

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: P775871

Luminaire Tested: HCDJBL510CSD-HCD8TRH-1000lm-3000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P775871
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-HCD8TRH-1000lm-3000K
Description: 8 INCH ROUND MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

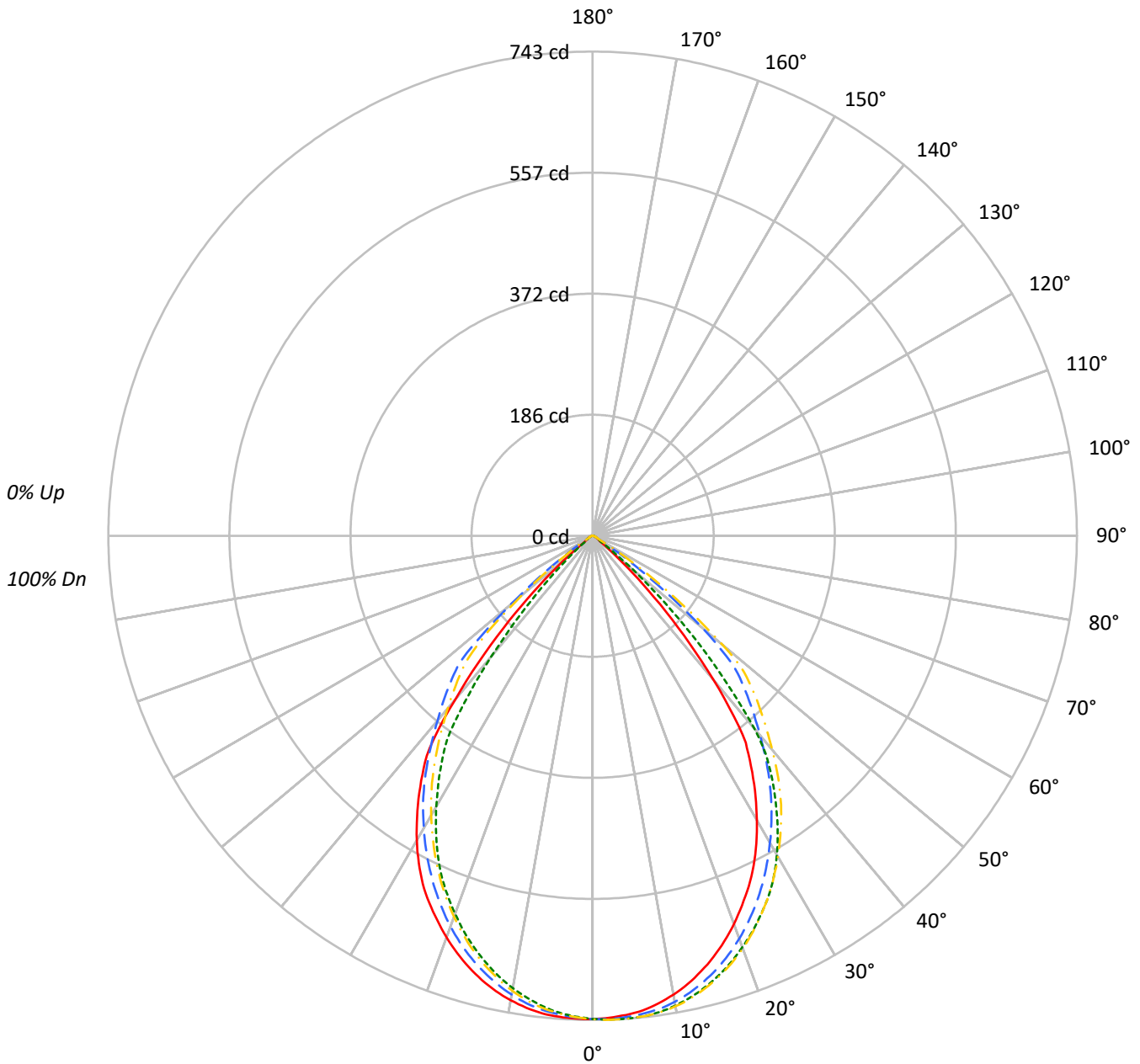
Lumens per Lamp: N/A
Luminaire Lumens: 1027.8 lumens
Efficiency: N/A
Efficacy: 102.8 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.15
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	113	110	107	104	110	107	105	103	103	101	99	100	98	97	96	95	94	92					92			
2	106	101	96	92	104	99	95	91	96	92	89	92	90	87	90	87	85	84					84			
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76					76			
4	94	85	79	74	92	84	78	73	82	76	72	79	75	72	78	74	71	69					69			
5	88	78	72	67	86	77	71	66	75	70	66	74	69	65	72	68	65	63					63			
6	83	72	66	61	81	72	65	60	70	64	60	68	63	60	67	63	59	57					57			
7	78	67	60	55	76	66	60	55	65	59	55	64	58	55	62	58	54	53					53			
8	73	62	55	51	72	62	55	51	60	55	50	59	54	50	58	54	50	48					48			
9	69	58	51	47	68	57	51	47	56	51	46	56	50	46	55	50	46	45					45			
10	65	54	48	43	64	54	47	43	53	47	43	52	47	43	51	46	43	41					41			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	22641	22641	22641	22641
5°	22529	22752	22639	22381
10°	22163	22693	22436	21856
15°	21518	22381	21995	21082
20°	20598	21833	21300	20049
25°	19417	21071	20404	18753
30°	17764	19929	19012	16911
35°	15665	18184	17085	14714
40°	11474	15364	13092	9585
45°	5777	9356	7228	4227
50°	1762	3880	2375	1211
55°	649	735	649	564
60°	501	550	501	427
65°	390	419	383	332
70°	312	339	303	268
75°	248	271	236	201
80°	193	229	193	158
85°	140	210	140	105

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 15375 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.8	6.8
10°-20°	193.8	18.9
20°-30°	271.9	26.5
30°-40°	279.2	27.2
40°-50°	170.7	16.6
50°-60°	33.2	3.2
60°-70°	6.0	0.6
70°-80°	2.7	0.3
80°-90°	0.6	0.1
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°	535.5	52.1
0°-40°	814.7	79.3
0°-60°	1018.5	99.1
0°-90°	1027.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1027.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	742	742	742	742	742	
5°	735	742	739	730	735	70
15°	681	708	696	667	681	191
25°	576	626	606	557	576	264
35°	420	488	458	395	420	257
45°	134	217	167	98	134	108
55°	12	14	12	11	12	13
65°	5	6	5	5	5	5
75°	2	2	2	2	2	2
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°	741.6	741.6	741.6	741.6	741.6	741.6	741.6	741.6	741.6	741.6	741.6
0.5°	741.4	741.3	741.8	742.2	741.9	742.2	742.4	742.4	741.7	741.2	741.2
1°	741.0	741.2	741.8	742.5	742.3	742.6	742.8	742.6	741.7	740.9	740.8
1.5°	740.6	741.0	741.8	742.7	742.6	743.0	743.1	742.7	741.6	740.6	740.3
2°	740.0	740.7	741.8	742.8	742.9	743.2	743.3	742.7	741.4	740.2	739.6
2.5°	739.4	740.3	741.6	742.8	743.0	743.4	743.3	742.7	741.2	739.6	739.0
3°	738.7	739.7	741.3	742.6	743.0	743.4	743.3	742.6	740.8	739.1	738.2
3.5°	737.9	739.1	740.9	742.3	743.0	743.4	743.2	742.3	740.4	738.4	737.4
4°	737.1	738.5	740.4	742.0	742.8	743.2	743.0	742.1	739.9	737.8	736.5
4.5°	736.2	737.8	739.7	741.6	742.6	743.0	742.7	741.8	739.4	737.1	735.4
5°	735.1	737.0	739.1	741.2	742.4	742.7	742.4	741.3	738.7	736.2	734.3
5.5°	733.8	736.0	738.3	740.7	742.0	742.4	742.0	740.7	738.0	735.3	733.1
6°	732.4	734.8	737.6	740.0	741.6	742.0	741.5	740.0	737.0	734.1	731.7
6.5°	730.8	733.4	736.7	739.3	741.0	741.5	741.0	739.1	735.8	732.8	730.2
7°	728.9	732.0	735.7	738.4	740.2	740.8	740.4	738.1	734.4	731.4	728.5
7.5°	727.0	730.3	734.5	737.3	739.1	739.9	739.5	736.8	733.0	729.6	726.7
8°	724.7	728.4	733.3	736.1	738.0	738.9	738.6	735.6	731.5	728.0	724.6
8.5°	722.4	726.3	731.8	734.7	736.7	737.7	737.5	734.1	729.6	726.1	722.5
9°	720.1	724.2	730.2	733.2	735.3	736.5	736.3	732.5	727.8	723.9	720.2
9.5°	717.4	721.9	728.3	731.6	733.7	734.9	734.8	730.8	725.8	721.8	717.7
10°	714.9	719.6	726.3	729.8	732.0	733.4	733.2	728.9	723.7	719.5	715.1
10.5°	712.1	717.1	724.1	727.9	730.1	731.8	731.6	727.1	721.6	717.1	712.3
11°	709.1	714.5	721.8	725.9	728.1	729.8	729.7	725.1	719.2	714.6	709.5
11.5°	706.1	711.8	719.3	723.6	726.1	727.8	727.7	722.9	716.8	711.9	706.5
12°	702.8	709.0	716.7	721.4	723.9	725.8	725.5	720.7	714.2	709.1	703.4
12.5°	699.6	706.1	714.0	718.9	721.6	723.6	723.1	718.3	711.5	706.2	700.2
13°	696.1	703.0	711.2	716.5	719.2	721.4	720.8	715.8	708.7	703.1	696.9
13.5°	692.4	699.9	708.1	713.8	716.6	718.9	718.2	713.2	705.7	700.0	693.5
14°	688.6	696.5	705.1	711.1	713.9	716.4	715.5	710.5	702.6	696.7	689.9
14.5°	684.7	692.8	701.8	708.1	711.1	713.6	712.7	707.5	699.2	693.1	686.3
15°	680.8	689.3	698.4	705.0	708.1	710.8	709.8	704.6	695.9	689.6	682.5
15.5°	676.5	685.5	695.0	701.7	705.1	707.7	706.7	701.4	692.4	685.9	678.6
16°	672.2	681.5	691.4	698.4	701.9	704.7	703.5	698.0	688.7	682.0	674.6
16.5°	667.9	677.5	687.6	695.1	698.5	701.5	700.4	694.5	685.0	678.0	670.4
17°	663.4	673.4	683.7	691.5	695.1	698.1	696.9	691.1	681.2	673.8	666.0
17.5°	658.8	669.2	679.7	687.6	691.5	694.6	693.3	687.3	677.1	669.7	661.6
18°	654.1	664.7	675.6	683.7	687.8	691.0	689.8	683.4	673.0	665.4	657.1
18.5°	649.2	660.1	671.3	679.8	683.9	687.2	685.9	679.6	668.7	660.9	652.3
19°	644.2	655.5	666.9	675.7	680.1	683.2	681.9	675.5	664.5	656.4	647.6
19.5°	639.2	650.7	662.4	671.4	676.1	679.3	677.9	671.3	660.1	651.7	642.7
20°	634.0	645.8	657.8	667.2	672.0	675.1	673.7	667.0	655.6	647.0	637.7
20.5°	628.6	640.6	653.1	662.7	667.8	671.0	669.5	662.5	650.9	642.0	632.6
21°	623.0	635.4	648.3	658.2	663.4	666.6	665.1	658.0	646.3	637.1	627.4



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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°	606.1	619.2	633.1	644.1	650.1	653.1	651.2	644.1	631.4	621.7	611.1
23°	600.3	613.4	627.9	639.2	645.3	648.3	646.4	639.2	626.4	616.4	605.5
23.5°	594.5	607.7	622.6	634.2	640.4	643.7	641.4	634.1	621.4	610.9	599.8
24°	588.6	601.8	617.0	629.1	635.6	638.7	636.3	629.0	616.3	605.4	594.1
24.5°	582.6	596.0	611.4	623.9	630.6	633.6	631.1	623.9	611.1	599.8	588.2
25°	576.4	590.0	605.7	618.5	625.5	628.4	626.0	618.6	605.7	594.1	582.0
25.5°	569.9	584.0	600.0	613.2	620.5	623.3	620.6	613.3	600.1	588.4	576.0
26°	563.2	578.0	594.2	607.6	615.4	617.9	615.2	608.0	594.2	582.7	569.9
26.5°	556.3	571.8	588.2	602.2	610.0	612.4	609.6	602.5	588.0	576.6	563.7
27°	549.3	565.4	582.1	596.6	604.3	606.9	604.1	596.9	581.5	570.5	557.4
27.5°	542.1	558.7	575.9	590.8	598.4	601.5	598.4	591.1	574.9	564.2	550.8
28°	534.7	551.7	569.7	584.9	592.1	595.9	592.5	584.9	568.2	557.4	544.4
28.5°	527.3	544.8	563.5	579.0	585.7	590.0	586.6	578.6	561.2	550.6	538.0
29°	519.4	537.6	556.9	572.8	579.2	583.9	580.8	572.1	554.2	543.8	531.4
29.5°	511.8	530.5	550.6	566.3	572.4	577.6	574.7	565.5	546.7	536.8	524.8
30°	503.9	523.1	544.1	559.5	565.3	571.1	568.6	558.5	539.3	529.5	518.0
30.5°	495.8	515.6	537.7	552.7	558.1	564.3	562.4	551.4	531.8	522.2	511.4
31°	487.8	507.9	530.9	545.6	550.7	557.7	556.2	544.3	524.1	514.7	504.6
31.5°	479.6	500.4	524.4	538.5	543.2	550.5	549.8	537.1	516.4	507.2	497.8
32°	471.6	492.5	517.6	531.1	535.6	543.4	543.5	529.7	508.4	499.6	490.8
32.5°	463.3	484.9	510.8	523.5	528.0	536.0	537.1	522.2	500.5	492.2	483.9
33°	454.8	477.1	504.0	516.0	520.1	528.8	530.6	514.4	492.4	484.3	476.8
33.5°	446.4	469.1	497.2	508.1	512.1	521.1	524.1	506.7	484.1	476.7	469.4
34°	437.9	461.1	489.7	500.6	504.2	513.6	517.5	498.9	475.8	469.0	462.1
34.5°	429.1	453.2	482.8	492.7	496.1	506.0	510.7	491.1	467.0	461.2	454.3
35°	420.3	444.9	475.4	484.8	487.9	498.4	503.9	483.1	458.4	453.1	446.8
35.5°	411.9	436.8	468.3	476.8	479.3	490.5	496.9	475.0	449.8	445.2	439.0
36°	402.9	428.6	460.8	469.2	470.9	482.9	489.6	466.9	441.4	437.1	431.4
36.5°	395.1	420.3	453.3	461.2	462.3	475.0	482.3	458.6	432.4	428.9	423.7
37°	382.2	411.9	445.7	453.1	453.5	466.8	474.8	450.4	422.6	420.7	415.8
37.5°	369.3	403.5	438.2	444.8	444.8	458.8	467.3	441.8	410.4	412.5	408.0
38°	352.3	395.2	430.5	436.7	435.6	450.6	459.7	433.4	396.5	404.2	400.4
38.5°	336.7	386.9	422.9	428.2	426.2	442.3	452.1	425.2	380.8	395.9	392.9
39°	320.9	378.4	415.1	420.3	413.8	434.1	444.3	416.6	363.9	386.5	385.2
39.5°	304.9	365.2	407.5	411.8	400.9	425.7	436.6	408.3	345.9	375.1	377.6
40°	287.9	350.3	399.9	403.5	385.5	417.4	428.8	396.3	328.5	362.0	370.3
40.5°	271.1	334.7	392.3	395.3	368.3	409.0	421.2	383.8	311.7	347.1	363.2
41°	254.1	319.4	384.8	384.1	350.9	397.4	413.3	369.6	294.9	331.5	356.2
41.5°	237.5	304.2	377.4	373.3	333.4	386.5	406.0	354.0	278.8	315.4	349.4
42°	221.7	288.7	370.2	359.9	316.0	372.4	398.4	337.9	261.8	299.2	342.3
42.5°	206.9	272.5	363.0	345.5	299.1	357.4	391.2	320.9	245.6	283.7	335.6
43°	192.1	256.1	356.0	330.1	282.8	341.3	384.2	305.2	228.7	268.4	328.6
43.5°	177.0	240.0	348.8	314.0	266.2	324.7	377.0	289.4	212.7	253.3	321.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	133.8	195.0	327.9	266.9	216.7	276.4	356.1	242.7	167.4	207.6	301.1
45.5°	120.8	180.4	321.0	252.2	201.0	260.8	349.1	226.9	152.9	192.8	294.2
46°	108.3	166.2	314.0	237.3	185.9	245.3	341.8	211.5	138.9	178.3	287.6
46.5°	95.9	152.1	307.1	222.2	171.0	229.5	335.0	196.4	125.3	164.7	276.5
47°	84.4	138.0	298.9	207.0	156.4	213.5	327.8	181.6	112.1	150.9	263.5
47.5°	73.7	125.1	288.4	192.2	142.0	198.4	320.5	167.4	100.9	137.7	248.2
48°	64.1	112.5	276.0	177.9	128.4	183.7	313.2	153.6	89.8	124.7	231.2
48.5°	55.7	100.5	262.6	164.1	115.3	169.3	303.1	140.0	78.6	112.4	214.4
49°	48.5	88.9	249.7	150.9	104.0	155.2	290.1	126.5	67.5	101.3	197.2
49.5°	42.3	78.0	234.6	137.6	92.9	141.4	276.6	113.7	58.2	90.2	180.4
50°	37.1	67.7	219.9	124.5	81.7	127.7	260.7	102.8	50.0	79.0	164.0
50.5°	33.0	58.3	203.6	111.9	70.6	115.1	243.7	91.9	42.4	67.9	148.7
51°	28.9	50.4	186.6	99.9	59.6	103.8	226.0	81.1	35.8	58.9	133.6
51.5°	24.8	43.6	170.0	88.4	51.1	92.6	208.3	70.2	30.0	50.5	119.8
52°	20.7	37.8	154.0	77.9	43.0	81.4	191.1	59.4	24.5	42.7	108.1
52.5°	16.6	33.6	138.4	67.8	35.8	70.2	174.5	50.7	19.6	35.7	96.6
53°	14.5	29.4	124.3	58.4	29.6	59.1	158.8	42.8	15.7	29.6	85.1
53.5°	13.8	25.1	110.6	49.7	24.1	50.2	143.4	36.0	14.0	24.2	73.4
54°	13.3	20.9	97.7	41.9	18.9	42.0	128.9	29.9	13.4	19.3	61.9
54.5°	12.8	16.7	85.5	34.6	15.1	35.1	114.9	24.5	12.9	14.9	52.9
55°	12.2	13.7	74.7	29.3	13.8	28.7	102.6	19.5	12.2	11.9	45.2
55.5°	11.7	12.3	64.3	24.1	13.3	23.0	90.6	15.0	11.7	11.4	38.3
56°	11.2	11.8	55.0	18.8	12.6	17.9	78.4	12.1	11.3	11.0	32.2
56.5°	10.8	11.3	46.7	13.6	12.0	13.7	66.3	11.6	10.8	10.6	26.9
57°	10.4	10.9	39.4	11.6	11.5	11.7	56.7	11.1	10.4	10.2	22.5
57.5°	10.0	10.5	33.5	11.2	11.1	11.2	47.9	10.7	10.0	9.8	19.0
58°	9.6	10.1	29.2	10.8	10.6	10.8	40.0	10.3	9.6	9.5	16.1
58.5°	9.2	9.8	24.9	10.4	10.2	10.4	33.0	10.0	9.2	9.1	13.9
59°	8.8	9.4	20.6	10.0	9.8	10.0	26.9	9.6	8.8	8.8	12.0
59.5°	8.5	9.1	16.3	9.7	9.4	9.6	21.8	9.3	8.5	8.5	10.7
60°	8.2	8.8	14.2	9.3	9.0	9.3	18.0	9.0	8.2	8.2	9.7
60.5°	7.9	8.5	12.3	9.0	8.6	9.0	15.0	8.6	7.8	8.0	8.8
61°	7.5	8.2	10.9	8.7	8.3	8.6	12.8	8.4	7.4	7.7	8.3
61.5°	7.2	7.9	9.7	8.4	8.0	8.3	11.1	8.1	7.1	7.3	8.0
62°	6.9	7.5	8.9	8.1	7.7	8.1	9.9	7.8	6.8	7.1	7.7
62.5°	6.6	7.3	8.3	7.8	7.3	7.8	9.0	7.4	6.5	6.8	7.3
63°	6.3	7.0	8.0	7.5	6.9	7.4	8.3	7.2	6.2	6.6	7.0
63.5°	6.1	6.8	7.8	7.2	6.6	7.1	8.0	6.9	6.0	6.3	6.8
64°	5.8	6.5	7.4	6.9	6.4	6.9	7.7	6.7	5.7	6.1	6.5
64.5°	5.6	6.3	7.2	6.7	6.1	6.6	7.3	6.4	5.5	5.9	6.3
65°	5.4	6.1	6.9	6.5	5.8	6.4	7.0	6.2	5.3	5.7	6.1
65.5°	5.2	5.9	6.7	6.2	5.6	6.2	6.7	6.0	5.0	5.5	5.9
66°	4.9	5.6	6.4	6.0	5.4	5.9	6.5	5.7	4.8	5.3	5.7



TEST NUMBER: P775871

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	4.4	5.0	5.8	5.4	4.7	5.3	5.9	5.1	4.2	4.7	5.1
68°	4.2	4.8	5.6	5.2	4.5	5.1	5.6	4.9	4.1	4.5	4.9
68.5°	4.0	4.7	5.4	5.0	4.3	4.9	5.4	4.7	3.9	4.3	4.7
69°	3.8	4.5	5.2	4.8	4.1	4.7	5.2	4.6	3.7	4.2	4.5
69.5°	3.7	4.3	5.0	4.6	4.0	4.6	5.0	4.4	3.6	4.0	4.3
70°	3.5	4.1	4.8	4.4	3.8	4.4	4.8	4.2	3.4	3.8	4.1
70.5°	3.4	4.0	4.6	4.3	3.6	4.2	4.7	4.0	3.3	3.7	4.0
71°	3.2	3.8	4.4	4.1	3.5	4.1	4.5	3.9	3.1	3.5	3.8
71.5°	3.1	3.7	4.2	3.9	3.3	3.9	4.3	3.7	3.0	3.4	3.6
72°	2.9	3.5	4.1	3.8	3.2	3.7	4.1	3.6	2.8	3.2	3.5
72.5°	2.8	3.4	3.9	3.6	3.0	3.6	3.9	3.4	2.7	3.1	3.3
73°	2.7	3.2	3.7	3.5	2.9	3.4	3.8	3.3	2.6	3.0	3.2
73.5°	2.4	3.1	3.6	3.3	2.8	3.3	3.6	3.1	2.4	2.8	3.0
74°	2.3	2.9	3.4	3.2	2.7	3.2	3.5	3.0	2.2	2.7	2.9
74.5°	2.2	2.8	3.2	3.0	2.4	3.0	3.3	2.9	2.1	2.6	2.7
75°	2.1	2.7	3.1	2.9	2.3	2.9	3.2	2.7	2.0	2.3	2.6
75.5°	2.0	2.4	2.9	2.8	2.2	2.8	3.0	2.6	1.9	2.2	2.4
76°	1.9	2.3	2.8	2.7	2.1	2.7	2.9	2.4	1.8	2.1	2.2
76.5°	1.8	2.2	2.7	2.4	2.0	2.4	2.7	2.2	1.7	2.0	2.1
77°	1.7	2.1	2.4	2.3	1.9	2.3	2.6	2.1	1.6	1.9	2.0
77.5°	1.6	2.0	2.3	2.2	1.8	2.2	2.4	2.0	1.5	1.8	1.9
78°	1.5	1.9	2.2	2.1	1.7	2.1	2.2	1.9	1.4	1.7	1.7
78.5°	1.4	1.7	2.0	2.0	1.6	2.0	2.1	1.8	1.3	1.5	1.6
79°	1.3	1.6	1.9	1.8	1.5	1.9	2.0	1.7	1.3	1.4	1.5
79.5°	1.2	1.5	1.8	1.7	1.4	1.8	1.9	1.6	1.2	1.3	1.4
80°	1.1	1.4	1.7	1.6	1.3	1.6	1.7	1.5	1.1	1.2	1.3
80.5°	1.0	1.3	1.6	1.5	1.3	1.5	1.6	1.3	1.0	1.1	1.2
81°	0.9	1.2	1.5	1.4	1.2	1.4	1.5	1.2	0.9	1.0	1.1
81.5°	0.9	1.1	1.3	1.3	1.1	1.4	1.4	1.2	0.9	1.0	1.0
82°	0.8	1.0	1.2	1.2	1.0	1.3	1.3	1.1	0.8	0.9	0.9
82.5°	0.7	0.9	1.1	1.1	0.9	1.2	1.2	1.0	0.7	0.8	0.8
83°	0.6	0.8	1.0	1.0	0.9	1.1	1.1	0.9	0.6	0.7	0.7
83.5°	0.6	0.7	0.9	0.9	0.8	1.0	1.0	0.8	0.6	0.6	0.6
84°	0.5	0.7	0.8	0.9	0.7	0.9	0.9	0.7	0.5	0.5	0.5
84.5°	0.4	0.6	0.7	0.8	0.7	0.8	0.8	0.6	0.4	0.4	0.5
85°	0.4	0.5	0.6	0.7	0.6	0.7	0.7	0.5	0.4	0.4	0.4
85.5°	0.3	0.4	0.6	0.6	0.6	0.7	0.6	0.4	0.3	0.3	0.3
86°	0.2	0.3	0.5	0.5	0.5	0.6	0.5	0.4	0.3	0.2	0.2
86.5°	0.2	0.2	0.4	0.5	0.4	0.5	0.5	0.3	0.2	0.2	0.2
87°	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.2	0.2	0.1	0.1
87.5°	0.1	0.1	0.3	0.3	0.3	0.4	0.3	0.2	0.1	0.1	0.1
88°	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.1	0.1	0.0	0.0
88.5°	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.0



TEST NUMBER: P775871

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P775871

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	741.6	741.6	741.6	741.6	741.6	741.6
0.5°	741.4	740.7	741.0	741.4	741.6	741.4
1°	740.8	739.9	740.3	740.7	741.1	741.0
1.5°	740.0	739.1	739.4	739.9	740.4	740.6
2°	739.3	738.3	738.5	739.1	739.6	740.0
2.5°	738.5	737.4	737.6	738.2	738.8	739.4
3°	737.7	736.3	736.6	737.1	738.0	738.7
3.5°	736.6	735.1	735.3	736.1	737.0	737.9
4°	735.5	733.6	733.9	734.8	736.1	737.1
4.5°	734.1	732.0	732.3	733.4	734.9	736.2
5°	732.6	730.3	730.6	732.0	733.6	735.1
5.5°	731.0	728.2	728.6	730.5	732.3	733.8
6°	729.1	726.3	726.7	728.7	730.8	732.4
6.5°	727.2	723.9	724.4	726.8	729.1	730.8
7°	725.2	721.6	722.1	724.7	727.2	728.9
7.5°	722.8	719.0	719.5	722.5	725.2	727.0
8°	720.5	716.5	717.0	720.2	722.9	724.7
8.5°	718.0	713.7	714.3	717.6	720.4	722.4
9°	715.5	710.9	711.6	714.9	717.8	720.1
9.5°	712.8	707.9	708.6	712.0	715.1	717.4
10°	710.2	705.0	705.7	708.9	712.3	714.9
10.5°	707.2	701.7	702.5	705.8	709.3	712.1
11°	704.2	698.3	699.2	702.4	706.3	709.1
11.5°	701.2	695.0	695.9	699.0	703.0	706.1
12°	697.9	691.3	692.3	695.5	699.7	702.8
12.5°	694.5	687.5	688.6	691.7	696.1	699.6
13°	691.0	683.6	684.9	687.9	692.5	696.1
13.5°	687.2	679.6	680.9	684.1	688.7	692.4
14°	683.4	675.5	676.7	680.1	684.9	688.6
14.5°	679.6	671.4	672.5	675.9	680.7	684.7
15°	675.5	667.0	668.1	671.7	676.6	680.8
15.5°	671.4	662.4	663.7	667.2	672.2	676.5
16°	667.1	657.9	659.2	662.7	667.7	672.2
16.5°	662.7	653.3	654.6	658.1	663.2	667.9
17°	658.1	648.5	649.7	653.2	658.6	663.4
17.5°	653.5	643.7	644.8	648.3	653.8	658.8
18°	648.8	638.5	639.7	643.2	649.0	654.1
18.5°	643.9	633.4	634.6	638.1	643.9	649.2
19°	639.0	628.0	629.3	632.9	638.8	644.2
19.5°	633.8	622.6	623.8	627.6	633.6	639.2
20°	628.7	617.1	618.4	622.1	628.3	634.0
20.5°	623.3	611.6	612.6	616.6	622.8	628.6
21°	617.7	606.0	606.9	611.0	617.1	623.0

TEST NUMBER: P775871

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	600.9	588.8	589.3	593.5	599.9	606.1
23°	595.2	582.8	583.2	587.6	593.8	600.3
23.5°	589.4	576.7	577.4	581.5	587.8	594.5
24°	583.6	570.3	571.0	575.3	581.7	588.6
24.5°	577.5	563.8	564.9	569.0	575.5	582.6
25°	571.4	556.7	558.5	562.6	569.3	576.4
25.5°	565.2	549.7	552.0	556.2	562.9	569.9
26°	558.9	542.5	545.0	549.8	556.5	563.2
26.5°	552.0	535.1	538.2	543.3	550.1	556.3
27°	545.0	527.5	530.9	536.4	543.5	549.3
27.5°	538.0	519.8	523.6	529.7	536.7	542.1
28°	530.6	511.9	515.9	523.0	529.5	534.7
28.5°	523.2	503.9	508.5	515.9	522.3	527.3
29°	515.6	495.7	500.8	509.3	515.0	519.4
29.5°	508.2	487.9	493.1	502.5	507.7	511.8
30°	500.3	479.7	485.1	495.4	499.8	503.9
30.5°	492.5	471.4	477.3	488.3	492.3	495.8
31°	484.5	462.9	469.2	481.5	484.5	487.8
31.5°	476.5	454.7	461.2	474.2	476.8	479.6
32°	468.5	446.3	453.0	467.0	468.7	471.6
32.5°	460.7	437.7	445.0	459.4	461.1	463.3
33°	452.5	429.1	436.9	452.3	453.2	454.8
33.5°	444.2	420.3	428.7	444.8	445.2	446.4
34°	436.0	411.8	420.4	437.3	437.2	437.9
34.5°	427.7	403.0	411.9	429.5	429.2	429.1
35°	419.4	394.8	403.6	421.8	421.2	420.3
35.5°	411.3	384.9	395.3	414.1	413.3	411.9
36°	402.8	371.7	386.8	406.4	405.1	402.9
36.5°	394.6	356.0	378.5	398.6	396.9	395.1
37°	386.3	339.8	370.6	390.8	388.7	382.2
37.5°	378.0	324.0	361.8	383.0	380.6	369.3
38°	370.5	307.3	349.2	375.4	372.4	352.3
38.5°	357.7	290.9	334.4	367.8	364.0	336.7
39°	343.8	273.9	319.3	360.5	356.7	320.9
39.5°	328.6	256.8	304.4	352.9	344.0	304.9
40°	313.4	240.5	289.4	345.6	330.9	287.9
40.5°	298.3	224.4	274.1	338.5	315.8	271.1
41°	282.6	209.1	258.1	331.4	301.0	254.1
41.5°	266.7	194.2	242.2	324.4	286.8	237.5
42°	250.4	179.3	226.8	317.3	272.6	221.7
42.5°	234.8	164.3	212.2	310.6	257.7	206.9
43°	219.5	149.9	197.9	303.8	242.3	192.1
43.5°	204.9	136.2	183.7	297.0	226.9	177.0



TEST NUMBER: P775871

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	162.2	97.9	142.4	276.6	184.3	133.8
45.5°	148.3	86.4	129.2	266.4	170.6	120.8
46°	134.5	75.3	117.1	255.5	157.0	108.3
46.5°	121.8	65.6	104.9	242.8	143.6	95.9
47°	109.7	56.8	93.2	231.1	130.6	84.4
47.5°	98.5	49.3	81.9	217.0	118.1	73.7
48°	87.5	42.9	71.6	202.6	106.1	64.1
48.5°	76.4	37.7	62.2	186.0	94.6	55.7
49°	65.4	33.7	53.8	170.6	83.5	48.5
49.5°	56.3	29.6	46.3	155.3	73.0	42.3
50°	48.6	25.5	40.3	141.2	63.3	37.1
50.5°	41.7	21.4	34.9	127.5	54.5	33.0
51°	36.2	17.3	30.9	115.1	46.9	28.9
51.5°	31.5	14.6	26.9	102.7	40.6	24.8
52°	27.4	13.7	23.0	91.6	35.0	20.7
52.5°	23.6	13.1	19.0	80.7	30.9	16.6
53°	19.7	12.5	15.4	70.8	26.7	14.5
53.5°	16.0	12.0	12.6	61.5	22.6	13.8
54°	13.2	11.5	11.7	53.5	18.5	13.3
54.5°	11.7	11.0	11.3	45.9	14.9	12.8
55°	11.3	10.6	10.9	39.4	12.3	12.2
55.5°	10.9	10.2	10.5	34.8	11.6	11.7
56°	10.5	9.8	10.1	30.3	11.2	11.2
56.5°	10.1	9.4	9.7	25.8	10.8	10.8
57°	9.8	9.0	9.4	21.2	10.4	10.4
57.5°	9.4	8.6	9.0	16.8	10.0	10.0
58°	9.1	8.3	8.7	14.5	9.7	9.6
58.5°	8.8	8.0	8.4	12.5	9.4	9.2
59°	8.5	7.7	8.1	11.0	9.1	8.8
59.5°	8.2	7.3	7.8	9.8	8.8	8.5
60°	7.9	7.0	7.5	8.9	8.5	8.2
60.5°	7.7	6.7	7.2	8.4	8.2	7.9
61°	7.3	6.4	7.0	8.1	7.9	7.5
61.5°	7.0	6.2	6.7	7.8	7.5	7.2
62°	6.8	5.9	6.5	7.4	7.3	6.9
62.5°	6.5	5.7	6.2	7.2	7.0	6.6
63°	6.3	5.4	6.0	6.9	6.8	6.3
63.5°	6.1	5.2	5.8	6.7	6.5	6.1
64°	5.8	5.0	5.6	6.5	6.3	5.8
64.5°	5.6	4.8	5.4	6.2	6.1	5.6
65°	5.4	4.6	5.2	6.0	5.9	5.4
65.5°	5.2	4.4	5.0	5.8	5.6	5.2
66°	5.0	4.2	4.8	5.6	5.4	4.9



TEST NUMBER: P775871

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	4.5	3.7	4.3	5.0	4.8	4.4
68°	4.3	3.5	4.1	4.8	4.6	4.2
68.5°	4.1	3.4	4.0	4.6	4.5	4.0
69°	4.0	3.2	3.8	4.4	4.3	3.8
69.5°	3.8	3.1	3.7	4.3	4.1	3.7
70°	3.7	3.0	3.5	4.1	3.9	3.5
70.5°	3.5	2.8	3.4	3.9	3.8	3.4
71°	3.4	2.7	3.2	3.8	3.6	3.2
71.5°	3.2	2.6	3.1	3.6	3.5	3.1
72°	3.1	2.4	3.0	3.4	3.3	2.9
72.5°	3.0	2.2	2.8	3.3	3.2	2.8
73°	2.8	2.1	2.7	3.1	3.0	2.7
73.5°	2.7	2.0	2.6	3.0	2.9	2.4
74°	2.6	1.9	2.4	2.8	2.7	2.3
74.5°	2.3	1.8	2.2	2.7	2.6	2.2
75°	2.2	1.7	2.1	2.6	2.4	2.1
75.5°	2.1	1.6	2.0	2.3	2.3	2.0
76°	2.0	1.5	1.9	2.2	2.1	1.9
76.5°	1.9	1.5	1.8	2.1	2.0	1.8
77°	1.8	1.4	1.7	1.9	1.9	1.7
77.5°	1.7	1.3	1.6	1.8	1.8	1.6
78°	1.6	1.2	1.5	1.7	1.7	1.5
78.5°	1.5	1.1	1.4	1.6	1.5	1.4
79°	1.4	1.0	1.3	1.5	1.4	1.3
79.5°	1.3	1.0	1.2	1.4	1.3	1.2
80°	1.2	0.9	1.1	1.2	1.2	1.1
80.5°	1.1	0.8	1.0	1.1	1.1	1.0
81°	1.0	0.8	0.9	1.0	1.0	0.9
81.5°	0.9	0.7	0.8	0.9	0.9	0.9
82°	0.8	0.6	0.8	0.8	0.8	0.8
82.5°	0.7	0.6	0.7	0.8	0.7	0.7
83°	0.6	0.5	0.6	0.7	0.6	0.6
83.5°	0.6	0.4	0.5	0.6	0.5	0.6
84°	0.5	0.4	0.4	0.5	0.4	0.5
84.5°	0.4	0.3	0.4	0.4	0.4	0.4
85°	0.3	0.3	0.3	0.4	0.3	0.4
85.5°	0.3	0.2	0.2	0.3	0.2	0.3
86°	0.2	0.1	0.2	0.2	0.2	0.2
86.5°	0.1	0.1	0.1	0.2	0.1	0.2
87°	0.1	0.0	0.1	0.1	0.1	0.1
87.5°	0.0	0.0	0.0	0.0	0.1	0.1
88°	0.0	0.0	0.0	0.0	0.0	0.1
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775871

CATALOG NUMBER: HCDJBL510CSD-HCD8TRH-1000lm-3000K

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°	617.4	630.1	643.3	653.7	659.1	662.2	660.5	653.4	641.4	632.0	622.1
22°	611.8	624.7	638.2	649.0	654.6	657.7	656.0	648.8	636.5	627.0	616.7



44°	161.8	224.4	341.7	298.1	249.8	308.3	370.0	273.9	196.9	238.0	314.6
44.5°	147.6	209.5	334.8	282.4	233.2	291.9	363.0	257.9	182.2	222.8	308.0



66.5°	4.7	5.4	6.2	5.8	5.1	5.7	6.3	5.5	4.6	5.1	5.4
67°	4.5	5.2	6.0	5.6	4.9	5.5	6.1	5.3	4.4	4.9	5.2



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

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21.5°	612.1	600.3	601.1	605.3	611.4	617.4
22°	606.6	594.5	595.2	599.5	605.6	611.8

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44°	190.2	122.7	169.7	290.3	211.9	161.8
44.5°	176.2	110.5	156.0	283.5	198.1	147.6

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66.5°	4.8	4.0	4.6	5.4	5.2	4.7
67°	4.7	3.9	4.5	5.2	5.0	4.5

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

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(END OF REPORT)