

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: P776304

Luminaire Tested: HCDJBS3040CSD-HCD4TRMB-4000lm-5000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776304
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: HCDJBL3040CSD-HCD4TRMB-4000lm-5000K
Description: 4 INCH ROUND MEDIUM MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2590.9 lumens
Efficiency: N/A
Efficacy: 67.3 lumens/watt
Spacing Criteria (0/90/45): 0.95 / 0.95 / 0.94
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

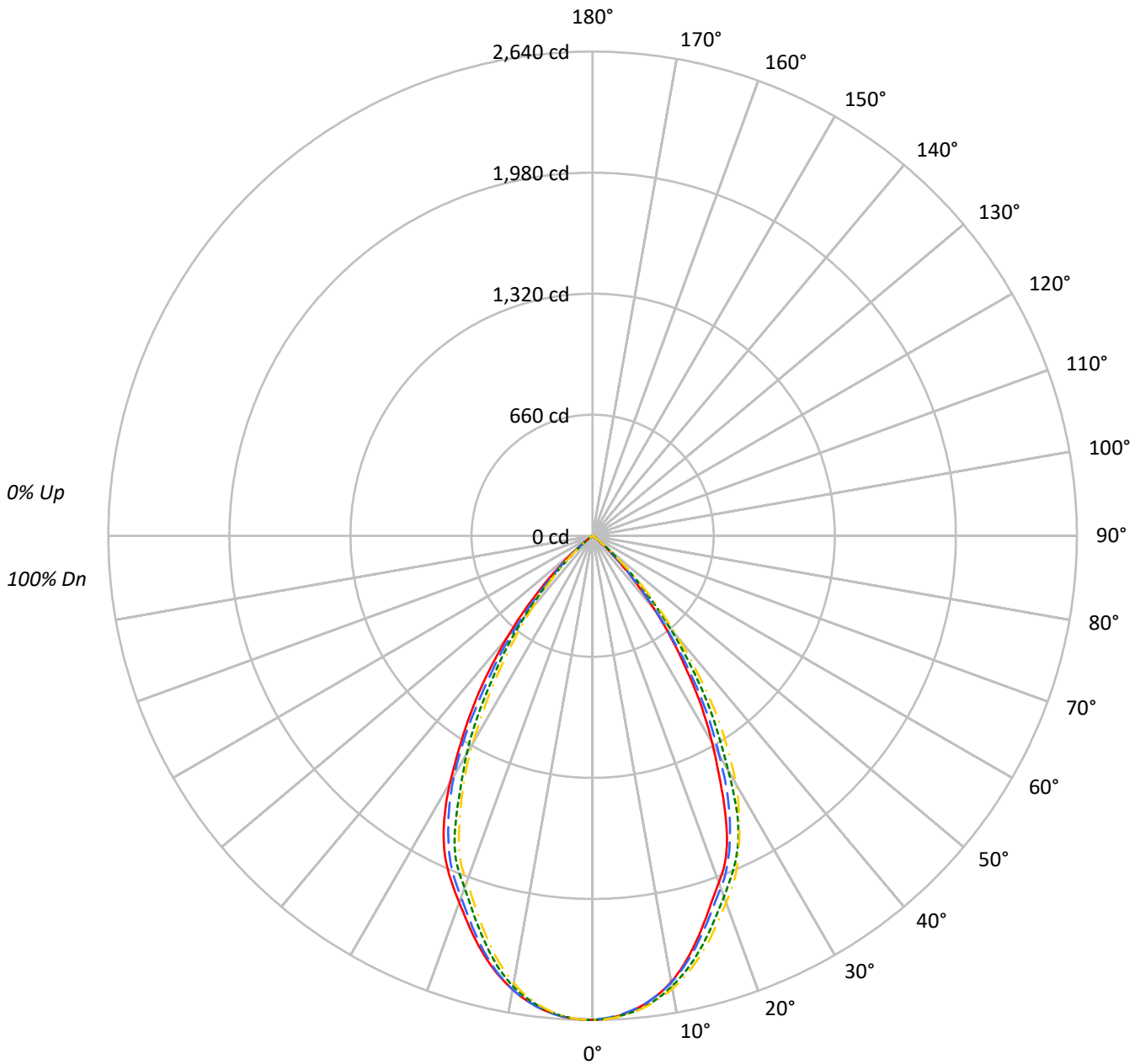
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93								
2	108	103	98	95	105	101	97	94	98	95	92	95	92	90	92	90	88	86								
3	102	95	90	86	100	94	89	85	91	87	84	89	86	83	87	84	82	80								
4	97	89	83	79	95	88	82	78	85	81	77	83	80	76	82	78	76	74								
5	91	83	77	72	90	82	76	72	80	75	71	78	74	71	77	73	70	69								
6	87	77	71	67	85	77	71	67	75	70	66	74	69	66	72	68	65	64								
7	82	72	66	62	81	72	66	62	70	65	61	69	65	61	68	64	61	59								
8	78	68	62	58	77	67	62	57	66	61	57	65	60	57	64	60	57	55								
9	74	64	58	54	73	63	58	54	62	57	53	62	57	53	61	56	53	52								
10	70	60	54	50	69	60	54	50	59	54	50	58	53	50	57	53	50	48								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	332143	332143	332143	332143
5°	327777	328914	329900	329280
10°	315517	318660	321063	318762
15°	293008	301112	305164	297698
20°	269514	280362	284795	273451
25°	239325	259890	265000	246712
30°	189394	214897	225898	199552
35°	137672	163574	174206	146659
40°	86184	108034	119863	94710
45°	38959	57896	66706	44495
50°	11297	17699	23064	13294
55°	1799	1799	2414	2238
60°	730	730	831	730
65°	476	476	476	476
70°	294	442	442	442
75°	194	389	194	389
80°	0	290	290	290
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 180°
 Vertical Angle: 45°
 Luminance: 66706 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	245.0	9.5
10°-20°	642.7	24.8
20°-30°	820.2	31.7
30°-40°	627.1	24.2
40°-50°	234.4	9.0
50°-60°	19.1	0.7
60°-70°	1.7	0.1
70°-80°	0.7	0.0
80°-90°	0.1	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°	1707.9	65.9
0°-40°	2335.0	90.1
0°-60°	2588.5	99.9
0°-90°	2590.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2590.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2639	2639	2639	2639	2639	
5°	2595	2604	2611	2606	2595	244
15°	2249	2311	2342	2285	2249	629
25°	1724	1872	1908	1777	1724	775
35°	896	1065	1134	955	896	558
45°	219	325	375	250	219	184
55°	8	8	11	10	8	13
65°	2	2	2	2	2	2
75°	0	1	0	1	0	1
85°	0	0	0	0	0	0
90°	0	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°	2639.2	2639.2	2639.2	2639.2	2639.2	2639.2	2639.2	2639.2	2639.2	2639.2	2639.2
0.5°	2638.4	2636.4	2636.4	2636.4	2638.4	2638.8	2640.1	2640.9	2639.7	2638.4	2638.4
1°	2636.8	2634.7	2634.3	2634.7	2636.8	2637.6	2638.8	2639.7	2639.2	2638.4	2638.0
1.5°	2634.3	2631.9	2631.5	2631.9	2634.7	2636.0	2637.2	2638.4	2637.6	2637.2	2637.6
2°	2631.1	2628.6	2627.8	2628.6	2632.3	2633.5	2634.7	2636.0	2636.0	2635.6	2636.0
2.5°	2627.0	2624.1	2623.7	2624.9	2629.0	2630.2	2631.5	2633.1	2633.5	2633.1	2633.5
3°	2622.1	2619.2	2618.8	2620.4	2624.9	2626.6	2627.8	2629.4	2630.2	2630.2	2630.7
3.5°	2616.3	2613.1	2613.5	2615.5	2620.4	2622.1	2623.7	2625.3	2626.6	2627.0	2627.0
4°	2609.8	2606.9	2606.9	2609.4	2615.5	2617.1	2618.4	2620.4	2622.1	2622.9	2622.9
4.5°	2602.4	2599.6	2600.0	2603.2	2610.2	2611.8	2613.1	2615.1	2617.1	2618.0	2618.0
5°	2594.6	2591.4	2591.8	2595.9	2603.6	2605.3	2606.5	2609.0	2611.4	2612.6	2612.2
5.5°	2585.6	2582.0	2583.6	2587.7	2596.3	2597.9	2599.6	2602.0	2604.9	2606.1	2605.3
6°	2576.2	2572.5	2574.2	2579.1	2588.5	2590.1	2591.8	2594.6	2597.9	2599.1	2597.9
6.5°	2566.0	2562.7	2564.8	2569.7	2579.5	2582.0	2583.6	2586.5	2590.1	2591.4	2590.1
7°	2555.0	2551.7	2554.1	2559.0	2569.7	2572.5	2574.6	2577.9	2581.1	2582.8	2581.5
7.5°	2543.1	2540.2	2542.3	2547.6	2559.0	2562.3	2565.2	2568.0	2571.3	2573.4	2572.1
8°	2530.4	2527.9	2530.0	2535.7	2547.6	2551.3	2555.0	2558.2	2561.5	2562.7	2561.5
8.5°	2516.5	2514.9	2517.3	2522.6	2535.3	2539.4	2544.3	2547.2	2550.0	2552.1	2550.5
9°	2501.8	2500.5	2503.4	2508.7	2522.2	2527.5	2532.9	2535.7	2538.6	2539.8	2538.6
9.5°	2485.4	2485.4	2488.7	2494.4	2508.3	2514.4	2520.6	2524.3	2525.9	2527.1	2525.9
10°	2469.0	2469.0	2472.7	2478.8	2493.6	2500.9	2507.5	2511.2	2512.4	2513.2	2512.0
10.5°	2451.8	2451.8	2455.9	2462.9	2479.3	2486.2	2493.6	2497.7	2498.5	2498.9	2497.3
11°	2432.2	2433.0	2438.3	2445.3	2462.9	2471.1	2479.3	2483.3	2484.2	2483.8	2481.7
11.5°	2412.1	2413.8	2419.9	2427.3	2446.1	2455.5	2464.5	2468.2	2468.2	2467.8	2464.9
12°	2390.9	2393.3	2400.3	2408.5	2429.3	2439.2	2448.6	2452.7	2452.7	2451.0	2448.2
12.5°	2368.8	2371.6	2379.4	2389.2	2410.9	2421.6	2431.8	2436.3	2435.9	2433.4	2430.2
13°	2345.9	2349.5	2358.5	2369.2	2392.1	2403.6	2415.0	2419.5	2418.3	2415.0	2410.1
13.5°	2322.1	2327.0	2336.4	2347.9	2373.3	2385.1	2396.6	2401.1	2400.3	2396.6	2390.9
14°	2298.0	2303.7	2314.8	2327.0	2352.4	2366.3	2377.8	2383.1	2381.5	2376.5	2370.0
14.5°	2273.4	2280.0	2291.8	2305.3	2331.9	2346.7	2358.1	2363.5	2361.8	2356.5	2348.3
15°	2248.9	2255.8	2268.5	2282.8	2311.1	2326.2	2338.5	2343.8	2342.2	2335.6	2326.6
15.5°	2223.5	2231.7	2244.8	2260.7	2290.2	2305.3	2318.4	2323.4	2321.7	2314.8	2304.1
16°	2198.1	2207.1	2221.9	2237.8	2268.1	2284.9	2298.0	2302.9	2300.8	2293.1	2281.6
16.5°	2173.6	2183.4	2198.6	2215.3	2246.4	2263.6	2276.3	2282.8	2280.0	2271.4	2258.7
17°	2149.0	2158.9	2174.8	2192.8	2224.3	2241.9	2255.4	2261.2	2258.3	2248.9	2235.8
17.5°	2124.5	2134.7	2151.5	2170.3	2201.8	2219.8	2233.3	2238.7	2236.2	2226.4	2212.1
18°	2099.9	2111.0	2128.2	2147.4	2179.7	2198.1	2211.6	2217.8	2214.1	2203.9	2189.1
18.5°	2076.2	2088.5	2105.3	2124.9	2157.2	2176.5	2190.4	2195.7	2191.6	2181.0	2165.4
19°	2054.1	2066.8	2084.4	2103.2	2135.5	2155.2	2168.7	2174.0	2169.5	2158.5	2142.1
19.5°	2033.2	2046.3	2063.1	2082.3	2114.7	2133.9	2148.2	2153.1	2148.6	2135.9	2119.2
20°	2012.4	2025.9	2042.7	2061.9	2093.4	2113.0	2128.6	2132.7	2126.5	2114.7	2097.5
20.5°	1991.9	2005.0	2022.2	2041.0	2072.9	2093.0	2108.1	2112.6	2106.5	2093.4	2076.2
21°	1971.0	1984.5	2000.9	2020.1	2052.5	2072.9	2087.3	2092.6	2086.0	2072.9	2055.3



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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°	1897.8	1910.5	1926.4	1951.8	1990.3	2010.3	2023.4	2029.6	2024.6	2011.1	1991.5
23°	1868.3	1881.4	1898.2	1928.1	1968.6	1987.8	1999.3	2006.6	2003.8	1989.5	1968.2
23.5°	1836.4	1850.3	1868.7	1901.1	1946.1	1963.7	1972.7	1980.9	1981.3	1967.4	1943.2
24°	1800.8	1815.6	1837.7	1872.8	1923.2	1937.9	1944.4	1954.7	1958.0	1944.4	1917.0
24.5°	1763.2	1777.9	1804.5	1843.0	1898.2	1911.7	1916.2	1926.4	1933.8	1919.9	1888.4
25°	1723.5	1737.8	1772.2	1812.7	1871.6	1883.5	1886.3	1897.4	1908.4	1894.9	1858.9
25.5°	1681.8	1696.9	1738.2	1779.5	1843.8	1853.6	1854.4	1866.7	1881.4	1867.9	1828.2
26°	1638.4	1655.2	1704.3	1747.6	1813.5	1822.1	1823.3	1835.6	1852.4	1839.7	1797.1
26.5°	1594.2	1613.4	1667.4	1714.1	1780.4	1789.4	1792.6	1804.1	1821.3	1809.0	1764.0
27°	1549.6	1572.5	1630.2	1679.3	1744.8	1756.2	1762.0	1772.6	1788.1	1775.5	1730.9
27.5°	1507.0	1532.0	1591.3	1643.7	1705.5	1722.3	1730.9	1740.7	1754.2	1740.7	1698.1
28°	1464.1	1493.5	1550.4	1605.6	1664.2	1687.5	1698.9	1708.8	1716.5	1703.4	1662.9
28.5°	1422.3	1456.3	1508.7	1565.5	1619.1	1650.7	1667.0	1676.0	1678.5	1665.4	1627.3
29°	1382.2	1419.5	1466.5	1524.6	1573.3	1613.4	1634.3	1642.9	1639.6	1623.6	1590.1
29.5°	1342.5	1382.2	1423.1	1481.3	1526.3	1574.5	1598.7	1607.3	1597.1	1581.1	1550.8
30°	1303.3	1344.2	1380.2	1435.8	1478.8	1533.6	1561.9	1571.7	1554.5	1536.9	1509.1
30.5°	1264.4	1304.9	1338.9	1388.4	1433.8	1491.5	1523.0	1533.2	1509.1	1490.7	1467.3
31°	1224.7	1264.4	1296.7	1342.1	1390.0	1448.1	1484.9	1495.6	1464.9	1444.4	1424.0
31.5°	1185.0	1222.6	1256.2	1293.4	1347.9	1404.3	1445.2	1454.7	1420.7	1397.8	1380.6
32°	1144.9	1180.5	1214.5	1246.0	1308.2	1359.7	1406.4	1413.7	1378.5	1352.8	1334.8
32.5°	1104.8	1135.9	1173.1	1199.7	1267.7	1315.9	1367.1	1370.8	1336.0	1309.0	1291.0
33°	1063.1	1092.1	1131.0	1152.3	1229.2	1272.6	1327.0	1328.6	1295.5	1265.6	1244.3
33.5°	1020.5	1048.3	1088.4	1105.6	1188.3	1229.6	1285.3	1286.1	1253.7	1223.1	1197.3
34°	978.4	1006.6	1044.7	1060.2	1147.4	1188.7	1243.9	1243.5	1214.9	1180.9	1149.4
34.5°	937.4	963.2	1001.3	1016.0	1105.2	1148.6	1201.0	1199.3	1174.0	1140.0	1104.0
35°	896.1	922.7	957.9	972.2	1064.7	1110.1	1158.0	1156.8	1133.9	1099.5	1056.9
35.5°	857.2	883.8	913.3	929.7	1019.7	1070.0	1112.6	1113.8	1092.9	1058.6	1012.7
36°	818.8	844.6	868.7	888.3	976.3	1029.5	1068.0	1070.8	1053.7	1017.2	969.8
36.5°	781.1	806.1	825.3	847.8	933.8	989.8	1022.6	1027.5	1011.5	975.1	928.0
37°	743.9	766.8	779.9	807.7	892.0	950.1	978.0	983.3	969.8	932.1	885.9
37.5°	707.1	728.8	736.1	768.4	850.3	908.8	932.9	941.5	927.6	889.6	846.6
38°	670.2	689.5	693.2	728.8	811.0	867.1	891.2	900.2	886.3	847.0	806.5
38.5°	633.4	650.6	653.1	690.3	771.7	824.9	848.2	859.7	846.2	805.3	766.8
39°	597.4	612.6	614.6	652.7	734.5	784.0	806.1	819.2	806.9	767.2	727.5
39.5°	560.2	572.9	576.1	617.5	695.2	743.1	764.4	779.1	767.6	725.9	689.1
40°	524.6	534.8	538.5	580.6	657.6	703.8	722.6	738.2	729.6	687.8	650.6
40.5°	489.0	497.6	504.1	546.3	620.7	664.9	681.3	698.5	691.1	651.4	612.6
41°	454.2	461.6	469.7	512.3	584.7	627.7	641.6	658.4	655.5	617.1	574.1
41.5°	419.8	426.8	436.6	478.7	547.5	590.0	603.1	617.9	618.7	580.6	537.7
42°	388.3	392.4	404.3	444.8	511.1	554.0	565.1	579.0	580.6	547.1	501.3
42.5°	356.8	360.5	374.0	414.1	476.7	518.0	527.8	541.8	544.2	513.1	466.9
43°	327.3	329.4	343.7	383.4	443.6	482.0	491.4	505.3	509.0	481.6	433.7
43.5°	297.9	299.5	315.9	353.1	411.6	445.6	457.5	469.7	473.4	447.2	401.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	218.9	216.9	237.7	269.2	325.3	345.8	362.1	372.4	374.8	358.4	315.9
45.5°	195.2	192.7	215.2	243.9	296.7	313.0	331.4	341.7	344.1	329.4	287.2
46°	173.1	170.6	193.5	219.7	268.0	280.3	300.8	311.0	313.4	300.3	261.5
46.5°	151.8	149.8	173.5	197.6	241.4	251.6	270.5	280.7	282.7	271.7	237.3
47°	136.7	135.0	153.9	176.4	215.6	224.6	243.1	252.1	254.1	245.1	214.0
47.5°	121.9	119.9	138.7	155.9	191.1	199.3	216.9	225.5	228.3	220.6	192.3
48°	107.2	104.8	123.6	136.7	167.8	175.9	193.1	200.1	203.4	197.2	172.3
48.5°	92.5	90.0	108.4	119.9	146.1	153.9	170.2	176.8	180.0	173.5	153.4
49°	77.7	74.9	93.3	105.6	125.6	134.2	148.5	154.3	157.5	152.2	135.4
49.5°	67.5	65.1	78.2	92.5	106.8	115.8	128.5	133.8	137.1	132.6	119.1
50°	57.7	55.6	66.3	79.4	90.4	99.0	109.7	115.4	117.8	114.2	103.9
50.5°	49.1	47.5	55.6	66.3	75.7	83.9	92.9	98.6	100.7	97.8	89.6
51°	41.3	39.7	45.8	53.2	62.6	70.0	77.3	83.1	84.7	82.2	76.9
51.5°	34.0	32.7	37.2	43.4	54.4	57.7	63.8	68.7	70.4	69.2	65.1
52°	27.8	26.6	29.5	34.4	46.2	49.1	54.4	56.5	57.7	57.3	54.4
52.5°	22.1	20.9	22.9	26.2	38.1	40.9	45.0	48.3	49.1	49.1	46.6
53°	16.8	16.0	17.2	19.6	29.9	32.3	36.0	39.7	40.9	40.5	38.9
53.5°	14.7	13.9	15.1	14.3	21.7	23.7	26.6	31.5	32.3	32.3	31.1
54°	12.7	11.5	12.7	11.9	13.5	15.5	17.6	22.9	23.7	24.1	22.9
54.5°	10.6	9.0	10.6	10.2	9.8	11.0	12.3	14.7	15.5	15.5	15.5
55°	8.2	7.0	8.2	8.2	8.2	8.6	9.4	10.6	11.0	11.5	11.5
55.5°	6.1	6.1	6.1	6.5	7.0	7.4	7.8	8.2	8.6	9.0	8.6
56°	5.7	5.3	5.3	5.7	6.1	6.5	6.5	7.0	7.4	7.4	7.4
56.5°	4.9	4.9	4.9	4.9	5.3	5.7	6.1	6.1	6.5	6.5	6.5
57°	4.5	4.5	4.5	4.5	4.9	4.9	5.3	5.7	5.7	5.7	5.7
57.5°	4.1	4.1	4.1	4.1	4.5	4.5	4.9	4.9	5.3	5.3	5.3
58°	3.7	3.7	3.7	3.7	4.1	4.1	4.1	4.5	4.5	4.5	4.5
58.5°	3.3	3.3	3.3	3.3	3.7	3.7	3.7	4.1	4.1	4.1	4.1
59°	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7	3.7	3.7	3.7
59.5°	2.9	2.9	2.9	2.9	2.9	3.3	3.3	3.3	3.3	3.3	3.3
60°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.3	3.3	3.3	3.3
60.5°	2.5	2.5	2.5	2.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9
61°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.9	2.9	2.9	2.9
61.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
62°	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5
62.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5
63°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
63.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
64°	1.6	1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.0
64.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.0
65°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
65.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
66°	1.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6



TEST NUMBER: P776304

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
68°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
68.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
69°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
69.5°	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
70°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
70.5°	0.8	0.8	0.8	0.8	1.2	1.2	1.2	0.8	0.8	0.8	1.2
71°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.2
71.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
72°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
73°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
73.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
74°	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
74.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.4	0.4	0.4	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
75.5°	0.4	0.4	0.4	0.4	0.8	0.8	0.8	0.4	0.4	0.4	0.8
76°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
76.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
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°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
81.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
82°	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776304

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-5000K

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: P776304

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2639.2	2639.2	2639.2	2639.2	2639.2	2639.2
0.5°	2638.4	2639.2	2639.7	2640.1	2640.1	2638.4
1°	2638.4	2638.8	2638.8	2639.2	2638.8	2636.8
1.5°	2637.6	2637.6	2637.6	2637.6	2636.8	2634.3
2°	2636.0	2635.6	2635.6	2635.2	2633.5	2631.1
2.5°	2633.5	2632.7	2632.3	2631.9	2629.8	2627.0
3°	2630.7	2629.0	2628.6	2627.8	2625.7	2622.1
3.5°	2626.6	2624.5	2624.1	2622.9	2620.0	2616.3
4°	2621.7	2619.2	2618.8	2617.1	2613.9	2609.8
4.5°	2616.3	2613.1	2612.2	2610.6	2607.3	2602.4
5°	2610.6	2606.5	2604.9	2602.8	2599.6	2594.6
5.5°	2603.6	2598.7	2596.7	2594.6	2590.1	2585.6
6°	2595.9	2590.1	2588.1	2585.2	2581.1	2576.2
6.5°	2587.7	2581.1	2578.7	2575.4	2570.9	2566.0
7°	2578.7	2571.3	2568.0	2564.4	2559.0	2555.0
7.5°	2568.9	2560.7	2556.6	2552.1	2546.8	2543.1
8°	2558.6	2549.2	2544.3	2539.0	2534.5	2530.4
8.5°	2547.2	2536.9	2531.2	2525.1	2520.2	2516.5
9°	2534.9	2523.9	2516.9	2509.9	2505.0	2501.8
9.5°	2521.8	2509.5	2501.8	2493.6	2487.8	2485.4
10°	2507.9	2494.4	2485.4	2476.8	2471.5	2469.0
10.5°	2492.8	2478.4	2467.8	2458.4	2453.5	2451.8
11°	2477.2	2461.2	2449.4	2439.2	2433.8	2432.2
11.5°	2460.4	2442.4	2429.7	2418.7	2413.0	2412.1
12°	2442.0	2423.2	2408.9	2397.0	2391.3	2390.9
12.5°	2423.2	2401.9	2386.8	2374.5	2368.8	2368.8
13°	2403.6	2379.8	2364.3	2351.6	2345.5	2345.9
13.5°	2382.3	2357.3	2340.5	2327.0	2322.1	2322.1
14°	2360.2	2334.0	2316.4	2302.5	2296.3	2298.0
14.5°	2337.7	2309.4	2291.4	2277.9	2271.4	2273.4
15°	2314.8	2284.9	2266.1	2252.6	2246.4	2248.9
15.5°	2291.0	2260.3	2240.7	2227.2	2221.1	2223.5
16°	2267.3	2235.0	2215.3	2200.6	2195.7	2198.1
16.5°	2243.2	2210.4	2190.0	2175.2	2170.3	2173.6
17°	2218.6	2185.5	2163.8	2149.5	2144.5	2149.0
17.5°	2194.1	2160.1	2138.4	2124.5	2119.6	2124.5
18°	2169.9	2134.7	2113.4	2098.7	2095.0	2099.9
18.5°	2145.8	2110.6	2088.1	2073.8	2070.5	2076.2
19°	2121.6	2086.0	2063.9	2050.0	2047.6	2054.1
19.5°	2098.7	2063.5	2042.2	2028.3	2025.5	2033.2
20°	2076.6	2041.8	2019.7	2007.1	2004.2	2012.4
20.5°	2055.3	2021.0	1998.9	1985.8	1983.7	1991.9
21°	2034.1	2000.1	1977.2	1964.1	1963.3	1971.0



TEST NUMBER: P776304

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1969.8	1935.0	1909.3	1892.9	1888.8	1897.8
23°	1944.4	1909.3	1881.4	1862.2	1858.1	1868.3
23.5°	1918.3	1881.0	1851.6	1829.1	1826.6	1836.4
24°	1889.6	1849.1	1817.2	1792.6	1791.0	1800.8
24.5°	1859.3	1814.3	1783.2	1755.0	1753.4	1763.2
25°	1827.0	1776.7	1745.6	1715.3	1714.5	1723.5
25.5°	1793.9	1736.2	1706.7	1676.4	1675.2	1681.8
26°	1758.7	1693.6	1665.0	1638.4	1633.5	1638.4
26.5°	1722.3	1649.0	1623.2	1599.9	1593.0	1594.2
27°	1685.0	1606.1	1578.6	1562.3	1551.6	1549.6
27.5°	1645.7	1563.5	1531.6	1522.2	1509.5	1507.0
28°	1605.6	1523.8	1486.2	1482.1	1467.7	1464.1
28.5°	1565.5	1484.9	1442.0	1440.3	1426.0	1422.3
29°	1524.2	1447.3	1399.4	1397.0	1382.6	1382.2
29.5°	1482.9	1410.9	1358.1	1351.9	1339.7	1342.5
30°	1442.8	1373.2	1317.2	1306.9	1295.5	1303.3
30.5°	1401.9	1334.4	1277.5	1260.3	1250.5	1264.4
31°	1362.2	1294.7	1237.8	1213.2	1206.3	1224.7
31.5°	1323.7	1252.5	1198.1	1168.6	1161.3	1185.0
32°	1284.4	1209.6	1157.6	1124.0	1118.7	1144.9
32.5°	1245.6	1166.2	1117.9	1080.2	1077.8	1104.8
33°	1206.7	1122.0	1077.0	1038.1	1037.3	1063.1
33.5°	1167.8	1077.8	1035.6	995.1	997.2	1020.5
34°	1126.5	1035.2	994.3	953.4	957.1	978.4
34.5°	1084.8	994.7	951.8	911.7	916.6	937.4
35°	1041.0	954.6	910.4	869.9	876.1	896.1
35.5°	998.8	917.0	870.7	828.6	835.6	857.2
36°	952.2	880.6	831.1	789.3	794.6	818.8
36.5°	908.4	842.9	793.8	751.7	753.3	781.1
37°	863.4	806.1	755.8	714.4	713.6	743.9
37.5°	820.8	768.9	718.5	678.0	675.2	707.1
38°	777.9	730.0	681.7	642.0	637.9	670.2
38.5°	737.8	691.1	645.3	606.8	602.3	633.4
39°	696.8	653.1	610.5	573.3	568.8	597.4
39.5°	657.2	614.6	574.1	538.9	535.6	560.2
40°	617.5	576.5	539.3	507.0	503.3	524.6
40.5°	580.2	539.7	505.3	474.7	471.4	489.0
41°	542.2	504.9	471.8	444.4	441.5	454.2
41.5°	505.8	470.2	439.5	415.3	411.2	419.8
42°	470.2	437.4	408.0	388.3	382.6	388.3
42.5°	435.4	404.7	377.7	360.9	354.8	356.8
43°	401.8	373.2	348.6	335.5	328.6	327.3
43.5°	371.9	340.4	321.2	310.2	302.4	297.9



TEST NUMBER: P776304

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	283.2	250.0	244.7	241.0	232.8	218.9
45.5°	257.0	222.6	221.4	219.7	211.5	195.2
46°	232.4	197.2	199.7	200.1	192.3	173.1
46.5°	209.1	173.5	178.8	181.3	173.1	151.8
47°	187.4	152.6	158.8	162.9	155.1	136.7
47.5°	167.4	137.5	140.4	146.1	140.4	121.9
48°	148.1	122.3	126.0	132.2	126.0	107.2
48.5°	130.9	107.6	111.3	118.3	111.3	92.5
49°	115.0	92.9	97.0	104.3	96.6	77.7
49.5°	100.3	78.2	82.7	90.4	81.8	67.5
50°	86.7	67.9	70.8	76.5	70.4	57.7
50.5°	74.9	58.9	60.6	65.1	58.9	49.1
51°	63.8	50.3	51.6	54.8	49.5	41.3
51.5°	54.4	43.0	43.0	45.4	40.9	34.0
52°	47.1	36.0	35.2	36.8	32.7	27.8
52.5°	40.1	29.5	28.6	29.1	25.8	22.1
53°	32.7	23.7	22.5	22.1	19.6	16.8
53.5°	25.8	18.4	17.2	16.4	14.3	14.7
54°	18.4	13.9	14.7	13.9	12.3	12.7
54.5°	13.9	11.9	12.7	11.5	10.2	10.6
55°	10.6	10.2	10.6	9.0	8.2	8.2
55.5°	8.2	8.2	8.2	6.5	6.5	6.1
56°	7.4	6.5	6.1	6.1	5.7	5.7
56.5°	6.1	5.7	5.3	5.3	5.3	4.9
57°	5.7	4.9	4.9	4.9	4.5	4.5
57.5°	4.9	4.5	4.5	4.5	4.1	4.1
58°	4.5	4.1	4.1	4.1	3.7	3.7
58.5°	4.1	3.7	3.7	3.7	3.7	3.3
59°	3.7	3.3	3.3	3.3	3.3	3.3
59.5°	3.3	3.3	3.3	3.3	2.9	2.9
60°	3.3	2.9	2.9	2.9	2.9	2.9
60.5°	2.9	2.9	2.9	2.9	2.9	2.5
61°	2.9	2.5	2.5	2.5	2.5	2.5
61.5°	2.5	2.5	2.5	2.5	2.5	2.5
62°	2.5	2.5	2.5	2.5	2.0	2.0
62.5°	2.5	2.0	2.0	2.0	2.0	2.0
63°	2.0	2.0	2.0	2.0	2.0	2.0
63.5°	2.0	2.0	2.0	2.0	2.0	2.0
64°	2.0	2.0	2.0	2.0	1.6	1.6
64.5°	2.0	1.6	1.6	1.6	1.6	1.6
65°	1.6	1.6	1.6	1.6	1.6	1.6
65.5°	1.6	1.6	1.6	1.6	1.6	1.6
66°	1.6	1.6	1.6	1.6	1.6	1.2



TEST NUMBER: P776304

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	1.2	1.2	1.2	1.2	1.2	1.2
68°	1.2	1.2	1.2	1.2	1.2	1.2
68.5°	1.2	1.2	1.2	1.2	1.2	1.2
69°	1.2	1.2	1.2	1.2	1.2	1.2
69.5°	1.2	1.2	1.2	1.2	1.2	0.8
70°	1.2	1.2	1.2	1.2	0.8	0.8
70.5°	1.2	1.2	1.2	0.8	0.8	0.8
71°	1.2	0.8	0.8	0.8	0.8	0.8
71.5°	0.8	0.8	0.8	0.8	0.8	0.8
72°	0.8	0.8	0.8	0.8	0.8	0.8
72.5°	0.8	0.8	0.8	0.8	0.8	0.8
73°	0.8	0.8	0.8	0.8	0.8	0.8
73.5°	0.8	0.8	0.8	0.8	0.8	0.8
74°	0.8	0.8	0.8	0.8	0.8	0.4
74.5°	0.8	0.8	0.8	0.8	0.4	0.4
75°	0.8	0.8	0.8	0.8	0.4	0.4
75.5°	0.8	0.8	0.8	0.4	0.4	0.4
76°	0.8	0.4	0.4	0.4	0.4	0.4
76.5°	0.4	0.4	0.4	0.4	0.4	0.4
77°	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	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
79.5°	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.0
80.5°	0.4	0.4	0.4	0.4	0.0	0.0
81°	0.4	0.4	0.4	0.4	0.0	0.0
81.5°	0.4	0.4	0.4	0.4	0.0	0.0
82°	0.4	0.4	0.4	0.0	0.0	0.0
82.5°	0.4	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776304

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-5000K

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°	1949.4	1962.5	1978.0	1998.9	2032.0	2053.3	2068.4	2072.5	2065.6	2051.7	2034.5
22°	1924.8	1937.5	1953.0	1976.8	2011.6	2032.0	2046.7	2052.1	2045.5	2031.2	2014.0



44°	270.9	270.5	288.1	323.3	383.0	410.8	423.5	435.0	438.6	416.6	373.2
44.5°	243.1	243.1	262.3	296.3	354.4	378.1	392.8	403.0	405.5	387.5	344.5



66.5°	1.2	1.2	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6
67°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.6



89°	0.0	0.0	0.0	0.0	0.0	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°	2013.2	1979.6	1957.1	1944.0	1940.8	1949.4
22°	1992.7	1958.0	1933.8	1919.9	1916.2	1924.8



44°	342.5	309.3	294.6	286.0	277.8	270.9
44.5°	312.6	279.1	269.2	262.7	254.9	243.1

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66.5°	1.6	1.6	1.6	1.6	1.2	1.2
67°	1.6	1.6	1.2	1.2	1.2	1.2

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89°	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

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Scaled Data Report



(END OF REPORT)