

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: P776302

Luminaire Tested: HCDJBS3040CSD-HCD4TRMB-4000lm-3500K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776302
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-3500K
Description: 4 INCH ROUND MEDIUM MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2517.9 lumens
Efficiency: N/A
Efficacy: 65.4 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

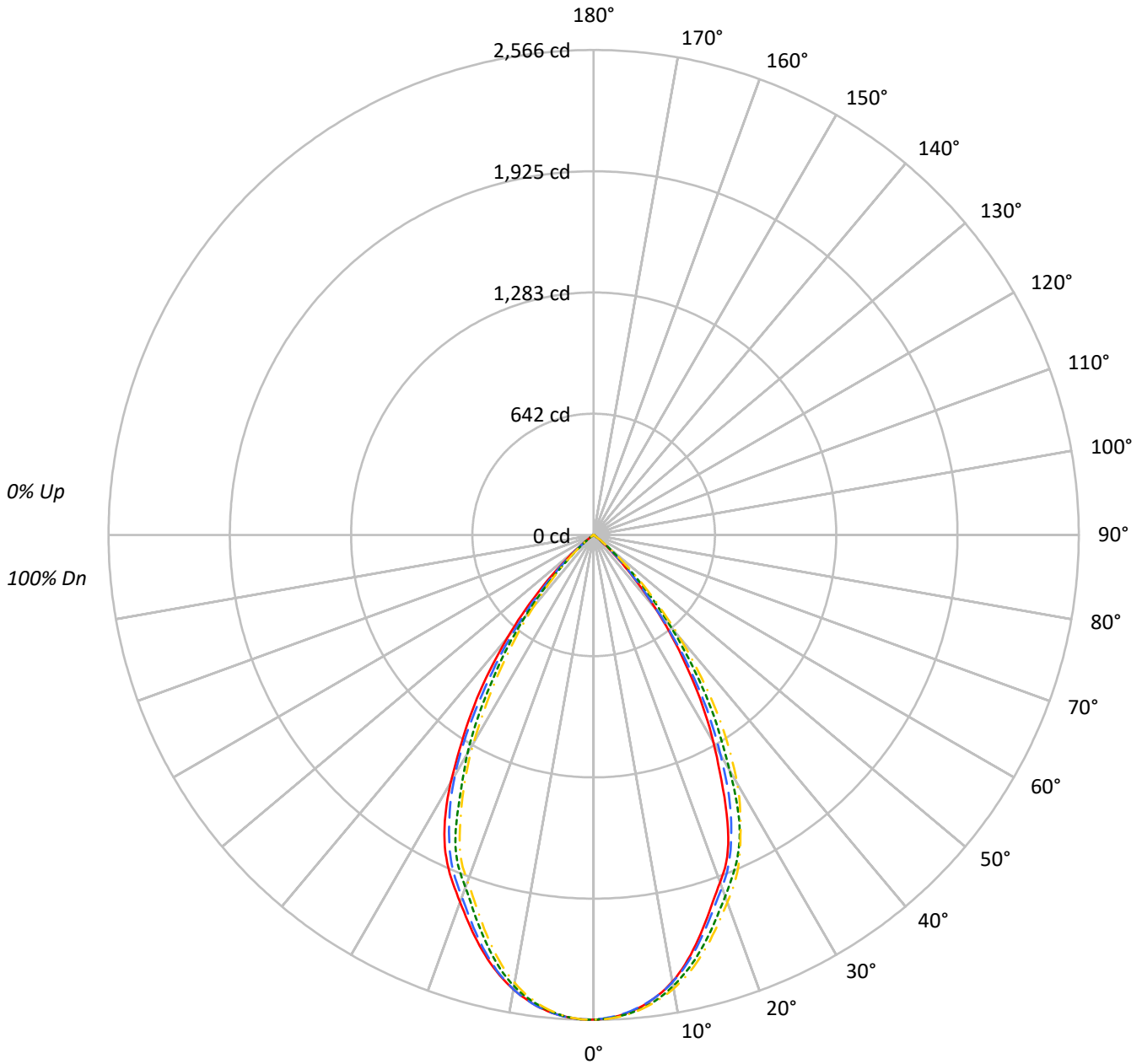
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100			
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°	322780	322780	322780	322780
5°	318530	319641	320602	319995
10°	306622	309664	312002	309766
15°	284734	292617	296551	289294
20°	261907	272447	276759	265737
25°	232576	252558	257530	239755
30°	184046	208838	219519	193928
35°	133785	158965	169290	142526
40°	83753	104978	116478	92049
45°	37856	56259	64820	43249
50°	10984	17210	22418	12922
55°	1755	1755	2348	2172
60°	705	705	805	705
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: 64820 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	238.1	9.5
10°-20°	624.6	24.8
20°-30°	797.1	31.7
30°-40°	609.4	24.2
40°-50°	227.8	9.0
50°-60°	18.6	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°	1659.7	65.9
0°-40°	2269.1	90.1
0°-60°	2515.5	99.9
0°-90°	2517.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2517.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2565	2565	2565	2565	2565	
5°	2521	2530	2538	2533	2521	237
15°	2185	2246	2276	2220	2185	612
25°	1675	1819	1855	1727	1675	754
35°	871	1035	1102	928	871	543
45°	213	316	364	243	213	179
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°	2564.8	2564.8	2564.8	2564.8	2564.8	2564.8	2564.8	2564.8	2564.8	2564.8	2564.8
0.5°	2564.0	2562.0	2562.0	2562.0	2564.0	2564.4	2565.6	2566.4	2565.2	2564.0	2564.0
1°	2562.4	2560.4	2560.0	2560.4	2562.4	2563.2	2564.4	2565.2	2564.8	2564.0	2563.6
1.5°	2560.0	2557.6	2557.2	2557.6	2560.4	2561.6	2562.8	2564.0	2563.2	2562.8	2563.2
2°	2556.8	2554.5	2553.7	2554.5	2558.0	2559.2	2560.4	2561.6	2561.6	2561.2	2561.6
2.5°	2552.9	2550.1	2549.7	2550.9	2554.9	2556.0	2557.2	2558.8	2559.2	2558.8	2559.2
3°	2548.1	2545.3	2544.9	2546.5	2550.9	2552.5	2553.7	2555.2	2556.0	2556.0	2556.4
3.5°	2542.5	2539.3	2539.7	2541.7	2546.5	2548.1	2549.7	2551.3	2552.5	2552.9	2552.9
4°	2536.2	2533.4	2533.4	2535.8	2541.7	2543.3	2544.5	2546.5	2548.1	2548.9	2548.9
4.5°	2529.0	2526.2	2526.6	2529.8	2536.6	2538.1	2539.3	2541.3	2543.3	2544.1	2544.1
5°	2521.4	2518.3	2518.7	2522.6	2530.2	2531.8	2533.0	2535.4	2537.8	2538.9	2538.5
5.5°	2512.7	2509.1	2510.7	2514.7	2523.0	2524.6	2526.2	2528.6	2531.4	2532.6	2531.8
6°	2503.6	2500.0	2501.6	2506.3	2515.5	2517.1	2518.7	2521.4	2524.6	2525.8	2524.6
6.5°	2493.6	2490.4	2492.4	2497.2	2506.7	2509.1	2510.7	2513.5	2517.1	2518.3	2517.1
7°	2482.9	2479.7	2482.1	2486.9	2497.2	2500.0	2502.0	2505.1	2508.3	2509.9	2508.7
7.5°	2471.3	2468.6	2470.6	2475.7	2486.9	2490.0	2492.8	2495.6	2498.8	2500.8	2499.6
8°	2459.0	2456.6	2458.6	2464.2	2475.7	2479.3	2482.9	2486.1	2489.2	2490.4	2489.2
8.5°	2445.5	2443.9	2446.3	2451.5	2463.8	2467.8	2472.5	2475.3	2478.1	2480.1	2478.5
9°	2431.2	2430.0	2432.8	2437.9	2451.1	2456.2	2461.4	2464.2	2467.0	2468.2	2467.0
9.5°	2415.3	2415.3	2418.5	2424.0	2437.5	2443.5	2449.5	2453.1	2454.6	2455.8	2454.6
10°	2399.4	2399.4	2403.0	2408.9	2423.2	2430.4	2436.8	2440.3	2441.5	2442.3	2441.1
10.5°	2382.7	2382.7	2386.6	2393.4	2409.3	2416.1	2423.2	2427.2	2428.0	2428.4	2426.8
11°	2363.6	2364.4	2369.5	2376.3	2393.4	2401.4	2409.3	2413.3	2414.1	2413.7	2411.7
11.5°	2344.1	2345.7	2351.7	2358.8	2377.1	2386.3	2395.0	2398.6	2398.6	2398.2	2395.4
12°	2323.4	2325.8	2332.6	2340.5	2360.8	2370.3	2379.5	2383.5	2383.5	2381.9	2379.1
12.5°	2302.0	2304.7	2312.3	2321.8	2342.9	2353.2	2363.2	2367.6	2367.2	2364.8	2361.6
13°	2279.7	2283.3	2292.0	2302.3	2324.6	2335.7	2346.9	2351.3	2350.1	2346.9	2342.1
13.5°	2256.6	2261.4	2270.5	2281.7	2306.3	2317.9	2329.0	2333.4	2332.6	2329.0	2323.4
14°	2233.2	2238.7	2249.5	2261.4	2286.0	2299.6	2310.7	2315.9	2314.3	2309.5	2303.1
14.5°	2209.3	2215.7	2227.2	2240.3	2266.2	2280.5	2291.6	2296.8	2295.2	2290.0	2282.1
15°	2185.4	2192.2	2204.5	2218.4	2245.9	2260.6	2272.5	2277.7	2276.1	2269.7	2261.0
15.5°	2160.8	2168.7	2181.5	2197.0	2225.6	2240.3	2253.0	2257.8	2256.2	2249.5	2239.1
16°	2136.1	2144.9	2159.2	2174.7	2204.1	2220.4	2233.2	2237.9	2235.9	2228.4	2217.3
16.5°	2112.3	2121.8	2136.5	2152.8	2183.1	2199.8	2212.1	2218.4	2215.7	2207.3	2195.0
17°	2088.4	2098.0	2113.5	2131.0	2161.6	2178.7	2191.8	2197.4	2194.6	2185.4	2172.7
17.5°	2064.6	2074.5	2090.8	2109.1	2139.7	2157.2	2170.3	2175.5	2173.1	2163.6	2149.7
18°	2040.7	2051.4	2068.1	2086.8	2118.2	2136.1	2149.3	2155.2	2151.6	2141.7	2127.4
18.5°	2017.6	2029.6	2045.9	2065.0	2096.4	2115.1	2128.6	2133.7	2129.8	2119.4	2104.3
19°	1996.2	2008.5	2025.6	2043.9	2075.3	2094.4	2107.5	2112.7	2108.3	2097.6	2081.7
19.5°	1975.9	1988.6	2004.9	2023.6	2055.0	2073.7	2087.6	2092.4	2088.0	2075.7	2059.4
20°	1955.6	1968.7	1985.0	2003.7	2034.3	2053.4	2068.5	2072.5	2066.5	2055.0	2038.3
20.5°	1935.7	1948.4	1965.1	1983.4	2014.5	2033.9	2048.7	2053.0	2047.1	2034.3	2017.6
21°	1915.4	1928.6	1944.5	1963.2	1994.6	2014.5	2028.4	2033.5	2027.2	2014.5	1997.4



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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°	1844.3	1856.6	1872.1	1896.8	1934.1	1953.6	1966.3	1972.3	1967.5	1954.4	1935.3
23°	1815.6	1828.4	1844.7	1873.7	1913.1	1931.7	1942.9	1950.0	1947.3	1933.3	1912.7
23.5°	1784.6	1798.1	1816.0	1847.4	1891.2	1908.3	1917.0	1925.0	1925.4	1911.9	1888.4
24°	1750.0	1764.3	1785.8	1820.0	1868.9	1883.2	1889.6	1899.5	1902.7	1889.6	1863.0
24.5°	1713.4	1727.8	1753.6	1791.0	1844.7	1857.8	1862.2	1872.1	1879.3	1865.7	1835.1
25°	1674.9	1688.8	1722.2	1761.6	1818.8	1830.3	1833.1	1843.9	1854.6	1841.5	1806.5
25.5°	1634.3	1649.0	1689.2	1729.3	1791.8	1801.3	1802.1	1814.0	1828.4	1815.2	1776.7
26°	1592.2	1608.5	1656.2	1698.3	1762.3	1770.7	1771.9	1783.8	1800.1	1787.8	1746.4
26.5°	1549.2	1567.9	1620.4	1665.7	1730.1	1738.9	1742.1	1753.2	1769.9	1758.0	1714.2
27°	1505.9	1528.1	1584.2	1631.9	1695.5	1706.7	1712.2	1722.6	1737.7	1725.4	1682.0
27.5°	1464.5	1488.8	1546.4	1597.3	1657.4	1673.7	1682.0	1691.6	1704.7	1691.6	1650.2
28°	1422.8	1451.4	1506.7	1560.3	1617.2	1639.9	1651.0	1660.6	1668.1	1655.4	1616.0
28.5°	1382.2	1415.2	1466.1	1521.4	1573.5	1604.1	1620.0	1628.7	1631.1	1618.4	1581.4
29°	1343.2	1379.4	1425.1	1481.6	1528.9	1567.9	1588.2	1596.5	1593.4	1577.8	1545.2
29.5°	1304.7	1343.2	1383.0	1439.5	1483.2	1530.1	1553.6	1561.9	1552.0	1536.5	1507.1
30°	1266.5	1306.3	1341.2	1395.3	1437.1	1490.4	1517.8	1527.3	1510.6	1493.5	1466.5
30.5°	1228.7	1268.1	1301.1	1349.2	1393.3	1449.4	1480.0	1490.0	1466.5	1448.6	1425.9
31°	1190.1	1228.7	1260.1	1304.3	1350.8	1407.3	1443.0	1453.4	1423.6	1403.7	1383.8
31.5°	1151.6	1188.2	1220.8	1256.9	1309.8	1364.7	1404.5	1413.6	1380.6	1358.3	1341.6
32°	1112.6	1147.2	1180.2	1210.8	1271.3	1321.4	1366.7	1373.9	1339.7	1314.6	1297.1
32.5°	1073.6	1103.9	1140.0	1165.9	1231.9	1278.8	1328.5	1332.1	1298.3	1272.1	1254.6
33°	1033.1	1061.3	1099.1	1119.8	1194.5	1236.7	1289.6	1291.1	1258.9	1229.9	1209.2
33.5°	991.7	1018.8	1057.7	1074.4	1154.8	1194.9	1249.0	1249.8	1218.4	1188.6	1163.5
34°	950.8	978.2	1015.2	1030.3	1115.0	1155.2	1208.8	1208.4	1180.6	1147.6	1117.0
34.5°	911.0	936.0	973.0	987.3	1074.0	1116.2	1167.1	1165.5	1140.8	1107.8	1072.8
35°	870.8	896.7	930.9	944.8	1034.7	1078.8	1125.3	1124.1	1101.9	1068.5	1027.1
35.5°	833.1	858.9	887.5	903.4	990.9	1039.8	1081.2	1082.4	1062.1	1028.7	984.2
36°	795.7	820.7	844.2	863.3	948.8	1000.5	1037.8	1040.6	1023.9	988.5	942.4
36.5°	759.1	783.4	802.0	823.9	907.4	961.9	993.7	998.5	983.0	947.6	901.9
37°	722.9	745.2	757.9	784.9	866.9	923.3	950.4	955.5	942.4	905.8	860.9
37.5°	687.1	708.2	715.4	746.8	826.3	883.2	906.6	915.0	901.5	864.5	822.7
38°	651.3	670.0	673.6	708.2	788.1	842.6	866.1	874.8	861.3	823.1	783.8
38.5°	615.6	632.3	634.6	670.8	750.0	801.6	824.3	835.4	822.3	782.6	745.2
39°	580.6	595.3	597.3	634.2	713.8	761.9	783.4	796.1	784.2	745.6	707.0
39.5°	544.4	556.7	559.9	600.0	675.6	722.1	742.8	757.1	746.0	705.4	669.6
40°	509.8	519.7	523.3	564.3	639.0	683.9	702.2	717.3	709.0	668.4	632.3
40.5°	475.2	483.5	489.9	530.9	603.2	646.2	662.1	678.8	671.6	633.0	595.3
41°	441.4	448.5	456.5	497.8	568.2	610.0	623.5	639.8	637.0	599.6	557.9
41.5°	408.0	414.7	424.3	465.2	532.0	573.4	586.1	600.4	601.2	564.3	522.5
42°	377.4	381.3	392.9	432.2	496.7	538.4	549.1	562.7	564.3	531.6	487.1
42.5°	346.7	350.3	363.4	402.4	463.3	503.4	513.0	526.5	528.9	498.6	453.7
43°	318.1	320.1	334.0	372.6	431.0	468.4	477.6	491.1	494.7	468.0	421.5
43.5°	289.5	291.1	307.0	343.2	400.0	433.0	444.6	456.5	460.1	434.6	390.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	212.7	210.8	231.0	261.6	316.1	336.0	351.9	361.9	364.2	348.3	307.0
45.5°	189.7	187.3	209.2	237.0	288.3	304.2	322.1	332.0	334.4	320.1	279.1
46°	168.2	165.8	188.1	213.5	260.5	272.4	292.3	302.2	304.6	291.9	254.1
46.5°	147.5	145.5	168.6	192.1	234.6	244.5	262.8	272.8	274.8	264.0	230.6
47°	132.8	131.2	149.5	171.4	209.6	218.3	236.2	244.9	246.9	238.2	208.0
47.5°	118.5	116.5	134.8	151.5	185.7	193.7	210.8	219.1	221.9	214.3	186.9
48°	104.2	101.8	120.1	132.8	163.0	171.0	187.7	194.4	197.6	191.7	167.4
48.5°	89.9	87.5	105.4	116.5	142.0	149.5	165.4	171.8	175.0	168.6	149.1
49°	75.6	72.8	90.7	102.6	122.1	130.4	144.3	149.9	153.1	147.9	131.6
49.5°	65.6	63.2	75.9	89.9	103.8	112.5	124.9	130.0	133.2	128.8	115.7
50°	56.1	54.1	64.4	77.1	87.9	96.2	106.6	112.1	114.5	110.9	101.0
50.5°	47.7	46.1	54.1	64.4	73.6	81.5	90.3	95.8	97.8	95.0	87.1
51°	40.2	38.6	44.5	51.7	60.8	68.0	75.2	80.7	82.3	79.9	74.8
51.5°	33.0	31.8	36.2	42.2	52.9	56.1	62.0	66.8	68.4	67.2	63.2
52°	27.0	25.8	28.6	33.4	44.9	47.7	52.9	54.9	56.1	55.7	52.9
52.5°	21.5	20.3	22.3	25.4	37.0	39.8	43.7	46.9	47.7	47.7	45.3
53°	16.3	15.5	16.7	19.1	29.0	31.4	35.0	38.6	39.8	39.4	37.8
53.5°	14.3	13.5	14.7	13.9	21.1	23.1	25.8	30.6	31.4	31.4	30.2
54°	12.3	11.1	12.3	11.5	13.1	15.1	17.1	22.3	23.1	23.5	22.3
54.5°	10.3	8.7	10.3	9.9	9.5	10.7	11.9	14.3	15.1	15.1	15.1
55°	8.0	6.8	8.0	8.0	8.0	8.4	9.1	10.3	10.7	11.1	11.1
55.5°	6.0	6.0	6.0	6.4	6.8	7.2	7.6	8.0	8.4	8.7	8.4
56°	5.6	5.2	5.2	5.6	6.0	6.4	6.4	6.8	7.2	7.2	7.2
56.5°	4.8	4.8	4.8	4.8	5.2	5.6	6.0	6.0	6.4	6.4	6.4
57°	4.4	4.4	4.4	4.4	4.8	4.8	5.2	5.6	5.6	5.6	5.6
57.5°	4.0	4.0	4.0	4.0	4.4	4.4	4.8	4.8	5.2	5.2	5.2
58°	3.6	3.6	3.6	3.6	4.0	4.0	4.0	4.4	4.4	4.4	4.4
58.5°	3.2	3.2	3.2	3.2	3.6	3.6	3.6	4.0	4.0	4.0	4.0
59°	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6	3.6	3.6	3.6
59.5°	2.8	2.8	2.8	2.8	2.8	3.2	3.2	3.2	3.2	3.2	3.2
60°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.2	3.2	3.2	3.2
60.5°	2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8	2.8	2.8	2.8
61°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.8	2.8	2.8	2.8
61.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
62°	2.0	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.4	2.4
62.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	2.4
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: P776302

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-3500K

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: P776302

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-3500K

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: P776302

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2564.8	2564.8	2564.8	2564.8	2564.8	2564.8
0.5°	2564.0	2564.8	2565.2	2565.6	2565.6	2564.0
1°	2564.0	2564.4	2564.4	2564.8	2564.4	2562.4
1.5°	2563.2	2563.2	2563.2	2563.2	2562.4	2560.0
2°	2561.6	2561.2	2561.2	2560.8	2559.2	2556.8
2.5°	2559.2	2558.4	2558.0	2557.6	2555.6	2552.9
3°	2556.4	2554.9	2554.5	2553.7	2551.7	2548.1
3.5°	2552.5	2550.5	2550.1	2548.9	2546.1	2542.5
4°	2547.7	2545.3	2544.9	2543.3	2540.1	2536.2
4.5°	2542.5	2539.3	2538.5	2537.0	2533.8	2529.0
5°	2537.0	2533.0	2531.4	2529.4	2526.2	2521.4
5.5°	2530.2	2525.4	2523.4	2521.4	2517.1	2512.7
6°	2522.6	2517.1	2515.1	2512.3	2508.3	2503.6
6.5°	2514.7	2508.3	2505.9	2502.8	2498.4	2493.6
7°	2505.9	2498.8	2495.6	2492.0	2486.9	2482.9
7.5°	2496.4	2488.4	2484.5	2480.1	2474.9	2471.3
8°	2486.5	2477.3	2472.5	2467.4	2463.0	2459.0
8.5°	2475.3	2465.4	2459.8	2453.8	2449.1	2445.5
9°	2463.4	2452.7	2445.9	2439.1	2434.4	2431.2
9.5°	2450.7	2438.7	2431.2	2423.2	2417.7	2415.3
10°	2437.1	2424.0	2415.3	2406.9	2401.8	2399.4
10.5°	2422.4	2408.5	2398.2	2389.0	2384.3	2382.7
11°	2407.3	2391.8	2380.3	2370.3	2365.2	2363.6
11.5°	2391.0	2373.5	2361.2	2350.5	2344.9	2344.1
12°	2373.1	2354.8	2340.9	2329.4	2323.8	2323.4
12.5°	2354.8	2334.2	2319.4	2307.5	2302.0	2302.0
13°	2335.7	2312.7	2297.6	2285.2	2279.3	2279.7
13.5°	2315.1	2290.8	2274.5	2261.4	2256.6	2256.6
14°	2293.6	2268.2	2251.1	2237.5	2231.6	2233.2
14.5°	2271.7	2244.3	2226.8	2213.7	2207.3	2209.3
15°	2249.5	2220.4	2202.1	2189.0	2183.1	2185.4
15.5°	2226.4	2196.6	2177.5	2164.4	2158.4	2160.8
16°	2203.3	2171.9	2152.8	2138.5	2133.7	2136.1
16.5°	2179.9	2148.1	2128.2	2113.9	2109.1	2112.3
17°	2156.0	2123.8	2102.7	2088.8	2084.0	2088.4
17.5°	2132.2	2099.2	2078.1	2064.6	2059.8	2064.6
18°	2108.7	2074.5	2053.8	2039.5	2035.9	2040.7
18.5°	2085.2	2051.0	2029.2	2015.3	2012.1	2017.6
19°	2061.8	2027.2	2005.7	1992.2	1989.8	1996.2
19.5°	2039.5	2005.3	1984.6	1971.1	1968.3	1975.9
20°	2018.0	1984.2	1962.8	1950.4	1947.7	1955.6
20.5°	1997.4	1964.0	1942.5	1929.8	1927.8	1935.7
21°	1976.7	1943.7	1921.4	1908.7	1907.9	1915.4



TEST NUMBER: P776302

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1914.2	1880.4	1855.4	1839.5	1835.5	1844.3
23°	1889.6	1855.4	1828.4	1809.7	1805.7	1815.6
23.5°	1864.1	1828.0	1799.3	1777.5	1775.1	1784.6
24°	1836.3	1796.9	1765.9	1742.1	1740.5	1750.0
24.5°	1806.9	1763.1	1732.9	1705.5	1703.9	1713.4
25°	1775.5	1726.6	1696.3	1666.9	1666.1	1674.9
25.5°	1743.3	1687.2	1658.6	1629.1	1627.9	1634.3
26°	1709.1	1645.8	1618.0	1592.2	1587.4	1592.2
26.5°	1673.7	1602.5	1577.4	1554.8	1548.0	1549.2
27°	1637.5	1560.7	1534.1	1518.2	1507.9	1505.9
27.5°	1599.3	1519.4	1488.4	1479.2	1466.9	1464.5
28°	1560.3	1480.8	1444.2	1440.3	1426.3	1422.8
28.5°	1521.4	1443.0	1401.3	1399.7	1385.8	1382.2
29°	1481.2	1406.5	1359.9	1357.6	1343.6	1343.2
29.5°	1441.1	1371.1	1319.8	1313.8	1301.9	1304.7
30°	1402.1	1334.5	1280.0	1270.1	1258.9	1266.5
30.5°	1362.3	1296.7	1241.4	1224.7	1215.2	1228.7
31°	1323.8	1258.1	1202.9	1179.0	1172.2	1190.1
31.5°	1286.4	1217.2	1164.3	1135.7	1128.5	1151.6
32°	1248.2	1175.4	1124.9	1092.3	1087.2	1112.6
32.5°	1210.4	1133.3	1086.4	1049.8	1047.4	1073.6
33°	1172.6	1090.3	1046.6	1008.8	1008.0	1033.1
33.5°	1134.9	1047.4	1006.4	967.1	969.1	991.7
34°	1094.7	1006.0	966.3	926.5	930.1	950.8
34.5°	1054.1	966.7	924.9	885.9	890.7	911.0
35°	1011.6	927.7	884.8	845.4	851.4	870.8
35.5°	970.6	891.1	846.2	805.2	812.0	833.1
36°	925.3	855.7	807.6	767.1	772.2	795.7
36.5°	882.8	819.1	771.4	730.5	732.1	759.1
37°	839.0	783.4	734.4	694.3	693.5	722.9
37.5°	797.7	747.2	698.3	658.9	656.1	687.1
38°	755.9	709.4	662.5	623.9	619.9	651.3
38.5°	716.9	671.6	627.1	589.7	585.3	615.6
39°	677.2	634.6	593.3	557.1	552.7	580.6
39.5°	638.6	597.3	557.9	523.7	520.5	544.4
40°	600.0	560.3	524.1	492.7	489.1	509.8
40.5°	563.9	524.5	491.1	461.3	458.1	475.2
41°	526.9	490.7	458.5	431.8	429.1	441.4
41.5°	491.5	456.9	427.1	403.6	399.6	408.0
42°	456.9	425.1	396.4	377.4	371.8	377.4
42.5°	423.1	393.3	367.0	350.7	344.8	346.7
43°	390.5	362.6	338.8	326.1	319.3	318.1
43.5°	361.5	330.8	312.1	301.4	293.9	289.5



TEST NUMBER: P776302

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	275.2	243.0	237.8	234.2	226.3	212.7
45.5°	249.7	216.3	215.1	213.5	205.6	189.7
46°	225.9	191.7	194.0	194.4	186.9	168.2
46.5°	203.2	168.6	173.8	176.2	168.2	147.5
47°	182.1	148.3	154.3	158.3	150.7	132.8
47.5°	162.6	133.6	136.4	142.0	136.4	118.5
48°	143.9	118.9	122.5	128.4	122.5	104.2
48.5°	127.2	104.6	108.2	114.9	108.2	89.9
49°	111.7	90.3	94.2	101.4	93.8	75.6
49.5°	97.4	75.9	80.3	87.9	79.5	65.6
50°	84.3	66.0	68.8	74.4	68.4	56.1
50.5°	72.8	57.3	58.9	63.2	57.3	47.7
51°	62.0	48.9	50.1	53.3	48.1	40.2
51.5°	52.9	41.8	41.8	44.1	39.8	33.0
52°	45.7	35.0	34.2	35.8	31.8	27.0
52.5°	39.0	28.6	27.8	28.2	25.1	21.5
53°	31.8	23.1	21.9	21.5	19.1	16.3
53.5°	25.1	17.9	16.7	15.9	13.9	14.3
54°	17.9	13.5	14.3	13.5	11.9	12.3
54.5°	13.5	11.5	12.3	11.1	9.9	10.3
55°	10.3	9.9	10.3	8.7	8.0	8.0
55.5°	8.0	8.0	8.0	6.4	6.4	6.0
56°	7.2	6.4	6.0	6.0	5.6	5.6
56.5°	6.0	5.6	5.2	5.2	5.2	4.8
57°	5.6	4.8	4.8	4.8	4.4	4.4
57.5°	4.8	4.4	4.4	4.4	4.0	4.0
58°	4.4	4.0	4.0	4.0	3.6	3.6
58.5°	4.0	3.6	3.6	3.6	3.6	3.2
59°	3.6	3.2	3.2	3.2	3.2	3.2
59.5°	3.2	3.2	3.2	3.2	2.8	2.8
60°	3.2	2.8	2.8	2.8	2.8	2.8
60.5°	2.8	2.8	2.8	2.8	2.8	2.4
61°	2.8	2.4	2.4	2.4	2.4	2.4
61.5°	2.4	2.4	2.4	2.4	2.4	2.4
62°	2.4	2.4	2.4	2.4	2.0	2.0
62.5°	2.4	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: P776302

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-3500K

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: P776302

CATALOG NUMBER: HCDJBL3040CSD-HCD4TRMB-4000lm-3500K

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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21.5°	1894.4	1907.1	1922.2	1942.5	1974.7	1995.4	2010.1	2014.1	2007.3	1993.8	1977.1
22°	1870.5	1882.8	1897.9	1921.0	1954.8	1974.7	1989.0	1994.2	1987.8	1973.9	1957.2



44°	263.2	262.8	279.9	314.1	372.2	399.2	411.6	422.7	426.3	404.8	362.6
44.5°	236.2	236.2	254.9	287.9	344.4	367.4	381.7	391.7	394.1	376.6	334.8



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°	1956.4	1923.8	1901.9	1889.2	1886.0	1894.4
22°	1936.5	1902.7	1879.3	1865.7	1862.2	1870.5



44°	332.8	300.6	286.3	278.0	270.0	263.2
44.5°	303.8	271.2	261.6	255.3	247.7	236.2

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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)