	9.4	7.8	9.4	10.2	9.4	7.8	9.4	10.2
76°	7.4	9.0	9.8	8.6	7.4	8.6	9.8	9.0	7.4	9.0	9.8
76.5°	7.0	8.2	9.0	8.2	7.0	8.2	9.0	8.2	7.0	8.2	9.0
77°	6.3	7.8	8.6	7.8	6.7	7.8	8.6	7.8	6.3	7.8	8.6
77.5°	5.9	7.4	8.2	7.4	6.3	7.4	8.2	7.4	5.9	7.4	8.2
78°	5.9	7.0	7.4	7.0	5.9	7.0	7.4	7.0	5.9	7.0	7.4
78.5°	5.5	6.7	7.0	6.7	5.5	6.7	7.0	6.7	5.5	6.7	7.0
79°	5.1	6.3	6.7	6.3	5.1	6.3	6.7	6.3	5.1	6.3	6.7
79.5°	4.7	5.5	6.3	5.9	4.7	5.9	6.3	5.5	4.7	5.5	6.3
80°	4.3	5.1	5.9	5.5	4.7	5.5	5.9	5.1	4.3	5.1	5.9
80.5°	3.9	4.7	5.5	5.1	4.3	5.1	5.5	4.7	3.9	4.7	5.5
81°	3.5	4.3	5.1	4.7	3.9	4.7	5.1	4.3	3.5	4.3	5.1
81.5°	3.5	3.9	4.7	4.3	3.5	4.3	4.7	3.9	3.5	3.9	4.7
82°	3.1	3.5	4.3	3.9	3.5	3.9	4.3	3.5	3.1	3.5	4.3
82.5°	2.7	3.1	3.9	3.5	3.1	3.5	3.9	3.1	2.7	3.1	3.9
83°	2.3	3.1	3.5	3.1	2.7	3.1	3.5	3.1	2.3	3.1	3.5
83.5°	2.3	2.7	3.1	3.1	2.3	3.1	3.1	2.7	2.3	2.7	3.1
84°	2.0	2.3	2.7	2.7	2.3	2.7	2.7	2.3	2.0	2.3	2.7
84.5°	1.6	2.0	2.3	2.3	2.0	2.3	2.3	2.0	1.6	2.0	2.3
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: P776516

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3000K

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: P776516

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2795.5	2795.5	2795.5	2795.5	2795.5	2795.5
0.5°	2797.1	2796.3	2797.1	2795.9	2793.9	2792.8
1°	2796.3	2795.9	2796.3	2795.1	2793.6	2792.4
1.5°	2795.5	2795.1	2795.5	2794.3	2792.4	2791.2
2°	2794.3	2793.6	2794.3	2792.8	2790.8	2789.6
2.5°	2792.4	2792.0	2792.4	2791.2	2788.9	2787.7
3°	2790.4	2790.0	2790.4	2788.9	2786.9	2785.3
3.5°	2788.1	2787.7	2788.1	2786.5	2784.2	2782.6
4°	2785.3	2784.9	2785.3	2783.4	2781.0	2779.5
4.5°	2781.8	2781.4	2781.8	2779.9	2777.1	2775.9
5°	2778.3	2777.5	2778.3	2776.3	2773.2	2771.6
5.5°	2774.0	2772.8	2774.0	2772.0	2768.9	2767.3
6°	2769.3	2768.1	2769.3	2767.3	2763.8	2761.9
6.5°	2763.8	2762.2	2763.8	2762.2	2758.7	2756.4
7°	2757.5	2756.0	2757.5	2756.4	2752.9	2750.5
7.5°	2750.9	2748.9	2750.9	2750.1	2746.6	2743.9
8°	2743.9	2741.9	2743.9	2743.5	2739.9	2736.8
8.5°	2735.6	2733.7	2735.6	2736.0	2732.5	2729.4
9°	2727.4	2725.1	2727.4	2728.2	2724.7	2721.5
9.5°	2718.4	2716.1	2718.4	2720.0	2716.5	2713.3
10°	2709.4	2706.7	2709.4	2711.0	2708.2	2704.3
10.5°	2699.6	2696.9	2699.6	2701.6	2698.8	2694.9
11°	2689.5	2686.3	2689.5	2691.8	2689.5	2685.1
11.5°	2678.5	2675.4	2678.5	2681.2	2679.3	2675.0
12°	2667.5	2664.4	2667.5	2670.3	2668.7	2664.0
12.5°	2655.8	2652.3	2655.8	2658.9	2657.8	2652.7
13°	2643.7	2640.1	2643.7	2647.2	2646.0	2640.9
13.5°	2631.1	2627.2	2631.1	2634.7	2633.9	2628.8
14°	2618.2	2613.9	2618.2	2622.1	2621.7	2615.9
14.5°	2604.5	2600.2	2604.5	2608.8	2608.4	2603.0
15°	2590.4	2586.1	2590.4	2595.5	2595.1	2589.3
15.5°	2576.0	2571.3	2576.0	2581.0	2581.4	2575.2
16°	2561.1	2556.4	2561.1	2566.6	2567.0	2560.7
16.5°	2545.8	2540.7	2545.8	2551.3	2552.1	2545.8
17°	2529.8	2524.7	2529.8	2536.0	2536.8	2530.6
17.5°	2513.7	2508.3	2513.7	2520.0	2521.2	2514.5
18°	2496.9	2491.0	2496.9	2503.2	2504.7	2498.1
18.5°	2480.1	2473.4	2480.1	2486.7	2487.9	2481.2
19°	2462.5	2455.8	2462.5	2469.5	2471.1	2464.0
19.5°	2444.5	2437.4	2444.5	2451.5	2453.5	2446.0
20°	2426.5	2419.0	2426.5	2433.5	2435.5	2428.0
20.5°	2407.3	2399.8	2407.3	2415.1	2417.1	2409.6
21°	2388.1	2380.3	2388.1	2396.3	2397.9	2390.5

TEST NUMBER: P776516

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2328.2	2320.8	2328.2	2336.8	2338.8	2330.6
23°	2307.5	2300.0	2307.5	2316.5	2318.0	2309.8
23.5°	2286.7	2279.7	2286.7	2295.7	2297.3	2288.3
24°	2265.6	2258.6	2265.6	2274.6	2275.4	2266.8
24.5°	2244.5	2236.3	2244.5	2253.1	2253.5	2244.1
25°	2222.9	2213.6	2222.9	2230.8	2231.2	2221.0
25.5°	2200.2	2190.9	2200.2	2208.5	2208.5	2197.9
26°	2178.3	2167.4	2178.3	2185.8	2185.0	2173.6
26.5°	2155.2	2142.7	2155.2	2162.7	2161.1	2149.4
27°	2131.8	2117.3	2131.8	2139.2	2136.8	2123.9
27.5°	2107.5	2091.8	2107.5	2115.7	2112.2	2098.9
28°	2082.4	2064.8	2082.4	2091.8	2086.8	2072.7
28.5°	2057.0	2037.4	2057.0	2067.2	2060.9	2046.1
29°	2031.2	2010.0	2031.2	2042.9	2035.5	2018.3
29.5°	2004.2	1981.9	2004.2	2018.7	2009.3	1990.5
30°	1977.2	1953.7	1977.2	1993.2	1982.3	1962.7
30.5°	1949.4	1924.7	1949.4	1968.2	1954.9	1934.1
31°	1922.0	1895.8	1922.0	1942.3	1927.1	1904.4
31.5°	1893.8	1866.0	1893.8	1916.9	1899.3	1875.4
32°	1865.6	1835.9	1865.6	1891.1	1870.7	1845.7
32.5°	1836.3	1805.8	1836.3	1864.8	1841.8	1815.5
33°	1808.1	1775.6	1808.1	1838.2	1812.8	1785.0
33.5°	1779.1	1744.7	1779.1	1811.2	1784.2	1754.5
34°	1750.2	1713.4	1750.2	1783.8	1754.9	1722.8
34.5°	1721.2	1681.7	1721.2	1756.4	1725.1	1691.5
35°	1691.5	1650.4	1691.5	1729.0	1695.4	1659.0
35.5°	1662.1	1619.1	1662.1	1700.5	1666.0	1627.7
36°	1632.4	1581.9	1632.4	1671.9	1635.9	1595.2
36.5°	1602.2	1540.0	1602.2	1644.1	1605.0	1560.4
37°	1572.1	1493.8	1572.1	1615.5	1574.8	1518.5
37.5°	1541.6	1446.1	1541.6	1587.4	1543.9	1463.7
38°	1511.4	1395.2	1511.4	1558.0	1513.4	1408.5
38.5°	1478.2	1343.2	1478.2	1529.8	1482.5	1347.5
39°	1439.4	1284.8	1439.4	1501.7	1450.4	1284.1
39.5°	1396.0	1223.4	1396.0	1473.9	1403.8	1217.9
40°	1348.6	1158.4	1348.6	1445.7	1353.7	1152.2
40.5°	1298.2	1094.3	1298.2	1417.9	1297.0	1086.4
41°	1244.1	1032.4	1244.1	1390.9	1238.3	1024.2
41.5°	1187.4	971.0	1187.4	1364.7	1178.0	962.4
42°	1127.9	911.5	1127.9	1338.5	1117.7	902.1
42.5°	1068.4	851.2	1068.4	1312.6	1058.2	841.8
43°	1008.5	792.9	1008.5	1286.8	998.0	782.3
43.5°	949.8	734.2	949.8	1261.4	939.3	722.5



TEST NUMBER: P776516

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	781.9	571.4	781.9	1184.7	768.6	557.3
45.5°	726.4	521.7	726.4	1159.2	712.7	505.6
46°	671.6	473.9	671.6	1133.4	658.7	457.5
46.5°	618.4	425.4	618.4	1106.8	606.2	410.1
47°	566.3	378.4	566.3	1069.6	554.6	363.6
47.5°	517.8	336.6	517.8	1024.2	504.9	319.0
48°	470.0	299.8	470.0	970.2	456.7	281.0
48.5°	423.8	265.3	423.8	913.1	410.9	246.2
49°	378.4	234.0	378.4	853.2	366.3	215.3
49.5°	337.7	204.7	337.7	791.7	323.3	188.2
50°	298.6	177.7	298.6	729.5	283.0	164.4
50.5°	262.6	152.2	262.6	668.1	246.6	142.1
51°	228.9	128.0	228.9	607.4	214.1	121.7
51.5°	198.4	107.6	198.4	550.6	185.5	105.3
52°	171.8	91.6	171.8	498.6	160.5	88.8
52.5°	147.2	80.6	147.2	447.7	138.2	74.8
53°	124.5	70.1	124.5	400.4	117.8	64.6
53.5°	103.3	59.1	103.3	353.8	100.6	55.2
54°	84.5	48.5	84.5	311.1	84.1	52.8
54.5°	70.1	46.2	70.1	270.4	70.4	50.5
55°	58.7	44.6	58.7	234.4	58.3	48.5
55.5°	50.5	42.7	50.5	201.9	49.7	46.6
56°	44.2	41.1	44.2	172.6	45.8	44.6
56.5°	41.1	39.5	41.1	146.4	43.8	42.7
57°	39.5	38.0	39.5	124.5	42.3	41.1
57.5°	38.0	36.4	38.0	105.3	40.7	39.1
58°	36.8	35.2	36.8	89.6	39.1	37.6
58.5°	35.2	33.7	35.2	75.5	37.6	36.0
59°	34.0	32.5	34.0	64.2	36.4	34.8
59.5°	32.9	31.3	32.9	54.4	35.2	33.3
60°	31.7	30.1	31.7	45.8	33.7	32.1
60.5°	30.5	28.6	30.5	40.7	32.5	30.5
61°	29.7	27.8	29.7	36.8	31.3	29.4
61.5°	28.6	26.6	28.6	33.7	30.1	28.2
62°	27.4	25.4	27.4	31.7	29.4	27.0
62.5°	26.6	24.7	26.6	30.1	28.2	25.8
63°	25.8	23.5	25.8	29.0	27.0	24.7
63.5°	24.7	22.7	24.7	27.8	26.2	23.9
64°	23.9	21.5	23.9	27.0	25.0	22.7
64.5°	23.1	20.7	23.1	25.8	24.3	21.9
65°	22.3	20.0	22.3	25.0	23.5	20.7
65.5°	21.5	19.2	21.5	23.9	22.3	20.0
66°	20.7	18.4	20.7	23.1	21.5	19.2



TEST NUMBER: P776516

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	18.4	16.0	18.4	20.7	19.2	16.8
68°	17.6	15.7	17.6	20.0	18.4	16.0
68.5°	17.2	14.9	17.2	19.2	17.6	15.3
69°	16.4	14.1	16.4	18.4	16.8	14.9
69.5°	15.7	13.7	15.7	17.6	16.4	14.1
70°	15.3	12.9	15.3	16.8	15.7	13.3
70.5°	14.5	12.5	14.5	16.4	14.9	12.9
71°	14.1	12.1	14.1	15.7	14.5	12.1
71.5°	13.3	11.3	13.3	14.9	13.7	11.7
72°	12.9	11.0	12.9	14.5	13.3	11.0
72.5°	12.1	10.6	12.1	13.7	12.5	10.6
73°	11.7	9.8	11.7	12.9	12.1	10.2
73.5°	11.3	9.4	11.3	12.5	11.3	9.4
74°	10.6	9.0	10.6	11.7	11.0	9.0
74.5°	10.2	8.6	10.2	11.3	10.6	8.6
75°	9.8	8.2	9.8	10.6	9.8	8.2
75.5°	9.4	7.8	9.4	10.2	9.4	7.8
76°	8.6	7.4	8.6	9.8	9.0	7.4
76.5°	8.2	7.0	8.2	9.0	8.2	7.0
77°	7.8	6.7	7.8	8.6	7.8	6.3
77.5°	7.4	6.3	7.4	8.2	7.4	5.9
78°	7.0	5.9	7.0	7.4	7.0	5.9
78.5°	6.7	5.5	6.7	7.0	6.7	5.5
79°	6.3	5.1	6.3	6.7	6.3	5.1
79.5°	5.9	4.7	5.9	6.3	5.5	4.7
80°	5.5	4.7	5.5	5.9	5.1	4.3
80.5°	5.1	4.3	5.1	5.5	4.7	3.9
81°	4.7	3.9	4.7	5.1	4.3	3.5
81.5°	4.3	3.5	4.3	4.7	3.9	3.5
82°	3.9	3.5	3.9	4.3	3.5	3.1
82.5°	3.5	3.1	3.5	3.9	3.1	2.7
83°	3.1	2.7	3.1	3.5	3.1	2.3
83.5°	3.1	2.3	3.1	3.1	2.7	2.3
84°	2.7	2.3	2.7	2.7	2.3	2.0
84.5°	2.3	2.0	2.3	2.3	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: P776516

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

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



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Cooper Lighting Solutions Photometric Lab
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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°	2371.3	2378.7	2376.8	2368.5	2361.1	2368.5	2376.8	2378.7	2371.3	2378.7	2376.8
22°	2350.5	2359.1	2356.8	2348.6	2340.7	2348.6	2356.8	2359.1	2350.5	2359.1	2356.8



44°	664.9	882.1	1235.5	893.5	677.1	893.5	1235.5	882.1	664.9	882.1	1235.5
44.5°	610.9	826.2	1210.5	837.5	621.1	837.5	1210.5	826.2	610.9	826.2	1210.5



66.5°	18.4	20.7	22.3	20.0	17.6	20.0	22.3	20.7	18.4	20.7	22.3
67°	17.6	20.0	21.5	19.2	16.8	19.2	21.5	20.0	17.6	20.0	21.5



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°	2368.5	2361.1	2368.5	2376.8	2378.7	2371.3
22°	2348.6	2340.7	2348.6	2356.8	2359.1	2350.5



44°	893.5	677.1	893.5	1235.5	882.1	664.9
44.5°	837.5	621.1	837.5	1210.5	826.2	610.9

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66.5°	20.0	17.6	20.0	22.3	20.7	18.4
67°	19.2	16.8	19.2	21.5	20.0	17.6

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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)