

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: P775874

Luminaire Tested: HCDJBL510CSD-HCD8TRH-1000lm-5000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P775874  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2310613A001)  
Test Lab:  
Issue Date: 2/7/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL510CSD-HCD8TRH-1000lm-5000K  
Description: 8 INCH ROUND MEDIUM HAZE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

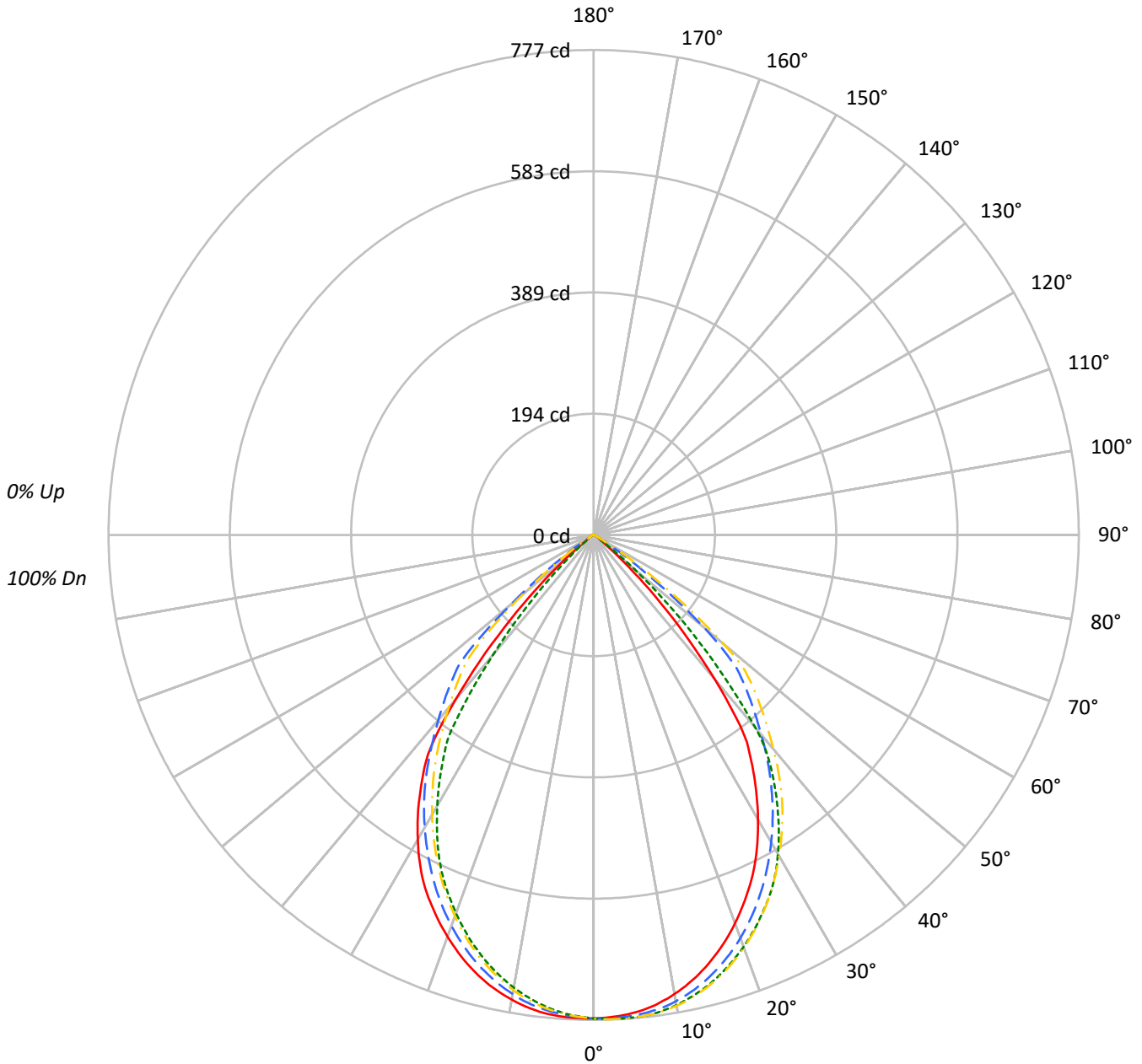
Lumens per Lamp: N/A  
Luminaire Lumens: 1073.8 lumens  
Efficiency: N/A  
Efficacy: 107.4 lumens/watt  
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.15  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

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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CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-5000K

### Luminous Intensity Polar Plot





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

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100				
1	113	110	107	104	110	107	105	103	103	101	99	100	98	97	96	95	94	92				92				
2	106	101	96	92	104	99	95	91	96	92	89	92	90	87	90	87	85	84				84				
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76				76				
4	94	85	79	74	92	84	78	73	82	76	72	79	75	72	78	74	71	69				69				
5	88	78	72	67	86	77	71	66	75	70	66	74	69	65	72	68	65	63				63				
6	83	72	66	61	81	72	65	60	70	64	60	68	63	60	67	63	59	57				57				
7	78	67	60	55	76	66	60	55	65	59	55	64	58	55	62	58	54	53				53				
8	73	62	55	51	72	62	55	51	60	55	50	59	54	50	58	54	50	48				48				
9	69	58	51	47	68	57	51	47	56	51	46	56	50	46	55	50	46	45				45				
10	65	54	48	43	64	54	47	43	53	47	43	52	47	43	51	46	43	41				41				

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

	0°	90°	180°	270°
0°	23652	23652	23652	23652
5°	23534	23770	23653	23381
10°	23152	23707	23440	22832
15°	22479	23383	22978	22024
20°	21518	22811	22252	20946
25°	20286	22014	21317	19592
30°	18557	20821	19862	17669
35°	16366	18997	17849	15370
40°	11984	16049	13674	10015
45°	6036	9771	7552	4417
50°	1843	4056	2479	1263
55°	681	766	681	591
60°	519	574	519	452
65°	405	441	397	347
70°	321	348	312	277
75°	260	295	248	212
80°	211	246	211	176
85°	140	210	140	105

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 135°  
 Vertical Angle: 45°  
 Luminance: 16062 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	72.9	6.8
10°-20°	202.4	18.9
20°-30°	284.1	26.5
30°-40°	291.7	27.2
40°-50°	178.3	16.6
50°-60°	34.6	3.2
60°-70°	6.3	0.6
70°-80°	2.8	0.3
80°-90°	0.6	0.1
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°	559.4	52.1
0°-40°	851.1	79.3
0°-60°	1064.1	99.1
0°-90°	1073.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1073.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	775	775	775	775	775	
5°	768	776	772	763	768	73
15°	711	740	727	697	711	200
25°	602	654	633	582	602	275
35°	439	510	479	412	439	268
45°	140	226	175	102	140	113
55°	13	14	13	11	13	14
65°	6	6	6	5	6	6
75°	2	2	2	2	2	2
85°	0	1	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°	774.7	774.7	774.7	774.7	774.7	774.7	774.7	774.7	774.7	774.7	774.7
0.5°	774.5	774.4	775.0	775.4	775.1	775.4	775.6	775.6	774.8	774.3	774.3
1°	774.1	774.3	775.0	775.7	775.5	775.8	776.0	775.8	774.8	774.0	773.9
1.5°	773.7	774.1	775.0	775.9	775.8	776.2	776.3	775.9	774.7	773.7	773.4
2°	773.1	773.8	775.0	776.0	776.1	776.4	776.6	775.9	774.5	773.2	772.7
2.5°	772.5	773.4	774.7	776.0	776.2	776.7	776.6	775.9	774.3	772.7	772.1
3°	771.8	772.8	774.4	775.8	776.2	776.7	776.6	775.8	773.9	772.2	771.2
3.5°	770.9	772.2	774.0	775.5	776.2	776.7	776.4	775.5	773.5	771.4	770.4
4°	770.0	771.5	773.5	775.2	776.0	776.4	776.2	775.3	773.0	770.8	769.4
4.5°	769.1	770.8	772.8	774.7	775.8	776.2	775.9	775.0	772.5	770.0	768.2
5°	767.9	769.9	772.2	774.3	775.6	775.9	775.6	774.4	771.8	769.1	767.2
5.5°	766.6	768.9	771.3	773.8	775.2	775.6	775.2	773.8	771.0	768.1	765.9
6°	765.1	767.7	770.6	773.1	774.7	775.2	774.6	773.1	769.9	767.0	764.4
6.5°	763.4	766.2	769.6	772.4	774.1	774.6	774.1	772.2	768.7	765.6	762.8
7°	761.5	764.7	768.6	771.4	773.2	773.9	773.5	771.1	767.3	764.1	761.1
7.5°	759.5	762.9	767.4	770.3	772.2	773.0	772.6	769.7	765.8	762.3	759.2
8°	757.2	761.0	766.1	769.0	771.0	772.0	771.6	768.5	764.2	760.6	757.0
8.5°	754.7	758.8	764.5	767.6	769.6	770.7	770.5	767.0	762.3	758.5	754.8
9°	752.3	756.6	762.8	766.0	768.1	769.4	769.2	765.3	760.4	756.3	752.4
9.5°	749.5	754.2	760.9	764.3	766.5	767.8	767.7	763.4	758.2	754.1	749.8
10°	746.8	751.8	758.8	762.5	764.7	766.2	766.0	761.5	756.1	751.7	747.0
10.5°	743.9	749.2	756.5	760.5	762.7	764.5	764.3	759.6	753.9	749.2	744.2
11°	740.9	746.5	754.1	758.3	760.7	762.5	762.4	757.5	751.4	746.6	741.3
11.5°	737.7	743.6	751.5	756.0	758.5	760.4	760.2	755.2	748.8	743.7	738.1
12°	734.2	740.7	748.7	753.6	756.3	758.2	757.9	752.9	746.2	740.9	734.9
12.5°	730.8	737.7	746.0	751.1	753.9	756.0	755.5	750.4	743.3	737.8	731.5
13°	727.2	734.5	743.0	748.5	751.4	753.6	753.0	747.8	740.4	734.6	728.1
13.5°	723.4	731.2	739.8	745.8	748.6	751.1	750.3	745.1	737.2	731.3	724.5
14°	719.4	727.6	736.6	742.9	745.9	748.4	747.5	742.2	734.0	727.8	720.7
14.5°	715.3	723.8	733.2	739.8	742.9	745.5	744.6	739.1	730.5	724.1	717.0
15°	711.2	720.1	729.7	736.5	739.8	742.6	741.5	736.1	727.0	720.4	713.0
15.5°	706.7	716.1	726.0	733.1	736.6	739.4	738.3	732.8	723.4	716.6	709.0
16°	702.3	712.0	722.3	729.7	733.3	736.2	735.0	729.2	719.5	712.5	704.7
16.5°	697.8	707.8	718.4	726.1	729.8	732.9	731.7	725.5	715.6	708.3	700.4
17°	693.1	703.6	714.3	722.4	726.1	729.3	728.1	722.0	711.7	704.0	695.8
17.5°	688.2	699.1	710.1	718.4	722.4	725.6	724.3	718.0	707.4	699.6	691.2
18°	683.3	694.4	705.8	714.3	718.6	721.9	720.6	714.0	703.1	695.1	686.5
18.5°	678.2	689.6	701.3	710.2	714.5	717.9	716.6	709.9	698.7	690.4	681.5
19°	673.0	684.8	696.7	705.9	710.5	713.8	712.4	705.7	694.2	685.8	676.6
19.5°	667.7	679.8	692.0	701.4	706.3	709.6	708.2	701.3	689.6	680.9	671.5
20°	662.3	674.7	687.2	697.1	702.1	705.3	703.9	696.8	684.9	676.0	666.3
20.5°	656.7	669.2	682.3	692.4	697.7	701.0	699.4	692.1	680.0	670.7	660.9
21°	650.9	663.8	677.3	687.7	693.1	696.4	694.8	687.5	675.2	665.6	655.5



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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°	633.2	646.9	661.5	672.9	679.1	682.3	680.3	672.9	659.6	649.5	638.4
23°	627.1	640.8	656.0	667.7	674.1	677.3	675.3	667.7	654.4	644.0	632.6
23.5°	621.1	634.9	650.5	662.5	669.0	672.4	670.1	662.4	649.2	638.2	626.6
24°	614.9	628.7	644.6	657.2	664.0	667.2	664.8	657.1	643.9	632.5	620.6
24.5°	608.6	622.7	638.8	651.8	658.8	661.9	659.3	651.8	638.4	626.6	614.5
25°	602.2	616.4	632.8	646.1	653.5	656.4	654.0	646.2	632.8	620.6	608.1
25.5°	595.4	610.1	626.8	640.6	648.2	651.1	648.4	640.7	626.9	614.7	601.8
26°	588.4	603.8	620.8	634.8	642.9	645.6	642.7	635.1	620.8	608.7	595.4
26.5°	581.2	597.4	614.5	629.2	637.3	639.8	636.8	629.5	614.2	602.4	588.9
27°	573.9	590.7	608.2	623.3	631.3	634.1	631.1	623.6	607.5	596.0	582.3
27.5°	566.3	583.7	601.7	617.2	625.1	628.4	625.1	617.6	600.6	589.4	575.5
28°	558.6	576.4	595.2	611.1	618.6	622.6	619.0	611.1	593.6	582.3	568.7
28.5°	550.8	569.2	588.7	604.9	611.9	616.4	612.9	604.4	586.3	575.2	562.0
29°	542.6	561.6	581.9	598.4	605.1	610.0	606.8	597.7	579.0	568.1	555.2
29.5°	534.6	554.3	575.2	591.7	597.9	603.4	600.4	590.8	571.2	560.8	548.3
30°	526.4	546.5	568.4	584.5	590.6	596.7	594.0	583.5	563.4	553.2	541.1
30.5°	518.0	538.7	561.7	577.4	583.0	589.5	587.5	576.1	555.5	545.5	534.2
31°	509.6	530.6	554.7	570.0	575.4	582.6	581.1	568.6	547.5	537.7	527.2
31.5°	501.1	522.8	547.9	562.6	567.5	575.1	574.4	561.1	539.4	529.8	520.0
32°	492.7	514.5	540.7	554.9	559.6	567.7	567.8	553.4	531.1	522.0	512.8
32.5°	484.0	506.6	533.7	546.9	551.6	560.0	561.1	545.5	522.9	514.2	505.6
33°	475.2	498.4	526.5	539.1	543.4	552.4	554.4	537.4	514.4	506.0	498.1
33.5°	466.3	490.1	519.4	530.8	535.0	544.4	547.5	529.3	505.8	498.0	490.4
34°	457.5	481.7	511.6	523.0	526.8	536.6	540.6	521.2	497.0	490.0	482.7
34.5°	448.3	473.5	504.4	514.7	518.2	528.7	533.6	513.0	487.9	481.8	474.6
35°	439.1	464.8	496.7	506.5	509.7	520.7	526.4	504.7	478.9	473.4	466.8
35.5°	430.3	456.3	489.2	498.1	500.8	512.5	519.1	496.3	470.0	465.1	458.7
36°	420.9	447.8	481.4	490.2	491.9	504.5	511.5	487.8	461.1	456.6	450.7
36.5°	412.7	439.1	473.6	481.8	483.0	496.3	503.8	479.1	451.7	448.1	442.7
37°	399.3	430.3	465.6	473.4	473.8	487.6	496.1	470.5	441.5	439.5	434.4
37.5°	385.8	421.6	457.8	464.7	464.7	479.3	488.2	461.5	428.7	431.0	426.3
38°	368.1	412.8	449.7	456.2	455.0	470.7	480.3	452.8	414.2	422.3	418.3
38.5°	351.8	404.2	441.8	447.4	445.2	462.1	472.3	444.2	397.8	413.6	410.5
39°	335.3	395.4	433.6	439.1	432.3	453.5	464.2	435.2	380.1	403.8	402.4
39.5°	318.5	381.5	425.7	430.2	418.8	444.7	456.1	426.6	361.4	391.8	394.5
40°	300.7	365.9	417.7	421.6	402.7	436.1	448.0	414.0	343.1	378.2	386.8
40.5°	283.3	349.6	409.9	412.9	384.8	427.3	440.0	401.0	325.7	362.6	379.5
41°	265.5	333.7	402.0	401.2	366.6	415.2	431.8	386.1	308.1	346.3	372.1
41.5°	248.1	317.8	394.3	390.0	348.3	403.8	424.1	369.8	291.2	329.5	365.0
42°	231.6	301.6	386.7	376.0	330.1	389.1	416.2	353.1	273.6	312.6	357.6
42.5°	216.1	284.6	379.3	360.9	312.5	373.4	408.7	335.3	256.6	296.4	350.6
43°	200.7	267.6	371.9	344.8	295.4	356.6	401.3	318.8	238.9	280.4	343.3
43.5°	184.9	250.8	364.4	328.0	278.1	339.2	393.9	302.3	222.2	264.6	336.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	139.8	203.8	342.6	278.9	226.3	288.8	372.0	253.5	174.9	216.9	314.6
45.5°	126.2	188.5	335.4	263.4	209.9	272.5	364.7	237.0	159.7	201.4	307.3
46°	113.2	173.6	328.0	247.9	194.2	256.3	357.1	220.9	145.1	186.3	300.4
46.5°	100.2	158.9	320.9	232.1	178.6	239.8	350.0	205.1	130.9	172.1	288.9
47°	88.1	144.2	312.2	216.2	163.4	223.0	342.5	189.7	117.1	157.6	275.3
47.5°	77.0	130.7	301.3	200.8	148.3	207.3	334.8	174.9	105.4	143.9	259.3
48°	66.9	117.5	288.4	185.9	134.2	191.9	327.2	160.5	93.8	130.2	241.6
48.5°	58.2	105.0	274.3	171.5	120.4	176.9	316.6	146.2	82.2	117.4	224.0
49°	50.6	92.9	260.9	157.6	108.7	162.1	303.1	132.1	70.5	105.8	206.0
49.5°	44.2	81.5	245.1	143.8	97.1	147.7	289.0	118.8	60.8	94.2	188.5
50°	38.8	70.8	229.8	130.1	85.4	133.4	272.4	107.4	52.2	82.5	171.4
50.5°	34.5	61.0	212.7	116.9	73.7	120.2	254.6	96.0	44.3	71.0	155.4
51°	30.2	52.6	194.9	104.3	62.2	108.5	236.2	84.7	37.4	61.5	139.6
51.5°	25.9	45.5	177.6	92.4	53.4	96.8	217.6	73.3	31.3	52.8	125.1
52°	21.6	39.5	160.9	81.4	45.0	85.0	199.6	62.0	25.6	44.7	113.0
52.5°	17.4	35.1	144.6	70.9	37.4	73.3	182.3	53.0	20.5	37.3	100.9
53°	15.1	30.7	129.9	61.1	30.9	61.7	165.9	44.8	16.4	30.9	88.9
53.5°	14.4	26.2	115.5	51.9	25.1	52.4	149.8	37.6	14.6	25.3	76.7
54°	13.9	21.8	102.1	43.8	19.7	43.9	134.7	31.2	14.0	20.1	64.7
54.5°	13.3	17.5	89.3	36.1	15.8	36.7	120.0	25.6	13.4	15.6	55.3
55°	12.8	14.3	78.0	30.6	14.4	29.9	107.2	20.4	12.8	12.5	47.2
55.5°	12.3	12.9	67.1	25.1	13.9	24.0	94.6	15.7	12.3	11.9	40.0
56°	11.7	12.4	57.4	19.6	13.2	18.6	81.9	12.7	11.8	11.5	33.7
56.5°	11.3	11.8	48.8	14.2	12.6	14.3	69.3	12.1	11.3	11.1	28.1
57°	10.9	11.4	41.1	12.1	12.0	12.3	59.3	11.6	10.9	10.7	23.6
57.5°	10.4	11.0	35.0	11.7	11.6	11.7	50.1	11.2	10.4	10.2	19.8
58°	10.0	10.6	30.5	11.3	11.1	11.3	41.8	10.8	10.0	9.9	16.8
58.5°	9.6	10.2	26.0	10.9	10.7	10.9	34.5	10.4	9.6	9.5	14.5
59°	9.2	9.8	21.5	10.4	10.2	10.4	28.1	10.0	9.2	9.2	12.6
59.5°	8.8	9.5	17.1	10.1	9.8	10.0	22.8	9.7	8.8	8.8	11.2
60°	8.5	9.2	14.8	9.7	9.4	9.7	18.8	9.4	8.5	8.5	10.1
60.5°	8.2	8.8	12.9	9.4	9.0	9.4	15.7	9.0	8.1	8.3	9.2
61°	7.9	8.5	11.4	9.1	8.6	9.0	13.3	8.7	7.8	8.0	8.6
61.5°	7.6	8.2	10.1	8.7	8.3	8.6	11.6	8.4	7.5	7.7	8.3
62°	7.2	7.9	9.3	8.4	8.0	8.4	10.3	8.1	7.1	7.5	8.0
62.5°	6.9	7.7	8.6	8.1	7.7	8.1	9.4	7.8	6.8	7.1	7.7
63°	6.6	7.4	8.3	7.9	7.2	7.8	8.6	7.6	6.5	6.9	7.4
63.5°	6.4	7.1	8.1	7.6	6.9	7.5	8.3	7.2	6.3	6.6	7.1
64°	6.1	6.8	7.8	7.2	6.7	7.2	8.0	7.0	6.0	6.4	6.8
64.5°	5.9	6.6	7.6	7.0	6.4	6.9	7.7	6.7	5.8	6.2	6.6
65°	5.6	6.4	7.2	6.8	6.1	6.7	7.4	6.5	5.5	6.0	6.4
65.5°	5.4	6.2	7.0	6.5	5.9	6.5	7.0	6.3	5.2	5.8	6.2
66°	5.1	5.9	6.7	6.3	5.6	6.2	6.8	6.0	5.0	5.5	6.0





TEST NUMBER: P775874

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	4.6	5.2	6.1	5.6	4.9	5.5	6.2	5.3	4.4	4.9	5.3
68°	4.4	5.0	5.9	5.4	4.7	5.3	5.9	5.1	4.3	4.7	5.1
68.5°	4.2	4.9	5.6	5.2	4.5	5.1	5.6	4.9	4.0	4.5	4.9
69°	3.9	4.7	5.4	5.0	4.3	4.9	5.4	4.8	3.8	4.4	4.7
69.5°	3.8	4.5	5.2	4.8	4.2	4.8	5.2	4.6	3.7	4.2	4.5
70°	3.6	4.3	5.0	4.6	3.9	4.6	5.0	4.4	3.5	3.9	4.3
70.5°	3.5	4.2	4.8	4.5	3.7	4.4	4.9	4.2	3.4	3.8	4.2
71°	3.3	3.9	4.6	4.3	3.6	4.3	4.7	4.0	3.2	3.6	3.9
71.5°	3.2	3.8	4.4	4.0	3.4	4.0	4.5	3.8	3.1	3.5	3.7
72°	3.0	3.6	4.3	3.9	3.3	3.8	4.3	3.7	2.9	3.3	3.6
72.5°	2.9	3.5	4.0	3.7	3.1	3.7	4.0	3.5	2.8	3.2	3.4
73°	2.8	3.3	3.8	3.6	3.0	3.5	3.9	3.4	2.7	3.1	3.3
73.5°	2.6	3.2	3.7	3.4	2.9	3.4	3.7	3.2	2.6	2.9	3.1
74°	2.5	3.0	3.5	3.3	2.8	3.3	3.6	3.1	2.3	2.8	3.0
74.5°	2.3	2.9	3.3	3.1	2.6	3.1	3.4	3.0	2.2	2.7	2.8
75°	2.2	2.8	3.2	3.0	2.5	3.0	3.3	2.8	2.1	2.5	2.7
75.5°	2.1	2.6	3.0	2.9	2.3	2.9	3.1	2.7	2.0	2.3	2.6
76°	2.0	2.5	2.9	2.8	2.2	2.8	3.0	2.6	1.9	2.2	2.3
76.5°	1.9	2.3	2.8	2.6	2.1	2.6	2.8	2.3	1.8	2.1	2.2
77°	1.8	2.2	2.6	2.5	2.0	2.5	2.7	2.2	1.7	2.0	2.1
77.5°	1.7	2.1	2.5	2.3	1.9	2.3	2.6	2.1	1.6	1.9	2.0
78°	1.6	2.0	2.3	2.2	1.8	2.2	2.3	2.0	1.5	1.8	1.8
78.5°	1.5	1.8	2.1	2.1	1.7	2.1	2.2	1.9	1.4	1.6	1.7
79°	1.4	1.7	2.0	1.9	1.6	2.0	2.1	1.8	1.4	1.5	1.6
79.5°	1.3	1.6	1.9	1.8	1.5	1.9	2.0	1.7	1.3	1.4	1.5
80°	1.2	1.5	1.8	1.7	1.4	1.7	1.8	1.6	1.2	1.3	1.4
80.5°	1.1	1.4	1.7	1.6	1.4	1.6	1.7	1.4	1.1	1.2	1.3
81°	1.0	1.3	1.6	1.5	1.3	1.5	1.6	1.3	1.0	1.1	1.2
81.5°	1.0	1.2	1.4	1.4	1.2	1.5	1.5	1.3	1.0	1.1	1.1
82°	0.9	1.1	1.3	1.3	1.1	1.4	1.4	1.2	0.9	1.0	1.0
82.5°	0.7	1.0	1.2	1.2	1.0	1.3	1.3	1.1	0.7	0.9	0.9
83°	0.6	0.9	1.1	1.1	1.0	1.2	1.2	1.0	0.6	0.7	0.7
83.5°	0.6	0.7	1.0	1.0	0.9	1.1	1.1	0.9	0.6	0.6	0.6
84°	0.5	0.7	0.9	1.0	0.7	1.0	1.0	0.7	0.5	0.5	0.5
84.5°	0.4	0.6	0.7	0.9	0.7	0.9	0.9	0.6	0.4	0.4	0.5
85°	0.4	0.5	0.6	0.7	0.6	0.7	0.7	0.5	0.4	0.4	0.4
85.5°	0.3	0.4	0.6	0.6	0.6	0.7	0.6	0.4	0.3	0.3	0.3
86°	0.2	0.3	0.5	0.5	0.5	0.6	0.5	0.4	0.3	0.2	0.2
86.5°	0.2	0.2	0.4	0.5	0.4	0.5	0.5	0.3	0.2	0.2	0.2
87°	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.2	0.2	0.1	0.1
87.5°	0.1	0.1	0.3	0.3	0.3	0.4	0.3	0.2	0.1	0.1	0.1
88°	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.0
88.5°	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0



TEST NUMBER: P775874  
CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-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	0.1	0.0	0.1	0.0	0.0	0.0	0.0



TEST NUMBER: P775874

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	774.7	774.7	774.7	774.7	774.7	774.7
0.5°	774.5	773.8	774.1	774.5	774.7	774.5
1°	773.9	773.0	773.4	773.8	774.2	774.1
1.5°	773.1	772.2	772.5	773.0	773.5	773.7
2°	772.4	771.3	771.5	772.2	772.7	773.1
2.5°	771.5	770.4	770.6	771.2	771.9	772.5
3°	770.7	769.2	769.5	770.0	771.0	771.8
3.5°	769.5	767.9	768.1	769.0	769.9	770.9
4°	768.3	766.4	766.7	767.7	769.0	770.0
4.5°	767.0	764.7	765.0	766.2	767.8	769.1
5°	765.4	762.9	763.2	764.7	766.4	767.9
5.5°	763.7	760.8	761.2	763.1	765.0	766.6
6°	761.7	758.8	759.2	761.3	763.4	765.1
6.5°	759.7	756.3	756.8	759.3	761.7	763.4
7°	757.6	753.9	754.4	757.2	759.7	761.5
7.5°	755.1	751.2	751.7	754.8	757.6	759.5
8°	752.7	748.5	749.1	752.4	755.2	757.2
8.5°	750.1	745.6	746.3	749.7	752.6	754.7
9°	747.5	742.7	743.4	746.8	749.9	752.3
9.5°	744.7	739.6	740.3	743.8	747.0	749.5
10°	741.9	736.5	737.2	740.6	744.2	746.8
10.5°	738.8	733.1	733.9	737.3	741.1	743.9
11°	735.7	729.6	730.5	733.8	737.9	740.9
11.5°	732.5	726.0	727.0	730.3	734.5	737.7
12°	729.1	722.2	723.3	726.6	730.9	734.2
12.5°	725.5	718.3	719.4	722.6	727.2	730.8
13°	721.9	714.2	715.5	718.7	723.5	727.2
13.5°	717.9	709.9	711.3	714.7	719.5	723.4
14°	714.0	705.7	707.0	710.5	715.5	719.4
14.5°	709.9	701.4	702.6	706.1	711.1	715.3
15°	705.7	696.8	698.0	701.7	706.9	711.2
15.5°	701.4	692.0	693.4	697.1	702.3	706.7
16°	696.9	687.4	688.6	692.4	697.6	702.3
16.5°	692.4	682.6	683.8	687.6	692.9	697.8
17°	687.6	677.6	678.7	682.5	688.1	693.1
17.5°	682.8	672.4	673.6	677.3	683.0	688.2
18°	677.8	667.0	668.3	672.0	678.0	683.3
18.5°	672.6	661.7	663.0	666.7	672.6	678.2
19°	667.5	656.1	657.4	661.2	667.3	673.0
19.5°	662.1	650.5	651.7	655.7	661.9	667.7
20°	656.8	644.7	646.0	649.9	656.3	662.3
20.5°	651.1	639.0	640.0	644.2	650.7	656.7
21°	645.4	633.1	634.1	638.3	644.7	650.9

TEST NUMBER: P775874

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	627.8	615.1	615.6	620.0	626.7	633.2
23°	621.8	608.8	609.2	613.8	620.3	627.1
23.5°	615.7	602.5	603.2	607.5	614.0	621.1
24°	609.7	595.8	596.6	601.0	607.7	614.9
24.5°	603.3	589.0	590.2	594.4	601.2	608.6
25°	597.0	581.6	583.5	587.7	594.7	602.2
25.5°	590.5	574.3	576.6	581.1	588.0	595.4
26°	583.9	566.7	569.4	574.4	581.4	588.4
26.5°	576.6	559.0	562.2	567.6	574.7	581.2
27°	569.4	551.1	554.7	560.4	567.8	573.9
27.5°	562.0	543.1	547.0	553.4	560.6	566.3
28°	554.4	534.8	539.0	546.4	553.2	558.6
28.5°	546.6	526.4	531.2	539.0	545.6	550.8
29°	538.7	517.9	523.2	532.1	538.1	542.6
29.5°	530.9	509.7	515.1	524.9	530.4	534.6
30°	522.7	501.2	506.8	517.6	522.2	526.4
30.5°	514.5	492.4	498.6	510.1	514.3	518.0
31°	506.2	483.6	490.2	503.0	506.2	509.6
31.5°	497.8	475.1	481.8	495.4	498.1	501.1
32°	489.5	466.2	473.3	487.9	489.7	492.7
32.5°	481.3	457.3	464.9	480.0	481.7	484.0
33°	472.7	448.3	456.4	472.5	473.5	475.2
33.5°	464.1	439.1	447.9	464.7	465.1	466.3
34°	455.5	430.2	439.2	456.9	456.7	457.5
34.5°	446.8	421.0	430.3	448.8	448.4	448.3
35°	438.2	412.4	421.7	440.7	440.0	439.1
35.5°	429.7	402.1	412.9	432.7	431.8	430.3
36°	420.8	388.3	404.1	424.6	423.2	420.9
36.5°	412.2	371.9	395.5	416.5	414.7	412.7
37°	403.6	355.0	387.2	408.3	406.1	399.3
37.5°	394.9	338.5	378.0	400.2	397.6	385.8
38°	387.0	321.1	364.8	392.2	389.1	368.1
38.5°	373.7	303.9	349.3	384.3	380.2	351.8
39°	359.1	286.1	333.6	376.6	372.7	335.3
39.5°	343.3	268.3	318.0	368.7	359.3	318.5
40°	327.4	251.3	302.3	361.0	345.7	300.7
40.5°	311.6	234.4	286.3	353.6	329.9	283.3
41°	295.2	218.5	269.6	346.2	314.5	265.5
41.5°	278.7	202.9	253.0	338.9	299.7	248.1
42°	261.6	187.3	236.9	331.5	284.7	231.6
42.5°	245.3	171.7	221.7	324.5	269.2	216.1
43°	229.3	156.7	206.7	317.4	253.1	200.7
43.5°	214.1	142.3	191.9	310.3	237.0	184.9



TEST NUMBER: P775874

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	169.4	102.3	148.8	289.0	192.6	139.8
45.5°	154.9	90.3	135.0	278.4	178.2	126.2
46°	140.6	78.6	122.3	266.9	164.0	113.2
46.5°	127.2	68.5	109.6	253.6	150.0	100.2
47°	114.6	59.4	97.4	241.5	136.4	88.1
47.5°	102.9	51.5	85.6	226.7	123.4	77.0
48°	91.4	44.9	74.8	211.6	110.8	66.9
48.5°	79.8	39.4	65.0	194.3	98.8	58.2
49°	68.3	35.2	56.2	178.2	87.3	50.6
49.5°	58.8	30.9	48.4	162.2	76.3	44.2
50°	50.7	26.6	42.1	147.5	66.2	38.8
50.5°	43.6	22.4	36.4	133.2	56.9	34.5
51°	37.8	18.1	32.3	120.2	49.0	30.2
51.5°	32.9	15.2	28.1	107.3	42.4	25.9
52°	28.7	14.3	24.0	95.7	36.6	21.6
52.5°	24.6	13.6	19.8	84.3	32.3	17.4
53°	20.6	13.1	16.1	74.0	27.9	15.1
53.5°	16.7	12.6	13.2	64.3	23.7	14.4
54°	13.7	12.0	12.3	55.8	19.3	13.9
54.5°	12.3	11.5	11.8	48.0	15.6	13.3
55°	11.8	11.1	11.4	41.1	12.9	12.8
55.5°	11.4	10.7	11.0	36.3	12.1	12.3
56°	11.0	10.2	10.6	31.7	11.7	11.7
56.5°	10.6	9.8	10.1	27.0	11.3	11.3
57°	10.2	9.4	9.8	22.2	10.9	10.9
57.5°	9.8	9.0	9.4	17.6	10.4	10.4
58°	9.5	8.6	9.1	15.1	10.1	10.0
58.5°	9.2	8.3	8.7	13.1	9.8	9.6
59°	8.8	8.0	8.4	11.5	9.5	9.2
59.5°	8.5	7.7	8.1	10.2	9.2	8.8
60°	8.2	7.4	7.9	9.3	8.8	8.5
60.5°	8.0	7.0	7.6	8.7	8.5	8.2
61°	7.7	6.7	7.4	8.4	8.2	7.9
61.5°	7.4	6.5	7.0	8.1	7.9	7.6
62°	7.1	6.2	6.8	7.8	7.7	7.2
62.5°	6.8	6.0	6.5	7.6	7.4	6.9
63°	6.6	5.6	6.3	7.2	7.1	6.6
63.5°	6.4	5.4	6.1	7.0	6.8	6.4
64°	6.1	5.2	5.9	6.8	6.6	6.1
64.5°	5.9	5.0	5.6	6.5	6.4	5.9
65°	5.6	4.8	5.4	6.3	6.2	5.6
65.5°	5.4	4.6	5.2	6.1	5.9	5.4
66°	5.2	4.4	5.0	5.9	5.6	5.1



TEST NUMBER: P775874

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	4.7	3.8	4.5	5.2	5.0	4.6
68°	4.5	3.6	4.3	5.0	4.8	4.4
68.5°	4.3	3.5	4.2	4.8	4.7	4.2
69°	4.2	3.3	3.9	4.6	4.5	3.9
69.5°	3.9	3.2	3.8	4.5	4.3	3.8
70°	3.8	3.1	3.6	4.3	4.0	3.6
70.5°	3.6	2.9	3.5	4.0	3.9	3.5
71°	3.5	2.8	3.3	3.9	3.7	3.3
71.5°	3.3	2.7	3.2	3.7	3.6	3.2
72°	3.2	2.6	3.1	3.5	3.4	3.0
72.5°	3.1	2.3	2.9	3.4	3.3	2.9
73°	2.9	2.2	2.8	3.2	3.1	2.8
73.5°	2.8	2.1	2.7	3.1	3.0	2.6
74°	2.7	2.0	2.6	2.9	2.8	2.5
74.5°	2.5	1.9	2.3	2.8	2.7	2.3
75°	2.3	1.8	2.2	2.7	2.6	2.2
75.5°	2.2	1.7	2.1	2.5	2.5	2.1
76°	2.1	1.6	2.0	2.3	2.2	2.0
76.5°	2.0	1.6	1.9	2.2	2.1	1.9
77°	1.9	1.5	1.8	2.0	2.0	1.8
77.5°	1.8	1.4	1.7	1.9	1.9	1.7
78°	1.7	1.3	1.6	1.8	1.8	1.6
78.5°	1.6	1.2	1.5	1.7	1.6	1.5
79°	1.5	1.1	1.4	1.6	1.5	1.4
79.5°	1.4	1.1	1.3	1.5	1.4	1.3
80°	1.3	1.0	1.2	1.3	1.3	1.2
80.5°	1.2	0.9	1.1	1.2	1.2	1.1
81°	1.1	0.9	1.0	1.1	1.1	1.0
81.5°	1.0	0.7	0.9	1.0	1.0	1.0
82°	0.9	0.6	0.9	0.9	0.9	0.9
82.5°	0.7	0.6	0.7	0.9	0.7	0.7
83°	0.6	0.5	0.6	0.7	0.6	0.6
83.5°	0.6	0.4	0.5	0.6	0.5	0.6
84°	0.5	0.4	0.4	0.5	0.4	0.5
84.5°	0.4	0.3	0.4	0.4	0.4	0.4
85°	0.3	0.3	0.3	0.4	0.3	0.4
85.5°	0.3	0.2	0.2	0.3	0.2	0.3
86°	0.2	0.1	0.2	0.2	0.2	0.2
86.5°	0.1	0.1	0.1	0.2	0.1	0.2
87°	0.1	0.0	0.1	0.1	0.1	0.1
87.5°	0.0	0.0	0.0	0.0	0.1	0.1
88°	0.0	0.0	0.0	0.0	0.0	0.1
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775874

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-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°	645.0	658.3	672.1	682.9	688.5	691.8	690.0	682.7	670.1	660.3	649.9
22°	639.2	652.6	666.8	678.0	683.8	687.1	685.3	677.8	665.0	655.1	644.3



44°	169.0	234.4	357.0	311.4	261.0	322.0	386.5	286.1	205.7	248.6	328.7
44.5°	154.2	218.9	349.8	295.0	243.6	305.0	379.3	269.4	190.3	232.7	321.7



66.5°	4.9	5.6	6.5	6.1	5.3	6.0	6.6	5.8	4.8	5.3	5.6
67°	4.7	5.4	6.3	5.9	5.1	5.8	6.4	5.5	4.6	5.1	5.4



89°	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0



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21.5°	639.5	627.1	628.0	632.4	638.8	645.0
22°	633.8	621.1	621.8	626.3	632.7	639.2



44°	198.7	128.2	177.3	303.3	221.3	169.0
44.5°	184.0	115.4	162.9	296.1	207.0	154.2

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66.5°	5.0	4.2	4.8	5.6	5.4	4.9
67°	4.9	4.0	4.7	5.4	5.2	4.7

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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)