

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: P775897

Luminaire Tested: HCDJBL510CSD-HCD8TSQH-1000lm-3500K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P775897
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-3500K
Description: 8 INCH SQUARE MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

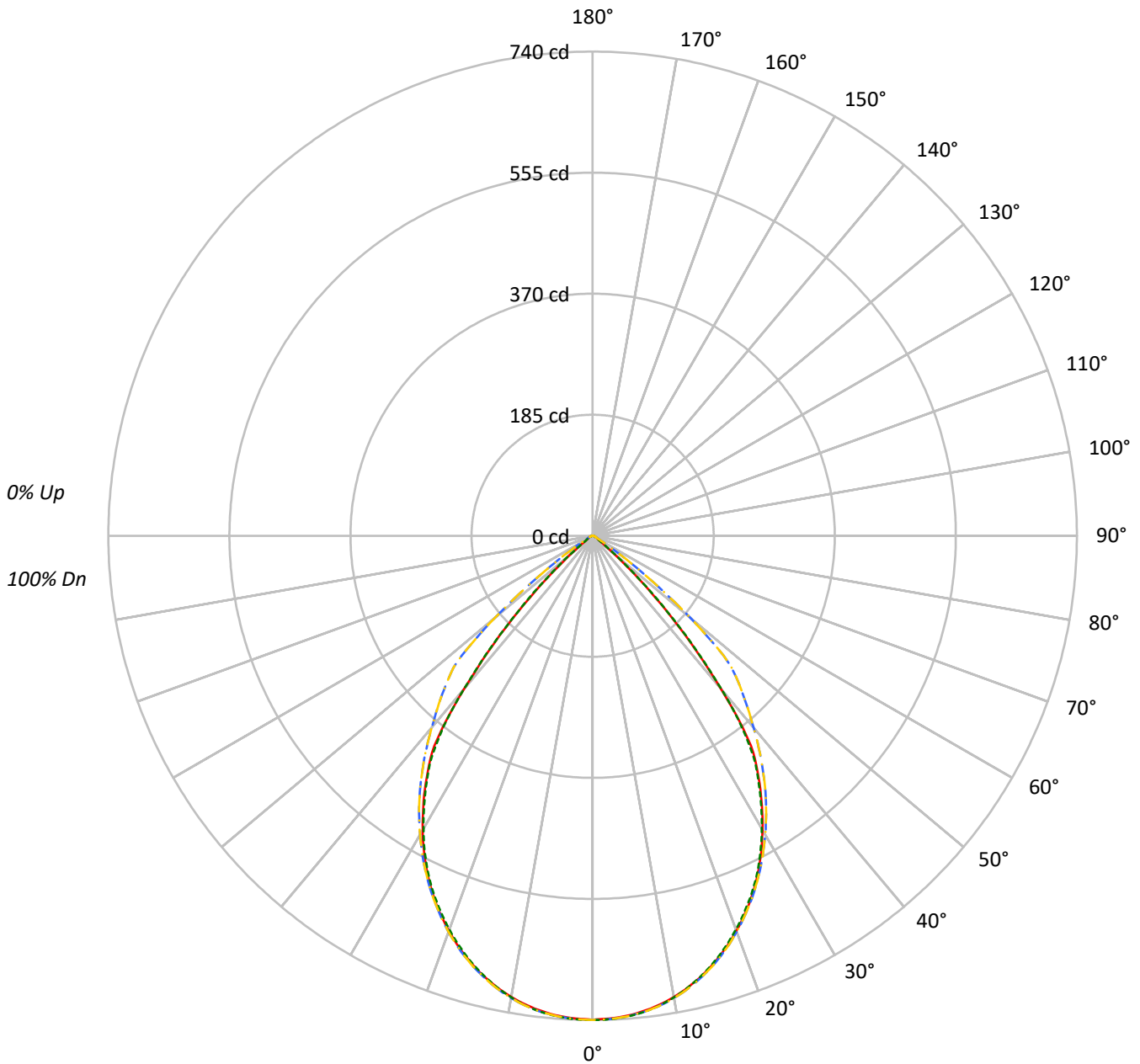
Lumens per Lamp: N/A
Luminaire Lumens: 1018.7 lumens
Efficiency: N/A
Efficacy: 101.9 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.15
Luminous Opening: Rectangular (W 0.67' x L: 0.67' x H: 0')
CIE Type: Direct

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					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	93	90	87	90	87	85	84					84			
3	100	92	87	82	98	91	86	82	88	84	80	86	82	79	83	80	78	76					76			
4	94	85	79	74	92	84	78	73	82	77	73	80	75	72	78	74	71	69					69			
5	88	78	72	67	86	77	71	66	76	70	66	74	69	65	72	68	65	63					63			
6	83	72	66	61	81	72	65	60	70	64	60	69	63	60	67	63	59	58					58			
7	78	67	60	55	76	66	60	55	65	59	55	64	59	55	63	58	54	53					53			
8	73	62	56	51	72	62	55	51	61	55	51	59	54	50	58	54	50	48					48			
9	69	58	51	47	68	58	51	47	57	51	47	56	50	46	55	50	46	45					45			
10	65	54	48	43	64	54	48	43	53	47	43	52	47	43	51	46	43	41					41			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17739	17739	17739	17739
5°	17655	17691	17655	17691
10°	17426	17441	17426	17441
15°	17010	16990	17010	16990
20°	16397	16336	16397	16336
25°	15552	15499	15552	15499
30°	14381	14315	14381	14315
35°	12851	12786	12851	12786
40°	9544	9597	9544	9597
45°	5002	5127	5002	5127
50°	1623	1753	1623	1753
55°	535	493	535	493
60°	408	384	408	384
65°	312	301	312	301
70°	245	238	245	238
75°	204	204	204	204
80°	152	166	152	166
85°	110	110	110	110

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 10631 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.6	6.8
10°-20°	192.7	18.9
20°-30°	270.0	26.5
30°-40°	277.3	27.2
40°-50°	168.0	16.5
50°-60°	31.6	3.1
60°-70°	6.1	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°	532.3	52.3
0°-40°	809.6	79.5
0°-60°	1009.2	99.1
0°-90°	1018.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1018.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	740	740	740	740	740	
5°	734	735	734	735	734	69
15°	685	684	685	684	685	193
25°	588	586	588	586	588	269
35°	439	437	439	437	439	268
45°	148	151	148	151	148	118
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°	739.8	739.8	739.8	739.8	739.8	739.8	739.8	739.8	739.8	739.8	739.8
0.5°	739.1	739.4	739.9	740.2	740.0	740.2	739.9	739.4	739.1	739.4	739.9
1°	739.0	739.3	739.7	740.0	739.9	740.0	739.7	739.3	739.0	739.3	739.7
1.5°	738.7	739.0	739.5	739.8	739.7	739.8	739.5	739.0	738.7	739.0	739.5
2°	738.3	738.6	739.1	739.5	739.3	739.5	739.1	738.6	738.3	738.6	739.1
2.5°	737.7	738.1	738.7	739.0	738.9	739.0	738.7	738.1	737.7	738.1	738.7
3°	737.1	737.5	738.1	738.5	738.4	738.5	738.1	737.5	737.1	737.5	738.1
3.5°	736.4	736.8	737.4	737.8	737.7	737.8	737.4	736.8	736.4	736.8	737.4
4°	735.6	736.0	736.6	737.1	737.0	737.1	736.6	736.0	735.6	736.0	736.6
4.5°	734.6	734.9	735.7	736.2	736.1	736.2	735.7	734.9	734.6	734.9	735.7
5°	733.5	733.9	734.7	735.3	735.0	735.3	734.7	733.9	733.5	733.9	734.7
5.5°	732.4	732.8	733.6	734.1	733.8	734.1	733.6	732.8	732.4	732.8	733.6
6°	730.9	731.4	732.4	732.9	732.6	732.9	732.4	731.4	730.9	731.4	732.4
6.5°	729.5	730.1	731.0	731.4	731.0	731.4	731.0	730.1	729.5	730.1	731.0
7°	727.9	728.5	729.5	729.8	729.4	729.8	729.5	728.5	727.9	728.5	729.5
7.5°	726.1	726.9	727.8	728.0	727.5	728.0	727.8	726.9	726.1	726.9	727.8
8°	724.3	725.1	726.0	726.1	725.6	726.1	726.0	725.1	724.3	725.1	726.0
8.5°	722.3	723.1	724.1	724.0	723.4	724.0	724.1	723.1	722.3	723.1	724.1
9°	720.2	721.1	722.0	721.8	721.2	721.8	722.0	721.1	720.2	721.1	722.0
9.5°	718.1	718.9	719.8	719.4	718.8	719.4	719.8	718.9	718.1	718.9	719.8
10°	715.7	716.7	717.4	717.0	716.3	717.0	717.4	716.7	715.7	716.7	717.4
10.5°	713.2	714.2	715.0	714.4	713.7	714.4	715.0	714.2	713.2	714.2	715.0
11°	710.6	711.7	712.4	711.7	710.9	711.7	712.4	711.7	710.6	711.7	712.4
11.5°	707.9	709.1	709.6	708.8	708.0	708.8	709.6	709.1	707.9	709.1	709.6
12°	705.0	706.3	706.7	705.9	705.1	705.9	706.7	706.3	705.0	706.3	706.7
12.5°	702.0	703.4	703.7	702.8	701.9	702.8	703.7	703.4	702.0	703.4	703.7
13°	698.9	700.2	700.6	699.6	698.7	699.6	700.6	700.2	698.9	700.2	700.6
13.5°	695.7	697.0	697.2	696.3	695.3	696.3	697.2	697.0	695.7	697.0	697.2
14°	692.3	693.8	693.9	692.9	691.8	692.9	693.9	693.8	692.3	693.8	693.9
14.5°	688.9	690.3	690.4	689.3	688.1	689.3	690.4	690.3	688.9	690.3	690.4
15°	685.2	686.8	686.9	685.5	684.4	685.5	686.9	686.8	685.2	686.8	686.9
15.5°	681.5	683.2	683.1	681.7	680.5	681.7	683.1	683.2	681.5	683.2	683.1
16°	677.7	679.3	679.2	677.8	676.5	677.8	679.2	679.3	677.7	679.3	679.2
16.5°	673.7	675.4	675.2	673.7	672.4	673.7	675.2	675.4	673.7	675.4	675.2
17°	669.7	671.4	671.1	669.5	668.1	669.5	671.1	671.4	669.7	671.4	671.1
17.5°	665.4	667.2	666.9	665.2	663.8	665.2	666.9	667.2	665.4	667.2	666.9
18°	661.1	662.9	662.4	660.8	659.2	660.8	662.4	662.9	661.1	662.9	662.4
18.5°	656.6	658.4	658.1	656.3	654.6	656.3	658.1	658.4	656.6	658.4	658.1
19°	652.1	654.0	653.5	651.7	649.9	651.7	653.5	654.0	652.1	654.0	653.5
19.5°	647.3	649.3	648.8	646.9	645.0	646.9	648.8	649.3	647.3	649.3	648.8
20°	642.6	644.5	644.0	642.1	640.2	642.1	644.0	644.5	642.6	644.5	644.0
20.5°	637.7	639.7	639.1	637.1	635.1	637.1	639.1	639.7	637.7	639.7	639.1
21°	632.6	634.6	634.2	632.0	629.9	632.0	634.2	634.6	632.6	634.6	634.2



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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°	616.8	618.9	618.4	616.1	614.2	616.1	618.4	618.9	616.8	618.9	618.4
23°	611.3	613.5	613.0	610.7	608.7	610.7	613.0	613.5	611.3	613.5	613.0
23.5°	605.6	608.0	607.6	605.2	603.3	605.2	607.6	608.0	605.6	608.0	607.6
24°	599.9	602.2	602.0	599.6	597.7	599.6	602.0	602.2	599.9	602.2	602.0
24.5°	593.9	596.4	596.3	594.0	591.8	594.0	596.3	596.4	593.9	596.4	596.3
25°	587.8	590.5	590.4	588.3	585.8	588.3	590.4	590.5	587.8	590.5	590.4
25.5°	581.7	584.5	584.5	582.3	579.8	582.3	584.5	584.5	581.7	584.5	584.5
26°	575.2	578.2	578.4	576.5	573.6	576.5	578.4	578.2	575.2	578.2	578.4
26.5°	568.8	571.9	572.3	570.4	567.1	570.4	572.3	571.9	568.8	571.9	572.3
27°	562.1	565.5	566.1	564.2	560.3	564.2	566.1	565.5	562.1	565.5	566.1
27.5°	555.5	559.0	559.9	557.7	553.6	557.7	559.9	559.0	555.5	559.0	559.9
28°	548.5	552.2	553.6	551.1	546.4	551.1	553.6	552.2	548.5	552.2	553.6
28.5°	541.5	545.4	547.1	544.4	539.2	544.4	547.1	545.4	541.5	545.4	547.1
29°	534.1	538.7	540.6	537.5	531.9	537.5	540.6	538.7	534.1	538.7	540.6
29.5°	526.8	531.7	534.2	530.4	524.5	530.4	534.2	531.7	526.8	531.7	534.2
30°	519.4	524.6	527.5	523.2	517.0	523.2	527.5	524.6	519.4	524.6	527.5
30.5°	511.9	517.3	520.9	515.9	509.4	515.9	520.9	517.3	511.9	517.3	520.9
31°	504.0	510.0	514.0	508.6	501.7	508.6	514.0	510.0	504.0	510.0	514.0
31.5°	496.3	502.6	507.3	501.2	493.8	501.2	507.3	502.6	496.3	502.6	507.3
32°	488.4	495.1	500.5	493.7	485.9	493.7	500.5	495.1	488.4	495.1	500.5
32.5°	480.5	487.4	493.5	486.0	477.9	486.0	493.5	487.4	480.5	487.4	493.5
33°	472.4	479.7	486.5	478.5	469.9	478.5	486.5	479.7	472.4	479.7	486.5
33.5°	464.3	472.2	479.3	470.8	461.7	470.8	479.3	472.2	464.3	472.2	479.3
34°	455.9	464.4	472.1	463.2	453.4	463.2	472.1	464.4	455.9	464.4	472.1
34.5°	447.6	456.5	464.8	455.5	445.0	455.5	464.8	456.5	447.6	456.5	464.8
35°	439.0	448.7	457.6	447.6	436.8	447.6	457.6	448.7	439.0	448.7	457.6
35.5°	430.8	440.9	450.0	439.9	428.5	439.9	450.0	440.9	430.8	440.9	450.0
36°	422.2	432.9	442.5	432.0	418.6	432.0	442.5	432.9	422.2	432.9	442.5
36.5°	412.9	424.7	435.1	424.0	407.6	424.0	435.1	424.7	412.9	424.7	435.1
37°	401.9	416.8	427.5	416.0	395.3	416.0	427.5	416.8	401.9	416.8	427.5
37.5°	387.4	408.6	420.1	408.0	382.7	408.0	420.1	408.6	387.4	408.6	420.1
38°	372.8	400.5	412.3	400.0	369.2	400.0	412.3	400.5	372.8	400.5	412.3
38.5°	356.6	392.3	404.9	391.2	355.5	391.2	404.9	392.3	356.6	392.3	404.9
39°	339.8	383.8	397.4	380.9	340.0	380.9	397.4	383.8	339.8	383.8	397.4
39.5°	322.3	371.5	390.1	369.4	323.8	369.4	390.1	371.5	322.3	371.5	390.1
40°	304.9	358.3	382.6	356.9	306.6	356.9	382.6	358.3	304.9	358.3	382.6
40.5°	287.5	343.2	375.2	343.5	289.6	343.5	375.2	343.2	287.5	343.2	375.2
41°	271.0	327.7	368.1	329.3	273.2	329.3	368.1	327.7	271.0	327.7	368.1
41.5°	254.7	311.8	361.2	314.2	257.0	314.2	361.2	311.8	254.7	311.8	361.2
42°	238.7	295.8	354.2	298.5	241.2	298.5	354.2	295.8	238.7	295.8	354.2
42.5°	222.8	280.1	347.4	282.8	225.3	282.8	347.4	280.1	222.8	280.1	347.4
43°	207.0	264.1	340.5	266.9	209.8	266.9	340.5	264.1	207.0	264.1	340.5
43.5°	191.2	248.6	333.8	251.4	194.3	251.4	333.8	248.6	191.2	248.6	333.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	147.5	203.4	313.5	206.9	151.2	206.9	313.5	203.4	147.5	203.4	313.5
45.5°	133.8	188.6	306.8	192.2	138.1	192.2	306.8	188.6	133.8	188.6	306.8
46°	121.1	174.3	299.9	177.7	125.4	177.7	299.9	174.3	121.1	174.3	299.9
46.5°	108.5	160.4	292.9	163.6	112.6	163.6	292.9	160.4	108.5	160.4	292.9
47°	96.2	146.8	283.1	149.9	100.2	149.9	283.1	146.8	96.2	146.8	283.1
47.5°	84.4	133.6	271.0	137.0	89.1	137.0	271.0	133.6	84.4	133.6	271.0
48°	74.4	120.9	256.8	124.4	79.3	124.4	256.8	120.9	74.4	120.9	256.8
48.5°	65.1	108.8	241.6	112.2	70.2	112.2	241.6	108.8	65.1	108.8	241.6
49°	57.0	96.9	225.8	100.2	61.9	100.2	225.8	96.9	57.0	96.9	225.8
49.5°	49.8	85.6	209.5	89.4	54.2	89.4	209.5	85.6	49.8	85.6	209.5
50°	43.5	74.9	193.1	79.0	47.0	79.0	193.1	74.9	43.5	74.9	193.1
50.5°	37.6	65.3	176.8	69.5	40.3	69.5	176.8	65.3	37.6	65.3	176.8
51°	32.2	56.7	160.7	60.6	33.9	60.6	160.7	56.7	32.2	56.7	160.7
51.5°	27.9	49.1	145.7	52.5	28.5	52.5	145.7	49.1	27.9	49.1	145.7
52°	23.5	42.5	132.0	45.5	24.2	45.5	132.0	42.5	23.5	42.5	132.0
52.5°	19.8	36.6	118.5	38.9	21.3	38.9	118.5	36.6	19.8	36.6	118.5
53°	17.1	31.2	106.0	32.9	18.5	32.9	106.0	31.2	17.1	31.2	106.0
53.5°	14.6	26.6	93.6	27.3	15.6	27.3	93.6	26.6	14.6	26.6	93.6
54°	14.0	22.3	82.3	22.4	12.8	22.4	82.3	22.3	14.0	22.3	82.3
54.5°	13.4	18.6	71.6	18.5	12.2	18.5	71.6	18.6	13.4	18.6	71.6
55°	12.8	15.4	62.0	15.5	11.8	15.5	62.0	15.4	12.8	15.4	62.0
55.5°	12.3	13.2	53.4	13.4	11.3	13.4	53.4	13.2	12.3	13.2	53.4
56°	11.8	12.1	45.7	11.7	10.9	11.7	45.7	12.1	11.8	12.1	45.7
56.5°	11.3	11.6	38.7	10.9	10.5	10.9	38.7	11.6	11.3	11.6	38.7
57°	10.9	11.2	32.9	10.5	10.0	10.5	32.9	11.2	10.9	11.2	32.9
57.5°	10.4	10.8	27.9	10.0	9.6	10.0	27.9	10.8	10.4	10.8	27.9
58°	9.9	10.4	23.7	9.7	9.3	9.7	23.7	10.4	9.9	10.4	23.7
58.5°	9.5	9.9	20.0	9.3	8.9	9.3	20.0	9.9	9.5	9.9	20.0
59°	9.2	9.6	17.0	9.0	8.6	9.0	17.0	9.6	9.2	9.6	17.0
59.5°	8.8	9.3	14.4	8.7	8.3	8.7	14.4	9.3	8.8	9.3	14.4
60°	8.5	8.9	12.1	8.4	8.0	8.4	12.1	8.9	8.5	8.9	12.1
60.5°	8.1	8.6	10.8	8.1	7.6	8.1	10.8	8.6	8.1	8.6	10.8
61°	7.8	8.3	9.7	7.9	7.4	7.9	9.7	8.3	7.8	8.3	9.7
61.5°	7.5	8.0	8.9	7.6	7.0	7.6	8.9	8.0	7.5	8.0	8.9
62°	7.1	7.8	8.4	7.3	6.7	7.3	8.4	7.8	7.1	7.8	8.4
62.5°	6.8	7.5	8.0	7.0	6.5	7.0	8.0	7.5	6.8	7.5	8.0
63°	6.5	7.1	7.7	6.8	6.2	6.8	7.7	7.1	6.5	7.1	7.7
63.5°	6.3	6.9	7.4	6.5	6.0	6.5	7.4	6.9	6.3	6.9	7.4
64°	6.0	6.6	7.1	6.3	5.7	6.3	7.1	6.6	6.0	6.6	7.1
64.5°	5.8	6.4	6.8	6.1	5.5	6.1	6.8	6.4	5.8	6.4	6.8
65°	5.5	6.2	6.6	5.9	5.3	5.9	6.6	6.2	5.5	6.2	6.6
65.5°	5.3	5.9	6.3	5.7	5.1	5.7	6.3	5.9	5.3	5.9	6.3
66°	5.1	5.7	6.1	5.5	4.9	5.5	6.1	5.7	5.1	5.7	6.1



TEST NUMBER: P775897

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	4.5	5.1	5.5	4.9	4.2	4.9	5.5	5.1	4.5	5.1	5.5
68°	4.2	4.9	5.3	4.7	4.1	4.7	5.3	4.9	4.2	4.9	5.3
68.5°	4.0	4.7	5.1	4.6	3.9	4.6	5.1	4.7	4.0	4.7	5.1
69°	3.9	4.5	4.9	4.4	3.7	4.4	4.9	4.5	3.9	4.5	4.9
69.5°	3.7	4.4	4.7	4.1	3.6	4.1	4.7	4.4	3.7	4.4	4.7
70°	3.5	4.1	4.5	4.0	3.4	4.0	4.5	4.1	3.5	4.1	4.5
70.5°	3.4	3.9	4.4	3.8	3.3	3.8	4.4	3.9	3.4	3.9	4.4
71°	3.2	3.8	4.1	3.7	3.2	3.7	4.1	3.8	3.2	3.8	4.1
71.5°	3.1	3.6	3.9	3.5	3.0	3.5	3.9	3.6	3.1	3.6	3.9
72°	2.9	3.5	3.8	3.4	2.9	3.4	3.8	3.5	2.9	3.5	3.8
72.5°	2.8	3.3	3.6	3.2	2.8	3.2	3.6	3.3	2.8	3.3	3.6
73°	2.7	3.2	3.4	3.1	2.6	3.1	3.4	3.2	2.7	3.2	3.4
73.5°	2.5	3.0	3.3	3.0	2.5	3.0	3.3	3.0	2.5	3.0	3.3
74°	2.4	2.9	3.1	2.8	2.4	2.8	3.1	2.9	2.4	2.9	3.1
74.5°	2.3	2.8	3.0	2.7	2.3	2.7	3.0	2.8	2.3	2.8	3.0
75°	2.2	2.6	2.8	2.6	2.2	2.6	2.8	2.6	2.2	2.6	2.8
75.5°	2.1	2.5	2.7	2.5	2.1	2.5	2.7	2.5	2.1	2.5	2.7
76°	2.0	2.4	2.6	2.3	2.0	2.3	2.6	2.4	2.0	2.4	2.6
76.5°	1.9	2.2	2.4	2.2	1.9	2.2	2.4	2.2	1.9	2.2	2.4
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°	1.3	1.7	1.8	1.7	1.3	1.7	1.8	1.7	1.3	1.7	1.8
79.5°	1.2	1.5	1.7	1.6	1.2	1.6	1.7	1.5	1.2	1.5	1.7
80°	1.1	1.3	1.6	1.5	1.2	1.5	1.6	1.3	1.1	1.3	1.6
80.5°	1.0	1.2	1.5	1.3	1.1	1.3	1.5	1.2	1.0	1.2	1.5
81°	0.9	1.1	1.3	1.2	1.0	1.2	1.3	1.1	0.9	1.1	1.3
81.5°	0.9	1.0	1.2	1.1	0.9	1.1	1.2	1.0	0.9	1.0	1.2
82°	0.8	0.9	1.1	1.0	0.9	1.0	1.1	0.9	0.8	0.9	1.1
82.5°	0.7	0.8	1.0	0.9	0.8	0.9	1.0	0.8	0.7	0.8	1.0
83°	0.6	0.8	0.9	0.8	0.7	0.8	0.9	0.8	0.6	0.8	0.9
83.5°	0.6	0.7	0.8	0.8	0.6	0.8	0.8	0.7	0.6	0.7	0.8
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: P775897
CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-3500K

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: P775897

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	739.8	739.8	739.8	739.8	739.8	739.8
0.5°	740.2	740.0	740.2	739.9	739.4	739.1
1°	740.0	739.9	740.0	739.7	739.3	739.0
1.5°	739.8	739.7	739.8	739.5	739.0	738.7
2°	739.5	739.3	739.5	739.1	738.6	738.3
2.5°	739.0	738.9	739.0	738.7	738.1	737.7
3°	738.5	738.4	738.5	738.1	737.5	737.1
3.5°	737.8	737.7	737.8	737.4	736.8	736.4
4°	737.1	737.0	737.1	736.6	736.0	735.6
4.5°	736.2	736.1	736.2	735.7	734.9	734.6
5°	735.3	735.0	735.3	734.7	733.9	733.5
5.5°	734.1	733.8	734.1	733.6	732.8	732.4
6°	732.9	732.6	732.9	732.4	731.4	730.9
6.5°	731.4	731.0	731.4	731.0	730.1	729.5
7°	729.8	729.4	729.8	729.5	728.5	727.9
7.5°	728.0	727.5	728.0	727.8	726.9	726.1
8°	726.1	725.6	726.1	726.0	725.1	724.3
8.5°	724.0	723.4	724.0	724.1	723.1	722.3
9°	721.8	721.2	721.8	722.0	721.1	720.2
9.5°	719.4	718.8	719.4	719.8	718.9	718.1
10°	717.0	716.3	717.0	717.4	716.7	715.7
10.5°	714.4	713.7	714.4	715.0	714.2	713.2
11°	711.7	710.9	711.7	712.4	711.7	710.6
11.5°	708.8	708.0	708.8	709.6	709.1	707.9
12°	705.9	705.1	705.9	706.7	706.3	705.0
12.5°	702.8	701.9	702.8	703.7	703.4	702.0
13°	699.6	698.7	699.6	700.6	700.2	698.9
13.5°	696.3	695.3	696.3	697.2	697.0	695.7
14°	692.9	691.8	692.9	693.9	693.8	692.3
14.5°	689.3	688.1	689.3	690.4	690.3	688.9
15°	685.5	684.4	685.5	686.9	686.8	685.2
15.5°	681.7	680.5	681.7	683.1	683.2	681.5
16°	677.8	676.5	677.8	679.2	679.3	677.7
16.5°	673.7	672.4	673.7	675.2	675.4	673.7
17°	669.5	668.1	669.5	671.1	671.4	669.7
17.5°	665.2	663.8	665.2	666.9	667.2	665.4
18°	660.8	659.2	660.8	662.4	662.9	661.1
18.5°	656.3	654.6	656.3	658.1	658.4	656.6
19°	651.7	649.9	651.7	653.5	654.0	652.1
19.5°	646.9	645.0	646.9	648.8	649.3	647.3
20°	642.1	640.2	642.1	644.0	644.5	642.6
20.5°	637.1	635.1	637.1	639.1	639.7	637.7
21°	632.0	629.9	632.0	634.2	634.6	632.6

TEST NUMBER: P775897

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	616.1	614.2	616.1	618.4	618.9	616.8
23°	610.7	608.7	610.7	613.0	613.5	611.3
23.5°	605.2	603.3	605.2	607.6	608.0	605.6
24°	599.6	597.7	599.6	602.0	602.2	599.9
24.5°	594.0	591.8	594.0	596.3	596.4	593.9
25°	588.3	585.8	588.3	590.4	590.5	587.8
25.5°	582.3	579.8	582.3	584.5	584.5	581.7
26°	576.5	573.6	576.5	578.4	578.2	575.2
26.5°	570.4	567.1	570.4	572.3	571.9	568.8
27°	564.2	560.3	564.2	566.1	565.5	562.1
27.5°	557.7	553.6	557.7	559.9	559.0	555.5
28°	551.1	546.4	551.1	553.6	552.2	548.5
28.5°	544.4	539.2	544.4	547.1	545.4	541.5
29°	537.5	531.9	537.5	540.6	538.7	534.1
29.5°	530.4	524.5	530.4	534.2	531.7	526.8
30°	523.2	517.0	523.2	527.5	524.6	519.4
30.5°	515.9	509.4	515.9	520.9	517.3	511.9
31°	508.6	501.7	508.6	514.0	510.0	504.0
31.5°	501.2	493.8	501.2	507.3	502.6	496.3
32°	493.7	485.9	493.7	500.5	495.1	488.4
32.5°	486.0	477.9	486.0	493.5	487.4	480.5
33°	478.5	469.9	478.5	486.5	479.7	472.4
33.5°	470.8	461.7	470.8	479.3	472.2	464.3
34°	463.2	453.4	463.2	472.1	464.4	455.9
34.5°	455.5	445.0	455.5	464.8	456.5	447.6
35°	447.6	436.8	447.6	457.6	448.7	439.0
35.5°	439.9	428.5	439.9	450.0	440.9	430.8
36°	432.0	418.6	432.0	442.5	432.9	422.2
36.5°	424.0	407.6	424.0	435.1	424.7	412.9
37°	416.0	395.3	416.0	427.5	416.8	401.9
37.5°	408.0	382.7	408.0	420.1	408.6	387.4
38°	400.0	369.2	400.0	412.3	400.5	372.8
38.5°	391.2	355.5	391.2	404.9	392.3	356.6
39°	380.9	340.0	380.9	397.4	383.8	339.8
39.5°	369.4	323.8	369.4	390.1	371.5	322.3
40°	356.9	306.6	356.9	382.6	358.3	304.9
40.5°	343.5	289.6	343.5	375.2	343.2	287.5
41°	329.3	273.2	329.3	368.1	327.7	271.0
41.5°	314.2	257.0	314.2	361.2	311.8	254.7
42°	298.5	241.2	298.5	354.2	295.8	238.7
42.5°	282.8	225.3	282.8	347.4	280.1	222.8
43°	266.9	209.8	266.9	340.5	264.1	207.0
43.5°	251.4	194.3	251.4	333.8	248.6	191.2



TEST NUMBER: P775897

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	206.9	151.2	206.9	313.5	203.4	147.5
45.5°	192.2	138.1	192.2	306.8	188.6	133.8
46°	177.7	125.4	177.7	299.9	174.3	121.1
46.5°	163.6	112.6	163.6	292.9	160.4	108.5
47°	149.9	100.2	149.9	283.1	146.8	96.2
47.5°	137.0	89.1	137.0	271.0	133.6	84.4
48°	124.4	79.3	124.4	256.8	120.9	74.4
48.5°	112.2	70.2	112.2	241.6	108.8	65.1
49°	100.2	61.9	100.2	225.8	96.9	57.0
49.5°	89.4	54.2	89.4	209.5	85.6	49.8
50°	79.0	47.0	79.0	193.1	74.9	43.5
50.5°	69.5	40.3	69.5	176.8	65.3	37.6
51°	60.6	33.9	60.6	160.7	56.7	32.2
51.5°	52.5	28.5	52.5	145.7	49.1	27.9
52°	45.5	24.2	45.5	132.0	42.5	23.5
52.5°	38.9	21.3	38.9	118.5	36.6	19.8
53°	32.9	18.5	32.9	106.0	31.2	17.1
53.5°	27.3	15.6	27.3	93.6	26.6	14.6
54°	22.4	12.8	22.4	82.3	22.3	14.0
54.5°	18.5	12.2	18.5	71.6	18.6	13.4
55°	15.5	11.8	15.5	62.0	15.4	12.8
55.5°	13.4	11.3	13.4	53.4	13.2	12.3
56°	11.7	10.9	11.7	45.7	12.1	11.8
56.5°	10.9	10.5	10.9	38.7	11.6	11.3
57°	10.5	10.0	10.5	32.9	11.2	10.9
57.5°	10.0	9.6	10.0	27.9	10.8	10.4
58°	9.7	9.3	9.7	23.7	10.4	9.9
58.5°	9.3	8.9	9.3	20.0	9.9	9.5
59°	9.0	8.6	9.0	17.0	9.6	9.2
59.5°	8.7	8.3	8.7	14.4	9.3	8.8
60°	8.4	8.0	8.4	12.1	8.9	8.5
60.5°	8.1	7.6	8.1	10.8	8.6	8.1
61°	7.9	7.4	7.9	9.7	8.3	7.8
61.5°	7.6	7.0	7.6	8.9	8.0	7.5
62°	7.3	6.7	7.3	8.4	7.8	7.1
62.5°	7.0	6.5	7.0	8.0	7.5	6.8
63°	6.8	6.2	6.8	7.7	7.1	6.5
63.5°	6.5	6.0	6.5	7.4	6.9	6.3
64°	6.3	5.7	6.3	7.1	6.6	6.0
64.5°	6.1	5.5	6.1	6.8	6.4	5.8
65°	5.9	5.3	5.9	6.6	6.2	5.5
65.5°	5.7	5.1	5.7	6.3	5.9	5.3
66°	5.5	4.9	5.5	6.1	5.7	5.1



TEST NUMBER: P775897

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	4.9	4.2	4.9	5.5	5.1	4.5
68°	4.7	4.1	4.7	5.3	4.9	4.2
68.5°	4.6	3.9	4.6	5.1	4.7	4.0
69°	4.4	3.7	4.4	4.9	4.5	3.9
69.5°	4.1	3.6	4.1	4.7	4.4	3.7
70°	4.0	3.4	4.0	4.5	4.1	3.5
70.5°	3.8	3.3	3.8	4.4	3.9	3.4
71°	3.7	3.2	3.7	4.1	3.8	3.2
71.5°	3.5	3.0	3.5	3.9	3.6	3.1
72°	3.4	2.9	3.4	3.8	3.5	2.9
72.5°	3.2	2.8	3.2	3.6	3.3	2.8
73°	3.1	2.6	3.1	3.4	3.2	2.7
73.5°	3.0	2.5	3.0	3.3	3.0	2.5
74°	2.8	2.4	2.8	3.1	2.9	2.4
74.5°	2.7	2.3	2.7	3.0	2.8	2.3
75°	2.6	2.2	2.6	2.8	2.6	2.2
75.5°	2.5	2.1	2.5	2.7	2.5	2.1
76°	2.3	2.0	2.3	2.6	2.4	2.0
76.5°	2.2	1.9	2.2	2.4	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	1.3	1.7	1.8	1.7	1.3
79.5°	1.6	1.2	1.6	1.7	1.5	1.2
80°	1.5	1.2	1.5	1.6	1.3	1.1
80.5°	1.3	1.1	1.3	1.5	1.2	1.0
81°	1.2	1.0	1.2	1.3	1.1	0.9
81.5°	1.1	0.9	1.1	1.2	1.0	0.9
82°	1.0	0.9	1.0	1.1	0.9	0.8
82.5°	0.9	0.8	0.9	1.0	0.8	0.7
83°	0.8	0.7	0.8	0.9	0.8	0.6
83.5°	0.8	0.6	0.8	0.8	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: P775897

CATALOG NUMBER: HCDJBL510CSD-HCD8TSQH-1000lm-3500K

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°	627.5	629.5	629.0	626.8	624.8	626.8	629.0	629.5	627.5	629.5	629.0
22°	622.1	624.3	623.7	621.5	619.5	621.5	623.7	624.3	622.1	624.3	623.7



44°	176.0	233.5	327.0	236.5	179.2	236.5	327.0	233.5	176.0	233.5	327.0
44.5°	161.7	218.6	320.3	221.6	164.4	221.6	320.3	218.6	161.7	218.6	320.3



66.5°	4.9	5.5	5.9	5.3	4.7	5.3	5.9	5.5	4.9	5.5	5.9
67°	4.7	5.3	5.7	5.1	4.5	5.1	5.7	5.3	4.7	5.3	5.7



89°	0.0	0.0	0.0	0.0	0.1	0.0	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	0.0

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21.5°	626.8	624.8	626.8	629.0	629.5	627.5
22°	621.5	619.5	621.5	623.7	624.3	622.1



44°	236.5	179.2	236.5	327.0	233.5	176.0
44.5°	221.6	164.4	221.6	320.3	218.6	161.7

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66.5°	5.3	4.7	5.3	5.9	5.5	4.9
67°	5.1	4.5	5.1	5.7	5.3	4.7

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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)