

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: P775885

Luminaire Tested: HCDJBL510CSD-HCD8TRMW-1000lm-2700K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P775885  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2310613A001)  
Test Lab:  
Issue Date: 2/7/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL510CSD-HCD8TRMW-1000lm-2700K  
Description: 8 INCH ROUND MEDIUM MATTE WHITE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1067.0 lumens  
Efficiency: N/A  
Efficacy: 106.7 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.22 / 1.18  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

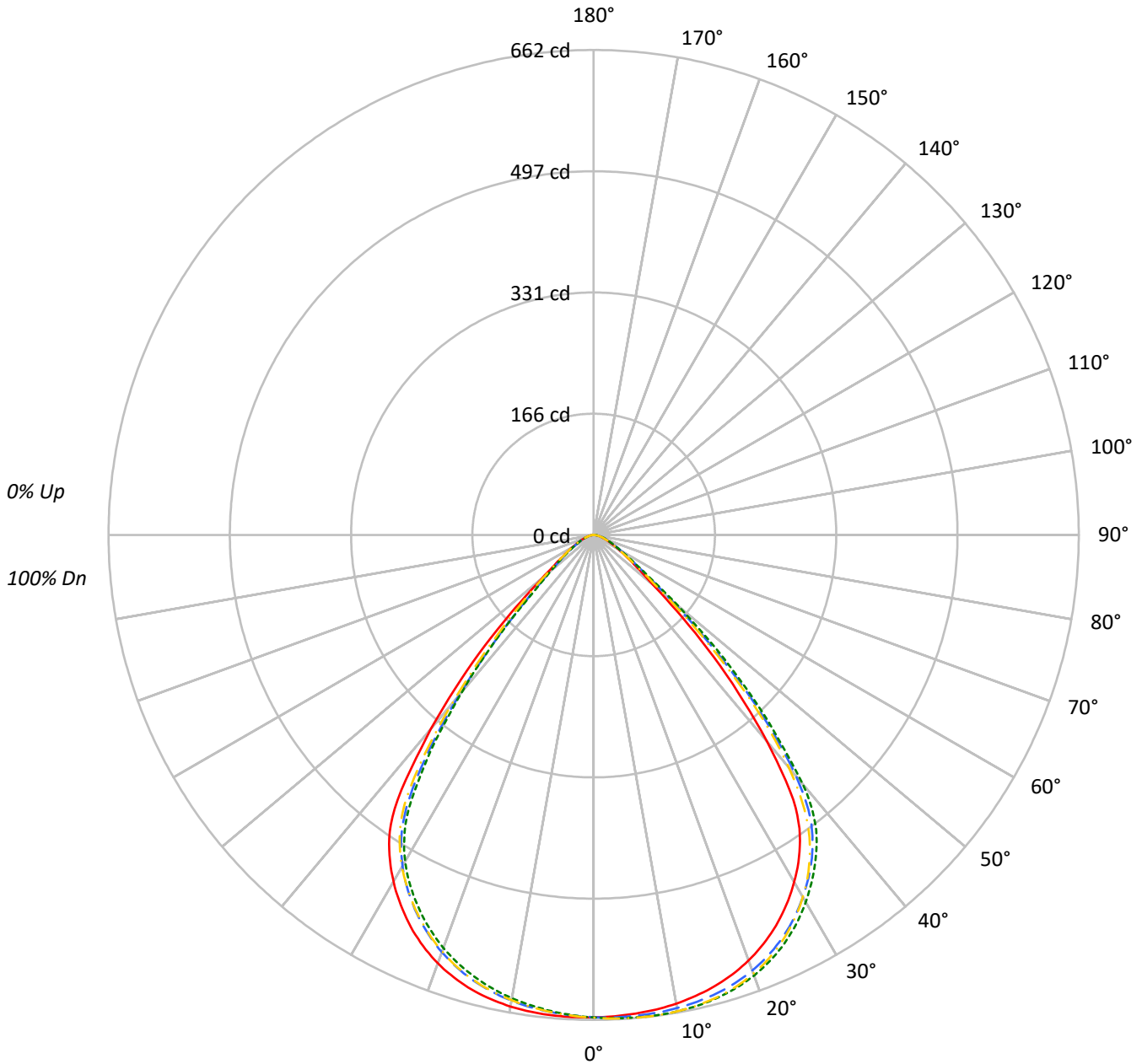
Input Watts (W): 10  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100			
1	112	109	106	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82			
3	98	91	85	80	96	89	84	79	86	82	78	84	80	77	81	78	75	74			
4	92	83	76	71	90	82	75	71	79	74	70	77	73	69	75	71	68	66			
5	86	76	69	64	84	75	68	64	73	67	63	71	66	62	70	65	62	60			
6	81	70	63	58	79	69	62	58	68	62	57	66	61	57	65	60	56	55			
7	76	65	58	53	74	64	57	52	63	56	52	61	56	52	60	55	51	50			
8	71	60	53	48	70	59	53	48	58	52	48	57	51	47	56	51	47	46			
9	67	56	49	44	66	55	48	44	54	48	44	53	48	44	52	47	43	42			
10	63	52	45	41	62	51	45	41	51	45	40	50	44	40	49	44	40	39			

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

	0°	90°	180°	270°
0°	20110	20110	20110	20110
5°	20101	20267	20172	20003
10°	20138	20470	20266	19906
15°	20159	20674	20308	19758
20°	20082	20793	20212	19487
25°	19821	20731	19892	18982
30°	19291	20408	19259	18148
35°	18244	19731	17987	15859
40°	14647	17695	13750	11139
45°	9507	12469	8506	6196
50°	5035	7087	4379	3581
55°	3284	3763	2794	2502
60°	2357	2619	2021	1881
65°	1828	2023	1575	1495
70°	1473	1669	1268	1205
75°	1215	1427	1014	955
80°	967	1248	756	703
85°	701	1156	420	350

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 12728 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	62.5	5.9
10°-20°	180.5	16.9
20°-30°	270.8	25.4
30°-40°	293.2	27.5
40°-50°	167.0	15.6
50°-60°	55.4	5.2
60°-70°	24.4	2.3
70°-80°	10.7	1.0
80°-90°	2.4	0.2
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°	513.9	48.2
0°-40°	807.1	75.6
0°-60°	1029.5	96.5
0°-90°	1067.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1067.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	659	659	659	659	659	
5°	656	661	658	653	656	62
15°	638	654	642	625	638	180
25°	588	615	590	564	588	270
35°	490	529	483	426	490	298
45°	220	289	197	144	220	171
55°	62	71	52	47	62	58
65°	25	28	22	21	25	26
75°	10	12	9	8	10	11
85°	2	3	1	1	2	2
90°	0	0	0	0	0	



TEST NUMBER: P775885

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	658.7	658.7	658.7	658.7	658.7	658.7	658.7	658.7	658.7	658.7	658.7
0.5°	658.4	658.6	658.6	658.7	659.1	659.4	659.7	659.3	658.7	658.4	658.1
1°	658.3	658.6	658.7	658.9	659.5	659.8	660.0	659.5	658.8	658.3	657.8
1.5°	658.1	658.5	658.9	659.2	659.8	660.2	660.3	659.7	658.8	658.2	657.5
2°	657.9	658.5	659.0	659.5	660.1	660.6	660.6	659.9	658.8	658.0	657.1
2.5°	657.7	658.4	659.1	659.7	660.4	660.8	660.8	660.0	658.8	657.8	656.7
3°	657.4	658.3	659.1	659.9	660.7	661.2	661.0	660.1	658.8	657.5	656.3
3.5°	657.0	658.2	659.1	660.1	660.9	661.4	661.3	660.1	658.6	657.3	655.8
4°	656.7	658.0	659.1	660.2	661.1	661.6	661.4	660.2	658.5	657.0	655.3
4.5°	656.4	657.7	659.0	660.3	661.2	661.8	661.5	660.2	658.4	656.6	654.8
5°	655.9	657.4	658.9	660.3	661.3	661.9	661.6	660.1	658.2	656.2	654.2
5.5°	655.5	657.2	658.8	660.4	661.3	662.0	661.6	660.0	658.0	655.8	653.6
6°	655.0	656.8	658.6	660.4	661.4	662.1	661.7	659.9	657.7	655.3	652.9
6.5°	654.5	656.5	658.4	660.3	661.4	662.1	661.7	659.7	657.4	654.8	652.2
7°	654.0	656.0	658.2	660.2	661.4	662.1	661.6	659.5	657.0	654.2	651.4
7.5°	653.4	655.6	657.9	660.1	661.3	662.1	661.5	659.3	656.6	653.6	650.6
8°	652.7	655.1	657.6	659.9	661.2	662.0	661.3	659.0	656.1	653.0	649.7
8.5°	652.0	654.6	657.2	659.7	661.0	661.9	661.1	658.6	655.6	652.2	648.8
9°	651.3	654.0	656.8	659.4	660.8	661.8	660.9	658.2	655.0	651.5	647.8
9.5°	650.5	653.3	656.4	659.2	660.6	661.5	660.6	657.7	654.4	650.6	646.7
10°	649.6	652.6	655.8	658.8	660.3	661.3	660.2	657.2	653.7	649.7	645.5
10.5°	648.7	651.9	655.3	658.5	659.9	660.9	659.8	656.6	652.9	648.7	644.4
11°	647.8	651.1	654.7	658.0	659.5	660.5	659.3	656.0	652.0	647.6	643.2
11.5°	646.7	650.2	654.1	657.6	659.1	660.1	658.8	655.3	651.1	646.6	641.9
12°	645.6	649.3	653.4	657.1	658.6	659.6	658.2	654.5	650.1	645.4	640.4
12.5°	644.5	648.4	652.6	656.5	658.0	659.1	657.5	653.6	649.0	644.1	639.0
13°	643.2	647.3	651.8	655.8	657.4	658.5	656.8	652.6	647.9	642.7	637.4
13.5°	642.0	646.2	650.9	655.2	656.6	657.8	655.9	651.6	646.7	641.3	635.8
14°	640.7	645.0	650.0	654.4	655.9	657.0	655.0	650.5	645.4	639.8	634.0
14.5°	639.3	643.8	649.0	653.6	655.0	656.2	654.1	649.3	644.0	638.2	632.3
15°	637.8	642.6	648.0	652.7	654.1	655.3	653.1	648.0	642.5	636.4	630.4
15.5°	636.2	641.2	646.8	651.7	653.0	654.3	652.0	646.7	640.9	634.6	628.4
16°	634.5	639.8	645.6	650.6	652.0	653.2	650.8	645.2	639.2	632.7	626.3
16.5°	632.8	638.3	644.3	649.5	650.8	652.1	649.4	643.6	637.4	630.7	624.2
17°	630.9	636.7	643.0	648.3	649.5	650.9	648.0	641.9	635.6	628.6	621.8
17.5°	629.1	635.0	641.5	647.0	648.2	649.6	646.5	640.1	633.6	626.5	619.5
18°	627.1	633.3	640.0	645.5	646.8	648.2	644.9	638.2	631.5	624.1	617.0
18.5°	625.0	631.4	638.3	644.1	645.2	646.6	643.1	636.3	629.3	621.7	614.5
19°	622.7	629.5	636.6	642.5	643.5	644.9	641.3	634.2	627.1	619.2	611.8
19.5°	620.4	627.5	634.8	640.8	641.8	643.3	639.5	632.0	624.6	616.6	608.9
20°	618.1	625.3	632.7	639.0	640.0	641.4	637.5	629.6	622.1	613.8	606.0
20.5°	615.6	623.1	630.8	637.1	638.0	639.4	635.3	627.2	619.5	611.0	603.1
21°	613.0	620.8	628.7	635.2	636.0	637.3	633.0	624.6	616.7	608.0	599.8



TEST NUMBER: P775885

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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°	604.6	613.1	621.6	628.5	629.1	630.5	625.5	616.3	607.8	598.5	589.8
23°	601.6	610.4	619.1	626.1	626.7	627.9	622.8	613.2	604.6	595.0	586.1
23.5°	598.4	607.6	616.4	623.6	624.1	625.4	619.8	610.1	601.1	591.4	582.4
24°	595.2	604.6	613.5	620.9	621.3	622.6	616.9	606.8	597.7	587.7	578.6
24.5°	591.8	601.6	610.8	618.1	618.4	619.7	613.8	603.4	594.2	584.0	574.6
25°	588.4	598.3	607.7	615.2	615.4	616.7	610.6	599.9	590.5	580.0	570.5
25.5°	584.8	595.0	604.6	612.2	612.3	613.6	607.2	596.2	586.6	575.8	566.3
26°	581.0	591.6	601.2	609.1	609.2	610.4	603.7	592.4	582.5	571.6	561.9
26.5°	577.2	588.0	598.0	605.8	605.7	607.0	600.0	588.4	578.5	567.5	557.6
27°	573.3	584.4	594.5	602.5	602.3	603.4	596.3	584.4	574.3	563.0	552.9
27.5°	569.3	580.5	590.8	599.0	598.7	599.8	592.4	580.2	570.0	558.5	548.2
28°	565.2	576.7	587.2	595.4	595.0	596.0	588.4	576.0	565.5	554.0	543.3
28.5°	560.8	572.6	583.2	591.6	591.1	592.2	584.2	571.5	560.9	549.1	538.4
29°	556.4	568.5	579.3	587.8	587.2	588.1	579.8	566.9	556.2	544.2	533.1
29.5°	551.8	564.1	575.1	583.9	583.1	583.9	575.4	562.1	551.3	539.1	527.5
30°	547.2	559.8	571.0	579.7	578.9	579.6	570.8	557.3	546.3	534.0	521.7
30.5°	542.2	555.3	566.5	575.6	574.5	575.2	566.2	552.4	541.0	528.4	515.6
31°	537.3	550.6	562.1	571.2	570.0	570.7	561.3	547.1	535.9	522.7	509.4
31.5°	532.3	545.5	557.5	566.7	565.3	565.9	556.3	541.6	530.2	516.9	502.8
32°	527.1	540.8	552.7	562.0	560.9	561.2	551.0	535.9	524.5	510.9	495.9
32.5°	521.6	535.6	547.8	557.4	555.9	556.2	545.4	530.0	518.6	504.3	488.5
33°	515.9	530.3	542.9	552.6	550.9	551.0	539.6	524.0	512.5	497.3	480.5
33.5°	509.7	524.9	537.8	547.6	545.7	545.7	533.8	517.5	505.8	489.7	471.6
34°	503.5	519.1	532.4	542.6	540.5	540.1	527.4	510.8	498.8	481.6	461.6
34.5°	496.7	512.8	526.6	537.3	535.0	534.2	521.1	503.7	491.2	471.6	450.6
35°	489.5	506.4	520.8	531.9	529.4	528.2	514.3	496.1	482.6	461.1	438.5
35.5°	481.4	499.4	514.4	526.2	523.6	522.0	507.2	487.4	472.7	449.7	425.1
36°	473.1	492.0	507.9	520.3	517.7	515.6	499.3	477.8	462.1	436.7	411.0
36.5°	463.6	484.2	500.8	514.3	511.2	508.5	490.9	467.7	450.0	422.5	396.5
37°	452.6	475.1	493.4	507.7	504.4	500.8	481.9	457.2	436.1	407.7	381.7
37.5°	439.6	465.0	485.2	500.4	496.6	492.3	472.0	445.3	420.6	392.2	366.1
38°	425.5	453.6	475.8	492.3	488.2	483.4	461.6	433.2	404.7	376.0	350.2
38.5°	410.9	440.7	465.4	483.4	478.8	473.5	451.0	420.0	388.7	359.6	334.0
39°	396.3	426.5	454.4	473.4	468.7	463.2	439.4	406.8	373.9	343.2	317.9
39.5°	381.9	412.3	442.4	463.0	457.1	451.4	427.2	392.1	359.5	327.3	301.8
40°	367.5	398.5	429.5	451.2	444.0	439.5	414.0	377.5	345.0	311.8	285.6
40.5°	352.4	385.2	415.4	438.5	428.2	426.2	400.8	361.9	329.9	296.2	269.7
41°	337.4	371.2	400.7	424.7	412.1	413.1	387.1	346.4	314.2	280.2	254.0
41.5°	322.3	356.9	385.7	410.1	395.6	398.9	373.2	330.8	298.7	264.3	238.9
42°	307.2	341.9	370.6	394.4	380.1	383.9	358.8	315.9	283.3	249.5	223.5
42.5°	292.2	326.1	355.1	378.1	365.8	368.3	343.3	300.2	268.3	234.7	208.7
43°	277.7	310.4	339.0	361.2	351.3	352.9	327.1	284.8	253.9	220.7	195.0
43.5°	263.3	294.9	323.3	344.8	336.1	337.2	311.1	269.3	239.8	207.2	181.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	220.2	249.4	275.0	294.8	288.8	291.2	262.1	224.4	197.0	169.3	146.4
45.5°	206.4	234.4	258.7	279.3	273.5	276.0	245.5	209.8	183.5	157.2	135.9
46°	192.8	219.5	242.3	263.2	258.8	260.6	230.7	195.5	170.4	146.1	126.7
46.5°	179.7	204.9	226.8	248.3	244.3	245.2	215.0	181.5	158.1	134.8	118.0
47°	166.9	190.7	211.4	233.5	229.8	230.1	200.6	168.3	146.6	124.9	110.1
47.5°	154.1	176.7	197.6	219.4	215.1	215.1	186.7	155.4	135.2	115.8	102.8
48°	142.7	163.7	184.0	205.7	200.6	200.7	173.6	143.3	124.6	107.5	96.3
48.5°	131.9	151.3	171.0	192.8	186.7	186.6	160.3	131.6	114.7	99.7	91.3
49°	122.1	139.5	159.1	179.7	173.5	172.6	148.2	121.1	105.7	94.1	86.2
49.5°	113.2	129.3	147.9	167.4	161.1	159.3	136.8	111.6	97.7	88.5	81.1
50°	106.0	119.6	137.5	155.3	149.2	146.3	126.3	103.1	92.2	82.9	76.0
50.5°	99.5	111.2	127.6	143.7	137.6	134.5	116.0	95.6	86.7	77.3	70.9
51°	93.6	103.7	118.7	132.9	126.1	123.4	107.1	89.9	81.2	71.8	67.7
51.5°	88.2	97.4	110.5	123.0	116.3	113.9	98.9	84.1	75.7	68.4	64.7
52°	83.5	91.5	103.0	113.8	106.9	105.0	93.1	78.3	70.3	65.4	61.8
52.5°	79.0	86.4	96.4	105.5	98.5	97.1	87.3	72.6	67.1	62.5	58.8
53°	74.7	81.6	90.1	98.1	92.9	91.1	81.6	68.9	64.1	59.5	56.0
53.5°	70.8	77.2	84.5	91.4	87.4	85.2	75.8	65.8	61.1	56.6	53.3
54°	67.8	73.0	79.2	85.1	81.8	79.2	70.1	62.8	58.2	53.8	50.8
54.5°	64.8	69.6	74.6	79.7	76.2	73.3	66.8	59.7	55.3	51.2	48.4
55°	61.7	66.4	70.6	74.7	70.7	69.6	63.7	56.7	52.5	48.7	46.1
55.5°	58.8	63.4	67.4	70.6	67.3	66.5	60.6	53.9	49.9	46.4	44.1
56°	56.0	60.4	64.2	67.3	64.3	63.3	57.5	51.1	47.6	44.3	42.1
56.5°	53.3	57.5	61.3	64.2	61.1	60.2	54.6	48.6	45.4	42.3	40.3
57°	50.7	54.7	58.2	61.1	58.0	57.2	51.9	46.3	43.2	40.5	38.6
57.5°	48.4	52.0	55.4	58.1	55.1	54.2	49.3	44.2	41.3	38.8	37.0
58°	46.1	49.5	52.6	55.1	52.3	51.5	46.9	42.1	39.5	37.1	35.5
58.5°	44.1	47.2	50.1	52.4	49.7	49.0	44.7	40.2	37.8	35.6	34.0
59°	42.1	45.1	47.7	49.8	47.3	46.6	42.6	38.4	36.2	34.1	32.6
59.5°	40.4	43.1	45.5	47.4	45.0	44.4	40.6	36.8	34.6	32.7	31.3
60°	38.6	41.2	43.4	45.2	42.9	42.3	38.8	35.3	33.1	31.4	30.1
60.5°	36.9	39.4	41.5	43.1	41.0	40.4	37.2	33.8	31.8	30.1	28.9
61°	35.5	37.8	39.7	41.1	39.2	38.6	35.6	32.4	30.4	28.9	27.8
61.5°	34.1	36.1	38.0	39.3	37.5	37.0	34.1	31.1	29.1	27.8	26.7
62°	32.7	34.8	36.4	37.6	35.9	35.3	32.7	29.8	27.9	26.6	25.7
62.5°	31.3	33.4	35.1	35.9	34.4	33.9	31.3	28.6	26.8	25.6	24.7
63°	29.9	32.1	33.7	34.6	32.9	32.4	30.1	27.5	25.7	24.6	23.7
63.5°	28.7	30.7	32.4	33.2	31.6	31.1	28.9	26.4	24.7	23.6	22.8
64°	27.5	29.4	31.0	31.9	30.3	29.9	27.7	25.3	23.6	22.6	21.9
64.5°	26.4	28.2	29.6	30.6	29.1	28.7	26.7	24.3	22.7	21.8	21.0
65°	25.3	27.0	28.5	29.3	28.0	27.6	25.6	23.3	21.8	20.8	20.2
65.5°	24.2	26.0	27.3	28.2	26.8	26.5	24.6	22.4	20.9	20.0	19.4
66°	23.3	24.9	26.3	27.1	25.8	25.5	23.6	21.5	20.0	19.2	18.6





TEST NUMBER: P775885

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	20.5	22.0	23.3	24.0	22.9	22.6	21.0	19.0	17.6	16.9	16.4
68°	19.6	21.1	22.4	23.1	22.0	21.7	20.2	18.2	16.9	16.2	15.7
68.5°	18.8	20.2	21.5	22.2	21.1	20.8	19.3	17.4	16.2	15.5	15.1
69°	18.0	19.4	20.6	21.3	20.3	20.0	18.6	16.7	15.5	14.8	14.4
69.5°	17.3	18.6	19.8	20.4	19.5	19.2	17.8	16.0	14.8	14.2	13.8
70°	16.5	17.8	19.0	19.6	18.7	18.4	17.1	15.3	14.2	13.5	13.2
70.5°	15.8	17.1	18.2	18.8	17.9	17.7	16.4	14.6	13.5	12.9	12.6
71°	15.1	16.3	17.5	18.1	17.2	17.0	15.7	14.0	12.9	12.3	12.0
71.5°	14.4	15.6	16.8	17.3	16.5	16.3	15.1	13.4	12.3	11.7	11.4
72°	13.8	15.0	16.1	16.6	15.8	15.6	14.4	12.8	11.7	11.1	10.9
72.5°	13.2	14.3	15.4	15.9	15.2	14.9	13.8	12.2	11.2	10.6	10.3
73°	12.6	13.7	14.7	15.3	14.5	14.3	13.2	11.6	10.6	10.1	9.8
73.5°	12.0	13.0	14.1	14.6	13.9	13.7	12.6	11.1	10.1	9.5	9.3
74°	11.4	12.4	13.5	14.0	13.3	13.1	12.0	10.5	9.6	9.0	8.8
74.5°	10.8	11.8	12.8	13.4	12.7	12.5	11.5	10.0	9.1	8.5	8.4
75°	10.3	11.3	12.3	12.8	12.1	11.9	10.9	9.5	8.6	8.1	7.9
75.5°	9.7	10.7	11.7	12.2	11.6	11.4	10.4	9.0	8.1	7.6	7.4
76°	9.2	10.1	11.1	11.7	11.0	10.9	9.9	8.5	7.6	7.1	7.0
76.5°	8.7	9.6	10.6	11.1	10.5	10.3	9.4	8.0	7.2	6.7	6.5
77°	8.2	9.1	10.0	10.6	10.0	9.8	8.9	7.6	6.7	6.2	6.1
77.5°	7.7	8.6	9.5	10.0	9.5	9.3	8.4	7.1	6.3	5.8	5.6
78°	7.3	8.1	9.0	9.5	9.0	8.8	7.9	6.6	5.8	5.4	5.2
78.5°	6.8	7.6	8.5	9.1	8.5	8.4	7.5	6.2	5.4	5.0	4.8
79°	6.4	7.2	8.1	8.6	8.0	7.9	7.0	5.8	5.0	4.6	4.5
79.5°	5.9	6.7	7.6	8.1	7.6	7.5	6.5	5.4	4.7	4.2	4.1
80°	5.5	6.3	7.1	7.6	7.1	7.0	6.1	5.0	4.3	3.8	3.7
80.5°	5.1	5.8	6.7	7.2	6.7	6.5	5.7	4.6	3.9	3.5	3.4
81°	4.7	5.4	6.2	6.7	6.3	6.2	5.3	4.2	3.6	3.1	3.0
81.5°	4.3	5.0	5.8	6.3	5.8	5.7	4.9	3.8	3.2	2.8	2.7
82°	4.0	4.6	5.4	5.9	5.4	5.3	4.6	3.5	2.9	2.5	2.4
82.5°	3.6	4.2	5.0	5.5	5.1	5.0	4.2	3.1	2.6	2.2	2.1
83°	3.3	3.9	4.6	5.1	4.7	4.6	3.8	2.8	2.3	1.9	1.8
83.5°	2.9	3.5	4.3	4.7	4.3	4.2	3.5	2.5	2.0	1.6	1.6
84°	2.6	3.2	3.9	4.4	4.0	3.9	3.2	2.2	1.7	1.3	1.3
84.5°	2.3	2.8	3.6	4.0	3.6	3.5	2.9	1.9	1.4	1.0	1.1
85°	2.0	2.5	3.2	3.7	3.3	3.2	2.5	1.6	1.2	0.8	0.8
85.5°	1.7	2.2	2.9	3.4	3.0	2.9	2.2	1.3	0.9	0.6	0.6
86°	1.4	1.9	2.5	3.0	2.7	2.6	2.0	1.1	0.7	0.5	0.4
86.5°	1.1	1.6	2.2	2.7	2.4	2.3	1.7	0.9	0.5	0.3	0.2
87°	0.9	1.3	2.0	2.4	2.1	2.0	1.4	0.7	0.4	0.2	0.0
87.5°	0.7	1.0	1.7	2.1	1.8	1.7	1.2	0.5	0.2	0.1	0.0
88°	0.5	0.8	1.4	1.8	1.5	1.5	1.0	0.4	0.1	0.0	0.0
88.5°	0.3	0.6	1.2	1.5	1.3	1.2	0.7	0.2	0.0	0.0	0.0



TEST NUMBER: P775885

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.1	0.5	0.8	0.5	0.5	0.1	0.0	0.0	0.0	0.0



TEST NUMBER: P775885

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	658.7	658.7	658.7	658.7	658.7	658.7
0.5°	657.9	658.4	658.5	658.9	658.8	658.4
1°	657.5	657.9	658.0	658.5	658.5	658.3
1.5°	657.0	657.3	657.5	658.0	658.1	658.1
2°	656.5	656.8	656.9	657.5	657.8	657.9
2.5°	655.9	656.2	656.3	657.0	657.4	657.7
3°	655.4	655.6	655.7	656.4	656.9	657.4
3.5°	654.7	654.9	655.0	655.9	656.5	657.0
4°	654.1	654.2	654.4	655.3	656.1	656.7
4.5°	653.4	653.5	653.6	654.7	655.6	656.4
5°	652.6	652.7	652.8	654.0	655.1	655.9
5.5°	651.8	651.9	652.0	653.4	654.5	655.5
6°	650.9	650.9	651.1	652.6	653.9	655.0
6.5°	650.0	650.1	650.2	651.8	653.2	654.5
7°	649.0	649.1	649.3	651.0	652.6	654.0
7.5°	648.0	648.1	648.2	650.2	651.9	653.4
8°	647.0	646.9	647.2	649.2	651.1	652.7
8.5°	645.8	645.8	646.1	648.3	650.3	652.0
9°	644.7	644.6	644.9	647.3	649.5	651.3
9.5°	643.4	643.5	643.6	646.1	648.6	650.5
10°	642.1	642.1	642.4	645.0	647.6	649.6
10.5°	640.8	640.7	641.0	643.8	646.6	648.7
11°	639.3	639.3	639.6	642.6	645.5	647.8
11.5°	637.8	637.8	638.0	641.3	644.4	646.7
12°	636.2	636.2	636.5	639.9	643.2	645.6
12.5°	634.6	634.5	634.8	638.4	641.8	644.5
13°	632.9	632.8	633.0	636.8	640.5	643.2
13.5°	631.1	631.0	631.3	635.2	639.1	642.0
14°	629.2	629.1	629.4	633.5	637.6	640.7
14.5°	627.2	627.2	627.4	631.7	636.0	639.3
15°	625.2	625.1	625.4	629.8	634.3	637.8
15.5°	623.1	622.9	623.2	627.7	632.6	636.2
16°	620.8	620.8	620.9	625.6	630.7	634.5
16.5°	618.5	618.5	618.6	623.4	628.8	632.8
17°	616.0	616.1	616.2	621.1	626.7	630.9
17.5°	613.6	613.6	613.6	618.8	624.6	629.1
18°	610.9	611.1	611.0	616.2	622.3	627.1
18.5°	608.2	608.3	608.2	613.6	620.0	625.0
19°	605.4	605.5	605.4	610.8	617.5	622.7
19.5°	602.4	602.8	602.5	608.1	614.9	620.4
20°	599.4	599.8	599.3	605.0	612.2	618.1
20.5°	596.3	596.6	596.2	602.1	609.5	615.6
21°	593.0	593.4	592.9	598.9	606.7	613.0



TEST NUMBER: P775885

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	582.6	583.0	582.4	588.7	597.4	604.6
23°	578.8	579.4	578.6	585.2	594.0	601.6
23.5°	574.9	575.6	574.9	581.4	590.6	598.4
24°	570.9	571.7	570.9	577.6	587.0	595.2
24.5°	566.9	567.7	566.8	573.8	583.4	591.8
25°	562.6	563.5	562.6	569.6	579.6	588.4
25.5°	558.3	559.3	558.3	565.5	575.8	584.8
26°	553.7	554.9	554.0	561.2	571.8	581.0
26.5°	549.3	550.5	549.4	556.9	567.8	577.2
27°	544.5	545.8	544.7	552.4	563.5	573.3
27.5°	539.7	541.0	540.0	547.8	559.2	569.3
28°	534.7	536.1	535.0	543.0	554.8	565.2
28.5°	529.4	531.2	530.1	538.2	550.3	560.8
29°	523.6	525.9	524.9	533.3	545.6	556.4
29.5°	517.6	520.5	519.5	528.3	540.7	551.8
30°	511.5	514.8	513.7	523.2	535.9	547.2
30.5°	505.0	508.6	507.6	517.8	530.9	542.2
31°	498.2	502.2	501.0	512.0	525.8	537.3
31.5°	491.0	495.2	494.4	506.0	520.5	532.3
32°	483.2	487.8	487.4	499.5	514.7	527.1
32.5°	475.0	479.9	480.1	492.8	508.8	521.6
33°	466.1	471.3	472.3	485.6	502.5	515.9
33.5°	455.7	462.2	463.6	478.1	495.9	509.7
34°	443.9	451.6	453.9	469.9	489.0	503.5
34.5°	430.7	439.4	442.0	460.8	481.5	496.7
35°	416.9	425.5	428.3	450.3	473.6	489.5
35.5°	402.7	411.2	413.7	438.4	464.8	481.4
36°	388.1	397.5	398.2	425.4	454.5	473.1
36.5°	374.1	384.3	382.5	411.4	442.9	463.6
37°	360.1	370.5	367.1	397.0	429.9	452.6
37.5°	345.9	355.3	352.3	381.4	415.5	439.6
38°	331.3	339.5	337.9	365.3	400.7	425.5
38.5°	315.5	323.5	322.6	349.4	385.5	410.9
39°	299.9	308.2	307.5	333.4	370.2	396.3
39.5°	283.9	293.7	292.2	317.6	354.2	381.9
40°	268.5	279.5	277.3	301.1	338.6	367.5
40.5°	252.8	265.5	262.4	285.0	322.9	352.4
41°	237.6	250.9	248.3	269.2	307.6	337.4
41.5°	222.8	236.2	234.3	254.8	292.8	322.3
42°	208.0	221.6	220.2	240.1	277.8	307.2
42.5°	193.3	207.7	206.7	226.2	262.1	292.2
43°	179.2	194.5	193.7	212.8	247.4	277.7
43.5°	166.3	181.2	180.9	200.0	233.1	263.3



TEST NUMBER: P775885

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	132.7	143.5	146.9	165.2	192.7	220.2
45.5°	123.3	132.1	136.8	154.9	180.5	206.4
46°	114.7	122.0	127.5	145.2	168.8	192.8
46.5°	107.2	113.4	118.9	136.0	158.1	179.7
47°	100.6	106.0	111.0	127.4	147.6	166.9
47.5°	94.5	99.5	103.9	119.2	137.9	154.1
48°	89.8	93.9	97.5	111.6	128.8	142.7
48.5°	85.2	88.9	91.8	104.7	120.6	131.9
49°	80.5	84.3	86.4	98.2	112.8	122.1
49.5°	75.8	79.7	81.5	92.2	105.5	113.2
50°	71.2	75.4	76.9	86.4	98.9	106.0
50.5°	68.1	71.6	72.8	81.2	92.8	99.5
51°	65.1	68.4	69.3	76.4	87.2	93.6
51.5°	62.2	65.5	66.3	72.1	81.9	88.2
52°	59.3	62.6	63.4	68.7	77.1	83.5
52.5°	56.5	59.7	60.5	65.8	72.9	79.0
53°	53.8	56.8	57.6	62.8	69.4	74.7
53.5°	51.2	54.2	54.8	59.8	66.4	70.8
54°	48.9	51.6	52.2	56.9	63.3	67.8
54.5°	46.7	49.2	49.9	54.2	60.3	64.8
55°	44.6	47.0	47.6	51.6	57.4	61.7
55.5°	42.7	44.9	45.5	49.3	54.7	58.8
56°	40.8	42.9	43.4	47.0	52.1	56.0
56.5°	39.1	41.1	41.6	44.9	49.7	53.3
57°	37.5	39.3	39.8	43.0	47.4	50.7
57.5°	36.0	37.7	38.1	41.1	45.3	48.4
58°	34.4	36.1	36.6	39.4	43.3	46.1
58.5°	33.1	34.7	35.3	37.7	41.4	44.1
59°	31.7	33.4	33.9	36.1	39.6	42.1
59.5°	30.5	32.1	32.6	34.8	38.0	40.4
60°	29.3	30.8	31.3	33.5	36.4	38.6
60.5°	28.1	29.6	29.9	32.2	35.1	36.9
61°	27.0	28.4	28.7	30.9	33.8	35.5
61.5°	26.0	27.3	27.6	29.6	32.4	34.1
62°	25.0	26.3	26.6	28.5	31.1	32.7
62.5°	24.0	25.2	25.5	27.4	29.8	31.3
63°	23.0	24.2	24.5	26.3	28.6	29.9
63.5°	22.1	23.3	23.6	25.2	27.5	28.7
64°	21.3	22.4	22.6	24.3	26.3	27.5
64.5°	20.4	21.5	21.8	23.3	25.3	26.4
65°	19.6	20.7	20.9	22.4	24.3	25.3
65.5°	18.8	19.8	20.1	21.5	23.3	24.2
66°	18.1	19.0	19.2	20.7	22.4	23.3



TEST NUMBER: P775885

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	15.9	16.8	17.0	18.3	19.7	20.5
68°	15.3	16.1	16.3	17.5	18.9	19.6
68.5°	14.6	15.4	15.6	16.8	18.1	18.8
69°	14.0	14.8	15.0	16.1	17.3	18.0
69.5°	13.4	14.1	14.3	15.4	16.6	17.3
70°	12.8	13.5	13.7	14.8	15.9	16.5
70.5°	12.2	12.9	13.1	14.1	15.2	15.8
71°	11.6	12.3	12.5	13.5	14.5	15.1
71.5°	11.1	11.8	11.9	12.9	13.9	14.4
72°	10.6	11.2	11.3	12.3	13.2	13.8
72.5°	10.0	10.7	10.8	11.7	12.6	13.2
73°	9.5	10.1	10.3	11.2	12.0	12.6
73.5°	9.1	9.6	9.7	10.6	11.4	12.0
74°	8.5	9.1	9.2	10.1	10.9	11.4
74.5°	8.1	8.6	8.7	9.5	10.3	10.8
75°	7.6	8.1	8.3	9.0	9.8	10.3
75.5°	7.2	7.7	7.8	8.5	9.2	9.7
76°	6.7	7.2	7.3	8.1	8.8	9.2
76.5°	6.3	6.8	6.9	7.6	8.3	8.7
77°	5.9	6.3	6.4	7.1	7.8	8.2
77.5°	5.4	5.9	6.0	6.7	7.3	7.7
78°	5.1	5.5	5.6	6.2	6.8	7.3
78.5°	4.7	5.1	5.2	5.8	6.4	6.8
79°	4.3	4.7	4.8	5.4	5.9	6.4
79.5°	4.0	4.4	4.4	5.0	5.5	5.9
80°	3.6	4.0	4.1	4.6	5.1	5.5
80.5°	3.3	3.7	3.7	4.2	4.7	5.1
81°	2.9	3.3	3.4	3.9	4.3	4.7
81.5°	2.6	3.0	3.1	3.5	3.9	4.3
82°	2.3	2.7	2.8	3.2	3.6	4.0
82.5°	2.0	2.4	2.5	2.9	3.2	3.6
83°	1.7	2.1	2.1	2.5	2.9	3.3
83.5°	1.5	1.8	1.8	2.2	2.5	2.9
84°	1.2	1.5	1.6	1.9	2.2	2.6
84.5°	0.9	1.2	1.3	1.7	1.9	2.3
85°	0.7	1.0	1.0	1.4	1.6	2.0
85.5°	0.4	0.7	0.8	1.1	1.3	1.7
86°	0.2	0.5	0.5	0.9	1.1	1.4
86.5°	0.0	0.2	0.2	0.6	0.9	1.1
87°	0.0	0.0	0.0	0.4	0.7	0.9
87.5°	0.0	0.0	0.0	0.2	0.5	0.7
88°	0.0	0.0	0.0	0.0	0.3	0.5
88.5°	0.0	0.0	0.0	0.0	0.2	0.3



TEST NUMBER: P775885

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-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°	610.3	618.3	626.4	633.1	633.8	635.1	630.6	622.0	613.8	605.0	596.6
22°	607.4	615.8	624.0	630.9	631.5	632.9	628.1	619.1	610.9	601.7	593.3



44°	248.9	279.6	307.5	327.9	320.4	322.0	295.0	254.5	225.6	194.7	169.1
44.5°	234.3	264.5	291.5	311.9	304.4	306.9	278.5	239.2	211.3	181.5	157.4



66.5°	22.3	23.9	25.3	26.0	24.8	24.4	22.7	20.6	19.2	18.4	17.9
67°	21.4	22.9	24.2	25.0	23.8	23.5	21.8	19.8	18.4	17.6	17.1



89°	0.1	0.5	0.9	1.3	1.0	1.0	0.5	0.1	0.0	0.0	0.0
89.5°	0.0	0.3	0.7	1.0	0.8	0.7	0.3	0.0	0.0	0.0	0.0



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21.5°	589.7	590.0	589.5	595.5	603.7	610.3
22°	586.1	586.6	586.0	592.3	600.5	607.4



44°	154.5	168.3	168.9	187.6	218.9	248.9
44.5°	143.2	155.5	157.3	176.3	205.5	234.3



66.5°	17.3	18.3	18.5	19.8	21.4	22.3
67°	16.6	17.5	17.7	19.1	20.6	21.4

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

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(END OF REPORT)