

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: P775854

Luminaire Tested: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-5000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P775854  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B068)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-5000K  
Description: 8 INCH ROUND NARROW LENSED WALLWASH KIT  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

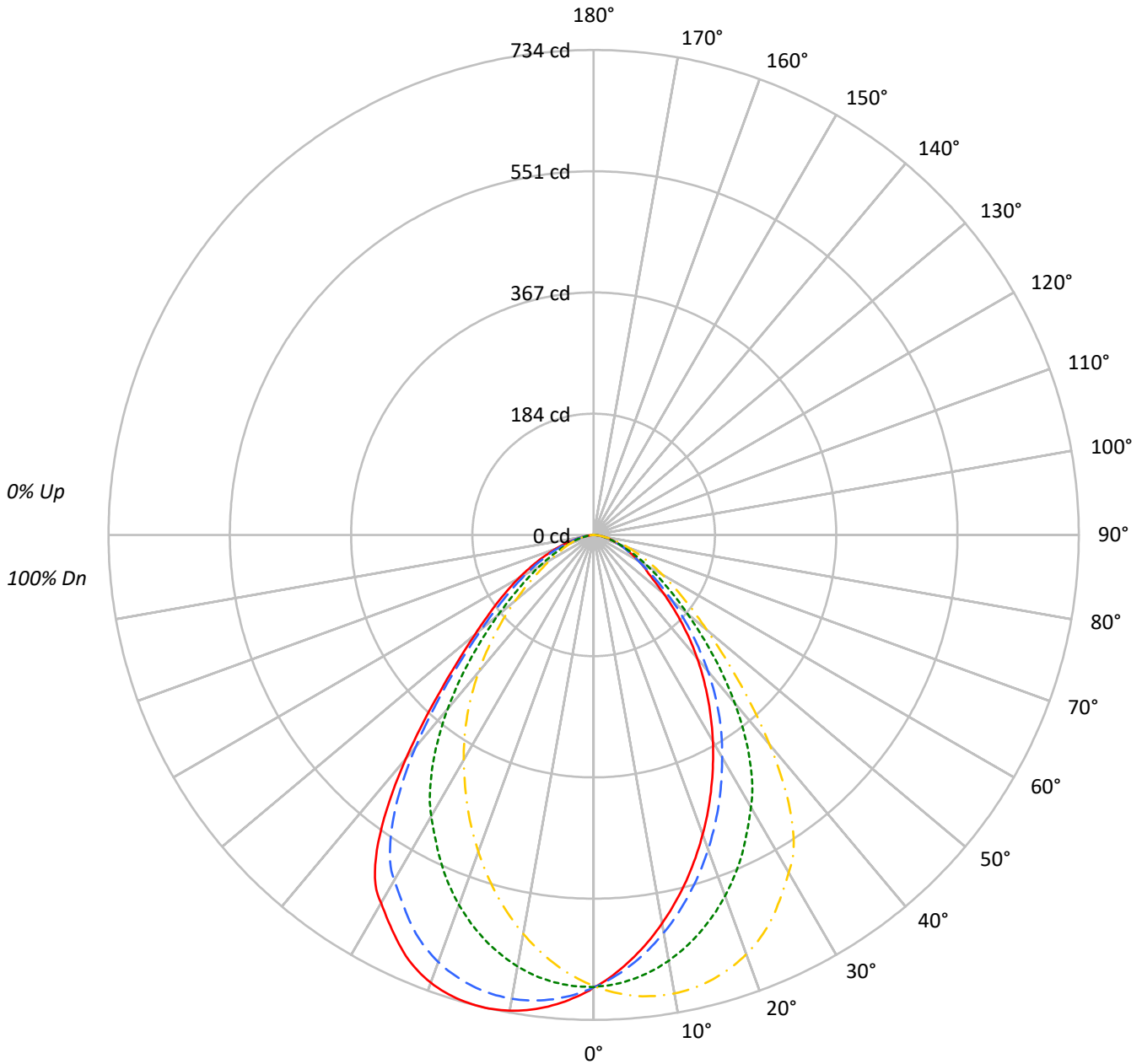
Lumens per Lamp: N/A  
Luminaire Lumens: 1186.7 lumens  
Efficiency: N/A  
Efficacy: 118.7 lumens/watt  
Spacing Criteria (0/90/45): 1.11 / 1.08 / 1.13  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

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



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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	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89								
2	103	96	91	86	101	95	90	85	91	87	83	88	85	82	85	82	80	78								
3	96	87	80	75	93	85	79	74	83	77	73	80	75	72	78	74	71	69								
4	89	79	71	66	87	77	71	65	75	69	64	73	68	64	71	66	63	61								
5	83	72	64	58	81	71	63	58	69	62	57	67	61	57	65	60	56	54								
6	77	66	58	52	75	65	57	52	63	56	52	61	56	51	60	55	51	49								
7	72	60	52	47	71	59	52	47	58	51	47	57	51	46	55	50	46	44								
8	68	56	48	43	66	55	48	43	54	47	42	52	47	42	51	46	42	40								
9	64	51	44	39	62	51	44	39	50	43	39	49	43	39	48	42	39	37								
10	60	48	41	36	59	47	41	36	46	40	36	46	40	36	45	39	35	34								

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

	0°	90°	180°	270°
0°	20898	20898	20898	20898
5°	19789	20690	21906	20834
10°	18502	20284	22665	20557
15°	17118	19676	23181	20061
20°	15676	18889	23425	19354
25°	14195	17914	23227	18416
30°	12712	16788	22686	17323
35°	11215	15311	21177	15814
40°	9717	13236	17604	13694
45°	8139	10924	13821	11282
50°	6569	8782	11138	8977
55°	5387	7085	9395	7133
60°	4799	5734	7975	5746
65°	4139	4638	6668	4616
70°	3588	3704	5383	3669
75°	3079	2937	4105	2902
80°	2549	2356	2637	2268
85°	1787	1787	771	1646

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 180°  
 Vertical Angle: 45°  
 Luminance: 13821 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	64.2	5.4
10°-20°	177.9	15.0
20°-30°	251.4	21.2
30°-40°	264.3	22.3
40°-50°	199.3	16.8
50°-60°	123.5	10.4
60°-70°	69.5	5.9
70°-80°	30.7	2.6
80°-90°	6.1	0.5
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°	493.5	41.6
0°-40°	757.8	63.9
0°-60°	1080.5	91.1
0°-90°	1186.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1186.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	684	684	684	684	684	
5°	646	675	715	680	646	60
15°	542	622	733	635	542	152
25°	421	532	690	547	421	193
35°	301	411	568	424	301	188
45°	188	253	320	261	188	145
55°	101	133	176	134	101	93
65°	57	64	92	64	57	57
75°	26	25	35	25	26	28
85°	5	5	2	5	5	6
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°	684.5	684.5	684.5	684.5	684.5	684.5	684.5	684.5	684.5	684.5	684.5
0.5°	682.2	682.6	682.4	682.4	683.5	684.3	685.0	688.5	689.3	689.3	687.8
1°	678.6	679.1	679.7	680.7	683.1	685.2	687.1	691.5	692.5	692.4	690.1
1.5°	674.9	675.5	676.8	678.9	682.6	686.1	689.3	694.4	695.8	695.4	692.6
2°	670.9	671.8	673.7	676.9	681.9	686.8	691.2	697.0	698.9	698.3	694.7
2.5°	667.0	667.9	670.6	674.8	681.1	687.3	692.9	699.6	701.7	701.1	696.9
3°	662.9	664.1	667.2	672.6	680.1	687.8	694.6	702.0	704.7	703.8	698.8
3.5°	658.8	660.2	664.0	670.3	679.1	688.1	696.2	704.4	707.4	706.3	700.6
4°	654.5	656.0	660.5	667.9	677.9	688.3	697.6	706.5	709.9	708.8	702.3
4.5°	650.1	651.7	656.9	665.4	676.6	688.4	699.0	708.7	712.4	711.0	704.0
5°	645.7	647.6	653.1	662.7	675.1	688.3	700.0	710.6	714.8	713.3	705.4
5.5°	641.2	643.2	649.5	660.0	673.6	688.2	701.1	712.4	717.1	715.3	706.7
6°	636.6	638.6	645.6	657.0	671.9	687.8	702.1	714.1	719.1	717.2	707.9
6.5°	631.9	634.0	641.6	654.0	670.1	687.3	702.8	715.6	721.0	719.0	709.1
7°	627.0	629.5	637.5	650.9	668.3	686.8	703.4	717.1	723.0	720.6	709.9
7.5°	622.3	624.9	633.4	647.7	666.1	686.2	704.0	718.4	724.7	722.2	710.8
8°	617.3	620.0	629.1	644.4	664.0	685.2	704.4	719.5	726.3	723.6	711.4
8.5°	612.3	615.2	624.9	641.0	661.8	684.4	704.6	720.5	727.6	724.9	712.0
9°	607.1	610.2	620.3	637.5	659.3	683.3	704.7	721.5	728.9	725.9	712.5
9.5°	602.1	605.2	615.9	633.8	656.9	682.1	704.7	722.2	730.1	726.9	712.7
10°	596.8	600.0	611.3	630.0	654.3	680.7	704.6	722.7	731.1	727.7	712.9
10.5°	591.5	594.9	606.7	626.4	651.5	679.2	704.4	723.3	731.9	728.5	712.9
11°	586.2	589.7	601.9	622.4	648.7	677.8	704.0	723.6	732.7	729.0	712.8
11.5°	580.9	584.5	597.2	618.4	645.8	676.0	703.5	723.8	733.3	729.6	712.5
12°	575.4	579.0	592.3	614.2	642.8	674.3	702.9	723.8	733.7	729.8	712.2
12.5°	569.8	573.7	587.3	610.2	639.6	672.4	702.1	723.8	734.0	730.0	711.7
13°	564.1	568.2	582.2	605.8	636.4	670.4	701.2	723.6	734.3	730.0	711.0
13.5°	558.7	562.6	577.2	601.6	633.2	668.3	700.1	723.3	734.3	729.9	710.3
14°	553.0	557.2	572.1	597.2	629.6	666.0	699.0	722.7	734.1	729.6	709.3
14.5°	547.3	551.5	566.9	592.7	626.1	663.6	697.7	722.2	733.8	729.1	708.2
15°	541.6	546.0	561.6	588.1	622.5	661.1	696.3	721.4	733.4	728.6	707.1
15.5°	535.7	540.2	556.2	583.4	618.8	658.5	694.7	720.5	732.9	728.0	705.8
16°	529.9	534.5	550.9	578.7	615.0	655.8	693.1	719.4	732.1	727.1	704.3
16.5°	524.0	528.7	545.6	574.0	611.0	652.9	691.3	718.3	731.4	726.1	702.7
17°	518.2	523.1	540.2	569.1	607.1	650.0	689.4	717.0	730.3	725.0	701.0
17.5°	512.2	517.2	534.6	564.3	603.0	647.1	687.3	715.5	729.1	723.7	699.1
18°	506.2	511.4	529.2	559.2	598.9	643.9	685.2	713.9	727.9	722.2	697.2
18.5°	500.3	505.4	523.5	554.3	594.5	640.7	682.9	712.1	726.4	720.6	695.0
19°	494.4	499.5	518.0	549.2	590.2	637.2	680.4	710.2	724.8	718.9	692.7
19.5°	488.2	493.6	512.3	544.1	585.9	633.8	677.9	708.1	723.1	717.0	690.2
20°	482.5	487.7	506.6	539.0	581.4	630.2	675.2	705.9	721.0	714.7	687.7
20.5°	476.3	481.8	500.9	533.6	576.7	626.6	672.4	703.5	718.9	712.5	685.0
21°	470.3	475.9	495.1	528.3	572.1	622.7	669.3	701.0	716.6	710.2	682.0



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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°	452.0	457.7	477.8	512.2	557.7	610.6	659.6	692.1	708.2	701.5	672.2
23°	445.9	451.8	471.9	506.7	552.7	606.3	656.0	688.7	705.0	698.2	668.6
23.5°	439.8	445.6	465.9	501.1	547.6	602.0	652.2	685.2	701.5	694.7	664.7
24°	433.7	439.6	460.3	495.6	542.5	597.4	648.2	681.2	697.8	690.8	660.6
24.5°	427.6	433.5	454.2	489.9	537.3	592.6	644.0	677.0	693.7	686.7	656.2
25°	421.4	427.5	448.4	484.2	531.8	587.7	639.5	672.6	689.5	682.3	651.6
25.5°	415.3	421.3	442.4	478.4	526.2	582.5	634.8	668.3	685.1	678.1	646.9
26°	409.2	415.4	436.4	472.7	520.7	577.2	630.0	663.5	680.6	673.3	642.0
26.5°	403.2	409.3	430.4	466.9	515.0	571.8	625.0	658.7	676.0	668.7	637.2
27°	397.2	403.3	424.6	461.0	509.2	566.6	620.1	654.0	671.4	664.1	632.2
27.5°	391.0	397.2	418.6	455.1	503.7	561.2	615.1	649.4	666.7	659.3	627.3
28°	384.8	391.2	412.5	449.2	498.0	555.9	610.2	644.5	661.9	654.5	622.4
28.5°	378.6	385.0	406.6	443.3	492.5	550.5	604.9	639.8	657.3	649.9	617.6
29°	372.7	379.1	400.8	437.6	486.9	545.3	600.0	635.0	652.5	645.1	612.6
29.5°	366.7	373.0	394.8	431.8	481.5	540.0	595.0	630.4	647.9	640.4	607.8
30°	360.6	367.0	388.9	426.3	476.2	534.9	590.2	625.9	643.5	636.1	603.3
30.5°	354.4	361.0	383.0	420.5	470.6	529.8	585.5	621.7	639.4	631.9	598.9
31°	348.5	355.1	377.4	415.0	465.2	524.8	581.1	617.0	634.8	627.1	593.8
31.5°	342.5	349.1	371.6	409.1	459.2	519.0	575.7	611.2	629.4	621.6	587.9
32°	336.5	343.2	365.7	403.4	453.0	513.0	569.8	604.6	623.0	615.1	581.1
32.5°	330.3	337.2	360.0	397.2	446.4	506.0	563.1	597.6	615.7	607.7	573.8
33°	324.5	331.4	354.0	391.2	439.7	499.0	555.8	589.4	607.5	599.6	566.0
33.5°	318.7	325.7	348.3	384.8	432.6	491.3	547.8	580.7	598.7	590.9	557.5
34°	312.8	319.8	342.2	378.2	425.4	483.5	539.5	571.2	589.1	581.6	548.8
34.5°	306.9	314.0	336.1	371.7	418.2	475.4	530.5	561.3	578.9	571.7	539.6
35°	300.9	308.2	330.0	365.2	410.8	466.9	521.4	550.6	568.2	561.0	530.2
35.5°	295.1	302.3	324.0	358.5	403.2	458.5	511.6	539.6	556.8	550.4	520.3
36°	289.4	296.5	317.9	351.8	395.6	449.8	501.8	528.1	544.9	539.0	509.9
36.5°	283.6	290.7	311.8	345.0	387.7	440.9	491.7	516.6	532.8	527.1	499.2
37°	277.9	284.9	305.7	338.3	379.9	431.7	480.9	504.2	520.3	515.0	488.4
37.5°	272.0	279.1	299.4	331.5	372.0	422.7	470.2	491.8	507.6	502.4	477.2
38°	266.4	273.3	293.4	324.6	363.9	413.3	459.0	479.5	494.7	489.8	465.9
38.5°	260.6	267.3	287.2	317.6	356.0	404.1	447.9	467.5	481.7	477.1	454.3
39°	255.0	261.7	281.0	310.7	348.4	394.6	436.8	454.5	468.3	464.2	442.7
39.5°	249.4	255.9	274.9	303.9	340.3	385.0	425.5	442.1	455.0	451.0	431.0
40°	243.8	250.2	268.5	297.0	332.1	375.4	414.2	429.3	441.7	438.0	419.1
40.5°	238.1	244.4	262.4	289.8	324.1	366.0	402.7	417.1	428.4	425.1	407.2
41°	232.6	238.8	256.3	283.0	316.0	356.4	391.6	404.5	415.6	412.3	395.5
41.5°	226.9	233.1	250.3	276.2	308.1	346.7	380.6	392.1	402.4	399.5	383.8
42°	221.3	227.5	244.2	269.4	300.0	337.2	369.6	380.1	389.9	386.8	372.2
42.5°	215.9	221.9	238.1	262.8	292.0	327.7	358.8	368.4	377.5	374.5	360.8
43°	210.3	216.4	232.4	256.0	284.1	318.5	347.9	356.9	365.3	362.6	349.5
43.5°	204.9	210.9	226.5	249.4	276.1	309.2	337.4	345.6	353.4	350.6	338.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	188.5	194.5	209.1	229.8	253.0	282.3	307.2	313.5	320.1	317.7	307.0
45.5°	183.1	189.0	203.5	223.5	245.5	273.7	297.6	303.6	309.8	307.1	296.9
46°	177.9	183.8	197.8	217.4	238.1	265.4	288.3	293.9	299.9	297.3	287.1
46.5°	172.8	178.7	192.5	211.2	231.0	257.0	279.3	284.4	290.3	287.6	277.6
47°	167.6	173.3	186.9	204.8	223.9	248.8	270.4	275.7	281.2	278.4	268.7
47.5°	162.5	168.4	181.4	199.0	216.9	241.0	261.9	267.1	272.7	269.7	260.0
48°	157.4	163.4	176.1	192.9	210.3	233.7	253.7	258.9	264.4	261.5	251.6
48.5°	152.5	158.5	170.8	187.1	203.9	226.2	245.9	251.0	256.3	253.3	243.4
49°	147.5	153.8	165.7	181.3	197.4	218.8	238.1	243.6	248.9	245.8	235.8
49.5°	143.1	149.1	160.4	175.8	191.0	212.1	230.9	236.2	241.6	238.1	228.1
50°	138.3	144.4	155.4	170.1	184.9	205.4	223.8	229.3	234.5	231.2	221.0
50.5°	133.7	140.1	150.4	164.6	179.1	198.8	216.7	222.5	227.7	224.3	214.0
51°	129.3	135.5	145.6	159.3	173.3	192.4	210.1	216.1	221.2	217.7	207.4
51.5°	125.1	131.2	140.8	154.1	167.8	186.3	203.8	209.8	215.0	211.5	201.0
52°	121.0	126.9	136.0	149.1	162.3	180.4	197.5	203.9	208.9	205.3	194.9
52.5°	117.0	122.8	131.5	144.1	157.1	174.8	191.6	198.0	203.2	199.3	188.8
53°	113.4	118.8	127.1	139.2	152.0	169.2	185.7	192.4	197.5	193.7	183.0
53.5°	109.9	114.8	122.7	134.5	147.1	163.7	180.2	187.0	192.1	188.1	177.4
54°	106.7	111.0	118.4	129.9	142.3	158.4	174.7	181.6	186.9	182.8	172.2
54.5°	103.8	107.3	114.3	125.7	137.7	153.5	169.4	176.5	181.6	177.6	166.9
55°	101.2	103.9	110.3	121.3	133.1	148.5	164.4	171.5	176.5	172.6	161.8
55.5°	98.7	100.5	106.5	117.3	128.8	143.7	159.5	166.6	171.6	167.7	156.9
56°	96.5	97.4	102.8	113.1	124.4	139.1	154.6	161.9	166.7	163.0	152.1
56.5°	94.8	94.4	99.2	109.3	120.2	134.5	149.9	157.2	161.9	158.1	147.4
57°	92.7	91.7	95.7	105.4	116.1	130.1	145.3	152.6	157.2	153.5	142.9
57.5°	90.4	89.1	92.4	101.7	112.1	125.8	140.8	148.3	152.6	149.1	138.6
58°	88.1	87.0	89.2	98.1	108.3	121.7	136.4	143.8	148.1	144.8	134.3
58.5°	85.7	84.9	86.1	94.7	104.6	117.7	132.3	139.4	143.5	140.3	129.9
59°	83.4	82.7	83.1	91.2	100.9	113.7	128.0	135.2	139.1	135.9	125.9
59.5°	80.9	80.5	80.4	87.9	97.4	109.9	124.0	130.9	134.7	131.6	121.8
60°	78.6	78.3	77.6	84.7	93.9	106.2	120.0	126.9	130.6	127.6	117.9
60.5°	76.2	76.1	75.0	81.7	90.7	102.7	116.0	122.8	126.3	123.4	114.1
61°	74.0	73.9	72.5	78.6	87.5	99.0	112.1	118.9	122.3	119.5	110.2
61.5°	71.7	71.7	70.0	75.7	84.2	95.5	108.4	114.9	118.2	115.7	106.6
62°	69.6	69.6	67.8	72.8	81.0	92.3	104.9	111.1	114.3	111.9	103.0
62.5°	67.4	67.5	65.6	70.0	78.1	89.0	101.3	107.2	110.4	107.9	99.5
63°	65.3	65.5	63.4	67.4	75.2	85.8	97.8	103.6	106.6	104.3	96.0
63.5°	63.2	63.4	61.4	64.8	72.3	82.6	94.3	100.1	102.9	100.6	92.7
64°	61.3	61.4	59.6	62.4	69.5	79.4	91.0	96.5	99.2	97.1	89.4
64.5°	59.3	59.5	57.8	60.0	66.7	76.4	87.7	93.2	95.7	93.7	86.2
65°	57.3	57.7	56.1	57.7	64.2	73.6	84.4	89.9	92.3	90.4	82.9
65.5°	55.5	55.8	54.4	55.4	61.6	70.7	81.2	86.6	88.9	87.1	79.6
66°	53.6	53.9	52.7	53.3	59.1	67.8	78.2	83.3	85.6	83.8	76.6





TEST NUMBER: P775854

CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	48.3	48.7	47.6	47.2	52.0	59.9	69.4	73.7	75.5	74.1	67.8
68°	46.7	47.0	46.2	45.4	49.7	57.3	66.5	70.6	72.3	71.0	64.9
68.5°	45.0	45.3	44.6	43.6	47.5	54.9	63.6	67.7	69.3	68.1	62.3
69°	43.4	43.7	43.0	41.9	45.5	52.4	61.0	64.7	66.2	65.1	59.5
69.5°	41.7	42.1	41.5	40.2	43.5	50.2	58.3	61.9	63.3	62.3	56.9
70°	40.2	40.5	40.0	38.5	41.5	48.0	55.8	59.2	60.3	59.5	54.4
70.5°	38.6	39.0	38.4	37.0	39.7	45.7	53.2	56.5	57.6	56.9	51.9
71°	37.1	37.5	37.0	35.6	37.7	43.6	50.8	53.8	54.8	54.2	49.4
71.5°	35.7	36.1	35.7	34.2	36.0	41.5	48.4	51.4	52.1	51.6	47.0
72°	34.3	34.8	34.3	32.8	34.2	39.4	46.1	48.7	49.4	49.0	44.7
72.5°	32.8	33.3	33.0	31.3	32.5	37.5	43.7	46.4	46.8	46.5	42.3
73°	31.4	31.9	31.7	30.1	30.9	35.6	41.5	43.9	44.2	44.1	40.1
73.5°	30.1	30.5	30.3	28.8	29.3	33.7	39.2	41.6	41.8	41.8	38.1
74°	28.8	29.1	29.0	27.6	27.8	31.9	37.2	39.3	39.4	39.5	35.9
74.5°	27.4	27.8	27.7	26.3	26.3	30.2	35.1	37.2	37.0	37.3	33.8
75°	26.1	26.5	26.5	25.2	24.9	28.5	33.0	35.0	34.8	35.1	31.9
75.5°	24.8	25.3	25.3	24.1	23.7	26.9	31.1	32.9	32.5	33.0	30.0
76°	23.7	24.0	24.1	22.9	22.3	25.3	29.2	30.9	30.3	31.0	28.0
76.5°	22.4	22.8	22.9	21.9	21.1	23.7	27.4	28.9	28.1	29.0	26.2
77°	21.2	21.5	21.7	20.8	19.8	22.3	25.7	27.0	26.1	27.1	24.5
77.5°	20.0	20.4	20.6	19.7	18.7	20.8	23.9	25.2	24.1	25.3	22.8
78°	18.9	19.3	19.5	18.7	17.6	19.5	22.3	23.3	22.2	23.5	21.1
78.5°	17.8	18.1	18.3	17.7	16.4	18.1	20.7	21.6	20.3	21.6	19.6
79°	16.6	17.1	17.3	16.6	15.5	16.8	19.1	19.9	18.4	20.0	18.0
79.5°	15.6	16.0	16.2	15.7	14.4	15.7	17.6	18.3	16.7	18.3	16.6
80°	14.5	14.8	15.1	14.7	13.4	14.5	16.1	16.7	15.0	16.8	15.1
80.5°	13.5	13.8	14.2	13.8	12.5	13.3	14.8	15.1	13.4	15.2	13.8
81°	12.5	12.8	13.2	12.9	11.5	12.3	13.4	13.6	11.8	13.8	12.5
81.5°	11.5	11.8	12.3	11.9	10.7	11.2	12.2	12.2	10.4	12.4	11.2
82°	10.6	10.8	11.3	11.1	9.8	10.1	11.0	10.9	9.1	11.1	10.1
82.5°	9.6	9.8	10.3	10.1	9.0	9.3	9.9	9.6	7.8	9.8	9.1
83°	8.6	9.0	9.5	9.3	8.2	8.4	8.8	8.3	6.4	8.5	7.9
83.5°	7.7	8.0	8.5	8.5	7.5	7.5	7.8	7.0	5.0	7.2	6.8
84°	6.8	7.0	7.7	7.7	6.6	6.6	6.7	5.8	3.9	6.0	5.8
84.5°	6.0	6.2	6.8	6.8	5.9	5.8	5.6	4.6	3.0	4.7	4.9
85°	5.1	5.3	6.0	6.1	5.1	5.0	4.8	3.6	2.2	3.6	4.1
85.5°	4.3	4.4	5.2	5.2	4.4	4.3	4.1	2.9	1.7	2.9	3.3
86°	3.6	3.8	4.5	4.5	3.7	3.5	3.3	2.1	1.4	2.1	2.6
86.5°	3.0	3.2	3.7	3.8	3.1	2.9	2.6	1.5	1.1	1.5	1.9
87°	2.3	2.6	3.1	3.1	2.5	2.2	1.9	1.0	0.7	1.0	1.4
87.5°	1.7	1.9	2.5	2.5	1.8	1.6	1.4	0.5	0.5	0.5	0.9
88°	1.2	1.4	1.8	1.7	1.3	1.1	0.9	0.2	0.2	0.2	0.4
88.5°	0.7	0.9	1.1	1.1	0.6	0.5	0.4	0.1	0.1	0.1	0.1



TEST NUMBER: P775854  
CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P775854

CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	684.5	684.5	684.5	684.5	684.5	684.5
0.5°	685.5	684.0	682.0	680.2	682.3	682.2
1°	686.8	684.0	680.6	677.8	679.0	678.6
1.5°	688.0	684.0	679.1	675.1	675.6	674.9
2°	689.2	683.7	677.5	672.2	672.1	670.9
2.5°	690.1	683.4	675.7	669.2	668.5	667.0
3°	691.0	682.9	673.9	666.3	664.7	662.9
3.5°	691.6	682.2	671.9	663.3	661.0	658.8
4°	692.3	681.6	669.9	660.1	657.1	654.5
4.5°	692.7	680.7	667.6	656.6	653.0	650.1
5°	692.9	679.8	665.4	653.1	649.0	645.7
5.5°	693.1	678.7	662.8	649.6	644.7	641.2
6°	693.2	677.4	660.4	646.0	640.4	636.6
6.5°	693.1	676.0	657.7	642.1	636.1	631.9
7°	692.9	674.7	654.8	638.4	631.5	627.0
7.5°	692.6	673.0	652.0	634.3	627.0	622.3
8°	692.1	671.3	649.0	630.3	622.3	617.3
8.5°	691.6	669.4	645.8	626.1	617.6	612.3
9°	690.9	667.4	642.5	621.9	612.7	607.1
9.5°	690.0	665.3	639.1	617.4	607.8	602.1
10°	689.1	663.1	635.6	613.2	602.9	596.8
10.5°	688.0	660.8	632.1	608.6	597.9	591.5
11°	686.7	658.2	628.5	604.1	592.8	586.2
11.5°	685.4	655.7	624.7	599.3	587.6	580.9
12°	683.8	653.0	620.8	594.6	582.3	575.4
12.5°	682.3	650.3	616.9	589.8	577.0	569.8
13°	680.5	647.4	612.9	584.9	571.7	564.1
13.5°	678.7	644.4	608.8	580.0	566.4	558.7
14°	676.7	641.3	604.5	574.9	560.8	553.0
14.5°	674.7	638.1	600.1	569.8	555.4	547.3
15°	672.4	634.7	595.9	564.8	549.7	541.6
15.5°	670.1	631.3	591.3	559.3	544.1	535.7
16°	667.6	627.7	586.8	554.1	538.4	529.9
16.5°	665.1	624.1	582.2	548.7	532.7	524.0
17°	662.3	620.3	577.4	543.4	527.0	518.2
17.5°	659.5	616.5	572.8	538.1	521.3	512.2
18°	656.5	612.5	567.9	532.5	515.5	506.2
18.5°	653.6	608.5	562.9	526.9	509.6	500.3
19°	650.3	604.3	557.9	521.5	503.7	494.4
19.5°	646.9	600.1	552.9	515.9	497.8	488.2
20°	643.5	595.7	547.8	510.3	492.0	482.5
20.5°	639.9	591.4	542.7	504.5	486.1	476.3
21°	636.3	586.8	537.4	498.9	480.1	470.3

TEST NUMBER: P775854

CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	624.5	572.8	521.4	481.6	462.2	452.0
23°	620.2	567.7	515.8	475.7	456.0	445.9
23.5°	615.6	562.7	510.3	470.0	450.2	439.8
24°	611.0	557.6	504.6	463.9	444.2	433.7
24.5°	606.1	552.3	499.0	458.3	438.0	427.6
25°	601.0	546.7	493.2	452.2	431.9	421.4
25.5°	595.9	541.3	487.5	446.2	426.0	415.3
26°	590.6	535.8	481.6	440.4	419.9	409.2
26.5°	585.3	530.0	475.7	434.5	413.8	403.2
27°	580.1	524.3	469.8	428.4	407.8	397.2
27.5°	574.8	518.7	463.9	422.3	401.7	391.0
28°	569.4	513.2	458.1	416.4	395.7	384.8
28.5°	564.2	507.5	452.4	410.6	389.5	378.6
29°	559.1	502.1	446.6	404.6	383.6	372.7
29.5°	554.1	496.7	441.1	398.9	377.6	366.7
30°	549.2	491.4	435.5	392.9	371.6	360.6
30.5°	544.1	486.1	429.7	387.2	365.6	354.4
31°	538.3	480.3	423.8	381.4	359.8	348.5
31.5°	532.2	474.4	418.1	375.5	353.8	342.5
32°	525.4	467.8	411.9	369.7	347.8	336.5
32.5°	518.2	460.9	405.6	363.7	341.9	330.3
33°	510.5	454.1	399.2	357.7	336.1	324.5
33.5°	502.6	446.8	392.7	351.8	330.2	318.7
34°	494.4	439.4	386.0	345.7	324.4	312.8
34.5°	486.1	431.9	379.2	339.5	318.5	306.9
35°	477.6	424.3	372.3	333.3	312.8	300.9
35.5°	468.7	416.6	365.5	327.0	306.8	295.1
36°	459.8	408.7	358.6	321.0	301.0	289.4
36.5°	450.5	400.9	351.7	314.7	295.2	283.6
37°	441.1	392.8	344.5	308.3	289.3	277.9
37.5°	431.6	384.8	337.6	302.0	283.4	272.0
38°	422.0	376.5	330.5	295.7	277.6	266.4
38.5°	412.4	368.4	323.4	289.4	271.7	260.6
39°	402.7	360.1	316.5	283.2	265.9	255.0
39.5°	392.9	351.9	309.2	276.9	260.1	249.4
40°	382.7	343.6	302.2	270.7	254.3	243.8
40.5°	372.7	335.1	295.2	264.5	248.5	238.1
41°	362.9	326.7	288.1	258.3	242.7	232.6
41.5°	352.8	318.4	281.1	252.0	236.9	226.9
42°	342.9	310.2	274.2	246.0	231.2	221.3
42.5°	332.8	301.7	267.3	240.1	225.6	215.9
43°	323.0	293.6	260.4	233.9	220.0	210.3
43.5°	313.3	285.4	253.4	227.8	214.5	204.9



TEST NUMBER: P775854

CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-100lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	285.2	261.3	233.2	210.1	197.7	188.5
45.5°	275.9	253.3	226.5	204.2	192.4	183.1
46°	267.2	245.6	220.0	198.6	187.0	177.9
46.5°	258.3	237.9	213.5	192.9	181.8	172.8
47°	249.9	230.6	207.1	187.2	176.5	167.6
47.5°	241.7	223.1	200.7	181.5	171.4	162.5
48°	233.9	216.0	194.6	176.1	166.4	157.4
48.5°	226.0	208.9	188.5	170.6	161.3	152.5
49°	218.4	202.2	182.5	165.3	156.5	147.5
49.5°	211.3	195.6	176.5	160.0	151.7	143.1
50°	204.3	189.0	170.8	154.8	146.9	138.3
50.5°	197.4	182.6	165.0	149.6	142.3	133.7
51°	191.0	176.5	159.6	144.7	137.5	129.3
51.5°	184.8	170.7	154.1	139.6	133.1	125.1
52°	178.8	164.9	148.9	135.1	128.8	121.0
52.5°	172.8	159.4	143.8	130.3	124.4	117.0
53°	167.1	153.9	138.8	125.7	120.1	113.4
53.5°	161.6	148.7	134.0	121.2	116.0	109.9
54°	156.5	143.7	129.2	116.9	111.9	106.7
54.5°	151.4	138.9	124.7	112.7	108.1	103.8
55°	146.4	134.0	120.3	108.6	104.5	101.2
55.5°	141.7	129.5	116.1	104.7	100.9	98.7
56°	137.0	125.1	111.9	100.9	97.5	96.5
56.5°	132.5	120.8	107.9	97.3	94.3	94.8
57°	128.1	116.5	104.0	93.7	91.5	92.7
57.5°	123.9	112.6	100.3	90.4	88.6	90.4
58°	119.8	108.7	96.7	87.2	86.0	88.1
58.5°	115.8	104.9	93.2	84.1	83.7	85.7
59°	111.8	101.1	89.8	81.1	81.5	83.4
59.5°	108.1	97.6	86.5	78.1	79.5	80.9
60°	104.4	94.1	83.3	75.5	77.4	78.6
60.5°	100.7	90.7	80.2	72.8	75.3	76.2
61°	97.2	87.2	77.2	70.2	73.1	74.0
61.5°	93.9	84.1	74.2	67.8	71.0	71.7
62°	90.6	81.0	71.3	65.6	69.0	69.6
62.5°	87.4	78.0	68.6	63.2	66.8	67.4
63°	84.1	74.9	66.0	61.1	64.8	65.3
63.5°	80.9	72.1	63.4	59.1	62.9	63.2
64°	77.8	69.3	60.9	57.0	60.9	61.3
64.5°	74.9	66.5	58.5	55.1	59.1	59.3
65°	71.8	63.9	56.2	53.4	57.1	57.3
65.5°	69.1	61.3	53.9	51.7	55.3	55.5
66°	66.3	58.7	51.8	50.1	53.5	53.6



TEST NUMBER: P775854

CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	58.4	51.7	45.7	45.3	48.2	48.3
68°	56.0	49.5	43.8	43.8	46.6	46.7
68.5°	53.5	47.2	42.0	42.3	44.9	45.0
69°	51.2	45.2	40.3	40.7	43.4	43.4
69.5°	48.8	43.2	38.6	39.3	41.8	41.7
70°	46.6	41.1	37.1	37.9	40.2	40.2
70.5°	44.3	39.2	35.6	36.6	38.7	38.6
71°	42.2	37.5	34.1	35.3	37.3	37.1
71.5°	40.2	35.8	32.6	33.9	35.8	35.7
72°	38.2	34.1	31.0	32.5	34.4	34.3
72.5°	36.2	32.4	29.7	31.1	33.0	32.8
73°	34.3	30.6	28.4	29.8	31.7	31.4
73.5°	32.5	29.1	27.1	28.6	30.3	30.1
74°	30.7	27.5	25.9	27.4	28.9	28.8
74.5°	29.0	26.0	24.6	26.1	27.6	27.4
75°	27.3	24.6	23.5	24.8	26.3	26.1
75.5°	25.7	23.2	22.4	23.7	25.1	24.8
76°	24.1	22.0	21.2	22.5	23.8	23.7
76.5°	22.6	20.7	20.1	21.4	22.6	22.4
77°	21.2	19.4	19.1	20.3	21.4	21.2
77.5°	19.8	18.2	18.1	19.2	20.1	20.0
78°	18.4	17.1	17.2	18.1	19.1	18.9
78.5°	17.2	16.0	16.1	17.1	17.9	17.8
79°	15.9	14.9	15.2	16.0	16.8	16.6
79.5°	14.7	13.9	14.3	15.0	15.8	15.6
80°	13.4	12.9	13.3	14.0	14.7	14.5
80.5°	12.4	11.9	12.5	13.0	13.6	13.5
81°	11.3	11.0	11.6	12.0	12.7	12.5
81.5°	10.2	10.1	10.7	11.1	11.6	11.5
82°	9.4	9.3	9.8	10.2	10.7	10.6
82.5°	8.4	8.4	9.0	9.3	9.7	9.6
83°	7.6	7.6	8.2	8.4	8.7	8.6
83.5°	6.6	6.8	7.4	7.6	7.9	7.7
84°	5.8	6.1	6.6	6.7	6.9	6.8
84.5°	4.9	5.3	5.9	6.0	6.1	6.0
85°	4.2	4.7	5.1	5.2	5.2	5.1
85.5°	3.4	3.9	4.4	4.5	4.4	4.3
86°	2.8	3.3	3.6	3.7	3.7	3.6
86.5°	2.1	2.7	3.0	3.1	3.2	3.0
87°	1.6	2.0	2.3	2.5	2.6	2.3
87.5°	1.0	1.5	1.7	1.7	1.9	1.7
88°	0.5	0.9	1.0	1.1	1.4	1.2
88.5°	0.1	0.3	0.4	0.5	0.9	0.7



TEST NUMBER: P775854  
CATALOG NUMBER: HCDJBL510CSD-HCD82TRH-HCD82TRLWW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.1	0.0



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

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21.5°	464.1	469.8	489.2	523.0	567.4	618.8	666.2	698.2	714.0	707.4	678.8
22°	458.1	463.7	483.5	517.6	562.6	614.8	663.0	695.2	711.2	704.6	675.6



44°	199.3	205.3	220.8	242.6	268.3	300.1	327.2	334.5	341.8	339.3	327.5
44.5°	193.9	199.9	214.9	236.4	260.6	291.0	317.1	323.8	330.8	328.0	317.0



66.5°	51.8	52.1	51.0	51.2	56.6	65.0	75.3	79.9	82.2	80.5	73.7
67°	50.1	50.4	49.4	49.1	54.3	62.5	72.3	76.8	78.8	77.2	70.7



89°	0.3	0.4	0.5	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0
89.5°	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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21.5°	632.3	582.2	532.1	493.1	474.2	464.1
22°	628.4	577.3	526.7	487.4	468.2	458.1



44°	303.7	277.2	246.7	221.9	208.7	199.3
44.5°	294.4	269.1	240.0	216.0	203.3	193.9

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66.5°	63.6	56.4	49.7	48.5	51.7	51.8
67°	61.0	54.0	47.6	46.9	50.0	50.1

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89°	0.0	0.1	0.1	0.1	0.4	0.3
89.5°	0.0	0.0	0.0	0.0	0.1	0.1

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(END OF REPORT)