

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: P775877

Luminaire Tested: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3500K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P775877
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B022)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3500K
Description: 8 INCH ROUND MEDIUM LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1038.3 lumens
Efficiency: N/A
Efficacy: 103.8 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.27 / 1.32
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

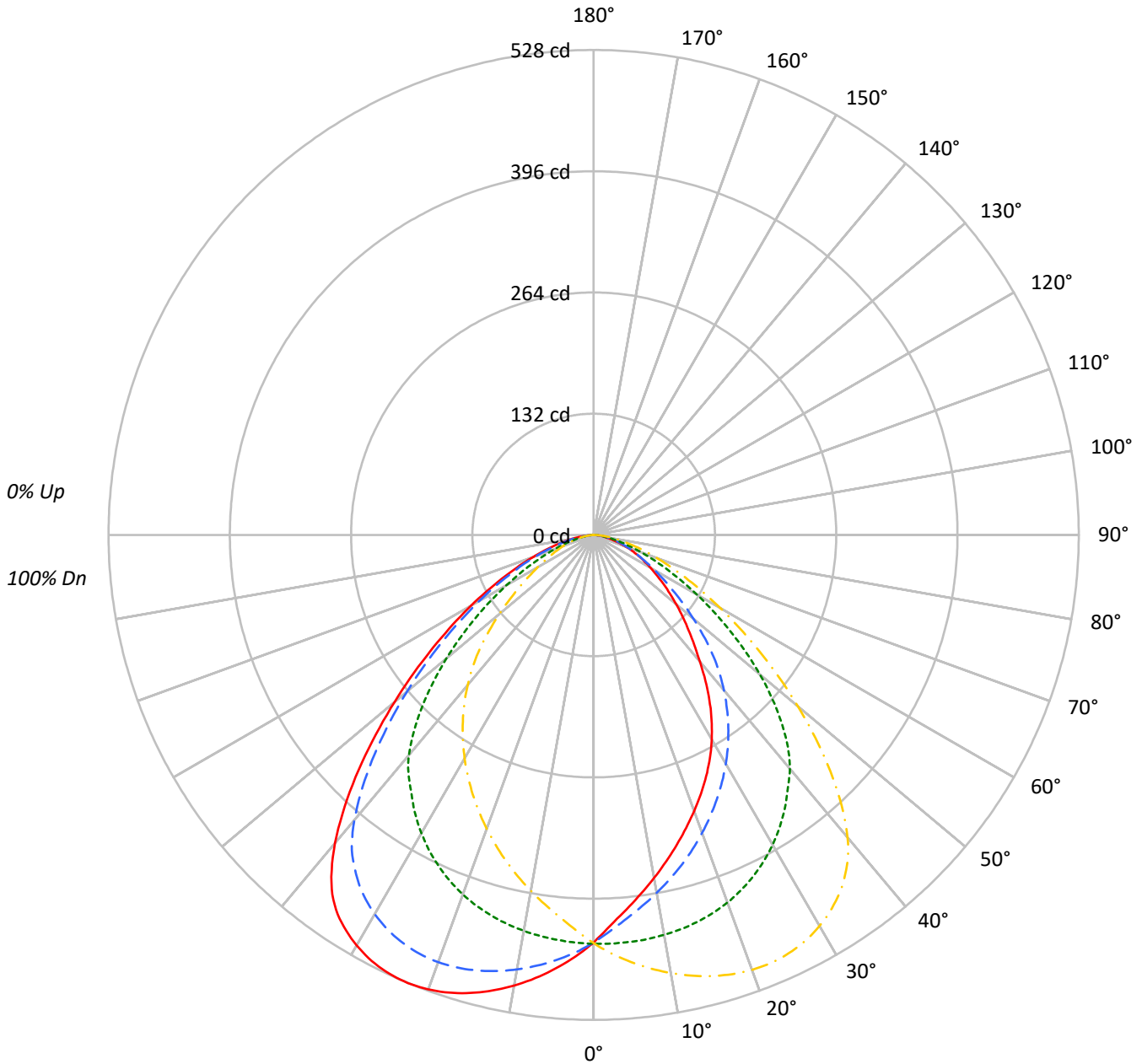
Input Watts (W): 10
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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									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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87																			
2	102	94	89	83	99	93	87	83	89	85	81	86	82	79	83	80	77	75																			
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	71	67	65																			
4	86	75	68	61	84	74	67	61	72	65	60	70	64	59	67	63	59	57																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																			
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44																			
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39																			
8	64	51	43	38	63	51	43	38	50	43	38	48	42	37	47	41	37	35																			
9	60	47	40	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32																			
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	13558	13558	13558	13558
5°	12547	13635	14521	13570
10°	11753	13706	15442	13572
15°	11044	13784	16319	13569
20°	10393	13834	17109	13529
25°	9762	13828	17749	13421
30°	9060	13735	18187	13220
35°	8188	13522	18322	12873
40°	7170	13244	17448	12459
45°	6295	12487	15608	11381
50°	5567	11219	13437	9932
55°	4913	9602	11332	8320
60°	4354	7895	9403	6711
65°	3887	6336	7686	5259
70°	3312	4910	6266	3999
75°	2654	3728	5049	2937
80°	2057	2743	3973	1987
85°	1366	1962	2557	1121

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°

Vertical Angle: 45°

Luminance: 15876 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	42.1	4.1
10°-20°	122.0	11.8
20°-30°	186.8	18.0
30°-40°	221.1	21.3
40°-50°	203.1	19.6
50°-60°	142.0	13.7
60°-70°	79.6	7.7
70°-80°	34.4	3.3
80°-90°	7.2	0.7
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°	350.9	33.8
0°-40°	572.0	55.1
0°-60°	917.2	88.3
0°-90°	1038.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1038.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	444	444	444	444	444	
5°	409	445	474	443	409	38
15°	349	436	516	429	349	98
25°	290	410	527	398	290	133
35°	220	363	492	345	220	137
45°	146	289	362	264	146	113
55°	92	180	213	156	92	83
65°	54	88	106	73	54	53
75°	22	32	43	25	22	24
85°	4	6	7	3	4	5
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°	444.1	444.1	444.1	444.1	444.1	444.1	444.1	444.1	444.1	444.1	444.1
0.5°	439.8	440.1	441.3	442.8	445.2	446.1	447.1	447.1	446.9	446.5	446.1
1°	436.3	436.9	438.8	441.5	445.2	447.5	449.5	450.2	450.3	449.7	448.4
1.5°	432.7	433.5	436.3	440.1	445.3	448.9	451.8	453.3	453.5	452.6	450.6
2°	428.9	430.2	433.7	438.8	445.3	450.2	454.1	456.2	456.6	455.5	452.9
2.5°	425.4	426.9	431.1	437.3	445.3	451.4	456.4	459.0	459.6	458.3	455.0
3°	422.0	423.7	428.6	436.0	445.3	452.8	458.5	461.8	462.6	461.0	457.0
3.5°	418.7	420.7	426.0	434.5	445.2	453.9	460.7	464.5	465.5	463.6	458.9
4°	415.6	417.6	423.7	433.0	445.1	455.1	462.7	467.2	468.3	466.1	460.9
4.5°	412.4	414.7	421.2	431.5	445.0	456.2	464.8	469.9	471.1	468.6	462.7
5°	409.4	411.8	418.8	430.0	444.9	457.3	466.8	472.4	473.8	471.1	464.6
5.5°	406.2	408.9	416.5	428.4	444.8	458.3	468.7	475.0	476.5	473.6	466.4
6°	403.2	406.1	414.1	427.0	444.6	459.3	470.6	477.3	479.1	476.0	468.1
6.5°	400.2	403.3	411.8	425.4	444.4	460.3	472.6	479.8	481.7	478.2	469.8
7°	397.1	400.5	409.6	423.9	444.2	461.3	474.3	482.1	484.2	480.5	471.4
7.5°	394.1	397.8	407.3	422.3	443.9	462.2	476.2	484.4	486.6	482.7	473.0
8°	391.1	394.8	405.0	420.8	443.6	463.0	477.9	486.7	489.1	484.9	474.5
8.5°	388.1	392.1	402.7	419.2	443.2	463.9	479.6	488.9	491.4	487.0	476.1
9°	385.1	389.3	400.3	417.5	442.9	464.7	481.2	491.0	493.7	488.9	477.5
9.5°	382.1	386.5	398.1	416.0	442.5	465.4	482.8	493.1	495.9	491.0	478.9
10°	379.1	383.6	395.7	414.4	442.1	466.3	484.3	495.3	498.1	492.9	480.2
10.5°	376.2	380.8	393.3	412.9	441.7	466.9	485.8	497.1	500.2	494.9	481.6
11°	373.1	378.0	390.9	411.2	441.2	467.5	487.4	499.1	502.3	496.6	482.8
11.5°	370.1	375.2	388.5	409.6	440.7	468.1	488.7	501.0	504.3	498.4	484.1
12°	367.1	372.3	386.0	407.9	440.1	468.7	490.1	502.8	506.2	500.1	485.2
12.5°	364.2	369.5	383.7	406.1	439.6	469.3	491.4	504.7	508.0	501.7	486.3
13°	361.2	366.7	381.3	404.4	439.0	469.8	492.7	506.4	509.9	503.4	487.3
13.5°	358.3	363.9	378.8	402.7	438.3	470.2	493.9	507.9	511.5	504.8	488.3
14°	355.3	361.0	376.3	400.9	437.5	470.5	495.1	509.6	513.2	506.3	489.3
14.5°	352.3	358.2	373.8	399.1	436.8	470.9	496.2	511.0	514.8	507.6	490.1
15°	349.4	355.3	371.3	397.1	436.1	471.2	497.2	512.5	516.3	509.0	490.9
15.5°	346.3	352.4	368.8	395.4	435.3	471.4	498.2	513.8	517.8	510.1	491.6
16°	343.4	349.6	366.2	393.4	434.4	471.6	499.1	515.2	519.1	511.2	492.3
16.5°	340.5	346.8	363.7	391.5	433.5	471.7	499.9	516.3	520.4	512.4	492.9
17°	337.5	343.9	361.2	389.5	432.6	471.8	500.8	517.4	521.5	513.3	493.4
17.5°	334.6	341.1	358.5	387.4	431.5	471.8	501.5	518.5	522.5	514.2	493.8
18°	331.6	338.2	355.9	385.3	430.5	471.8	502.1	519.4	523.6	515.1	494.2
18.5°	328.7	335.4	353.2	383.2	429.4	471.7	502.6	520.4	524.4	515.7	494.5
19°	325.8	332.5	350.6	381.1	428.2	471.6	503.1	521.2	525.2	516.4	494.8
19.5°	322.8	329.7	347.9	379.0	427.1	471.4	503.6	521.8	525.9	516.9	494.9
20°	319.9	326.7	345.2	376.7	425.8	471.1	503.9	522.4	526.6	517.3	495.0
20.5°	316.9	323.8	342.5	374.5	424.6	470.7	504.2	522.9	527.1	517.7	494.9
21°	314.0	320.9	339.7	372.3	423.1	470.3	504.3	523.4	527.5	518.0	494.8



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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°	305.0	312.1	331.5	365.2	418.9	468.7	504.4	524.0	528.1	518.1	493.9
23°	302.0	309.2	328.6	362.7	417.3	468.0	504.2	524.0	528.0	517.9	493.4
23.5°	299.0	306.3	325.9	360.3	415.7	467.3	503.9	523.9	527.9	517.7	492.9
24°	296.0	303.3	323.0	357.9	413.9	466.5	503.6	523.7	527.7	517.2	492.2
24.5°	292.9	300.2	320.2	355.3	412.3	465.5	503.1	523.4	527.3	516.7	491.4
25°	289.8	297.3	317.3	352.8	410.5	464.5	502.5	522.9	526.9	516.2	490.6
25.5°	286.7	294.2	314.5	350.2	408.7	463.5	501.9	522.4	526.4	515.5	489.7
26°	283.5	291.2	311.6	347.6	406.8	462.3	501.2	521.8	525.6	514.7	488.5
26.5°	280.4	288.1	308.7	344.9	404.8	461.0	500.3	521.1	524.8	513.7	487.4
27°	277.1	285.1	305.7	342.2	402.8	459.7	499.4	520.2	524.0	512.8	486.2
27.5°	273.8	281.9	302.8	339.5	400.8	458.3	498.4	519.3	522.9	511.6	484.8
28°	270.6	278.8	299.8	336.7	398.6	456.8	497.2	518.2	521.8	510.3	483.4
28.5°	267.3	275.6	296.8	333.9	396.4	455.3	496.0	517.0	520.6	509.1	481.9
29°	263.9	272.4	293.8	331.1	394.2	453.6	494.6	515.7	519.1	507.5	480.2
29.5°	260.4	269.0	290.8	328.3	391.8	451.8	493.2	514.3	517.6	505.9	478.5
30°	257.0	265.7	287.7	325.5	389.6	450.0	491.6	512.8	515.9	504.2	476.6
30.5°	253.5	262.3	284.6	322.5	387.2	448.1	490.0	511.0	514.1	502.4	474.6
31°	249.9	259.0	281.5	319.6	384.7	446.1	488.2	509.3	512.3	500.5	472.6
31.5°	246.2	255.5	278.3	316.7	382.1	444.0	486.4	507.4	510.3	498.4	470.4
32°	242.5	252.0	275.2	313.6	379.6	441.9	484.4	505.3	508.1	496.1	468.2
32.5°	238.8	248.5	271.9	310.7	377.0	439.6	482.3	503.3	505.9	493.8	465.7
33°	235.1	244.9	268.7	307.6	374.3	437.3	480.1	501.0	503.5	491.4	463.1
33.5°	231.3	241.3	265.5	304.6	371.5	434.9	477.8	498.5	500.9	488.6	460.4
34°	227.6	237.6	262.2	301.4	368.7	432.3	475.3	495.9	498.2	485.8	457.4
34.5°	223.5	233.9	258.9	298.3	365.8	429.7	472.8	493.2	495.2	482.5	454.2
35°	219.7	230.1	255.6	295.0	362.8	427.0	470.0	490.1	491.6	479.1	450.8
35.5°	215.7	226.3	252.1	291.8	359.8	424.0	467.0	486.8	488.0	475.2	447.2
36°	211.8	222.5	248.7	288.6	356.7	420.9	463.7	483.0	483.9	471.0	443.9
36.5°	207.7	218.7	245.4	285.3	353.5	417.8	460.1	478.9	479.4	466.8	440.4
37°	203.7	214.7	241.9	282.1	350.4	414.4	456.5	474.6	474.0	462.2	436.7
37.5°	199.6	210.8	238.4	278.7	347.2	411.4	453.1	470.0	469.1	456.9	432.4
38°	195.7	206.8	234.8	275.6	344.3	408.4	449.3	464.8	463.1	451.3	427.5
38.5°	191.4	202.8	231.3	272.2	341.3	405.6	445.0	459.3	457.3	445.5	422.2
39°	187.6	198.8	227.8	269.0	338.3	402.3	440.2	453.7	451.0	439.4	416.8
39.5°	183.6	194.7	224.2	265.8	335.4	398.7	435.4	447.7	444.6	433.1	411.0
40°	179.9	190.7	220.5	262.6	332.3	394.6	430.0	441.3	437.8	426.5	405.0
40.5°	176.0	186.6	216.8	259.3	328.8	390.0	424.3	434.9	430.7	419.6	398.7
41°	172.4	182.7	213.1	256.0	325.1	385.3	418.4	427.9	423.6	412.6	392.4
41.5°	168.8	178.8	209.4	252.6	321.2	380.3	412.3	421.0	416.1	405.4	385.7
42°	165.5	174.8	205.7	249.0	317.0	375.1	405.9	413.7	408.6	398.2	379.0
42.5°	162.1	171.1	202.0	245.4	312.8	369.9	399.4	406.2	401.1	390.6	372.3
43°	158.7	167.5	198.1	241.6	308.2	364.4	392.6	398.8	393.3	383.2	365.4
43.5°	155.3	163.8	194.3	237.6	303.6	358.7	385.6	391.1	385.4	375.4	358.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	145.8	153.6	182.4	225.4	289.2	340.8	364.4	367.7	361.5	352.3	336.8
45.5°	142.9	150.3	178.5	221.4	284.2	334.6	356.9	359.9	353.6	344.5	329.6
46°	139.8	147.0	174.3	217.0	279.2	328.2	349.7	351.9	345.5	336.7	322.3
46.5°	136.8	143.7	170.2	212.6	274.1	321.8	342.3	344.1	337.5	328.8	315.0
47°	133.9	140.6	166.0	208.2	268.8	315.3	334.7	336.0	329.5	321.1	307.8
47.5°	131.0	137.4	161.8	203.6	263.4	308.7	327.2	328.1	321.7	313.4	300.4
48°	128.2	134.4	157.5	199.2	258.1	302.1	319.8	320.4	313.8	305.8	293.3
48.5°	125.4	131.4	153.5	194.7	252.7	295.5	312.3	312.6	306.1	298.2	286.1
49°	122.7	128.4	149.3	190.1	247.3	288.8	304.8	304.9	298.1	290.7	279.1
49.5°	119.9	125.5	145.4	185.5	241.7	282.1	297.4	297.0	290.5	283.0	272.0
50°	117.2	122.6	141.4	180.9	236.2	275.5	290.1	289.3	282.9	275.7	264.9
50.5°	114.5	119.8	137.4	176.3	230.5	268.8	282.5	281.8	275.5	268.3	257.9
51°	111.9	116.9	133.7	171.6	224.9	262.0	275.2	274.2	268.0	261.2	251.0
51.5°	109.4	114.2	130.0	166.9	219.4	255.6	268.1	267.0	260.6	254.0	244.4
52°	106.8	111.4	126.2	162.3	213.7	248.9	261.0	259.6	253.6	247.0	237.5
52.5°	104.4	108.7	122.7	157.6	208.1	242.2	253.7	252.2	246.2	240.0	230.8
53°	101.9	106.0	119.1	153.0	202.5	235.7	246.7	245.2	239.5	233.3	224.3
53.5°	99.5	103.4	115.6	148.4	196.9	229.2	239.7	238.3	232.3	226.4	217.8
54°	97.0	100.8	112.0	143.8	191.3	222.7	233.0	231.4	225.8	219.8	211.4
54.5°	94.7	98.3	108.7	139.3	185.8	216.4	226.1	224.6	218.9	213.3	205.2
55°	92.3	95.9	105.4	134.8	180.4	210.2	219.4	217.9	212.9	207.2	199.1
55.5°	90.1	93.4	102.2	130.4	175.0	203.7	213.1	211.4	206.1	200.7	193.1
56°	87.9	91.0	99.0	125.9	169.7	197.6	206.4	205.0	200.1	194.5	187.1
56.5°	85.6	88.6	96.0	121.7	164.5	191.8	200.1	198.7	193.6	188.6	181.3
57°	83.4	86.1	92.9	117.5	159.1	185.7	193.9	192.6	188.0	182.7	175.5
57.5°	81.4	83.9	90.0	113.3	154.1	179.8	187.7	186.4	181.8	176.9	169.9
58°	79.2	81.7	87.2	109.2	148.9	174.0	181.8	180.5	176.3	171.2	164.5
58.5°	77.2	79.5	84.4	105.3	143.9	168.4	176.0	174.8	170.4	165.8	159.0
59°	75.2	77.3	81.7	101.4	139.0	162.8	170.2	169.1	165.1	160.4	153.8
59.5°	73.3	75.2	79.1	97.5	134.1	157.4	164.4	163.5	159.5	155.0	148.5
60°	71.3	73.2	76.5	93.8	129.3	152.0	158.8	158.1	154.0	150.0	143.5
60.5°	69.4	71.1	74.0	90.3	124.7	146.7	153.5	152.9	148.9	145.0	138.6
61°	67.6	69.1	71.5	86.6	120.2	141.6	148.3	147.7	143.4	140.0	133.7
61.5°	65.7	67.3	69.3	83.2	115.7	136.6	143.1	142.6	138.6	135.1	129.0
62°	63.9	65.4	67.1	80.0	111.3	131.7	138.0	137.7	133.7	130.4	124.5
62.5°	62.2	63.5	64.9	76.8	107.2	127.0	133.1	132.8	128.6	125.7	120.0
63°	60.5	61.7	62.8	73.7	103.0	122.1	128.3	128.0	124.2	121.1	115.6
63.5°	58.9	59.9	60.7	70.6	98.8	117.4	123.5	123.3	119.4	116.7	111.4
64°	57.2	58.2	58.8	67.7	95.1	113.0	119.1	118.9	114.8	112.3	107.2
64.5°	55.5	56.5	56.9	64.9	91.4	108.6	114.6	114.4	110.7	108.2	103.1
65°	53.8	54.8	55.1	62.2	87.7	104.5	110.3	110.2	106.4	104.2	99.3
65.5°	52.1	53.2	53.3	59.6	83.9	100.3	106.0	106.0	102.2	100.1	95.4
66°	50.5	51.5	51.5	57.0	80.2	96.2	102.0	102.0	98.2	96.2	91.6



TEST NUMBER: P775877

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	45.3	46.6	46.6	50.0	70.0	85.0	90.5	90.6	87.3	85.3	81.1
68°	43.7	45.1	45.1	47.7	66.7	81.4	86.9	87.1	83.6	81.8	77.6
68.5°	42.1	43.5	43.5	45.6	63.7	77.6	83.3	83.4	80.1	78.2	74.3
69°	40.4	42.0	42.0	43.4	60.6	74.2	79.8	79.9	76.5	75.0	71.1
69.5°	38.9	40.3	40.5	41.6	57.8	70.8	76.2	76.4	73.3	71.8	68.0
70°	37.1	38.8	39.1	39.7	55.0	67.5	72.9	73.2	70.2	68.7	64.9
70.5°	35.7	37.1	37.7	37.9	52.3	64.4	69.5	70.0	67.1	65.7	62.0
71°	34.2	35.7	36.4	36.3	49.6	61.5	66.5	66.9	64.0	62.7	59.2
71.5°	32.6	34.3	35.0	34.7	47.2	58.5	63.5	63.9	61.0	59.8	56.4
72°	31.2	32.9	33.7	33.1	44.7	55.5	60.5	60.9	58.2	57.0	53.7
72.5°	29.7	31.5	32.4	31.5	42.3	52.8	57.7	58.1	55.4	54.3	51.0
73°	28.3	30.1	31.1	29.8	40.0	50.1	54.8	55.4	52.8	51.6	48.5
73.5°	26.7	28.6	29.7	28.5	37.7	47.5	52.3	52.8	50.2	49.1	46.0
74°	25.3	27.3	28.5	27.2	35.7	45.0	49.6	50.3	47.7	46.6	43.6
74.5°	23.9	25.9	27.3	25.8	33.6	42.6	47.1	47.7	45.2	44.4	41.4
75°	22.5	24.5	26.0	24.6	31.6	40.2	44.6	45.3	42.8	42.0	39.1
75.5°	21.1	23.2	24.8	23.4	29.6	37.9	42.3	42.9	40.5	39.7	36.9
76°	19.8	21.9	23.6	22.3	27.9	35.8	39.9	40.6	38.2	37.4	34.7
76.5°	18.6	20.5	22.4	21.1	26.1	33.6	37.7	38.4	36.2	35.3	32.7
77°	17.3	19.3	21.2	20.1	24.5	31.6	35.5	36.3	34.0	33.3	30.8
77.5°	16.3	18.0	20.1	19.2	22.8	29.6	33.5	34.2	31.9	31.3	28.8
78°	15.3	16.9	19.0	18.1	21.2	27.7	31.4	32.2	30.0	29.3	26.9
78.5°	14.4	15.9	17.8	17.2	19.7	25.9	29.5	30.3	28.1	27.5	25.2
79°	13.5	14.8	16.8	16.2	18.3	24.1	27.6	28.4	26.1	25.6	23.5
79.5°	12.6	13.9	15.8	15.2	16.9	22.4	25.8	26.5	24.4	23.9	21.8
80°	11.7	13.1	14.7	14.3	15.6	20.8	24.0	24.7	22.6	22.2	20.1
80.5°	11.0	12.1	13.7	13.5	14.3	19.3	22.3	23.0	20.8	20.5	18.7
81°	10.2	11.3	12.7	12.5	13.3	17.7	20.7	21.3	19.2	18.9	17.1
81.5°	9.3	10.4	11.9	11.6	12.0	16.3	19.1	19.7	17.5	17.3	15.6
82°	8.5	9.5	11.0	10.8	11.0	14.9	17.6	18.1	16.0	15.9	14.2
82.5°	7.8	8.7	10.2	9.9	9.9	13.6	16.1	16.6	14.4	14.4	12.9
83°	6.9	7.9	9.3	9.1	9.0	12.3	14.7	15.1	13.0	13.0	11.6
83.5°	6.1	7.0	8.5	8.4	8.2	11.2	13.3	13.7	11.4	11.6	10.5
84°	5.4	6.3	7.7	7.6	7.4	10.2	12.0	12.3	10.1	10.4	9.3
84.5°	4.7	5.5	6.8	6.8	6.4	9.0	10.7	11.0	8.6	9.1	8.2
85°	3.9	4.8	6.0	6.0	5.6	8.0	9.6	9.7	7.3	7.9	7.0
85.5°	3.3	3.9	5.3	5.3	4.9	6.9	8.5	8.6	5.9	6.6	5.9
86°	2.7	3.3	4.5	4.6	4.1	5.9	7.4	7.5	4.5	5.4	4.8
86.5°	2.1	2.8	3.8	3.8	3.5	5.1	6.2	6.2	3.3	4.5	3.8
87°	1.6	2.2	3.1	3.2	2.9	4.1	5.1	5.1	2.7	3.5	2.9
87.5°	1.0	1.6	2.5	2.6	2.3	3.3	4.1	4.0	2.1	2.7	2.0
88°	0.6	1.0	1.8	1.9	1.8	2.6	3.1	3.1	1.5	1.8	1.1
88.5°	0.3	0.6	1.1	1.2	1.2	1.9	2.3	2.1	0.8	0.8	0.3



TEST NUMBER: P775877

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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	0.1	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775877

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	444.1	444.1	444.1	444.1	444.1	444.1
0.5°	445.3	445.0	443.3	441.9	440.6	439.8
1°	446.5	444.9	441.9	439.3	437.1	436.3
1.5°	447.6	444.7	440.3	436.6	433.7	432.7
2°	448.7	444.5	438.8	434.0	430.3	428.9
2.5°	449.9	444.3	437.2	431.2	427.0	425.4
3°	450.9	444.0	435.7	428.5	423.8	422.0
3.5°	451.8	443.8	434.0	425.8	420.7	418.7
4°	452.9	443.5	432.4	423.2	417.4	415.6
4.5°	453.8	443.1	430.7	420.7	414.4	412.4
5°	454.6	442.8	428.9	418.2	411.5	409.4
5.5°	455.5	442.4	427.3	415.6	408.6	406.2
6°	456.3	442.0	425.5	413.2	405.7	403.2
6.5°	457.0	441.6	423.9	410.7	402.8	400.2
7°	457.8	441.2	422.1	408.3	399.9	397.1
7.5°	458.5	440.7	420.3	405.8	397.0	394.1
8°	459.1	440.1	418.7	403.5	394.1	391.1
8.5°	459.7	439.6	416.8	401.0	391.2	388.1
9°	460.3	439.0	415.1	398.5	388.2	385.1
9.5°	460.9	438.4	413.3	396.0	385.4	382.1
10°	461.4	437.8	411.5	393.6	382.5	379.1
10.5°	461.8	437.0	409.7	391.0	379.6	376.2
11°	462.2	436.3	407.9	388.5	376.7	373.1
11.5°	462.5	435.6	406.0	385.9	373.8	370.1
12°	462.8	434.9	404.2	383.4	370.9	367.1
12.5°	463.1	434.0	402.2	380.9	368.0	364.2
13°	463.4	433.1	400.3	378.3	365.2	361.2
13.5°	463.6	432.3	398.4	375.7	362.2	358.3
14°	463.7	431.3	396.4	373.1	359.3	355.3
14.5°	463.7	430.3	394.4	370.4	356.4	352.3
15°	463.7	429.3	392.5	367.8	353.5	349.4
15.5°	463.7	428.2	390.3	365.1	350.4	346.3
16°	463.6	427.1	388.2	362.4	347.6	343.4
16.5°	463.5	425.9	386.1	359.7	344.7	340.5
17°	463.2	424.7	384.0	357.1	341.8	337.5
17.5°	462.9	423.5	381.7	354.3	338.8	334.6
18°	462.6	422.2	379.5	351.6	335.9	331.6
18.5°	462.2	420.8	377.2	348.7	332.9	328.7
19°	461.7	419.4	375.0	346.0	330.0	325.8
19.5°	461.2	418.0	372.6	343.2	327.1	322.8
20°	460.6	416.4	370.3	340.5	324.2	319.9
20.5°	459.9	415.0	367.8	337.6	321.2	316.9
21°	459.2	413.3	365.4	334.7	318.3	314.0

TEST NUMBER: P775877

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	456.6	408.1	357.9	326.1	309.2	305.0
23°	455.5	406.4	355.3	323.3	306.2	302.0
23.5°	454.4	404.4	352.7	320.3	303.2	299.0
24°	453.2	402.5	350.1	317.4	300.2	296.0
24.5°	452.0	400.4	347.4	314.4	297.1	292.9
25°	450.6	398.4	344.7	311.5	294.1	289.8
25.5°	449.3	396.3	341.9	308.5	291.1	286.7
26°	447.7	394.2	339.2	305.5	288.0	283.5
26.5°	446.1	392.1	336.4	302.5	284.8	280.4
27°	444.5	389.7	333.6	299.5	281.7	277.1
27.5°	442.7	387.4	330.7	296.4	278.5	273.8
28°	440.9	385.0	327.8	293.3	275.2	270.6
28.5°	439.0	382.6	324.9	290.2	272.0	267.3
29°	437.0	380.0	322.0	287.2	268.7	263.9
29.5°	435.0	377.5	319.1	284.1	265.5	260.4
30°	432.8	375.0	316.1	281.0	262.2	257.0
30.5°	430.5	372.3	313.0	277.6	258.8	253.5
31°	428.2	369.6	310.0	274.5	255.4	249.9
31.5°	425.7	366.9	307.0	271.3	251.8	246.2
32°	423.3	363.9	303.8	268.1	248.3	242.5
32.5°	420.7	361.1	300.6	264.9	244.8	238.8
33°	418.0	358.1	297.4	261.6	241.3	235.1
33.5°	415.1	355.1	294.3	258.3	237.5	231.3
34°	411.9	351.8	291.0	254.9	233.9	227.6
34.5°	408.8	348.6	287.8	251.6	230.3	223.5
35°	405.5	345.4	284.5	248.2	226.4	219.7
35.5°	402.4	342.4	281.3	244.8	222.7	215.7
36°	399.5	339.5	278.1	241.5	218.9	211.8
36.5°	396.7	336.6	274.8	237.9	214.9	207.7
37°	393.8	333.7	271.6	234.4	211.1	203.7
37.5°	390.6	330.8	268.4	231.0	207.2	199.6
38°	387.0	327.7	265.2	227.5	203.2	195.7
38.5°	382.9	324.4	262.0	224.1	199.2	191.4
39°	378.3	320.7	258.9	220.4	195.2	187.6
39.5°	373.4	316.8	255.5	217.0	191.2	183.6
40°	368.2	312.6	251.9	213.3	187.3	179.9
40.5°	363.0	308.1	248.3	209.8	183.1	176.0
41°	357.6	303.6	244.6	206.1	179.2	172.4
41.5°	351.9	298.9	240.8	202.5	175.2	168.8
42°	346.2	294.1	236.8	198.7	171.4	165.5
42.5°	340.4	289.2	232.8	194.9	167.8	162.1
43°	334.6	284.3	228.6	191.1	164.1	158.7
43.5°	328.4	279.2	224.5	187.2	160.5	155.3



TEST NUMBER: P775877

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	309.9	263.6	211.3	175.1	150.2	145.8
45.5°	303.4	258.3	206.9	171.1	147.0	142.9
46°	297.0	253.1	202.4	166.9	143.5	139.8
46.5°	290.9	247.5	197.8	162.8	140.4	136.8
47°	284.3	242.1	193.3	158.6	137.3	133.9
47.5°	277.7	236.5	188.6	154.3	134.2	131.0
48°	271.3	231.2	184.1	150.1	131.1	128.2
48.5°	265.1	225.6	179.4	145.9	128.1	125.4
49°	258.5	220.2	174.8	141.8	125.1	122.7
49.5°	252.0	214.7	170.2	137.8	122.2	119.9
50°	245.6	209.1	165.5	133.8	119.3	117.2
50.5°	239.5	203.7	160.8	130.0	116.4	114.5
51°	232.9	198.4	156.5	126.0	113.6	111.9
51.5°	227.0	193.0	151.8	122.4	110.8	109.4
52°	220.5	187.5	147.4	118.7	108.1	106.8
52.5°	214.5	182.0	142.8	115.0	105.4	104.4
53°	208.4	176.8	138.4	111.4	102.8	101.9
53.5°	202.5	171.6	133.9	108.1	100.1	99.5
54°	196.4	166.3	129.6	104.7	97.5	97.0
54.5°	190.7	161.2	125.4	101.3	95.0	94.7
55°	184.9	156.3	121.1	98.0	92.5	92.3
55.5°	179.3	151.2	116.9	94.9	90.2	90.1
56°	173.6	146.3	113.0	91.8	87.8	87.9
56.5°	168.1	141.4	108.9	88.7	85.4	85.6
57°	162.7	136.6	105.0	85.8	83.0	83.4
57.5°	157.5	131.8	101.0	83.0	80.7	81.4
58°	152.2	127.4	97.4	80.3	78.6	79.2
58.5°	147.3	122.9	93.8	77.6	76.4	77.2
59°	142.1	118.5	90.3	75.0	74.3	75.2
59.5°	137.2	114.0	86.7	72.5	72.2	73.3
60°	132.4	109.9	83.4	70.2	70.2	71.3
60.5°	127.8	105.6	80.1	67.8	68.2	69.4
61°	123.1	101.7	76.9	65.5	66.2	67.6
61.5°	118.8	97.8	73.9	63.3	64.4	65.7
62°	114.3	93.9	70.9	61.2	62.5	63.9
62.5°	110.1	90.2	67.9	59.2	60.7	62.2
63°	105.8	86.4	65.1	57.2	59.0	60.5
63.5°	101.8	82.9	62.4	55.2	57.1	58.9
64°	97.7	79.4	59.8	53.5	55.5	57.2
64.5°	93.9	76.1	57.2	51.7	53.9	55.5
65°	90.4	72.8	54.8	50.0	52.2	53.8
65.5°	86.7	69.6	52.4	48.3	50.7	52.1
66°	83.1	66.4	50.2	46.7	49.1	50.5



TEST NUMBER: P775877

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	72.6	57.7	43.7	42.1	44.4	45.3
68°	69.4	54.9	41.8	40.6	42.7	43.7
68.5°	66.3	52.2	39.9	39.2	41.1	42.1
69°	63.3	49.7	38.0	37.8	39.6	40.4
69.5°	60.3	47.3	36.4	36.6	38.0	38.9
70°	57.4	44.8	34.7	35.2	36.6	37.1
70.5°	54.7	42.5	33.1	34.0	35.1	35.7
71°	52.0	40.2	31.4	32.6	33.7	34.2
71.5°	49.3	38.0	29.8	31.3	32.2	32.6
72°	46.8	36.1	28.4	30.1	30.8	31.2
72.5°	44.4	34.2	26.9	28.8	29.3	29.7
73°	42.0	32.2	25.5	27.6	27.9	28.3
73.5°	39.7	30.3	24.3	26.3	26.5	26.7
74°	37.5	28.3	23.0	25.2	25.2	25.3
74.5°	35.3	26.5	21.9	23.9	23.8	23.9
75°	33.3	24.9	20.7	22.8	22.5	22.5
75.5°	31.3	23.2	19.6	21.7	21.1	21.1
76°	29.3	21.7	18.6	20.5	19.9	19.8
76.5°	27.6	20.2	17.5	19.4	18.6	18.6
77°	25.7	18.8	16.6	18.2	17.4	17.3
77.5°	24.0	17.4	15.6	17.2	16.2	16.3
78°	22.4	16.1	14.8	16.1	15.1	15.3
78.5°	20.7	14.8	13.9	15.0	14.1	14.4
79°	19.3	13.6	13.0	14.1	13.2	13.5
79.5°	17.7	12.4	12.1	13.1	12.3	12.6
80°	16.3	11.3	11.3	12.0	11.4	11.7
80.5°	14.9	10.3	10.5	11.2	10.6	11.0
81°	13.7	9.3	9.6	10.3	9.7	10.2
81.5°	12.4	8.4	8.8	9.4	8.8	9.3
82°	11.2	7.5	8.1	8.6	8.0	8.5
82.5°	10.2	6.6	7.4	7.8	7.3	7.8
83°	9.2	5.9	6.6	7.0	6.4	6.9
83.5°	8.2	5.2	5.8	6.2	5.6	6.1
84°	7.2	4.5	5.2	5.5	4.9	5.4
84.5°	6.1	3.7	4.5	4.8	4.1	4.7
85°	5.1	3.2	3.7	4.0	3.5	3.9
85.5°	4.2	2.6	3.1	3.4	2.9	3.3
86°	3.4	2.1	2.5	2.8	2.3	2.7
86.5°	2.6	1.5	1.9	2.1	1.8	2.1
87°	1.9	1.0	1.2	1.5	1.2	1.6
87.5°	1.2	0.5	0.7	0.9	0.8	1.0
88°	0.5	0.2	0.2	0.4	0.5	0.6
88.5°	0.1	0.0	0.0	0.1	0.2	0.3



TEST NUMBER: P775877
CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-HCD8TRLWW-1000lm-3500K

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°	311.0	318.0	337.0	369.9	421.8	469.9	504.4	523.7	527.8	518.1	494.5
22°	308.0	315.2	334.2	367.6	420.3	469.4	504.4	523.9	527.9	518.1	494.2



44°	152.1	160.4	190.4	233.7	298.9	352.8	378.8	383.4	377.3	367.8	351.1
44.5°	149.0	156.9	186.4	229.7	294.2	346.9	371.5	375.6	369.7	360.0	344.1



66.5°	48.7	50.0	49.8	54.5	76.5	92.3	97.9	97.9	94.4	92.4	88.2
67°	47.1	48.3	48.2	52.1	73.2	88.7	94.1	94.1	90.8	88.9	84.7



89°	0.1	0.3	0.5	0.7	0.8	1.1	1.3	1.0	0.2	0.1	0.0
89.5°	0.0	0.1	0.1	0.2	0.4	0.5	0.5	0.2	0.0	0.0	0.0

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21.5°	458.4	411.6	362.9	331.9	315.3	311.0
22°	457.4	409.9	360.4	329.0	312.3	308.0



44°	322.4	274.0	220.1	183.2	157.0	152.1
44.5°	315.9	268.8	215.7	179.3	153.6	149.0



66.5°	79.6	63.4	48.0	45.2	47.5	48.7
67°	76.0	60.4	45.8	43.6	45.9	47.1

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

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(END OF REPORT)