

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: P776330

Luminaire Tested: HCDJBL3040CSD-HCD4TSQMW-4000lm-2700K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776330
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-HCD4TSQMW-4000lm-2700K
Description: 4 INCH SQUARE MEDIUM MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

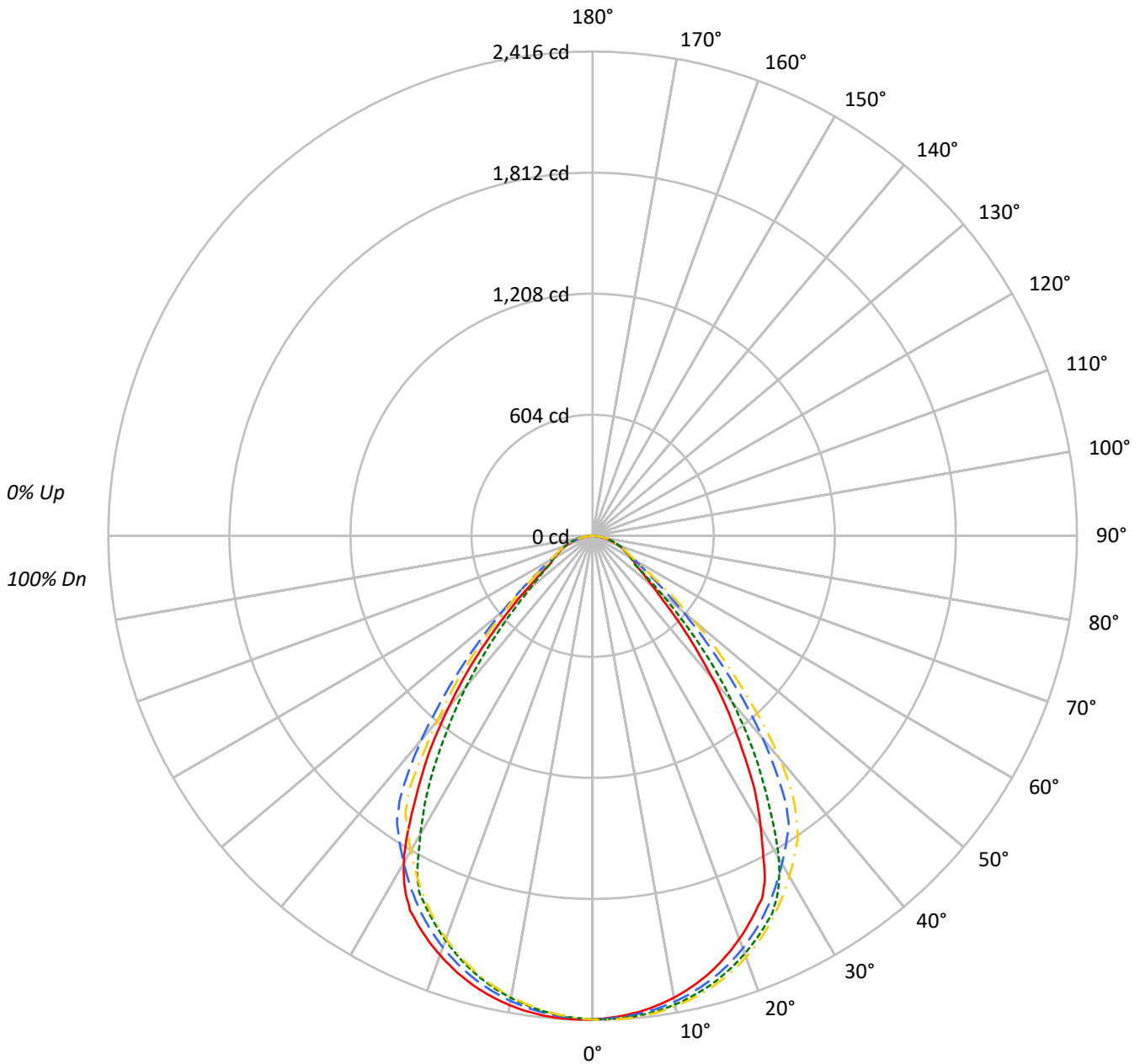
Lumens per Lamp: N/A
Luminaire Lumens: 3989.7 lumens
Efficiency: N/A
Efficacy: 103.6 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.13 / 1.17
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

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									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	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	88	101	96	91	86	92	88	85	89	86	83	86	83	81	79																			
3	97	88	82	77	94	87	81	76	84	79	75	81	77	73	79	75	72	70																			
4	90	80	73	68	88	79	72	67	77	71	66	75	70	66	73	68	65	63																			
5	84	73	66	61	82	72	65	60	70	64	60	69	63	59	67	62	58	57																			
6	79	67	60	55	77	67	59	54	65	59	54	63	58	53	62	57	53	51																			
7	74	62	55	49	72	61	54	49	60	54	49	59	53	49	57	52	48	47																			
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	53	48	44	43																			
9	65	53	46	41	64	53	46	41	52	46	41	51	45	41	50	45	41	39																			
10	61	50	43	38	60	49	43	38	48	42	38	48	42	38	47	41	38	36																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	238457	238457	238457	238457
5°	237195	238842	239070	237314
10°	234859	238321	238743	235090
15°	230997	236615	237280	231427
20°	225087	233365	234217	225939
25°	217881	228896	229572	218764
30°	191333	211843	215004	196069
35°	156972	177545	181394	162957
40°	120397	140010	144229	126333
45°	84639	101609	105691	90119
50°	59878	68013	71504	62001
55°	47372	46787	49561	48372
60°	44400	43036	43807	44321
65°	41841	41303	41584	42847
70°	38610	39621	39159	41500
75°	34753	37540	36089	40023
80°	27550	34779	31250	37568
85°	13496	28352	18712	33115

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 142929 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	227.8	5.7
10°-20°	644.4	16.2
20°-30°	939.3	23.5
30°-40°	944.8	23.7
40°-50°	619.4	15.5
50°-60°	300.2	7.5
60°-70°	182.4	4.6
70°-80°	105.0	2.6
80°-90°	26.4	0.7
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°	1811.5	45.4
0°-40°	2756.3	69.1
0°-60°	3675.9	92.1
0°-90°	3989.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3989.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2412	2412	2412	2412	2412	
5°	2391	2407	2410	2392	2391	227
15°	2257	2312	2319	2262	2257	635
25°	1998	2099	2105	2006	1998	900
35°	1301	1471	1503	1350	1301	811
45°	606	727	756	645	606	477
55°	275	272	288	281	275	257
65°	179	177	178	183	179	177
75°	91	98	94	105	91	96
85°	12	25	16	29	12	17
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°	2412.5	2412.5	2412.5	2412.5	2412.5	2412.5	2412.5	2412.5	2412.5	2412.5	2412.5
0.5°	2412.1	2411.4	2411.8	2411.8	2413.3	2413.7	2414.5	2414.8	2414.1	2412.5	2411.4
1°	2411.0	2410.2	2411.4	2412.1	2413.7	2414.5	2415.2	2415.6	2414.5	2412.5	2411.0
1.5°	2409.1	2409.1	2411.0	2412.1	2413.7	2414.8	2416.0	2416.0	2414.8	2412.5	2410.2
2°	2407.2	2407.5	2410.2	2412.1	2413.7	2414.8	2416.0	2416.0	2414.8	2412.1	2409.1
2.5°	2405.2	2406.0	2409.1	2411.4	2413.3	2414.8	2416.0	2416.0	2414.8	2411.8	2407.9
3°	2402.6	2403.7	2407.5	2410.6	2412.1	2414.5	2415.6	2416.0	2414.1	2411.0	2406.4
3.5°	2400.2	2401.4	2406.0	2409.8	2411.4	2413.7	2415.2	2415.2	2413.3	2409.8	2404.5
4°	2397.6	2399.1	2404.1	2408.7	2410.2	2412.9	2414.5	2414.8	2412.5	2408.3	2402.9
4.5°	2394.1	2396.0	2401.8	2407.2	2409.1	2411.4	2413.7	2413.7	2411.4	2406.8	2400.6
5°	2390.6	2393.0	2399.1	2405.2	2407.2	2410.2	2412.1	2412.1	2409.5	2404.9	2397.6
5.5°	2387.2	2389.5	2396.4	2403.3	2405.2	2408.3	2410.6	2410.6	2407.9	2402.9	2394.9
6°	2383.4	2386.0	2393.7	2401.0	2402.9	2406.0	2408.7	2408.7	2405.6	2400.2	2391.8
6.5°	2379.1	2382.2	2390.6	2398.7	2400.2	2404.1	2406.4	2406.4	2402.9	2397.6	2388.3
7°	2374.1	2377.6	2387.2	2396.0	2397.2	2401.4	2404.1	2404.1	2400.6	2394.9	2384.5
7.5°	2369.1	2373.0	2383.4	2393.0	2394.1	2398.7	2401.4	2401.0	2397.6	2391.4	2380.7
8°	2364.2	2368.4	2378.7	2389.5	2390.6	2395.6	2398.3	2397.9	2394.5	2388.0	2376.4
8.5°	2358.4	2362.6	2374.9	2386.0	2387.2	2392.2	2394.9	2394.9	2391.0	2384.1	2371.8
9°	2352.6	2357.2	2370.3	2382.2	2383.4	2388.7	2391.4	2391.4	2387.2	2380.3	2367.2
9.5°	2346.5	2351.5	2365.3	2377.6	2379.1	2384.9	2387.6	2387.2	2383.0	2375.7	2362.2
10°	2340.0	2345.7	2359.9	2373.4	2374.5	2380.3	2383.7	2383.4	2378.7	2371.1	2356.9
10.5°	2333.1	2339.2	2354.6	2368.4	2369.5	2375.7	2379.1	2378.7	2374.1	2366.5	2351.1
11°	2326.1	2332.3	2348.8	2363.4	2364.5	2370.7	2374.5	2374.1	2369.5	2361.1	2345.0
11.5°	2318.8	2325.4	2342.6	2358.0	2358.8	2365.7	2369.5	2368.8	2364.2	2355.7	2338.8
12°	2310.8	2318.1	2336.1	2352.2	2353.0	2360.7	2364.5	2363.4	2358.4	2349.9	2332.3
12.5°	2302.7	2310.4	2329.2	2346.1	2346.9	2354.9	2358.8	2357.6	2352.6	2343.8	2325.4
13°	2294.3	2302.7	2322.3	2340.3	2340.7	2348.4	2353.0	2351.9	2346.5	2337.7	2318.5
13.5°	2285.8	2294.3	2315.4	2333.4	2334.2	2342.6	2346.9	2345.3	2340.0	2330.7	2310.8
14°	2277.0	2285.4	2307.3	2326.9	2327.3	2335.7	2340.3	2338.8	2333.1	2323.5	2303.1
14.5°	2267.4	2276.2	2299.6	2319.6	2320.0	2328.4	2333.4	2332.3	2326.1	2316.2	2295.0
15°	2257.4	2267.0	2291.2	2312.3	2312.3	2321.5	2326.5	2324.6	2318.8	2308.9	2286.6
15.5°	2247.0	2257.4	2282.7	2304.6	2304.6	2314.2	2319.2	2317.3	2310.8	2300.8	2277.8
16°	2236.7	2247.4	2273.5	2296.6	2296.2	2305.8	2311.5	2309.2	2302.7	2292.7	2268.9
16.5°	2225.5	2237.1	2264.3	2287.7	2287.4	2297.7	2303.5	2301.2	2294.3	2283.9	2259.3
17°	2214.4	2226.3	2255.1	2279.3	2278.5	2288.9	2295.0	2293.1	2285.8	2275.1	2249.7
17.5°	2202.5	2215.2	2245.1	2270.5	2269.3	2280.4	2286.2	2284.3	2276.2	2265.9	2239.7
18°	2191.0	2204.0	2234.8	2260.9	2259.7	2271.2	2277.0	2274.7	2266.6	2256.3	2229.4
18.5°	2178.3	2191.7	2224.4	2251.3	2250.1	2261.2	2267.8	2265.1	2257.4	2246.7	2218.6
19°	2166.0	2179.8	2213.2	2241.7	2239.7	2250.9	2258.2	2255.1	2247.4	2236.3	2207.9
19.5°	2153.0	2167.2	2202.1	2230.9	2229.4	2241.7	2248.2	2244.7	2237.4	2225.5	2196.7
20°	2139.9	2154.9	2190.6	2220.2	2218.6	2230.5	2237.4	2234.8	2226.7	2214.8	2184.8
20.5°	2126.9	2141.8	2178.3	2209.0	2207.5	2219.8	2227.1	2223.6	2215.6	2203.6	2172.5
21°	2113.4	2128.4	2166.0	2197.9	2196.0	2208.6	2215.9	2212.5	2204.4	2192.5	2160.6



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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°	2070.4	2086.9	2127.2	2161.8	2161.0	2173.7	2180.6	2177.9	2169.5	2156.4	2121.9
23°	2055.8	2072.7	2113.0	2149.9	2148.4	2161.4	2168.3	2165.6	2157.2	2143.7	2108.0
23.5°	2041.2	2057.7	2098.8	2137.2	2135.7	2149.1	2155.7	2153.0	2145.3	2130.7	2093.8
24°	2025.5	2042.8	2084.6	2124.2	2123.0	2136.5	2142.6	2140.3	2132.6	2117.6	2079.6
24.5°	2012.0	2028.2	2070.0	2111.1	2110.0	2123.4	2128.8	2127.2	2119.2	2104.6	2065.0
25°	1997.8	2012.8	2054.7	2097.3	2098.8	2110.3	2115.0	2113.8	2105.0	2091.1	2049.7
25.5°	1974.8	1997.5	2039.3	2083.5	2083.5	2096.9	2101.1	2100.7	2091.9	2077.3	2034.7
26°	1949.5	1982.5	2023.6	2069.6	2062.7	2082.7	2086.5	2086.9	2078.9	2063.1	2018.6
26.5°	1925.6	1968.3	2007.8	2055.4	2045.1	2069.3	2071.9	2072.3	2055.4	2048.5	2002.8
27°	1889.9	1950.2	1991.7	2040.5	2024.7	2056.6	2057.0	2057.7	2037.4	2033.2	1986.7
27.5°	1852.3	1922.6	1975.2	2027.4	2001.7	2038.9	2042.0	2044.3	2017.4	2019.3	1970.2
28°	1815.1	1900.3	1958.3	2012.8	1976.0	2017.8	2025.9	2025.1	1994.4	2002.1	1953.3
28.5°	1779.0	1870.0	1941.4	1990.9	1949.5	2000.1	2010.5	2002.8	1969.8	1979.4	1936.8
29°	1744.0	1833.9	1924.5	1971.3	1920.7	1978.3	1994.8	1985.2	1942.9	1960.6	1919.1
29.5°	1710.2	1797.4	1907.6	1951.8	1889.9	1954.4	1978.6	1963.7	1914.5	1939.9	1902.2
30°	1676.4	1760.9	1889.9	1929.1	1856.1	1929.5	1962.1	1939.5	1883.8	1916.4	1884.6
30.5°	1643.4	1725.2	1872.7	1904.5	1820.1	1903.0	1946.0	1914.5	1851.2	1891.1	1866.9
31°	1610.4	1690.3	1855.0	1877.7	1782.8	1873.8	1929.5	1888.0	1815.8	1865.0	1849.2
31.5°	1576.6	1657.2	1837.0	1850.4	1743.6	1844.6	1912.6	1859.2	1777.4	1836.6	1831.6
32°	1539.8	1623.8	1819.7	1820.8	1704.1	1812.4	1895.3	1828.5	1737.9	1807.0	1813.5
32.5°	1504.0	1591.6	1801.2	1789.7	1663.8	1777.1	1878.4	1796.6	1698.3	1774.4	1795.1
33°	1465.3	1558.2	1784.3	1755.2	1623.8	1740.6	1860.8	1761.7	1658.8	1740.6	1777.1
33.5°	1424.6	1524.8	1767.8	1721.4	1584.7	1702.6	1844.2	1725.2	1618.1	1704.1	1759.0
34°	1381.9	1489.1	1750.9	1684.5	1546.3	1663.8	1827.7	1687.2	1578.1	1666.8	1743.3
34.5°	1342.0	1453.0	1724.1	1645.7	1508.6	1625.0	1806.2	1648.0	1540.1	1628.5	1722.9
35°	1300.9	1415.3	1693.7	1606.9	1471.4	1586.2	1778.6	1608.1	1503.3	1588.5	1692.6
35.5°	1262.1	1375.8	1667.6	1568.5	1434.5	1547.8	1754.4	1570.5	1467.2	1550.1	1664.9
36°	1223.7	1335.1	1634.6	1530.5	1397.7	1510.6	1730.2	1532.1	1429.9	1512.5	1639.6
36.5°	1187.6	1294.8	1597.0	1492.9	1360.0	1473.3	1701.0	1494.4	1391.9	1474.9	1605.8
37°	1151.2	1255.2	1558.6	1454.9	1321.7	1436.5	1671.1	1457.2	1355.8	1438.0	1567.8
37.5°	1115.8	1218.7	1518.6	1418.8	1282.5	1401.1	1639.2	1421.5	1317.0	1402.7	1529.4
38°	1080.5	1180.3	1479.5	1382.7	1242.6	1363.9	1605.4	1385.0	1277.5	1366.6	1490.2
38.5°	1044.8	1145.0	1439.9	1347.0	1203.0	1327.8	1571.2	1350.1	1236.8	1331.6	1449.5
39°	1007.9	1110.1	1401.1	1311.3	1164.2	1291.3	1533.6	1312.8	1196.9	1295.9	1410.0
39.5°	970.7	1075.9	1362.0	1274.8	1124.7	1253.3	1494.8	1276.0	1157.7	1260.2	1368.9
40°	933.1	1039.8	1321.3	1239.1	1085.1	1215.7	1454.1	1237.6	1117.8	1223.4	1327.8
40.5°	896.2	1006.0	1280.6	1202.2	1047.1	1177.3	1412.3	1199.5	1079.4	1185.3	1285.6
41°	860.1	970.7	1239.1	1164.6	1011.0	1138.5	1368.1	1160.4	1041.3	1147.3	1244.1
41.5°	825.6	935.8	1198.4	1127.4	973.8	1101.2	1323.2	1122.0	1005.6	1109.7	1202.6
42°	791.0	900.0	1156.5	1089.7	937.7	1064.4	1277.9	1084.0	968.8	1072.5	1160.8
42.5°	758.7	865.1	1114.7	1052.9	901.6	1027.5	1233.0	1046.0	933.1	1036.4	1119.7
43°	726.9	830.2	1072.5	1016.4	865.5	991.0	1189.6	1009.9	898.1	1000.3	1079.7
43.5°	695.8	796.4	1030.6	981.4	830.2	955.7	1146.2	974.2	862.0	965.7	1037.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	605.5	701.1	911.2	878.2	726.9	852.4	1022.5	869.7	756.1	864.3	920.4
45.5°	577.5	671.2	873.2	845.1	693.1	817.1	984.5	836.3	722.6	832.5	882.4
46°	550.6	641.6	837.5	812.1	660.8	784.1	947.3	801.7	689.2	798.7	846.3
46.5°	524.9	612.8	802.9	779.5	629.0	751.8	909.3	768.0	657.4	765.7	810.6
47°	499.9	584.8	769.5	747.2	599.0	718.8	873.2	734.2	626.7	733.4	776.8
47.5°	477.7	557.5	736.9	715.4	569.8	687.3	837.1	701.1	597.1	701.9	743.4
48°	456.9	531.4	704.2	683.9	541.8	656.2	800.6	670.0	568.3	670.8	710.4
48.5°	438.1	506.1	672.7	652.4	515.7	625.1	766.4	639.3	541.4	640.9	678.5
49°	420.8	482.3	642.8	622.8	490.0	595.9	730.7	609.8	514.5	611.7	647.8
49.5°	404.3	460.4	613.6	594.4	465.8	566.4	696.5	579.8	489.6	584.0	618.2
50°	389.4	439.3	584.8	566.8	442.3	539.1	663.9	552.5	465.0	556.4	589.8
50.5°	375.9	420.1	556.8	539.9	419.7	511.8	631.6	524.9	441.6	530.3	561.4
51°	363.2	402.8	530.3	514.9	398.6	486.5	601.3	499.2	419.7	504.9	535.3
51.5°	351.0	386.7	504.9	489.6	379.4	462.3	571.7	474.6	399.3	481.1	509.9
52°	339.4	372.5	480.7	466.1	360.9	439.3	543.7	451.6	380.1	458.1	485.7
52.5°	327.9	358.6	458.5	442.7	345.6	416.6	515.7	427.8	361.7	435.0	462.7
53°	317.2	346.0	436.6	420.5	330.2	395.5	490.3	405.9	345.2	414.3	440.4
53.5°	305.6	334.1	416.2	398.6	314.9	375.1	465.0	385.9	330.6	393.6	419.7
54°	294.9	322.9	396.3	378.6	299.5	356.3	441.6	366.7	316.4	374.0	399.7
54.5°	284.5	311.8	378.2	359.4	284.5	341.0	418.5	348.3	301.8	355.6	381.7
55°	274.9	301.0	360.9	341.4	271.5	325.2	397.8	332.9	287.6	340.6	364.4
55.5°	266.5	290.3	344.8	325.2	261.1	309.9	376.7	317.9	274.5	325.6	347.5
56°	260.3	279.9	329.5	309.5	253.0	294.1	357.1	303.0	263.4	310.6	333.7
56.5°	255.7	269.6	315.2	295.3	248.0	278.8	341.4	288.0	254.2	296.0	319.5
57°	251.5	260.7	302.2	281.8	243.4	265.7	325.2	274.5	248.0	281.1	305.3
57.5°	246.9	252.7	289.5	269.2	239.2	254.2	309.5	262.3	243.4	268.4	291.4
58°	242.7	247.3	278.4	257.3	235.0	245.0	293.7	251.9	239.2	256.9	280.3
58.5°	238.5	242.7	268.4	247.7	230.8	239.2	277.6	243.1	235.0	247.7	269.6
59°	233.8	238.1	258.8	241.5	226.2	234.2	265.7	237.3	230.4	240.4	259.6
59.5°	229.2	233.8	250.4	236.5	221.9	230.0	255.0	232.3	226.2	235.4	250.7
60°	224.6	229.6	242.3	231.9	217.7	225.8	245.4	228.1	221.6	230.8	242.3
60.5°	219.6	225.0	235.0	227.7	213.5	221.2	236.9	223.5	217.3	226.5	234.6
61°	215.4	220.4	228.1	223.1	209.3	216.9	229.6	219.3	212.7	222.3	227.7
61.5°	210.8	215.8	221.6	218.5	205.0	212.7	222.3	215.0	208.1	217.7	221.2
62°	206.2	211.2	215.8	214.3	201.2	208.5	215.8	210.4	203.9	213.5	215.0
62.5°	201.2	206.2	209.7	210.0	197.0	204.3	209.7	205.8	199.7	208.9	208.9
63°	197.0	201.6	204.3	205.8	192.8	199.7	203.9	201.6	195.1	204.3	203.5
63.5°	192.4	197.0	198.9	201.2	188.5	195.4	198.5	197.0	190.8	200.1	198.5
64°	187.8	192.4	194.3	197.0	184.7	191.2	193.1	192.4	186.6	195.4	193.5
64.5°	183.2	188.1	189.7	192.8	180.5	187.0	188.5	188.1	182.0	190.8	188.9
65°	178.9	183.2	185.5	188.5	176.6	183.2	184.3	183.5	177.8	186.6	184.3
65.5°	174.3	178.5	181.2	184.3	172.4	178.9	179.7	179.3	173.6	182.0	180.1
66°	169.7	174.3	176.6	180.1	168.6	174.7	175.5	174.7	169.3	177.8	175.9



TEST NUMBER: P776330

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	156.3	160.5	163.6	167.4	156.7	162.4	162.8	161.7	156.7	164.7	163.2
68°	152.1	155.9	159.4	163.2	152.8	158.2	158.2	157.4	152.4	160.5	159.0
68.5°	147.4	151.3	154.7	159.0	148.6	154.4	154.0	153.2	148.2	155.9	154.7
69°	143.2	147.1	150.5	154.7	144.8	150.1	149.8	149.0	144.0	151.7	150.1
69.5°	137.8	142.5	145.9	150.9	140.9	145.9	145.5	144.4	139.8	147.4	145.9
70°	133.6	139.4	141.7	146.7	137.1	142.1	140.9	140.2	135.5	143.2	141.7
70.5°	129.8	134.8	137.1	142.5	133.2	138.2	136.7	135.9	131.7	139.0	137.5
71°	125.6	130.2	132.9	139.0	129.4	134.0	132.5	131.7	127.5	134.8	133.2
71.5°	121.7	125.2	128.6	134.8	125.6	129.8	128.2	127.5	123.3	130.2	129.0
72°	117.1	120.6	124.4	130.9	121.7	125.9	124.0	123.3	119.0	125.9	124.8
72.5°	112.9	116.0	120.2	126.7	117.9	122.1	119.8	119.0	115.2	121.7	120.6
73°	108.3	111.7	116.0	122.9	113.7	118.3	115.6	114.8	111.0	117.5	116.3
73.5°	104.1	107.1	111.7	118.6	109.8	114.0	111.7	110.6	106.7	113.3	112.1
74°	99.5	102.9	107.5	114.8	106.4	110.2	107.5	106.4	102.9	109.0	107.9
74.5°	95.2	98.3	102.9	110.6	102.5	106.4	103.3	102.1	98.7	104.8	104.1
75°	91.0	93.7	98.7	106.7	98.3	102.1	99.5	97.9	94.5	100.6	99.8
75.5°	86.8	89.5	94.5	102.5	94.5	98.3	95.2	93.7	90.6	96.4	95.6
76°	82.2	84.9	90.2	98.7	90.6	94.5	91.0	89.5	86.4	92.2	91.4
76.5°	77.9	80.6	86.0	94.8	87.2	90.6	87.2	85.2	82.6	88.3	87.2
77°	73.7	76.0	81.8	90.6	83.3	86.8	83.3	81.0	78.3	84.1	82.9
77.5°	69.5	71.8	77.6	86.8	79.5	82.9	79.5	76.8	74.5	79.9	79.1
78°	65.3	67.2	73.7	82.6	75.6	78.7	75.3	72.6	70.7	75.6	74.9
78.5°	61.1	63.0	69.5	78.7	71.8	74.9	71.4	68.3	66.4	71.4	70.7
79°	56.8	58.4	65.7	74.5	68.3	71.0	67.6	64.1	62.6	67.2	66.8
79.5°	52.6	54.1	61.4	70.7	64.5	67.2	63.7	59.9	58.7	63.4	63.0
80°	48.4	49.9	57.6	66.8	61.1	63.4	59.9	56.1	54.9	59.1	59.1
80.5°	44.5	45.7	53.8	62.6	57.2	59.5	56.4	51.8	51.1	54.9	54.9
81°	40.3	41.1	49.9	58.7	53.8	55.7	52.6	48.0	47.2	50.7	51.5
81.5°	36.1	36.9	46.1	54.9	49.9	52.2	49.1	44.5	43.4	46.8	47.6
82°	31.9	33.0	42.2	51.1	46.5	48.4	45.3	40.7	39.2	42.6	43.8
82.5°	28.0	29.2	38.8	47.6	43.0	44.9	41.9	37.2	35.3	38.4	40.3
83°	23.8	25.7	35.3	43.8	39.5	41.1	38.4	33.8	31.9	34.9	36.9
83.5°	19.6	21.9	31.9	40.3	35.7	37.6	35.3	30.3	28.0	31.1	33.8
84°	15.7	18.8	28.4	36.5	32.3	33.8	31.9	26.9	24.2	27.3	30.7
84.5°	13.8	15.7	25.3	33.0	28.8	30.3	28.8	23.8	20.4	23.8	27.6
85°	11.9	13.4	22.3	29.2	25.0	26.9	25.3	20.4	16.5	20.0	24.6
85.5°	9.6	11.1	18.8	25.7	21.5	23.0	22.3	17.3	13.8	16.9	21.1
86°	7.7	9.2	15.7	21.9	18.0	19.6	19.2	15.0	11.5	14.6	18.4
86.5°	5.8	7.3	13.1	18.4	14.6	16.1	16.1	12.7	10.0	12.7	15.4
87°	4.2	5.0	10.0	15.0	11.1	12.7	13.1	10.4	8.4	10.8	12.3
87.5°	2.3	3.1	7.3	11.5	7.7	9.2	10.0	8.1	6.5	8.4	9.2
88°	0.8	1.2	4.2	8.4	4.6	5.8	6.9	6.1	5.0	6.5	6.5
88.5°	0.0	0.4	1.5	5.0	1.5	2.7	3.8	3.8	3.5	4.6	3.5



TEST NUMBER: P776330

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-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	0.4	0.0	0.0	0.0	0.4	0.4	0.0	0.4	0.4



TEST NUMBER: P776330

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2412.5	2412.5	2412.5	2412.5	2412.5	2412.5
0.5°	2409.8	2411.8	2411.8	2412.1	2412.5	2412.1
1°	2409.1	2410.6	2410.2	2410.6	2411.4	2411.0
1.5°	2407.5	2409.1	2408.3	2408.7	2409.5	2409.1
2°	2406.0	2407.5	2406.4	2406.4	2407.2	2407.2
2.5°	2404.1	2405.6	2404.1	2404.1	2404.9	2405.2
3°	2401.8	2403.3	2401.4	2401.4	2402.2	2402.6
3.5°	2399.1	2401.0	2399.1	2398.7	2399.5	2400.2
4°	2396.4	2397.9	2396.0	2395.6	2396.4	2397.6
4.5°	2393.3	2395.3	2392.6	2392.2	2393.0	2394.1
5°	2389.9	2391.8	2388.7	2388.7	2389.5	2390.6
5.5°	2386.4	2388.3	2384.9	2384.5	2385.7	2387.2
6°	2382.6	2384.1	2380.7	2380.3	2381.4	2383.4
6.5°	2378.4	2379.9	2376.4	2376.1	2376.8	2379.1
7°	2373.8	2375.3	2371.4	2371.1	2372.2	2374.1
7.5°	2368.8	2370.7	2366.5	2366.1	2366.8	2369.1
8°	2363.8	2365.3	2361.1	2360.7	2361.8	2364.2
8.5°	2358.4	2359.9	2355.3	2354.9	2356.1	2358.4
9°	2353.0	2354.2	2349.6	2348.8	2349.9	2352.6
9.5°	2346.9	2348.0	2343.4	2342.6	2343.8	2346.5
10°	2340.3	2342.3	2336.9	2335.7	2337.3	2340.0
10.5°	2333.8	2335.7	2330.0	2329.2	2330.0	2333.1
11°	2326.9	2328.4	2323.1	2321.9	2323.1	2326.1
11.5°	2320.0	2321.1	2315.4	2314.2	2315.8	2318.8
12°	2312.3	2313.9	2307.7	2306.6	2307.7	2310.8
12.5°	2304.6	2305.8	2299.6	2298.5	2299.3	2302.7
13°	2296.6	2297.7	2291.2	2290.0	2291.2	2294.3
13.5°	2287.7	2289.3	2282.7	2281.6	2282.4	2285.8
14°	2279.3	2280.4	2273.5	2272.4	2273.5	2277.0
14.5°	2270.1	2271.2	2264.3	2262.8	2263.6	2267.4
15°	2260.9	2261.6	2254.7	2253.2	2253.6	2257.4
15.5°	2250.9	2251.6	2244.4	2243.2	2243.2	2247.0
16°	2240.9	2241.7	2234.0	2232.8	2233.2	2236.7
16.5°	2230.1	2231.3	2223.6	2222.1	2222.5	2225.5
17°	2219.4	2220.2	2212.9	2211.3	2211.3	2214.4
17.5°	2208.3	2209.0	2201.3	2199.8	2199.4	2202.5
18°	2197.1	2197.1	2189.8	2188.3	2187.9	2191.0
18.5°	2184.8	2185.2	2177.5	2176.8	2175.6	2178.3
19°	2172.9	2173.3	2165.3	2164.1	2162.9	2166.0
19.5°	2160.6	2160.6	2152.6	2151.8	2150.3	2153.0
20°	2147.6	2148.0	2139.5	2138.8	2136.8	2139.9
20.5°	2134.5	2134.9	2126.5	2124.9	2123.4	2126.9
21°	2121.1	2121.5	2112.6	2111.9	2109.6	2113.4



TEST NUMBER: P776330

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2079.2	2080.0	2070.0	2068.1	2066.6	2070.4
23°	2064.6	2065.4	2055.4	2053.5	2052.0	2055.8
23.5°	2050.4	2050.4	2040.8	2037.4	2037.0	2041.2
24°	2035.5	2035.9	2025.5	2022.0	2021.6	2025.5
24.5°	2020.1	2020.5	2009.7	2005.9	2005.9	2012.0
25°	2004.4	2005.9	1994.4	1989.8	1989.8	1997.8
25.5°	1989.0	1992.5	1978.3	1972.5	1974.4	1974.8
26°	1973.6	1974.4	1962.1	1956.8	1957.9	1949.5
26.5°	1959.8	1947.2	1946.4	1938.7	1943.7	1925.6
27°	1944.1	1926.0	1932.2	1922.2	1928.3	1889.9
27.5°	1919.1	1896.1	1915.3	1904.1	1904.1	1852.3
28°	1894.2	1860.0	1889.9	1886.5	1879.2	1815.1
28.5°	1870.4	1823.5	1865.4	1868.4	1854.2	1779.0
29°	1837.3	1787.8	1841.6	1850.8	1820.1	1744.0
29.5°	1801.6	1752.1	1807.8	1831.6	1784.0	1710.2
30°	1765.9	1717.9	1773.2	1813.9	1746.7	1676.4
30.5°	1731.0	1682.6	1736.3	1795.5	1711.8	1643.4
31°	1696.8	1648.8	1702.2	1777.1	1676.8	1610.4
31.5°	1661.9	1614.6	1666.8	1758.2	1642.7	1576.6
32°	1628.1	1580.1	1633.4	1739.4	1610.0	1539.8
32.5°	1594.3	1544.0	1600.4	1721.0	1578.5	1504.0
33°	1560.9	1507.5	1567.0	1703.3	1545.9	1465.3
33.5°	1526.7	1469.5	1533.6	1687.6	1514.4	1424.6
34°	1491.0	1430.3	1500.6	1670.3	1481.0	1381.9
34.5°	1455.3	1390.8	1465.6	1641.9	1446.8	1342.0
35°	1418.8	1350.5	1429.9	1608.1	1410.0	1300.9
35.5°	1380.8	1310.1	1393.8	1582.8	1373.9	1262.1
36°	1342.4	1271.7	1355.8	1546.3	1334.7	1223.7
36.5°	1303.2	1233.0	1318.6	1501.0	1296.7	1187.6
37°	1264.8	1196.5	1280.2	1455.7	1256.8	1151.2
37.5°	1226.8	1159.6	1242.6	1410.7	1219.5	1115.8
38°	1189.9	1123.5	1204.5	1366.2	1182.7	1080.5
38.5°	1154.2	1087.8	1169.2	1323.6	1147.3	1044.8
39°	1117.8	1052.9	1133.1	1282.1	1112.8	1007.9
39.5°	1082.8	1016.0	1099.7	1242.2	1079.0	970.7
40°	1048.6	979.1	1065.2	1203.8	1046.0	933.1
40.5°	1015.2	943.4	1031.0	1166.9	1012.9	896.2
41°	979.9	907.0	997.2	1130.8	979.5	860.1
41.5°	945.4	871.2	963.8	1094.7	945.0	825.6
42°	910.4	836.3	929.2	1059.4	910.8	791.0
42.5°	876.6	802.5	894.7	1025.2	877.0	758.7
43°	842.1	769.1	860.9	989.9	842.8	726.9
43.5°	807.9	736.9	826.7	953.8	809.4	695.8

TEST NUMBER: P776330

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	712.7	644.7	730.3	845.9	715.0	605.5
45.5°	683.5	615.5	700.8	811.7	685.8	577.5
46°	653.1	586.7	671.2	778.7	656.6	550.6
46.5°	624.3	558.7	641.6	746.1	628.2	524.9
47°	596.3	532.2	613.6	715.4	600.5	499.9
47.5°	569.1	506.1	584.8	686.2	573.7	477.7
48°	541.8	483.0	557.5	658.5	547.2	456.9
48.5°	516.5	460.0	531.8	632.0	521.8	438.1
49°	491.1	439.7	506.9	605.5	497.6	420.8
49.5°	468.1	420.8	483.0	580.6	475.0	404.3
50°	445.0	403.2	460.4	556.0	453.9	389.4
50.5°	424.7	387.0	439.7	532.2	433.9	375.9
51°	405.5	372.8	419.7	509.2	415.8	363.2
51.5°	387.8	359.4	402.4	486.5	399.0	351.0
52°	371.7	347.1	386.7	465.0	383.6	339.4
52.5°	357.1	335.2	371.3	444.3	369.4	327.9
53°	343.7	323.7	357.5	424.7	355.9	317.2
53.5°	332.1	312.6	344.4	405.9	343.3	305.6
54°	321.0	301.4	331.8	388.2	331.4	294.9
54.5°	309.9	291.1	321.0	371.3	319.9	284.5
55°	298.4	280.7	309.5	355.6	309.5	274.9
55.5°	287.2	270.7	298.4	340.6	298.4	266.5
56°	277.2	262.3	288.0	326.8	288.0	260.3
56.5°	266.9	255.3	277.6	313.7	277.6	255.7
57°	257.6	250.0	267.6	301.0	268.0	251.5
57.5°	249.6	245.7	258.4	289.5	259.2	246.9
58°	242.7	241.1	250.7	278.8	251.9	242.7
58.5°	237.7	236.9	244.6	268.8	246.1	238.5
59°	233.5	232.7	240.0	259.6	241.9	233.8
59.5°	229.2	228.9	235.4	250.4	237.3	229.2
60°	225.0	224.2	231.2	242.7	233.1	224.6
60.5°	220.8	220.4	226.9	235.4	228.1	219.6
61°	216.2	216.2	222.3	228.5	223.9	215.4
61.5°	212.0	212.0	218.1	221.9	219.3	210.8
62°	207.7	207.7	213.9	215.8	214.6	206.2
62.5°	203.5	203.5	209.3	210.0	209.7	201.2
63°	199.3	199.7	205.0	204.7	205.0	197.0
63.5°	195.1	195.4	200.8	199.7	200.4	192.4
64°	190.8	191.6	196.6	194.7	195.8	187.8
64.5°	186.6	187.4	192.0	190.5	191.2	183.2
65°	182.8	183.2	188.1	186.2	186.6	178.9
65.5°	178.5	179.3	183.9	181.6	182.0	174.3
66°	174.3	175.1	179.3	177.4	177.4	169.7



TEST NUMBER: P776330

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	162.0	163.2	167.0	164.7	163.6	156.3
68°	157.8	159.4	162.8	160.1	159.0	152.1
68.5°	154.0	155.1	158.6	155.5	154.4	147.4
69°	149.8	151.3	154.4	151.3	150.1	143.2
69.5°	145.5	147.4	150.1	146.7	145.5	137.8
70°	141.7	143.6	145.9	142.5	140.9	133.6
70.5°	137.5	139.0	142.1	138.6	136.7	129.8
71°	133.6	135.2	139.4	134.4	132.1	125.6
71.5°	129.4	131.7	135.2	129.8	127.9	121.7
72°	125.6	127.9	130.6	125.6	123.6	117.1
72.5°	121.3	124.0	126.3	121.3	119.0	112.9
73°	117.5	120.6	122.1	117.1	114.4	108.3
73.5°	113.7	116.3	117.9	112.5	110.2	104.1
74°	109.4	112.5	114.0	108.3	105.6	99.5
74.5°	105.6	108.7	109.8	104.1	101.0	95.2
75°	101.4	104.8	105.6	99.8	96.8	91.0
75.5°	97.5	101.0	101.8	95.6	92.2	86.8
76°	93.3	97.1	97.5	91.0	87.9	82.2
76.5°	89.5	92.9	93.7	86.8	83.3	77.9
77°	85.6	89.1	89.5	82.9	78.7	73.7
77.5°	81.4	85.2	85.6	78.7	74.5	69.5
78°	77.6	81.4	81.4	74.5	69.9	65.3
78.5°	73.3	77.6	77.6	70.3	65.7	61.1
79°	69.5	73.7	73.3	66.4	61.1	56.8
79.5°	65.7	69.9	69.5	62.2	56.8	52.6
80°	61.4	66.0	65.3	58.4	52.2	48.4
80.5°	57.6	62.2	61.4	54.5	48.0	44.5
81°	53.8	58.7	57.6	50.7	43.8	40.3
81.5°	50.3	54.9	53.8	46.8	39.9	36.1
82°	46.5	51.1	49.9	43.0	35.7	31.9
82.5°	42.6	47.6	46.1	39.5	32.3	28.0
83°	39.2	43.8	42.2	36.1	28.4	23.8
83.5°	35.3	39.9	38.4	32.6	25.0	19.6
84°	31.9	36.5	34.6	29.2	21.5	15.7
84.5°	28.0	33.0	31.1	26.1	18.4	13.8
85°	24.6	29.2	27.3	22.7	15.7	11.9
85.5°	20.7	25.7	23.4	19.6	13.4	9.6
86°	17.3	21.9	19.6	16.1	11.1	7.7
86.5°	13.4	18.4	16.1	13.1	8.8	5.8
87°	10.0	14.6	12.7	10.0	6.5	4.2
87.5°	6.5	11.5	9.6	7.3	4.2	2.3
88°	3.5	8.1	6.5	4.2	1.9	0.8
88.5°	1.2	4.6	3.5	1.2	0.8	0.0



TEST NUMBER: P776330

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.4	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°	2099.2	2114.6	2153.3	2186.4	2184.5	2197.1	2204.8	2201.3	2193.3	2180.2	2148.4
22°	2084.6	2100.7	2140.3	2174.1	2172.9	2185.2	2192.9	2189.8	2181.8	2168.7	2134.9



44°	665.4	762.6	989.1	945.4	794.8	920.4	1102.8	938.8	825.6	930.4	996.8
44.5°	635.1	731.9	950.0	911.2	760.7	886.2	1062.9	905.0	791.0	898.1	957.6



66.5°	165.5	169.7	172.4	175.9	164.3	170.5	171.3	170.5	165.1	173.6	171.6
67°	160.9	165.1	168.2	171.6	160.5	166.3	167.0	166.3	160.9	169.0	167.4



89°	0.0	0.4	0.4	1.9	0.4	0.8	1.5	1.9	1.9	2.7	1.5
89.5°	0.0	0.4	0.4	0.4	0.0	0.0	0.4	0.4	0.4	1.2	0.4

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21.5°	2107.7	2108.0	2098.8	2097.3	2095.4	2099.2
22°	2093.8	2093.8	2084.6	2083.1	2081.2	2084.6



44°	775.6	705.4	794.1	917.3	776.4	665.4
44.5°	744.5	674.6	762.6	881.6	745.7	635.1



66.5°	170.1	171.3	175.5	173.2	172.8	165.5
67°	166.3	167.4	171.3	169.0	168.2	160.9

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

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(END OF REPORT)