

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: P775644

Luminaire Tested: HCDJBL510CSD-HCD42TRC-1000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775644
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-5000K
Description: 4 INCH ROUND NARROW SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

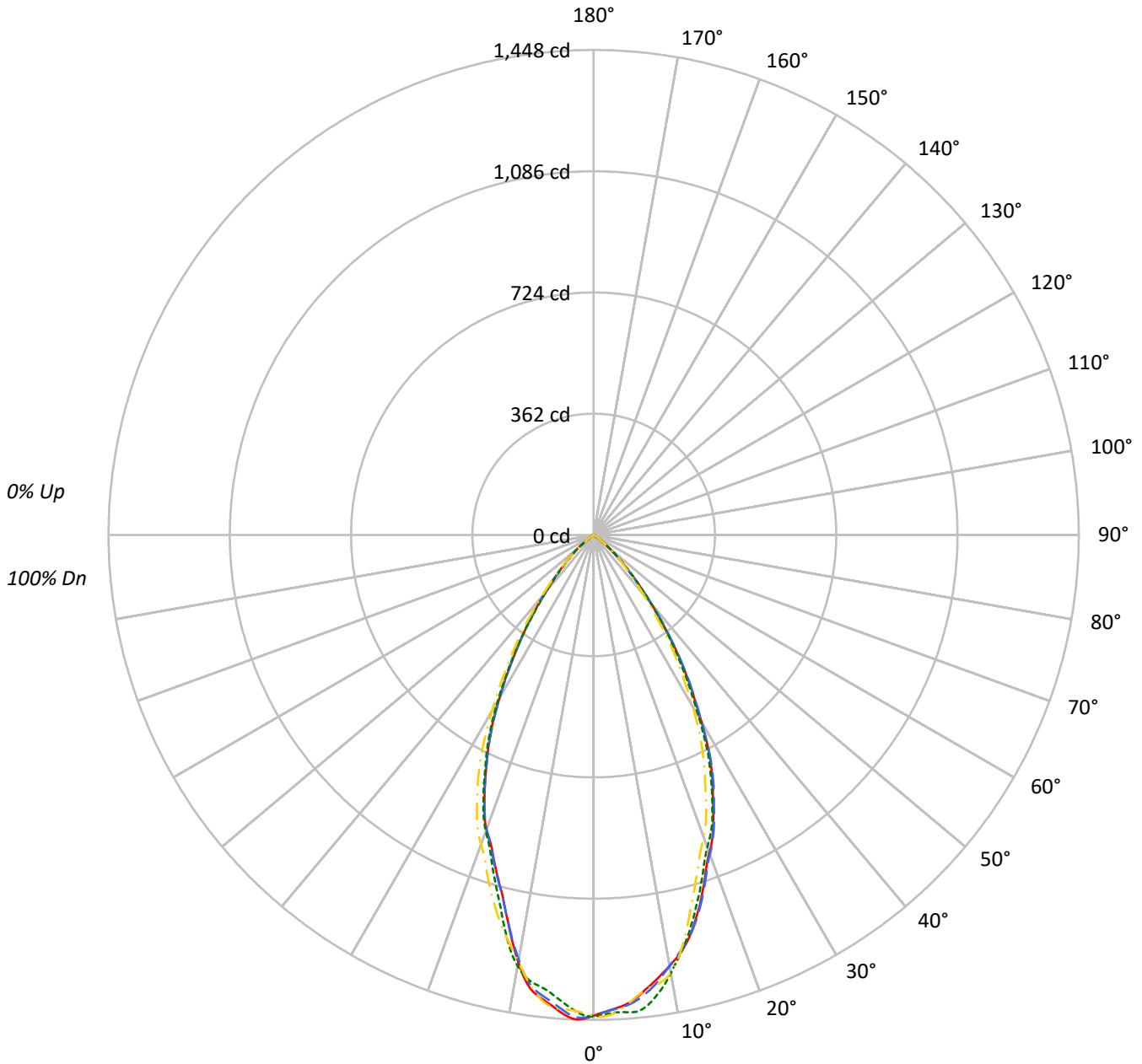
Lumens per Lamp: N/A
Luminaire Lumens: 1181.4 lumens
Efficiency: N/A
Efficacy: 118.1 lumens/watt
Spacing Criteria (0/90/45): 0.82 / 0.81 / 0.84
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 10
Input Voltage (V): NR
Input Current (A_{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					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°	180683	180683	180683	180683
5°	175890	180640	178442	174185
10°	166959	169758	165490	167087
15°	154093	151969	141090	144361
20°	135226	132922	125262	126065
25°	116823	115809	105186	106283
30°	93353	91289	81887	83093
35°	68060	66140	57674	58074
40°	43503	43141	36981	36159
45°	24294	24970	22123	21482
50°	11042	11806	10964	10553
55°	658	636	505	592
60°	176	252	227	227
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: 24970 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.0	11.1
10°-20°	317.0	26.8
20°-30°	363.6	30.8
30°-40°	254.2	21.5
40°-50°	103.7	8.8
50°-60°	11.4	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°	811.6	68.7
0°-40°	1065.8	90.2
0°-60°	1180.9	100.0
0°-90°	1181.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1181.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1436	1436	1436	1436	1436	
5°	1392	1430	1412	1379	1392	130
15°	1183	1166	1083	1108	1183	328
25°	841	834	758	765	841	383
35°	443	430	375	378	443	275
45°	136	140	124	121	136	109
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°	1435.7	1435.7	1435.7	1435.7	1435.7	1435.7	1435.7	1435.7	1435.7	1435.7	1435.7
0.5°	1431.1	1431.0	1431.0	1431.3	1436.3	1436.7	1438.0	1439.3	1439.8	1439.7	1438.3
1°	1427.3	1426.9	1427.5	1428.3	1433.8	1435.6	1438.6	1441.8	1443.9	1443.8	1441.1
1.5°	1423.5	1423.1	1424.1	1425.8	1431.4	1433.3	1437.3	1442.4	1446.8	1447.0	1442.4
2°	1420.0	1419.0	1420.9	1423.9	1429.1	1430.2	1434.0	1440.7	1447.8	1448.7	1441.3
2.5°	1416.6	1414.8	1417.7	1422.9	1427.6	1426.7	1428.9	1436.2	1445.8	1447.8	1437.7
3°	1413.1	1409.8	1414.8	1422.9	1427.0	1422.9	1422.6	1429.9	1441.4	1443.9	1431.8
3.5°	1409.2	1404.0	1411.7	1424.2	1427.5	1418.9	1415.2	1422.5	1435.3	1438.3	1424.8
4°	1404.9	1397.8	1408.4	1425.9	1428.9	1414.6	1407.0	1414.1	1428.1	1431.2	1417.3
4.5°	1399.2	1390.1	1404.3	1427.8	1429.9	1409.4	1398.4	1405.6	1420.4	1423.7	1409.5
5°	1392.3	1381.8	1399.5	1428.5	1429.9	1403.0	1389.7	1397.2	1412.5	1416.4	1402.0
5.5°	1384.2	1373.1	1393.1	1427.0	1427.5	1395.6	1381.3	1389.6	1405.3	1408.8	1394.9
6°	1375.6	1364.3	1385.7	1422.9	1422.1	1386.8	1373.7	1382.9	1398.6	1401.3	1388.5
6.5°	1366.8	1356.5	1377.7	1415.6	1414.8	1378.7	1367.3	1377.3	1392.0	1394.0	1382.2
7°	1358.6	1350.0	1369.3	1405.6	1405.6	1370.8	1362.5	1372.5	1384.6	1385.9	1375.4
7.5°	1350.1	1344.3	1360.5	1393.0	1394.8	1363.3	1358.8	1368.2	1376.4	1375.7	1367.1
8°	1342.0	1339.2	1350.9	1378.0	1383.5	1356.3	1355.3	1362.9	1365.8	1363.0	1356.4
8.5°	1333.0	1334.7	1340.1	1360.6	1371.2	1349.1	1351.5	1356.0	1351.7	1347.4	1342.8
9°	1324.1	1330.5	1328.9	1342.1	1358.1	1341.2	1345.7	1346.5	1335.1	1328.7	1327.0
9.5°	1315.1	1326.6	1317.7	1323.7	1343.4	1333.1	1337.8	1334.1	1315.4	1307.3	1308.0
10°	1306.5	1323.2	1306.5	1305.5	1328.4	1324.0	1327.7	1319.2	1295.0	1284.2	1288.4
10.5°	1297.6	1319.7	1295.7	1289.1	1313.0	1313.8	1314.8	1302.5	1273.6	1259.1	1268.1
11°	1288.8	1315.8	1285.5	1274.1	1297.8	1301.9	1299.8	1284.2	1251.4	1233.7	1247.5
11.5°	1279.1	1309.9	1275.3	1260.8	1283.3	1288.3	1281.9	1265.2	1228.3	1208.2	1225.9
12°	1268.8	1301.2	1265.1	1248.6	1268.1	1272.6	1262.9	1245.7	1205.8	1182.4	1203.9
12.5°	1256.9	1289.2	1254.5	1237.4	1252.7	1254.7	1241.7	1225.5	1183.0	1157.5	1181.5
13°	1244.6	1274.6	1243.7	1226.2	1237.2	1235.8	1220.2	1204.7	1160.4	1134.4	1160.7
13.5°	1230.3	1258.1	1231.2	1213.9	1220.5	1215.0	1197.9	1182.5	1138.9	1112.5	1139.5
14°	1215.4	1240.1	1217.8	1200.3	1202.5	1193.9	1176.0	1162.0	1118.5	1092.8	1119.6
14.5°	1199.4	1221.3	1203.0	1186.1	1184.5	1172.0	1154.2	1140.9	1099.5	1074.1	1101.2
15°	1182.7	1201.5	1187.3	1171.2	1166.4	1150.9	1133.8	1121.3	1082.9	1056.8	1084.7
15.5°	1166.2	1182.7	1170.9	1156.4	1148.2	1131.1	1114.2	1102.0	1066.1	1041.1	1068.5
16°	1149.0	1163.5	1154.0	1140.7	1130.3	1111.8	1094.8	1083.3	1050.0	1025.5	1052.5
16.5°	1131.3	1143.7	1136.6	1124.2	1112.4	1092.4	1075.1	1063.9	1033.2	1009.8	1035.7
17°	1112.5	1123.7	1118.5	1106.7	1093.7	1072.9	1056.5	1044.5	1016.6	994.1	1019.3
17.5°	1094.0	1103.1	1100.0	1088.9	1074.8	1053.4	1037.9	1025.3	999.8	978.7	1002.6
18°	1074.8	1082.9	1080.8	1070.9	1056.5	1034.1	1019.6	1007.2	983.9	964.2	987.0
18.5°	1056.1	1063.3	1061.9	1053.0	1038.1	1016.0	1002.2	989.5	969.8	951.3	972.3
19°	1038.7	1045.2	1044.0	1036.3	1021.3	999.6	986.9	974.7	957.5	940.1	960.1
19.5°	1023.5	1029.2	1028.2	1021.8	1005.8	985.6	973.4	961.3	946.5	929.4	947.6
20°	1009.7	1014.7	1014.1	1008.7	992.5	972.6	960.7	948.3	935.3	918.1	935.3
20.5°	997.3	1001.1	1001.1	996.9	980.2	959.7	947.4	934.0	922.4	904.9	921.1
21°	983.3	986.6	986.6	984.5	967.7	945.6	931.7	917.8	907.4	889.9	905.3



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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°	933.5	937.0	938.7	942.0	924.5	897.9	877.4	858.6	851.7	837.0	852.0
23°	913.8	918.5	920.0	924.9	906.8	879.9	857.3	837.5	832.9	819.7	832.8
23.5°	894.6	900.5	901.8	907.6	888.5	862.5	836.8	818.0	814.0	802.4	813.7
24°	876.1	882.6	883.2	889.2	870.5	845.6	819.2	798.6	795.2	785.1	794.6
24.5°	858.4	865.8	865.9	870.1	852.1	827.6	801.6	779.2	776.3	767.7	775.5
25°	841.3	849.3	848.0	849.8	834.0	810.4	784.0	759.8	757.5	750.3	756.3
25.5°	825.0	833.2	831.3	830.3	815.4	793.2	766.4	741.7	739.4	733.4	737.2
26°	807.8	817.0	813.3	809.5	796.7	775.9	748.8	724.2	721.7	715.2	719.4
26.5°	790.2	799.9	795.3	789.1	777.9	758.6	731.2	706.3	703.1	696.6	700.6
27°	771.8	781.6	775.8	767.5	759.2	738.7	713.2	688.6	684.4	677.4	681.6
27.5°	752.4	762.6	755.8	747.0	740.4	719.0	694.4	670.1	665.1	657.6	662.4
28°	731.8	742.6	734.4	725.6	718.1	698.4	675.2	650.1	645.4	637.5	642.4
28.5°	710.0	722.1	712.1	705.1	695.3	677.4	654.1	629.8	624.6	616.1	621.7
29°	687.1	701.8	689.4	683.9	672.7	656.6	632.9	609.3	604.2	595.0	601.5
29.5°	664.9	680.4	666.9	663.3	650.3	635.0	611.3	588.0	583.8	573.9	580.8
30°	642.4	658.7	644.9	642.6	628.2	613.5	590.0	567.1	563.5	553.9	560.5
30.5°	620.3	637.0	623.4	622.0	606.4	592.1	568.6	547.1	543.2	533.0	540.0
31°	599.0	615.0	602.6	600.8	586.5	572.0	548.0	527.9	523.6	513.0	520.9
31.5°	578.3	593.6	582.9	580.2	564.4	551.4	528.5	508.8	504.2	493.6	501.3
32°	558.3	572.4	563.4	559.5	544.5	531.1	509.2	490.6	484.7	476.0	482.3
32.5°	538.7	551.2	544.2	539.2	524.4	510.1	490.2	471.9	465.0	457.3	463.5
33°	519.8	530.6	525.5	519.4	506.1	490.4	471.2	453.9	446.4	439.6	444.8
33.5°	500.7	510.2	506.0	500.1	485.7	470.2	452.9	436.2	427.5	421.9	426.6
34°	481.7	490.0	486.7	481.3	466.5	451.3	434.3	418.3	410.2	405.6	408.5
34.5°	462.2	469.4	467.3	463.0	448.2	431.6	415.8	399.7	392.4	388.3	391.2
35°	443.0	449.2	448.1	444.3	430.5	413.0	396.9	381.9	375.4	371.8	374.1
35.5°	424.1	429.5	429.0	426.1	412.1	394.4	378.4	364.5	358.8	355.4	357.4
36°	405.2	410.2	409.8	407.6	394.3	377.1	360.0	347.5	342.9	339.8	340.7
36.5°	385.9	391.2	391.2	388.5	376.9	358.6	341.6	329.8	326.4	323.6	324.4
37°	368.1	373.6	373.4	370.8	360.5	341.2	323.7	312.6	310.4	308.9	308.4
37.5°	350.3	356.0	355.6	353.1	342.8	324.1	306.7	296.7	294.7	294.2	293.0
38°	332.4	338.3	337.9	335.3	326.4	308.2	290.2	280.8	279.9	279.9	277.7
38.5°	314.6	320.7	320.1	317.6	309.9	292.2	274.5	265.1	265.5	266.0	263.3
39°	296.8	303.1	302.3	299.9	294.5	276.9	259.3	249.9	251.5	252.8	249.4
39.5°	280.3	286.4	285.5	283.9	277.7	262.2	244.5	235.3	237.8	239.5	236.0
40°	264.8	270.4	268.9	268.5	262.6	248.1	230.2	221.0	225.1	227.1	222.9
40.5°	249.4	255.0	252.5	253.6	247.8	234.4	216.4	207.7	213.1	215.0	210.9
41°	234.0	240.3	237.2	238.9	233.8	221.5	203.5	194.8	201.5	203.7	199.1
41.5°	219.5	225.8	222.5	224.7	219.9	208.9	191.3	183.2	190.4	192.7	187.9
42°	206.5	212.3	208.7	210.9	207.6	197.1	179.9	172.2	179.5	182.3	177.3
42.5°	193.7	199.1	195.3	197.1	195.0	185.8	169.4	162.4	169.6	172.2	166.9
43°	181.3	186.2	182.6	184.3	183.2	174.8	159.6	153.3	159.8	162.5	157.2
43.5°	168.9	173.4	170.5	171.6	171.8	164.2	150.3	144.8	150.3	153.0	147.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	136.5	138.8	137.7	138.2	140.3	135.9	125.4	121.1	124.3	126.5	122.7
45.5°	126.0	128.3	127.6	128.6	130.9	126.6	117.9	113.9	116.4	118.2	115.0
46°	116.9	118.8	118.1	119.3	121.4	118.0	110.4	106.9	108.7	110.1	107.5
46.5°	107.5	109.3	108.8	110.2	112.7	109.9	103.5	100.3	101.6	102.8	100.6
47°	99.1	100.4	100.1	101.7	104.3	102.5	96.6	93.6	94.7	95.7	93.7
47.5°	90.3	91.6	91.6	93.5	96.5	95.0	89.8	87.0	87.7	88.4	86.8
48°	82.7	83.7	83.6	85.5	88.7	87.7	83.0	80.4	80.6	81.2	80.0
48.5°	75.3	76.3	76.3	78.2	81.0	80.2	76.2	73.9	73.7	73.9	73.2
49°	68.9	69.4	69.4	71.1	73.3	72.8	70.0	67.8	67.6	67.9	67.2
49.5°	62.6	62.8	62.9	64.2	66.6	66.3	64.1	62.1	61.6	62.1	61.4
50°	56.4	56.4	56.5	57.8	60.3	60.0	57.8	56.2	56.0	56.3	55.6
50.5°	49.9	49.9	49.8	51.0	53.6	53.4	51.6	50.0	50.0	50.2	49.5
51°	42.9	42.8	42.6	43.5	46.4	46.3	44.6	43.2	43.3	43.3	42.6
51.5°	35.1	35.0	34.9	35.0	38.7	38.6	37.4	36.3	36.4	36.2	35.5
52°	28.7	28.6	28.6	28.7	30.8	30.4	29.5	28.9	29.0	28.6	27.9
52.5°	22.3	22.2	22.4	22.4	23.6	22.9	22.3	22.0	21.8	21.5	21.0
53°	15.9	15.9	16.1	16.0	19.4	18.9	18.2	18.0	17.8	17.7	17.3
53.5°	9.5	9.6	9.9	9.8	15.3	14.8	14.3	14.1	14.0	13.9	13.4
54°	5.8	5.9	6.1	6.1	11.0	10.7	10.3	10.1	10.1	10.0	9.7
54.5°	3.4	3.5	3.7	3.6	6.8	6.6	6.4	6.3	6.3	6.2	5.9
55°	3.0	3.0	3.1	3.1	2.9	2.7	2.5	2.3	2.3	2.3	2.3
55.5°	2.5	2.5	2.6	2.6	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°	1.4	1.4	1.5	1.6	1.7	1.6	1.5	1.5	1.4	1.5	1.5
57°	1.3	1.3	1.4	1.5	1.6	1.5	1.4	1.3	1.3	1.3	1.4
57.5°	1.2	1.2	1.3	1.4	1.4	1.4	1.3	1.2	1.2	1.2	1.3
58°	1.1	1.1	1.2	1.3	1.3	1.3	1.2	1.2	1.1	1.1	1.2
58.5°	1.0	1.0	1.1	1.2	1.2	1.2	1.1	1.1	1.0	1.1	1.1
59°	0.9	1.0	1.0	1.1	1.2	1.1	1.0	1.0	1.0	1.0	1.0
59.5°	0.9	0.9	1.0	1.0	1.1	1.0	1.0	0.9	0.9	0.9	1.0
60°	0.7	0.7	0.9	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9
60.5°	0.7	0.7	0.7	0.9	0.9	0.9	0.7	0.7	0.7	0.7	0.7
61°	0.6	0.6	0.7	0.7	0.9	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: P775644

CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-5000K

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: P775644
CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-5000K

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: P775644

CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1435.7	1435.7	1435.7	1435.7	1435.7	1435.7
0.5°	1436.3	1437.6	1434.5	1432.9	1431.8	1431.1
1°	1437.2	1435.7	1431.6	1429.5	1428.2	1427.3
1.5°	1436.0	1431.7	1427.9	1426.1	1425.0	1423.5
2°	1432.4	1426.2	1423.2	1423.1	1422.3	1420.0
2.5°	1426.3	1419.0	1418.4	1421.0	1420.5	1416.6
3°	1418.8	1411.1	1413.7	1419.7	1419.5	1413.1
3.5°	1410.3	1402.9	1408.9	1419.1	1419.1	1409.2
4°	1401.9	1395.0	1403.9	1418.8	1419.1	1404.9
4.5°	1393.4	1386.9	1398.0	1418.2	1418.5	1399.2
5°	1385.7	1378.8	1391.4	1415.9	1416.3	1392.3
5.5°	1378.5	1371.4	1383.4	1411.0	1411.9	1384.2
6°	1372.2	1365.1	1375.1	1403.8	1405.2	1375.6
6.5°	1367.3	1359.8	1366.6	1394.5	1396.2	1366.8
7°	1363.3	1355.4	1358.2	1383.7	1385.6	1358.6
7.5°	1359.4	1351.3	1349.9	1371.3	1371.6	1350.1
8°	1355.0	1346.4	1341.1	1358.5	1357.7	1342.0
8.5°	1348.4	1339.8	1332.2	1343.4	1341.2	1333.0
9°	1339.4	1331.3	1322.3	1327.2	1324.7	1324.1
9.5°	1327.1	1320.4	1311.5	1310.1	1307.2	1315.1
10°	1312.2	1307.5	1299.9	1293.9	1291.3	1306.5
10.5°	1294.7	1293.5	1287.4	1278.2	1276.7	1297.6
11°	1275.9	1277.0	1273.8	1263.8	1263.0	1288.8
11.5°	1256.5	1257.5	1258.6	1249.7	1250.2	1279.1
12°	1235.5	1236.6	1242.2	1236.0	1238.8	1268.8
12.5°	1213.7	1214.8	1224.5	1221.8	1227.5	1256.9
13°	1192.3	1192.3	1206.1	1207.7	1216.3	1244.6
13.5°	1170.0	1169.8	1186.1	1192.0	1204.0	1230.3
14°	1147.1	1148.0	1165.4	1176.1	1191.2	1215.4
14.5°	1125.7	1127.6	1145.2	1159.8	1177.3	1199.4
15°	1105.4	1108.0	1125.1	1143.6	1163.1	1182.7
15.5°	1086.0	1089.2	1105.8	1127.3	1148.8	1166.2
16°	1066.9	1070.4	1086.5	1110.7	1133.5	1149.0
16.5°	1047.8	1052.1	1067.3	1093.3	1117.5	1131.3
17°	1028.4	1033.7	1048.6	1075.7	1100.5	1112.5
17.5°	1009.1	1015.1	1029.4	1058.1	1083.2	1094.0
18°	990.4	997.2	1010.9	1040.3	1065.6	1074.8
18.5°	972.9	981.5	993.5	1022.8	1048.0	1056.1
19°	957.8	966.9	978.6	1007.4	1032.0	1038.7
19.5°	944.1	954.2	965.3	994.6	1018.4	1023.5
20°	930.9	941.3	952.2	983.0	1006.6	1009.7
20.5°	916.4	928.2	939.0	971.2	994.8	997.3
21°	900.3	913.2	924.6	958.0	982.0	983.3

TEST NUMBER: P775644

CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	844.4	860.4	876.9	910.3	934.9	933.5
23°	825.4	841.3	859.1	892.0	916.1	913.8
23.5°	806.5	822.3	841.6	873.1	897.3	894.6
24°	787.5	802.8	824.0	854.6	877.8	876.1
24.5°	768.7	783.9	806.5	836.4	858.9	858.4
25°	749.7	765.4	787.8	818.3	839.8	841.3
25.5°	732.7	747.8	770.3	800.0	820.6	825.0
26°	715.3	729.9	751.8	780.8	800.7	807.8
26.5°	697.3	712.1	733.1	761.0	780.9	790.2
27°	679.2	694.0	713.0	740.2	760.0	771.8
27.5°	659.9	674.7	693.3	718.4	738.9	752.4
28°	640.2	655.1	672.0	695.2	717.6	731.8
28.5°	619.1	634.7	650.5	672.8	697.5	710.0
29°	598.0	614.2	628.4	650.4	675.8	687.1
29.5°	577.2	592.6	606.9	628.5	654.9	664.9
30°	557.3	571.8	585.7	606.9	633.3	642.4
30.5°	537.6	550.8	564.2	586.2	612.3	620.3
31°	519.2	530.1	543.8	565.3	591.3	599.0
31.5°	500.5	509.8	523.9	545.0	570.6	578.3
32°	483.1	489.8	504.3	525.1	549.8	558.3
32.5°	464.7	470.8	484.7	504.5	529.4	538.7
33°	447.1	452.0	465.9	484.9	510.0	519.8
33.5°	428.9	433.8	446.8	465.7	491.0	500.7
34°	410.5	415.2	427.8	446.8	472.1	481.7
34.5°	392.6	396.3	409.6	428.8	453.6	462.2
35°	375.2	378.0	390.9	410.4	435.0	443.0
35.5°	357.9	360.5	373.8	393.2	417.2	424.1
36°	341.4	342.9	356.8	381.3	398.7	405.2
36.5°	324.7	325.4	339.8	363.5	378.5	385.9
37°	309.2	307.9	322.7	345.5	361.0	368.1
37.5°	292.8	291.6	305.8	327.5	343.6	350.3
38°	277.0	276.3	290.0	309.6	326.2	332.4
38.5°	261.5	261.3	275.1	293.6	308.8	314.6
39°	246.1	247.4	260.7	278.2	292.7	296.8
39.5°	231.1	233.0	246.6	263.0	276.6	280.3
40°	216.9	220.1	232.8	248.0	261.4	264.8
40.5°	203.5	207.1	220.1	233.9	246.6	249.4
41°	191.3	195.5	207.8	220.2	232.3	234.0
41.5°	180.0	184.1	196.0	207.4	218.5	219.5
42°	169.5	173.3	185.5	195.2	204.9	206.5
42.5°	160.0	163.6	174.6	183.7	192.2	193.7
43°	151.0	154.0	164.2	171.9	179.7	181.3
43.5°	142.7	145.1	154.3	160.8	167.8	168.9



TEST NUMBER: P775644

CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	119.8	120.7	127.3	130.7	134.8	136.5
45.5°	112.6	113.3	118.8	121.5	125.1	126.0
46°	105.7	106.0	110.5	112.8	116.1	116.9
46.5°	99.1	98.7	102.4	104.3	107.3	107.5
47°	92.6	91.7	94.6	96.1	98.9	99.1
47.5°	86.1	84.9	86.9	88.3	90.9	90.3
48°	79.6	78.3	80.0	81.0	83.2	82.7
48.5°	73.0	72.1	73.3	73.9	75.8	75.3
49°	67.2	66.1	67.2	67.5	69.3	68.9
49.5°	61.4	60.2	61.1	61.1	62.9	62.6
50°	55.5	53.9	54.8	54.9	56.6	56.4
50.5°	49.3	47.2	48.3	48.3	50.0	49.9
51°	42.3	39.9	40.8	41.3	43.0	42.9
51.5°	35.4	33.6	34.4	34.8	35.2	35.1
52°	27.7	27.3	27.9	28.3	28.7	28.7
52.5°	21.2	21.0	21.5	21.8	22.2	22.3
53°	17.4	14.7	15.0	15.3	15.8	15.9
53.5°	13.7	8.4	8.6	8.9	9.3	9.5
54°	9.8	5.0	5.2	5.3	5.7	5.8
54.5°	6.1	3.0	3.2	3.2	3.3	3.4
55°	2.5	2.7	2.8	2.7	2.8	3.0
55.5°	2.0	2.3	2.3	2.3	2.3	2.5
56°	1.8	1.9	1.9	1.9	1.9	1.9
56.5°	1.6	1.6	1.5	1.5	1.4	1.4
57°	1.5	1.4	1.4	1.3	1.3	1.3
57.5°	1.4	1.3	1.3	1.2	1.2	1.2
58°	1.3	1.2	1.2	1.1	1.1	1.1
58.5°	1.2	1.2	1.1	1.1	1.0	1.0
59°	1.1	1.1	1.0	1.0	1.0	0.9
59.5°	1.0	1.0	1.0	0.9	0.9	0.9
60°	1.0	0.9	0.9	0.9	0.7	0.7
60.5°	0.9	0.9	0.9	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: P775644

CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-5000K

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: P775644
CATALOG NUMBER: HCDJBL510CSD-HCD42TRC-1000lm-5000K

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°	967.8	971.2	971.5	972.1	954.2	930.9	915.1	899.5	890.4	873.0	888.5
22°	950.7	954.1	955.2	957.9	940.1	915.2	897.0	879.8	871.6	855.5	870.7



44°	157.8	161.5	158.9	159.6	160.8	154.1	141.6	136.2	141.2	143.9	139.2
44.5°	147.1	149.7	147.9	148.5	150.2	144.9	133.6	128.6	132.5	135.0	130.8



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°	883.2	897.0	909.8	943.5	967.9	967.8
22°	864.2	879.0	893.1	927.9	951.9	950.7



44°	134.6	136.4	145.2	150.3	156.1	157.8
44.5°	127.0	128.5	135.9	140.3	145.1	147.1

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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)