

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: P775624

Luminaire Tested: HCDJBL510CSD-HCD41TRH-1000lm-5000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P775624  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B029)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL510CSD-HCD41TRH-1000lm-5000K  
Description: 4 INCH ROUND SHALLOW-WIDE HAZE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

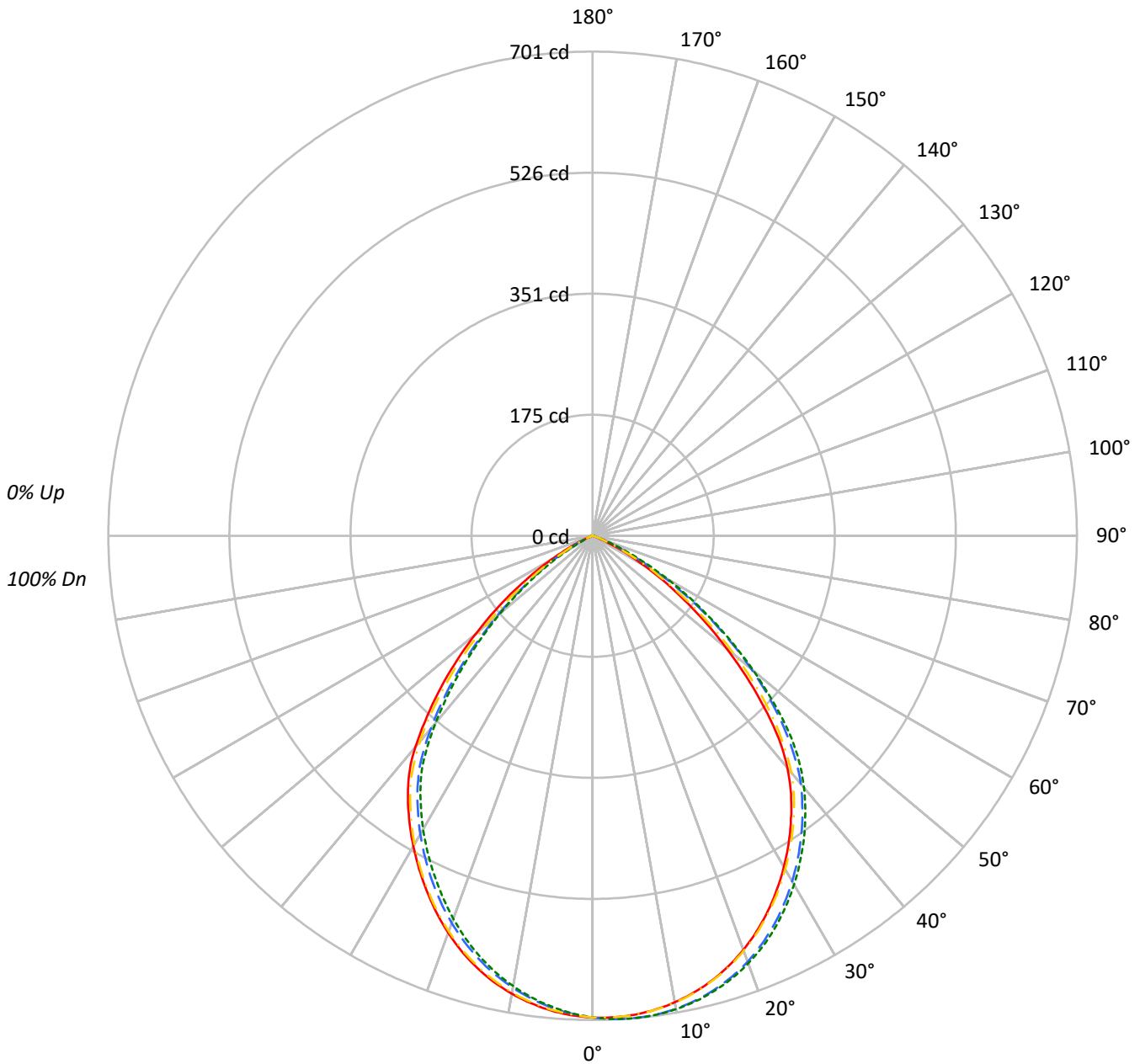
Lumens per Lamp: N/A  
Luminaire Lumens: 1247.4 lumens  
Efficiency: N/A  
Efficacy: 124.7 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.15 / 1.22  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

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



TEST NUMBER: P775624  
CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-5000K

### 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	112	109	105	103	109	106	104	101	102	100	98	98	97	95	95	94	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80																			
3	97	89	83	77	95	87	82	77	85	80	76	82	78	74	80	76	73	71																			
4	90	81	74	68	88	79	73	68	77	71	67	75	70	66	73	69	65	63																			
5	84	73	66	60	82	72	65	60	70	64	60	69	63	59	67	62	58	57																			
6	78	67	60	54	77	66	59	54	65	58	53	63	57	53	62	57	53	51																			
7	73	62	54	49	72	61	54	49	59	53	48	58	52	48	57	52	48	46																			
8	69	57	49	44	67	56	49	44	55	48	44	54	48	44	53	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	60	49	42	37	59	48	41	37	47	41	37	46	41	36	46	40	36	35																			

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

	0°	90°	180°	270°
0°	87755	87755	87755	87755
5°	87939	88558	87168	86423
10°	87639	88955	86055	84598
15°	86864	88870	84336	82160
20°	85459	88244	81909	79003
25°	83288	86871	78845	75290
30°	80448	84735	75450	71293
35°	76894	81964	71609	66647
40°	72072	78183	65484	58075
45°	62506	71423	55209	46595
50°	49436	59461	43230	34087
55°	35523	45945	30367	21634
60°	21722	31311	17392	10395
65°	9112	16736	6522	3067
70°	2024	4894	1877	1325
75°	1410	1799	1313	875
80°	1015	1377	942	652
85°	289	1300	144	144

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 45°  
 Luminance: 71423 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	65.7	5.3
10°-20°	184.9	14.8
20°-30°	268.7	21.5
30°-40°	301.0	24.1
40°-50°	253.4	20.3
50°-60°	136.4	10.9
60°-70°	33.6	2.7
70°-80°	3.2	0.3
80°-90°	0.5	0.0
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°	519.3	41.6
0°-40°	820.2	65.8
0°-60°	1210.1	97.0
0°-90°	1247.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1247.4	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	697	697	697	697	697	
5°	696	701	690	684	696	66
15°	667	682	647	631	667	188
25°	600	626	568	542	600	276
35°	500	534	466	434	500	312
45°	351	401	310	262	351	268
55°	162	209	138	99	162	146
65°	31	56	22	10	31	34
75°	3	4	3	2	3	3
85°	0	1	0	0	0	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	697.3	697.3	697.3	697.3	697.3	697.3	697.3	697.3	697.3	697.3	697.3
0.5°	697.8	698.2	698.4	698.2	698.0	697.6	697.3	697.1	697.1	697.1	696.9
1°	697.9	698.7	699.0	698.9	698.6	698.2	697.6	697.0	696.7	696.4	696.0
1.5°	698.0	699.0	699.7	699.6	699.3	698.6	697.8	696.9	696.2	695.5	695.0
2°	698.0	699.4	700.1	700.1	699.8	698.9	697.8	696.6	695.6	694.7	693.9
2.5°	697.9	699.6	700.5	700.5	700.2	699.2	697.8	696.2	694.9	693.7	692.7
3°	697.7	699.7	700.8	700.9	700.5	699.4	697.6	695.7	694.1	692.7	691.5
3.5°	697.3	699.7	701.0	701.2	700.8	699.4	697.3	695.2	693.2	691.4	690.1
4°	697.0	699.6	701.1	701.3	701.0	699.4	697.1	694.6	692.2	690.2	688.7
4.5°	696.6	699.4	701.1	701.4	701.1	699.3	696.7	693.8	691.2	688.9	687.1
5°	696.1	699.2	701.0	701.5	701.0	699.0	696.2	693.0	690.0	687.4	685.5
5.5°	695.4	698.8	700.8	701.4	701.0	698.7	695.6	692.1	688.7	685.9	683.9
6°	694.7	698.4	700.6	701.2	700.8	698.4	694.9	691.1	687.4	684.3	682.1
6.5°	693.8	697.9	700.2	700.9	700.4	697.9	694.1	690.0	685.9	682.6	680.2
7°	693.1	697.2	699.8	700.5	700.1	697.3	693.3	688.8	684.4	680.9	678.2
7.5°	692.0	696.6	699.3	700.1	699.6	696.7	692.4	687.5	682.8	679.0	676.1
8°	690.9	695.9	698.6	699.6	699.0	696.0	691.4	686.1	681.1	677.0	674.0
8.5°	689.8	694.9	698.0	698.9	698.4	695.2	690.2	684.7	679.2	674.8	671.8
9°	688.6	693.9	697.2	698.2	697.7	694.3	689.0	683.1	677.4	672.7	669.4
9.5°	687.2	692.9	696.3	697.5	696.9	693.3	687.7	681.5	675.4	670.6	667.1
10°	685.8	691.8	695.3	696.5	696.1	692.2	686.4	679.8	673.4	668.2	664.6
10.5°	684.3	690.5	694.3	695.5	695.0	691.1	684.9	677.8	671.1	665.8	661.9
11°	682.7	689.2	693.1	694.5	693.9	689.8	683.3	675.9	668.9	663.3	659.3
11.5°	681.0	687.7	691.9	693.3	692.8	688.4	681.7	673.9	666.5	660.7	656.6
12°	679.3	686.3	690.5	692.0	691.6	686.9	680.0	671.9	664.1	658.0	653.7
12.5°	677.4	684.7	689.0	690.6	690.2	685.4	678.0	669.5	661.5	655.3	650.7
13°	675.5	682.9	687.5	689.2	688.8	683.8	676.1	667.3	658.9	652.5	647.9
13.5°	673.4	681.1	685.8	687.6	687.2	682.1	674.1	664.9	656.2	649.4	644.7
14°	671.2	679.2	684.2	686.0	685.6	680.4	672.1	662.5	653.2	646.4	641.5
14.5°	669.0	677.3	682.4	684.2	683.9	678.5	669.8	659.8	650.3	643.2	638.3
15°	666.7	675.3	680.5	682.4	682.1	676.4	667.6	657.0	647.3	640.1	635.0
15.5°	664.3	673.0	678.5	680.5	680.2	674.4	665.1	654.3	644.1	636.6	631.3
16°	661.7	670.8	676.4	678.6	678.2	672.2	662.8	651.5	640.9	633.2	627.8
16.5°	659.1	668.4	674.2	676.4	676.1	669.9	660.1	648.4	637.5	629.7	624.2
17°	656.4	665.9	672.0	674.2	674.0	667.6	657.5	645.3	634.2	626.1	620.6
17.5°	653.5	663.4	669.5	671.9	671.6	665.1	654.7	642.2	630.6	622.4	616.6
18°	650.6	660.8	667.1	669.4	669.3	662.6	651.8	639.0	627.0	618.5	612.8
18.5°	647.7	658.0	664.5	666.8	666.8	660.0	648.9	635.6	623.2	614.6	608.7
19°	644.6	655.1	661.7	664.3	664.3	657.3	645.8	632.2	619.4	610.5	604.8
19.5°	641.4	652.1	659.0	661.5	661.6	654.5	642.8	628.6	615.6	606.6	600.5
20°	638.1	649.0	656.1	658.6	658.9	651.5	639.4	624.9	611.6	602.6	596.4
20.5°	634.6	645.9	653.0	655.8	656.0	648.5	636.2	621.2	607.6	598.2	592.1
21°	631.1	642.6	649.9	652.8	653.0	645.3	632.8	617.5	603.3	593.9	587.7



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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°	620.0	632.3	639.9	643.0	643.5	635.4	622.0	605.5	590.5	580.5	574.2
23°	616.3	628.6	636.4	639.4	640.2	631.9	618.2	601.5	586.1	576.0	569.6
23.5°	612.3	624.8	632.7	636.0	636.7	628.4	614.3	597.2	581.5	571.3	564.8
24°	608.2	621.0	629.0	632.3	633.0	624.6	610.3	593.1	577.1	566.6	560.0
24.5°	604.0	616.9	625.2	628.6	629.3	620.8	606.3	588.6	572.5	561.9	555.2
25°	599.8	613.0	621.2	624.7	625.6	616.9	602.2	584.3	567.8	557.2	550.4
25.5°	595.5	608.9	617.3	620.9	621.9	613.1	598.1	579.8	563.1	552.2	545.5
26°	591.1	604.7	613.1	616.8	617.8	608.9	593.9	575.4	558.5	547.3	540.5
26.5°	586.7	600.4	609.1	612.8	613.6	604.8	589.5	570.7	553.6	542.3	535.5
27°	582.3	596.0	604.8	608.6	609.6	600.5	585.2	566.2	548.7	537.4	530.4
27.5°	577.6	591.6	600.4	604.5	605.3	596.3	580.6	561.5	543.9	532.4	525.2
28°	572.9	587.1	595.9	600.1	601.1	591.8	576.2	556.8	539.0	527.3	520.1
28.5°	568.2	582.6	591.5	595.6	596.7	587.5	571.6	551.9	534.0	522.3	514.8
29°	563.4	577.9	586.9	591.1	592.2	583.0	566.9	547.1	529.1	517.1	509.6
29.5°	558.5	573.2	582.3	586.7	587.7	578.5	562.1	542.3	524.1	511.8	504.3
30°	553.6	568.3	577.5	581.9	583.1	573.7	557.6	537.5	519.2	506.7	498.9
30.5°	548.7	563.5	572.8	577.4	578.5	569.0	552.7	532.5	513.9	501.5	493.5
31°	543.6	558.7	567.9	572.6	573.8	564.3	547.7	527.5	508.8	496.1	487.9
31.5°	538.6	553.6	563.1	567.7	568.9	559.4	542.7	522.5	503.7	490.8	482.4
32°	533.4	548.6	558.0	562.7	564.0	554.4	537.9	517.6	498.6	485.4	476.7
32.5°	528.2	543.5	553.1	557.9	559.0	549.5	532.8	512.5	493.4	479.8	471.0
33°	522.7	538.3	548.0	552.9	554.0	544.5	527.8	507.4	487.9	474.3	465.3
33.5°	517.5	533.1	542.7	547.7	548.9	539.3	522.7	502.0	482.5	468.6	459.4
34°	511.8	527.8	537.4	542.6	543.9	534.3	517.5	496.8	477.1	463.1	453.5
34.5°	506.4	522.3	532.3	537.4	538.6	529.1	512.2	491.3	471.6	457.2	447.6
35°	500.5	516.6	526.8	532.2	533.5	523.8	506.8	485.9	466.1	451.5	441.4
35.5°	495.2	511.2	521.3	526.6	528.1	518.3	501.3	480.5	460.4	445.6	435.1
36°	489.3	505.5	515.7	521.3	522.7	512.9	495.8	474.9	454.7	439.6	429.1
36.5°	483.6	499.8	510.2	515.7	517.0	507.3	490.2	469.4	448.9	433.4	422.4
37°	477.4	493.9	504.5	509.9	511.3	501.6	484.4	463.5	442.9	426.8	415.0
37.5°	471.7	488.0	498.7	504.2	505.6	495.9	478.8	457.6	436.7	419.6	407.2
38°	465.2	482.2	492.7	498.5	500.0	490.2	472.8	451.7	430.0	412.0	399.0
38.5°	458.8	476.2	487.0	492.5	494.1	484.2	466.7	445.4	422.9	404.2	390.5
39°	452.1	469.8	481.1	486.6	488.2	478.2	460.6	438.6	415.3	396.1	381.8
39.5°	445.7	463.3	474.9	480.7	482.3	471.9	454.2	431.2	407.3	387.6	373.2
40°	438.7	456.8	468.5	474.3	475.9	465.7	447.3	423.7	398.6	379.0	364.5
40.5°	431.3	450.0	461.9	467.9	469.6	459.0	439.9	415.7	389.9	370.1	355.3
41°	423.7	442.8	455.1	461.4	463.1	452.4	432.4	407.6	381.3	361.0	346.2
41.5°	415.8	435.1	447.6	454.2	456.4	445.4	424.7	399.5	372.6	352.3	337.4
42°	407.7	427.4	439.9	446.9	449.4	438.0	416.6	391.2	363.6	342.6	327.9
42.5°	399.1	419.3	432.1	439.3	442.2	430.2	408.5	382.6	354.6	333.3	318.6
43°	389.9	410.8	424.1	431.3	434.7	422.1	400.2	373.5	345.9	324.1	309.0
43.5°	380.4	402.2	416.0	423.2	426.7	413.9	391.6	364.7	337.2	315.0	299.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	351.2	375.5	390.7	398.1	401.3	387.5	365.1	337.8	310.2	287.1	271.4
45.5°	341.1	366.5	382.3	389.6	392.0	378.3	355.9	328.8	301.4	278.1	261.9
46°	331.0	357.1	373.4	380.9	382.7	368.8	346.6	319.8	292.3	268.9	252.3
46.5°	321.1	347.3	364.6	371.9	373.1	359.3	337.3	310.7	283.3	259.9	243.0
47°	311.0	337.8	355.7	363.0	363.2	349.5	327.6	301.4	274.4	250.8	233.6
47.5°	301.1	328.1	346.3	353.8	353.4	339.6	318.0	292.4	265.4	242.3	224.3
48°	291.1	318.4	337.2	344.5	343.2	329.7	308.3	283.3	256.2	233.1	215.3
48.5°	281.3	308.6	327.9	335.1	333.3	319.7	298.6	274.2	247.4	224.2	206.5
49°	271.7	298.9	318.8	325.7	323.3	309.6	288.7	264.9	238.5	215.4	197.5
49.5°	261.9	288.9	309.2	316.3	313.5	299.6	279.0	255.9	229.8	206.9	188.8
50°	252.5	279.0	299.7	306.4	303.7	289.5	269.1	246.5	220.8	198.3	180.2
50.5°	242.7	269.3	290.1	296.6	294.3	279.5	259.3	237.5	212.1	189.8	171.9
51°	233.4	259.7	280.6	287.0	284.2	269.7	249.5	228.1	203.6	181.5	163.7
51.5°	224.0	249.9	270.8	277.1	274.6	260.2	240.0	219.3	195.1	173.3	155.9
52°	215.0	240.7	261.6	267.7	265.2	250.6	230.4	210.3	186.7	165.1	148.0
52.5°	205.7	231.3	251.7	257.8	256.0	240.7	221.0	201.2	178.3	157.0	140.4
53°	196.7	221.9	242.0	248.2	246.2	231.2	211.5	192.2	170.1	149.1	132.8
53.5°	187.8	212.5	232.2	238.2	236.7	221.9	202.5	183.7	162.0	141.4	125.5
54°	179.0	203.3	222.7	228.8	227.4	212.6	193.1	175.0	154.1	133.7	118.5
54.5°	170.3	194.5	213.3	219.2	218.7	203.4	184.4	166.2	146.1	126.2	111.5
55°	161.9	185.5	203.9	210.1	209.4	194.3	175.5	157.9	138.4	119.1	105.0
55.5°	153.3	176.7	194.5	200.5	200.2	185.5	167.0	149.7	130.7	112.0	99.0
56°	145.3	168.0	185.1	191.7	191.3	176.6	158.4	141.5	123.3	105.1	92.8
56.5°	137.1	159.6	176.0	182.5	182.8	167.9	150.0	133.4	115.9	98.7	86.6
57°	129.4	151.2	166.7	173.6	173.8	159.4	141.9	125.7	108.8	92.4	80.5
57.5°	121.7	142.9	157.9	164.5	165.2	151.2	134.0	118.1	101.7	86.0	74.3
58°	114.2	134.9	149.3	156.3	156.8	143.1	126.4	110.6	95.1	79.8	68.9
58.5°	106.9	127.1	140.7	147.7	148.3	135.2	118.9	103.4	88.5	73.4	63.7
59°	99.9	119.1	132.3	139.3	140.2	127.5	111.4	96.7	81.9	67.6	58.5
59.5°	93.1	111.5	124.1	130.8	132.3	120.0	104.3	89.9	75.3	62.2	53.6
60°	86.3	104.2	116.1	123.2	124.4	112.5	97.8	83.2	69.1	56.8	49.0
60.5°	79.8	96.8	108.3	115.3	116.8	105.5	91.3	76.5	63.2	51.8	44.5
61°	73.5	89.7	100.8	107.4	109.2	98.8	84.8	70.4	57.6	46.9	40.2
61.5°	67.5	83.0	93.6	100.0	102.1	92.3	78.3	64.6	52.1	42.4	36.3
62°	61.7	76.3	86.6	92.8	95.2	85.7	71.8	59.0	47.0	38.1	32.5
62.5°	56.0	69.9	79.7	85.6	88.3	79.2	65.9	53.6	41.9	34.0	28.9
63°	50.4	63.7	73.0	78.8	81.4	72.6	60.2	48.3	37.3	30.1	25.4
63.5°	45.0	57.7	66.7	72.0	74.4	66.7	54.9	43.5	32.9	26.6	22.3
64°	39.7	51.8	60.7	65.7	68.0	61.0	49.7	39.0	28.9	23.1	19.4
64.5°	35.1	46.2	54.9	59.5	62.0	55.3	45.0	34.8	25.3	20.0	16.6
65°	30.6	40.8	49.4	53.7	56.2	50.1	40.3	30.7	21.9	17.3	14.3
65.5°	26.1	36.3	44.0	48.2	50.5	45.0	36.0	27.0	18.6	14.7	12.6
66°	21.6	32.0	39.0	42.8	45.1	40.1	31.8	23.6	15.8	12.5	10.9





TEST NUMBER: P775624

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	11.2	19.4	26.8	29.6	30.8	27.1	21.2	14.7	10.3	8.2	5.8
68°	9.0	16.3	22.6	25.7	26.7	23.4	18.1	12.5	8.9	6.7	5.0
68.5°	7.4	13.5	18.6	21.6	22.8	19.9	15.4	11.1	7.4	5.3	4.6
69°	6.4	11.2	15.4	17.6	19.2	16.8	13.0	9.8	5.9	4.8	4.3
69.5°	5.9	9.3	12.6	14.6	16.0	14.1	11.4	8.4	5.4	4.5	3.9
70°	5.5	7.7	10.2	12.0	13.3	12.4	9.9	7.0	5.1	4.2	3.7
70.5°	5.2	6.4	8.2	9.8	11.7	10.7	8.4	5.8	4.8	3.9	3.5
71°	4.9	5.4	6.7	8.0	10.1	9.0	6.9	5.2	4.5	3.7	3.2
71.5°	4.6	5.0	5.7	6.6	8.5	7.3	5.4	4.9	4.2	3.4	3.0
72°	4.3	4.7	5.0	5.5	6.9	5.5	5.0	4.6	3.9	3.2	2.9
72.5°	4.1	4.4	4.6	5.0	5.3	5.0	4.7	4.3	3.6	3.0	2.7
73°	3.8	4.1	4.3	4.7	4.9	4.7	4.4	4.1	3.4	2.8	2.5
73.5°	3.5	3.8	4.1	4.4	4.6	4.4	4.1	3.7	3.2	2.7	2.3
74°	3.3	3.6	3.8	4.1	4.3	4.1	3.8	3.5	3.0	2.5	2.1
74.5°	3.1	3.3	3.5	3.8	4.1	3.8	3.5	3.3	2.8	2.2	2.0
75°	2.9	3.1	3.3	3.5	3.7	3.5	3.3	3.1	2.7	2.1	1.8
75.5°	2.7	2.9	3.1	3.3	3.5	3.3	3.1	2.9	2.5	2.0	1.7
76°	2.6	2.8	2.9	3.1	3.3	3.1	2.9	2.7	2.2	1.8	1.6
76.5°	2.3	2.6	2.7	2.9	3.1	2.9	2.7	2.5	2.1	1.7	1.5
77°	2.2	2.3	2.6	2.7	2.9	2.7	2.6	2.3	2.0	1.6	1.4
77.5°	2.0	2.2	2.3	2.6	2.7	2.6	2.3	2.1	1.8	1.5	1.3
78°	1.9	2.1	2.2	2.3	2.5	2.3	2.1	2.0	1.7	1.4	1.2
78.5°	1.8	1.9	2.0	2.2	2.3	2.2	2.0	1.8	1.6	1.3	1.1
79°	1.6	1.8	1.9	2.0	2.1	2.0	1.9	1.7	1.5	1.2	1.0
79.5°	1.5	1.7	1.8	1.9	2.0	1.9	1.7	1.6	1.4	1.1	1.0
80°	1.4	1.5	1.6	1.8	1.9	1.8	1.6	1.5	1.3	1.0	0.9
80.5°	1.3	1.4	1.5	1.7	1.7	1.7	1.5	1.4	1.2	0.9	0.7
81°	1.2	1.3	1.4	1.6	1.6	1.5	1.4	1.3	1.1	0.7	0.6
81.5°	1.1	1.2	1.3	1.5	1.5	1.4	1.3	1.2	1.0	0.6	0.6
82°	0.9	1.1	1.2	1.4	1.4	1.3	1.2	1.1	0.9	0.5	0.5
82.5°	0.7	1.0	1.2	1.3	1.3	1.3	1.1	1.0	0.6	0.4	0.5
83°	0.6	0.9	1.1	1.2	1.2	1.2	1.1	0.9	0.5	0.4	0.4
83.5°	0.4	0.7	1.0	1.1	1.1	1.1	1.0	0.7	0.4	0.3	0.4
84°	0.3	0.6	0.9	1.0	1.1	1.0	0.9	0.6	0.3	0.2	0.3
84.5°	0.2	0.5	0.7	0.9	1.0	0.9	0.7	0.5	0.2	0.2	0.2
85°	0.2	0.4	0.7	0.9	0.9	0.9	0.7	0.4	0.1	0.2	0.2
85.5°	0.1	0.4	0.6	0.7	0.7	0.7	0.6	0.4	0.1	0.1	0.1
86°	0.1	0.3	0.6	0.6	0.7	0.6	0.5	0.3	0.1	0.1	0.1
86.5°	0.1	0.3	0.5	0.6	0.6	0.6	0.5	0.3	0.1	0.1	0.0
87°	0.1	0.3	0.4	0.5	0.5	0.5	0.4	0.2	0.0	0.0	0.0
87.5°	0.0	0.2	0.4	0.4	0.5	0.4	0.3	0.2	0.0	0.0	0.0
88°	0.0	0.1	0.3	0.4	0.4	0.4	0.3	0.1	0.0	0.0	0.0
88.5°	0.0	0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.0



TEST NUMBER: P775624  
CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-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	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1



TEST NUMBER: P775624

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	697.3	697.3	697.3	697.3	697.3	697.3
0.5°	696.5	696.2	696.2	696.6	697.0	697.8
1°	695.5	695.2	695.4	696.1	696.9	697.9
1.5°	694.5	694.1	694.5	695.4	696.7	698.0
2°	693.3	693.0	693.5	694.8	696.3	698.0
2.5°	692.1	691.8	692.4	693.9	695.9	697.9
3°	690.7	690.4	691.4	693.1	695.3	697.7
3.5°	689.2	689.0	690.1	692.1	694.7	697.3
4°	687.7	687.4	688.8	691.1	693.9	697.0
4.5°	686.1	685.8	687.3	689.9	693.2	696.6
5°	684.4	684.1	685.8	688.7	692.3	696.1
5.5°	682.6	682.3	684.2	687.4	691.3	695.4
6°	680.7	680.5	682.5	686.0	690.2	694.7
6.5°	678.8	678.6	680.7	684.5	689.0	693.8
7°	676.8	676.4	678.8	682.8	687.9	693.1
7.5°	674.6	674.3	676.9	681.1	686.5	692.0
8°	672.4	672.0	674.7	679.3	685.2	690.9
8.5°	670.0	669.7	672.6	677.5	683.7	689.8
9°	667.7	667.3	670.3	675.6	682.1	688.6
9.5°	665.2	664.7	667.9	673.5	680.3	687.2
10°	662.7	662.0	665.5	671.3	678.6	685.8
10.5°	660.0	659.4	662.9	669.2	676.8	684.3
11°	657.3	656.6	660.3	667.0	674.8	682.7
11.5°	654.4	653.7	657.6	664.5	672.8	681.0
12°	651.5	650.7	654.8	661.9	670.7	679.3
12.5°	648.4	647.5	651.8	659.3	668.3	677.4
13°	645.3	644.5	648.7	656.7	666.1	675.5
13.5°	642.1	641.2	645.6	653.8	663.8	673.4
14°	638.8	637.7	642.4	651.0	661.3	671.2
14.5°	635.4	634.3	639.0	648.0	658.6	669.0
15°	631.9	630.6	635.6	645.0	656.0	666.7
15.5°	628.4	626.9	632.0	641.8	653.1	664.3
16°	624.6	623.1	628.5	638.5	650.2	661.7
16.5°	620.8	619.3	624.6	635.2	647.3	659.1
17°	616.9	615.3	620.9	631.8	644.3	656.4
17.5°	613.0	611.3	616.9	628.2	641.0	653.5
18°	609.1	607.1	613.0	624.5	637.8	650.6
18.5°	604.9	602.9	608.8	620.8	634.4	647.7
19°	600.7	598.6	604.7	616.9	631.0	644.6
19.5°	596.4	594.3	600.5	613.1	627.5	641.4
20°	592.0	589.9	596.3	609.1	623.9	638.1
20.5°	587.6	585.3	591.9	605.0	620.1	634.6
21°	583.1	580.7	587.3	600.8	616.3	631.1



TEST NUMBER: P775624

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	569.3	566.6	573.8	587.9	604.5	620.0
23°	564.5	561.8	569.0	583.6	600.3	616.3
23.5°	559.8	557.0	564.4	579.1	596.2	612.3
24°	554.9	552.1	559.6	574.4	591.8	608.2
24.5°	550.0	547.2	554.8	569.8	587.5	604.0
25°	545.1	542.2	549.8	565.1	583.0	599.8
25.5°	540.0	537.2	545.0	560.4	578.6	595.5
26°	535.0	532.3	540.0	555.6	574.1	591.1
26.5°	529.8	527.2	535.1	550.8	569.5	586.7
27°	524.7	522.2	530.0	545.9	564.8	582.3
27.5°	519.6	516.9	525.0	541.0	560.1	577.6
28°	514.4	511.7	519.9	536.0	555.2	572.9
28.5°	509.0	506.5	514.7	531.0	550.4	568.2
29°	503.9	501.4	509.7	525.9	545.4	563.4
29.5°	498.6	496.0	504.5	520.8	540.5	558.5
30°	493.2	490.6	499.2	515.7	535.5	553.6
30.5°	487.6	485.2	493.9	510.3	530.3	548.7
31°	482.1	479.7	488.4	505.1	525.0	543.6
31.5°	476.5	474.2	482.9	499.7	519.9	538.6
32°	470.8	468.6	477.5	494.2	514.6	533.4
32.5°	465.2	463.0	471.9	488.7	509.3	528.2
33°	459.5	457.2	466.3	483.2	503.6	522.7
33.5°	453.7	451.7	460.7	477.6	498.1	517.5
34°	447.8	445.8	455.1	471.9	492.5	511.8
34.5°	441.9	439.8	449.1	466.1	486.6	506.4
35°	435.7	433.8	443.1	460.4	481.0	500.5
35.5°	429.6	427.6	437.2	454.4	475.1	495.2
36°	423.3	420.9	431.0	448.5	469.3	489.3
36.5°	416.2	413.8	424.3	442.0	463.3	483.6
37°	408.5	406.0	416.8	435.6	456.9	477.4
37.5°	400.6	397.7	409.0	428.4	450.4	471.7
38°	392.2	389.2	400.7	420.9	443.8	465.2
38.5°	383.6	380.4	392.2	413.0	437.0	458.8
39°	374.9	371.7	383.5	405.0	429.7	452.1
39.5°	365.9	362.7	374.7	396.9	422.0	445.7
40°	356.7	353.5	365.9	388.3	413.8	438.7
40.5°	347.7	344.2	356.9	379.7	405.7	431.3
41°	338.2	335.0	348.1	371.0	397.3	423.7
41.5°	328.9	325.9	339.1	361.9	388.8	415.8
42°	319.5	316.8	330.1	352.8	380.1	407.7
42.5°	310.2	307.5	321.2	343.8	371.0	399.1
43°	300.5	298.2	312.3	334.4	361.8	389.9
43.5°	291.2	289.2	303.2	324.9	352.3	380.4

TEST NUMBER: P775624

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	263.2	261.8	275.7	296.6	323.4	351.2
45.5°	253.9	252.7	266.6	286.8	313.6	341.1
46°	244.7	243.6	257.1	277.8	303.7	331.0
46.5°	235.8	234.6	247.6	268.2	293.4	321.1
47°	226.5	225.6	238.6	258.7	283.4	311.0
47.5°	217.6	216.8	229.2	249.0	273.4	301.1
48°	209.0	208.0	220.4	239.8	263.5	291.1
48.5°	200.2	199.4	211.3	230.1	253.3	281.3
49°	191.6	191.0	202.4	221.0	243.6	271.7
49.5°	183.0	182.4	193.7	211.7	233.9	261.9
50°	174.7	174.1	185.0	202.5	224.1	252.5
50.5°	166.3	165.8	176.4	192.8	214.5	242.7
51°	158.3	157.8	167.7	184.4	205.3	233.4
51.5°	150.6	149.9	159.5	175.3	196.1	224.0
52°	142.6	142.1	151.3	166.6	187.1	215.0
52.5°	135.0	134.6	143.3	157.4	178.2	205.7
53°	127.5	127.0	135.3	149.4	169.4	196.7
53.5°	120.3	119.6	127.4	141.1	161.0	187.8
54°	113.2	112.5	119.7	132.6	152.6	179.0
54.5°	106.3	105.6	112.5	124.8	144.6	170.3
55°	100.1	98.6	105.2	117.1	136.6	161.9
55.5°	93.8	92.0	98.0	109.6	128.8	153.3
56°	87.6	85.4	91.2	102.4	121.2	145.3
56.5°	81.4	79.1	84.4	95.2	114.0	137.1
57°	75.1	73.0	78.1	88.4	106.7	129.4
57.5°	69.5	67.1	71.8	82.0	99.7	121.7
58°	64.2	61.4	65.7	75.7	92.9	114.2
58.5°	59.0	56.0	60.0	69.7	86.4	106.9
59°	54.2	50.9	54.5	63.9	80.0	99.9
59.5°	49.3	46.0	49.4	58.4	73.8	93.1
60°	44.7	41.3	44.5	53.3	67.8	86.3
60.5°	40.3	36.9	39.8	48.2	62.1	79.8
61°	36.4	33.2	35.9	43.4	56.5	73.5
61.5°	32.3	29.4	32.2	39.0	51.3	67.5
62°	28.7	25.8	28.5	35.4	46.4	61.7
62.5°	25.4	22.1	24.7	31.7	41.5	56.0
63°	22.3	19.1	21.0	28.0	36.9	50.4
63.5°	19.2	16.5	18.1	24.4	33.1	45.0
64°	16.5	14.1	15.6	20.8	29.3	39.7
64.5°	14.1	12.2	13.4	17.9	25.6	35.1
65°	12.6	10.3	11.5	15.4	21.9	30.6
65.5°	11.1	8.9	9.9	13.0	18.8	26.1
66°	9.6	7.5	8.4	11.0	15.9	21.6



TEST NUMBER: P775624

CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	5.2	5.0	5.4	6.5	9.3	11.2
68°	4.7	4.7	4.9	5.7	7.8	9.0
68.5°	4.4	4.4	4.6	5.0	6.5	7.4
69°	4.2	4.1	4.3	4.7	5.7	6.4
69.5°	3.8	3.8	4.1	4.4	5.1	5.9
70°	3.6	3.6	3.8	4.2	4.8	5.5
70.5°	3.4	3.4	3.5	3.8	4.5	5.2
71°	3.1	3.1	3.3	3.6	4.2	4.9
71.5°	2.9	2.9	3.1	3.4	3.9	4.6
72°	2.8	2.8	2.9	3.2	3.7	4.3
72.5°	2.6	2.6	2.7	3.0	3.4	4.1
73°	2.3	2.3	2.5	2.8	3.2	3.8
73.5°	2.2	2.2	2.3	2.6	3.0	3.5
74°	2.0	2.0	2.1	2.3	2.8	3.3
74.5°	1.9	1.9	2.0	2.2	2.6	3.1
75°	1.8	1.8	1.9	2.1	2.5	2.9
75.5°	1.7	1.7	1.8	1.9	2.2	2.7
76°	1.6	1.6	1.6	1.8	2.1	2.6
76.5°	1.5	1.5	1.5	1.7	1.9	2.3
77°	1.4	1.4	1.4	1.6	1.8	2.2
77.5°	1.3	1.3	1.3	1.5	1.7	2.0
78°	1.2	1.2	1.3	1.4	1.6	1.9
78.5°	1.1	1.1	1.2	1.3	1.4	1.8
79°	1.0	1.0	1.1	1.2	1.3	1.6
79.5°	1.0	1.0	1.0	1.1	1.2	1.5
80°	0.9	0.9	0.9	1.0	1.1	1.4
80.5°	0.7	0.7	0.9	0.9	1.0	1.3
81°	0.7	0.7	0.7	0.7	0.9	1.2
81.5°	0.6	0.6	0.6	0.7	0.7	1.1
82°	0.5	0.5	0.6	0.6	0.6	0.9
82.5°	0.5	0.5	0.5	0.5	0.5	0.7
83°	0.4	0.4	0.4	0.5	0.4	0.6
83.5°	0.4	0.3	0.4	0.4	0.4	0.4
84°	0.3	0.3	0.3	0.4	0.3	0.3
84.5°	0.2	0.2	0.2	0.3	0.3	0.2
85°	0.2	0.1	0.2	0.2	0.2	0.2
85.5°	0.1	0.1	0.1	0.2	0.2	0.1
86°	0.0	0.0	0.0	0.1	0.1	0.1
86.5°	0.0	0.0	0.0	0.0	0.1	0.1
87°	0.0	0.0	0.0	0.0	0.0	0.1
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.1	0.0	0.0	0.0	0.0
88.5°	0.1	0.1	0.1	0.0	0.0	0.0



TEST NUMBER: P775624  
CATALOG NUMBER: HCDJBL510CSD-HCD41TRH-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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Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9



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

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21.5°	627.5	639.3	646.7	649.5	650.0	642.1	629.2	613.5	599.1	589.4	583.3
22°	623.9	635.8	643.4	646.3	646.7	638.8	625.6	609.5	594.9	585.1	578.8



44°	370.9	393.5	407.7	415.0	418.5	405.3	383.0	355.9	328.1	305.5	290.1
44.5°	361.3	384.6	399.3	406.6	410.2	396.4	374.0	347.0	319.1	296.4	280.6



66.5°	17.2	27.8	35.0	37.7	40.1	35.5	27.9	20.3	13.3	11.0	9.2
67°	13.9	23.6	30.8	33.7	35.3	31.1	24.4	17.3	11.8	9.6	7.5



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



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21.5°	578.5	576.1	582.8	596.7	612.5	627.5
22°	573.9	571.3	578.3	592.3	608.4	623.9



44°	281.8	280.1	294.1	315.5	342.9	370.9
44.5°	272.5	270.8	284.7	305.8	333.4	361.3

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66.5°	8.2	6.5	7.1	9.2	13.4	17.2
67°	6.7	5.5	6.2	7.7	11.2	13.9

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

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(END OF REPORT)