

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: P776305

Luminaire Tested: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776305
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-HCD4TRMW-4000lm-2700K
Description: 4 INCH ROUND MEDIUM MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

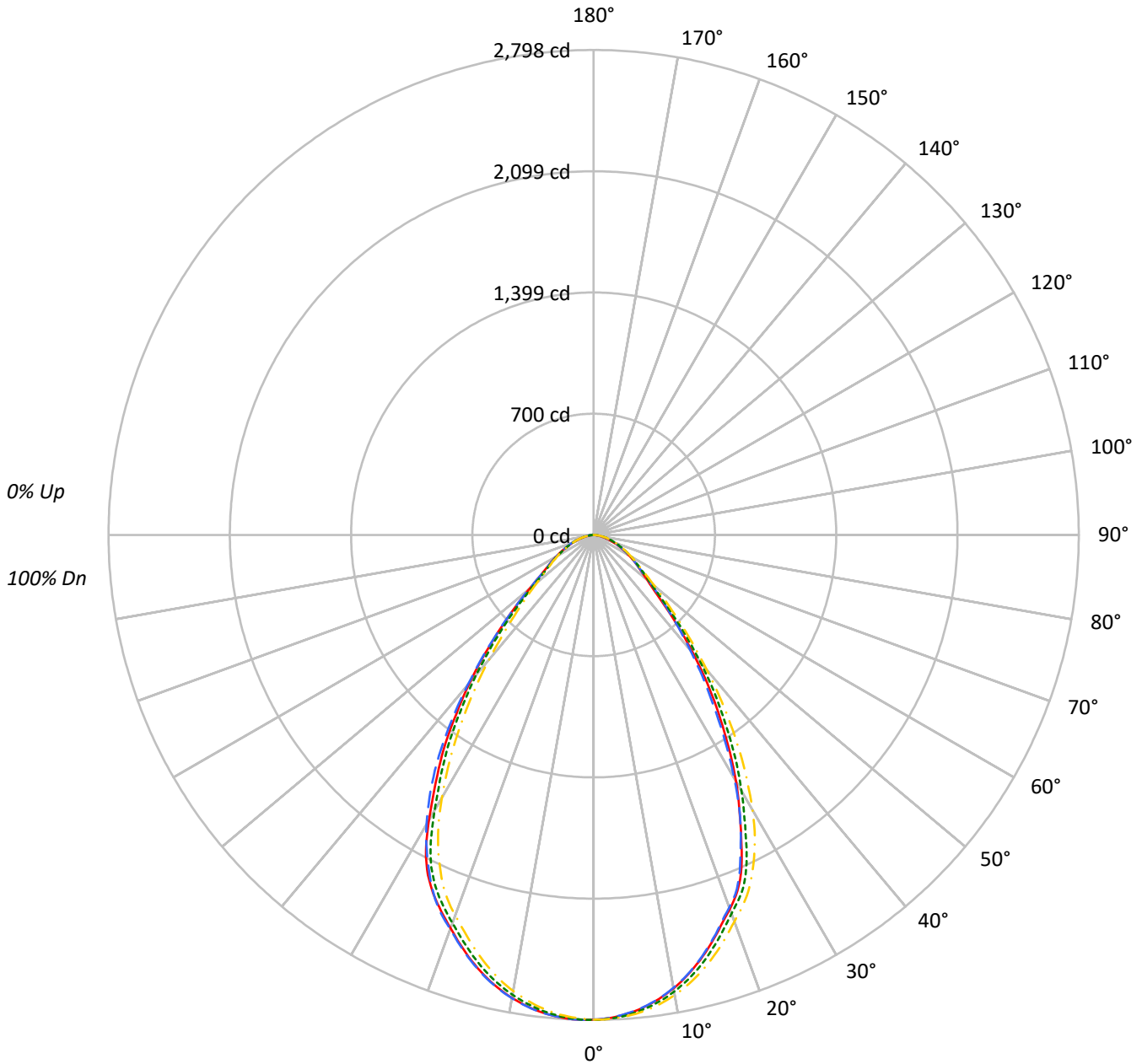
Lumens per Lamp: N/A
Luminaire Lumens: 3901.5 lumens
Efficiency: N/A
Efficacy: 101.3 lumens/watt
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.02
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P776305
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

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																			
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	76	73	72																			
4	91	82	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	65																			
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	58																			
6	80	69	62	56	78	68	61	56	66	60	56	65	60	55	64	59	55	53																			
7	75	64	57	51	74	63	56	51	62	56	51	60	55	51	59	54	50	49																			
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45																			
9	67	55	48	44	65	55	48	43	54	48	43	53	47	43	52	47	43	41																			
10	63	52	45	40	62	51	45	40	50	44	40	49	44	40	49	44	40	38																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	352002	352002	352002	352002
5°	348205	349519	351451	350390
10°	339388	341829	346646	344333
15°	324811	328668	337058	333515
20°	307509	311473	323392	319120
25°	280414	289578	309352	303756
30°	238672	247827	276164	266515
35°	192719	203028	231511	221786
40°	146608	157205	182307	173157
45°	103566	112589	134231	125760
50°	78981	83640	94389	87928
55°	67294	70146	72516	69137
60°	58847	62019	63000	60282
65°	50296	54763	53840	52589
70°	42647	48718	45885	46621
75°	34329	43470	38462	41039
80°	23916	37831	29497	35077
85°	8375	29890	13284	25558

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 202.5°
 Vertical Angle: 45°
 Luminance: 136082 cd/sqm



TEST NUMBER: P776305

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	261.6	6.7
10°-20°	712.6	18.3
20°-30°	966.1	24.8
30°-40°	858.0	22.0
40°-50°	525.4	13.5
50°-60°	291.4	7.5
60°-70°	178.8	4.6
70°-80°	88.4	2.3
80°-90°	19.2	0.5
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°	1940.4	49.7
0°-40°	2798.4	71.7
0°-60°	3615.1	92.7
0°-90°	3901.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3901.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2797	2797	2797	2797	2797	
5°	2756	2767	2782	2774	2756	260
15°	2493	2523	2587	2560	2493	699
25°	2019	2085	2228	2188	2019	917
35°	1254	1322	1507	1444	1254	781
45°	582	633	754	707	582	464
55°	307	320	330	315	307	277
65°	169	184	181	177	169	169
75°	71	89	79	84	71	76
85°	6	21	9	18	6	10
90°	0	0	0	0	0	



TEST NUMBER: P776305

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2797.0	2797.0	2797.0	2797.0	2797.0	2797.0	2797.0	2797.0	2797.0	2797.0	2797.0
0.5°	2795.9	2796.2	2795.5	2793.9	2797.8	2796.6	2796.6	2797.4	2798.2	2798.9	2798.2
1°	2793.9	2794.3	2793.5	2792.0	2796.6	2796.2	2796.2	2797.8	2798.5	2799.3	2798.5
1.5°	2791.2	2791.2	2790.5	2789.3	2794.7	2795.1	2795.1	2797.4	2798.5	2799.3	2798.5
2°	2788.2	2787.8	2787.0	2786.3	2792.4	2793.2	2793.9	2795.9	2797.8	2798.9	2797.8
2.5°	2784.3	2784.0	2783.2	2782.4	2789.3	2790.9	2792.0	2794.7	2796.6	2797.8	2796.6
3°	2779.7	2779.7	2779.0	2778.2	2785.9	2787.8	2789.7	2792.8	2794.7	2795.9	2794.7
3.5°	2774.7	2774.7	2773.6	2773.6	2782.0	2784.3	2786.6	2790.1	2792.4	2793.5	2792.4
4°	2769.4	2769.0	2767.8	2768.2	2777.4	2780.5	2782.8	2787.0	2789.7	2790.9	2789.7
4.5°	2763.6	2762.8	2761.7	2762.5	2772.4	2775.5	2778.6	2783.2	2786.3	2787.8	2786.3
5°	2756.3	2755.9	2755.2	2755.9	2766.7	2770.5	2774.0	2779.0	2782.0	2784.0	2782.4
5.5°	2749.0	2748.3	2747.5	2748.6	2759.8	2764.4	2768.2	2774.4	2777.4	2779.3	2778.2
6°	2741.3	2740.2	2739.4	2740.6	2752.9	2758.2	2762.8	2769.0	2772.4	2774.4	2773.6
6.5°	2732.5	2731.4	2731.4	2732.5	2745.2	2750.9	2756.3	2762.8	2767.1	2769.0	2768.2
7°	2723.7	2722.5	2722.2	2723.7	2737.1	2743.3	2749.4	2756.3	2761.3	2763.2	2762.1
7.5°	2713.7	2712.2	2711.8	2714.1	2728.3	2735.2	2741.7	2749.4	2754.4	2756.7	2755.6
8°	2703.7	2702.2	2701.4	2703.7	2718.3	2726.4	2733.7	2741.7	2746.7	2749.4	2748.3
8.5°	2692.6	2691.1	2690.3	2692.6	2708.7	2717.2	2724.8	2733.7	2739.0	2741.3	2741.0
9°	2681.1	2679.2	2678.4	2681.5	2698.0	2707.2	2715.6	2724.5	2731.0	2733.7	2732.9
9.5°	2668.4	2666.1	2665.7	2669.2	2686.5	2696.8	2705.7	2715.6	2722.2	2724.8	2724.1
10°	2655.8	2653.1	2652.7	2656.1	2674.9	2685.7	2695.3	2705.7	2712.6	2716.0	2714.9
10.5°	2642.3	2639.6	2639.2	2642.7	2662.7	2674.2	2684.2	2695.3	2702.2	2706.0	2705.3
11°	2628.1	2625.4	2624.7	2628.9	2648.8	2661.5	2672.3	2684.5	2691.8	2695.7	2694.9
11.5°	2613.1	2609.7	2609.7	2614.3	2635.8	2648.5	2660.4	2672.3	2681.1	2684.5	2684.2
12°	2597.8	2594.7	2594.3	2598.9	2621.6	2635.0	2647.3	2660.4	2669.6	2673.4	2672.3
12.5°	2581.7	2578.2	2578.2	2582.4	2605.9	2620.4	2633.5	2647.7	2656.9	2661.1	2660.0
13°	2565.2	2561.7	2560.9	2566.3	2590.5	2605.9	2619.7	2634.6	2644.2	2648.8	2647.7
13.5°	2547.1	2543.3	2544.1	2549.0	2574.8	2590.1	2605.1	2620.8	2630.8	2635.4	2634.6
14°	2530.2	2526.0	2525.6	2531.0	2557.9	2574.0	2589.3	2605.9	2617.0	2621.6	2620.1
14.5°	2511.8	2507.6	2507.2	2513.4	2540.2	2557.5	2574.0	2590.9	2602.8	2607.0	2605.5
15°	2493.0	2488.0	2487.6	2494.2	2522.6	2540.2	2557.9	2575.1	2587.0	2592.0	2590.5
15.5°	2473.4	2468.8	2468.8	2475.0	2503.8	2522.6	2540.6	2559.4	2571.3	2576.7	2575.5
16°	2453.5	2448.9	2448.5	2455.0	2484.9	2504.5	2523.3	2543.3	2555.6	2560.9	2559.4
16.5°	2433.5	2428.1	2428.1	2435.4	2465.8	2485.7	2505.7	2526.0	2539.1	2544.4	2542.9
17°	2413.6	2407.4	2407.8	2415.1	2445.8	2466.5	2487.6	2508.7	2521.8	2527.6	2526.4
17.5°	2393.2	2386.7	2386.7	2394.4	2425.5	2447.3	2468.8	2490.7	2504.5	2510.7	2508.7
18°	2371.7	2365.6	2365.2	2373.3	2405.5	2427.4	2450.0	2472.3	2486.9	2493.0	2491.5
18.5°	2351.8	2344.8	2344.1	2352.5	2384.8	2407.0	2430.4	2453.9	2468.8	2475.0	2473.4
19°	2332.6	2325.3	2324.1	2332.2	2364.0	2387.5	2410.9	2435.0	2450.8	2457.3	2455.4
19.5°	2314.1	2306.5	2305.3	2313.4	2344.5	2367.9	2391.3	2416.6	2432.0	2439.3	2437.7
20°	2296.1	2288.0	2287.3	2294.9	2325.7	2349.5	2373.6	2398.2	2414.7	2421.6	2420.8
20.5°	2276.9	2268.8	2268.1	2276.1	2307.2	2331.0	2355.2	2380.2	2396.7	2404.7	2404.0
21°	2257.7	2249.7	2249.3	2257.7	2288.8	2313.8	2337.6	2362.1	2379.4	2388.2	2387.5



TEST NUMBER: P776305

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2188.6	2177.1	2176.3	2189.4	2230.8	2256.9	2282.3	2308.4	2326.0	2335.3	2334.1
23°	2160.2	2148.3	2145.6	2161.4	2207.8	2234.7	2260.8	2289.6	2308.0	2316.4	2313.4
23.5°	2129.9	2117.6	2112.6	2131.8	2181.3	2210.1	2238.5	2270.0	2289.2	2295.7	2291.9
24°	2095.7	2083.8	2077.3	2099.6	2151.8	2184.0	2214.3	2248.9	2269.6	2274.2	2268.5
24.5°	2058.9	2049.3	2042.0	2065.4	2120.3	2156.0	2188.6	2227.0	2248.9	2251.2	2244.3
25°	2019.4	2012.8	2005.9	2029.7	2085.4	2126.1	2161.8	2203.2	2227.8	2227.0	2218.6
25.5°	1980.6	1974.4	1971.0	1992.5	2048.9	2092.7	2133.4	2178.6	2205.1	2201.3	2191.3
26°	1941.4	1935.3	1936.4	1954.1	2010.9	2058.1	2104.6	2152.2	2180.2	2174.8	2164.1
26.5°	1902.3	1893.8	1901.5	1915.0	1970.2	2022.0	2073.9	2123.4	2153.3	2146.0	2136.0
27°	1863.5	1853.5	1865.4	1875.8	1930.3	1984.8	2043.9	2093.8	2124.9	2117.2	2108.8
27.5°	1826.7	1812.9	1828.6	1835.1	1891.9	1947.2	2012.8	2063.1	2093.8	2087.3	2081.2
28°	1790.2	1771.4	1789.1	1795.2	1853.5	1908.4	1980.2	2030.5	2060.0	2058.1	2052.0
28.5°	1754.1	1732.2	1748.4	1756.0	1816.3	1872.0	1946.0	1997.5	2022.8	2027.0	2023.2
29°	1716.5	1693.1	1706.5	1716.5	1779.5	1836.3	1909.2	1962.2	1983.7	1995.2	1993.6
29.5°	1680.0	1654.3	1664.7	1677.0	1742.6	1801.0	1871.6	1925.3	1943.0	1962.2	1962.2
30°	1642.4	1615.2	1622.1	1637.4	1705.4	1765.6	1832.4	1886.9	1900.4	1928.4	1929.9
30.5°	1604.4	1577.2	1578.7	1597.5	1668.9	1730.7	1792.9	1845.1	1857.0	1891.5	1895.0
31°	1564.9	1537.6	1536.5	1557.6	1632.1	1694.6	1751.8	1802.5	1814.0	1855.1	1860.1
31.5°	1525.7	1498.5	1494.7	1518.5	1593.7	1658.2	1710.4	1758.0	1772.5	1817.1	1822.8
32°	1484.3	1460.1	1452.4	1479.3	1556.1	1621.3	1670.4	1713.1	1733.4	1777.9	1786.4
32.5°	1444.4	1420.6	1410.2	1439.8	1518.1	1583.7	1630.5	1668.5	1695.0	1736.5	1749.9
33°	1405.2	1381.4	1369.5	1401.4	1477.8	1544.2	1588.3	1623.6	1657.0	1694.2	1713.4
33.5°	1366.5	1344.2	1328.8	1363.4	1437.8	1504.6	1546.1	1580.6	1619.4	1652.4	1674.7
34°	1328.8	1305.0	1288.5	1325.0	1398.3	1463.9	1503.9	1540.7	1582.9	1611.3	1637.4
34.5°	1291.2	1266.7	1249.0	1286.6	1359.9	1422.1	1462.4	1498.9	1544.9	1569.9	1596.4
35°	1254.4	1227.5	1209.1	1248.6	1321.5	1380.3	1420.6	1456.7	1506.9	1530.3	1555.7
35.5°	1218.3	1191.0	1171.5	1210.6	1285.1	1340.4	1379.5	1416.4	1467.0	1491.6	1513.1
36°	1182.6	1152.3	1135.4	1172.2	1247.1	1299.3	1336.9	1375.7	1425.6	1452.8	1471.2
36.5°	1146.1	1114.7	1100.1	1133.1	1211.4	1259.7	1296.6	1335.0	1384.5	1413.7	1427.9
37°	1109.3	1078.6	1065.5	1095.5	1174.9	1219.8	1254.0	1293.5	1342.7	1374.1	1384.5
37.5°	1072.4	1042.5	1031.0	1057.8	1138.8	1181.4	1212.9	1252.5	1301.2	1336.1	1341.9
38°	1035.6	1007.2	996.8	1021.0	1103.1	1143.1	1171.1	1212.2	1261.7	1295.8	1298.9
38.5°	998.7	971.5	962.7	986.8	1067.1	1105.4	1131.2	1172.6	1224.4	1256.3	1255.1
39°	963.4	938.5	930.0	953.1	1027.9	1067.8	1091.2	1133.1	1184.9	1216.0	1212.9
39.5°	927.3	905.5	897.8	920.1	992.2	1030.2	1054.0	1095.8	1147.7	1176.1	1170.7
40°	892.4	872.8	865.2	887.0	956.9	992.6	1014.5	1058.6	1109.7	1135.8	1129.2
40.5°	858.6	841.0	834.8	855.6	920.1	953.4	976.9	1022.9	1075.5	1096.2	1087.8
41°	826.0	809.9	805.7	824.5	885.1	916.2	939.6	987.2	1037.9	1057.5	1048.6
41.5°	793.0	779.2	776.9	794.5	851.3	879.7	904.7	953.1	999.5	1019.1	1010.3
42°	760.4	750.0	750.4	765.0	819.1	844.1	869.8	920.1	961.9	981.1	972.6
42.5°	729.3	722.0	723.9	736.2	786.1	808.7	836.8	887.0	927.0	944.2	936.2
43°	698.2	694.7	698.2	708.6	754.2	775.3	804.5	854.0	889.7	906.6	899.3
43.5°	667.5	667.9	672.5	681.7	722.4	743.1	774.2	822.6	854.0	870.2	863.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	581.9	594.6	602.2	607.6	632.6	654.4	684.8	728.5	754.2	764.6	761.5
45.5°	557.3	571.9	580.4	585.0	604.9	627.2	658.3	698.6	723.5	731.2	728.9
46°	534.3	550.4	560.0	563.5	578.4	600.3	631.8	669.4	692.8	698.6	697.4
46.5°	512.4	529.7	539.3	542.4	553.5	576.1	606.1	641.4	663.7	666.7	667.1
47°	492.5	509.7	520.5	522.0	530.8	552.0	581.9	614.5	634.9	635.2	637.5
47.5°	474.4	490.5	501.7	502.8	509.7	529.3	558.9	588.0	606.8	606.5	609.9
48°	458.3	473.3	483.6	484.8	489.8	508.6	537.4	563.5	580.4	578.8	582.3
48.5°	442.9	456.4	466.4	467.5	471.7	489.0	516.6	540.1	554.3	552.7	556.2
49°	429.1	440.6	451.0	451.0	455.6	471.3	496.3	517.4	528.9	527.4	530.8
49.5°	415.7	425.7	435.3	435.3	440.6	454.1	477.9	496.3	505.1	504.0	507.4
50°	403.4	411.5	420.3	420.3	427.2	438.3	459.8	476.0	482.1	481.7	484.4
50.5°	391.9	398.0	405.3	406.5	413.8	423.8	442.9	456.8	461.4	461.4	462.9
51°	380.8	385.8	392.3	393.0	401.1	410.3	426.8	438.7	441.8	442.2	442.9
51.5°	369.6	373.5	379.2	380.8	389.6	397.7	411.5	421.8	423.8	424.5	423.8
52°	359.3	362.0	366.9	368.5	378.8	385.4	397.3	406.1	406.9	407.6	406.1
52.5°	348.9	350.8	355.0	357.4	367.7	373.9	383.5	390.7	391.5	391.9	389.6
53°	338.9	340.8	343.9	346.2	357.0	362.7	370.8	376.5	377.7	377.3	374.2
53.5°	329.7	331.2	333.6	335.9	346.6	352.0	358.5	363.9	364.3	363.9	360.8
54°	321.3	322.4	324.0	326.3	337.0	342.4	347.0	351.6	352.0	351.2	348.5
54.5°	314.0	314.7	315.9	318.2	327.4	332.0	336.2	340.1	340.8	339.3	337.0
55°	306.7	307.5	308.6	310.5	319.7	324.3	327.8	329.7	330.5	329.3	328.6
55.5°	299.4	300.2	301.3	303.2	312.1	316.3	319.7	321.7	322.4	321.3	320.1
56°	292.1	292.9	294.0	295.6	304.4	308.6	311.7	313.6	314.0	312.8	311.7
56.5°	284.4	285.6	286.7	288.6	296.7	300.5	303.2	305.5	305.5	304.8	303.6
57°	277.1	278.3	279.4	281.0	289.8	292.9	295.2	297.1	297.1	296.3	295.2
57.5°	269.8	271.0	271.8	273.7	282.1	285.2	287.5	289.4	290.2	288.6	287.1
58°	262.5	263.7	264.5	266.4	274.8	277.9	279.8	281.7	282.1	281.0	279.0
58.5°	255.3	256.4	257.6	259.5	267.5	270.2	272.1	274.4	274.1	273.3	271.4
59°	248.3	249.5	250.6	252.6	260.2	262.9	264.8	266.8	266.0	265.2	263.7
59.5°	241.0	242.6	243.7	245.3	253.3	255.6	257.2	259.1	258.3	257.6	256.0
60°	233.8	236.1	236.8	238.7	246.4	249.1	250.3	251.8	250.3	250.3	248.7
60.5°	226.8	229.1	230.3	231.8	239.9	241.8	243.4	244.5	242.6	242.6	241.4
61°	219.9	222.2	223.8	225.3	233.0	235.3	236.4	237.6	235.3	235.3	234.5
61.5°	213.4	215.7	217.6	219.2	226.5	228.8	229.5	230.7	228.0	228.0	227.6
62°	206.5	209.2	211.5	212.6	219.9	222.2	223.0	224.2	220.7	221.1	221.1
62.5°	200.0	203.0	205.0	206.5	213.4	215.7	216.9	217.3	213.8	214.2	214.6
63°	193.5	196.5	199.2	200.7	207.3	209.6	210.3	210.7	206.9	207.3	208.0
63.5°	187.3	190.4	193.1	194.6	201.1	203.4	204.2	203.8	200.0	200.7	201.9
64°	181.2	184.2	187.7	188.8	195.4	197.3	198.1	197.3	193.5	194.2	195.8
64.5°	175.0	178.5	181.9	183.5	189.6	191.5	192.3	191.1	186.9	188.1	190.0
65°	168.9	172.3	176.6	177.7	183.9	185.8	186.5	185.0	180.8	181.9	183.9
65.5°	163.1	166.6	170.8	172.3	178.5	180.0	181.2	178.9	174.3	175.8	178.1
66°	157.4	161.2	165.4	167.0	172.7	174.6	175.4	173.1	168.5	170.0	172.7



TEST NUMBER: P776305

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	140.9	144.7	149.7	151.6	157.0	158.5	159.3	155.8	151.2	152.8	156.2
68°	135.9	139.3	144.7	146.6	152.0	153.5	154.3	150.5	145.9	147.4	150.8
68.5°	130.9	134.7	140.1	141.6	147.0	148.5	148.9	145.1	140.1	142.0	145.9
69°	125.9	129.7	135.1	137.0	142.0	143.6	143.9	139.7	135.1	137.0	140.9
69.5°	120.9	124.7	130.5	132.4	137.4	138.9	138.9	134.7	129.7	132.0	135.9
70°	115.9	119.8	125.9	128.2	132.4	134.0	134.3	129.7	124.7	127.0	130.9
70.5°	110.9	114.8	121.3	123.6	128.2	129.4	129.7	124.7	119.8	122.1	126.3
71°	106.3	110.2	116.7	119.0	123.6	124.7	124.7	119.8	115.2	117.1	121.7
71.5°	101.7	105.6	112.1	114.8	119.0	120.5	120.1	114.8	110.2	112.5	117.1
72°	96.7	100.9	107.5	110.2	114.4	115.9	115.5	110.2	105.6	107.9	112.5
72.5°	92.1	96.3	103.3	105.9	110.2	111.7	111.3	105.6	100.9	103.3	108.2
73°	87.5	91.7	98.6	101.7	105.9	107.1	106.7	100.9	96.3	98.6	103.6
73.5°	83.3	87.1	94.4	97.5	101.7	102.9	102.1	96.3	91.7	94.0	99.4
74°	79.1	82.9	90.2	93.7	97.5	99.0	98.3	92.1	87.5	89.8	95.2
74.5°	74.8	78.7	86.0	89.4	93.3	94.8	93.7	87.9	83.3	85.6	91.0
75°	70.6	74.5	81.8	85.6	89.4	90.6	89.8	83.3	79.1	81.4	86.7
75.5°	66.4	70.2	77.9	81.4	85.6	86.7	85.6	79.5	74.8	77.2	82.9
76°	62.6	66.4	73.7	77.9	81.4	82.9	81.4	74.8	70.6	72.9	79.1
76.5°	58.7	62.2	69.9	73.7	77.5	79.1	77.5	71.0	66.8	69.1	74.8
77°	54.9	58.3	66.0	70.2	73.7	75.2	73.7	66.8	62.6	64.9	71.0
77.5°	51.1	54.5	62.2	66.4	70.2	71.8	69.9	62.9	58.7	61.0	67.2
78°	47.2	50.7	58.7	62.9	66.4	67.9	66.0	59.1	54.9	57.6	63.3
78.5°	43.4	46.8	54.9	59.1	62.9	64.1	62.2	55.3	51.4	53.7	59.9
79°	39.9	43.0	51.4	55.7	59.1	60.6	58.7	51.4	47.6	49.9	56.4
79.5°	36.5	39.5	47.6	52.2	55.7	57.2	55.3	48.0	44.1	46.1	52.6
80°	33.0	36.1	44.1	48.7	52.2	53.7	51.4	44.1	40.7	42.6	49.1
80.5°	29.6	32.6	41.1	45.7	49.1	50.3	48.4	40.7	37.2	39.2	45.7
81°	26.1	29.2	37.6	42.2	45.7	46.8	44.9	37.2	33.8	36.1	42.6
81.5°	23.0	25.7	34.5	38.8	42.2	43.8	41.5	34.2	30.7	32.6	39.2
82°	19.6	22.6	31.5	35.7	39.2	40.3	38.4	31.1	27.3	29.2	36.1
82.5°	16.5	19.6	28.4	32.6	35.7	37.2	35.3	28.0	24.2	26.1	33.4
83°	13.4	16.9	25.7	29.6	33.0	34.2	32.6	24.9	20.7	22.6	30.7
83.5°	11.5	14.2	22.6	26.5	29.9	31.1	29.6	21.5	17.7	20.0	27.6
84°	9.6	12.7	20.3	23.8	26.9	28.0	26.5	18.8	14.6	17.3	24.9
84.5°	7.7	11.1	17.7	20.7	23.8	24.9	23.8	16.5	11.9	14.6	22.3
85°	5.8	9.2	15.0	17.7	20.7	21.9	20.7	14.2	9.2	12.7	19.6
85.5°	4.6	7.7	12.7	15.0	17.7	19.2	18.4	12.3	7.7	11.1	16.9
86°	3.5	6.1	10.4	12.3	15.0	16.5	15.7	10.7	6.5	9.6	14.6
86.5°	2.7	4.6	8.1	9.6	12.3	13.4	13.4	8.8	5.4	8.1	12.3
87°	1.5	3.1	5.4	6.9	9.6	10.7	10.7	7.3	4.2	6.5	10.0
87.5°	0.8	1.9	3.1	4.2	6.9	8.4	8.4	5.8	3.5	5.0	7.7
88°	0.4	0.8	1.2	1.9	4.6	5.8	6.1	4.2	2.3	3.8	5.4
88.5°	0.0	0.4	0.4	0.8	2.3	3.1	3.8	2.7	1.5	2.3	3.1



TEST NUMBER: P776305
CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P776305

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2797.0	2797.0	2797.0	2797.0	2797.0	2797.0
0.5°	2796.2	2798.2	2796.6	2795.1	2795.5	2795.9
1°	2796.6	2797.8	2795.5	2793.5	2793.5	2793.9
1.5°	2795.9	2796.6	2793.9	2791.6	2791.2	2791.2
2°	2795.1	2795.1	2792.0	2788.9	2788.2	2788.2
2.5°	2793.5	2792.8	2789.7	2786.3	2784.7	2784.3
3°	2791.6	2790.1	2786.3	2782.8	2780.5	2779.7
3.5°	2789.3	2787.0	2782.8	2778.6	2775.9	2774.7
4°	2786.3	2783.6	2778.2	2774.4	2770.9	2769.4
4.5°	2782.8	2778.6	2773.6	2768.6	2765.1	2763.6
5°	2779.0	2773.6	2767.8	2762.8	2758.6	2756.3
5.5°	2774.0	2768.2	2762.1	2756.3	2751.7	2749.0
6°	2768.6	2762.5	2755.2	2749.4	2744.4	2741.3
6.5°	2763.2	2756.3	2748.3	2742.1	2736.0	2732.5
7°	2757.1	2749.0	2740.6	2733.7	2727.1	2723.7
7.5°	2750.6	2741.0	2732.5	2724.8	2717.9	2713.7
8°	2742.9	2733.3	2723.7	2715.2	2708.0	2703.7
8.5°	2735.2	2724.5	2714.5	2705.7	2697.6	2692.6
9°	2726.8	2714.9	2704.5	2694.5	2685.7	2681.1
9.5°	2717.9	2705.3	2694.1	2683.8	2674.2	2668.4
10°	2708.3	2694.5	2683.0	2672.3	2661.9	2655.8
10.5°	2698.4	2683.8	2671.1	2660.0	2649.2	2642.3
11°	2687.2	2672.3	2658.8	2646.9	2635.4	2628.1
11.5°	2676.1	2660.4	2646.2	2633.5	2620.4	2613.1
12°	2664.2	2647.3	2632.7	2618.5	2605.9	2597.8
12.5°	2651.9	2633.9	2618.5	2603.6	2590.1	2581.7
13°	2638.9	2620.1	2604.3	2588.6	2574.4	2565.2
13.5°	2625.4	2606.2	2589.0	2572.8	2557.1	2547.1
14°	2611.2	2591.3	2573.6	2556.3	2539.5	2530.2
14.5°	2596.6	2575.9	2557.5	2539.5	2521.8	2511.8
15°	2581.3	2559.8	2540.6	2521.4	2503.4	2493.0
15.5°	2565.6	2542.9	2523.3	2503.8	2484.9	2473.4
16°	2549.4	2526.4	2505.7	2485.3	2466.1	2453.5
16.5°	2532.9	2509.1	2487.6	2466.9	2446.2	2433.5
17°	2515.7	2490.7	2469.2	2448.1	2426.6	2413.6
17.5°	2498.4	2473.4	2450.4	2428.1	2406.3	2393.2
18°	2480.7	2455.0	2432.0	2408.9	2386.3	2371.7
18.5°	2462.7	2436.2	2413.2	2389.8	2366.7	2351.8
19°	2443.9	2418.9	2394.7	2371.3	2348.3	2332.6
19.5°	2426.6	2400.5	2376.7	2353.7	2330.3	2314.1
20°	2409.7	2382.8	2359.8	2335.6	2312.2	2296.1
20.5°	2392.8	2366.0	2341.4	2317.6	2293.4	2276.9
21°	2375.6	2347.9	2323.7	2299.2	2274.6	2257.7

TEST NUMBER: P776305

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2322.6	2293.4	2266.5	2235.5	2207.1	2188.6
23°	2303.0	2274.6	2246.6	2212.0	2181.3	2160.2
23.5°	2282.3	2254.3	2224.7	2186.3	2152.5	2129.9
24°	2259.6	2234.3	2201.3	2159.5	2121.8	2095.7
24.5°	2236.2	2210.9	2176.7	2130.7	2089.2	2058.9
25°	2211.3	2187.5	2150.2	2101.5	2055.4	2019.4
25.5°	2185.2	2161.8	2122.6	2071.6	2019.7	1980.6
26°	2157.9	2135.3	2093.4	2041.6	1982.9	1941.4
26.5°	2128.4	2104.2	2062.0	2009.8	1944.9	1902.3
27°	2099.6	2072.7	2029.3	1976.7	1907.7	1863.5
27.5°	2070.4	2037.0	1995.6	1943.0	1870.0	1826.7
28°	2040.1	1999.4	1960.2	1907.3	1833.6	1790.2
28.5°	2009.0	1959.5	1923.0	1870.0	1797.5	1754.1
29°	1976.7	1919.2	1884.2	1831.3	1761.8	1716.5
29.5°	1944.5	1876.6	1843.9	1791.7	1726.5	1680.0
30°	1909.6	1834.0	1802.1	1751.4	1691.2	1642.4
30.5°	1873.5	1792.5	1758.3	1711.1	1654.7	1604.4
31°	1835.9	1751.8	1712.7	1670.4	1616.7	1564.9
31.5°	1797.1	1712.7	1668.9	1628.2	1579.1	1525.7
32°	1757.6	1674.3	1625.5	1586.8	1541.1	1484.3
32.5°	1716.5	1636.7	1582.9	1544.9	1501.9	1444.4
33°	1674.7	1599.4	1542.2	1503.5	1459.7	1405.2
33.5°	1632.4	1562.2	1500.8	1461.3	1419.0	1366.5
34°	1591.4	1524.6	1461.3	1419.8	1376.4	1328.8
34.5°	1550.7	1483.9	1421.0	1377.2	1334.6	1291.2
35°	1510.8	1443.6	1380.7	1335.4	1292.0	1254.4
35.5°	1471.6	1402.9	1340.0	1294.3	1252.5	1218.3
36°	1432.5	1361.8	1298.9	1254.0	1212.2	1182.6
36.5°	1393.3	1321.5	1258.2	1213.7	1173.4	1146.1
37°	1354.6	1280.1	1217.5	1172.2	1135.0	1109.3
37.5°	1314.3	1240.6	1177.6	1132.3	1098.5	1072.4
38°	1274.3	1202.2	1138.1	1092.4	1060.2	1035.6
38.5°	1234.8	1164.9	1099.3	1053.6	1022.9	998.7
39°	1195.6	1128.1	1062.8	1014.5	984.9	963.4
39.5°	1155.0	1090.9	1026.4	976.5	946.5	927.3
40°	1115.4	1054.0	991.1	938.9	908.9	892.4
40.5°	1075.5	1017.2	956.5	902.4	872.1	858.6
41°	1038.7	979.5	922.0	866.7	835.6	826.0
41.5°	999.5	943.5	888.6	833.3	800.7	793.0
42°	962.3	906.6	854.8	799.9	767.7	760.4
42.5°	924.7	870.9	824.1	769.2	736.2	729.3
43°	889.3	835.6	791.1	738.5	705.5	698.2
43.5°	852.1	802.2	759.6	708.6	675.9	667.5

TEST NUMBER: P776305

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	749.6	706.6	668.6	626.4	594.9	581.9
45.5°	715.9	676.7	640.6	601.5	570.8	557.3
46°	684.4	647.9	613.8	578.1	547.3	534.3
46.5°	652.9	619.1	587.3	555.0	525.5	512.4
47°	623.0	591.9	561.9	532.4	504.7	492.5
47.5°	594.6	565.0	538.5	511.7	485.6	474.4
48°	566.9	539.7	515.1	492.5	467.9	458.3
48.5°	542.0	514.7	493.6	474.0	451.0	442.9
49°	516.6	491.7	473.7	456.4	435.7	429.1
49.5°	494.0	469.8	454.5	439.5	421.5	415.7
50°	472.5	449.1	436.0	423.4	408.0	403.4
50.5°	452.2	429.5	418.8	408.4	395.3	391.9
51°	433.0	412.2	403.0	394.2	383.1	380.8
51.5°	415.7	396.1	388.1	381.1	371.6	369.6
52°	399.2	381.1	374.6	368.1	360.8	359.3
52.5°	383.8	367.7	361.6	356.2	350.1	348.9
53°	369.6	355.0	349.3	344.7	340.1	338.9
53.5°	356.2	343.5	337.8	334.3	330.5	329.7
54°	343.9	332.8	327.8	324.7	322.0	321.3
54.5°	333.2	323.6	319.4	316.7	314.4	314.0
55°	325.1	315.1	311.7	309.4	307.1	306.7
55.5°	316.7	307.8	304.0	301.7	299.4	299.4
56°	308.6	300.2	296.3	294.4	292.1	292.1
56.5°	300.5	292.5	289.0	286.7	284.4	284.4
57°	292.1	284.4	281.4	279.0	277.1	277.1
57.5°	284.4	276.4	273.3	271.4	269.8	269.8
58°	276.7	269.1	266.0	264.1	262.5	262.5
58.5°	269.1	261.4	258.3	256.8	255.3	255.3
59°	261.0	254.1	251.0	249.5	248.3	248.3
59.5°	253.7	246.4	243.7	242.6	241.4	241.0
60°	246.4	239.5	236.8	235.7	234.5	233.8
60.5°	239.1	232.2	229.9	229.1	228.0	226.8
61°	232.2	225.7	223.4	222.2	221.5	219.9
61.5°	225.3	219.2	216.9	215.7	214.6	213.4
62°	218.8	212.6	210.7	209.6	208.4	206.5
62.5°	212.3	206.1	203.8	203.4	201.9	200.0
63°	205.7	200.0	198.1	197.3	195.8	193.5
63.5°	200.0	193.8	191.9	191.5	189.6	187.3
64°	193.8	188.1	186.2	185.8	183.5	181.2
64.5°	187.7	182.3	180.4	180.0	177.7	175.0
65°	181.9	176.6	175.0	174.6	172.0	168.9
65.5°	176.2	171.2	169.7	168.9	166.2	163.1
66°	170.8	165.8	164.3	163.9	160.4	157.4



TEST NUMBER: P776305

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	155.1	150.1	148.9	148.2	143.9	140.9
68°	149.7	145.1	143.9	143.6	138.2	135.9
68.5°	145.1	140.5	138.6	138.2	133.6	130.9
69°	140.1	135.9	134.3	133.6	129.0	125.9
69.5°	135.1	131.3	129.7	129.0	124.0	120.9
70°	130.5	126.7	125.5	124.7	119.4	115.9
70.5°	125.9	122.4	120.9	120.1	114.4	110.9
71°	121.7	117.8	116.3	115.5	109.8	106.3
71.5°	117.1	113.2	112.1	110.9	105.2	101.7
72°	112.8	109.0	107.9	106.7	100.6	96.7
72.5°	108.2	104.8	103.6	102.1	96.0	92.1
73°	104.0	100.6	99.4	97.9	91.7	87.5
73.5°	99.8	96.3	95.2	93.7	87.1	83.3
74°	96.0	92.5	91.4	89.4	82.9	79.1
74.5°	91.7	88.3	87.1	85.6	78.7	74.8
75°	87.9	84.4	83.3	81.4	74.5	70.6
75.5°	84.1	80.6	79.5	77.5	70.6	66.4
76°	80.2	76.8	75.6	73.3	66.4	62.6
76.5°	76.4	72.9	71.8	69.5	62.2	58.7
77°	72.5	69.5	68.3	65.6	58.3	54.9
77.5°	69.1	65.6	64.5	62.2	54.5	51.1
78°	65.3	62.2	61.0	58.3	50.7	47.2
78.5°	61.8	58.7	57.6	54.9	47.2	43.4
79°	58.3	55.3	54.1	51.1	43.4	39.9
79.5°	54.9	51.8	50.7	47.6	39.9	36.5
80°	51.4	48.4	47.2	44.5	36.5	33.0
80.5°	48.0	45.3	44.1	41.1	33.0	29.6
81°	44.9	41.8	40.7	37.6	29.6	26.1
81.5°	41.5	38.8	37.6	34.5	26.5	23.0
82°	38.4	35.7	34.5	31.5	23.4	19.6
82.5°	35.3	32.6	31.5	28.8	20.3	16.5
83°	32.6	29.6	28.4	25.7	17.7	13.4
83.5°	29.6	26.5	25.3	23.0	15.4	11.5
84°	26.5	23.4	22.3	20.3	13.4	9.6
84.5°	23.4	20.7	19.6	17.7	11.9	7.7
85°	20.7	17.7	16.9	15.0	10.0	5.8
85.5°	17.7	15.0	13.8	12.7	8.1	4.6
86°	15.0	12.7	11.5	10.0	6.5	3.5
86.5°	12.3	10.0	8.8	7.7	5.0	2.7
87°	10.0	7.3	6.1	5.0	3.5	1.5
87.5°	7.3	4.6	3.5	2.7	1.9	0.8
88°	4.6	2.3	1.5	1.2	0.8	0.4
88.5°	2.3	0.8	0.4	0.4	0.4	0.0



TEST NUMBER: P776305

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.4	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°	2237.8	2227.4	2228.2	2237.4	2270.8	2295.3	2319.9	2344.5	2361.4	2370.6	2370.2
22°	2214.7	2203.2	2204.0	2214.3	2252.0	2277.3	2302.6	2326.4	2344.1	2353.7	2352.9



44°	637.5	642.5	648.7	656.4	691.3	712.8	743.1	790.3	819.5	834.5	828.7
44.5°	609.5	618.0	624.1	631.8	661.7	683.2	712.8	759.6	787.2	798.8	794.5



66.5°	152.0	155.5	160.4	161.6	167.4	169.3	169.7	167.0	162.4	163.9	167.0
67°	146.2	150.1	155.1	156.6	162.4	163.9	164.7	161.6	157.0	158.5	161.6



89°	0.0	0.4	0.0	0.0	0.8	1.2	1.5	1.5	0.8	1.2	1.2
89.5°	0.0	0.4	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.4	0.4

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21.5°	2357.9	2329.5	2305.3	2279.6	2253.9	2237.8
22°	2341.0	2312.2	2286.5	2258.1	2231.6	2214.7



44°	817.6	768.8	728.9	680.2	647.5	637.5
44.5°	782.6	737.3	699.0	652.5	620.7	609.5



66.5°	165.4	160.4	158.9	158.5	154.7	152.0
67°	160.1	155.1	153.9	153.5	149.3	146.2

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

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(END OF REPORT)