

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: P776337

Luminaire Tested: HCDJBL3040CSD-HCD61TRC-4000lm-3500K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776337
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B035-HCD61TRC)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD61TRC-4000lm-3500K
Description: 6 INCH ROUND SHALLOW-WIDE SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4904.7 lumens
Efficiency: N/A
Efficacy: 127.4 lumens/watt
Spacing Criteria (0/90/45): 1.39 / 1.39 / 1.3
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

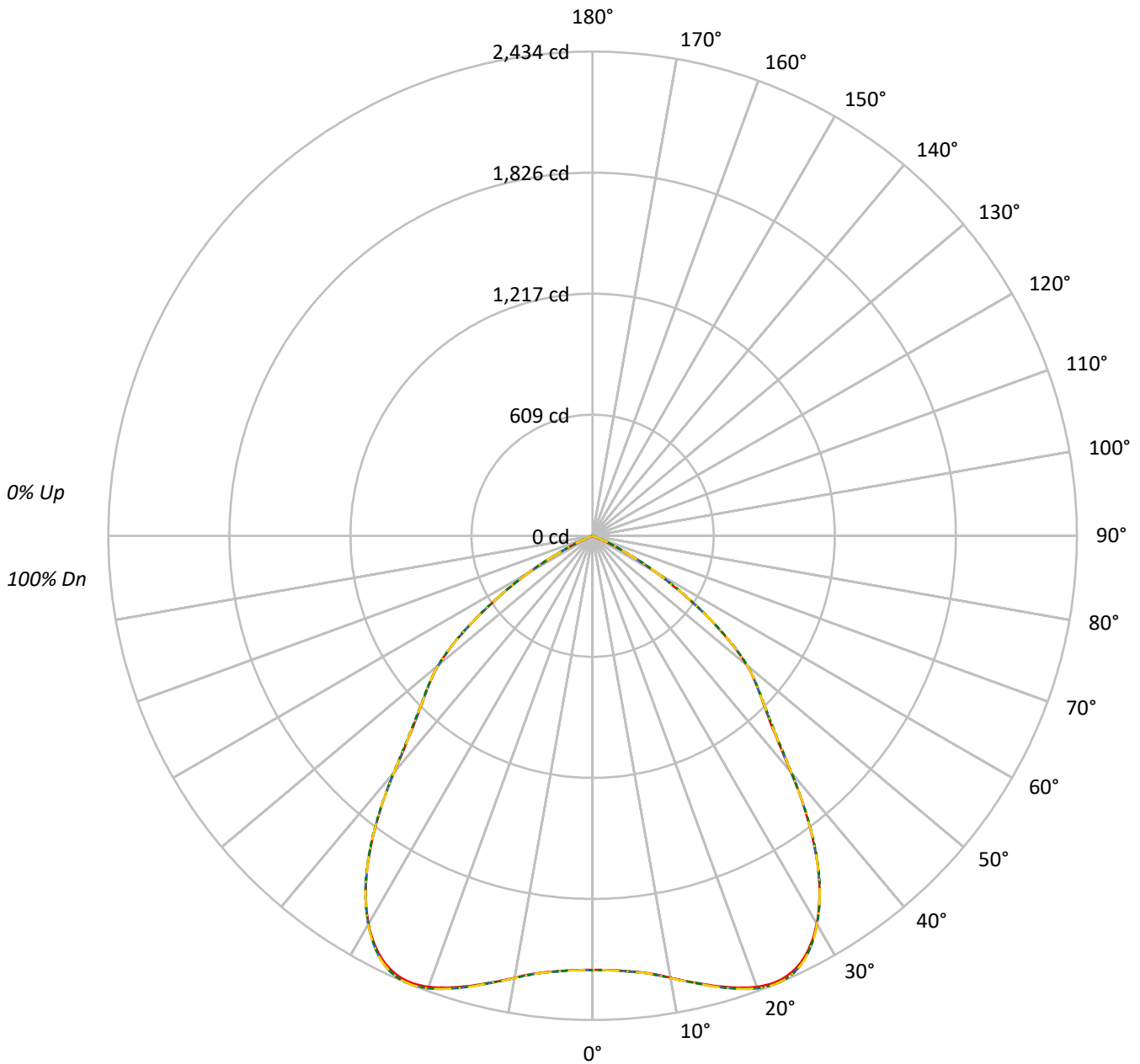
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P776337

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3500K

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	103	109	106	103	101	102	100	98	98	97	95	95	93	92	90																			
2	104	98	93	88	102	96	91	87	93	89	85	90	86	84	87	84	82	80																			
3	97	88	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71																			
4	90	80	73	67	88	79	72	67	76	71	66	74	69	65	72	68	64	63																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	66	59	53	76	65	58	53	64	57	52	62	56	52	61	56	52	50																			
7	72	61	53	48	71	60	53	47	58	52	47	57	51	47	56	51	47	45																			
8	68	56	48	43	66	55	48	43	54	47	43	53	47	42	52	46	42	40																			
9	63	51	44	39	62	51	44	39	50	43	39	49	43	39	48	42	38	37																			
10	60	48	40	36	58	47	40	36	46	40	35	45	39	35	44	39	35	34																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	119656	119656	119656	119656
5°	120966	121054	120966	121054
10°	125593	125638	125593	125638
15°	132878	133009	132878	133009
20°	140759	141150	140759	141150
25°	145436	146041	145436	146041
30°	142592	142769	142592	142769
35°	130908	131337	130908	131337
40°	110979	111430	110979	111430
45°	95056	95545	95056	95545
50°	86232	86428	86232	86428
55°	66397	67085	66397	67085
60°	39997	41269	39997	41269
65°	12531	15981	12531	15981
70°	64	641	64	641
75°	0	85	0	85
80°	0	0	0	0
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 95545 cd/sqm



TEST NUMBER: P776337

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	211.7	4.3
10°-20°	666.5	13.6
20°-30°	1102.0	22.5
30°-40°	1209.5	24.7
40°-50°	960.5	19.6
50°-60°	618.6	12.6
60°-70°	135.5	2.8
70°-80°	0.4	0.0
80°-90°	0.0	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°	1980.2	40.4
0°-40°	3189.8	65.0
0°-60°	4768.9	97.2
0°-90°	4904.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4904.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2183	2183	2183	2183	2183	
5°	2198	2200	2198	2200	2198	212
15°	2341	2344	2341	2344	2341	666
25°	2404	2414	2404	2414	2404	1099
35°	1956	1962	1956	1962	1956	1208
45°	1226	1232	1226	1232	1226	958
55°	695	702	695	702	695	615
65°	97	123	97	123	97	123
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

TEST NUMBER: P776337

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2182.7	2182.7	2182.7	2182.7	2182.7	2182.7	2182.7	2182.7	2182.7	2182.7	2182.7
0.5°	2181.9	2182.7	2183.1	2183.5	2183.1	2183.5	2183.1	2182.7	2181.9	2182.7	2183.1
1°	2182.7	2183.1	2183.5	2183.9	2183.5	2183.9	2183.5	2183.1	2182.7	2183.1	2183.5
1.5°	2183.5	2183.9	2184.3	2184.7	2184.3	2184.7	2184.3	2183.9	2183.5	2183.9	2184.3
2°	2184.7	2185.1	2185.5	2185.5	2185.1	2185.5	2185.5	2185.1	2184.7	2185.1	2185.5
2.5°	2185.9	2186.3	2187.1	2187.1	2186.7	2187.1	2187.1	2186.3	2185.9	2186.3	2187.1
3°	2187.8	2188.2	2188.6	2188.6	2188.2	2188.6	2188.6	2188.2	2187.8	2188.2	2188.6
3.5°	2189.8	2190.2	2191.0	2191.0	2190.6	2191.0	2191.0	2190.2	2189.8	2190.2	2191.0
4°	2192.2	2192.6	2193.4	2193.8	2193.4	2193.8	2193.4	2192.6	2192.2	2192.6	2193.4
4.5°	2195.0	2195.4	2196.2	2196.6	2196.2	2196.6	2196.2	2195.4	2195.0	2195.4	2196.2
5°	2198.2	2198.6	2199.4	2199.8	2199.4	2199.8	2199.4	2198.6	2198.2	2198.6	2199.4
5.5°	2201.4	2202.2	2202.9	2203.7	2203.3	2203.7	2202.9	2202.2	2201.4	2202.2	2202.9
6°	2205.3	2205.7	2206.9	2207.7	2207.3	2207.7	2206.9	2205.7	2205.3	2205.7	2206.9
6.5°	2209.7	2210.1	2211.3	2211.7	2211.3	2211.7	2211.3	2210.1	2209.7	2210.1	2211.3
7°	2214.5	2214.9	2216.1	2216.5	2216.1	2216.5	2216.1	2214.9	2214.5	2214.9	2216.1
7.5°	2220.0	2220.4	2221.6	2221.6	2221.2	2221.6	2221.6	2220.4	2220.0	2220.4	2221.6
8°	2225.6	2226.4	2227.6	2228.0	2227.6	2228.0	2227.6	2226.4	2225.6	2226.4	2227.6
8.5°	2232.4	2233.2	2234.7	2234.7	2234.3	2234.7	2234.7	2233.2	2232.4	2233.2	2234.7
9°	2239.9	2240.7	2241.9	2242.3	2241.5	2242.3	2241.9	2240.7	2239.9	2240.7	2241.9
9.5°	2247.9	2248.7	2249.8	2250.2	2249.0	2250.2	2249.8	2248.7	2247.9	2248.7	2249.8
10°	2256.2	2257.0	2258.2	2258.2	2257.0	2258.2	2258.2	2257.0	2256.2	2257.0	2258.2
10.5°	2264.5	2265.3	2266.1	2266.1	2265.3	2266.1	2266.1	2265.3	2264.5	2265.3	2266.1
11°	2272.9	2274.1	2274.9	2274.5	2273.7	2274.5	2274.9	2274.1	2272.9	2274.1	2274.9
11.5°	2281.6	2282.4	2283.2	2282.8	2282.0	2282.8	2283.2	2282.4	2281.6	2282.4	2283.2
12°	2290.0	2290.8	2291.6	2291.6	2290.8	2291.6	2291.6	2290.8	2290.0	2290.8	2291.6
12.5°	2298.3	2299.5	2300.3	2300.3	2299.5	2300.3	2300.3	2299.5	2298.3	2299.5	2300.3
13°	2306.7	2308.3	2309.1	2309.1	2308.3	2309.1	2309.1	2308.3	2306.7	2308.3	2309.1
13.5°	2315.4	2317.0	2318.2	2317.8	2317.0	2317.8	2318.2	2317.0	2315.4	2317.0	2318.2
14°	2323.8	2325.8	2327.3	2327.3	2325.8	2327.3	2327.3	2325.8	2323.8	2325.8	2327.3
14.5°	2332.5	2334.5	2336.1	2336.5	2334.9	2336.5	2336.1	2334.5	2332.5	2334.5	2336.1
15°	2341.3	2343.2	2345.2	2345.6	2343.6	2345.6	2345.2	2343.2	2341.3	2343.2	2345.2
15.5°	2349.6	2352.0	2354.4	2354.4	2352.4	2354.4	2354.4	2352.0	2349.6	2352.0	2354.4
16°	2357.9	2360.7	2363.1	2363.1	2361.1	2363.1	2363.1	2360.7	2357.9	2360.7	2363.1
16.5°	2365.9	2368.7	2371.5	2371.5	2369.5	2371.5	2371.5	2368.7	2365.9	2368.7	2371.5
17°	2374.2	2377.0	2379.8	2379.8	2377.4	2379.8	2379.8	2377.0	2374.2	2377.0	2379.8
17.5°	2381.8	2385.0	2387.8	2387.8	2385.4	2387.8	2387.8	2385.0	2381.8	2385.0	2387.8
18°	2388.9	2392.5	2395.3	2395.3	2393.3	2395.3	2395.3	2392.5	2388.9	2392.5	2395.3
18.5°	2395.7	2399.7	2402.5	2402.5	2400.5	2402.5	2402.5	2399.7	2395.7	2399.7	2402.5
19°	2402.1	2406.0	2409.2	2408.8	2407.2	2408.8	2409.2	2406.0	2402.1	2406.0	2409.2
19.5°	2407.6	2411.6	2415.6	2414.8	2413.6	2414.8	2415.6	2411.6	2407.6	2411.6	2415.6
20°	2412.8	2416.8	2421.1	2419.9	2419.5	2419.9	2421.1	2416.8	2412.8	2416.8	2421.1
20.5°	2417.2	2421.1	2425.5	2424.3	2424.3	2424.3	2425.5	2421.1	2417.2	2421.1	2425.5
21°	2420.3	2424.3	2429.1	2427.5	2428.3	2427.5	2429.1	2424.3	2420.3	2424.3	2429.1



TEST NUMBER: P776337

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2424.3	2427.9	2433.5	2431.5	2433.9	2431.5	2433.5	2427.9	2424.3	2427.9	2433.5
23°	2423.5	2426.7	2432.7	2430.3	2433.1	2430.3	2432.7	2426.7	2423.5	2426.7	2432.7
23.5°	2421.1	2424.3	2430.3	2427.5	2431.1	2427.5	2430.3	2424.3	2421.1	2424.3	2430.3
24°	2417.2	2420.3	2426.3	2423.9	2427.1	2423.9	2426.3	2420.3	2417.2	2420.3	2426.3
24.5°	2411.6	2414.8	2420.7	2418.8	2421.5	2418.8	2420.7	2414.8	2411.6	2414.8	2420.7
25°	2404.4	2408.0	2413.6	2412.0	2414.4	2412.0	2413.6	2408.0	2404.4	2408.0	2413.6
25.5°	2396.5	2399.7	2405.2	2404.0	2405.2	2404.0	2405.2	2399.7	2396.5	2399.7	2405.2
26°	2386.6	2389.7	2394.9	2394.5	2394.9	2394.5	2394.9	2389.7	2386.6	2389.7	2394.9
26.5°	2374.2	2377.8	2383.0	2383.4	2382.6	2383.4	2383.0	2377.8	2374.2	2377.8	2383.0
27°	2361.5	2365.1	2369.5	2370.7	2368.7	2370.7	2369.5	2365.1	2361.5	2365.1	2369.5
27.5°	2346.8	2350.4	2354.4	2356.4	2353.2	2356.4	2354.4	2350.4	2346.8	2350.4	2354.4
28°	2330.5	2334.1	2337.3	2340.5	2336.1	2340.5	2337.3	2334.1	2330.5	2334.1	2337.3
28.5°	2313.4	2316.2	2319.4	2323.4	2317.8	2323.4	2319.4	2316.2	2313.4	2316.2	2319.4
29°	2294.4	2297.1	2299.5	2304.3	2298.3	2304.3	2299.5	2297.1	2294.4	2297.1	2299.5
29.5°	2274.1	2276.5	2279.3	2283.2	2277.7	2283.2	2279.3	2276.5	2274.1	2276.5	2279.3
30°	2252.6	2254.2	2256.2	2261.0	2255.4	2261.0	2256.2	2254.2	2252.6	2254.2	2256.2
30.5°	2229.6	2230.4	2232.8	2237.5	2232.0	2237.5	2232.8	2230.4	2229.6	2230.4	2232.8
31°	2204.5	2205.3	2207.7	2212.1	2207.3	2212.1	2207.7	2205.3	2204.5	2205.3	2207.7
31.5°	2178.7	2178.7	2181.5	2185.1	2181.5	2185.1	2181.5	2178.7	2178.7	2178.7	2181.5
32°	2151.3	2150.9	2153.3	2156.8	2154.5	2156.8	2153.3	2150.9	2151.3	2150.9	2153.3
32.5°	2122.3	2121.5	2124.7	2127.0	2126.2	2127.0	2124.7	2121.5	2122.3	2121.5	2124.7
33°	2092.1	2091.3	2094.1	2096.0	2096.4	2096.0	2094.1	2091.3	2092.1	2091.3	2094.1
33.5°	2060.3	2058.7	2062.3	2063.5	2064.6	2063.5	2062.3	2058.7	2060.3	2058.7	2062.3
34°	2027.3	2025.7	2028.9	2029.3	2032.5	2029.3	2028.9	2025.7	2027.3	2025.7	2028.9
34.5°	1991.9	1991.9	1993.9	1994.3	1997.9	1994.3	1993.9	1991.9	1991.9	1991.9	1993.9
35°	1956.1	1955.7	1957.7	1958.5	1962.5	1958.5	1957.7	1955.7	1956.1	1955.7	1957.7
35.5°	1919.6	1919.6	1921.2	1922.0	1925.9	1922.0	1921.2	1919.6	1919.6	1919.6	1921.2
36°	1882.2	1882.2	1883.4	1884.6	1887.4	1884.6	1883.4	1882.2	1882.2	1882.2	1883.4
36.5°	1843.7	1844.1	1844.9	1845.7	1848.8	1845.7	1844.9	1844.1	1843.7	1844.1	1844.9
37°	1803.5	1804.3	1804.7	1805.9	1808.3	1805.9	1804.7	1804.3	1803.5	1804.3	1804.7
37.5°	1763.4	1763.8	1764.6	1765.8	1767.0	1765.8	1764.6	1763.8	1763.4	1763.8	1764.6
38°	1722.5	1722.5	1723.6	1724.4	1725.6	1724.4	1723.6	1722.5	1722.5	1722.5	1723.6
38.5°	1680.7	1680.7	1681.9	1682.7	1683.5	1682.7	1681.9	1680.7	1680.7	1680.7	1681.9
39°	1638.2	1638.2	1639.8	1641.0	1641.4	1641.0	1639.8	1638.2	1638.2	1638.2	1639.8
39.5°	1594.5	1594.9	1596.5	1598.9	1599.3	1598.9	1596.5	1594.9	1594.5	1594.9	1596.5
40°	1550.8	1551.2	1553.9	1555.9	1557.1	1555.9	1553.9	1551.2	1550.8	1551.2	1553.9
40.5°	1507.8	1508.6	1512.2	1515.8	1516.6	1515.8	1512.2	1508.6	1507.8	1508.6	1512.2
41°	1467.3	1468.5	1472.1	1476.1	1477.6	1476.1	1472.1	1468.5	1467.3	1468.5	1472.1
41.5°	1429.2	1430.7	1433.9	1437.9	1439.1	1437.9	1433.9	1430.7	1429.2	1430.7	1433.9
42°	1394.2	1395.0	1398.2	1400.9	1403.3	1400.9	1398.2	1395.0	1394.2	1395.0	1398.2
42.5°	1361.6	1362.0	1366.0	1368.7	1370.3	1368.7	1366.0	1362.0	1361.6	1362.0	1366.0
43°	1329.8	1330.2	1334.6	1337.7	1341.3	1337.7	1334.6	1330.2	1329.8	1330.2	1334.6
43.5°	1300.4	1301.6	1304.8	1307.9	1310.7	1307.9	1304.8	1301.6	1300.4	1301.6	1304.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1226.1	1226.1	1228.8	1230.0	1232.4	1230.0	1228.8	1226.1	1226.1	1226.1	1228.8
45.5°	1203.4	1203.4	1206.2	1207.4	1208.6	1207.4	1206.2	1203.4	1203.4	1203.4	1206.2
46°	1181.6	1182.0	1183.9	1185.5	1186.3	1185.5	1183.9	1182.0	1181.6	1182.0	1183.9
46.5°	1160.5	1160.5	1162.5	1163.7	1165.3	1163.7	1162.5	1160.5	1160.5	1160.5	1162.5
47°	1139.8	1139.8	1141.4	1143.0	1144.2	1143.0	1141.4	1139.8	1139.8	1139.8	1141.4
47.5°	1119.2	1119.2	1121.1	1122.3	1122.7	1122.3	1121.1	1119.2	1119.2	1119.2	1121.1
48°	1099.3	1098.9	1100.9	1102.1	1102.9	1102.1	1100.9	1098.9	1099.3	1098.9	1100.9
48.5°	1078.6	1078.6	1080.2	1081.8	1082.2	1081.8	1080.2	1078.6	1078.6	1078.6	1080.2
49°	1057.2	1057.6	1059.1	1060.3	1061.1	1060.3	1059.1	1057.6	1057.2	1057.6	1059.1
49.5°	1035.3	1034.9	1036.9	1038.1	1038.5	1038.1	1036.9	1034.9	1035.3	1034.9	1036.9
50°	1011.1	1011.1	1012.3	1013.4	1013.4	1013.4	1012.3	1011.1	1011.1	1011.1	1012.3
50.5°	984.4	984.4	985.2	986.8	986.8	986.8	985.2	984.4	984.4	984.4	985.2
51°	956.2	955.8	957.0	958.2	959.4	958.2	957.0	955.8	956.2	955.8	957.0
51.5°	926.4	926.0	927.6	929.2	929.6	929.2	927.6	926.0	926.4	926.0	927.6
52°	895.4	895.8	897.0	898.2	899.0	898.2	897.0	895.8	895.4	895.8	897.0
52.5°	863.6	863.2	865.2	866.8	867.2	866.8	865.2	863.6	863.6	863.2	865.2
53°	830.2	830.6	832.6	834.6	834.2	834.6	832.6	830.6	830.2	830.6	832.6
53.5°	796.8	797.2	799.6	801.2	802.0	801.2	799.6	797.2	796.8	797.2	799.6
54°	762.7	763.5	765.8	767.4	767.8	767.4	765.8	763.5	762.7	763.5	765.8
54.5°	728.9	728.9	732.1	734.1	734.8	734.1	732.1	728.9	728.9	728.9	732.1
55°	694.7	695.1	698.7	700.3	701.9	700.3	698.7	695.1	694.7	695.1	698.7
55.5°	659.7	660.5	664.1	666.5	668.1	666.5	664.1	660.5	659.7	660.5	664.1
56°	625.2	626.3	630.3	632.3	634.3	632.3	630.3	626.3	625.2	626.3	630.3
56.5°	591.0	592.2	596.1	598.5	600.5	598.5	596.1	592.2	591.0	592.2	596.1
57°	556.8	558.8	562.4	565.1	567.1	565.1	562.4	558.8	556.8	558.8	562.4
57.5°	523.4	525.4	529.0	532.2	534.1	532.2	529.0	525.4	523.4	525.4	529.0
58°	490.4	492.0	496.0	500.0	501.6	500.0	496.0	492.0	490.4	492.0	496.0
58.5°	457.4	459.8	463.8	468.6	469.8	468.6	463.8	459.8	457.4	459.8	463.8
59°	425.6	428.4	431.6	436.8	438.0	436.8	431.6	428.4	425.6	428.4	431.6
59.5°	395.0	397.0	400.6	405.8	407.0	405.8	400.6	397.0	395.0	397.0	400.6
60°	364.8	366.4	370.0	374.8	376.4	374.8	370.0	366.4	364.8	366.4	370.0
60.5°	334.6	336.2	339.8	344.6	347.0	344.6	339.8	336.2	334.6	336.2	339.8
61°	305.2	306.8	311.2	315.6	317.9	315.6	311.2	306.8	305.2	306.8	311.2
61.5°	275.4	278.6	283.0	287.3	290.9	287.3	283.0	278.6	275.4	278.6	283.0
62°	247.2	251.2	255.5	260.3	263.9	260.3	255.5	251.2	247.2	251.2	255.5
62.5°	219.0	224.1	228.9	233.7	237.7	233.7	228.9	224.1	219.0	224.1	228.9
63°	191.6	198.7	203.1	207.9	212.2	207.9	203.1	198.7	191.6	198.7	203.1
63.5°	165.3	174.5	179.2	183.6	188.4	183.6	179.2	174.5	165.3	174.5	179.2
64°	139.9	151.8	157.4	161.4	166.1	161.4	157.4	151.8	139.9	151.8	157.4
64.5°	117.2	131.2	136.3	139.9	144.7	139.9	136.3	131.2	117.2	131.2	136.3
65°	96.6	111.3	116.4	119.6	123.2	119.6	116.4	111.3	96.6	111.3	116.4
65.5°	77.1	93.8	98.2	99.8	102.9	99.8	98.2	93.8	77.1	93.8	98.2
66°	60.4	77.9	81.1	83.5	85.0	83.5	81.1	77.9	60.4	77.9	81.1



TEST NUMBER: P776337

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	18.7	36.2	38.9	41.3	43.7	41.3	38.9	36.2	18.7	36.2	38.9
68°	11.1	25.4	27.8	31.0	35.8	31.0	27.8	25.4	11.1	25.4	27.8
68.5°	6.8	16.7	19.9	21.9	27.8	21.9	19.9	16.7	6.8	16.7	19.9
69°	4.0	9.9	12.3	13.9	19.9	13.9	12.3	9.9	4.0	9.9	12.3
69.5°	2.4	6.4	7.2	7.2	11.9	7.2	7.2	6.4	2.4	6.4	7.2
70°	0.4	3.2	4.0	4.0	4.0	4.0	4.0	3.2	0.4	3.2	4.0
70.5°	0.4	1.2	2.4	2.4	1.6	2.4	2.4	1.2	0.4	1.2	2.4
71°	0.4	0.4	1.2	1.2	0.4	1.2	1.2	0.4	0.4	0.4	1.2
71.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
72°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
72.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
73°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
73.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
74°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
74.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
75°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
75.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
76°	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P776337

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-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: P776337

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2182.7	2182.7	2182.7	2182.7	2182.7	2182.7
0.5°	2183.5	2183.1	2183.5	2183.1	2182.7	2181.9
1°	2183.9	2183.5	2183.9	2183.5	2183.1	2182.7
1.5°	2184.7	2184.3	2184.7	2184.3	2183.9	2183.5
2°	2185.5	2185.1	2185.5	2185.5	2185.1	2184.7
2.5°	2187.1	2186.7	2187.1	2187.1	2186.3	2185.9
3°	2188.6	2188.2	2188.6	2188.6	2188.2	2187.8
3.5°	2191.0	2190.6	2191.0	2191.0	2190.2	2189.8
4°	2193.8	2193.4	2193.8	2193.4	2192.6	2192.2
4.5°	2196.6	2196.2	2196.6	2196.2	2195.4	2195.0
5°	2199.8	2199.8	2199.8	2199.4	2198.6	2198.2
5.5°	2203.7	2203.3	2203.7	2202.9	2202.2	2201.4
6°	2207.7	2207.3	2207.7	2206.9	2205.7	2205.3
6.5°	2211.7	2211.3	2211.7	2211.3	2210.1	2209.7
7°	2216.5	2216.1	2216.5	2216.1	2214.9	2214.5
7.5°	2221.6	2221.2	2221.6	2221.6	2220.4	2220.0
8°	2228.0	2227.6	2228.0	2227.6	2226.4	2225.6
8.5°	2234.7	2234.3	2234.7	2234.7	2233.2	2232.4
9°	2242.3	2241.5	2242.3	2241.9	2240.7	2239.9
9.5°	2250.2	2249.0	2250.2	2249.8	2248.7	2247.9
10°	2258.2	2257.0	2258.2	2258.2	2257.0	2256.2
10.5°	2266.1	2265.3	2266.1	2266.1	2265.3	2264.5
11°	2274.5	2273.7	2274.5	2274.9	2274.1	2272.9
11.5°	2282.8	2282.0	2282.8	2283.2	2282.4	2281.6
12°	2291.6	2290.8	2291.6	2291.6	2290.8	2290.0
12.5°	2300.3	2299.5	2300.3	2300.3	2299.5	2298.3
13°	2309.1	2308.3	2309.1	2309.1	2308.3	2306.7
13.5°	2317.8	2317.0	2317.8	2318.2	2317.0	2315.4
14°	2327.3	2325.8	2327.3	2327.3	2325.8	2323.8
14.5°	2336.5	2334.9	2336.5	2336.1	2334.5	2332.5
15°	2345.6	2343.6	2345.6	2345.2	2343.2	2341.3
15.5°	2354.4	2352.4	2354.4	2354.4	2352.0	2349.6
16°	2363.1	2361.1	2363.1	2363.1	2360.7	2357.9
16.5°	2371.5	2369.5	2371.5	2371.5	2368.7	2365.9
17°	2379.8	2377.4	2379.8	2379.8	2377.0	2374.2
17.5°	2387.8	2385.4	2387.8	2387.8	2385.0	2381.8
18°	2395.3	2393.3	2395.3	2395.3	2392.5	2388.9
18.5°	2402.5	2400.5	2402.5	2402.5	2399.7	2395.7
19°	2408.8	2407.2	2408.8	2409.2	2406.0	2402.1
19.5°	2414.8	2413.6	2414.8	2415.6	2411.6	2407.6
20°	2419.9	2419.5	2419.9	2421.1	2416.8	2412.8
20.5°	2424.3	2424.3	2424.3	2425.5	2421.1	2417.2
21°	2427.5	2428.3	2427.5	2429.1	2424.3	2420.3



TEST NUMBER: P776337

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2431.5	2433.9	2431.5	2433.5	2427.9	2424.3
23°	2430.3	2433.1	2430.3	2432.7	2426.7	2423.5
23.5°	2427.5	2431.1	2427.5	2430.3	2424.3	2421.1
24°	2423.9	2427.1	2423.9	2426.3	2420.3	2417.2
24.5°	2418.8	2421.5	2418.8	2420.7	2414.8	2411.6
25°	2412.0	2414.4	2412.0	2413.6	2408.0	2404.4
25.5°	2404.0	2405.2	2404.0	2405.2	2399.7	2396.5
26°	2394.5	2394.9	2394.5	2394.9	2389.7	2386.6
26.5°	2383.4	2382.6	2383.4	2383.0	2377.8	2374.2
27°	2370.7	2368.7	2370.7	2369.5	2365.1	2361.5
27.5°	2356.4	2353.2	2356.4	2354.4	2350.4	2346.8
28°	2340.5	2336.1	2340.5	2337.3	2334.1	2330.5
28.5°	2323.4	2317.8	2323.4	2319.4	2316.2	2313.4
29°	2304.3	2298.3	2304.3	2299.5	2297.1	2294.4
29.5°	2283.2	2277.7	2283.2	2279.3	2276.5	2274.1
30°	2261.0	2255.4	2261.0	2256.2	2254.2	2252.6
30.5°	2237.5	2232.0	2237.5	2232.8	2230.4	2229.6
31°	2212.1	2207.3	2212.1	2207.7	2205.3	2204.5
31.5°	2185.1	2181.5	2185.1	2181.5	2178.7	2178.7
32°	2156.8	2154.5	2156.8	2153.3	2150.9	2151.3
32.5°	2127.0	2126.2	2127.0	2124.7	2121.5	2122.3
33°	2096.0	2096.4	2096.0	2094.1	2091.3	2092.1
33.5°	2063.5	2064.6	2063.5	2062.3	2058.7	2060.3
34°	2029.3	2032.5	2029.3	2028.9	2025.7	2027.3
34.5°	1994.3	1997.9	1994.3	1993.9	1991.9	1991.9
35°	1958.5	1962.5	1958.5	1957.7	1955.7	1956.1
35.5°	1922.0	1925.9	1922.0	1921.2	1919.6	1919.6
36°	1884.6	1887.4	1884.6	1883.4	1882.2	1882.2
36.5°	1845.7	1848.8	1845.7	1844.9	1844.1	1843.7
37°	1805.9	1808.3	1805.9	1804.7	1804.3	1803.5
37.5°	1765.8	1767.0	1765.8	1764.6	1763.8	1763.4
38°	1724.4	1725.6	1724.4	1723.6	1722.5	1722.5
38.5°	1682.7	1683.5	1682.7	1681.9	1680.7	1680.7
39°	1641.0	1641.4	1641.0	1639.8	1638.2	1638.2
39.5°	1598.9	1599.3	1598.9	1596.5	1594.9	1594.5
40°	1555.9	1557.1	1555.9	1553.9	1551.2	1550.8
40.5°	1515.8	1516.6	1515.8	1512.2	1508.6	1507.8
41°	1476.1	1477.6	1476.1	1472.1	1468.5	1467.3
41.5°	1437.9	1439.1	1437.9	1433.9	1430.7	1429.2
42°	1400.9	1403.3	1400.9	1398.2	1395.0	1394.2
42.5°	1368.7	1370.3	1368.7	1366.0	1362.0	1361.6
43°	1337.7	1341.3	1337.7	1334.6	1330.2	1329.8
43.5°	1307.9	1310.7	1307.9	1304.8	1301.6	1300.4



TEST NUMBER: P776337

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1230.0	1232.4	1230.0	1228.8	1226.1	1226.1
45.5°	1207.4	1208.6	1207.4	1206.2	1203.4	1203.4
46°	1185.5	1186.3	1185.5	1183.9	1182.0	1181.6
46.5°	1163.7	1165.3	1163.7	1162.5	1160.5	1160.5
47°	1143.0	1144.2	1143.0	1141.4	1139.8	1139.8
47.5°	1122.3	1122.7	1122.3	1121.1	1119.2	1119.2
48°	1102.1	1102.9	1102.1	1100.9	1098.9	1099.3
48.5°	1081.8	1082.2	1081.8	1080.2	1078.6	1078.6
49°	1060.3	1061.1	1060.3	1059.1	1057.6	1057.2
49.5°	1038.1	1038.5	1038.1	1036.9	1034.9	1035.3
50°	1013.4	1013.4	1013.4	1012.3	1011.1	1011.1
50.5°	986.8	986.8	986.8	985.2	984.4	984.4
51°	958.2	959.4	958.2	957.0	955.8	956.2
51.5°	929.2	929.6	929.2	927.6	926.0	926.4
52°	898.2	899.0	898.2	897.0	895.8	895.4
52.5°	866.8	867.2	866.8	865.2	863.2	863.6
53°	834.6	834.2	834.6	832.6	830.6	830.2
53.5°	801.2	802.0	801.2	799.6	797.2	796.8
54°	767.4	767.8	767.4	765.8	763.5	762.7
54.5°	734.1	734.8	734.1	732.1	728.9	728.9
55°	700.3	701.9	700.3	698.7	695.1	694.7
55.5°	666.5	668.1	666.5	664.1	660.5	659.7
56°	632.3	634.3	632.3	630.3	626.3	625.2
56.5°	598.5	600.5	598.5	596.1	592.2	591.0
57°	565.1	567.1	565.1	562.4	558.8	556.8
57.5°	532.2	534.1	532.2	529.0	525.4	523.4
58°	500.0	501.6	500.0	496.0	492.0	490.4
58.5°	468.6	469.8	468.6	463.8	459.8	457.4
59°	436.8	438.0	436.8	431.6	428.4	425.6
59.5°	405.8	407.0	405.8	400.6	397.0	395.0
60°	374.8	376.4	374.8	370.0	366.4	364.8
60.5°	344.6	347.0	344.6	339.8	336.2	334.6
61°	315.6	317.9	315.6	311.2	306.8	305.2
61.5°	287.3	290.9	287.3	283.0	278.6	275.4
62°	260.3	263.9	260.3	255.5	251.2	247.2
62.5°	233.7	237.7	233.7	228.9	224.1	219.0
63°	207.9	212.2	207.9	203.1	198.7	191.6
63.5°	183.6	188.4	183.6	179.2	174.5	165.3
64°	161.4	166.1	161.4	157.4	151.8	139.9
64.5°	139.9	144.7	139.9	136.3	131.2	117.2
65°	119.6	123.2	119.6	116.4	111.3	96.6
65.5°	99.8	102.9	99.8	98.2	93.8	77.1
66°	83.5	85.0	83.5	81.1	77.9	60.4



TEST NUMBER: P776337

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	41.3	43.7	41.3	38.9	36.2	18.7
68°	31.0	35.8	31.0	27.8	25.4	11.1
68.5°	21.9	27.8	21.9	19.9	16.7	6.8
69°	13.9	19.9	13.9	12.3	9.9	4.0
69.5°	7.2	11.9	7.2	7.2	6.4	2.4
70°	4.0	4.0	4.0	4.0	3.2	0.4
70.5°	2.4	1.6	2.4	2.4	1.2	0.4
71°	1.2	0.4	1.2	1.2	0.4	0.4
71.5°	0.4	0.4	0.4	0.4	0.4	0.4
72°	0.4	0.4	0.4	0.4	0.4	0.4
72.5°	0.4	0.4	0.4	0.4	0.4	0.4
73°	0.4	0.4	0.4	0.4	0.4	0.4
73.5°	0.4	0.4	0.4	0.4	0.4	0.4
74°	0.4	0.4	0.4	0.4	0.4	0.4
74.5°	0.4	0.4	0.4	0.4	0.4	0.4
75°	0.4	0.4	0.4	0.4	0.0	0.0
75.5°	0.4	0.4	0.4	0.0	0.0	0.0
76°	0.0	0.4	0.0	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	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
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: P776337

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRC-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
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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°	2423.1	2426.7	2431.9	2429.9	2431.5	2429.9	2431.9	2426.7	2423.1	2426.7	2431.9
22°	2424.3	2427.9	2433.5	2431.1	2433.1	2431.1	2433.5	2427.9	2424.3	2427.9	2433.5



44°	1273.8	1274.6	1277.7	1279.7	1282.9	1279.7	1277.7	1274.6	1273.8	1274.6	1277.7
44.5°	1249.5	1249.9	1252.7	1254.3	1256.3	1254.3	1252.7	1249.9	1249.5	1249.9	1252.7



66.5°	44.1	62.0	66.0	68.4	68.8	68.4	66.0	62.0	44.1	62.0	66.0
67°	30.6	48.9	51.3	53.7	54.1	53.7	51.3	48.9	30.6	48.9	51.3



89°	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

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21.5°	2429.9	2431.5	2429.9	2431.9	2426.7	2423.1
22°	2431.1	2433.1	2431.1	2433.5	2427.9	2424.3



44°	1279.7	1282.9	1279.7	1277.7	1274.6	1273.8
44.5°	1254.3	1256.3	1254.3	1252.7	1249.9	1249.5

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66.5°	68.4	68.8	68.4	66.0	62.0	44.1
67°	53.7	54.1	53.7	51.3	48.9	30.6

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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)