

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: P775699

Luminaire Tested: HCDJBL5510CSD-HCD4TSQH-1000lm-5000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P775699  
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-HCD4TSQH-1000lm-5000K  
Description: 4 INCH SQUARE MEDIUM HAZE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

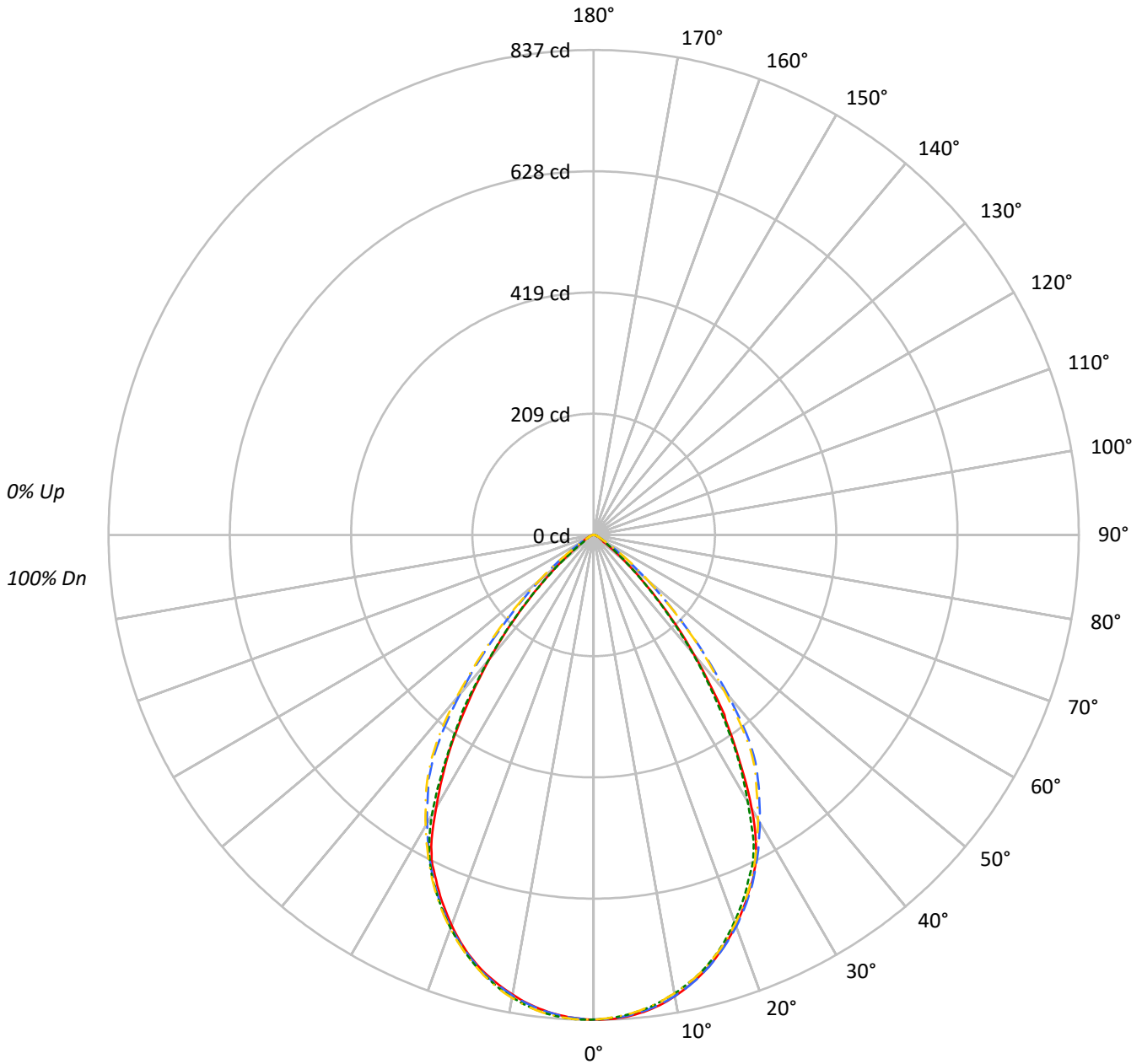
Lumens per Lamp: N/A  
Luminaire Lumens: 1070.6 lumens  
Efficiency: N/A  
Efficacy: 107.1 lumens/watt  
Spacing Criteria (0/90/45): 1.05 / 1.05 / 1.09  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

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



TEST NUMBER: P775699  
CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-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			
1	113	110	107	104	110	107	105	103	103	101	100	100	98	97	96	95	94	92			
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	88	85	84			
3	100	93	87	82	98	91	86	82	88	84	80	86	82	79	84	81	78	76			
4	94	85	79	74	92	84	78	74	82	77	73	80	76	72	78	74	71	70			
5	88	79	72	67	87	78	72	67	76	71	66	74	70	66	73	69	65	64			
6	83	73	66	61	82	72	66	61	71	65	61	69	64	60	68	63	60	58			
7	78	68	61	56	77	67	61	56	66	60	56	65	59	56	63	59	55	54			
8	74	63	56	52	73	63	56	52	61	56	51	60	55	51	59	55	51	49			
9	70	59	52	48	69	58	52	48	57	52	48	57	51	47	56	51	47	46			
10	66	55	49	44	65	55	49	44	54	48	44	53	48	44	52	47	44	43			

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

	0°	90°	180°	270°
0°	82662	82662	82662	82662
5°	82442	82075	82184	82511
10°	81127	80635	80856	81357
15°	78824	78404	78814	79172
20°	75418	74713	75376	75965
25°	71107	69929	70671	71718
30°	62294	60673	62031	63663
35°	48881	47843	49834	50498
40°	34773	34038	36115	36464
45°	21261	20716	22533	22673
50°	10441	10764	11625	11241
55°	3912	5394	5687	4377
60°	2847	3598	3637	2886
65°	2245	2830	2900	2315
70°	1792	2283	2312	1878
75°	1375	1795	1795	1528
80°	911	1423	1309	1195
85°	340	1134	567	794

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 315°  
 Vertical Angle: 45°  
 Luminance: 32612 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	78.5	7.3
10°-20°	216.3	20.2
20°-30°	297.6	27.8
30°-40°	273.5	25.5
40°-50°	147.9	13.8
50°-60°	39.8	3.7
60°-70°	11.4	1.1
70°-80°	4.8	0.4
80°-90°	0.9	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°	592.4	55.3
0°-40°	865.8	80.9
0°-60°	1053.6	98.4
0°-90°	1070.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1070.6	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	836	836	836	836	836	
5°	831	827	828	832	831	79
15°	770	766	770	774	770	216
25°	652	641	648	658	652	296
35°	405	396	413	418	405	252
45°	152	148	161	162	152	120
55°	23	31	33	25	23	27
65°	10	12	12	10	10	10
75°	4	5	5	4	4	4
85°	0	1	0	1	0	1
90°	0	0	0	0	0	



TEST NUMBER: P775699

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	836.3	836.3	836.3	836.3	836.3	836.3	836.3	836.3	836.3	836.3	836.3
0.5°	836.7	836.4	836.1	835.8	836.3	835.8	836.0	836.1	836.4	836.4	836.0
1°	836.7	836.2	835.8	835.5	835.9	835.3	835.4	835.5	836.0	836.2	835.8
1.5°	836.4	835.8	835.7	835.0	835.1	834.5	834.8	834.9	835.5	835.7	835.2
2°	836.2	835.4	835.0	834.5	834.3	833.8	833.9	834.2	834.7	835.1	834.7
2.5°	835.7	834.9	834.5	833.7	833.4	832.9	833.1	833.2	834.1	834.4	834.1
3°	835.0	833.9	833.7	833.0	832.6	831.8	832.0	832.2	833.2	833.7	833.2
3.5°	834.2	833.1	832.8	832.0	831.5	830.6	830.8	831.1	832.1	832.8	832.4
4°	833.2	832.0	832.0	831.0	830.2	829.5	829.5	829.9	830.9	831.8	831.3
4.5°	832.1	830.8	830.6	829.8	828.7	827.9	828.1	828.5	829.7	830.8	830.0
5°	830.9	829.4	829.4	828.3	827.2	826.4	826.5	827.0	828.3	829.3	828.6
5.5°	829.3	827.9	828.0	826.8	825.5	824.6	824.8	825.3	826.7	828.0	827.1
6°	827.8	826.1	826.3	825.1	823.7	822.7	823.0	823.6	824.9	826.3	825.4
6.5°	826.0	824.3	824.6	823.4	821.7	820.6	820.9	821.6	823.1	824.7	823.7
7°	823.9	822.1	822.5	821.3	819.6	818.4	818.9	819.7	821.1	822.8	821.8
7.5°	821.8	820.0	820.5	819.3	817.2	816.2	816.6	817.4	818.8	820.7	819.7
8°	819.6	817.6	818.5	816.8	814.8	813.5	814.1	814.9	816.6	818.5	817.4
8.5°	817.0	815.2	816.0	814.2	812.0	811.0	811.7	812.4	814.0	816.0	815.1
9°	814.3	812.6	813.5	811.7	809.3	808.2	808.9	809.8	811.4	813.5	812.6
9.5°	811.5	809.5	810.9	809.0	806.3	805.3	806.0	806.9	808.5	810.9	809.9
10°	808.3	806.6	807.9	805.9	803.4	802.3	803.1	804.0	805.6	808.2	807.1
10.5°	805.2	803.3	805.0	802.8	800.3	799.2	800.2	800.9	802.5	805.3	804.0
11°	801.9	800.0	802.1	799.6	797.1	796.0	797.0	797.7	799.4	802.2	800.9
11.5°	798.5	796.5	798.5	796.3	793.6	792.5	793.5	794.7	796.3	799.0	797.6
12°	794.7	792.8	795.0	792.7	790.0	789.1	790.0	791.2	792.8	795.9	795.4
12.5°	791.1	789.0	791.2	789.1	786.5	785.6	786.5	787.8	789.3	792.3	791.7
13°	787.3	785.1	787.6	785.2	783.1	782.0	783.0	784.3	785.8	788.8	788.1
13.5°	783.3	781.0	783.6	781.3	779.5	778.5	779.5	780.9	782.3	785.2	784.5
14°	779.2	776.9	779.4	777.3	775.2	774.2	775.4	776.6	778.7	781.7	781.0
14.5°	774.7	772.3	775.0	773.1	770.8	769.8	771.1	772.2	774.6	778.2	776.0
15°	770.3	767.9	770.8	768.8	766.2	765.4	766.5	768.0	770.2	773.9	771.6
15.5°	765.6	763.3	766.3	764.1	761.5	760.6	761.8	763.3	765.6	769.6	767.0
16°	760.9	758.5	761.4	759.3	756.7	755.9	757.0	758.7	760.9	765.0	762.4
16.5°	755.8	753.8	756.5	754.6	751.6	750.8	752.2	753.8	756.3	760.2	757.6
17°	750.8	748.5	751.7	749.6	746.3	745.8	747.2	748.9	751.4	755.4	752.6
17.5°	745.6	743.4	746.5	744.4	740.9	740.6	742.0	743.6	745.9	750.5	747.5
18°	740.2	737.9	741.3	739.0	734.9	735.0	736.8	738.4	740.3	745.4	742.4
18.5°	734.3	732.3	735.8	733.7	729.0	729.3	731.2	732.8	734.6	740.0	737.1
19°	728.8	726.5	730.5	728.0	722.8	723.3	725.7	727.1	728.8	734.3	731.5
19.5°	722.9	720.8	724.8	721.9	716.7	717.3	720.0	721.2	722.8	728.4	725.9
20°	717.0	714.8	719.2	715.8	710.3	710.9	714.3	715.1	716.6	722.5	720.2
20.5°	710.9	708.7	713.3	709.5	703.9	704.5	708.2	708.8	710.3	716.4	714.2
21°	704.6	702.3	707.0	703.0	697.3	698.0	702.1	702.4	703.9	710.0	708.2



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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°	685.4	682.8	688.2	682.7	677.3	677.8	683.0	682.4	684.0	690.3	689.4
23°	678.2	676.1	681.5	675.6	670.1	670.8	676.5	675.3	677.3	683.5	682.8
23.5°	671.6	669.4	674.6	668.9	662.7	664.0	669.6	668.3	670.1	676.5	675.9
24°	664.8	662.3	667.9	661.6	655.0	656.7	662.6	661.3	662.9	669.6	668.9
24.5°	658.6	655.2	660.8	654.6	647.9	649.3	655.1	654.2	655.3	662.5	661.6
25°	652.0	647.8	653.4	646.8	641.2	641.6	647.8	646.8	648.0	655.1	654.4
25.5°	643.4	640.8	645.8	639.1	634.4	633.8	640.1	639.2	641.0	647.4	646.9
26°	635.6	634.1	638.0	631.1	627.7	626.2	632.4	631.6	634.5	639.8	639.5
26.5°	627.2	627.5	630.4	623.6	617.9	619.1	624.4	623.7	626.6	632.0	631.6
27°	617.2	618.8	622.5	616.2	607.6	612.3	616.4	616.1	616.1	624.8	623.7
27.5°	606.7	610.4	614.5	609.4	597.9	605.2	608.3	608.8	606.9	618.1	615.7
28°	595.8	601.4	606.2	602.5	584.6	597.1	600.1	601.8	595.6	610.8	607.6
28.5°	584.2	592.0	598.2	594.8	571.0	586.2	591.9	593.8	582.8	600.3	599.6
29°	572.3	581.8	589.8	584.2	558.0	577.1	583.7	583.6	569.8	590.9	591.3
29.5°	559.2	571.1	581.8	574.4	544.7	565.9	575.1	574.2	556.4	581.3	583.2
30°	545.8	559.5	573.6	564.0	531.6	552.7	566.8	563.7	543.5	568.9	574.9
30.5°	531.6	548.3	565.2	551.2	518.8	539.5	558.1	551.0	530.3	555.7	566.6
31°	517.3	535.4	556.6	537.9	506.1	526.7	549.4	538.5	517.8	542.9	558.0
31.5°	502.8	522.9	548.1	524.9	493.3	513.6	540.5	525.4	505.4	529.8	549.3
32°	488.0	508.9	539.5	512.0	480.9	500.9	532.0	512.6	492.8	517.1	540.9
32.5°	473.7	495.6	531.5	499.0	467.7	488.5	523.3	499.8	480.0	504.4	532.2
33°	459.8	481.4	523.7	486.4	454.3	476.4	515.1	487.7	467.3	492.0	524.1
33.5°	445.9	467.0	515.4	473.9	439.9	463.9	507.1	475.1	454.4	479.4	517.0
34°	432.4	453.2	505.9	461.6	425.9	451.6	499.3	463.2	441.0	467.0	509.6
34.5°	418.7	439.2	497.7	449.0	411.0	438.7	491.1	450.8	426.9	454.5	498.9
35°	405.1	425.2	489.3	436.3	396.5	426.4	482.0	439.0	413.0	442.0	488.0
35.5°	391.8	412.0	480.2	423.3	381.9	412.8	472.0	426.4	399.0	429.0	478.6
36°	383.6	398.9	469.6	410.2	368.1	399.2	461.9	414.2	384.9	416.0	467.0
36.5°	368.6	386.1	457.3	396.7	354.1	385.5	449.0	401.1	371.0	402.6	454.1
37°	353.4	373.2	445.8	382.9	340.8	371.7	436.1	388.1	356.8	389.0	440.9
37.5°	338.2	360.2	433.4	369.6	327.7	357.7	422.3	375.0	343.5	375.1	427.6
38°	322.9	347.3	419.1	356.3	314.9	344.2	407.2	361.8	330.5	361.8	414.0
38.5°	309.3	334.4	404.1	343.1	302.0	331.2	392.3	348.4	317.6	348.1	400.5
39°	295.7	321.4	389.6	329.7	289.7	318.6	377.4	335.3	304.7	335.1	386.7
39.5°	282.5	308.2	375.3	316.4	276.7	306.6	363.1	322.4	292.1	322.2	372.9
40°	269.5	295.2	360.9	303.7	263.8	294.0	349.0	310.0	279.9	309.5	359.1
40.5°	257.1	282.0	346.5	291.5	250.8	282.0	335.5	297.3	267.1	296.9	345.4
41°	244.6	269.4	332.0	279.4	238.3	270.3	322.3	285.4	254.4	284.8	331.3
41.5°	232.2	257.1	317.6	267.5	225.5	258.7	309.3	273.7	241.5	272.9	317.7
42°	220.3	245.1	303.8	255.4	213.5	246.4	296.6	262.0	229.1	260.9	303.7
42.5°	208.4	233.2	290.4	243.6	201.7	234.4	284.3	250.5	217.1	249.1	290.1
43°	196.7	221.7	277.1	231.8	190.3	222.6	272.2	238.7	205.4	237.0	276.2
43.5°	184.8	210.5	264.1	220.1	179.2	211.2	260.0	227.2	193.9	225.2	263.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	152.1	177.7	225.9	186.1	148.2	177.9	223.8	193.5	161.2	191.1	224.4
45.5°	141.9	166.9	213.5	175.5	138.3	167.9	212.2	182.6	151.0	180.3	212.5
46°	132.0	156.7	201.5	165.1	128.6	157.7	200.6	172.2	141.1	169.9	200.6
46.5°	122.5	146.6	189.9	155.3	119.6	148.0	189.5	162.0	131.5	159.9	189.2
47°	113.4	137.1	178.5	145.7	110.9	138.5	178.8	152.2	122.0	150.0	178.3
47.5°	105.0	127.7	167.5	136.2	102.8	129.4	168.5	142.4	113.2	140.1	167.6
48°	96.8	118.7	157.1	126.9	96.0	120.4	158.9	133.1	104.8	131.1	157.3
48.5°	89.1	110.3	147.1	118.1	89.2	111.9	149.3	124.3	97.4	122.0	147.3
49°	81.7	102.2	137.5	109.9	82.4	103.8	140.3	115.4	90.2	113.4	138.1
49.5°	74.6	94.4	128.4	101.8	75.7	96.8	131.6	107.1	82.8	105.1	128.4
50°	67.9	87.0	119.6	93.9	70.0	89.7	123.3	100.0	75.6	97.7	119.5
50.5°	61.7	79.7	110.8	86.3	64.8	82.7	115.4	92.8	69.7	90.3	111.2
51°	56.0	73.0	102.7	79.5	60.3	75.7	107.4	85.6	64.3	82.8	103.4
51.5°	50.6	66.7	95.0	73.1	56.1	69.9	100.5	78.4	59.4	75.5	96.1
52°	45.6	60.7	87.7	67.1	52.0	64.6	93.8	71.3	54.8	69.2	89.0
52.5°	41.0	55.0	80.6	61.8	48.2	59.7	87.0	65.3	50.7	63.5	81.8
53°	36.8	49.7	74.1	56.9	44.5	55.2	80.1	59.9	46.8	58.4	74.7
53.5°	33.3	44.9	67.9	52.5	41.2	51.2	73.3	55.0	43.2	53.7	68.2
54°	29.7	40.4	62.1	48.4	37.8	47.4	67.6	50.5	39.6	49.5	62.5
54.5°	26.2	36.1	56.6	44.5	34.5	43.8	62.1	46.4	36.2	45.4	57.1
55°	22.7	32.2	51.8	41.1	31.3	40.4	57.0	42.6	33.0	41.8	52.0
55.5°	20.4	29.3	47.1	37.7	28.5	37.2	52.2	39.1	29.8	38.4	47.3
56°	19.5	26.5	42.8	35.0	25.9	34.0	47.7	35.7	27.1	35.1	42.9
56.5°	18.8	23.7	38.9	32.1	24.1	30.9	43.6	32.6	24.8	32.0	39.0
57°	18.1	20.9	36.0	29.2	23.0	27.9	39.8	29.6	23.2	28.9	35.3
57.5°	17.4	18.0	33.0	26.3	22.2	25.3	36.2	26.8	22.4	26.0	32.0
58°	16.7	17.4	30.2	23.9	21.3	22.8	32.9	24.0	21.5	23.6	29.0
58.5°	16.1	16.7	27.3	21.7	20.6	21.0	30.1	21.7	20.7	21.6	26.2
59°	15.5	16.1	24.4	20.1	19.7	20.0	27.3	20.0	19.9	20.4	23.9
59.5°	14.9	15.5	22.3	19.3	19.0	19.2	24.9	19.1	19.2	19.6	21.8
60°	14.4	14.9	20.5	18.4	18.2	18.4	22.8	18.3	18.4	18.9	20.0
60.5°	13.7	14.4	18.8	17.8	17.5	17.8	20.9	17.6	17.7	18.1	18.3
61°	13.2	13.7	17.4	17.1	16.8	17.1	19.2	16.8	17.1	17.4	17.1
61.5°	12.8	13.3	16.1	16.4	16.2	16.4	17.7	16.2	16.4	16.7	15.8
62°	12.3	12.8	15.0	15.7	15.6	15.8	16.4	15.6	15.7	16.1	14.7
62.5°	11.7	12.3	14.0	15.1	14.9	15.1	15.3	14.9	15.1	15.5	13.7
63°	11.3	11.8	13.1	14.5	14.3	14.5	14.3	14.4	14.5	14.8	13.0
63.5°	10.9	11.3	12.4	13.9	13.7	14.0	13.4	13.7	14.0	14.3	12.3
64°	10.4	10.9	11.8	13.3	13.2	13.4	12.6	13.2	13.3	13.6	11.7
64.5°	10.0	10.4	11.4	12.8	12.7	12.9	11.9	12.7	12.8	13.1	11.2
65°	9.6	10.1	10.9	12.3	12.1	12.4	11.4	12.1	12.4	12.6	10.8
65.5°	9.3	9.7	10.4	11.8	11.6	11.8	11.0	11.6	11.8	12.0	10.3
66°	8.8	9.3	10.1	11.3	11.1	11.4	10.6	11.2	11.3	11.6	9.9





TEST NUMBER: P775699

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	7.8	8.2	9.0	9.9	9.8	10.0	9.4	9.8	9.9	10.2	8.7
68°	7.5	7.9	8.5	9.5	9.4	9.6	9.0	9.4	9.5	9.8	8.4
68.5°	7.1	7.5	8.2	9.2	9.0	9.2	8.6	9.0	9.1	9.4	8.1
69°	6.8	7.1	7.9	8.7	8.6	8.8	8.2	8.6	8.7	9.0	7.8
69.5°	6.5	6.8	7.6	8.4	8.2	8.4	7.9	8.2	8.3	8.5	7.5
70°	6.2	6.5	7.2	8.0	7.9	8.1	7.6	7.9	8.0	8.2	7.0
70.5°	5.9	6.3	6.9	7.7	7.5	7.8	7.1	7.5	7.6	7.8	6.8
71°	5.6	6.0	6.6	7.4	7.1	7.4	6.8	7.1	7.2	7.5	6.5
71.5°	5.3	5.6	6.3	6.9	6.8	7.0	6.5	6.8	6.8	7.0	6.2
72°	5.1	5.4	6.0	6.7	6.5	6.7	6.3	6.5	6.5	6.7	5.9
72.5°	4.8	5.1	5.8	6.4	6.2	6.4	6.0	6.2	6.2	6.4	5.6
73°	4.6	4.9	5.4	6.1	5.9	6.1	5.6	5.9	5.9	6.1	5.3
73.5°	4.3	4.6	5.1	5.8	5.5	5.8	5.4	5.5	5.5	5.8	5.1
74°	4.0	4.4	4.9	5.4	5.3	5.5	5.1	5.2	5.3	5.5	4.9
74.5°	3.8	4.2	4.7	5.2	5.0	5.2	4.9	5.0	5.0	5.2	4.6
75°	3.6	3.8	4.4	4.9	4.7	5.0	4.6	4.7	4.7	4.9	4.4
75.5°	3.4	3.6	4.2	4.7	4.5	4.7	4.4	4.5	4.5	4.7	4.2
76°	3.1	3.4	3.9	4.5	4.3	4.5	4.2	4.2	4.2	4.4	3.9
76.5°	2.9	3.2	3.7	4.2	3.9	4.3	3.9	3.9	3.9	4.2	3.6
77°	2.8	3.0	3.5	3.9	3.7	3.9	3.7	3.6	3.6	3.8	3.4
77.5°	2.6	2.8	3.3	3.7	3.5	3.7	3.5	3.4	3.4	3.6	3.2
78°	2.3	2.6	3.1	3.5	3.3	3.5	3.3	3.2	3.2	3.4	3.0
78.5°	2.1	2.3	2.9	3.3	3.1	3.3	3.1	3.0	3.0	3.1	2.9
79°	2.0	2.1	2.7	3.1	2.9	3.1	2.9	2.8	2.8	2.9	2.7
79.5°	1.8	1.9	2.6	2.9	2.7	2.9	2.7	2.6	2.6	2.7	2.5
80°	1.6	1.8	2.3	2.7	2.5	2.7	2.6	2.3	2.3	2.5	2.2
80.5°	1.5	1.6	2.1	2.5	2.3	2.5	2.3	2.1	2.1	2.2	2.1
81°	1.3	1.4	2.0	2.2	2.1	2.2	2.1	1.9	1.9	2.0	1.9
81.5°	1.2	1.3	1.8	2.0	1.9	2.1	2.0	1.7	1.7	1.8	1.8
82°	1.1	1.1	1.7	1.9	1.8	1.9	1.8	1.6	1.6	1.6	1.6
82.5°	0.9	1.0	1.5	1.7	1.6	1.8	1.7	1.4	1.4	1.4	1.5
83°	0.7	0.9	1.4	1.6	1.5	1.6	1.5	1.3	1.2	1.3	1.3
83.5°	0.5	0.6	1.2	1.4	1.4	1.5	1.4	1.1	1.1	1.1	1.2
84°	0.4	0.5	1.1	1.3	1.2	1.3	1.3	1.0	0.9	1.0	1.1
84.5°	0.4	0.4	1.0	1.1	1.1	1.2	1.1	0.9	0.7	0.7	1.0
85°	0.3	0.4	0.9	1.0	1.0	1.1	1.0	0.6	0.5	0.6	0.9
85.5°	0.2	0.3	0.7	0.9	0.7	0.9	0.9	0.5	0.4	0.5	0.6
86°	0.2	0.2	0.5	0.6	0.6	0.7	0.7	0.4	0.4	0.4	0.5
86.5°	0.2	0.2	0.4	0.5	0.5	0.6	0.6	0.4	0.3	0.3	0.4
87°	0.1	0.1	0.3	0.4	0.4	0.4	0.5	0.3	0.3	0.3	0.3
87.5°	0.0	0.1	0.2	0.3	0.3	0.3	0.4	0.2	0.2	0.2	0.2
88°	0.0	0.0	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1
88.5°	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1



TEST NUMBER: P775699  
CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-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: P775699

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	836.3	836.3	836.3	836.3	836.3	836.3
0.5°	836.1	836.8	836.4	836.6	836.4	836.7
1°	836.0	836.7	836.4	836.6	836.4	836.7
1.5°	835.7	836.7	836.4	836.5	836.4	836.4
2°	835.2	836.4	836.3	836.3	836.2	836.2
2.5°	834.7	836.2	835.9	836.2	835.8	835.7
3°	833.9	835.7	835.3	835.5	835.2	835.0
3.5°	833.1	834.8	834.7	834.9	834.5	834.2
4°	832.0	833.8	833.8	834.1	833.7	833.2
4.5°	830.9	832.8	832.9	833.1	832.7	832.1
5°	829.6	831.6	831.7	831.9	831.5	830.9
5.5°	828.1	830.3	830.4	830.5	830.1	829.3
6°	826.5	828.7	828.9	829.2	828.6	827.8
6.5°	824.7	827.0	827.3	827.4	826.9	826.0
7°	822.8	825.2	825.5	825.7	825.1	823.9
7.5°	820.6	823.3	823.7	823.7	823.1	821.8
8°	818.3	820.9	821.5	821.7	820.8	819.6
8.5°	815.9	818.7	819.2	819.3	818.5	817.0
9°	813.5	816.0	816.9	817.0	815.8	814.3
9.5°	810.7	813.3	814.1	814.3	813.4	811.5
10°	807.8	810.6	811.2	811.7	810.4	808.3
10.5°	804.7	807.6	808.4	808.7	807.4	805.2
11°	801.8	804.3	805.2	805.5	804.2	801.9
11.5°	798.5	801.1	801.9	802.3	800.9	798.5
12°	795.0	797.5	798.5	798.9	797.2	794.7
12.5°	791.2	794.0	794.8	795.2	793.7	791.1
13°	787.5	790.3	791.2	791.6	789.9	787.3
13.5°	783.8	786.4	787.4	787.6	785.9	783.3
14°	779.9	782.5	783.4	783.3	781.8	779.2
14.5°	776.9	778.2	779.3	779.0	777.6	774.7
15°	772.6	773.7	775.0	774.6	773.2	770.3
15.5°	768.0	769.4	770.2	770.1	768.6	765.6
16°	763.3	764.7	765.7	765.6	763.9	760.9
16.5°	758.5	759.9	761.1	760.7	759.2	755.8
17°	753.5	754.8	756.2	755.7	754.3	750.8
17.5°	748.4	749.8	751.0	750.7	749.1	745.6
18°	743.0	744.3	745.8	745.5	743.9	740.2
18.5°	737.6	739.0	740.5	740.0	738.2	734.3
19°	732.2	733.4	734.9	734.6	732.6	728.8
19.5°	726.3	727.9	729.2	729.0	726.9	722.9
20°	720.4	722.2	723.5	723.3	721.1	717.0
20.5°	714.5	716.1	717.6	717.4	715.0	710.9
21°	708.3	710.0	711.3	711.4	708.6	704.6

TEST NUMBER: P775699

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	689.1	690.8	692.2	692.5	689.3	685.4
23°	682.6	684.2	685.5	685.9	682.6	678.2
23.5°	675.8	677.4	678.8	679.1	675.8	671.6
24°	668.7	670.4	671.8	672.2	669.0	664.8
24.5°	661.7	663.6	664.8	665.0	661.9	658.6
25°	654.7	657.6	657.5	657.9	654.7	652.0
25.5°	647.2	649.3	650.1	650.5	647.2	643.4
26°	639.7	641.3	643.2	642.9	640.2	635.6
26.5°	633.2	633.2	636.7	635.4	633.6	627.2
27°	625.9	623.7	627.9	627.8	626.9	617.2
27.5°	616.9	614.3	619.8	619.9	618.2	606.7
28°	608.9	604.2	611.4	611.8	609.6	595.8
28.5°	600.0	593.5	602.1	604.1	601.2	584.2
29°	590.9	582.0	592.8	596.2	591.7	572.3
29.5°	580.8	570.4	582.5	588.1	581.8	559.2
30°	570.7	557.8	572.0	580.0	571.2	545.8
30.5°	559.8	544.5	561.1	571.8	559.8	531.6
31°	548.6	530.3	549.2	563.5	548.2	517.3
31.5°	536.8	516.9	536.9	555.0	535.9	502.8
32°	524.8	502.4	524.3	546.7	523.3	488.0
32.5°	511.8	487.7	511.0	539.3	510.1	473.7
33°	498.3	473.7	497.1	531.1	496.2	459.8
33.5°	484.6	459.7	483.1	522.3	482.3	445.9
34°	471.0	445.9	469.1	514.5	468.3	432.4
34.5°	456.8	431.8	455.4	505.4	454.3	418.7
35°	443.1	418.5	441.4	495.0	440.4	405.1
35.5°	429.7	405.2	427.7	484.9	427.0	391.8
36°	416.4	392.0	414.6	474.7	413.9	383.6
36.5°	403.0	384.3	401.6	463.3	400.8	368.6
37°	390.1	369.3	388.6	451.5	388.0	353.4
37.5°	377.3	353.8	375.6	439.2	375.1	338.2
38°	364.6	338.4	362.6	426.3	362.4	322.9
38.5°	351.7	322.9	349.6	413.2	349.5	309.3
39°	338.8	309.6	336.6	399.3	336.6	295.7
39.5°	325.9	296.0	323.6	385.7	323.8	282.5
40°	312.9	282.6	310.2	371.1	310.3	269.5
40.5°	299.9	269.7	296.9	356.4	297.3	257.1
41°	286.9	257.4	284.0	341.8	284.7	244.6
41.5°	274.3	244.6	271.2	327.2	272.1	232.2
42°	262.1	232.5	259.0	312.6	259.9	220.3
42.5°	249.9	220.7	246.7	298.5	247.8	208.4
43°	238.1	208.2	235.0	284.8	236.1	196.7
43.5°	226.5	196.3	223.3	271.3	224.3	184.8



TEST NUMBER: P775699

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	193.4	162.2	189.2	233.3	191.1	152.1
45.5°	182.8	151.5	178.1	221.5	180.3	141.9
46°	172.2	141.2	167.4	209.7	169.9	132.0
46.5°	161.7	131.3	156.6	197.9	159.4	122.5
47°	151.7	121.8	146.5	186.5	149.6	113.4
47.5°	141.9	112.5	136.6	175.3	139.8	105.0
48°	132.4	103.7	127.0	164.8	130.4	96.8
48.5°	123.3	95.5	118.0	154.0	121.2	89.1
49°	114.5	87.6	109.2	143.9	112.8	81.7
49.5°	106.3	80.3	100.6	134.1	104.3	74.6
50°	98.7	73.1	92.7	124.5	96.0	67.9
50.5°	91.1	66.3	85.2	115.5	88.4	61.7
51°	83.6	60.1	77.7	106.9	81.1	56.0
51.5°	76.1	54.5	71.0	98.6	74.2	50.6
52°	69.3	49.2	64.7	90.8	67.7	45.6
52.5°	63.0	44.2	58.5	83.3	61.4	41.0
53°	57.0	39.6	53.0	76.3	55.4	36.8
53.5°	51.4	36.1	47.6	69.8	50.0	33.3
54°	46.0	32.5	42.8	63.2	45.0	29.7
54.5°	41.4	28.9	38.5	57.4	40.4	26.2
55°	37.0	25.4	34.9	52.0	36.7	22.7
55.5°	33.0	21.7	31.3	46.8	33.0	20.4
56°	29.1	20.0	27.7	42.0	29.4	19.5
56.5°	25.6	19.2	24.2	37.5	25.8	18.8
57°	22.5	18.4	20.6	34.4	22.2	18.1
57.5°	19.8	17.7	18.5	31.4	19.5	17.4
58°	17.8	17.1	17.8	28.3	17.8	16.7
58.5°	17.1	16.4	17.2	25.3	17.1	16.1
59°	16.3	15.8	16.5	22.3	16.4	15.5
59.5°	15.8	15.2	15.9	20.2	15.8	14.9
60°	15.1	14.6	15.2	18.5	15.2	14.4
60.5°	14.6	14.1	14.7	17.1	14.6	13.7
61°	14.1	13.5	14.2	15.8	14.1	13.2
61.5°	13.5	13.0	13.6	14.6	13.5	12.8
62°	13.0	12.6	13.1	13.6	13.0	12.3
62.5°	12.5	12.0	12.6	12.8	12.6	11.7
63°	12.0	11.6	12.1	12.0	12.0	11.3
63.5°	11.6	11.2	11.6	11.5	11.5	10.9
64°	11.1	10.8	11.2	11.1	11.1	10.4
64.5°	10.8	10.3	10.8	10.7	10.7	10.0
65°	10.3	9.9	10.3	10.2	10.2	9.6
65.5°	9.9	9.5	10.0	9.8	9.8	9.3
66°	9.5	9.2	9.6	9.5	9.5	8.8



TEST NUMBER: P775699

CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	8.5	8.1	8.5	8.4	8.3	7.8
68°	8.1	7.8	8.1	8.0	8.0	7.5
68.5°	7.8	7.5	7.8	7.7	7.7	7.1
69°	7.5	7.1	7.5	7.4	7.4	6.8
69.5°	7.1	6.8	7.1	7.0	7.0	6.5
70°	6.8	6.5	6.9	6.7	6.7	6.2
70.5°	6.6	6.3	6.6	6.5	6.4	5.9
71°	6.3	6.0	6.3	6.2	6.1	5.6
71.5°	6.0	5.8	6.0	5.9	5.8	5.3
72°	5.8	5.4	5.8	5.6	5.5	5.1
72.5°	5.5	5.2	5.4	5.3	5.2	4.8
73°	5.2	4.9	5.2	5.1	4.9	4.6
73.5°	5.0	4.7	5.0	4.9	4.7	4.3
74°	4.8	4.5	4.7	4.6	4.5	4.0
74.5°	4.6	4.3	4.5	4.4	4.2	3.8
75°	4.3	4.0	4.3	4.2	3.9	3.6
75.5°	4.0	3.8	4.0	3.9	3.7	3.4
76°	3.8	3.6	3.8	3.7	3.5	3.1
76.5°	3.6	3.4	3.6	3.5	3.3	2.9
77°	3.4	3.2	3.4	3.2	3.1	2.8
77.5°	3.2	3.0	3.2	3.1	2.8	2.6
78°	3.0	2.8	3.0	2.9	2.6	2.3
78.5°	2.9	2.7	2.8	2.7	2.5	2.1
79°	2.7	2.5	2.6	2.5	2.2	2.0
79.5°	2.5	2.2	2.5	2.2	2.0	1.8
80°	2.2	2.1	2.2	2.1	1.8	1.6
80.5°	2.1	2.0	2.1	1.9	1.6	1.5
81°	1.9	1.8	1.9	1.8	1.5	1.3
81.5°	1.8	1.7	1.7	1.6	1.3	1.2
82°	1.6	1.5	1.6	1.5	1.1	1.1
82.5°	1.5	1.4	1.5	1.3	1.0	0.9
83°	1.4	1.3	1.3	1.2	0.9	0.7
83.5°	1.2	1.2	1.2	1.1	0.7	0.5
84°	1.1	1.1	1.1	1.0	0.5	0.4
84.5°	1.0	1.0	0.9	0.9	0.4	0.4
85°	0.9	0.7	0.7	0.6	0.4	0.3
85.5°	0.6	0.6	0.6	0.5	0.3	0.2
86°	0.5	0.5	0.5	0.4	0.2	0.2
86.5°	0.4	0.4	0.4	0.3	0.2	0.2
87°	0.3	0.3	0.3	0.2	0.1	0.1
87.5°	0.2	0.2	0.2	0.1	0.1	0.0
88°	0.1	0.1	0.1	0.1	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775699  
CATALOG NUMBER: HCDJBL510CSD-HCD4TSQH-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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Scaled Data Report





— 0°-180°    - - 45°-225°    - - - - 90°-270°    - · - 135°-315°

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21.5°	698.3	695.8	700.8	696.3	690.8	691.2	695.9	695.8	697.3	703.5	702.0
22°	691.9	689.4	694.5	689.5	684.2	684.6	689.4	689.1	690.7	696.9	695.9



44°	173.5	199.4	251.2	208.4	168.6	199.5	247.7	215.8	182.3	213.7	249.8
44.5°	162.6	188.4	238.5	196.8	158.2	188.7	235.6	204.5	171.7	202.3	236.9



66.5°	8.5	9.0	9.7	10.9	10.7	10.9	10.1	10.7	10.9	11.1	9.5
67°	8.1	8.5	9.3	10.3	10.2	10.4	9.7	10.2	10.3	10.7	9.2



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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°	701.9	703.6	705.1	705.2	702.3	698.3
22°	695.6	697.3	698.7	698.9	695.9	691.9



44°	215.3	184.9	211.7	258.3	213.2	173.5
44.5°	204.4	173.4	200.4	245.5	202.0	162.6



66.5°	9.2	8.7	9.2	9.1	9.1	8.5
67°	8.8	8.4	8.8	8.7	8.6	8.1



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)