

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: P776342

Luminaire Tested: HCDJBL3040CSD-HCD61TRH-4000lm-3500K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776342
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B036)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD61TRH-4000lm-3500K
Description: 6 INCH ROUND SHALLOW-WIDE HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

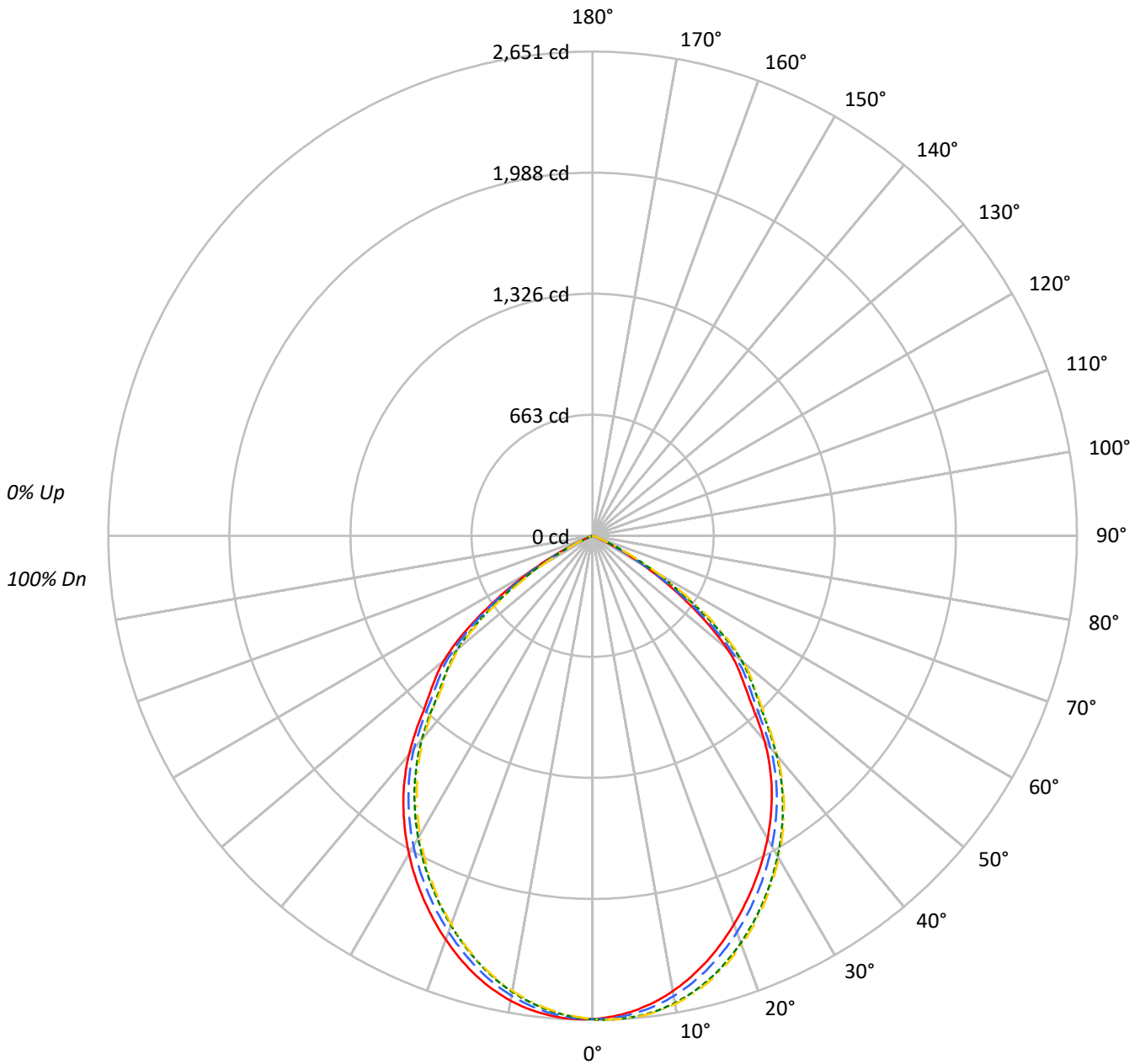
Lumens per Lamp: N/A
Luminaire Lumens: 4726.0 lumens
Efficiency: N/A
Efficacy: 122.8 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.12 / 1.2
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

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					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	103	109	106	103	101	102	100	98	98	97	95	95	93	92	90								
2	104	98	93	89	102	96	91	87	93	89	86	90	87	84	87	84	82	80								
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71								
4	90	80	73	68	88	79	72	67	77	71	66	74	70	65	72	68	65	63								
5	84	73	65	60	82	72	65	60	70	64	59	68	63	58	66	62	58	56								
6	78	67	59	53	76	66	58	53	64	58	53	62	57	52	61	56	52	50								
7	73	61	53	48	71	60	53	48	59	52	48	57	52	47	56	51	47	45								
8	68	56	49	43	67	55	48	43	54	48	43	53	47	43	52	47	43	41								
9	64	52	45	40	63	51	44	39	50	44	39	49	43	39	48	43	39	37								
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	145071	145071	145071	145071
5°	143655	145471	145146	143743
10°	140913	144564	143880	141157
15°	136902	142157	141164	137243
20°	132049	138408	137224	132352
25°	126818	133695	132588	126890
30°	121221	128292	127311	120892
35°	114405	121506	120870	113763
40°	104675	112067	111895	104074
45°	92103	99840	99499	91459
50°	81933	90846	90504	82300
55°	60404	69933	70430	62038
60°	34515	43100	44141	37037
65°	9949	16189	15255	12946
70°	256	385	256	769
75°	169	169	169	169
80°	126	126	126	126
85°	252	0	0	252

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 100793 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	248.6	5.3
10°-20°	690.7	14.6
20°-30°	988.2	20.9
30°-40°	1093.8	23.1
40°-50°	961.0	20.3
50°-60°	611.9	12.9
60°-70°	130.3	2.8
70°-80°	1.1	0.0
80°-90°	0.5	0.0
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°	1927.5	40.8
0°-40°	3021.3	63.9
0°-60°	4594.2	97.2
0°-90°	4726.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4726.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2646	2646	2646	2646	2646	
5°	2610	2644	2638	2612	2610	247
15°	2412	2505	2487	2418	2412	678
25°	2097	2210	2192	2098	2097	964
35°	1710	1816	1806	1700	1710	1064
45°	1188	1288	1283	1180	1188	924
55°	632	732	737	649	632	563
65°	77	125	118	100	77	102
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	2	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°	2646.3	2646.3	2646.3	2646.3	2646.3	2646.3	2646.3	2646.3	2646.3	2646.3	2646.3
0.5°	2644.3	2645.5	2646.7	2646.3	2649.1	2648.7	2647.5	2647.1	2647.1	2647.1	2646.7
1°	2642.3	2643.9	2646.3	2646.3	2649.9	2649.9	2648.7	2648.3	2647.9	2647.1	2645.9
1.5°	2639.9	2642.3	2645.1	2646.3	2650.7	2651.1	2649.9	2649.1	2647.9	2646.7	2644.7
2°	2636.8	2639.9	2643.5	2645.5	2650.7	2651.5	2650.7	2649.5	2647.9	2645.5	2643.1
2.5°	2633.6	2637.2	2641.5	2644.3	2650.7	2651.9	2650.7	2649.5	2647.1	2644.3	2641.1
3°	2630.0	2634.0	2639.2	2643.1	2649.9	2651.5	2650.7	2648.7	2646.3	2642.7	2638.8
3.5°	2625.6	2630.4	2636.4	2641.1	2649.1	2650.7	2650.3	2647.9	2644.7	2640.3	2635.6
4°	2620.9	2626.4	2633.2	2638.8	2647.5	2649.9	2649.1	2646.7	2642.7	2638.0	2632.0
4.5°	2615.7	2622.1	2629.2	2635.6	2645.9	2648.7	2647.9	2645.1	2640.3	2634.8	2628.4
5°	2610.5	2616.9	2624.8	2632.4	2643.5	2646.7	2645.9	2642.7	2637.6	2631.2	2624.4
5.5°	2604.6	2611.3	2620.1	2628.8	2641.1	2644.3	2643.9	2640.3	2634.0	2627.2	2619.7
6°	2597.8	2605.4	2615.3	2624.8	2638.0	2641.9	2641.1	2637.2	2630.4	2622.5	2614.1
6.5°	2591.5	2599.0	2609.7	2620.1	2634.4	2638.8	2638.0	2633.6	2626.4	2617.7	2608.9
7°	2584.3	2592.3	2603.8	2614.9	2630.4	2635.2	2634.4	2629.6	2622.1	2612.5	2603.0
7.5°	2576.4	2585.1	2597.4	2609.3	2625.6	2631.2	2630.4	2625.2	2616.9	2606.6	2596.2
8°	2568.4	2577.1	2590.3	2603.4	2621.3	2626.8	2626.0	2620.1	2611.3	2600.6	2589.5
8.5°	2559.7	2569.2	2583.1	2597.4	2615.7	2622.1	2621.3	2614.9	2605.4	2593.8	2581.9
9°	2550.9	2560.5	2575.6	2590.3	2609.7	2616.5	2615.7	2608.9	2598.6	2586.7	2574.0
9.5°	2541.4	2551.7	2567.2	2583.1	2603.4	2610.9	2609.7	2603.0	2591.9	2579.1	2566.0
10°	2531.4	2541.8	2558.5	2575.6	2597.0	2604.6	2603.8	2596.2	2584.7	2571.2	2557.3
10.5°	2521.1	2531.8	2549.7	2567.2	2589.9	2597.8	2597.0	2589.1	2577.1	2562.8	2548.1
11°	2510.4	2521.9	2540.2	2558.5	2582.3	2590.7	2589.9	2581.1	2568.4	2554.1	2538.6
11.5°	2499.2	2511.2	2530.2	2549.3	2574.0	2582.7	2581.9	2573.2	2559.7	2544.6	2528.7
12°	2488.1	2500.0	2520.3	2539.8	2565.6	2574.8	2574.0	2564.4	2550.9	2534.6	2518.3
12.5°	2476.2	2488.9	2509.6	2530.2	2556.5	2566.0	2565.2	2555.7	2541.4	2524.7	2507.6
13°	2463.9	2477.4	2498.4	2519.9	2546.9	2557.3	2556.1	2546.1	2531.0	2514.0	2496.5
13.5°	2451.5	2465.1	2486.9	2509.2	2537.0	2547.7	2546.5	2536.2	2521.1	2503.2	2485.3
14°	2438.8	2452.7	2475.4	2497.7	2526.7	2537.8	2536.6	2525.9	2510.0	2491.7	2473.4
14.5°	2425.7	2439.6	2463.1	2486.9	2515.9	2527.1	2525.9	2515.1	2498.4	2480.2	2460.7
15°	2412.2	2426.5	2450.8	2474.6	2504.8	2516.3	2515.1	2503.6	2487.3	2467.8	2448.4
15.5°	2398.7	2413.4	2437.6	2462.7	2493.3	2504.8	2503.6	2492.1	2475.4	2455.5	2435.7
16°	2384.4	2399.5	2424.5	2449.2	2481.4	2493.7	2491.7	2480.2	2462.3	2442.8	2422.1
16.5°	2370.5	2385.6	2411.4	2437.2	2468.6	2481.4	2479.4	2467.8	2450.0	2429.7	2408.6
17°	2355.4	2371.3	2397.5	2423.7	2455.9	2469.0	2467.0	2455.1	2436.8	2416.6	2395.1
17.5°	2340.7	2357.0	2383.2	2409.8	2442.8	2455.5	2454.3	2441.6	2423.7	2402.7	2381.2
18°	2325.6	2342.2	2369.3	2395.5	2429.3	2442.4	2440.4	2428.1	2409.8	2388.7	2366.1
18.5°	2310.4	2327.1	2354.6	2382.0	2415.4	2428.5	2426.9	2414.6	2395.5	2374.4	2352.2
19°	2294.9	2312.4	2339.9	2367.3	2401.1	2414.6	2413.0	2400.3	2381.6	2360.1	2337.1
19.5°	2279.8	2297.3	2324.8	2353.0	2386.8	2400.3	2398.7	2386.4	2366.9	2345.4	2322.4
20°	2263.5	2281.4	2309.3	2337.5	2372.5	2385.6	2384.0	2371.7	2352.2	2330.3	2306.9
20.5°	2247.7	2265.5	2293.8	2322.0	2357.0	2370.9	2369.3	2356.6	2337.5	2315.2	2291.8
21°	2231.4	2250.0	2278.3	2306.9	2341.8	2355.4	2353.8	2341.5	2322.0	2299.7	2275.5



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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°	2181.7	2201.1	2229.8	2258.4	2294.2	2307.7	2306.5	2293.8	2275.1	2252.0	2227.4
23°	2165.4	2184.9	2213.1	2242.1	2277.5	2291.4	2290.2	2277.9	2258.8	2235.7	2210.3
23.5°	2148.3	2168.2	2196.4	2225.4	2261.2	2275.1	2273.5	2261.6	2242.1	2219.4	2194.0
24°	2131.2	2151.1	2178.9	2208.3	2244.9	2258.4	2257.2	2244.5	2225.8	2202.7	2176.9
24.5°	2114.1	2134.0	2162.2	2191.6	2227.8	2240.5	2240.1	2227.4	2208.7	2185.2	2160.2
25°	2096.6	2116.9	2144.7	2173.7	2210.3	2223.4	2222.6	2210.3	2192.0	2168.6	2142.7
25.5°	2079.5	2099.8	2127.6	2156.6	2192.8	2205.9	2205.1	2193.2	2174.9	2151.1	2125.6
26°	2061.6	2082.7	2110.1	2139.1	2175.3	2187.6	2187.2	2176.1	2157.4	2133.6	2107.7
26.5°	2043.8	2064.8	2091.8	2121.3	2157.4	2170.1	2169.7	2158.2	2139.5	2115.7	2090.3
27°	2026.3	2047.3	2074.0	2103.4	2139.5	2151.5	2151.9	2139.5	2122.1	2097.8	2072.4
27.5°	2008.0	2029.4	2056.1	2084.3	2120.9	2133.2	2133.6	2121.7	2104.2	2079.9	2054.1
28°	1989.7	2011.2	2037.4	2066.0	2102.6	2115.3	2114.5	2103.8	2085.9	2061.6	2035.4
28.5°	1971.0	1992.5	2018.7	2046.9	2083.5	2095.4	2095.4	2085.1	2067.6	2043.0	2017.5
29°	1952.3	1974.6	2000.0	2028.3	2064.8	2076.3	2076.7	2065.6	2048.9	2024.3	1998.8
29.5°	1933.7	1955.5	1981.4	2008.8	2045.7	2056.9	2057.7	2046.5	2030.2	2005.6	1980.2
30°	1915.0	1936.8	1962.3	1989.7	2026.7	2038.2	2037.8	2027.9	2011.2	1986.5	1960.7
30.5°	1895.1	1917.8	1942.8	1970.6	2006.0	2017.5	2017.5	2008.4	1991.3	1967.0	1941.2
31°	1875.2	1898.3	1923.3	1950.3	1986.5	1997.2	1998.0	1987.7	1972.2	1948.0	1922.1
31.5°	1855.8	1878.8	1903.1	1930.1	1965.8	1977.0	1977.4	1968.2	1951.9	1928.1	1902.7
32°	1835.9	1859.3	1883.2	1909.8	1945.6	1957.1	1956.7	1948.0	1932.5	1907.8	1882.8
32.5°	1815.6	1838.7	1862.9	1889.5	1924.9	1935.6	1935.2	1927.7	1912.2	1887.9	1862.1
33°	1794.9	1818.4	1842.2	1868.9	1903.8	1914.2	1915.0	1906.6	1891.5	1867.7	1841.8
33.5°	1774.3	1797.3	1821.6	1847.4	1882.0	1892.7	1893.1	1885.6	1870.1	1847.4	1821.6
34°	1752.8	1776.7	1800.5	1826.7	1860.5	1871.7	1871.3	1864.1	1849.0	1825.9	1800.5
34.5°	1731.3	1755.6	1779.0	1804.1	1838.7	1848.2	1849.0	1841.8	1827.5	1804.5	1779.4
35°	1709.5	1733.7	1757.6	1782.2	1815.6	1826.3	1826.7	1819.6	1806.1	1783.4	1757.6
35.5°	1686.8	1711.9	1735.7	1759.6	1793.4	1802.9	1803.7	1797.3	1783.4	1762.0	1735.7
36°	1664.2	1690.0	1713.1	1736.9	1770.3	1780.2	1780.6	1774.7	1761.6	1740.1	1714.7
36.5°	1640.7	1666.6	1690.4	1713.5	1747.2	1755.6	1757.2	1750.8	1738.5	1717.0	1692.4
37°	1617.7	1643.1	1667.4	1690.0	1722.2	1731.7	1732.5	1727.0	1715.8	1694.4	1669.3
37.5°	1593.8	1618.9	1643.5	1666.2	1698.0	1706.3	1707.5	1702.7	1691.6	1671.7	1646.3
38°	1568.8	1595.0	1619.3	1640.7	1672.9	1681.3	1682.9	1677.7	1667.0	1647.9	1624.0
38.5°	1543.7	1570.0	1594.2	1615.3	1647.1	1655.8	1657.4	1651.9	1642.7	1623.6	1599.0
39°	1517.5	1544.5	1568.4	1589.8	1620.9	1628.8	1630.8	1626.0	1617.7	1599.0	1574.0
39.5°	1490.5	1516.3	1541.0	1562.0	1593.4	1601.8	1603.8	1599.4	1591.4	1572.8	1547.3
40°	1462.7	1488.5	1512.3	1533.8	1566.0	1574.3	1575.9	1572.4	1563.6	1546.1	1522.3
40.5°	1432.5	1459.1	1483.3	1504.8	1536.6	1545.3	1548.1	1544.1	1535.8	1518.3	1493.3
41°	1403.4	1429.7	1453.9	1475.8	1508.0	1516.7	1518.7	1515.1	1507.6	1489.3	1464.3
41.5°	1374.8	1400.3	1424.5	1446.8	1479.4	1487.7	1490.5	1486.1	1478.2	1459.5	1434.8
42°	1345.8	1370.8	1395.1	1417.4	1450.3	1460.3	1462.7	1458.7	1449.9	1431.7	1407.8
42.5°	1314.0	1339.8	1364.5	1387.1	1421.3	1430.9	1434.0	1430.5	1421.3	1403.0	1378.0
43°	1285.4	1310.8	1335.9	1358.1	1391.5	1401.5	1404.6	1400.3	1391.5	1372.4	1348.6
43.5°	1258.8	1283.8	1308.8	1331.1	1363.7	1373.6	1376.4	1371.2	1360.9	1341.8	1318.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1188.0	1212.7	1236.5	1257.6	1287.8	1297.3	1300.1	1294.5	1283.4	1263.9	1241.3
45.5°	1165.8	1190.8	1214.6	1235.3	1264.7	1273.9	1276.6	1271.1	1260.0	1241.3	1218.2
46°	1145.1	1170.1	1193.2	1213.9	1242.5	1251.2	1254.0	1248.4	1237.7	1219.0	1196.4
46.5°	1124.4	1149.5	1172.1	1192.4	1220.6	1229.7	1232.5	1227.4	1216.2	1197.6	1174.9
47°	1104.2	1128.8	1151.8	1171.7	1199.1	1208.3	1211.1	1205.9	1194.8	1176.9	1154.6
47.5°	1083.9	1108.5	1131.2	1151.1	1178.1	1187.6	1190.4	1184.4	1173.7	1156.2	1134.0
48°	1063.2	1087.9	1109.7	1130.4	1157.0	1166.9	1169.3	1163.8	1153.4	1135.9	1113.7
48.5°	1040.2	1064.4	1087.5	1108.5	1136.3	1146.3	1149.1	1143.9	1132.8	1115.3	1093.4
49°	1015.1	1037.8	1061.2	1084.3	1113.7	1124.4	1128.0	1122.4	1110.5	1092.2	1071.2
49.5°	989.7	1011.1	1035.0	1058.8	1089.8	1101.4	1104.5	1098.2	1086.3	1067.2	1045.7
50°	960.7	981.3	1005.2	1031.0	1065.2	1077.9	1081.1	1074.3	1061.2	1042.1	1020.7
50.5°	930.1	951.1	975.8	1002.4	1038.2	1051.3	1054.1	1049.3	1035.0	1015.9	992.9
51°	898.7	920.5	943.6	971.4	1009.2	1021.1	1025.5	1020.7	1007.2	986.9	964.2
51.5°	866.9	888.3	911.8	938.8	978.6	991.3	996.8	990.1	978.2	957.1	934.4
52°	834.3	855.3	878.4	904.6	945.2	960.3	965.8	959.5	946.8	926.1	903.8
52.5°	801.3	822.0	845.8	870.0	911.0	928.5	934.0	927.7	913.4	893.5	872.4
53°	767.5	788.2	810.4	833.9	875.6	895.5	902.6	894.3	878.0	859.3	840.6
53.5°	733.7	753.6	776.2	797.7	839.8	862.5	870.8	861.7	843.4	825.9	807.2
54°	699.5	719.0	740.1	760.7	803.7	827.5	837.5	825.9	808.0	791.0	773.5
54.5°	665.7	686.0	704.3	724.6	767.9	792.9	802.9	791.0	771.9	756.0	739.3
55°	632.0	651.0	667.7	688.0	731.7	759.2	769.5	756.8	736.9	721.0	705.9
55.5°	597.8	616.5	632.4	651.8	696.8	723.4	735.7	721.8	702.7	685.2	670.9
56°	564.4	581.5	596.6	614.9	660.6	687.6	699.9	685.2	667.3	649.1	636.3
56.5°	531.4	548.1	560.4	579.5	625.2	653.0	665.0	650.6	632.8	613.7	601.8
57°	498.8	513.5	524.7	544.1	589.8	616.5	629.6	616.1	598.2	579.1	568.0
57.5°	466.2	480.1	490.5	510.3	556.4	581.9	595.0	582.3	565.2	544.5	533.0
58°	434.4	446.7	457.1	476.2	522.7	546.5	559.2	547.7	531.4	509.9	499.6
58.5°	403.4	414.6	423.7	444.0	490.1	512.7	524.3	514.7	499.6	477.4	467.0
59°	372.8	382.0	391.1	411.8	457.1	478.5	489.3	480.9	466.6	445.2	434.0
59.5°	344.2	351.4	360.1	380.0	424.9	445.6	454.7	449.5	434.0	414.2	402.6
60°	314.8	320.0	329.5	349.8	393.1	412.6	421.3	416.1	402.6	385.1	372.8
60.5°	286.6	290.9	300.1	320.4	363.3	382.0	389.9	385.9	373.2	356.1	343.4
61°	259.5	262.3	271.1	290.5	333.9	351.4	358.5	356.1	343.8	327.1	314.0
61.5°	233.3	235.7	244.0	264.7	304.1	320.8	327.1	325.9	314.4	298.1	284.6
62°	207.5	209.1	218.6	237.7	274.2	290.1	295.7	295.7	285.0	269.1	255.2
62.5°	183.6	184.4	193.6	212.2	246.4	259.5	264.3	265.5	255.6	242.8	229.3
63°	160.2	160.6	170.5	188.4	219.8	231.7	236.1	237.7	225.4	217.8	204.3
63.5°	136.3	139.1	147.9	165.3	194.0	204.3	209.1	210.3	197.1	193.6	180.8
64°	116.5	121.6	130.4	143.1	169.7	179.3	183.6	184.8	169.7	170.1	158.6
64.5°	96.6	104.5	112.9	125.2	146.3	155.0	159.4	159.8	143.1	148.3	137.5
65°	76.7	87.8	95.4	107.3	124.8	132.0	136.7	136.7	117.6	126.8	118.0
65.5°	56.8	70.7	77.9	89.4	104.1	110.9	115.3	114.5	95.0	107.3	100.6
66°	41.7	53.7	60.4	71.5	85.1	91.0	95.4	93.8	73.9	88.6	83.1



TEST NUMBER: P776342

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	13.1	22.7	26.2	29.0	44.5	48.1	51.7	50.5	33.8	49.3	46.5
68°	10.3	15.5	18.3	19.5	33.0	35.8	38.6	38.2	20.3	37.8	36.2
68.5°	7.6	11.9	11.1	12.3	21.1	23.5	25.8	25.8	6.8	26.2	25.4
69°	4.8	8.7	8.7	9.5	9.5	11.5	13.1	13.5	3.2	15.1	15.1
69.5°	2.0	5.2	6.4	6.8	4.8	6.0	6.8	7.6	2.0	9.1	8.7
70°	1.6	2.0	4.0	4.0	2.4	2.8	3.2	3.6	1.6	4.8	4.8
70.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.0	1.6	2.4	2.4
71°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
71.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.6	1.6	1.6
72°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.6	1.6
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
73°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
73.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
74°	0.8	0.8	1.2	0.8	0.8	0.8	0.8	0.8	0.8	1.2	1.2
74.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.2
75°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.8	0.8
78°	0.8	0.4	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.8	0.8
78.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.4	0.4
85°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
85.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
86°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
86.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
87°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
87.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
88°	0.4	0.8	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
88.5°	0.4	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.4	0.4



TEST NUMBER: P776342

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.4	1.2	1.2	0.8	0.4	0.0	0.0	0.4	0.0	0.8	0.4



TEST NUMBER: P776342

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2646.3	2646.3	2646.3	2646.3	2646.3	2646.3
0.5°	2644.7	2645.9	2644.7	2643.1	2643.5	2644.3
1°	2643.5	2643.9	2642.3	2640.7	2641.1	2642.3
1.5°	2641.5	2641.1	2639.2	2637.6	2638.0	2639.9
2°	2639.5	2638.4	2636.0	2634.4	2635.2	2636.8
2.5°	2636.8	2634.8	2632.4	2630.4	2631.2	2633.6
3°	2633.6	2631.2	2628.4	2626.4	2627.2	2630.0
3.5°	2630.4	2626.8	2624.0	2622.1	2622.9	2625.6
4°	2626.4	2622.5	2619.3	2617.3	2618.1	2620.9
4.5°	2622.1	2617.3	2614.1	2611.7	2612.9	2615.7
5°	2617.3	2612.1	2608.9	2606.6	2607.4	2610.5
5.5°	2612.1	2606.2	2603.0	2600.2	2601.0	2604.6
6°	2606.6	2600.2	2596.6	2594.2	2594.6	2597.8
6.5°	2600.2	2593.8	2590.3	2587.5	2587.5	2591.5
7°	2593.8	2586.7	2583.1	2580.3	2580.7	2584.3
7.5°	2587.1	2579.1	2575.6	2572.8	2573.2	2576.4
8°	2579.5	2571.6	2567.6	2564.8	2564.8	2568.4
8.5°	2571.6	2563.2	2559.7	2556.5	2556.5	2559.7
9°	2563.2	2554.5	2550.9	2548.1	2547.3	2550.9
9.5°	2554.5	2545.3	2541.8	2539.0	2538.2	2541.4
10°	2545.3	2535.8	2532.2	2529.5	2528.3	2531.4
10.5°	2535.8	2525.9	2522.3	2519.5	2518.3	2521.1
11°	2525.5	2515.5	2512.0	2509.2	2507.6	2510.4
11.5°	2515.1	2504.4	2501.2	2498.4	2496.9	2499.2
12°	2504.8	2493.7	2490.1	2487.3	2485.3	2488.1
12.5°	2493.3	2481.8	2478.6	2475.8	2473.8	2476.2
13°	2481.8	2469.8	2467.0	2464.3	2461.5	2463.9
13.5°	2469.4	2457.1	2454.7	2451.5	2449.2	2451.5
14°	2457.1	2444.4	2442.0	2438.8	2436.4	2438.8
14.5°	2444.8	2431.7	2429.3	2426.1	2423.3	2425.7
15°	2431.3	2418.2	2415.8	2412.6	2409.4	2412.2
15.5°	2417.8	2404.6	2401.9	2399.1	2395.9	2398.7
16°	2404.3	2390.3	2387.6	2384.8	2382.0	2384.4
16.5°	2390.3	2376.0	2373.6	2370.9	2367.3	2370.5
17°	2376.4	2361.7	2358.9	2356.2	2353.0	2355.4
17.5°	2362.1	2346.6	2343.8	2341.1	2337.5	2340.7
18°	2347.0	2331.5	2328.7	2326.0	2322.4	2325.6
18.5°	2331.9	2316.0	2312.8	2310.4	2306.9	2310.4
19°	2316.4	2300.5	2297.3	2294.6	2291.4	2294.9
19.5°	2301.3	2285.0	2281.4	2278.7	2275.5	2279.8
20°	2285.8	2268.7	2264.7	2262.0	2259.2	2263.5
20.5°	2269.9	2252.4	2248.4	2245.7	2242.9	2247.7
21°	2254.0	2235.3	2231.8	2228.6	2226.2	2231.4

TEST NUMBER: P776342

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2204.7	2185.2	2180.1	2176.9	2175.7	2181.7
23°	2188.0	2167.8	2162.6	2158.2	2158.6	2165.4
23.5°	2171.3	2150.3	2144.7	2141.1	2141.1	2148.3
24°	2154.2	2132.8	2126.4	2122.4	2123.6	2131.2
24.5°	2136.8	2115.3	2108.5	2104.6	2105.4	2114.1
25°	2119.7	2097.8	2089.9	2085.5	2087.5	2096.6
25.5°	2102.2	2079.9	2071.6	2067.6	2070.0	2079.5
26°	2084.3	2061.6	2052.5	2047.7	2051.7	2061.6
26.5°	2066.4	2043.0	2034.2	2029.4	2033.4	2043.8
27°	2048.5	2024.7	2014.7	2010.0	2014.7	2026.3
27.5°	2030.6	2006.0	1995.7	1990.5	1995.7	2008.0
28°	2012.4	1986.9	1976.2	1971.0	1976.6	1989.7
28.5°	1993.7	1967.8	1956.7	1951.1	1957.5	1971.0
29°	1975.0	1948.8	1936.8	1930.9	1938.4	1952.3
29.5°	1956.3	1929.3	1917.0	1911.0	1918.6	1933.7
30°	1937.2	1909.8	1896.3	1891.1	1898.7	1915.0
30.5°	1917.8	1889.9	1876.0	1870.5	1878.8	1895.1
31°	1898.7	1869.7	1855.4	1849.4	1858.5	1875.2
31.5°	1878.4	1849.4	1834.7	1828.7	1837.9	1855.8
32°	1858.1	1829.1	1813.2	1807.7	1817.6	1835.9
32.5°	1838.3	1808.5	1792.2	1786.6	1796.5	1815.6
33°	1817.6	1787.0	1771.1	1765.5	1775.5	1794.9
33.5°	1796.9	1765.5	1749.6	1743.7	1754.4	1774.3
34°	1775.5	1744.1	1728.2	1721.8	1732.9	1752.8
34.5°	1754.0	1722.2	1705.5	1699.9	1711.1	1731.3
35°	1732.5	1699.9	1683.3	1677.7	1688.8	1709.5
35.5°	1710.7	1677.3	1661.4	1655.4	1666.6	1686.8
36°	1688.8	1654.2	1638.3	1632.8	1643.9	1664.2
36.5°	1665.8	1631.2	1615.7	1609.7	1621.2	1640.7
37°	1642.3	1607.3	1591.8	1586.7	1597.8	1617.7
37.5°	1618.9	1583.1	1568.0	1563.2	1574.0	1593.8
38°	1594.6	1558.8	1544.1	1539.0	1549.7	1568.8
38.5°	1570.0	1533.4	1519.1	1514.3	1524.7	1543.7
39°	1544.1	1508.0	1494.5	1489.7	1500.0	1517.5
39.5°	1518.7	1481.3	1467.8	1463.9	1472.6	1490.5
40°	1492.1	1454.3	1440.4	1436.4	1444.8	1462.7
40.5°	1463.9	1426.1	1412.2	1408.2	1415.8	1432.5
41°	1434.8	1397.1	1383.6	1379.2	1387.5	1403.4
41.5°	1405.8	1368.1	1354.6	1351.0	1358.1	1374.8
42°	1378.0	1340.6	1326.7	1322.4	1330.3	1345.8
42.5°	1349.4	1312.0	1297.7	1292.2	1299.7	1314.0
43°	1320.4	1282.2	1268.3	1263.9	1270.7	1285.4
43.5°	1290.6	1253.2	1239.7	1235.3	1242.9	1258.8



TEST NUMBER: P776342

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1213.9	1179.7	1166.9	1163.4	1171.3	1188.0
45.5°	1191.2	1157.0	1144.3	1141.5	1149.5	1165.8
46°	1169.7	1135.9	1123.6	1120.4	1128.8	1145.1
46.5°	1148.3	1115.7	1103.0	1100.2	1108.1	1124.4
47°	1128.8	1095.8	1082.7	1079.9	1087.9	1104.2
47.5°	1108.1	1074.7	1062.8	1059.6	1068.0	1083.9
48°	1088.3	1055.7	1042.9	1039.8	1047.7	1063.2
48.5°	1068.4	1034.6	1023.1	1019.1	1026.6	1040.2
49°	1046.5	1013.5	1001.2	996.8	1003.2	1015.1
49.5°	1022.3	988.9	978.6	973.8	978.2	989.7
50°	997.2	965.0	953.9	949.1	951.5	960.7
50.5°	970.2	937.2	927.7	921.3	922.1	930.1
51°	940.8	908.6	898.3	891.5	891.9	898.7
51.5°	911.4	877.6	867.7	859.3	860.9	866.9
52°	881.6	846.6	835.1	826.3	827.1	834.3
52.5°	850.2	813.6	801.7	792.9	793.3	801.3
53°	818.4	781.0	767.9	758.4	759.2	767.5
53.5°	785.4	747.6	733.3	723.8	724.6	733.7
54°	752.8	714.6	699.1	689.2	690.0	699.5
54.5°	719.8	682.0	665.4	654.6	655.4	665.7
55°	687.6	649.1	630.8	619.6	621.2	632.0
55.5°	654.2	615.3	597.4	584.3	587.8	597.8
56°	620.4	582.7	563.6	550.1	554.5	564.4
56.5°	587.8	550.5	531.0	516.7	521.9	531.4
57°	554.1	518.7	497.6	483.3	488.9	498.8
57.5°	521.9	487.3	465.8	451.1	456.7	466.2
58°	489.7	456.3	434.8	420.1	425.3	434.4
58.5°	457.1	425.3	404.6	389.1	395.5	403.4
59°	425.3	395.5	375.2	359.7	364.5	372.8
59.5°	395.5	366.5	345.8	331.1	336.3	344.2
60°	366.1	337.8	317.6	303.3	308.4	314.8
60.5°	336.7	308.8	290.5	277.0	281.0	286.6
61°	307.2	281.8	263.9	252.0	254.0	259.5
61.5°	277.8	255.2	239.3	228.5	230.1	233.3
62°	250.4	228.9	215.0	204.7	205.9	207.5
62.5°	224.2	203.9	192.0	183.2	182.4	183.6
63°	198.7	180.1	170.1	162.2	160.2	160.2
63.5°	174.5	157.4	149.8	143.1	140.3	136.3
64°	151.4	135.5	132.8	127.2	124.0	116.5
64.5°	130.8	117.6	116.1	110.9	107.7	96.6
65°	110.5	99.8	99.4	95.0	91.0	76.7
65.5°	92.2	82.3	82.3	79.1	74.7	56.8
66°	75.5	64.4	65.6	63.2	58.0	41.7



TEST NUMBER: P776342

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	41.3	29.0	30.6	30.2	25.0	13.1
68°	31.8	20.7	22.3	21.5	17.5	10.3
68.5°	22.3	14.3	14.7	14.3	14.3	7.6
69°	12.7	11.1	11.5	11.1	11.1	4.8
69.5°	7.6	7.9	8.3	7.9	7.9	2.0
70°	4.0	4.8	4.8	4.8	4.8	1.6
70.5°	2.0	1.6	1.6	1.6	1.6	1.6
71°	1.6	1.6	1.6	1.6	1.6	1.6
71.5°	1.6	1.2	1.2	1.2	1.2	1.2
72°	1.2	1.2	1.2	1.2	1.2	1.2
72.5°	1.2	1.2	1.2	1.2	1.2	1.2
73°	1.2	1.2	1.2	1.2	1.2	1.2
73.5°	1.2	1.2	1.2	1.2	1.2	1.2
74°	1.2	1.2	1.2	1.2	0.8	0.8
74.5°	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.8	0.8	0.8	0.8	0.8	0.8
77°	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.8	0.8
78°	0.8	0.8	0.8	0.8	0.8	0.8
78.5°	0.4	0.8	0.8	0.8	0.8	0.4
79°	0.4	0.4	0.8	0.8	0.8	0.4
79.5°	0.4	0.4	0.8	0.8	0.4	0.4
80°	0.4	0.4	0.8	0.8	0.4	0.4
80.5°	0.4	0.4	0.8	0.8	0.4	0.4
81°	0.4	0.4	0.8	0.8	0.4	0.4
81.5°	0.4	0.4	0.8	0.8	0.4	0.4
82°	0.4	0.4	0.8	0.8	0.4	0.4
82.5°	0.4	0.4	0.8	0.8	0.4	0.4
83°	0.4	0.4	0.8	0.8	0.4	0.4
83.5°	0.4	0.4	0.8	0.8	0.4	0.4
84°	0.4	0.4	0.8	0.8	0.4	0.4
84.5°	0.4	0.4	0.8	0.8	0.4	0.4
85°	0.4	0.4	0.8	0.8	0.8	0.4
85.5°	0.4	0.4	0.8	0.8	0.8	0.4
86°	0.4	0.4	0.8	0.8	0.8	0.4
86.5°	0.4	0.4	0.8	1.2	0.8	0.4
87°	0.4	0.4	1.2	1.2	1.2	0.4
87.5°	0.4	0.8	1.2	1.6	1.2	0.4
88°	0.4	0.8	1.6	2.0	1.6	0.4
88.5°	0.4	0.8	2.0	2.4	2.0	0.4



TEST NUMBER: P776342

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.4	1.6	2.8	2.0	2.8	0.4



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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°	2215.1	2233.7	2262.0	2290.6	2326.3	2339.5	2337.9	2325.6	2306.1	2284.2	2259.6
22°	2198.4	2217.4	2245.7	2275.1	2310.4	2324.0	2322.4	2309.7	2290.6	2268.3	2243.3



44°	1233.7	1259.2	1283.4	1305.7	1337.5	1347.4	1349.8	1344.2	1333.1	1313.6	1291.0
44.5°	1210.3	1235.3	1259.6	1281.0	1312.0	1321.6	1323.9	1319.2	1307.7	1288.2	1264.3



66.5°	30.2	41.3	47.3	53.7	68.0	72.7	77.1	75.1	60.4	71.9	68.0
67°	20.7	31.0	36.2	40.5	56.4	60.4	64.4	62.8	46.9	60.4	57.2



89°	0.4	0.8	1.2	0.8	0.0	0.0	0.0	0.4	0.0	0.4	0.4
89.5°	0.4	1.2	1.2	0.8	0.4	0.0	0.0	0.4	0.0	0.4	0.4

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21.5°	2238.1	2218.6	2214.7	2211.5	2209.9	2215.1
22°	2221.0	2201.9	2197.6	2193.6	2192.4	2198.4



44°	1263.1	1227.4	1214.6	1209.9	1218.2	1233.7
44.5°	1237.7	1203.1	1190.0	1186.4	1194.4	1210.3

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66.5°	60.8	50.5	52.9	50.9	45.7	30.2
67°	50.9	38.6	40.9	39.7	34.6	20.7



89°	0.4	1.2	2.0	2.8	2.0	0.4
89.5°	0.4	1.2	2.4	2.8	2.4	0.4

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Scaled Data Report



(END OF REPORT)