

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: P775725

Luminaire Tested: HCDJBL510CSD-HCD61TRH-HCD61TRLWW-1000lm-2700K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P775725  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B041)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL510CSD-HCD61TRH-HCD61TRLWW-1000lm-2700K  
Description: 6 INCH ROUND SHALLOW-WIDE LENSED WALLWASH KIT  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

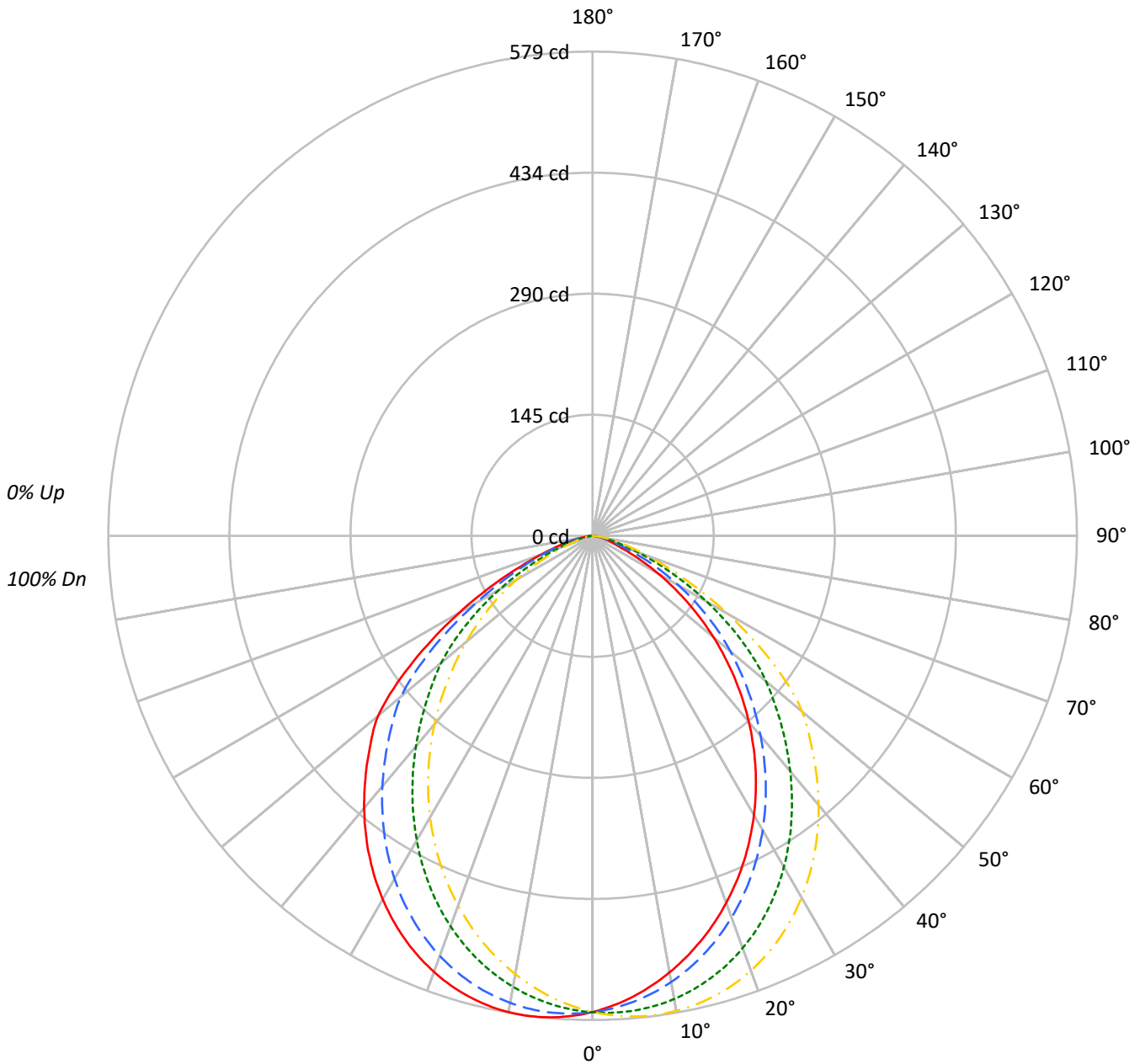
Lumens per Lamp: N/A  
Luminaire Lumens: 1212.0 lumens  
Efficiency: N/A  
Efficacy: 121.2 lumens/watt  
Spacing Criteria (0/90/45): 1.17 / 1.16 / 1.25  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

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					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	111	107	103	100	108	105	101	99	100	98	95	97	94	93	93	91	90	88					88			
2	102	95	89	84	100	93	88	83	90	85	82	87	83	80	84	81	78	76					76			
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66					66			
4	87	76	68	62	85	75	68	62	72	66	61	70	65	60	68	63	60	58					58			
5	80	69	61	55	78	68	60	54	66	59	54	64	58	53	62	57	53	51					51			
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45					45			
7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40					40			
8	65	52	44	39	63	51	44	39	50	43	38	49	43	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	40	35	45	39	35	44	39	35	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	90°	180°	270°
0°	31226	31226	31226	31226
5°	30442	31361	31813	30954
10°	29508	31306	32203	30494
15°	28445	31067	32390	29841
20°	27256	30604	32372	28988
25°	25919	29905	32173	27909
30°	24415	28947	31771	26624
35°	22714	27733	31179	25143
40°	20789	26306	30421	23515
45°	18591	24700	29499	21801
50°	16076	23078	28528	20119
55°	13209	20654	24974	17548
60°	9988	17257	20207	14078
65°	6551	13244	15125	10377
70°	4344	9264	10434	6988
75°	3474	5973	7244	4427
80°	2557	3662	4357	2620
85°	1384	2139	943	1510

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 157.5°  
 Vertical Angle: 45°  
 Luminance: 29701 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	53.7	4.4
10°-20°	151.0	12.5
20°-30°	220.4	18.2
30°-40°	249.4	20.6
40°-50°	236.0	19.5
50°-60°	179.1	14.8
60°-70°	89.8	7.4
70°-80°	28.4	2.3
80°-90°	4.3	0.4
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°	425.0	35.1
0°-40°	674.4	55.6
0°-60°	1089.5	89.9
0°-90°	1212.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1212.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	570	570	570	570	570	
5°	553	570	578	562	553	52
15°	501	547	571	526	501	141
25°	428	494	532	461	428	197
35°	339	414	466	376	339	212
45°	240	319	380	281	240	184
55°	138	216	261	184	138	124
65°	50	102	117	80	50	52
75°	16	28	34	21	16	18
85°	2	3	2	2	2	3
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°	569.6	569.6	569.6	569.6	569.6	569.6	569.6	569.6	569.6	569.6	569.6
0.5°	568.2	568.6	569.0	569.3	570.2	570.3	570.5	570.6	570.7	570.7	570.3
1°	566.8	567.5	568.2	569.1	570.5	571.0	571.5	571.8	571.8	571.6	570.8
1.5°	565.4	566.3	567.4	568.7	570.7	571.7	572.5	572.9	572.9	572.4	571.3
2°	563.9	565.0	566.5	568.3	570.8	572.2	573.3	573.9	573.8	573.2	571.6
2.5°	562.2	563.6	565.5	567.8	570.8	572.7	574.1	574.8	574.8	573.9	572.0
3°	560.6	562.2	564.4	567.2	570.8	573.1	574.9	575.7	575.5	574.4	572.2
3.5°	558.9	560.7	563.3	566.5	570.7	573.5	575.5	576.5	576.3	574.9	572.3
4°	557.0	559.1	562.1	565.8	570.5	573.7	576.1	577.2	577.0	575.4	572.4
4.5°	555.2	557.4	560.8	565.0	570.3	573.9	576.6	577.9	577.6	575.7	572.4
5°	553.2	555.7	559.4	564.1	569.9	574.0	577.0	578.4	578.1	576.0	572.3
5.5°	551.2	553.8	558.0	563.1	569.5	574.1	577.3	578.9	578.5	576.2	572.2
6°	549.1	551.9	556.4	562.1	569.0	574.0	577.6	579.3	578.8	576.3	571.9
6.5°	547.0	550.0	554.9	561.0	568.5	573.9	577.8	579.6	579.1	576.3	571.6
7°	544.8	548.0	553.2	559.8	567.8	573.7	577.9	579.8	579.2	576.3	571.2
7.5°	542.5	545.9	551.5	558.5	567.1	573.4	577.9	579.9	579.3	576.1	570.7
8°	540.1	543.7	549.7	557.1	566.3	573.1	577.9	580.0	579.3	575.9	570.2
8.5°	537.7	541.5	547.8	555.7	565.5	572.7	577.8	580.0	579.2	575.6	569.5
9°	535.3	539.3	545.8	554.2	564.5	572.3	577.5	579.9	579.1	575.3	568.8
9.5°	532.7	536.9	543.8	552.7	563.5	571.7	577.3	579.7	578.8	574.8	568.1
10°	530.1	534.5	541.8	551.0	562.4	571.1	576.9	579.4	578.5	574.3	567.2
10.5°	527.5	532.0	539.6	549.3	561.3	570.3	576.5	579.1	578.1	573.6	566.3
11°	524.8	529.5	537.3	547.5	560.0	569.5	576.0	578.7	577.5	573.0	565.3
11.5°	522.0	526.9	535.0	545.6	558.7	568.7	575.4	578.1	577.0	572.2	564.2
12°	519.2	524.2	532.7	543.6	557.3	567.7	574.7	577.6	576.3	571.4	563.1
12.5°	516.3	521.5	530.2	541.7	555.9	566.7	573.9	576.9	575.6	570.5	561.8
13°	513.4	518.7	527.7	539.5	554.3	565.6	573.1	576.1	574.8	569.5	560.5
13.5°	510.4	515.9	525.1	537.4	552.7	564.5	572.2	575.3	573.8	568.4	559.2
14°	507.4	513.0	522.5	535.2	551.0	563.2	571.2	574.4	572.9	567.2	557.7
14.5°	504.3	510.1	519.8	532.9	549.2	561.9	570.1	573.4	571.8	566.0	556.2
15°	501.2	507.0	517.0	530.4	547.4	560.4	569.0	572.3	570.7	564.7	554.6
15.5°	498.0	503.9	514.1	528.0	545.4	559.0	567.8	571.2	569.5	563.3	552.9
16°	494.8	500.8	511.3	525.4	543.4	557.4	566.5	569.9	568.1	561.8	551.1
16.5°	491.5	497.6	508.3	522.9	541.4	555.8	565.1	568.6	566.8	560.3	549.3
17°	488.1	494.4	505.2	520.1	539.3	554.1	563.7	567.3	565.3	558.7	547.4
17.5°	484.8	491.1	502.1	517.4	537.0	552.3	562.1	565.8	563.8	557.0	545.5
18°	481.3	487.7	499.0	514.6	534.6	550.5	560.5	564.2	562.1	555.2	543.4
18.5°	477.9	484.4	495.7	511.7	532.3	548.5	558.8	562.6	560.5	553.3	541.3
19°	474.3	480.9	492.5	508.7	529.8	546.5	557.0	560.9	558.7	551.4	539.1
19.5°	470.7	477.5	489.1	505.6	527.3	544.4	555.2	559.1	556.8	549.5	536.8
20°	467.2	473.9	485.8	502.6	524.6	542.2	553.4	557.2	554.9	547.4	534.5
20.5°	463.4	470.3	482.3	499.4	521.9	539.9	551.4	555.3	552.9	545.2	532.0
21°	459.7	466.6	478.8	496.2	519.2	537.7	549.3	553.3	550.9	543.0	529.6



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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°	448.4	455.4	467.9	486.0	510.5	530.2	542.6	546.9	544.3	536.0	521.8
23°	444.5	451.5	464.2	482.5	507.4	527.6	540.3	544.6	541.9	533.5	519.0
23.5°	440.6	447.7	460.5	478.9	504.3	524.9	537.9	542.2	539.5	530.9	516.2
24°	436.6	443.8	456.6	475.3	501.1	522.1	535.3	539.8	537.1	528.2	513.3
24.5°	432.5	439.8	452.6	471.5	497.8	519.2	532.7	537.3	534.4	525.5	510.3
25°	428.5	435.7	448.7	467.8	494.4	516.4	530.1	534.7	531.9	522.8	507.3
25.5°	424.4	431.7	444.8	464.0	491.0	513.3	527.4	532.1	529.1	520.0	504.2
26°	420.2	427.6	440.8	460.1	487.6	510.2	524.6	529.4	526.4	517.0	501.1
26.5°	416.0	423.5	436.5	456.1	484.0	507.1	521.7	526.5	523.5	514.1	497.9
27°	411.8	419.2	432.5	452.2	480.3	503.9	518.7	523.7	520.7	511.0	494.6
27.5°	407.5	414.9	428.3	448.1	476.7	500.6	515.8	520.8	517.7	508.0	491.3
28°	403.2	410.6	424.1	444.0	472.9	497.2	512.7	517.8	514.6	504.9	487.8
28.5°	398.9	406.3	419.6	439.8	469.1	493.8	509.5	514.7	511.5	501.6	484.4
29°	394.6	402.1	415.3	435.7	465.3	490.4	506.3	511.7	508.3	498.3	480.9
29.5°	390.2	397.7	411.0	431.5	461.3	486.7	503.1	508.4	505.1	495.0	477.3
30°	385.7	393.2	406.7	427.2	457.3	483.2	499.7	505.2	501.9	491.6	473.6
30.5°	381.2	388.8	402.1	422.8	453.3	479.4	496.2	501.9	498.6	488.1	469.9
31°	376.7	384.3	397.7	418.4	449.2	475.6	492.7	498.6	495.2	484.6	466.2
31.5°	372.2	379.8	393.1	413.9	445.0	471.7	489.2	495.1	491.6	481.0	462.3
32°	367.6	375.3	388.6	409.4	440.7	468.0	485.6	491.6	488.2	477.4	458.5
32.5°	363.0	370.7	384.0	405.0	436.5	464.0	482.0	488.0	484.7	473.7	454.6
33°	358.3	366.0	379.5	400.5	432.3	459.9	478.2	484.4	481.0	470.0	450.7
33.5°	353.7	361.4	374.8	395.8	427.9	455.9	474.4	480.8	477.3	466.2	446.8
34°	349.0	356.8	370.2	391.3	423.5	451.8	470.5	477.1	473.5	462.3	442.6
34.5°	344.2	352.1	365.4	386.6	418.8	447.5	466.6	473.2	469.7	458.4	438.5
35°	339.4	347.3	360.8	381.9	414.4	443.3	462.7	469.4	465.9	454.5	434.4
35.5°	334.7	342.6	355.9	377.3	409.9	439.1	458.6	465.5	462.1	450.6	430.3
36°	329.9	337.8	351.3	372.6	405.3	434.7	454.6	461.6	458.2	446.5	426.0
36.5°	325.1	333.0	346.5	367.8	400.7	430.3	450.5	457.6	454.1	442.6	421.8
37°	320.2	328.1	341.5	363.0	396.0	425.9	446.3	453.5	450.1	438.4	417.4
37.5°	315.3	323.3	336.8	358.2	391.3	421.3	442.0	449.4	446.0	434.3	413.0
38°	310.3	318.4	332.0	353.4	386.7	416.8	437.8	445.3	441.9	430.0	408.6
38.5°	305.5	313.6	327.1	348.6	381.9	412.2	433.4	441.1	437.8	425.9	404.4
39°	300.7	308.6	322.3	343.7	377.2	407.6	429.1	436.9	433.5	421.5	399.9
39.5°	295.6	303.8	317.4	338.9	372.5	403.0	424.7	432.6	429.4	417.2	395.5
40°	290.5	298.8	312.6	334.0	367.6	398.3	420.1	428.3	425.1	412.9	390.9
40.5°	285.6	293.8	307.5	329.1	362.6	393.7	415.6	423.9	420.6	408.6	386.5
41°	280.6	288.8	302.7	324.2	357.8	388.8	411.0	419.4	416.3	404.1	381.9
41.5°	275.5	283.9	297.7	319.2	353.1	384.1	406.5	415.0	412.0	399.8	377.4
42°	270.4	278.8	292.8	314.4	348.0	379.3	401.9	410.5	407.5	395.3	372.8
42.5°	265.4	273.9	288.0	309.5	343.3	374.6	397.3	406.0	403.1	390.9	368.2
43°	260.4	268.9	283.0	304.6	338.3	369.8	392.6	401.5	398.6	386.3	363.6
43.5°	255.3	263.9	278.1	299.7	333.5	365.0	388.0	397.0	394.2	381.8	359.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	239.8	248.7	263.3	285.0	318.6	350.4	373.7	383.1	380.5	368.2	345.1
45.5°	234.7	243.8	258.6	280.2	314.0	345.5	369.0	378.5	376.0	363.6	340.5
46°	229.6	238.7	253.6	275.3	308.9	340.5	364.2	373.9	371.4	359.2	336.0
46.5°	224.3	233.8	248.7	270.5	304.0	335.8	359.6	369.4	367.1	354.8	331.6
47°	219.1	228.7	243.8	265.7	299.1	331.0	355.0	364.9	362.8	350.5	327.2
47.5°	214.1	223.7	239.0	260.9	294.5	326.3	350.5	360.6	358.4	346.1	322.7
48°	209.0	218.8	234.1	256.1	289.6	321.7	345.9	356.2	354.1	341.8	318.4
48.5°	203.9	213.8	229.3	251.4	285.0	317.1	341.5	351.8	349.7	337.3	313.8
49°	198.7	208.9	224.5	246.7	280.2	312.3	336.8	347.2	345.1	332.5	309.1
49.5°	193.7	204.0	219.8	242.0	275.4	307.6	332.1	342.6	340.2	327.4	303.9
50°	188.5	199.0	215.1	237.1	270.6	302.7	327.0	337.2	334.5	321.8	298.7
50.5°	183.4	194.1	210.2	232.5	265.8	297.4	321.4	331.4	328.5	315.5	292.8
51°	178.1	189.3	205.5	227.6	260.7	291.8	315.6	325.0	321.4	308.9	286.9
51.5°	173.2	184.4	200.8	222.7	255.4	286.3	309.5	318.3	314.6	302.1	280.4
52°	168.1	179.5	196.0	217.8	250.1	280.3	302.9	311.1	307.5	295.0	273.7
52.5°	163.1	174.7	191.3	212.7	244.5	274.2	296.1	303.7	299.9	287.6	266.8
53°	158.1	169.9	186.5	207.7	238.8	268.0	289.0	296.2	292.6	280.2	260.0
53.5°	153.1	165.1	181.6	202.6	233.3	261.6	281.8	288.7	284.7	272.6	252.8
54°	148.0	160.3	176.8	197.3	227.5	255.0	274.7	281.2	276.8	265.0	245.8
54.5°	143.1	155.5	172.0	192.3	222.0	248.5	267.3	273.4	269.0	257.4	238.7
55°	138.2	150.8	167.2	187.3	216.1	241.9	260.0	265.8	261.3	249.7	231.7
55.5°	133.2	146.1	162.2	182.1	210.4	235.3	252.3	258.1	253.3	241.9	224.4
56°	128.5	141.3	157.4	176.9	204.5	228.4	244.9	250.2	245.2	234.0	217.3
56.5°	123.6	136.5	152.6	171.7	198.7	221.6	237.3	242.4	237.5	226.4	210.1
57°	118.8	131.8	147.7	166.5	192.7	214.8	230.0	234.5	229.6	218.9	203.1
57.5°	114.0	127.1	142.8	161.3	187.0	208.1	222.4	226.8	221.9	211.1	195.9
58°	109.4	122.5	138.1	156.1	181.0	201.2	215.3	219.1	214.4	203.5	188.9
58.5°	104.8	117.8	133.2	151.0	175.1	194.5	207.8	211.5	206.7	196.1	182.0
59°	100.1	113.3	128.5	145.7	169.1	187.7	200.4	203.9	199.1	188.9	175.0
59.5°	95.6	108.7	123.7	140.6	163.4	181.0	193.2	196.3	191.6	181.5	168.1
60°	91.1	104.2	119.1	135.6	157.4	174.4	186.0	188.9	184.3	174.4	161.6
60.5°	86.6	99.6	114.4	130.5	151.6	167.7	178.7	181.6	177.1	167.4	154.9
61°	82.1	95.3	109.7	125.4	145.7	161.3	171.7	174.4	169.9	160.7	148.5
61.5°	77.9	90.9	105.2	120.4	140.1	155.0	164.8	167.2	162.9	154.0	142.3
62°	73.6	86.6	100.8	115.5	134.3	148.8	158.2	160.3	156.0	147.5	136.2
62.5°	69.4	82.2	96.2	110.6	128.8	142.5	151.1	153.3	149.2	141.1	130.1
63°	65.4	78.1	91.8	105.7	123.2	136.2	144.5	146.5	142.7	134.7	124.2
63.5°	61.5	73.9	87.4	100.9	117.8	130.4	138.0	139.9	135.9	128.7	118.6
64°	57.6	69.9	82.9	96.1	112.4	124.3	131.9	133.5	129.2	123.1	113.2
64.5°	54.0	66.0	78.6	91.4	107.2	118.5	125.6	127.1	122.8	117.3	107.9
65°	50.5	62.2	74.4	86.8	102.1	112.9	119.5	121.1	116.6	111.8	102.7
65.5°	47.0	58.3	70.2	82.3	97.2	107.4	113.7	115.1	110.2	106.3	97.8
66°	43.8	54.7	66.0	77.7	92.3	101.9	108.1	109.2	104.2	101.1	93.0





TEST NUMBER: P775725

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-HCD61TRLWW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	35.4	44.1	54.2	65.0	78.4	87.2	92.2	93.0	88.1	86.8	80.0
68°	33.6	40.8	50.5	61.1	73.8	82.5	87.6	88.2	83.2	82.1	75.7
68.5°	31.7	37.7	46.9	57.1	69.7	77.9	82.9	83.4	78.3	77.5	71.4
69°	29.9	35.2	43.5	53.4	65.6	73.3	78.3	78.7	73.4	73.0	67.6
69.5°	28.0	32.8	40.2	49.6	61.6	68.9	73.6	74.0	69.1	68.9	63.8
70°	27.1	30.4	37.2	46.3	57.8	64.9	69.5	70.0	65.1	65.0	60.2
70.5°	26.1	27.9	34.8	43.0	54.2	61.1	65.7	66.1	61.3	61.4	56.9
71°	25.0	25.5	32.4	39.8	50.8	57.4	61.9	62.3	57.7	57.8	53.6
71.5°	23.9	24.4	29.9	36.9	47.4	53.8	58.2	58.6	54.2	54.4	50.4
72°	22.7	23.4	27.5	34.5	44.2	50.6	54.8	55.3	50.9	51.1	47.4
72.5°	21.6	22.4	25.1	32.1	41.1	47.3	51.6	52.0	47.8	48.1	44.5
73°	20.5	21.3	23.2	29.7	38.3	44.3	48.5	49.0	44.8	45.0	41.7
73.5°	19.4	20.3	21.5	27.2	35.6	41.4	45.4	46.0	42.1	42.3	39.1
74°	18.4	19.3	20.0	24.8	33.0	38.7	42.7	43.2	39.3	39.6	36.6
74.5°	17.3	18.3	18.7	22.9	30.5	36.0	40.0	40.5	36.7	37.0	34.2
75°	16.4	17.3	17.5	21.1	28.2	33.5	37.5	37.9	34.2	34.6	31.8
75.5°	15.4	16.4	16.5	19.4	26.1	31.2	35.0	35.5	31.8	32.2	29.6
76°	14.5	15.4	15.5	17.9	24.0	28.9	32.6	33.1	29.4	29.9	27.5
76.5°	13.6	14.5	14.7	16.4	22.1	26.8	30.4	30.8	27.2	27.8	25.5
77°	12.7	13.6	13.8	15.1	20.3	24.8	28.2	28.7	25.0	25.7	23.6
77.5°	11.9	12.8	13.0	13.9	18.6	22.9	26.2	26.6	23.0	23.7	21.8
78°	11.0	11.9	12.2	12.8	17.0	21.1	24.2	24.6	21.0	21.8	20.0
78.5°	10.3	11.1	11.4	11.7	15.5	19.3	22.3	22.7	19.0	20.1	18.3
79°	9.5	10.3	10.7	10.7	14.1	17.7	20.5	20.8	17.2	18.3	16.7
79.5°	8.8	9.5	10.0	9.8	12.8	16.1	18.8	19.1	15.5	16.7	15.2
80°	8.1	8.8	9.3	9.0	11.6	14.6	17.1	17.4	13.8	15.1	13.7
80.5°	7.4	8.1	8.6	8.2	10.5	13.2	15.5	15.8	12.1	13.6	12.3
81°	6.7	7.4	7.9	7.5	9.5	11.9	14.0	14.3	10.7	12.2	11.0
81.5°	6.1	6.8	7.3	6.9	8.6	10.7	12.5	12.8	9.4	10.9	9.9
82°	5.5	6.1	6.7	6.3	7.7	9.6	11.1	11.5	8.0	9.8	8.8
82.5°	4.9	5.5	6.1	5.7	6.8	8.6	10.0	10.3	6.6	8.7	7.7
83°	4.3	4.9	5.5	5.2	5.9	7.6	8.9	9.2	5.3	7.6	6.6
83.5°	3.7	4.3	4.9	4.7	5.2	6.6	7.8	8.1	4.2	6.4	5.5
84°	3.2	3.7	4.4	4.2	4.5	5.6	6.6	6.9	3.1	5.3	4.7
84.5°	2.7	3.2	3.9	3.7	3.9	4.8	5.5	5.8	2.2	4.4	3.9
85°	2.2	2.7	3.4	3.3	3.4	4.0	4.6	4.7	1.5	3.6	3.2
85.5°	1.7	2.2	3.0	2.9	2.9	3.4	3.8	3.8	1.0	2.8	2.5
86°	1.3	1.8	2.5	2.5	2.4	2.7	3.1	2.9	0.7	2.1	1.9
86.5°	1.1	1.4	2.0	2.0	2.0	2.2	2.4	2.2	0.6	1.5	1.4
87°	0.8	1.1	1.6	1.6	1.6	1.7	1.8	1.6	0.4	1.0	1.0
87.5°	0.6	0.8	1.2	1.2	1.3	1.3	1.3	1.1	0.3	0.6	0.6
88°	0.4	0.6	0.8	0.9	1.0	0.9	0.8	0.6	0.2	0.3	0.3
88.5°	0.2	0.3	0.5	0.5	0.6	0.5	0.4	0.3	0.1	0.1	0.1



TEST NUMBER: P775725

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-HCD61TRLWW-1000lm-2700K

**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: P775725

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-HCD61TRLWW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	569.6	569.6	569.6	569.6	569.6	569.6
0.5°	569.7	569.5	568.7	568.2	568.0	568.2
1°	569.8	569.0	567.7	567.0	566.6	566.8
1.5°	569.7	568.4	566.8	565.6	565.1	565.4
2°	569.7	567.8	565.7	564.2	563.5	563.9
2.5°	569.5	567.1	564.5	562.8	561.9	562.2
3°	569.3	566.3	563.3	561.2	560.2	560.6
3.5°	569.0	565.4	562.0	559.6	558.5	558.9
4°	568.6	564.5	560.7	557.9	556.7	557.0
4.5°	568.1	563.5	559.3	556.1	554.7	555.2
5°	567.6	562.5	557.8	554.3	552.7	553.2
5.5°	567.0	561.3	556.2	552.4	550.7	551.2
6°	566.3	560.1	554.5	550.4	548.6	549.1
6.5°	565.5	558.8	552.8	548.4	546.4	547.0
7°	564.7	557.5	551.1	546.3	544.1	544.8
7.5°	563.7	556.0	549.2	544.1	541.8	542.5
8°	562.8	554.5	547.3	541.9	539.5	540.1
8.5°	561.7	553.0	545.2	539.6	537.0	537.7
9°	560.6	551.3	543.2	537.3	534.5	535.3
9.5°	559.4	549.5	541.0	534.8	531.9	532.7
10°	558.1	547.8	538.8	532.3	529.3	530.1
10.5°	556.7	545.9	536.5	529.8	526.7	527.5
11°	555.3	544.0	534.2	527.2	524.0	524.8
11.5°	553.8	541.9	531.8	524.5	521.2	522.0
12°	552.3	539.8	529.3	521.8	518.3	519.2
12.5°	550.6	537.7	526.7	518.9	515.4	516.3
13°	548.9	535.5	524.1	516.1	512.5	513.4
13.5°	547.1	533.1	521.5	513.2	509.4	510.4
14°	545.2	530.8	518.7	510.3	506.4	507.4
14.5°	543.3	528.3	515.9	507.3	503.3	504.3
15°	541.2	525.8	513.1	504.2	500.1	501.2
15.5°	539.1	523.3	510.1	501.0	496.9	498.0
16°	537.0	520.6	507.1	497.8	493.7	494.8
16.5°	534.8	517.9	504.0	494.6	490.3	491.5
17°	532.5	515.1	500.9	491.3	487.0	488.1
17.5°	530.1	512.3	497.7	487.9	483.5	484.8
18°	527.6	509.3	494.5	484.5	480.1	481.3
18.5°	525.1	506.3	491.1	481.0	476.6	477.9
19°	522.5	503.2	487.8	477.5	473.0	474.3
19.5°	519.8	500.1	484.4	473.9	469.4	470.7
20°	517.1	496.9	480.9	470.4	465.8	467.2
20.5°	514.3	493.7	477.3	466.7	462.1	463.4
21°	511.4	490.3	473.7	462.9	458.3	459.7

TEST NUMBER: P775725

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-HCD61TRLWW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	502.4	480.0	462.5	451.5	446.9	448.4
23°	499.2	476.3	458.7	447.6	443.0	444.5
23.5°	496.1	472.8	454.9	443.7	439.1	440.6
24°	492.8	469.0	450.9	439.7	435.0	436.6
24.5°	489.4	465.3	447.0	435.7	430.9	432.5
25°	486.0	461.4	442.9	431.6	426.9	428.5
25.5°	482.5	457.6	438.9	427.4	422.8	424.4
26°	479.0	453.8	434.7	423.2	418.5	420.2
26.5°	475.3	449.7	430.7	419.0	414.3	416.0
27°	471.7	445.6	426.4	414.8	410.1	411.8
27.5°	468.1	441.6	422.2	410.5	405.8	407.5
28°	464.3	437.5	417.7	406.1	401.4	403.2
28.5°	460.6	433.4	413.5	401.8	397.2	398.9
29°	456.6	429.1	409.1	397.4	392.7	394.6
29.5°	452.7	424.9	404.7	393.0	388.3	390.2
30°	448.7	420.6	400.3	388.5	383.8	385.7
30.5°	444.8	416.2	395.8	384.0	379.4	381.2
31°	440.7	411.8	391.2	379.5	374.8	376.7
31.5°	436.5	407.4	386.8	374.9	370.3	372.2
32°	432.3	402.9	382.2	370.3	365.6	367.6
32.5°	428.2	398.5	377.6	365.7	361.1	363.0
33°	423.9	394.1	373.0	361.1	356.4	358.3
33.5°	419.5	389.5	368.4	356.4	351.8	353.7
34°	415.2	384.9	363.7	351.7	347.1	349.0
34.5°	410.8	380.3	358.9	347.0	342.4	344.2
35°	406.4	375.7	354.2	342.2	337.5	339.4
35.5°	402.0	371.0	349.6	337.4	332.9	334.7
36°	397.6	366.5	344.8	332.7	328.1	329.9
36.5°	393.1	361.7	340.1	327.9	323.2	325.1
37°	388.5	357.0	335.2	323.0	318.4	320.2
37.5°	384.0	352.4	330.5	318.2	313.6	315.3
38°	379.4	347.6	325.6	313.3	308.7	310.3
38.5°	374.8	342.8	320.9	308.5	303.8	305.5
39°	370.2	338.2	316.1	303.7	298.9	300.7
39.5°	365.6	333.4	311.3	298.8	294.0	295.6
40°	360.9	328.6	306.4	293.8	289.0	290.5
40.5°	356.3	323.9	301.6	289.0	284.1	285.6
41°	351.6	319.0	296.8	284.1	279.0	280.6
41.5°	346.9	314.3	291.9	279.2	274.0	275.5
42°	342.2	309.6	287.1	274.3	269.1	270.4
42.5°	337.5	304.9	282.4	269.4	264.1	265.4
43°	332.9	300.2	277.6	264.5	259.1	260.4
43.5°	328.1	295.3	272.9	259.6	254.1	255.3



TEST NUMBER: P775725

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-HCD61TRLWW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	314.1	281.2	258.5	244.9	239.0	239.8
45.5°	309.4	276.5	253.8	240.0	233.9	234.7
46°	304.8	272.0	249.1	235.3	228.9	229.6
46.5°	300.3	267.5	244.5	230.4	223.9	224.3
47°	295.8	263.0	239.8	225.6	218.9	219.1
47.5°	291.3	258.4	235.2	220.8	214.0	214.1
48°	287.0	254.2	230.7	216.0	209.0	209.0
48.5°	282.6	249.6	226.1	211.3	203.9	203.9
49°	278.0	245.1	221.7	206.7	199.0	198.7
49.5°	273.1	240.6	217.3	202.0	194.1	193.7
50°	268.1	235.9	212.8	197.3	189.1	188.5
50.5°	262.8	231.0	208.1	192.7	184.3	183.4
51°	257.4	226.1	203.6	188.1	179.3	178.1
51.5°	251.7	221.0	199.0	183.5	174.5	173.2
52°	246.0	215.9	194.3	179.0	169.7	168.1
52.5°	240.0	210.6	189.5	174.3	164.8	163.1
53°	234.1	205.3	184.7	169.7	160.1	158.1
53.5°	227.8	199.9	179.9	165.0	155.3	153.1
54°	221.5	194.5	175.0	160.5	150.6	148.0
54.5°	215.2	189.1	170.1	155.8	145.9	143.1
55°	209.0	183.6	165.1	151.1	141.3	138.2
55.5°	202.5	177.9	160.2	146.4	136.5	133.2
56°	196.1	172.4	155.2	141.8	131.9	128.5
56.5°	189.8	166.9	150.3	137.1	127.3	123.6
57°	183.5	161.3	145.2	132.5	122.7	118.8
57.5°	177.1	155.7	140.2	127.7	118.1	114.0
58°	170.9	150.2	135.3	123.2	113.7	109.4
58.5°	164.8	144.7	130.4	118.5	109.1	104.8
59°	158.5	139.2	125.5	113.9	104.6	100.1
59.5°	152.5	133.7	120.6	109.4	100.2	95.6
60°	146.5	128.4	115.8	104.9	95.8	91.1
60.5°	140.6	123.1	111.0	100.4	91.4	86.6
61°	134.7	117.9	106.3	96.0	87.1	82.1
61.5°	129.0	112.9	101.6	91.7	82.8	77.9
62°	123.6	107.9	97.0	87.4	78.7	73.6
62.5°	118.0	103.0	92.5	83.0	74.6	69.4
63°	112.6	98.1	88.1	78.8	70.6	65.4
63.5°	107.3	93.5	83.6	74.7	66.6	61.5
64°	102.2	88.9	79.3	70.6	62.8	57.6
64.5°	97.3	84.5	75.1	66.6	59.0	54.0
65°	92.5	80.0	71.0	62.7	55.5	50.5
65.5°	88.0	75.8	67.0	58.8	51.9	47.0
66°	83.5	71.6	63.0	55.1	48.5	43.8



TEST NUMBER: P775725

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-HCD61TRLWW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	70.7	60.1	52.0	44.5	38.9	35.4
68°	66.8	56.5	48.5	41.4	36.1	33.6
68.5°	63.1	53.1	45.3	38.3	33.9	31.7
69°	59.5	49.8	42.0	35.3	31.8	29.9
69.5°	56.1	46.7	39.0	33.0	29.7	28.0
70°	52.8	43.6	36.3	30.7	27.5	27.1
70.5°	49.7	40.7	34.0	28.4	25.4	26.1
71°	46.6	38.0	31.7	26.1	24.4	25.0
71.5°	43.8	35.3	29.4	24.3	23.5	23.9
72°	41.0	33.1	27.1	22.7	22.5	22.7
72.5°	38.4	30.9	24.8	21.2	21.4	21.6
73°	35.8	28.7	22.9	19.8	20.3	20.5
73.5°	33.4	26.4	21.2	18.6	19.3	19.4
74°	31.1	24.5	19.6	17.6	18.3	18.4
74.5°	29.0	22.6	18.1	16.7	17.3	17.3
75°	26.9	20.9	16.8	15.9	16.4	16.4
75.5°	24.9	19.2	15.5	15.0	15.4	15.4
76°	23.0	17.7	14.4	14.2	14.5	14.5
76.5°	21.3	16.2	13.3	13.4	13.6	13.6
77°	19.6	14.8	12.3	12.6	12.8	12.7
77.5°	18.0	13.6	11.4	11.8	12.0	11.9
78°	16.4	12.3	10.5	11.1	11.2	11.0
78.5°	15.0	11.2	9.7	10.4	10.4	10.3
79°	13.6	10.2	9.0	9.7	9.6	9.5
79.5°	12.4	9.2	8.3	9.0	8.9	8.8
80°	11.2	8.3	7.7	8.3	8.2	8.1
80.5°	10.0	7.5	7.2	7.7	7.5	7.4
81°	9.1	6.7	6.6	7.1	6.8	6.7
81.5°	8.2	6.0	6.1	6.5	6.2	6.1
82°	7.2	5.4	5.5	5.9	5.5	5.5
82.5°	6.3	4.8	5.0	5.3	4.9	4.9
83°	5.3	4.2	4.5	4.8	4.3	4.3
83.5°	4.6	3.7	4.0	4.3	3.7	3.7
84°	3.9	3.2	3.6	3.8	3.3	3.2
84.5°	3.3	2.8	3.1	3.3	2.8	2.7
85°	2.7	2.4	2.7	2.8	2.3	2.2
85.5°	2.2	1.9	2.2	2.4	1.8	1.7
86°	1.7	1.6	1.8	1.9	1.5	1.3
86.5°	1.3	1.2	1.4	1.5	1.2	1.1
87°	0.9	0.9	1.0	1.1	0.9	0.8
87.5°	0.6	0.5	0.6	0.7	0.6	0.6
88°	0.4	0.2	0.3	0.4	0.4	0.4
88.5°	0.1	0.1	0.1	0.1	0.2	0.2



TEST NUMBER: P775725

CATALOG NUMBER: HCDJBL510CSD-HCD61TRH-HCD61TRLWW-1000lm-2700K

**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°	456.0	462.9	475.2	492.8	516.3	535.2	547.1	551.3	548.8	540.8	527.0
22°	452.2	459.2	471.6	489.4	513.5	532.7	545.0	549.1	546.5	538.3	524.4



44°	249.9	258.8	273.2	294.8	328.5	360.0	383.2	392.3	389.6	377.3	354.4
44.5°	244.9	253.8	268.3	290.0	323.6	355.2	378.5	387.7	385.1	372.8	349.8



66.5°	40.7	51.1	62.0	73.4	87.7	96.7	102.6	103.6	98.4	95.9	88.7
67°	37.8	47.6	58.1	69.1	83.0	91.8	97.4	98.2	93.0	91.3	84.4



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



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21.5°	508.5	486.9	470.1	459.1	454.5	456.0
22°	505.4	483.5	466.3	455.4	450.7	452.2



44°	323.4	290.6	268.0	254.7	248.9	249.9
44.5°	318.6	285.9	263.3	249.7	244.0	244.9

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66.5°	79.0	67.7	59.2	51.3	45.2	40.7
67°	74.6	63.7	55.5	48.0	42.0	37.8

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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)