

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: P775748

Luminaire Tested: HCDJBL510CSD-HCD62TRH-1000lm-4000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775748
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B056)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD62TRH-1000lm-4000K
Description: 6 INCH ROUND NARROW HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

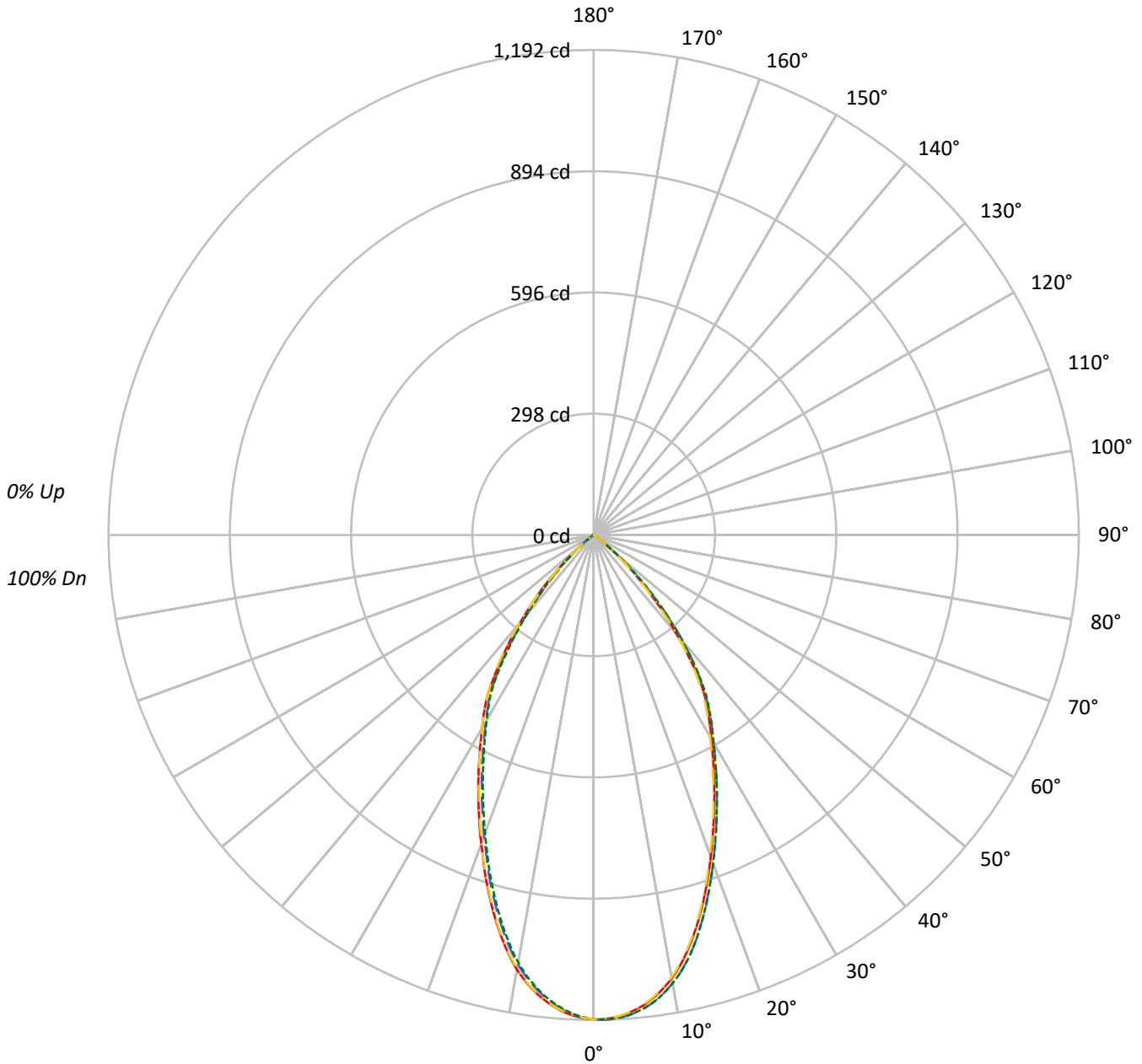
Lumens per Lamp: N/A
Luminaire Lumens: 1107.5 lumens
Efficiency: N/A
Efficacy: 110.7 lumens/watt
Spacing Criteria (0/90/45): 0.83 / 0.82 / 0.91
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

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	100	100	97	96	95	93		
1	113	110	108	106	111	108	106	104	104	102	101	100	99	98	97	96	95	93	93	93	92	91	90	89		
2	107	102	98	95	105	101	97	93	97	94	91	94	92	89	92	89	88	86	86	86	85	84	83	82		
3	102	95	90	86	100	93	89	85	91	87	83	88	85	82	86	83	81	79	79	79	78	77	76	75		
4	96	88	82	78	94	87	82	77	85	80	77	83	79	76	81	78	75	73	73	73	72	71	70	69		
5	91	82	76	71	89	81	75	71	79	74	70	78	73	70	76	72	69	68	68	68	67	66	65	64		
6	86	77	70	66	84	76	70	66	74	69	65	73	68	65	71	67	64	63	63	63	62	61	60	59		
7	81	72	65	61	80	71	65	61	70	64	60	68	64	60	67	63	60	58	58	58	57	56	55	54		
8	77	67	61	57	76	67	61	56	65	60	56	64	59	56	63	59	56	54	54	54	53	52	51	50		
9	73	63	57	53	72	63	57	53	62	56	52	61	56	52	60	55	52	51	51	51	50	49	48	47		
10	70	59	53	49	69	59	53	49	58	53	49	57	52	49	57	52	49	47	47	47	46	45	44	43		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	65247	65247	65247	65247
5°	64489	64852	63922	63449
10°	61578	62273	60392	59384
15°	56016	57021	54240	52827
20°	49080	50072	47126	45521
25°	42444	43339	40539	38912
30°	36613	37316	34740	33284
35°	31467	32203	28677	27157
40°	22671	24038	20123	18363
45°	13428	14994	11451	9947
50°	5569	6507	3932	3283
55°	946	1242	946	621
60°	395	373	384	307
65°	233	221	233	195
70°	144	144	144	128
75°	106	85	106	85
80°	63	63	63	63
85°	0	63	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°

Vertical Angle: 45°

Luminance: 15955 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.1	9.8
10°-20°	269.5	24.3
20°-30°	313.6	28.3
30°-40°	272.7	24.6
40°-50°	125.4	11.3
50°-60°	14.8	1.3
60°-70°	1.8	0.2
70°-80°	0.5	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°	692.1	62.5
0°-40°	964.9	87.1
0°-60°	1105.1	99.8
0°-90°	1107.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1107.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1190	1190	1190	1190	1190	
5°	1172	1178	1162	1153	1172	110
15°	987	1005	956	931	987	274
25°	702	716	670	643	702	322
35°	470	481	428	406	470	286
45°	173	193	148	128	173	136
55°	10	13	10	6	10	16
65°	2	2	2	2	2	2
75°	0	0	0	0	0	1
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°	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2
0.5°	1190.7	1191.5	1191.7	1190.7	1190.9	1190.3	1189.9	1190.1	1189.9	1190.0	1189.8
1°	1190.5	1191.7	1192.1	1191.5	1191.2	1190.3	1189.8	1189.3	1188.7	1188.6	1188.2
1.5°	1189.6	1191.2	1192.1	1191.9	1191.2	1190.0	1189.0	1188.1	1187.0	1186.5	1185.9
2°	1188.5	1190.6	1191.5	1191.8	1190.7	1189.3	1188.0	1186.3	1184.9	1184.0	1182.9
2.5°	1186.8	1189.3	1190.5	1191.2	1189.9	1188.0	1186.2	1184.0	1182.3	1180.9	1179.6
3°	1184.7	1187.7	1188.9	1190.4	1188.4	1186.4	1184.0	1181.5	1179.0	1177.4	1175.7
3.5°	1182.3	1185.5	1187.1	1189.0	1186.7	1184.4	1181.4	1178.4	1175.5	1173.2	1171.5
4°	1179.3	1182.8	1184.7	1187.1	1184.6	1181.8	1178.4	1174.6	1171.3	1168.6	1166.8
4.5°	1175.8	1179.8	1182.1	1184.7	1181.9	1178.6	1174.8	1170.6	1166.6	1163.6	1161.5
5°	1171.9	1176.3	1178.6	1182.1	1178.5	1175.2	1170.7	1166.1	1161.6	1158.0	1155.5
5.5°	1167.7	1172.4	1175.1	1178.7	1174.9	1171.0	1166.2	1161.3	1156.2	1152.1	1149.4
6°	1162.8	1167.9	1171.1	1175.2	1170.7	1166.4	1161.4	1155.4	1150.0	1145.6	1142.7
6.5°	1157.6	1163.3	1166.4	1171.0	1166.0	1161.5	1155.9	1149.4	1143.7	1139.1	1135.6
7°	1151.6	1157.7	1161.2	1166.4	1161.1	1156.1	1149.9	1143.1	1136.9	1132.0	1128.3
7.5°	1145.2	1151.8	1155.5	1161.2	1155.3	1149.7	1143.4	1136.5	1129.3	1124.0	1120.2
8°	1138.4	1145.2	1149.0	1155.5	1149.1	1143.0	1136.5	1128.8	1121.6	1115.8	1111.6
8.5°	1131.1	1138.5	1142.4	1149.3	1142.2	1136.3	1129.0	1120.7	1113.2	1107.1	1102.7
9°	1123.3	1131.0	1134.9	1142.3	1134.9	1128.7	1121.1	1112.3	1104.3	1097.7	1093.1
9.5°	1114.9	1122.9	1127.3	1134.9	1127.1	1120.5	1112.5	1103.8	1094.9	1088.1	1083.0
10°	1106.2	1114.3	1118.8	1127.0	1118.7	1111.9	1103.7	1093.8	1084.9	1077.8	1072.2
10.5°	1096.7	1105.7	1110.1	1118.7	1110.2	1103.1	1093.9	1083.8	1074.1	1066.1	1060.4
11°	1086.8	1096.0	1100.7	1110.0	1100.7	1093.2	1084.0	1072.9	1062.6	1053.6	1048.0
11.5°	1076.1	1085.5	1090.5	1100.6	1090.7	1082.9	1073.1	1061.6	1050.4	1041.4	1035.5
12°	1064.5	1074.7	1079.5	1090.3	1080.0	1071.8	1061.4	1049.2	1038.1	1028.9	1022.5
12.5°	1052.6	1062.9	1068.3	1079.3	1068.8	1060.1	1049.3	1037.0	1025.0	1015.4	1008.9
13°	1040.3	1051.0	1056.6	1068.0	1056.9	1048.1	1037.1	1024.2	1011.9	1001.8	995.1
13.5°	1027.6	1038.6	1044.4	1056.2	1044.7	1035.4	1024.2	1010.9	998.2	987.8	980.7
14°	1014.4	1025.7	1031.5	1044.2	1031.6	1022.6	1010.8	997.2	984.2	974.0	966.7
14.5°	1000.9	1012.4	1018.5	1030.8	1018.3	1008.8	997.0	983.2	970.3	959.1	952.1
15°	987.0	998.8	1004.5	1018.1	1004.7	995.0	983.1	969.1	955.7	944.8	937.4
15.5°	972.8	984.8	990.4	1004.3	991.0	981.0	969.1	954.8	941.2	930.1	922.5
16°	958.6	970.7	976.5	990.2	976.6	966.7	954.9	940.1	926.6	915.5	907.7
16.5°	944.4	956.5	962.5	976.1	962.2	952.4	940.5	925.8	912.2	900.5	892.9
17°	930.1	942.0	947.7	961.9	947.8	937.8	925.5	911.0	897.2	885.5	877.7
17.5°	915.2	927.4	933.0	947.0	932.9	922.7	910.8	896.5	882.2	870.7	862.2
18°	900.5	912.5	918.2	932.3	918.0	907.8	896.0	881.6	867.1	855.3	846.7
18.5°	885.8	897.9	903.3	917.3	903.0	893.1	881.2	866.1	852.2	840.1	831.5
19°	870.9	883.2	888.1	902.2	888.2	878.3	865.9	851.2	836.8	824.7	816.3
19.5°	856.3	868.2	873.4	887.1	873.2	863.4	850.8	836.7	821.8	810.5	802.1
20°	841.3	853.2	858.1	872.2	858.3	848.3	836.2	821.5	807.8	796.4	787.9
20.5°	826.5	838.7	843.5	857.0	843.1	833.2	821.3	807.5	793.8	782.2	773.6
21°	812.0	824.1	829.1	842.6	828.3	818.6	807.3	793.5	779.9	768.0	759.3



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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°	769.5	780.9	785.5	798.1	785.9	776.5	765.5	751.6	737.5	725.6	716.8
23°	755.6	766.6	771.5	783.9	771.8	762.4	751.5	737.4	723.9	711.6	703.3
23.5°	742.0	752.8	757.5	769.7	757.8	748.3	737.2	723.8	710.1	698.1	689.7
24°	728.2	739.2	743.5	755.4	743.7	734.5	723.3	710.3	696.6	684.7	676.1
24.5°	715.0	725.6	729.6	741.4	730.1	720.2	709.8	696.9	683.2	671.5	662.9
25°	701.7	712.2	716.2	728.0	716.5	706.8	696.1	683.3	670.2	658.4	649.9
25.5°	688.6	698.9	702.8	714.5	702.8	693.8	682.9	670.4	657.3	645.4	637.3
26°	675.6	686.2	689.7	701.0	689.6	680.9	670.0	657.6	644.5	632.8	624.7
26.5°	663.0	672.8	676.8	687.3	676.6	667.5	657.0	644.6	631.7	620.2	611.6
27°	650.2	660.0	663.7	674.4	663.5	654.3	644.1	632.0	619.2	607.8	599.3
27.5°	637.6	647.4	650.8	661.6	650.6	642.2	631.6	619.4	606.8	595.6	587.2
28°	625.3	635.3	638.2	648.8	637.8	629.5	619.0	607.3	594.7	583.3	575.3
28.5°	613.0	623.0	625.8	636.2	625.5	616.9	606.8	595.0	582.5	571.4	563.4
29°	601.3	610.6	613.6	623.5	613.2	604.8	595.1	583.3	571.2	559.9	551.9
29.5°	589.9	598.9	601.4	611.4	601.3	593.0	583.3	571.8	559.7	548.8	540.8
30°	578.4	587.6	590.1	599.8	589.5	581.6	571.8	560.6	548.8	537.7	530.0
30.5°	567.3	576.2	578.9	588.2	578.1	570.1	560.7	549.3	537.8	526.8	519.4
31°	556.5	565.2	567.7	576.7	567.2	559.3	549.6	538.6	527.0	516.2	508.7
31.5°	545.5	554.2	556.7	565.6	556.3	548.6	538.9	528.1	516.5	505.9	498.6
32°	535.4	544.0	546.2	554.7	545.8	537.8	528.7	517.9	506.3	495.6	488.2
32.5°	525.2	533.5	535.7	544.0	535.0	527.4	518.1	507.2	496.0	485.2	478.1
33°	515.0	523.2	525.4	533.6	525.1	517.1	507.7	496.4	484.8	473.8	466.3
33.5°	504.3	512.5	514.4	523.1	514.4	506.8	496.6	484.1	472.3	460.5	452.5
34°	493.6	501.5	502.7	512.5	504.0	496.0	484.8	471.2	458.8	446.8	438.8
34.5°	481.8	489.6	490.0	501.0	493.0	484.6	472.0	457.7	443.6	432.6	423.9
35°	470.2	477.0	477.3	488.4	481.2	472.9	459.2	444.4	428.5	418.1	409.4
35.5°	457.4	464.0	464.5	476.0	469.2	460.9	446.1	430.3	412.6	402.0	395.2
36°	443.7	450.5	451.6	463.1	456.6	447.9	433.1	416.1	397.8	386.0	380.9
36.5°	428.7	436.5	438.7	450.5	442.7	433.9	419.4	401.5	383.1	370.4	365.5
37°	412.4	422.2	425.7	437.5	428.5	418.9	405.3	386.8	369.0	354.9	350.5
37.5°	395.5	407.5	412.3	424.3	413.5	403.9	390.9	371.4	354.7	339.7	334.9
38°	379.1	393.0	398.3	410.7	398.0	388.7	376.3	356.8	340.7	324.8	319.5
38.5°	363.6	377.7	384.0	397.2	382.2	372.4	361.1	342.1	325.9	310.5	303.2
39°	348.0	362.1	369.7	383.4	366.4	355.8	346.1	327.7	311.4	296.7	288.4
39.5°	332.4	346.4	355.2	368.7	351.2	339.9	330.4	313.2	296.4	282.0	273.0
40°	316.8	330.8	340.7	354.0	335.9	324.8	314.5	298.9	281.2	267.3	258.4
40.5°	301.2	315.2	326.2	339.3	320.8	309.6	298.3	284.6	266.3	253.2	243.2
41°	286.4	299.6	311.8	324.6	306.3	294.7	282.2	270.3	252.4	239.2	228.9
41.5°	271.2	284.3	296.5	309.9	291.8	279.3	266.5	255.6	238.6	225.3	214.2
42°	256.7	270.0	281.2	294.4	277.6	264.8	251.1	240.8	225.3	211.5	200.2
42.5°	241.8	256.0	266.0	279.2	263.1	250.5	236.2	226.2	212.4	198.3	186.8
43°	227.4	241.7	250.6	264.4	248.8	236.2	221.8	211.9	199.3	186.0	174.2
43.5°	212.9	226.9	235.1	249.4	234.6	221.6	207.5	197.6	186.1	173.0	161.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	173.2	185.8	191.1	205.8	193.4	180.6	167.7	156.7	147.7	136.6	127.4
45.5°	160.3	172.5	176.9	192.0	180.3	167.7	154.9	144.0	135.5	124.9	116.7
46°	148.4	159.6	163.5	178.1	167.9	155.0	142.8	131.7	123.9	114.0	106.9
46.5°	136.4	147.0	150.3	164.7	154.9	142.7	130.9	119.7	112.5	104.5	98.1
47°	124.8	134.9	137.2	151.3	142.2	131.6	119.5	109.5	102.1	95.2	89.5
47.5°	113.6	123.1	125.0	138.7	130.2	120.4	108.6	99.4	91.8	85.7	80.8
48°	103.1	111.6	113.4	126.1	118.8	109.5	99.0	89.3	81.4	76.4	72.1
48.5°	93.0	100.1	102.3	114.0	108.2	99.7	89.3	79.2	71.0	66.9	64.6
49°	83.4	89.5	91.8	103.1	97.5	89.9	79.8	69.1	62.1	59.3	57.6
49.5°	74.3	79.2	81.6	91.9	86.9	80.2	70.1	60.9	53.7	51.8	51.1
50°	65.3	69.5	72.1	81.7	76.3	70.5	61.9	53.4	46.1	45.3	45.0
50.5°	57.0	60.3	63.2	71.9	65.7	61.9	54.0	46.4	39.5	39.1	39.2
51°	49.1	52.0	54.8	62.9	56.8	53.6	47.0	40.0	33.7	33.7	33.9
51.5°	41.7	44.3	47.1	54.1	49.0	46.1	40.7	34.5	29.0	28.9	29.3
52°	34.9	37.6	39.8	46.3	41.5	39.0	34.8	29.2	24.8	24.6	25.0
52.5°	30.1	32.8	34.7	39.2	34.6	32.7	29.4	24.6	21.1	20.7	20.9
53°	25.2	27.9	29.5	34.1	28.6	27.0	24.5	20.6	18.0	17.3	17.3
53.5°	20.4	23.2	24.4	29.1	23.3	22.0	20.3	17.1	15.1	14.4	14.2
54°	15.7	18.4	19.2	24.1	18.8	17.8	16.6	14.1	12.6	12.7	12.5
54.5°	12.4	13.7	14.1	19.0	15.0	14.2	14.4	12.4	11.2	11.0	10.7
55°	9.9	10.7	11.0	14.0	13.0	12.4	12.2	10.7	9.9	9.2	8.9
55.5°	7.9	8.4	8.5	10.9	11.1	10.6	10.1	9.0	8.5	7.6	7.3
56°	6.6	6.8	6.7	8.4	9.1	8.8	8.0	7.5	7.1	5.9	5.5
56.5°	5.9	6.0	5.9	6.6	7.1	7.0	5.9	5.8	5.8	5.4	5.0
57°	5.5	5.5	5.4	5.7	5.3	5.3	5.4	5.4	5.4	5.0	4.7
57.5°	5.1	5.1	4.9	5.1	4.8	4.8	4.9	5.0	4.9	4.7	4.4
58°	4.7	4.7	4.6	4.7	4.5	4.5	4.6	4.7	4.6	4.4	4.1
58.5°	4.4	4.4	4.2	4.4	4.2	4.2	4.3	4.4	4.3	4.1	3.8
59°	4.1	4.1	4.0	4.1	3.9	3.9	4.0	4.1	4.0	3.8	3.6
59.5°	3.9	3.8	3.7	3.8	3.6	3.6	3.7	3.8	3.8	3.6	3.3
60°	3.6	3.6	3.5	3.6	3.4	3.4	3.5	3.5	3.5	3.3	3.0
60.5°	3.4	3.3	3.2	3.3	3.2	3.2	3.2	3.3	3.3	3.0	2.8
61°	3.0	3.0	2.9	3.0	2.8	2.9	2.9	3.0	3.0	2.8	2.6
61.5°	2.8	2.8	2.7	2.8	2.7	2.7	2.7	2.8	2.8	2.6	2.5
62°	2.6	2.6	2.5	2.6	2.5	2.5	2.6	2.6	2.6	2.5	2.3
62.5°	2.5	2.5	2.3	2.4	2.3	2.3	2.4	2.5	2.5	2.3	2.2
63°	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.3	2.3	2.2	2.0
63.5°	2.2	2.2	2.1	2.1	2.0	2.1	2.1	2.2	2.2	2.1	1.9
64°	2.1	2.0	1.9	2.0	1.9	1.9	2.0	2.1	2.1	2.0	1.8
64.5°	1.9	1.9	1.8	1.9	1.8	1.8	1.9	1.9	1.9	1.8	1.7
65°	1.8	1.8	1.7	1.8	1.7	1.7	1.8	1.8	1.8	1.7	1.6
65.5°	1.7	1.7	1.6	1.7	1.6	1.6	1.7	1.7	1.7	1.6	1.5
66°	1.6	1.6	1.5	1.6	1.5	1.5	1.6	1.6	1.6	1.5	1.4



TEST NUMBER: P775748

CATALOG NUMBER: HCDJBL510CSD-HCD62TRH-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.3	1.2
68°	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.2	1.2
68.5°	1.2	1.2	1.1	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.1
69°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.1	0.9
69.5°	1.1	1.1	0.9	0.9	0.9	0.9	1.1	1.1	1.1	0.9	0.9
70°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8
70.5°	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.8
71°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7
71.5°	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.7
72°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6
72.5°	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.6
73°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
73.5°	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.5
74°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5
74.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.5	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.4
75.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4
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	0.3
77°	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.3
77.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
78°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
78.5°	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
79°	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
79.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
80°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
80.5°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
81°	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
81.5°	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
82°	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
82.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
83°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
83.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
84°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
84.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
85°	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.1	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: P775748
CATALOG NUMBER: HCDJBL510CSD-HCD62TRH-1000lm-4000K

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: P775748

CATALOG NUMBER: HCDJBL510CSD-HCD62TRH-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1190.2	1190.2	1190.2	1190.2	1190.2	1190.2
0.5°	1187.7	1188.5	1188.5	1189.0	1189.9	1190.7
1°	1185.5	1186.7	1186.9	1187.9	1189.0	1190.5
1.5°	1182.6	1184.1	1184.6	1186.0	1187.9	1189.6
2°	1179.2	1181.3	1182.1	1183.9	1186.2	1188.5
2.5°	1175.3	1177.7	1178.7	1181.3	1184.2	1186.8
3°	1170.8	1173.7	1175.2	1178.0	1181.6	1184.7
3.5°	1165.9	1169.5	1171.1	1174.4	1178.4	1182.3
4°	1160.7	1164.2	1166.5	1170.2	1174.8	1179.3
4.5°	1154.8	1159.0	1161.4	1165.6	1170.8	1175.8
5°	1148.6	1153.0	1155.8	1160.4	1166.4	1171.9
5.5°	1141.6	1146.8	1149.7	1154.9	1161.6	1167.7
6°	1134.6	1140.2	1143.4	1148.9	1156.3	1162.8
6.5°	1126.9	1132.7	1136.6	1142.6	1150.5	1157.6
7°	1118.9	1125.0	1129.2	1135.8	1144.1	1151.6
7.5°	1110.5	1116.7	1121.3	1128.2	1137.1	1145.2
8°	1101.2	1108.0	1112.7	1120.3	1129.7	1138.4
8.5°	1091.4	1098.8	1104.0	1111.7	1121.9	1131.1
9°	1081.2	1088.7	1094.3	1102.7	1113.3	1123.3
9.5°	1070.3	1078.4	1084.2	1093.2	1104.4	1114.9
10°	1058.6	1066.8	1072.9	1083.1	1095.3	1106.2
10.5°	1046.0	1055.2	1061.7	1072.3	1085.2	1096.7
11°	1033.0	1043.0	1049.7	1060.5	1074.5	1086.8
11.5°	1020.1	1029.6	1037.6	1048.5	1062.9	1076.1
12°	1006.5	1016.5	1024.0	1036.4	1051.0	1064.5
12.5°	992.6	1002.6	1010.5	1023.3	1038.7	1052.6
13°	978.6	988.8	997.4	1010.3	1026.2	1040.3
13.5°	964.2	974.5	983.5	996.3	1012.7	1027.6
14°	949.7	960.4	968.9	982.2	999.3	1014.4
14.5°	934.6	945.8	954.4	968.6	985.3	1000.9
15°	920.2	930.8	939.8	954.0	971.3	987.0
15.5°	905.1	915.8	925.3	939.5	957.0	972.8
16°	889.9	900.8	910.3	924.2	942.5	958.6
16.5°	874.9	885.9	895.4	909.9	928.0	944.4
17°	859.5	870.9	880.3	895.1	913.6	930.1
17.5°	844.5	855.5	865.2	880.1	898.8	915.2
18°	828.5	840.1	849.6	864.7	883.9	900.5
18.5°	813.7	824.5	834.4	849.4	869.0	885.8
19°	799.0	809.6	819.2	835.0	853.9	870.9
19.5°	784.3	795.0	804.7	820.5	839.4	856.3
20°	769.6	780.3	790.5	805.7	824.7	841.3
20.5°	755.0	766.0	776.1	791.2	810.3	826.5
21°	742.0	751.2	761.4	776.6	795.5	812.0

TEST NUMBER: P775748

CATALOG NUMBER: HCDJBL510CSD-HCD62TRH-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	700.5	709.5	719.8	735.2	753.4	769.5
23°	687.0	695.9	705.9	721.1	739.5	755.6
23.5°	673.6	682.5	692.8	708.0	726.1	742.0
24°	660.8	669.4	679.6	694.3	712.7	728.2
24.5°	647.5	656.4	666.4	681.5	699.2	715.0
25°	635.0	643.3	653.5	668.0	686.1	701.7
25.5°	622.0	630.8	641.0	655.5	673.2	688.6
26°	609.5	618.3	628.5	642.8	660.5	675.6
26.5°	597.4	606.1	616.2	630.4	647.8	663.0
27°	585.1	593.8	603.8	618.2	635.3	650.2
27.5°	573.0	581.9	591.6	605.9	622.9	637.6
28°	561.4	569.9	579.7	593.5	610.7	625.3
28.5°	550.2	558.4	568.2	581.9	598.7	613.0
29°	539.2	547.3	557.1	570.8	587.2	601.3
29.5°	528.0	536.4	545.8	559.4	575.6	589.9
30°	517.3	525.8	535.1	548.5	564.7	578.4
30.5°	507.0	515.3	524.5	537.6	553.7	567.3
31°	496.9	505.0	514.4	527.4	543.0	556.5
31.5°	486.6	494.8	504.4	517.2	532.3	545.5
32°	476.2	484.7	494.0	506.9	522.1	535.4
32.5°	464.9	474.6	483.9	496.9	512.1	525.2
33°	452.1	462.7	472.5	485.7	502.0	515.0
33.5°	438.3	449.6	459.9	473.4	490.9	504.3
34°	423.2	435.7	446.4	460.3	478.7	493.6
34.5°	408.3	420.8	431.5	447.6	466.3	481.8
35°	393.7	405.8	416.5	433.7	453.3	470.2
35.5°	379.0	389.9	401.5	420.2	439.8	457.4
36°	364.0	372.6	386.9	406.0	425.9	443.7
36.5°	348.3	357.9	377.6	391.5	411.7	428.7
37°	332.8	343.4	362.2	377.1	397.2	412.4
37.5°	317.5	328.9	346.6	362.0	381.9	395.5
38°	301.7	314.3	331.1	346.9	366.0	379.1
38.5°	286.3	300.1	315.5	331.7	350.0	363.6
39°	271.6	285.6	300.9	316.6	334.0	348.0
39.5°	257.2	271.1	285.7	301.5	318.1	332.4
40°	242.7	256.6	270.6	286.5	302.0	316.8
40.5°	228.9	242.4	255.6	271.8	285.9	301.2
41°	215.0	228.4	240.9	257.1	269.8	286.4
41.5°	200.9	214.5	226.9	242.0	253.8	271.2
42°	187.1	201.6	213.2	227.8	238.8	256.7
42.5°	174.5	188.3	200.2	213.0	223.9	241.8
43°	161.6	176.4	187.1	198.5	210.1	227.4
43.5°	149.5	163.9	174.0	183.7	196.0	212.9



TEST NUMBER: P775748

CATALOG NUMBER: HCDJBL510CSD-HCD62TRH-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	116.4	128.3	136.1	143.1	157.4	173.2
45.5°	106.5	117.2	124.1	130.9	145.1	160.3
46°	97.7	106.1	112.5	119.2	133.6	148.4
46.5°	88.9	95.5	101.3	108.1	122.3	136.4
47°	80.1	85.7	90.8	97.7	111.5	124.8
47.5°	71.2	76.5	80.8	87.7	101.0	113.6
48°	63.8	67.6	71.5	78.4	91.0	103.1
48.5°	56.7	59.4	62.6	69.7	81.4	93.0
49°	49.9	51.9	54.3	61.7	72.3	83.4
49.5°	43.8	45.0	46.8	54.3	63.9	74.3
50°	38.2	38.5	40.0	47.3	55.9	65.3
50.5°	33.0	34.3	35.6	41.0	48.6	57.0
51°	28.3	29.9	31.2	35.2	42.0	49.1
51.5°	23.9	25.7	26.8	30.8	35.8	41.7
52°	20.1	21.5	22.4	26.5	31.2	34.9
52.5°	16.6	17.2	18.0	22.1	26.6	30.1
53°	13.6	14.4	15.1	17.8	22.1	25.2
53.5°	11.9	11.8	12.5	14.6	17.5	20.4
54°	10.3	9.7	10.3	11.8	14.1	15.7
54.5°	8.6	7.9	8.4	9.5	11.2	12.4
55°	6.9	6.5	6.8	7.6	8.9	9.9
55.5°	5.3	5.6	5.8	6.3	7.1	7.9
56°	4.8	5.0	5.3	5.6	6.2	6.6
56.5°	4.5	4.7	4.8	5.1	5.6	5.9
57°	4.2	4.4	4.5	4.8	5.1	5.5
57.5°	4.0	4.1	4.2	4.4	4.8	5.1
58°	3.7	3.9	4.0	4.1	4.5	4.7
58.5°	3.4	3.6	3.7	3.9	4.2	4.4
59°	3.2	3.4	3.5	3.6	3.9	4.1
59.5°	2.9	3.0	3.2	3.4	3.7	3.9
60°	2.7	2.8	2.9	3.0	3.4	3.6
60.5°	2.5	2.6	2.7	2.8	3.2	3.4
61°	2.4	2.5	2.5	2.6	2.8	3.0
61.5°	2.2	2.3	2.4	2.5	2.7	2.8
62°	2.1	2.2	2.2	2.3	2.5	2.6
62.5°	2.0	2.0	2.1	2.2	2.3	2.5
63°	1.9	1.9	2.0	2.0	2.2	2.3
63.5°	1.8	1.8	1.8	1.9	2.1	2.2
64°	1.7	1.7	1.7	1.8	2.0	2.1
64.5°	1.6	1.6	1.6	1.7	1.8	1.9
65°	1.5	1.5	1.5	1.6	1.7	1.8
65.5°	1.4	1.4	1.5	1.5	1.6	1.7
66°	1.3	1.4	1.4	1.4	1.5	1.6



TEST NUMBER: P775748

CATALOG NUMBER: HCDJBL510CSD-HCD62TRH-1000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	1.1	1.1	1.2	1.2	1.3	1.4
68°	1.1	1.1	1.1	1.1	1.2	1.3
68.5°	0.9	0.9	0.9	1.1	1.2	1.2
69°	0.8	0.9	0.9	0.9	1.1	1.1
69.5°	0.8	0.8	0.8	0.9	0.9	1.1
70°	0.7	0.8	0.8	0.8	0.9	0.9
70.5°	0.7	0.7	0.7	0.8	0.8	0.9
71°	0.7	0.7	0.7	0.7	0.8	0.8
71.5°	0.6	0.6	0.6	0.7	0.7	0.8
72°	0.6	0.6	0.6	0.6	0.7	0.7
72.5°	0.5	0.6	0.6	0.6	0.6	0.7
73°	0.5	0.5	0.5	0.6	0.6	0.6
73.5°	0.5	0.5	0.5	0.5	0.6	0.6
74°	0.5	0.5	0.5	0.5	0.5	0.5
74.5°	0.4	0.4	0.4	0.5	0.5	0.5
75°	0.4	0.4	0.4	0.4	0.4	0.5
75.5°	0.4	0.4	0.4	0.4	0.4	0.4
76°	0.3	0.4	0.4	0.4	0.4	0.4
76.5°	0.3	0.3	0.3	0.3	0.4	0.4
77°	0.3	0.3	0.3	0.3	0.3	0.4
77.5°	0.3	0.3	0.3	0.3	0.3	0.3
78°	0.3	0.3	0.3	0.3	0.3	0.3
78.5°	0.2	0.2	0.2	0.2	0.3	0.3
79°	0.2	0.2	0.2	0.2	0.2	0.3
79.5°	0.2	0.2	0.2	0.2	0.2	0.2
80°	0.2	0.2	0.2	0.2	0.2	0.2
80.5°	0.2	0.2	0.2	0.2	0.2	0.2
81°	0.1	0.2	0.2	0.2	0.2	0.2
81.5°	0.1	0.1	0.1	0.1	0.1	0.2
82°	0.1	0.1	0.1	0.1	0.1	0.1
82.5°	0.1	0.1	0.1	0.1	0.1	0.1
83°	0.1	0.1	0.1	0.1	0.1	0.1
83.5°	0.1	0.1	0.1	0.1	0.1	0.1
84°	0.1	0.1	0.1	0.1	0.1	0.1
84.5°	0.1	0.1	0.1	0.1	0.0	0.1
85°	0.0	0.0	0.1	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: P775748

CATALOG NUMBER: HCDJBL510CSD-HCD62TRH-1000lm-4000K

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°	797.8	809.1	814.5	828.1	813.9	804.6	793.3	779.6	765.8	753.8	745.1
22°	783.3	794.7	799.6	813.1	799.9	790.6	779.4	765.6	751.8	739.4	730.9



44°	199.4	212.9	220.4	234.6	220.6	207.0	193.8	183.6	173.0	160.6	149.6
44.5°	186.4	199.2	205.6	219.9	206.8	193.7	180.6	169.7	160.1	148.2	138.2



66.5°	1.5	1.5	1.4	1.5	1.4	1.4	1.5	1.5	1.5	1.5	1.4
67°	1.4	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.5	1.4	1.3



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°	728.3	737.2	747.6	762.8	781.4	797.8
22°	714.2	723.1	733.2	748.6	767.5	783.3

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44°	137.8	151.7	161.1	169.8	182.5	199.4
44.5°	126.9	139.7	148.5	155.8	169.7	186.4

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66.5°	1.2	1.3	1.3	1.4	1.5	1.5
67°	1.2	1.2	1.2	1.3	1.4	1.4

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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)