

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: P775642

Luminaire Tested: HCDJBL510CSD-HCD42TRC-1000lm-3500K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P775642  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B049)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL510CSD-HCD42TRC-1000lm-3500K  
Description: 4 INCH ROUND NARROW SPECULAR CLEAR TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

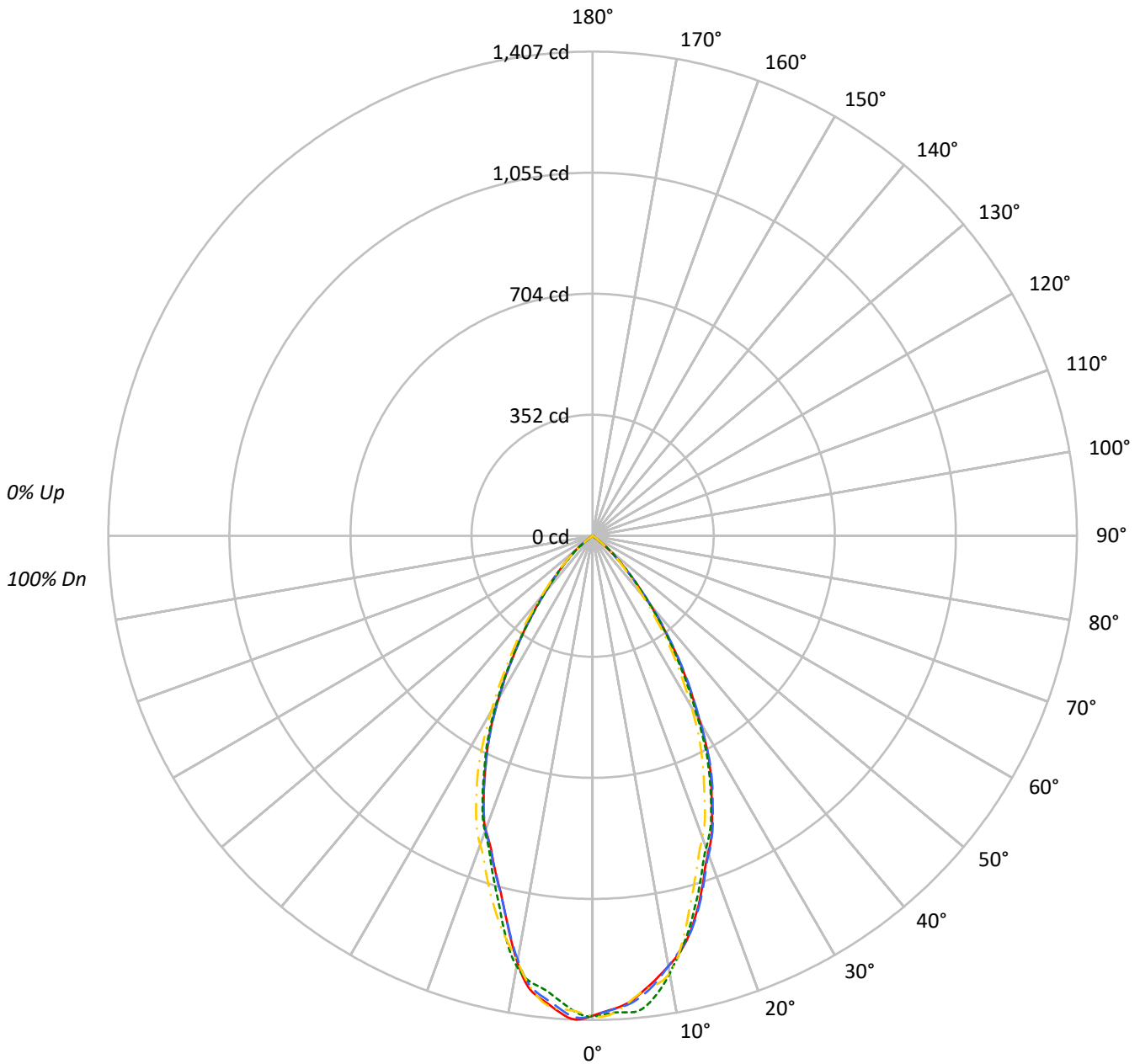
Lumens per Lamp: N/A  
Luminaire Lumens: 1148.1 lumens  
Efficiency: N/A  
Efficacy: 114.8 lumens/watt  
Spacing Criteria (0/90/45): 0.82 / 0.81 / 0.84  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 10  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93								
2	108	103	99	96	106	101	98	94	98	95	92	95	93	90	92	90	89	87								
3	102	96	91	87	100	95	90	86	92	88	85	89	86	84	87	85	82	81								
4	97	90	84	80	95	88	83	79	86	82	78	84	80	77	82	79	76	75								
5	92	84	78	74	90	83	77	73	81	76	73	79	75	72	78	74	71	70								
6	87	78	72	68	86	78	72	68	76	71	67	75	70	67	73	70	66	65								
7	83	74	68	63	82	73	67	63	72	67	63	71	66	63	69	65	62	61								
8	79	69	63	59	78	69	63	59	68	62	59	67	62	59	66	61	58	57								
9	75	65	59	55	74	65	59	55	64	59	55	63	58	55	62	58	55	53								
10	72	62	56	52	71	61	56	52	61	55	52	60	55	52	59	55	52	50								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	175586	175586	175586	175586
5°	170925	175549	173414	169270
10°	162257	164966	160825	162372
15°	149741	147683	137103	140296
20°	131409	129172	121726	122516
25°	113532	112546	102215	103284
30°	90723	88717	79577	80739
35°	66140	64265	56046	56430
40°	42287	41926	35946	35141
45°	23618	24258	21482	20877
50°	10729	11473	10651	10240
55°	636	614	505	570
60°	176	227	201	201
65°	89	119	119	119
70°	74	74	74	74
75°	49	49	49	49
80°	0	0	0	0
85°	0	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 24258 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	127.3	11.1
10°-20°	308.0	26.8
20°-30°	353.4	30.8
30°-40°	247.0	21.5
40°-50°	100.8	8.8
50°-60°	11.1	1.0
60°-70°	0.4	0.0
70°-80°	0.1	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°	788.7	68.7
0°-40°	1035.7	90.2
0°-60°	1147.5	100.0
0°-90°	1148.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1148.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1395	1395	1395	1395	1395	
5°	1353	1390	1373	1340	1353	126
15°	1149	1134	1052	1077	1149	319
25°	818	810	736	744	818	372
35°	430	418	365	367	430	267
45°	133	136	121	117	133	106
55°	3	3	2	3	3	11
65°	0	0	0	0	0	0
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
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°	1395.2	1395.2	1395.2	1395.2	1395.2	1395.2	1395.2	1395.2	1395.2	1395.2	1395.2
0.5°	1390.7	1390.6	1390.6	1390.9	1395.8	1396.2	1397.5	1398.7	1399.2	1399.1	1397.8
1°	1387.0	1386.7	1387.2	1388.0	1393.3	1395.1	1398.0	1401.1	1403.2	1403.1	1400.5
1.5°	1383.4	1382.9	1383.9	1385.5	1391.0	1392.9	1396.7	1401.7	1406.0	1406.2	1401.7
2°	1379.9	1379.0	1380.8	1383.8	1388.8	1389.9	1393.5	1400.1	1407.0	1407.8	1400.7
2.5°	1376.6	1374.9	1377.7	1382.7	1387.3	1386.5	1388.5	1395.7	1405.0	1407.0	1397.1
3°	1373.2	1370.0	1374.9	1382.7	1386.8	1382.7	1382.4	1389.6	1400.8	1403.2	1391.4
3.5°	1369.5	1364.4	1371.9	1384.0	1387.2	1378.9	1375.3	1382.3	1394.8	1397.8	1384.6
4°	1365.2	1358.4	1368.6	1385.6	1388.5	1374.7	1367.3	1374.2	1387.8	1390.8	1377.4
4.5°	1359.7	1350.9	1364.7	1387.5	1389.6	1369.7	1358.9	1366.0	1380.4	1383.6	1369.8
5°	1353.0	1342.8	1360.0	1388.2	1389.6	1363.5	1350.5	1357.8	1372.7	1376.4	1362.4
5.5°	1345.1	1334.3	1353.8	1386.8	1387.2	1356.2	1342.3	1350.4	1365.6	1369.1	1355.6
6°	1336.8	1325.8	1346.6	1382.7	1382.0	1347.7	1335.0	1343.9	1359.1	1361.8	1349.4
6.5°	1328.2	1318.3	1338.8	1375.7	1374.9	1339.8	1328.7	1338.5	1352.7	1354.7	1343.3
7°	1320.2	1312.0	1330.7	1366.0	1366.0	1332.2	1324.1	1333.8	1345.5	1346.8	1336.6
7.5°	1312.1	1306.4	1322.1	1353.7	1355.5	1324.8	1320.5	1329.6	1337.6	1336.9	1328.5
8°	1304.2	1301.4	1312.8	1339.1	1344.5	1318.1	1317.0	1324.5	1327.3	1324.6	1318.2
8.5°	1295.4	1297.0	1302.3	1322.2	1332.5	1311.0	1313.4	1317.8	1313.6	1309.4	1304.9
9°	1286.8	1293.0	1291.4	1304.3	1319.8	1303.3	1307.7	1308.5	1297.4	1291.2	1289.6
9.5°	1278.0	1289.1	1280.5	1286.4	1305.5	1295.5	1300.0	1296.5	1278.3	1270.4	1271.1
10°	1269.7	1285.8	1269.7	1268.6	1290.9	1286.7	1290.3	1282.0	1258.5	1248.0	1252.0
10.5°	1261.0	1282.5	1259.2	1252.8	1276.0	1276.7	1277.7	1265.7	1237.6	1223.5	1232.4
11°	1252.5	1278.7	1249.2	1238.2	1261.2	1265.2	1263.1	1248.0	1216.1	1198.9	1212.3
11.5°	1243.0	1273.0	1239.3	1225.2	1247.1	1251.9	1245.7	1229.6	1193.7	1174.1	1191.3
12°	1233.0	1264.5	1229.4	1213.4	1232.4	1236.7	1227.3	1210.6	1171.8	1149.0	1170.0
12.5°	1221.5	1252.9	1219.1	1202.5	1217.3	1219.3	1206.6	1190.9	1149.6	1124.9	1148.2
13°	1209.4	1238.7	1208.6	1191.6	1202.3	1200.9	1185.8	1170.7	1127.7	1102.4	1128.0
13.5°	1195.6	1222.6	1196.5	1179.7	1186.0	1180.7	1164.2	1149.1	1106.7	1081.1	1107.4
14°	1181.2	1205.1	1183.4	1166.4	1168.6	1160.2	1142.8	1129.2	1086.9	1062.0	1088.0
14.5°	1165.6	1186.9	1169.0	1152.6	1151.1	1139.0	1121.7	1108.7	1068.5	1043.8	1070.1
15°	1149.3	1167.6	1153.8	1138.1	1133.5	1118.4	1101.9	1089.6	1052.3	1027.0	1054.1
15.5°	1133.3	1149.3	1137.8	1123.7	1115.9	1099.2	1082.8	1070.9	1036.0	1011.7	1038.3
16°	1116.6	1130.7	1121.5	1108.5	1098.4	1080.4	1063.9	1052.7	1020.4	996.6	1022.8
16.5°	1099.4	1111.4	1104.6	1092.5	1081.0	1061.5	1044.8	1033.9	1004.0	981.3	1006.5
17°	1081.1	1092.0	1086.9	1075.4	1062.9	1042.7	1026.7	1015.0	988.0	966.1	990.5
17.5°	1063.1	1072.0	1069.0	1058.2	1044.4	1023.7	1008.6	996.3	971.6	951.1	974.3
18°	1044.4	1052.3	1050.3	1040.7	1026.7	1005.0	990.9	978.8	956.1	937.0	959.1
18.5°	1026.3	1033.4	1031.9	1023.3	1008.8	987.3	974.0	961.6	942.5	924.4	944.8
19°	1009.4	1015.7	1014.6	1007.0	992.5	971.4	959.0	947.2	930.5	913.5	933.0
19.5°	994.6	1000.2	999.1	992.9	977.4	957.8	946.0	934.2	919.8	903.2	920.9
20°	981.2	986.1	985.5	980.3	964.5	945.1	933.6	921.5	908.9	892.2	908.9
20.5°	969.2	972.8	972.8	968.8	952.5	932.6	920.7	907.6	896.3	879.3	895.1
21°	955.5	958.7	958.7	956.8	940.4	918.9	905.5	891.9	881.8	864.8	879.7



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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°	907.2	910.5	912.2	915.4	898.4	872.6	852.7	834.4	827.7	813.4	827.9
23°	888.0	892.6	894.1	898.8	881.2	855.1	833.1	813.8	809.4	796.6	809.3
23.5°	869.4	875.1	876.3	882.0	863.5	838.2	813.2	795.0	791.0	779.7	790.7
24°	851.3	857.7	858.3	864.1	846.0	821.7	796.1	776.1	772.8	762.9	772.2
24.5°	834.1	841.4	841.5	845.5	828.0	804.3	779.0	757.2	754.4	746.0	753.6
25°	817.6	825.3	824.1	825.9	810.5	787.5	761.9	738.4	736.1	729.1	735.0
25.5°	801.7	809.7	807.8	806.9	792.4	770.8	744.8	720.8	718.6	712.7	716.4
26°	785.0	793.9	790.4	786.7	774.2	754.0	727.7	703.8	701.4	695.1	699.1
26.5°	767.9	777.3	772.9	766.9	756.0	737.2	710.6	686.3	683.2	676.9	680.9
27°	750.0	759.5	753.9	745.8	737.8	717.9	693.1	669.1	665.1	658.3	662.4
27.5°	731.2	741.1	734.4	725.9	719.5	698.7	674.8	651.2	646.3	639.1	643.7
28°	711.1	721.7	713.7	705.1	697.8	678.7	656.2	631.7	627.2	619.5	624.3
28.5°	690.0	701.7	692.0	685.2	675.7	658.3	635.7	612.0	607.0	598.8	604.2
29°	667.7	682.0	670.0	664.6	653.7	638.0	615.0	592.1	587.2	578.2	584.6
29.5°	646.1	661.2	648.1	644.6	631.9	617.1	594.1	571.4	567.4	557.7	564.5
30°	624.3	640.1	626.7	624.5	610.5	596.2	573.4	551.1	547.6	538.2	544.7
30.5°	602.8	619.1	605.8	604.5	589.3	575.4	552.5	531.7	527.9	517.9	524.8
31°	582.1	597.6	585.6	583.8	569.9	555.9	532.5	513.0	508.8	498.5	506.2
31.5°	562.0	576.9	566.4	563.8	548.5	535.9	513.6	494.5	489.9	479.7	487.1
32°	542.6	556.3	547.5	543.7	529.1	516.2	494.8	476.8	471.1	462.6	468.7
32.5°	523.5	535.6	528.8	524.0	509.6	495.7	476.4	458.6	451.9	444.4	450.4
33°	505.2	515.6	510.7	504.8	491.8	476.6	457.9	441.1	433.8	427.2	432.2
33.5°	486.6	495.8	491.7	486.0	472.0	457.0	440.1	423.9	415.4	410.0	414.6
34°	468.1	476.1	472.9	467.8	453.3	438.5	422.0	406.5	398.6	394.2	397.0
34.5°	449.2	456.1	454.1	449.9	435.5	419.5	404.1	388.5	381.3	377.4	380.2
35°	430.5	436.6	435.4	431.8	418.3	401.3	385.7	371.2	364.8	361.3	363.6
35.5°	412.1	417.4	416.9	414.1	400.5	383.3	367.7	354.3	348.7	345.3	347.3
36°	393.8	398.6	398.2	396.1	383.2	366.5	349.8	337.7	333.2	330.2	331.0
36.5°	375.0	380.2	380.2	377.6	366.3	348.5	332.0	320.5	317.2	314.5	315.3
37°	357.7	363.1	362.9	360.4	350.3	331.6	314.6	303.8	301.6	300.2	299.7
37.5°	340.4	346.0	345.6	343.2	333.1	315.0	298.1	288.3	286.4	285.9	284.7
38°	323.1	328.8	328.4	325.9	317.2	299.5	282.0	272.9	272.0	272.0	269.9
38.5°	305.8	311.7	311.0	308.7	301.2	284.0	266.8	257.7	258.0	258.5	255.9
39°	288.4	294.6	293.7	291.5	286.2	269.1	252.0	242.8	244.4	245.6	242.3
39.5°	272.4	278.3	277.5	275.9	269.9	254.8	237.6	228.6	231.1	232.8	229.4
40°	257.4	262.7	261.3	260.9	255.2	241.1	223.7	214.8	218.8	220.7	216.6
40.5°	242.3	247.8	245.3	246.5	240.8	227.8	210.3	201.8	207.1	209.0	204.9
41°	227.4	233.5	230.5	232.2	227.2	215.3	197.8	189.3	195.8	198.0	193.5
41.5°	213.3	219.4	216.2	218.4	213.7	203.0	185.9	178.1	185.0	187.3	182.6
42°	200.7	206.4	202.8	204.9	201.7	191.5	174.9	167.4	174.4	177.1	172.3
42.5°	188.2	193.5	189.8	191.5	189.5	180.6	164.6	157.9	164.8	167.4	162.2
43°	176.2	181.0	177.4	179.1	178.1	169.9	155.1	148.9	155.3	158.0	152.8
43.5°	164.2	168.5	165.7	166.8	167.0	159.6	146.0	140.8	146.0	148.7	143.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	132.7	134.8	133.8	134.3	136.3	132.0	121.9	117.6	120.7	122.9	119.2
45.5°	122.4	124.7	124.0	125.0	127.2	123.0	114.5	110.7	113.1	114.8	111.7
46°	113.6	115.5	114.7	116.0	117.9	114.6	107.3	103.9	105.6	107.0	104.5
46.5°	104.5	106.2	105.7	107.1	109.6	106.8	100.5	97.4	98.8	99.9	97.7
47°	96.3	97.5	97.3	98.9	101.4	99.6	93.9	91.0	92.0	93.0	91.1
47.5°	87.8	89.0	89.0	90.9	93.8	92.3	87.3	84.6	85.2	85.9	84.4
48°	80.3	81.4	81.3	83.1	86.2	85.2	80.6	78.1	78.4	78.9	77.7
48.5°	73.2	74.1	74.1	76.0	78.7	77.9	74.0	71.8	71.6	71.8	71.1
49°	67.0	67.5	67.5	69.1	71.2	70.8	68.0	65.9	65.7	66.0	65.3
49.5°	60.8	61.0	61.2	62.4	64.7	64.5	62.3	60.3	59.9	60.3	59.7
50°	54.8	54.8	54.9	56.2	58.6	58.4	56.2	54.6	54.4	54.7	54.0
50.5°	48.5	48.5	48.4	49.5	52.1	51.9	50.2	48.6	48.6	48.8	48.1
51°	41.7	41.6	41.4	42.3	45.1	45.0	43.3	42.0	42.1	42.1	41.4
51.5°	34.1	34.0	33.9	34.0	37.6	37.5	36.4	35.2	35.3	35.1	34.5
52°	27.9	27.8	27.8	27.9	30.0	29.5	28.7	28.1	28.2	27.8	27.2
52.5°	21.7	21.6	21.8	21.8	22.9	22.3	21.7	21.4	21.1	20.9	20.4
53°	15.4	15.4	15.7	15.5	18.9	18.3	17.7	17.5	17.3	17.2	16.8
53.5°	9.2	9.3	9.6	9.5	14.8	14.4	13.9	13.7	13.6	13.5	13.1
54°	5.6	5.7	5.9	5.9	10.7	10.4	10.1	9.8	9.8	9.7	9.4
54.5°	3.3	3.4	3.6	3.5	6.6	6.4	6.2	6.1	6.1	6.0	5.7
55°	2.9	2.9	3.0	3.0	2.8	2.6	2.4	2.3	2.3	2.3	2.3
55.5°	2.4	2.4	2.5	2.5	2.2	2.1	1.9	1.9	1.8	1.8	1.9
56°	1.9	1.9	2.0	2.1	1.9	1.8	1.7	1.6	1.6	1.6	1.7
56.5°	1.3	1.3	1.5	1.6	1.7	1.6	1.5	1.5	1.3	1.5	1.5
57°	1.2	1.2	1.3	1.5	1.6	1.5	1.3	1.2	1.2	1.2	1.3
57.5°	1.1	1.1	1.2	1.3	1.3	1.3	1.2	1.1	1.1	1.1	1.2
58°	1.0	1.0	1.1	1.2	1.2	1.2	1.1	1.1	1.0	1.0	1.1
58.5°	0.9	0.9	1.0	1.1	1.1	1.1	1.0	1.0	0.9	1.0	1.0
59°	0.8	0.9	0.9	1.0	1.1	1.0	0.9	0.9	0.9	0.9	0.9
59.5°	0.8	0.8	0.9	0.9	1.0	0.9	0.9	0.8	0.8	0.8	0.9
60°	0.7	0.7	0.8	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8
60.5°	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7
61°	0.6	0.6	0.7	0.7	0.8	0.7	0.7	0.7	0.6	0.7	0.7
61.5°	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6
62°	0.5	0.5	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6
62.5°	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.6
63°	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5
63.5°	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
64°	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.5
64.5°	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4
65°	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
65.5°	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4
66°	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3





TEST NUMBER: P775642  
 CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
68°	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3
68.5°	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2
69°	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2
69.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
70°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
70.5°	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
71°	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
71.5°	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2
72°	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1
72.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
73°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
73.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
74°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
74.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
75°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
75.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
76°	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
76.5°	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
77°	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
77.5°	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
78°	0.0	0.0	0.0	0.0	0.1	0.1	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: P775642  
CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-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: P775642

CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1395.2	1395.2	1395.2	1395.2	1395.2	1395.2
0.5°	1395.8	1397.0	1394.0	1392.5	1391.4	1390.7
1°	1396.6	1395.2	1391.2	1389.2	1387.9	1387.0
1.5°	1395.5	1391.3	1387.6	1385.9	1384.8	1383.4
2°	1392.0	1386.0	1383.1	1382.9	1382.2	1379.9
2.5°	1386.1	1379.0	1378.4	1380.9	1380.5	1376.6
3°	1378.8	1371.3	1373.8	1379.6	1379.4	1373.2
3.5°	1370.5	1363.4	1369.2	1379.1	1379.1	1369.5
4°	1362.3	1355.7	1364.3	1378.8	1379.1	1365.2
4.5°	1354.1	1347.8	1358.6	1378.2	1378.5	1359.7
5°	1346.6	1339.9	1352.2	1376.0	1376.3	1353.0
5.5°	1339.6	1332.7	1344.4	1371.2	1372.1	1345.1
6°	1333.5	1326.6	1336.3	1364.2	1365.5	1336.8
6.5°	1328.7	1321.5	1328.0	1355.2	1356.8	1328.2
7°	1324.8	1317.1	1319.9	1344.7	1346.5	1320.2
7.5°	1321.1	1313.2	1311.8	1332.6	1332.9	1312.1
8°	1316.8	1308.4	1303.2	1320.1	1319.4	1304.2
8.5°	1310.4	1302.0	1294.6	1305.5	1303.3	1295.4
9°	1301.6	1293.7	1285.0	1289.8	1287.3	1286.8
9.5°	1289.7	1283.1	1274.5	1273.2	1270.3	1278.0
10°	1275.2	1270.6	1263.2	1257.4	1254.8	1269.7
10.5°	1258.2	1257.0	1251.1	1242.1	1240.6	1261.0
11°	1239.9	1241.0	1237.8	1228.1	1227.4	1252.5
11.5°	1221.1	1222.0	1223.1	1214.4	1214.9	1243.0
12°	1200.6	1201.7	1207.2	1201.2	1203.8	1233.0
12.5°	1179.5	1180.5	1190.0	1187.4	1192.9	1221.5
13°	1158.7	1158.7	1172.0	1173.6	1182.0	1209.4
13.5°	1137.0	1136.8	1152.6	1158.3	1170.1	1195.6
14°	1114.7	1115.6	1132.5	1142.9	1157.6	1181.2
14.5°	1094.0	1095.7	1112.8	1127.0	1144.0	1165.6
15°	1074.2	1076.8	1093.4	1111.3	1130.3	1149.3
15.5°	1055.3	1058.4	1074.6	1095.5	1116.4	1133.3
16°	1036.8	1040.2	1055.8	1079.4	1101.6	1116.6
16.5°	1018.2	1022.5	1037.2	1062.5	1086.0	1099.4
17°	999.4	1004.5	1019.0	1045.4	1069.4	1081.1
17.5°	980.6	986.5	1000.4	1028.3	1052.6	1063.1
18°	962.5	969.1	982.4	1011.0	1035.5	1044.4
18.5°	945.5	953.9	965.5	994.0	1018.4	1026.3
19°	930.7	939.7	951.0	978.9	1002.9	1009.4
19.5°	917.5	927.3	938.1	966.5	989.7	994.6
20°	904.6	914.8	925.4	955.3	978.2	981.2
20.5°	890.5	902.0	912.5	943.8	966.7	969.2
21°	874.9	887.4	898.5	930.9	954.3	955.5



TEST NUMBER: P775642

CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	820.6	836.1	852.2	884.6	908.6	907.2
23°	802.1	817.6	834.9	866.8	890.2	888.0
23.5°	783.8	799.1	817.9	848.4	872.0	869.4
24°	765.3	780.1	800.8	830.5	853.0	851.3
24.5°	747.0	761.8	783.8	812.8	834.7	834.1
25°	728.5	743.8	765.5	795.2	816.1	817.6
25.5°	712.0	726.7	748.5	777.4	797.5	801.7
26°	695.2	709.4	730.6	758.8	778.1	785.0
26.5°	677.6	692.0	712.5	739.5	758.9	767.9
27°	660.0	674.4	692.9	719.3	738.6	750.0
27.5°	641.3	655.7	673.7	698.2	718.1	731.2
28°	622.2	636.6	653.1	675.6	697.3	711.1
28.5°	601.7	616.8	632.1	653.8	677.8	690.0
29°	581.1	596.9	610.7	632.0	656.7	667.7
29.5°	560.9	575.9	589.7	610.8	636.4	646.1
30°	541.6	555.6	569.2	589.7	615.5	624.3
30.5°	522.5	535.2	548.3	569.6	595.0	602.8
31°	504.5	515.1	528.5	549.3	574.6	582.1
31.5°	486.4	495.4	509.1	529.6	554.5	562.0
32°	469.5	475.9	490.0	510.2	534.3	542.6
32.5°	451.6	457.5	471.1	490.2	514.5	523.5
33°	434.5	439.3	452.7	471.2	495.6	505.2
33.5°	416.8	421.5	434.2	452.5	477.2	486.6
34°	398.9	403.5	415.7	434.2	458.7	468.1
34.5°	381.5	385.1	398.0	416.7	440.8	449.2
35°	364.6	367.3	379.9	398.8	422.8	430.5
35.5°	347.8	350.3	363.3	382.1	405.5	412.1
36°	331.8	333.2	346.7	370.5	387.4	393.8
36.5°	315.5	316.2	330.2	353.2	367.8	375.0
37°	300.5	299.2	313.6	335.7	350.8	357.7
37.5°	284.5	283.4	297.2	318.3	333.9	340.4
38°	269.2	268.5	281.8	300.9	316.9	323.1
38.5°	254.1	253.9	267.3	285.3	300.1	305.8
39°	239.1	240.5	253.3	270.3	284.4	288.4
39.5°	224.6	226.5	239.6	255.6	268.8	272.4
40°	210.8	213.9	226.3	241.0	254.0	257.4
40.5°	197.8	201.3	213.9	227.3	239.6	242.3
41°	185.9	190.0	201.9	214.0	225.7	227.4
41.5°	175.0	178.9	190.5	201.6	212.4	213.3
42°	164.7	168.4	180.2	189.7	199.1	200.7
42.5°	155.5	159.0	169.7	178.5	186.8	188.2
43°	146.8	149.7	159.6	167.1	174.6	176.2
43.5°	138.7	141.0	150.0	156.3	163.0	164.2



TEST NUMBER: P775642

CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	116.4	117.3	123.8	127.0	131.0	132.7
45.5°	109.5	110.1	115.5	118.1	121.6	122.4
46°	102.7	103.0	107.4	109.7	112.9	113.6
46.5°	96.3	95.9	99.5	101.4	104.3	104.5
47°	90.0	89.1	91.9	93.4	96.1	96.3
47.5°	83.6	82.5	84.5	85.8	88.3	87.8
48°	77.3	76.1	77.7	78.7	80.8	80.3
48.5°	70.9	70.1	71.2	71.8	73.7	73.2
49°	65.3	64.3	65.3	65.6	67.4	67.0
49.5°	59.7	58.5	59.4	59.4	61.2	60.8
50°	53.9	52.3	53.3	53.4	55.0	54.8
50.5°	47.9	45.9	47.0	47.0	48.6	48.5
51°	41.1	38.8	39.7	40.1	41.8	41.7
51.5°	34.4	32.6	33.5	33.8	34.2	34.1
52°	26.9	26.5	27.2	27.5	27.9	27.9
52.5°	20.6	20.4	20.9	21.1	21.6	21.7
53°	16.9	14.3	14.6	14.8	15.3	15.4
53.5°	13.3	8.2	8.4	8.6	9.0	9.2
54°	9.5	4.9	5.1	5.2	5.5	5.6
54.5°	5.9	2.9	3.1	3.1	3.2	3.3
55°	2.4	2.6	2.7	2.6	2.7	2.9
55.5°	2.0	2.3	2.3	2.3	2.3	2.4
56°	1.8	1.9	1.9	1.9	1.9	1.9
56.5°	1.6	1.6	1.5	1.5	1.3	1.3
57°	1.5	1.3	1.3	1.2	1.2	1.2
57.5°	1.3	1.2	1.2	1.1	1.1	1.1
58°	1.2	1.1	1.1	1.0	1.0	1.0
58.5°	1.1	1.1	1.0	1.0	0.9	0.9
59°	1.0	1.0	0.9	0.9	0.9	0.8
59.5°	0.9	0.9	0.9	0.8	0.8	0.8
60°	0.9	0.8	0.8	0.8	0.7	0.7
60.5°	0.8	0.8	0.8	0.7	0.7	0.7
61°	0.7	0.7	0.7	0.7	0.6	0.6
61.5°	0.7	0.7	0.7	0.6	0.6	0.6
62°	0.6	0.6	0.6	0.6	0.5	0.5
62.5°	0.6	0.6	0.6	0.5	0.5	0.5
63°	0.6	0.6	0.5	0.5	0.5	0.5
63.5°	0.5	0.5	0.5	0.5	0.4	0.4
64°	0.5	0.5	0.5	0.4	0.4	0.4
64.5°	0.5	0.5	0.4	0.4	0.4	0.4
65°	0.4	0.4	0.4	0.4	0.3	0.3
65.5°	0.4	0.4	0.4	0.3	0.3	0.3
66°	0.4	0.4	0.3	0.3	0.3	0.3



TEST NUMBER: P775642

CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	0.3	0.3	0.3	0.3	0.2	0.2
68°	0.3	0.3	0.3	0.2	0.2	0.2
68.5°	0.3	0.3	0.2	0.2	0.2	0.2
69°	0.2	0.2	0.2	0.2	0.2	0.2
69.5°	0.2	0.2	0.2	0.2	0.2	0.2
70°	0.2	0.2	0.2	0.2	0.2	0.2
70.5°	0.2	0.2	0.2	0.2	0.2	0.1
71°	0.2	0.2	0.2	0.2	0.1	0.1
71.5°	0.2	0.2	0.2	0.1	0.1	0.1
72°	0.2	0.2	0.1	0.1	0.1	0.1
72.5°	0.1	0.1	0.1	0.1	0.1	0.1
73°	0.1	0.1	0.1	0.1	0.1	0.1
73.5°	0.1	0.1	0.1	0.1	0.1	0.1
74°	0.1	0.1	0.1	0.1	0.1	0.1
74.5°	0.1	0.1	0.1	0.1	0.1	0.1
75°	0.1	0.1	0.1	0.1	0.1	0.1
75.5°	0.1	0.1	0.1	0.1	0.1	0.1
76°	0.1	0.1	0.1	0.1	0.1	0.0
76.5°	0.1	0.1	0.1	0.1	0.0	0.0
77°	0.1	0.1	0.1	0.1	0.0	0.0
77.5°	0.1	0.1	0.1	0.0	0.0	0.0
78°	0.1	0.1	0.0	0.0	0.0	0.0
78.5°	0.1	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: P775642  
CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-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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— 0°-180°    - - 45°-225°    - - - - 90°-270°    - · - · 135°-315°

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21.5°	940.5	943.8	944.1	944.6	927.3	904.6	889.3	874.2	865.2	848.3	863.5
22°	923.9	927.2	928.3	930.8	913.5	889.4	871.7	855.0	847.0	831.3	846.2



44°	153.4	156.9	154.4	155.1	156.3	149.8	137.6	132.4	137.2	139.8	135.3
44.5°	142.9	145.5	143.8	144.3	145.9	140.9	129.9	125.0	128.7	131.2	127.1



66.5°	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
67°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3



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°	858.3	871.7	884.1	916.9	940.6	940.5
22°	839.8	854.3	867.9	901.7	925.0	923.9



44°	130.8	132.6	141.1	146.0	151.7	153.4
44.5°	123.4	124.9	132.0	136.3	141.0	142.9

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66.5°	0.3	0.3	0.3	0.3	0.3	0.3
67°	0.3	0.3	0.3	0.3	0.3	0.3

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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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(END OF REPORT)