

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: P775899

Luminaire Tested: HCDJBL510CSD-HCD8TSQH-1000lm-5000K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P775899
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B005-HCD4TSQC)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD8TSQH-1000lm-5000K
Description: 8 INCH SQUARE MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

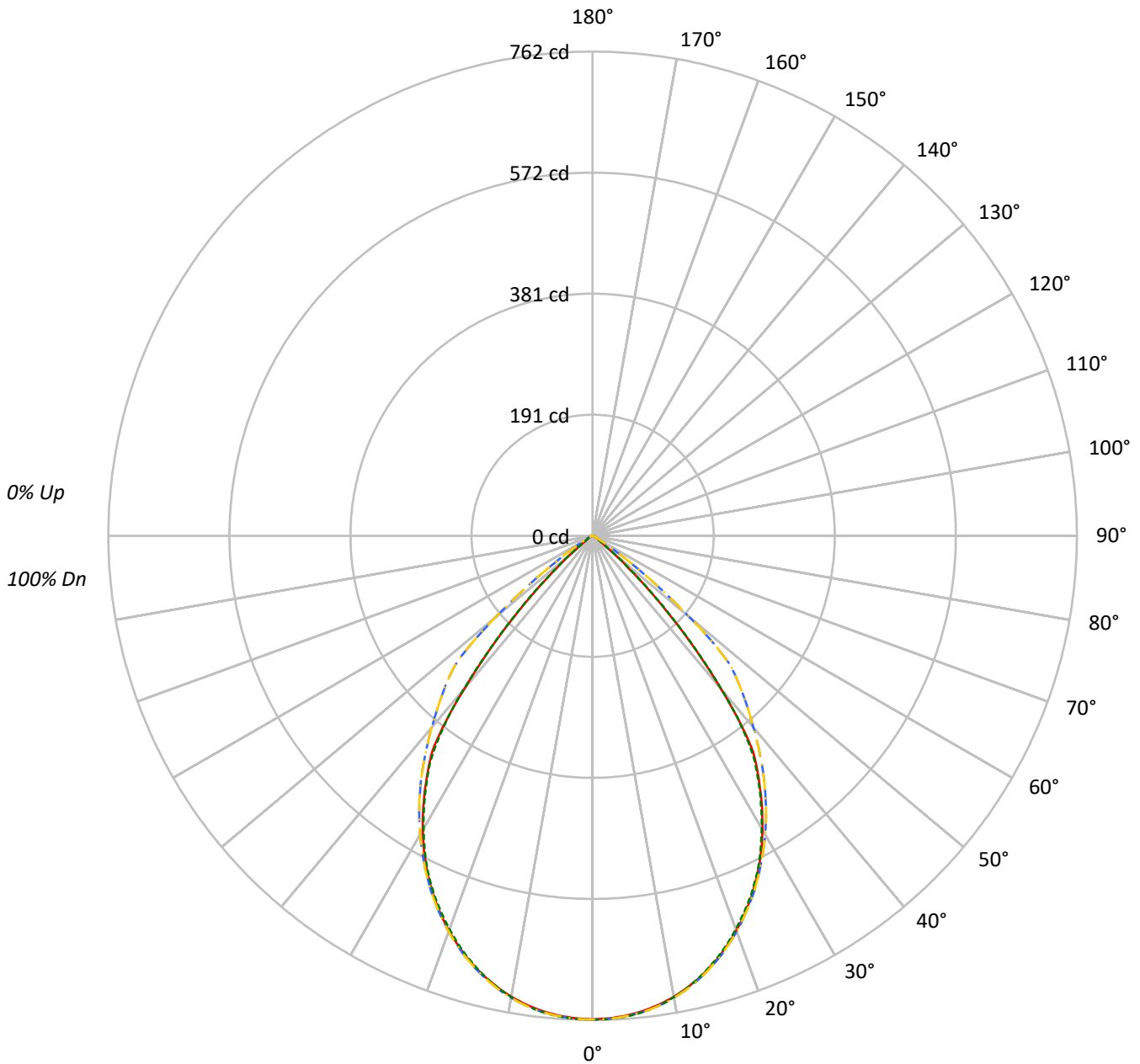
Lumens per Lamp: N/A
Luminaire Lumens: 1048.2 lumens
Efficiency: N/A
Efficacy: 104.8 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.15
Luminous Opening: Rectangular (W 0.67' x L: 0.67' x H: 0')
CIE Type: Direct

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



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	113	110	107	104	110	107	105	103	103	101	99	100	98	97	96	95	94	92																			
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	87	85	84																			
3	100	92	87	82	98	91	86	82	88	84	80	86	82	79	83	80	78	76																			
4	94	85	79	74	92	84	78	73	82	77	73	80	75	72	78	74	71	69																			
5	88	78	72	67	86	77	71	66	76	70	66	74	69	65	72	68	65	63																			
6	83	72	66	61	81	72	65	60	70	64	60	69	63	60	67	63	59	58																			
7	78	67	60	55	76	66	60	55	65	59	55	64	59	55	63	58	54	53																			
8	73	62	56	51	72	62	55	51	61	55	51	59	54	50	58	54	50	48																			
9	69	58	51	47	68	58	51	47	57	51	47	56	50	46	55	50	46	45																			
10	65	54	48	43	64	54	48	43	53	47	43	52	47	43	51	46	43	41																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	18255	18255	18255	18255
5°	18168	18207	18168	18207
10°	17933	17947	17933	17947
15°	17504	17484	17504	17484
20°	16872	16811	16872	16811
25°	16001	15948	16001	15948
30°	14799	14730	14799	14730
35°	13225	13155	13225	13155
40°	9822	9876	9822	9876
45°	5148	5276	5148	5276
50°	1671	1806	1671	1806
55°	552	506	552	506
60°	417	393	417	393
65°	318	306	318	306
70°	252	245	252	245
75°	204	204	204	204
80°	166	180	166	180
85°	110	110	110	110

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 10940 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.6	6.8
10°-20°	198.3	18.9
20°-30°	277.8	26.5
30°-40°	285.4	27.2
40°-50°	172.9	16.5
50°-60°	32.5	3.1
60°-70°	6.3	0.6
70°-80°	2.8	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°	547.7	52.3
0°-40°	833.1	79.5
0°-60°	1038.5	99.1
0°-90°	1048.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1048.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	761	761	761	761	761	
5°	755	756	755	756	755	71
15°	705	704	705	704	705	198
25°	605	603	605	603	605	277
35°	452	449	452	449	452	276
45°	152	156	152	156	152	121
55°	13	12	13	12	13	15
65°	6	5	6	5	6	6
75°	2	2	2	2	2	2
85°	0	0	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°	761.3	761.3	761.3	761.3	761.3	761.3	761.3	761.3	761.3	761.3	761.3
0.5°	760.5	760.9	761.4	761.7	761.5	761.7	761.4	760.9	760.5	760.9	761.4
1°	760.4	760.8	761.2	761.5	761.4	761.5	761.2	760.8	760.4	760.8	761.2
1.5°	760.1	760.4	761.0	761.3	761.2	761.3	761.0	760.4	760.1	760.4	761.0
2°	759.7	760.0	760.5	761.0	760.8	761.0	760.5	760.0	759.7	760.0	760.5
2.5°	759.2	759.5	760.1	760.4	760.3	760.4	760.1	759.5	759.2	759.5	760.1
3°	758.5	758.9	759.5	759.9	759.8	759.9	759.5	758.9	758.5	758.9	759.5
3.5°	757.8	758.2	758.8	759.3	759.2	759.3	758.8	758.2	757.8	758.2	758.8
4°	756.9	757.3	758.0	758.5	758.4	758.5	758.0	757.3	756.9	757.3	758.0
4.5°	756.0	756.3	757.0	757.6	757.5	757.6	757.0	756.3	756.0	756.3	757.0
5°	754.8	755.2	756.1	756.6	756.4	756.6	756.1	755.2	754.8	755.2	756.1
5.5°	753.6	754.0	754.9	755.4	755.1	755.4	754.9	754.0	753.6	754.0	754.9
6°	752.1	752.7	753.6	754.1	753.8	754.1	753.6	752.7	752.1	752.7	753.6
6.5°	750.6	751.3	752.2	752.7	752.2	752.7	752.2	751.3	750.6	751.3	752.2
7°	749.0	749.7	750.6	751.0	750.5	751.0	750.6	749.7	749.0	749.7	750.6
7.5°	747.2	748.0	748.9	749.1	748.6	749.1	748.9	748.0	747.2	748.0	748.9
8°	745.3	746.2	747.1	747.2	746.7	747.2	747.1	746.2	745.3	746.2	747.1
8.5°	743.3	744.1	745.1	745.0	744.5	745.0	745.1	744.1	743.3	744.1	745.1
9°	741.1	742.0	743.0	742.7	742.1	742.7	743.0	742.0	741.1	742.0	743.0
9.5°	738.9	739.8	740.7	740.3	739.7	740.3	740.7	739.8	738.9	739.8	740.7
10°	736.5	737.5	738.3	737.8	737.1	737.8	738.3	737.5	736.5	737.5	738.3
10.5°	733.9	735.0	735.7	735.2	734.4	735.2	735.7	735.0	733.9	735.0	735.7
11°	731.2	732.4	733.0	732.4	731.6	732.4	733.0	732.4	731.2	732.4	733.0
11.5°	728.5	729.6	730.2	729.4	728.6	729.4	730.2	729.6	728.5	729.6	730.2
12°	725.5	726.8	727.2	726.4	725.6	726.4	727.2	726.8	725.5	726.8	727.2
12.5°	722.4	723.8	724.1	723.2	722.3	723.2	724.1	723.8	722.4	723.8	724.1
13°	719.2	720.6	720.9	719.9	719.0	719.9	720.9	720.6	719.2	720.6	720.9
13.5°	715.9	717.3	717.5	716.5	715.5	716.5	717.5	717.3	715.9	717.3	717.5
14°	712.4	714.0	714.1	713.0	711.8	713.0	714.1	714.0	712.4	714.0	714.1
14.5°	708.9	710.3	710.5	709.3	708.1	709.3	710.5	710.3	708.9	710.3	710.5
15°	705.1	706.7	706.8	705.4	704.3	705.4	706.8	706.7	705.1	706.7	706.8
15.5°	701.3	703.0	702.9	701.5	700.2	701.5	702.9	703.0	701.3	703.0	702.9
16°	697.3	699.0	698.9	697.4	696.2	697.4	698.9	699.0	697.3	699.0	698.9
16.5°	693.3	695.0	694.8	693.3	691.9	693.3	694.8	695.0	693.3	695.0	694.8
17°	689.1	690.8	690.6	688.9	687.5	688.9	690.6	690.8	689.1	690.8	690.6
17.5°	684.8	686.6	686.3	684.6	683.1	684.6	686.3	686.6	684.8	686.6	686.3
18°	680.3	682.1	681.7	680.0	678.4	680.0	681.7	682.1	680.3	682.1	681.7
18.5°	675.7	677.5	677.2	675.4	673.6	675.4	677.2	677.5	675.7	677.5	677.2
19°	671.0	672.9	672.5	670.6	668.8	670.6	672.5	672.9	671.0	672.9	672.5
19.5°	666.1	668.1	667.6	665.7	663.8	665.7	667.6	668.1	666.1	668.1	667.6
20°	661.2	663.2	662.7	660.8	658.8	660.8	662.7	663.2	661.2	663.2	662.7
20.5°	656.2	658.2	657.7	655.6	653.5	655.6	657.7	658.2	656.2	658.2	657.7
21°	651.0	653.0	652.6	650.3	648.2	650.3	652.6	653.0	651.0	653.0	652.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	634.7	636.9	636.4	634.0	632.0	634.0	636.4	636.9	634.7	636.9	636.4
23°	629.0	631.3	630.8	628.4	626.4	628.4	630.8	631.3	629.0	631.3	630.8
23.5°	623.2	625.6	625.2	622.7	620.8	622.7	625.2	625.6	623.2	625.6	625.2
24°	617.3	619.6	619.4	617.0	615.1	617.0	619.4	619.6	617.3	619.6	619.4
24.5°	611.1	613.7	613.6	611.2	609.0	611.2	613.6	613.7	611.1	613.7	613.6
25°	604.8	607.6	607.5	605.4	602.8	605.4	607.5	607.6	604.8	607.6	607.5
25.5°	598.5	601.4	601.4	599.2	596.6	599.2	601.4	601.4	598.5	601.4	601.4
26°	591.9	595.0	595.2	593.2	590.2	593.2	595.2	595.0	591.9	595.0	595.2
26.5°	585.3	588.5	589.0	586.9	583.5	586.9	589.0	588.5	585.3	588.5	589.0
27°	578.4	581.9	582.6	580.5	576.6	580.5	582.6	581.9	578.4	581.9	582.6
27.5°	571.6	575.2	576.2	573.9	569.7	573.9	576.2	575.2	571.6	575.2	576.2
28°	564.4	568.3	569.7	567.1	562.3	567.1	569.7	568.3	564.4	568.3	569.7
28.5°	557.2	561.2	562.9	560.2	554.8	560.2	562.9	561.2	557.2	561.2	562.9
29°	549.6	554.3	556.3	553.1	547.4	553.1	556.3	554.3	549.6	554.3	556.3
29.5°	542.1	547.2	549.7	545.8	539.7	545.8	549.7	547.2	542.1	547.2	549.7
30°	534.5	539.8	542.8	538.4	532.0	538.4	542.8	539.8	534.5	539.8	542.8
30.5°	526.7	532.4	536.0	530.9	524.2	530.9	536.0	532.4	526.7	532.4	536.0
31°	518.6	524.8	528.9	523.4	516.3	523.4	528.9	524.8	518.6	524.8	528.9
31.5°	510.7	517.2	522.0	515.7	508.2	515.7	522.0	517.2	510.7	517.2	522.0
32°	502.6	509.4	515.0	508.1	500.0	508.1	515.0	509.4	502.6	509.4	515.0
32.5°	494.4	501.6	507.8	500.1	491.8	500.1	507.8	501.6	494.4	501.6	507.8
33°	486.1	493.7	500.6	492.4	483.5	492.4	500.6	493.7	486.1	493.7	500.6
33.5°	477.8	485.9	493.2	484.5	475.1	484.5	493.2	485.9	477.8	485.9	493.2
34°	469.2	477.9	485.8	476.6	466.6	476.6	485.8	477.9	469.2	477.9	485.8
34.5°	460.6	469.8	478.3	468.7	458.0	468.7	478.3	469.8	460.6	469.8	478.3
35°	451.8	461.7	470.9	460.6	449.4	460.6	470.9	461.7	451.8	461.7	470.9
35.5°	443.3	453.7	463.1	452.6	440.9	452.6	463.1	453.7	443.3	453.7	463.1
36°	434.4	445.5	455.3	444.5	430.8	444.5	455.3	445.5	434.4	445.5	455.3
36.5°	424.9	437.1	447.7	436.3	419.4	436.3	447.7	437.1	424.9	437.1	447.7
37°	413.5	428.9	440.0	428.1	406.8	428.1	440.0	428.9	413.5	428.9	440.0
37.5°	398.6	420.5	432.3	419.8	393.8	419.8	432.3	420.5	398.6	420.5	432.3
38°	383.6	412.1	424.3	411.6	380.0	411.6	424.3	412.1	383.6	412.1	424.3
38.5°	366.9	403.7	416.6	402.5	365.8	402.5	416.6	403.7	366.9	403.7	416.6
39°	349.7	395.0	408.9	392.0	349.9	392.0	408.9	395.0	349.7	395.0	408.9
39.5°	331.7	382.3	401.4	380.2	333.2	380.2	401.4	382.3	331.7	382.3	401.4
40°	313.8	368.7	393.7	367.3	315.5	367.3	393.7	368.7	313.8	368.7	393.7
40.5°	295.9	353.2	386.1	353.5	298.0	353.5	386.1	353.2	295.9	353.2	386.1
41°	278.9	337.2	378.8	338.8	281.2	338.8	378.8	337.2	278.9	337.2	378.8
41.5°	262.1	320.8	371.6	323.4	264.4	323.4	371.6	320.8	262.1	320.8	371.6
42°	245.7	304.4	364.5	307.2	248.2	307.2	364.5	304.4	245.7	304.4	364.5
42.5°	229.3	288.2	357.5	291.0	231.8	291.0	357.5	288.2	229.3	288.2	357.5
43°	213.1	271.8	350.4	274.7	215.9	274.7	350.4	271.8	213.1	271.8	350.4
43.5°	196.7	255.8	343.5	258.7	199.9	258.7	343.5	255.8	196.7	255.8	343.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	151.8	209.3	322.6	212.9	155.6	212.9	322.6	209.3	151.8	209.3	322.6
45.5°	137.7	194.1	315.7	197.8	142.1	197.8	315.7	194.1	137.7	194.1	315.7
46°	124.6	179.4	308.7	182.9	129.1	182.9	308.7	179.4	124.6	179.4	308.7
46.5°	111.7	165.1	301.4	168.4	115.9	168.4	301.4	165.1	111.7	165.1	301.4
47°	99.0	151.0	291.3	154.2	103.1	154.2	291.3	151.0	99.0	151.0	291.3
47.5°	86.9	137.5	278.9	141.0	91.7	141.0	278.9	137.5	86.9	137.5	278.9
48°	76.5	124.4	264.2	128.0	81.6	128.0	264.2	124.4	76.5	124.4	264.2
48.5°	67.0	111.9	248.6	115.4	72.3	115.4	248.6	111.9	67.0	111.9	248.6
49°	58.6	99.8	232.3	103.1	63.7	103.1	232.3	99.8	58.6	99.8	232.3
49.5°	51.3	88.0	215.6	92.0	55.7	92.0	215.6	88.0	51.3	88.0	215.6
50°	44.8	77.1	198.7	81.3	48.4	81.3	198.7	77.1	44.8	77.1	198.7
50.5°	38.7	67.1	181.9	71.5	41.5	71.5	181.9	67.1	38.7	67.1	181.9
51°	33.1	58.3	165.4	62.3	34.9	62.3	165.4	58.3	33.1	58.3	165.4
51.5°	28.7	50.5	150.0	54.0	29.3	54.0	150.0	50.5	28.7	50.5	150.0
52°	24.2	43.7	135.8	46.8	24.9	46.8	135.8	43.7	24.2	43.7	135.8
52.5°	20.4	37.6	121.9	40.1	22.0	40.1	121.9	37.6	20.4	37.6	121.9
53°	17.6	32.1	109.0	33.9	19.1	33.9	109.0	32.1	17.6	32.1	109.0
53.5°	15.0	27.4	96.3	28.1	16.1	28.1	96.3	27.4	15.0	27.4	96.3
54°	14.4	22.9	84.7	23.0	13.2	23.0	84.7	22.9	14.4	22.9	84.7
54.5°	13.7	19.2	73.6	19.1	12.6	19.1	73.6	19.2	13.7	19.2	73.6
55°	13.2	15.9	63.8	16.0	12.1	16.0	63.8	15.9	13.2	15.9	63.8
55.5°	12.7	13.5	55.0	13.7	11.6	13.7	55.0	13.5	12.7	13.5	55.0
56°	12.1	12.5	47.0	12.0	11.2	12.0	47.0	12.5	12.1	12.5	47.0
56.5°	11.6	11.9	39.9	11.2	10.8	11.2	39.9	11.9	11.6	11.9	39.9
57°	11.2	11.5	33.9	10.8	10.3	10.8	33.9	11.5	11.2	11.5	33.9
57.5°	10.7	11.1	28.7	10.3	9.9	10.3	28.7	11.1	10.7	11.1	28.7
58°	10.2	10.7	24.4	10.0	9.6	10.0	24.4	10.7	10.2	10.7	24.4
58.5°	9.8	10.2	20.6	9.6	9.2	9.6	20.6	10.2	9.8	10.2	20.6
59°	9.5	9.9	17.5	9.3	8.8	9.3	17.5	9.9	9.5	9.9	17.5
59.5°	9.1	9.6	14.8	9.0	8.5	9.0	14.8	9.6	9.1	9.6	14.8
60°	8.7	9.2	12.5	8.6	8.2	8.6	12.5	9.2	8.7	9.2	12.5
60.5°	8.3	8.8	11.1	8.3	7.8	8.3	11.1	8.8	8.3	8.8	11.1
61°	8.0	8.5	10.0	8.1	7.6	8.1	10.0	8.5	8.0	8.5	10.0
61.5°	7.7	8.2	9.2	7.8	7.2	7.8	9.2	8.2	7.7	8.2	9.2
62°	7.4	8.0	8.6	7.5	6.9	7.5	8.6	8.0	7.4	8.0	8.6
62.5°	7.0	7.7	8.2	7.2	6.7	7.2	8.2	7.7	7.0	7.7	8.2
63°	6.7	7.4	7.9	7.0	6.4	7.0	7.9	7.4	6.7	7.4	7.9
63.5°	6.5	7.1	7.6	6.7	6.2	6.7	7.6	7.1	6.5	7.1	7.6
64°	6.2	6.8	7.4	6.5	5.9	6.5	7.4	6.8	6.2	6.8	7.4
64.5°	6.0	6.6	7.0	6.3	5.6	6.3	7.0	6.6	6.0	6.6	7.0
65°	5.6	6.4	6.8	6.1	5.4	6.1	6.8	6.4	5.6	6.4	6.8
65.5°	5.4	6.1	6.5	5.9	5.2	5.9	6.5	6.1	5.4	6.1	6.5
66°	5.2	5.9	6.3	5.6	5.0	5.6	6.3	5.9	5.2	5.9	6.3



TEST NUMBER: P775899

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	4.6	5.2	5.6	5.0	4.4	5.0	5.6	5.2	4.6	5.2	5.6
68°	4.4	5.0	5.4	4.8	4.3	4.8	5.4	5.0	4.4	5.0	5.4
68.5°	4.2	4.8	5.2	4.7	4.0	4.7	5.2	4.8	4.2	4.8	5.2
69°	4.0	4.6	5.0	4.5	3.8	4.5	5.0	4.6	4.0	4.6	5.0
69.5°	3.8	4.5	4.8	4.3	3.7	4.3	4.8	4.5	3.8	4.5	4.8
70°	3.6	4.3	4.6	4.2	3.5	4.2	4.6	4.3	3.6	4.3	4.6
70.5°	3.5	4.0	4.5	3.9	3.4	3.9	4.5	4.0	3.5	4.0	4.5
71°	3.3	3.9	4.3	3.8	3.3	3.8	4.3	3.9	3.3	3.9	4.3
71.5°	3.2	3.7	4.0	3.6	3.1	3.6	4.0	3.7	3.2	3.7	4.0
72°	3.0	3.6	3.9	3.5	3.0	3.5	3.9	3.6	3.0	3.6	3.9
72.5°	2.9	3.4	3.7	3.3	2.9	3.3	3.7	3.4	2.9	3.4	3.7
73°	2.8	3.3	3.5	3.2	2.7	3.2	3.5	3.3	2.8	3.3	3.5
73.5°	2.6	3.1	3.4	3.1	2.6	3.1	3.4	3.1	2.6	3.1	3.4
74°	2.5	3.0	3.2	2.9	2.5	2.9	3.2	3.0	2.5	3.0	3.2
74.5°	2.3	2.9	3.1	2.8	2.3	2.8	3.1	2.9	2.3	2.9	3.1
75°	2.2	2.7	2.9	2.7	2.2	2.7	2.9	2.7	2.2	2.7	2.9
75.5°	2.1	2.6	2.8	2.6	2.1	2.6	2.8	2.6	2.1	2.6	2.8
76°	2.0	2.5	2.7	2.3	2.0	2.3	2.7	2.5	2.0	2.5	2.7
76.5°	1.9	2.2	2.5	2.2	1.9	2.2	2.5	2.2	1.9	2.2	2.5
77°	1.7	2.1	2.3	2.1	1.8	2.1	2.3	2.1	1.7	2.1	2.3
77.5°	1.6	2.0	2.2	2.0	1.7	2.0	2.2	2.0	1.6	2.0	2.2
78°	1.6	1.9	2.0	1.9	1.6	1.9	2.0	1.9	1.6	1.9	2.0
78.5°	1.5	1.8	1.9	1.8	1.5	1.8	1.9	1.8	1.5	1.8	1.9
79°	1.4	1.7	1.8	1.7	1.4	1.7	1.8	1.7	1.4	1.7	1.8
79.5°	1.3	1.5	1.7	1.6	1.3	1.6	1.7	1.5	1.3	1.5	1.7
80°	1.2	1.4	1.6	1.5	1.3	1.5	1.6	1.4	1.2	1.4	1.6
80.5°	1.1	1.3	1.5	1.4	1.2	1.4	1.5	1.3	1.1	1.3	1.5
81°	1.0	1.2	1.4	1.3	1.1	1.3	1.4	1.2	1.0	1.2	1.4
81.5°	1.0	1.1	1.3	1.2	1.0	1.2	1.3	1.1	1.0	1.1	1.3
82°	0.9	1.0	1.2	1.1	1.0	1.1	1.2	1.0	0.9	1.0	1.2
82.5°	0.7	0.9	1.1	1.0	0.9	1.0	1.1	0.9	0.7	0.9	1.1
83°	0.6	0.9	1.0	0.9	0.7	0.9	1.0	0.9	0.6	0.9	1.0
83.5°	0.6	0.7	0.9	0.9	0.6	0.9	0.9	0.7	0.6	0.7	0.9
84°	0.5	0.6	0.7	0.7	0.6	0.7	0.7	0.6	0.5	0.6	0.7
84.5°	0.4	0.5	0.6	0.6	0.5	0.6	0.6	0.5	0.4	0.5	0.6
85°	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.5
85.5°	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4
86°	0.2	0.3	0.4	0.4	0.3	0.4	0.4	0.3	0.2	0.3	0.4
86.5°	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3
87°	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2
87.5°	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2
88°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
88.5°	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1



TEST NUMBER: P775899
CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P775899

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	761.3	761.3	761.3	761.3	761.3	761.3
0.5°	761.7	761.5	761.7	761.4	760.9	760.5
1°	761.5	761.4	761.5	761.2	760.8	760.4
1.5°	761.3	761.2	761.3	761.0	760.4	760.1
2°	761.0	760.8	761.0	760.5	760.0	759.7
2.5°	760.4	760.3	760.4	760.1	759.5	759.2
3°	759.9	759.8	759.9	759.5	758.9	758.5
3.5°	759.3	759.2	759.3	758.8	758.2	757.8
4°	758.5	758.4	758.5	758.0	757.3	756.9
4.5°	757.6	757.5	757.6	757.0	756.3	756.0
5°	756.6	756.4	756.6	756.1	755.2	754.8
5.5°	755.4	755.1	755.4	754.9	754.0	753.6
6°	754.1	753.8	754.1	753.6	752.7	752.1
6.5°	752.7	752.2	752.7	752.2	751.3	750.6
7°	751.0	750.5	751.0	750.6	749.7	749.0
7.5°	749.1	748.6	749.1	748.9	748.0	747.2
8°	747.2	746.7	747.2	747.1	746.2	745.3
8.5°	745.0	744.5	745.0	745.1	744.1	743.3
9°	742.7	742.1	742.7	743.0	742.0	741.1
9.5°	740.3	739.7	740.3	740.7	739.8	738.9
10°	737.8	737.1	737.8	738.3	737.5	736.5
10.5°	735.2	734.4	735.2	735.7	735.0	733.9
11°	732.4	731.6	732.4	733.0	732.4	731.2
11.5°	729.4	728.6	729.4	730.2	729.6	728.5
12°	726.4	725.6	726.4	727.2	726.8	725.5
12.5°	723.2	722.3	723.2	724.1	723.8	722.4
13°	719.9	719.0	719.9	720.9	720.6	719.2
13.5°	716.5	715.5	716.5	717.5	717.3	715.9
14°	713.0	711.8	713.0	714.1	714.0	712.4
14.5°	709.3	708.1	709.3	710.5	710.3	708.9
15°	705.4	704.3	705.4	706.8	706.7	705.1
15.5°	701.5	700.2	701.5	702.9	703.0	701.3
16°	697.4	696.2	697.4	698.9	699.0	697.3
16.5°	693.3	691.9	693.3	694.8	695.0	693.3
17°	688.9	687.5	688.9	690.6	690.8	689.1
17.5°	684.6	683.1	684.6	686.3	686.6	684.8
18°	680.0	678.4	680.0	681.7	682.1	680.3
18.5°	675.4	673.6	675.4	677.2	677.5	675.7
19°	670.6	668.8	670.6	672.5	672.9	671.0
19.5°	665.7	663.8	665.7	667.6	668.1	666.1
20°	660.8	658.8	660.8	662.7	663.2	661.2
20.5°	655.6	653.5	655.6	657.7	658.2	656.2
21°	650.3	648.2	650.3	652.6	653.0	651.0



TEST NUMBER: P775899

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	634.0	632.0	634.0	636.4	636.9	634.7
23°	628.4	626.4	628.4	630.8	631.3	629.0
23.5°	622.7	620.8	622.7	625.2	625.6	623.2
24°	617.0	615.1	617.0	619.4	619.6	617.3
24.5°	611.2	609.0	611.2	613.6	613.7	611.1
25°	605.4	602.8	605.4	607.5	607.6	604.8
25.5°	599.2	596.6	599.2	601.4	601.4	598.5
26°	593.2	590.2	593.2	595.2	595.0	591.9
26.5°	586.9	583.5	586.9	589.0	588.5	585.3
27°	580.5	576.6	580.5	582.6	581.9	578.4
27.5°	573.9	569.7	573.9	576.2	575.2	571.6
28°	567.1	562.3	567.1	569.7	568.3	564.4
28.5°	560.2	554.8	560.2	562.9	561.2	557.2
29°	553.1	547.4	553.1	556.3	554.3	549.6
29.5°	545.8	539.7	545.8	549.7	547.2	542.1
30°	538.4	532.0	538.4	542.8	539.8	534.5
30.5°	530.9	524.2	530.9	536.0	532.4	526.7
31°	523.4	516.3	523.4	528.9	524.8	518.6
31.5°	515.7	508.2	515.7	522.0	517.2	510.7
32°	508.1	500.0	508.1	515.0	509.4	502.6
32.5°	500.1	491.8	500.1	507.8	501.6	494.4
33°	492.4	483.5	492.4	500.6	493.7	486.1
33.5°	484.5	475.1	484.5	493.2	485.9	477.8
34°	476.6	466.6	476.6	485.8	477.9	469.2
34.5°	468.7	458.0	468.7	478.3	469.8	460.6
35°	460.6	449.4	460.6	470.9	461.7	451.8
35.5°	452.6	440.9	452.6	463.1	453.7	443.3
36°	444.5	430.8	444.5	455.3	445.5	434.4
36.5°	436.3	419.4	436.3	447.7	437.1	424.9
37°	428.1	406.8	428.1	440.0	428.9	413.5
37.5°	419.8	393.8	419.8	432.3	420.5	398.6
38°	411.6	380.0	411.6	424.3	412.1	383.6
38.5°	402.5	365.8	402.5	416.6	403.7	366.9
39°	392.0	349.9	392.0	408.9	395.0	349.7
39.5°	380.2	333.2	380.2	401.4	382.3	331.7
40°	367.3	315.5	367.3	393.7	368.7	313.8
40.5°	353.5	298.0	353.5	386.1	353.2	295.9
41°	338.8	281.2	338.8	378.8	337.2	278.9
41.5°	323.4	264.4	323.4	371.6	320.8	262.1
42°	307.2	248.2	307.2	364.5	304.4	245.7
42.5°	291.0	231.8	291.0	357.5	288.2	229.3
43°	274.7	215.9	274.7	350.4	271.8	213.1
43.5°	258.7	199.9	258.7	343.5	255.8	196.7



TEST NUMBER: P775899

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	212.9	155.6	212.9	322.6	209.3	151.8
45.5°	197.8	142.1	197.8	315.7	194.1	137.7
46°	182.9	129.1	182.9	308.7	179.4	124.6
46.5°	168.4	115.9	168.4	301.4	165.1	111.7
47°	154.2	103.1	154.2	291.3	151.0	99.0
47.5°	141.0	91.7	141.0	278.9	137.5	86.9
48°	128.0	81.6	128.0	264.2	124.4	76.5
48.5°	115.4	72.3	115.4	248.6	111.9	67.0
49°	103.1	63.7	103.1	232.3	99.8	58.6
49.5°	92.0	55.7	92.0	215.6	88.0	51.3
50°	81.3	48.4	81.3	198.7	77.1	44.8
50.5°	71.5	41.5	71.5	181.9	67.1	38.7
51°	62.3	34.9	62.3	165.4	58.3	33.1
51.5°	54.0	29.3	54.0	150.0	50.5	28.7
52°	46.8	24.9	46.8	135.8	43.7	24.2
52.5°	40.1	22.0	40.1	121.9	37.6	20.4
53°	33.9	19.1	33.9	109.0	32.1	17.6
53.5°	28.1	16.1	28.1	96.3	27.4	15.0
54°	23.0	13.2	23.0	84.7	22.9	14.4
54.5°	19.1	12.6	19.1	73.6	19.2	13.7
55°	16.0	12.1	16.0	63.8	15.9	13.2
55.5°	13.7	11.6	13.7	55.0	13.5	12.7
56°	12.0	11.2	12.0	47.0	12.5	12.1
56.5°	11.2	10.8	11.2	39.9	11.9	11.6
57°	10.8	10.3	10.8	33.9	11.5	11.2
57.5°	10.3	9.9	10.3	28.7	11.1	10.7
58°	10.0	9.6	10.0	24.4	10.7	10.2
58.5°	9.6	9.2	9.6	20.6	10.2	9.8
59°	9.3	8.8	9.3	17.5	9.9	9.5
59.5°	9.0	8.5	9.0	14.8	9.6	9.1
60°	8.6	8.2	8.6	12.5	9.2	8.7
60.5°	8.3	7.8	8.3	11.1	8.8	8.3
61°	8.1	7.6	8.1	10.0	8.5	8.0
61.5°	7.8	7.2	7.8	9.2	8.2	7.7
62°	7.5	6.9	7.5	8.6	8.0	7.4
62.5°	7.2	6.7	7.2	8.2	7.7	7.0
63°	7.0	6.4	7.0	7.9	7.4	6.7
63.5°	6.7	6.2	6.7	7.6	7.1	6.5
64°	6.5	5.9	6.5	7.4	6.8	6.2
64.5°	6.3	5.6	6.3	7.0	6.6	6.0
65°	6.1	5.4	6.1	6.8	6.4	5.6
65.5°	5.9	5.2	5.9	6.5	6.1	5.4
66°	5.6	5.0	5.6	6.3	5.9	5.2



TEST NUMBER: P775899

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	5.0	4.4	5.0	5.6	5.2	4.6
68°	4.8	4.3	4.8	5.4	5.0	4.4
68.5°	4.7	4.0	4.7	5.2	4.8	4.2
69°	4.5	3.8	4.5	5.0	4.6	4.0
69.5°	4.3	3.7	4.3	4.8	4.5	3.8
70°	4.2	3.5	4.2	4.6	4.3	3.6
70.5°	3.9	3.4	3.9	4.5	4.0	3.5
71°	3.8	3.3	3.8	4.3	3.9	3.3
71.5°	3.6	3.1	3.6	4.0	3.7	3.2
72°	3.5	3.0	3.5	3.9	3.6	3.0
72.5°	3.3	2.9	3.3	3.7	3.4	2.9
73°	3.2	2.7	3.2	3.5	3.3	2.8
73.5°	3.1	2.6	3.1	3.4	3.1	2.6
74°	2.9	2.5	2.9	3.2	3.0	2.5
74.5°	2.8	2.3	2.8	3.1	2.9	2.3
75°	2.7	2.2	2.7	2.9	2.7	2.2
75.5°	2.6	2.1	2.6	2.8	2.6	2.1
76°	2.3	2.0	2.3	2.7	2.5	2.0
76.5°	2.2	1.9	2.2	2.5	2.2	1.9
77°	2.1	1.8	2.1	2.3	2.1	1.7
77.5°	2.0	1.7	2.0	2.2	2.0	1.6
78°	1.9	1.6	1.9	2.0	1.9	1.6
78.5°	1.8	1.5	1.8	1.9	1.8	1.5
79°	1.7	1.4	1.7	1.8	1.7	1.4
79.5°	1.6	1.3	1.6	1.7	1.5	1.3
80°	1.5	1.3	1.5	1.6	1.4	1.2
80.5°	1.4	1.2	1.4	1.5	1.3	1.1
81°	1.3	1.1	1.3	1.4	1.2	1.0
81.5°	1.2	1.0	1.2	1.3	1.1	1.0
82°	1.1	1.0	1.1	1.2	1.0	0.9
82.5°	1.0	0.9	1.0	1.1	0.9	0.7
83°	0.9	0.7	0.9	1.0	0.9	0.6
83.5°	0.9	0.6	0.9	0.9	0.7	0.6
84°	0.7	0.6	0.7	0.7	0.6	0.5
84.5°	0.6	0.5	0.6	0.6	0.5	0.4
85°	0.5	0.4	0.5	0.5	0.4	0.4
85.5°	0.4	0.4	0.4	0.4	0.3	0.3
86°	0.4	0.3	0.4	0.4	0.3	0.2
86.5°	0.3	0.3	0.3	0.3	0.2	0.2
87°	0.2	0.2	0.2	0.2	0.2	0.1
87.5°	0.2	0.2	0.2	0.2	0.1	0.1
88°	0.1	0.1	0.1	0.1	0.1	0.1
88.5°	0.1	0.1	0.1	0.1	0.0	0.0



TEST NUMBER: P775899
CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-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°	645.8	647.8	647.3	645.0	643.0	645.0	647.3	647.8	645.8	647.8	647.3
22°	640.1	642.5	641.8	639.6	637.4	639.6	641.8	642.5	640.1	642.5	641.8



44°	181.1	240.2	336.5	243.3	184.4	243.3	336.5	240.2	181.1	240.2	336.5
44.5°	166.4	225.0	329.6	228.1	169.1	228.1	329.6	225.0	166.4	225.0	329.6



66.5°	5.0	5.6	6.1	5.4	4.8	5.4	6.1	5.6	5.0	5.6	6.1
67°	4.8	5.4	5.9	5.2	4.6	5.2	5.9	5.4	4.8	5.4	5.9



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

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21.5°	645.0	643.0	645.0	647.3	647.8	645.8
22°	639.6	637.4	639.6	641.8	642.5	640.1



44°	243.3	184.4	243.3	336.5	240.2	181.1
44.5°	228.1	169.1	228.1	329.6	225.0	166.4

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66.5°	5.4	4.8	5.4	6.1	5.6	5.0
67°	5.2	4.6	5.2	5.9	5.4	4.8

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89°	0.0	0.1	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)