

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: P775889

Luminaire Tested: HCDJBL510CSD-HCD8TRMW-1000lm-5000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P775889  
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-5000K  
Description: 8 INCH ROUND MEDIUM MATTE WHITE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1136.7 lumens  
Efficiency: N/A  
Efficacy: 113.7 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

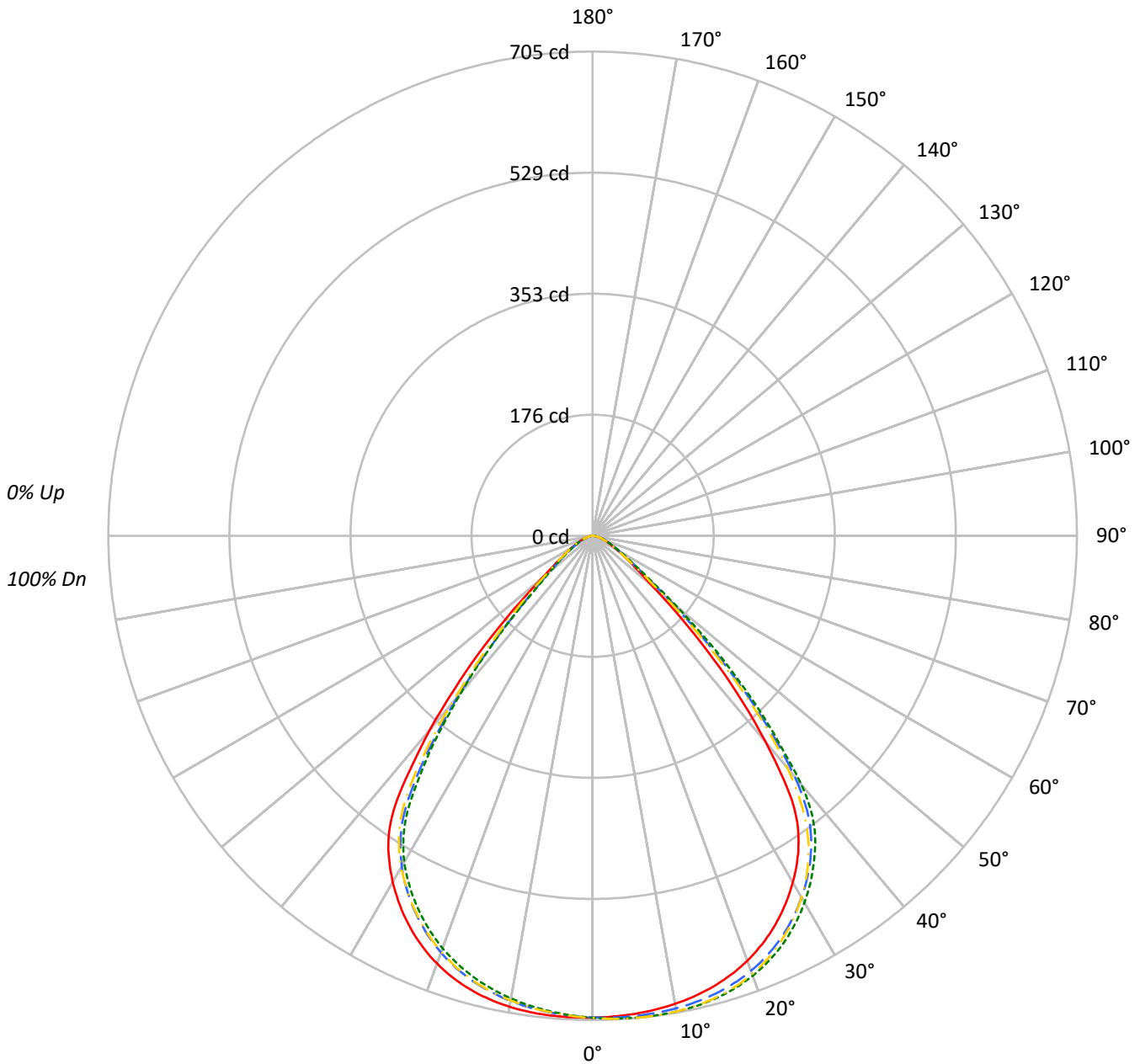
Input Watts (W): 10  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	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°	21423	21423	21423	21423
5°	21416	21591	21490	21309
10°	21453	21806	21589	21205
15°	21477	22024	21635	21047
20°	21394	22151	21531	20761
25°	21115	22085	21192	20222
30°	20549	21741	20517	19333
35°	19433	21017	19161	16895
40°	15603	18847	14647	11865
45°	10129	13285	9058	6597
50°	5367	7547	4669	3819
55°	3502	4008	2975	2667
60°	2510	2790	2155	2003
65°	1951	2153	1676	1597
70°	1571	1776	1348	1285
75°	1298	1522	1085	1014
80°	1037	1336	809	756
85°	736	1226	455	385

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 13557 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.6	5.9
10°-20°	192.3	16.9
20°-30°	288.5	25.4
30°-40°	312.3	27.5
40°-50°	177.9	15.6
50°-60°	59.0	5.2
60°-70°	26.1	2.3
70°-80°	11.4	1.0
80°-90°	2.5	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°	547.5	48.2
0°-40°	859.8	75.6
0°-60°	1096.7	96.5
0°-90°	1136.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1136.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	702	702	702	702	702	
5°	699	704	701	695	699	66
15°	680	697	684	666	680	192
25°	627	656	629	600	627	288
35°	521	564	514	453	521	317
45°	235	308	210	153	235	183
55°	66	75	56	50	66	61
65°	27	30	23	22	27	27
75°	11	13	9	9	11	12
85°	2	4	1	1	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°	701.7	701.7	701.7	701.7	701.7	701.7	701.7	701.7	701.7	701.7	701.7
0.5°	701.4	701.6	701.6	701.7	702.2	702.5	702.8	702.4	701.7	701.4	701.1
1°	701.3	701.6	701.7	701.9	702.6	702.9	703.1	702.6	701.8	701.3	700.8
1.5°	701.1	701.5	701.9	702.3	702.9	703.3	703.4	702.8	701.8	701.2	700.5
2°	700.9	701.5	702.1	702.6	703.2	703.8	703.8	703.0	701.8	701.0	700.0
2.5°	700.7	701.4	702.2	702.8	703.5	704.0	704.0	703.1	701.8	700.8	699.6
3°	700.4	701.3	702.2	703.0	703.9	704.4	704.2	703.2	701.8	700.5	699.2
3.5°	699.9	701.2	702.2	703.2	704.1	704.6	704.5	703.2	701.6	700.2	698.6
4°	699.6	701.0	702.2	703.3	704.3	704.8	704.6	703.3	701.5	699.9	698.1
4.5°	699.3	700.7	702.1	703.4	704.4	705.0	704.7	703.3	701.4	699.5	697.6
5°	698.8	700.4	701.9	703.4	704.5	705.1	704.8	703.2	701.2	699.1	696.9
5.5°	698.3	700.1	701.8	703.5	704.5	705.3	704.8	703.1	701.0	698.6	696.3
6°	697.8	699.7	701.6	703.5	704.6	705.4	704.9	703.0	700.7	698.1	695.6
6.5°	697.3	699.4	701.4	703.4	704.6	705.4	704.9	702.8	700.4	697.6	694.8
7°	696.7	698.9	701.2	703.3	704.6	705.4	704.8	702.6	699.9	696.9	694.0
7.5°	696.1	698.4	700.9	703.2	704.5	705.4	704.7	702.4	699.5	696.3	693.1
8°	695.3	697.9	700.6	703.0	704.4	705.3	704.5	702.1	699.0	695.7	692.1
8.5°	694.6	697.4	700.1	702.8	704.2	705.1	704.3	701.6	698.4	694.8	691.2
9°	693.8	696.7	699.7	702.5	704.0	705.0	704.1	701.2	697.8	694.1	690.1
9.5°	693.0	696.0	699.3	702.3	703.8	704.7	703.8	700.7	697.2	693.1	688.9
10°	692.0	695.2	698.6	701.8	703.4	704.5	703.3	700.1	696.4	692.1	687.7
10.5°	691.1	694.5	698.1	701.5	703.0	704.1	702.9	699.5	695.6	691.1	686.5
11°	690.1	693.6	697.5	701.0	702.6	703.7	702.4	698.9	694.6	689.9	685.2
11.5°	688.9	692.7	696.8	700.6	702.2	703.2	701.8	698.1	693.6	688.8	683.8
12°	687.8	691.7	696.1	700.0	701.6	702.7	701.2	697.3	692.6	687.6	682.2
12.5°	686.6	690.8	695.2	699.4	701.0	702.2	700.5	696.3	691.4	686.2	680.7
13°	685.2	689.6	694.4	698.6	700.4	701.5	699.7	695.2	690.2	684.7	679.0
13.5°	683.9	688.4	693.4	698.0	699.5	700.8	698.8	694.2	688.9	683.2	677.3
14°	682.6	687.1	692.5	697.2	698.8	699.9	697.8	693.0	687.6	681.6	675.4
14.5°	681.1	685.9	691.4	696.3	697.8	699.1	696.8	691.7	686.1	679.9	673.6
15°	679.5	684.6	690.3	695.3	696.8	698.1	695.8	690.3	684.5	678.0	671.6
15.5°	677.8	683.1	689.1	694.3	695.7	697.0	694.6	688.9	682.8	676.1	669.4
16°	675.9	681.6	687.8	693.1	694.6	695.9	693.3	687.3	681.0	674.0	667.2
16.5°	674.1	680.0	686.4	691.9	693.3	694.7	691.8	685.6	679.0	671.9	665.0
17°	672.1	678.3	685.0	690.7	691.9	693.4	690.3	683.8	677.1	669.7	662.4
17.5°	670.2	676.5	683.4	689.3	690.5	692.0	688.7	681.9	675.0	667.4	660.0
18°	668.1	674.7	681.8	687.7	689.1	690.5	687.0	679.9	672.7	664.9	657.3
18.5°	665.8	672.6	680.0	686.2	687.3	688.8	685.1	677.9	670.4	662.3	654.6
19°	663.4	670.6	678.2	684.5	685.5	687.0	683.2	675.6	668.1	659.6	651.8
19.5°	660.9	668.5	676.3	682.7	683.7	685.3	681.3	673.3	665.4	656.9	648.7
20°	658.5	666.1	674.0	680.7	681.8	683.3	679.1	670.7	662.7	653.9	645.6
20.5°	655.8	663.8	672.0	678.7	679.7	681.2	676.8	668.2	660.0	650.9	642.5
21°	653.0	661.3	669.8	676.7	677.5	678.9	674.3	665.4	657.0	647.7	639.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	644.1	653.1	662.2	669.6	670.2	671.7	666.4	656.6	647.5	637.6	628.3
23°	640.9	650.3	659.5	667.0	667.6	668.9	663.5	653.2	644.1	633.9	624.4
23.5°	637.5	647.3	656.7	664.3	664.9	666.2	660.3	649.9	640.4	630.0	620.4
24°	634.1	644.1	653.6	661.5	661.9	663.3	657.2	646.4	636.7	626.1	616.4
24.5°	630.4	640.9	650.7	658.5	658.8	660.2	653.9	642.8	633.0	622.1	612.1
25°	626.8	637.4	647.4	655.4	655.6	657.0	650.5	639.1	629.1	617.9	607.7
25.5°	623.0	633.9	644.1	652.2	652.3	653.7	646.9	635.1	624.9	613.4	603.3
26°	618.9	630.2	640.5	648.9	649.0	650.3	643.1	631.1	620.5	608.9	598.6
26.5°	614.9	626.4	637.1	645.4	645.3	646.6	639.2	626.8	616.3	604.5	594.0
27°	610.7	622.6	633.3	641.8	641.6	642.8	635.2	622.6	611.8	599.8	589.0
27.5°	606.5	618.4	629.4	638.1	637.8	639.0	631.1	618.1	607.2	595.0	584.0
28°	602.1	614.4	625.5	634.3	633.9	634.9	626.8	613.6	602.4	590.2	578.8
28.5°	597.4	610.0	621.3	630.2	629.7	630.9	622.3	608.8	597.5	584.9	573.5
29°	592.7	605.6	617.1	626.2	625.5	626.5	617.7	603.9	592.5	579.7	567.9
29.5°	587.8	600.9	612.6	622.0	621.2	622.0	613.0	598.8	587.3	574.3	561.9
30°	582.9	596.3	608.3	617.5	616.7	617.4	608.1	593.7	582.0	568.8	555.7
30.5°	577.6	591.5	603.5	613.2	612.0	612.8	603.2	588.5	576.3	562.9	549.2
31°	572.4	586.5	598.8	608.5	607.2	608.0	597.9	582.8	570.9	556.8	542.6
31.5°	567.0	581.1	593.9	603.7	602.2	602.8	592.6	576.9	564.8	550.6	535.6
32°	561.5	576.1	588.8	598.7	597.5	597.8	587.0	570.9	558.7	544.2	528.2
32.5°	555.6	570.6	583.6	593.8	592.2	592.5	581.0	564.6	552.4	537.2	520.4
33°	549.6	564.9	578.3	588.7	586.9	587.0	574.8	558.2	545.9	529.7	511.8
33.5°	543.0	559.2	572.9	583.3	581.3	581.3	568.6	551.3	538.8	521.6	502.4
34°	536.3	553.0	567.1	578.0	575.8	575.3	561.8	544.1	531.3	513.0	491.7
34.5°	529.1	546.3	561.0	572.4	569.9	569.1	555.1	536.6	523.2	502.4	480.0
35°	521.4	539.4	554.8	566.6	563.9	562.7	547.9	528.5	514.1	491.2	467.1
35.5°	512.8	532.0	548.0	560.5	557.8	556.1	540.3	519.2	503.5	479.0	452.9
36°	503.9	524.1	541.0	554.2	551.5	549.2	531.9	509.0	492.2	465.2	437.9
36.5°	493.8	515.8	533.5	547.9	544.6	541.7	522.9	498.2	479.3	450.1	422.4
37°	482.1	506.1	525.6	540.8	537.3	533.5	513.3	487.0	464.5	434.4	406.7
37.5°	468.3	495.3	516.8	533.0	529.0	524.4	502.8	474.3	448.1	417.8	390.0
38°	453.3	483.2	506.8	524.4	520.0	514.9	491.7	461.4	431.2	400.6	373.1
38.5°	437.8	469.4	495.7	514.9	510.0	504.4	480.4	447.5	414.1	383.1	355.8
39°	422.2	454.4	484.0	504.3	499.3	493.4	468.0	433.4	398.3	365.6	338.7
39.5°	406.9	439.3	471.2	493.2	486.9	480.8	455.1	417.7	383.0	348.7	321.5
40°	391.5	424.6	457.5	480.6	472.9	468.1	441.1	402.2	367.5	332.2	304.2
40.5°	375.4	410.4	442.6	467.1	456.2	454.1	427.0	385.6	351.5	315.5	287.3
41°	359.4	395.5	426.9	452.5	439.1	440.1	412.4	369.0	334.7	298.5	270.6
41.5°	343.4	380.2	410.9	436.9	421.5	425.0	397.6	352.4	318.2	281.5	254.5
42°	327.3	364.2	394.8	420.2	405.0	409.0	382.3	336.5	301.8	265.8	238.1
42.5°	311.3	347.4	378.3	402.8	389.7	392.4	365.7	319.8	285.8	250.0	222.3
43°	295.8	330.7	361.2	384.8	374.3	376.0	348.5	303.4	270.5	235.1	207.7
43.5°	280.5	314.2	344.4	367.3	358.1	359.2	331.4	286.9	255.4	220.7	193.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	234.6	265.7	292.9	314.0	307.7	310.2	279.2	239.0	209.8	180.3	155.9
45.5°	219.8	249.7	275.6	297.5	291.4	294.0	261.5	223.5	195.4	167.4	144.8
46°	205.4	233.8	258.1	280.4	275.7	277.6	245.7	208.2	181.5	155.6	135.0
46.5°	191.4	218.2	241.6	264.5	260.2	261.2	229.0	193.3	168.4	143.7	125.7
47°	177.8	203.1	225.2	248.7	244.8	245.1	213.7	179.2	156.1	133.1	117.3
47.5°	164.1	188.2	210.5	233.7	229.1	229.1	198.9	165.5	144.1	123.4	109.5
48°	152.1	174.3	196.0	219.1	213.7	213.8	184.9	152.6	132.8	114.6	102.6
48.5°	140.6	161.1	182.1	205.4	198.9	198.7	170.7	140.2	122.2	106.2	97.3
49°	130.1	148.7	169.4	191.4	184.8	183.8	157.8	129.1	112.6	100.3	91.9
49.5°	120.6	137.8	157.5	178.3	171.6	169.7	145.8	118.9	104.1	94.3	86.4
50°	113.0	127.5	146.5	165.4	158.9	155.8	134.6	109.9	98.3	88.3	81.0
50.5°	106.0	118.5	136.0	153.0	146.6	143.3	123.6	101.9	92.4	82.4	75.6
51°	99.7	110.5	126.5	141.6	134.4	131.5	114.1	95.8	86.5	76.5	72.1
51.5°	94.0	103.8	117.8	131.1	123.9	121.4	105.4	89.6	80.7	72.9	68.9
52°	89.0	97.5	109.8	121.3	113.9	111.9	99.2	83.4	74.9	69.7	65.9
52.5°	84.2	92.1	102.7	112.4	105.0	103.5	93.0	77.4	71.5	66.6	62.7
53°	79.6	87.0	96.0	104.5	99.0	97.1	87.0	73.4	68.3	63.4	59.7
53.5°	75.4	82.3	90.0	97.4	93.1	90.8	80.8	70.1	65.1	60.3	56.8
54°	72.3	77.8	84.4	90.7	87.2	84.4	74.7	66.9	62.0	57.3	54.1
54.5°	69.1	74.2	79.5	84.9	81.2	78.1	71.2	63.6	58.9	54.6	51.6
55°	65.8	70.8	75.2	79.6	75.3	74.2	67.9	60.4	55.9	51.9	49.1
55.5°	62.7	67.6	71.8	75.2	71.7	70.9	64.6	57.4	53.2	49.4	47.0
56°	59.7	64.4	68.4	71.7	68.5	67.5	61.3	54.5	50.7	47.2	44.9
56.5°	56.8	61.3	65.3	68.4	65.1	64.2	58.2	51.8	48.4	45.1	42.9
57°	54.0	58.3	62.0	65.1	61.8	61.0	55.3	49.3	46.0	43.2	41.1
57.5°	51.6	55.4	59.0	61.9	58.7	57.8	52.5	47.1	44.0	41.3	39.4
58°	49.1	52.8	56.1	58.7	55.7	54.9	50.0	44.9	42.1	39.5	37.8
58.5°	47.0	50.3	53.4	55.8	53.0	52.2	47.6	42.8	40.3	37.9	36.2
59°	44.9	48.1	50.8	53.1	50.4	49.7	45.4	40.9	38.6	36.3	34.7
59.5°	43.1	45.9	48.5	50.5	48.0	47.3	43.3	39.2	36.9	34.8	33.4
60°	41.1	43.9	46.2	48.2	45.7	45.1	41.3	37.6	35.3	33.5	32.1
60.5°	39.3	42.0	44.2	45.9	43.7	43.1	39.6	36.0	33.9	32.1	30.8
61°	37.8	40.3	42.3	43.8	41.8	41.1	37.9	34.5	32.4	30.8	29.6
61.5°	36.3	38.5	40.5	41.9	40.0	39.4	36.3	33.1	31.0	29.6	28.5
62°	34.8	37.1	38.8	40.1	38.3	37.6	34.8	31.8	29.7	28.3	27.4
62.5°	33.4	35.6	37.4	38.3	36.7	36.1	33.4	30.5	28.6	27.3	26.3
63°	31.9	34.2	35.9	36.9	35.1	34.5	32.1	29.3	27.4	26.2	25.3
63.5°	30.6	32.7	34.5	35.4	33.7	33.1	30.8	28.1	26.3	25.1	24.3
64°	29.3	31.3	33.0	34.0	32.3	31.9	29.5	27.0	25.1	24.1	23.3
64.5°	28.1	30.1	31.5	32.6	31.0	30.6	28.5	25.9	24.2	23.2	22.4
65°	27.0	28.8	30.4	31.2	29.8	29.4	27.3	24.8	23.2	22.2	21.5
65.5°	25.8	27.7	29.1	30.1	28.6	28.2	26.2	23.9	22.3	21.3	20.7
66°	24.8	26.5	28.0	28.9	27.5	27.2	25.1	22.9	21.3	20.5	19.8





TEST NUMBER: P775889

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	21.8	23.4	24.8	25.6	24.4	24.1	22.4	20.2	18.8	18.0	17.5
68°	20.9	22.5	23.9	24.6	23.4	23.1	21.5	19.4	18.0	17.3	16.7
68.5°	20.0	21.5	22.9	23.7	22.5	22.2	20.6	18.5	17.3	16.5	16.1
69°	19.2	20.7	22.0	22.7	21.6	21.3	19.8	17.8	16.5	15.8	15.3
69.5°	18.4	19.8	21.1	21.7	20.8	20.5	19.0	17.1	15.8	15.1	14.7
70°	17.6	19.0	20.2	20.9	19.9	19.6	18.2	16.3	15.1	14.4	14.1
70.5°	16.8	18.2	19.4	20.0	19.1	18.9	17.5	15.6	14.4	13.7	13.4
71°	16.1	17.4	18.6	19.3	18.3	18.1	16.7	14.9	13.7	13.1	12.8
71.5°	15.3	16.6	17.9	18.4	17.6	17.4	16.1	14.3	13.1	12.5	12.1
72°	14.7	16.0	17.2	17.7	16.8	16.6	15.3	13.6	12.5	11.8	11.6
72.5°	14.1	15.2	16.4	16.9	16.2	15.9	14.7	13.0	11.9	11.3	11.0
73°	13.4	14.6	15.7	16.3	15.5	15.2	14.1	12.4	11.3	10.8	10.4
73.5°	12.8	13.9	15.0	15.6	14.8	14.6	13.4	11.8	10.8	10.1	9.9
74°	12.1	13.2	14.4	14.9	14.2	14.0	12.8	11.2	10.2	9.6	9.4
74.5°	11.5	12.6	13.6	14.3	13.5	13.3	12.3	10.7	9.7	9.1	9.0
75°	11.0	12.0	13.1	13.6	12.9	12.7	11.6	10.1	9.2	8.6	8.4
75.5°	10.3	11.4	12.5	13.0	12.4	12.1	11.1	9.6	8.6	8.1	7.9
76°	9.8	10.8	11.8	12.5	11.7	11.6	10.6	9.1	8.1	7.6	7.5
76.5°	9.3	10.2	11.3	11.8	11.2	11.0	10.0	8.5	7.7	7.1	6.9
77°	8.7	9.7	10.7	11.3	10.7	10.4	9.5	8.1	7.1	6.6	6.5
77.5°	8.2	9.2	10.1	10.7	10.1	9.9	9.0	7.6	6.7	6.2	6.0
78°	7.8	8.6	9.6	10.1	9.6	9.4	8.4	7.0	6.2	5.8	5.5
78.5°	7.2	8.1	9.1	9.7	9.1	9.0	8.0	6.6	5.8	5.3	5.1
79°	6.8	7.7	8.6	9.2	8.5	8.4	7.5	6.2	5.3	4.9	4.8
79.5°	6.3	7.1	8.1	8.6	8.1	8.0	6.9	5.8	5.0	4.5	4.4
80°	5.9	6.7	7.6	8.1	7.6	7.5	6.5	5.3	4.6	4.0	3.9
80.5°	5.4	6.2	7.1	7.7	7.1	6.9	6.1	4.9	4.2	3.7	3.6
81°	5.0	5.8	6.6	7.1	6.7	6.6	5.6	4.5	3.8	3.3	3.2
81.5°	4.6	5.3	6.2	6.7	6.2	6.1	5.2	4.0	3.4	3.0	2.9
82°	4.3	4.9	5.8	6.3	5.8	5.6	4.9	3.7	3.1	2.7	2.6
82.5°	3.8	4.5	5.3	5.9	5.4	5.3	4.5	3.3	2.8	2.3	2.2
83°	3.5	4.2	4.9	5.4	5.0	4.9	4.0	3.0	2.5	2.0	1.9
83.5°	3.1	3.7	4.6	5.0	4.6	4.5	3.7	2.7	2.1	1.7	1.7
84°	2.8	3.4	4.2	4.7	4.3	4.2	3.4	2.3	1.8	1.4	1.4
84.5°	2.5	3.0	3.8	4.3	3.8	3.7	3.1	2.0	1.5	1.1	1.2
85°	2.1	2.7	3.4	3.9	3.5	3.4	2.7	1.7	1.3	0.9	0.9
85.5°	1.8	2.3	3.1	3.6	3.2	3.1	2.3	1.4	1.0	0.6	0.6
86°	1.5	2.0	2.7	3.2	2.9	2.8	2.1	1.2	0.7	0.5	0.4
86.5°	1.2	1.7	2.3	2.9	2.6	2.5	1.8	1.0	0.5	0.3	0.2
87°	1.0	1.4	2.1	2.6	2.2	2.1	1.5	0.7	0.4	0.2	0.0
87.5°	0.7	1.1	1.8	2.2	1.9	1.8	1.3	0.5	0.2	0.1	0.0
88°	0.5	0.9	1.5	1.9	1.6	1.6	1.1	0.4	0.1	0.0	0.0
88.5°	0.3	0.6	1.3	1.6	1.4	1.3	0.7	0.2	0.0	0.0	0.0



TEST NUMBER: P775889

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.1	0.5	0.9	0.5	0.5	0.1	0.0	0.0	0.0	0.0



TEST NUMBER: P775889

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	701.7	701.7	701.7	701.7	701.7	701.7
0.5°	700.9	701.4	701.5	701.9	701.8	701.4
1°	700.5	700.9	701.0	701.5	701.5	701.3
1.5°	699.9	700.2	700.5	701.0	701.1	701.1
2°	699.4	699.7	699.8	700.5	700.8	700.9
2.5°	698.8	699.1	699.2	699.9	700.4	700.7
3°	698.2	698.4	698.5	699.3	699.8	700.4
3.5°	697.5	697.7	697.8	698.8	699.4	699.9
4°	696.8	696.9	697.2	698.1	699.0	699.6
4.5°	696.1	696.2	696.3	697.5	698.4	699.3
5°	695.2	695.3	695.4	696.7	697.9	698.8
5.5°	694.4	694.5	694.6	696.1	697.3	698.3
6°	693.4	693.4	693.6	695.2	696.6	697.8
6.5°	692.5	692.6	692.7	694.4	695.9	697.3
7°	691.4	691.5	691.7	693.5	695.2	696.7
7.5°	690.3	690.4	690.5	692.7	694.5	696.1
8°	689.3	689.2	689.5	691.6	693.6	695.3
8.5°	688.0	688.0	688.3	690.7	692.8	694.6
9°	686.8	686.7	687.0	689.6	691.9	693.8
9.5°	685.4	685.5	685.6	688.3	691.0	693.0
10°	684.0	684.0	684.4	687.1	689.9	692.0
10.5°	682.7	682.6	682.9	685.9	688.8	691.1
11°	681.1	681.1	681.4	684.6	687.7	690.1
11.5°	679.5	679.5	679.7	683.2	686.5	688.9
12°	677.8	677.8	678.1	681.7	685.2	687.8
12.5°	676.1	675.9	676.3	680.1	683.7	686.6
13°	674.2	674.1	674.3	678.4	682.3	685.2
13.5°	672.3	672.2	672.5	676.7	680.8	683.9
14°	670.3	670.2	670.5	674.9	679.3	682.6
14.5°	668.2	668.2	668.4	673.0	677.5	681.1
15°	666.0	665.9	666.2	670.9	675.7	679.5
15.5°	663.8	663.6	663.9	668.7	673.9	677.8
16°	661.3	661.3	661.5	666.5	671.9	675.9
16.5°	658.9	658.9	659.0	664.1	669.9	674.1
17°	656.2	656.3	656.4	661.7	667.6	672.1
17.5°	653.7	653.7	653.7	659.2	665.4	670.2
18°	650.8	651.0	650.9	656.4	662.9	668.1
18.5°	647.9	648.0	647.9	653.7	660.5	665.8
19°	644.9	645.0	644.9	650.7	657.8	663.4
19.5°	641.7	642.2	641.8	647.8	655.1	660.9
20°	638.5	639.0	638.4	644.5	652.2	658.5
20.5°	635.2	635.6	635.1	641.4	649.3	655.8
21°	631.7	632.1	631.6	638.0	646.3	653.0



TEST NUMBER: P775889

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	620.6	621.1	620.4	627.1	636.4	644.1
23°	616.6	617.2	616.4	623.4	632.8	640.9
23.5°	612.4	613.2	612.4	619.4	629.2	637.5
24°	608.2	609.0	608.2	615.3	625.3	634.1
24.5°	603.9	604.8	603.8	611.3	621.5	630.4
25°	599.3	600.3	599.3	606.8	617.4	626.8
25.5°	594.7	595.8	594.7	602.4	613.4	623.0
26°	589.8	591.1	590.2	597.8	609.1	618.9
26.5°	585.2	586.4	585.3	593.3	604.9	614.9
27°	580.0	581.4	580.3	588.5	600.3	610.7
27.5°	574.9	576.3	575.2	583.6	595.7	606.5
28°	569.6	571.1	569.9	578.4	591.0	602.1
28.5°	563.9	565.9	564.7	573.3	586.2	597.4
29°	557.8	560.2	559.2	568.1	581.2	592.7
29.5°	551.4	554.5	553.4	562.8	576.0	587.8
30°	544.9	548.4	547.2	557.3	570.9	582.9
30.5°	537.9	541.8	540.7	551.6	565.5	577.6
31°	530.7	535.0	533.7	545.4	560.1	572.4
31.5°	523.0	527.5	526.6	539.0	554.5	567.0
32°	514.7	519.6	519.2	532.1	548.3	561.5
32.5°	506.0	511.2	511.4	524.9	542.0	555.6
33°	496.5	502.0	503.1	517.3	535.3	549.6
33.5°	485.4	492.3	493.8	509.3	528.2	543.0
34°	472.8	481.0	483.5	500.5	520.9	536.3
34.5°	458.8	468.0	470.8	490.8	512.9	529.1
35°	444.2	453.3	456.3	479.7	504.5	521.4
35.5°	429.0	438.1	440.8	467.0	495.1	512.8
36°	413.5	423.5	424.2	453.2	484.1	503.9
36.5°	398.6	409.4	407.5	438.3	471.8	493.8
37°	383.6	394.7	391.1	423.0	457.9	482.1
37.5°	368.5	378.5	375.3	406.3	442.7	468.3
38°	352.9	361.7	360.0	389.2	426.9	453.3
38.5°	336.1	344.6	343.7	372.2	410.7	437.8
39°	319.5	328.3	327.6	355.2	394.4	422.2
39.5°	302.4	312.9	311.3	338.3	377.3	406.9
40°	286.0	297.7	295.4	320.8	360.7	391.5
40.5°	269.3	282.8	279.5	303.6	344.0	375.4
41°	253.1	267.3	264.5	286.8	327.7	359.4
41.5°	237.3	251.6	249.6	271.4	311.9	343.4
42°	221.6	236.0	234.6	255.8	295.9	327.3
42.5°	205.9	221.2	220.2	240.9	279.2	311.3
43°	190.9	207.2	206.3	226.7	263.5	295.8
43.5°	177.1	193.0	192.7	213.0	248.3	280.5



TEST NUMBER: P775889

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	141.4	152.8	156.4	175.9	205.2	234.6
45.5°	131.4	140.8	145.8	165.0	192.2	219.8
46°	122.2	130.0	135.9	154.6	179.8	205.4
46.5°	114.2	120.8	126.7	144.9	168.4	191.4
47°	107.2	113.0	118.3	135.8	157.2	177.8
47.5°	100.7	106.0	110.7	127.0	147.0	164.1
48°	95.7	100.1	103.9	118.9	137.3	152.1
48.5°	90.8	94.7	97.8	111.6	128.5	140.6
49°	85.8	89.8	92.1	104.6	120.2	130.1
49.5°	80.8	84.9	86.9	98.3	112.4	120.6
50°	75.9	80.4	81.9	92.1	105.4	113.0
50.5°	72.6	76.3	77.6	86.5	98.9	106.0
51°	69.4	72.9	73.9	81.4	92.9	99.7
51.5°	66.3	69.8	70.7	76.8	87.3	94.0
52°	63.2	66.7	67.6	73.2	82.2	89.0
52.5°	60.2	63.6	64.5	70.1	77.7	84.2
53°	57.3	60.5	61.4	66.9	74.0	79.6
53.5°	54.6	57.8	58.4	63.7	70.8	75.4
54°	52.1	55.0	55.6	60.6	67.5	72.3
54.5°	49.8	52.4	53.2	57.8	64.3	69.1
55°	47.5	50.1	50.7	55.0	61.2	65.8
55.5°	45.5	47.8	48.5	52.5	58.3	62.7
56°	43.5	45.7	46.2	50.1	55.5	59.7
56.5°	41.7	43.8	44.3	47.8	53.0	56.8
57°	40.0	41.9	42.4	45.8	50.5	54.0
57.5°	38.4	40.2	40.6	43.8	48.3	51.6
58°	36.7	38.5	39.0	42.0	46.1	49.1
58.5°	35.3	37.0	37.6	40.2	44.1	47.0
59°	33.8	35.6	36.1	38.5	42.2	44.9
59.5°	32.5	34.2	34.7	37.1	40.5	43.1
60°	31.2	32.8	33.4	35.7	38.8	41.1
60.5°	29.9	31.5	31.9	34.3	37.4	39.3
61°	28.8	30.3	30.6	32.9	36.0	37.8
61.5°	27.7	29.1	29.4	31.5	34.5	36.3
62°	26.6	28.0	28.3	30.4	33.1	34.8
62.5°	25.6	26.9	27.2	29.2	31.8	33.4
63°	24.5	25.8	26.1	28.0	30.5	31.9
63.5°	23.6	24.8	25.1	26.9	29.3	30.6
64°	22.7	23.9	24.1	25.9	28.0	29.3
64.5°	21.7	22.9	23.2	24.8	27.0	28.1
65°	20.9	22.1	22.3	23.9	25.9	27.0
65.5°	20.0	21.1	21.4	22.9	24.8	25.8
66°	19.3	20.2	20.5	22.1	23.9	24.8



TEST NUMBER: P775889

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	16.9	17.9	18.1	19.5	21.0	21.8
68°	16.3	17.2	17.4	18.6	20.1	20.9
68.5°	15.6	16.4	16.6	17.9	19.3	20.0
69°	14.9	15.8	16.0	17.2	18.4	19.2
69.5°	14.3	15.0	15.2	16.4	17.7	18.4
70°	13.6	14.4	14.6	15.8	16.9	17.6
70.5°	13.0	13.7	14.0	15.0	16.2	16.8
71°	12.4	13.1	13.3	14.4	15.5	16.1
71.5°	11.8	12.6	12.7	13.7	14.8	15.3
72°	11.3	11.9	12.0	13.1	14.1	14.7
72.5°	10.7	11.4	11.5	12.5	13.4	14.1
73°	10.1	10.8	11.0	11.9	12.8	13.4
73.5°	9.7	10.2	10.3	11.3	12.1	12.8
74°	9.1	9.7	9.8	10.8	11.6	12.1
74.5°	8.6	9.2	9.3	10.1	11.0	11.5
75°	8.1	8.6	8.8	9.6	10.4	11.0
75.5°	7.7	8.2	8.3	9.1	9.8	10.3
76°	7.1	7.7	7.8	8.6	9.4	9.8
76.5°	6.7	7.2	7.4	8.1	8.8	9.3
77°	6.3	6.7	6.8	7.6	8.3	8.7
77.5°	5.8	6.3	6.4	7.1	7.8	8.2
78°	5.4	5.9	6.0	6.6	7.2	7.8
78.5°	5.0	5.4	5.5	6.2	6.8	7.2
79°	4.6	5.0	5.1	5.8	6.3	6.8
79.5°	4.3	4.7	4.7	5.3	5.9	6.3
80°	3.8	4.3	4.4	4.9	5.4	5.9
80.5°	3.5	3.9	3.9	4.5	5.0	5.4
81°	3.1	3.5	3.6	4.2	4.6	5.0
81.5°	2.8	3.2	3.3	3.7	4.2	4.6
82°	2.5	2.9	3.0	3.4	3.8	4.3
82.5°	2.1	2.6	2.7	3.1	3.4	3.8
83°	1.8	2.2	2.2	2.7	3.1	3.5
83.5°	1.6	1.9	1.9	2.3	2.7	3.1
84°	1.3	1.6	1.7	2.0	2.3	2.8
84.5°	1.0	1.3	1.4	1.8	2.0	2.5
85°	0.7	1.1	1.1	1.5	1.7	2.1
85.5°	0.4	0.7	0.9	1.2	1.4	1.8
86°	0.2	0.5	0.5	1.0	1.2	1.5
86.5°	0.0	0.2	0.2	0.6	1.0	1.2
87°	0.0	0.0	0.0	0.4	0.7	1.0
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: P775889

CATALOG NUMBER: HCDJBL510CSD-HCD8TRMW-1000lm-5000K

**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°	650.2	658.7	667.3	674.5	675.2	676.6	671.8	662.6	653.9	644.5	635.6
22°	647.1	656.0	664.8	672.1	672.7	674.2	669.1	659.5	650.8	641.0	632.0



44°	265.1	297.9	327.6	349.3	341.3	343.0	314.3	271.1	240.3	207.4	180.1
44.5°	249.6	281.8	310.5	332.3	324.3	326.9	296.7	254.8	225.1	193.3	167.6



66.5°	23.8	25.5	27.0	27.7	26.4	26.0	24.2	22.0	20.5	19.6	19.1
67°	22.8	24.4	25.8	26.6	25.4	25.0	23.2	21.1	19.6	18.8	18.2



89°	0.1	0.5	1.0	1.4	1.1	1.1	0.5	0.1	0.0	0.0	0.0
89.5°	0.0	0.3	0.7	1.1	0.9	0.7	0.3	0.0	0.0	0.0	0.0



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21.5°	628.2	628.5	628.0	634.4	643.1	650.2
22°	624.4	624.9	624.3	631.0	639.7	647.1



44°	164.5	179.2	179.9	199.8	233.2	265.1
44.5°	152.5	165.6	167.5	187.8	218.9	249.6



66.5°	18.4	19.5	19.7	21.1	22.8	23.8
67°	17.7	18.6	18.9	20.4	22.0	22.8

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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)